G. R. H. WRIGHT

ANCIENT BUILDING IN CYPRUS

VOLUME I

TEXT

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HANDBUCH DER ORIENTALISTIK

Herausgegeben von B. SPULER†
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ANCIENT BUILDING
IN CYPRUS, I

ANCIENT BUILDING IN CYPRUS

BY

G. R. H. WRIGHT

PART ONE

TEXT

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Vorwort des Herausgebers

Die vorliegende Publikation über "Ancient Building in Cyprus" ist die zweite Untersuchung von G.R.H. Wright zur antiken Baugeschichte im östlichen Mittelmeerbereich. Die erste, die ebenfalls im Handbuch der Orientalistik erschienen ist, behandelte die Bauwerke Südsyriens und Palästinas. In dieser neuen Publikation sollte neben Zypern auch noch der mittlere und nördliche Teil von Syrien sowie der im Altertum dazugehörige Teil von Kleinasien behandelt werden. Die Arbeit an der zyprischen Architektur erwies sich aber als so umfangreich, daß auf das andere Vorhaben verzichtet werden mußte. Dieser Teil sollte nun im Rahmen der kleinasiatischen Baugeschichte abgehandelt werden, die ebenfalls für das Handbuch geplant ist, mit W. Schirmer-Karlsruhe als Bearbeiter.

Als weitere Veröffentlichungen auf dem Gebiet der altorientalischen Baukunst sind außerdem noch eine über Mesopotamien durch J.-C. Margueron vorgesehen sowie eine über Iran. Als Verfasser ist hierfür W. Kleiss vorgesehen.

Unser besonderer Dank gilt für die Fertigstellung dieser Untersuchung über die Baugeschichte Zyperns wiederum der Deutschen Forschungsgemeinschaft, die, wie für die über Syrien/Palästina (HdO 7. Abt., 1. Bd. 2B, Leiden 1985), eine langjährige Sachbeihilfe zur Verfügung gestellt hat und nunmehr auch den Druck dieser vorliegenden Veröffentlichung durch einen namhaften Betrag finanzierte.

Barthel Hrouda

CONTENTS

LIST OF ILLUSTRATIONS

LIST OF ABBREVIATIONS

Books & Monographs

ABSP	G. R. H. Wright, Ancient Building in South Syria and Palestine, Leiden 1985.
Acts COO	V. Karageorghis ed., Acts of the International Archaeological Symposium "Cyprus between the Orient and the Occident", Nicosia 1986.
Acts MEM	V. Karageorghis ed., Acts of the International Archaeological Symposium "The Mycenaeans in the Eastern Mediterranean", Nicosia 1973.
Acts RCC	V. Karageorghis ed., Acts of the International Symposium "The Relations between Cyprus and Crete", Nicosia 1979.
Alasia I	C. F. A. Schaeffer, Alasia I, Paris 1971.
Alt Paphos	F. G. Maier, Alt Paphos auf Cypern, Mainz 1985.
Amathonte I	P. Aupert, Amathonte I, Paris 1984.
ANRW	Temporini & Haase ed., Aufstieg und Niedergang der Romischen Welt, Berlin 1980.
Apollo Sanctuary	D. Soren, The Sanctuary of Apollo Hylates, Tucson Arizona 1987.
Apollonia	D. White *et al.*, Apollonia (Supplement to Libya Antiqua IV).
Arch CRD	N. Robertson ed., Archaeology of Cyprus Recent Developments, Montreal 1975.
Arch in C	V. Karageorghis ed., Archaeology in Cyprus 1960-85, Nicosia 1985.
Ashlar	G. Hult, Bronze Age Ashlar Masonry (SIMA LXVI), Göteborg 1983.
Athienou	J. Dothan & A. Ben Tor, Excavations at Athienou (Qedem 16), Jerusalem.
Bamboula Arch	S. Weinberg, Bamboula at Kourion, Philadelphia 1983.
Bieber	M. Bieber, The History of the Greek and Roman Theater, Princeton 1963.
Built Tombs	A. Westholm, Built Tombs in Cyprus, O Arch II 1941, pp 29-58.
CAH	Cambridge Ancient History[3], Cambridge 1971-.
Cesnola	L. P. di Cesnola, Cyprus its Ancient Cities, Tombs and Temples, London 1877.
Chalc C	J. Reade ed., Chalcolithic Cyprus (B M Occasional Paper), London 1981.
Chapiteau Ionique	D. Theodorescu, Le Chapiteau Ionique Grec, Geneva 1980.

Corolla Arch	Corolla Archaeologica, Lund 1932 (Skrifter utgivna av Svenská Institutet, Rom II = Acta Archaeologica II).
Crema AR	L. Crema, L'Architettura Romana, Turin 1959.
Cypriote Bronze	H. Catling, Cypriote Bronze Work in the Mycenaean World, Oxford 1964.
Cyprus	V. Karageorghis, Cyprus from the Stone Age to the Romans, London 1982.
Cyprus CLBA	V. Karageorghis ed., Cyprus at the Close of the Late Bronze Age, Nicosia 1984 (= CCLBA).
Devia Cypria	W. Hogarth, Devia Cypria, London 1989.
Dictionnaire	A. O.Aurenche, Dictionnaire Illustré Multilingue de l'Architecture du Proche Orient Ancien, Lyon 1977.
Dinsmoor	W. B. Dinsmoor, Architecture of Ancient Greece, London 1950.
D & S	Daremberg & Saglio, Dictionnaire des Antiquités Grecques et Romaines, Paris 1877-1912.
EAA	Enciclopedia dell' Arte Antica Classica e Orientale, Rome 1966.
EMC	J. Muhly *et al.*, Early Metallurgy in Cyprus, Nicosia 1982.
Enkomi	P. Dikaios, Enkomi Excavations I-II, Mainz 1969-71.
Enkomi-Alasia	C. F. A. Schaeffer, Enkomi-Alasia I, Paris 1952.
Enkomi & BRC	J. C. Courtois *et al.*, Enkomi et le Bronze Récent à Chypre, Nicosia 1986.
Espace	A. le Brun, Espace Collectif et Espace Domestique à Khirokitia, Paris 1985.
Exc in C	Murray Smith & Walters, Excavations in Cyprus, London 1900.
Exc NS	V. Karageorghis, Excavations in the Necropolis of Salamis I-IV Nicosia 1967-74 (= Sal Nec I-IV).
Fortin	M. Fortin, Military Architecture in Cyprus during the Second Millenium BC, London (Thesis) 1981.
Greek Houses	B. Carr Rider, Ancient Greek Houses, Chicago 1986.
Greek Sources	K. Hajiyoannou, Ancient Cyprus in the Greek Sources I-IV, Nicosia 1971-83 (in Greek).
Gymnasion	J. Delorme, Gymnasion, Paris 1960.
Handbook	Sir R. Storrs ed., The Handbook of Cyprus, London 1930.
Hill	G. F. Hill, A History of Cyprus I, Cambridge 1940.
House Form	A. Rapaport, House Form and Culture Eagle Wood, Cliffs 1969.
HST	P. Astrom *et al.*, Hala Sultan Tekke Excavations SIMA 45 etc., Göteborg 1983-.
Idalion	L. E. Stager *et al.*, American Expedition to Idalion Cyprus (BASOR Supplement 18), Cambridge Mass 1974.
Idalion OIC	L. E. Stager *et al.*, American Expedition to Idalion (OIC), Chicago 1989.

Ionas	I. Ionas, L'Architecture Religieuse au 11e Millenaire à Chypre, Lyon (thesis) 1983.
Kafkallia	J. C. Overbeck & S. Swiny, Two Cypriote Bronze Age Sites at Kafkallia (Dhali) (SIMA 33), Göteborg 1972.
Khirokitia	P. Dikaios, Khirokitia, Oxford 1953.
Khirokitia FR	A. Le Brun, Fouilles Récentes à Khirokitia, 1977-81, Paris 1984.
Kition	V. Karageorghis, Kition, London 1976.
Kition Exc	V. Karageorghis *et al.*, Excavations at Kition I-V, Nicosia 1974-85.
Kourion Area	H. W. Swiny ed., The Ancient Kourion Area and the Akrotiri Peninsula, Nicosia 1982.
Kourion Sanctuary	R. Scranton, The Architecture of the Sanctuary of Apollo Hylates at Kourion (Transactions of the American Philosophical Society NS 575), 1967.
Kourion Theatre	R. Stillwell, Kourion: The Theatre (Proceedings of the American Philosophical Society 105), 1961.
Kypros	M. O. Richter, Kypros The Bible and Homer, London 1893.
Lawrence Fort	A. W. Lawrence, Greek Aims in Fortification, Oxford 1979.
Lawrence GA	A. W. Lawrence, Greek Architecture, London 1957.
Lemba	E.J. Peltenberg, Lemba Archaeological Project Vol 1 (Excavations) 1976-83 (SIMA LXX: 1), Göteborg 1985.
Maa	V. Karageorghis & M. Demas, Excavations at Maa Palaeokastro 1979-86, Nicosia 1988.
Maison	O. Aurenche, La Maison Orientale: L'Architecture du Proche Orient Ancien des Origines au mileu du quatrième millenaire, Paris 1981.
Maison Ptolemaique	M. Nowicka, La Maison Privée dans L'Egypte Ptolemaique, Warsaw 1969.
Maison Rurale	I. Ionas, La Maison Rurale de Chypre (XVIIe-XXe siécle), Nicosia 1988.
Maison Syrienne	R. Thoumin, La Maison Syrienne, Paris 1937.
Martin MAG	R. Martin, Manuel d'Architecture Greque I, Paris 1965.
Meniko	V. Karageorghis, Two Cypriote Sanctuaries, Rome 1977.
Minoan Architecture	J. W. Shaw, Minoan Architecture, Annuario XLIV 1971, Rome 1973.
Missions	C. F. A. Schaeffer, Missions en Chypre 1932-36, Paris 1936.
Nylander	C. Nylander, Ionians in Pasargadae, Uppsala 1970.
Paphos	F. Maier & V. Karageorghis, Paphos, Nicosia 1984.
P & C	G. Perrot & C. Chipiez, History of Art in Phoenecia and its Dependencies (English Ed), London 1895.

PGC	H. G. Buchholz & V. Karageorghis, Prehistoric Greece and Cyprus, London 1973.
Phaneromeni 2	J. S. Swiny, The Kent University Expedition to Episcopi Phaneromeni Pt 2 (SIMA LXXIV: 2), Nicosia 1986.
Phoenecians	W. Ward ed., The Role of Phoenecians, Beirut 1968.
Pigadhes	J. du Plat Taylor, Myrtou-Pigadhes, Oxford 1957.
Plommer ACA	H. Plommer, Ancient & Classical Architecture, London 1956.
Praktika 1	Praktika tou Protou Dhiethnous Kyprologikou Synedriou Vol. 1. (Proceedings of the First National Congress of Cypriote Studies) Nicosia 1972.
Praktika 2	Praktika tou Dhefterou Dhiethnous Kyprologikou Synedriou Vol. 1. (Proceedings of the Second National Congress of Cypriote Studies) Nicosia 1985.
Problems	E. Sjoquist, Some Problems of the Late Cypriote Bronze Age, Stockholm 1940.
Ptolemais	C. H. Kraeling, Ptolemais (OIP XC), Chicago 1963.
RAGW	S. Macready *et al.* ed., Roman Architecture in the Greek World, London 1987.
RE	Pauly Wissowa, Real Encyclopädie der Classischen Altertumswissenschaft, Stuttgart 1893 —.
Robertson GRA	D. S. Robertson, A Handbook of Greek and Roman Architecture, Cambridge 1954.
Ronczewski Chap Alex	K. Ronczewski, Description des Chapiteaux. Corinthiens et Variés du Musée Gréco-Romain d'Alexandrie, Bulletin de la Société Archéologique d'Alexandrie, Supplément du Fasc. 22, 1927, pp 1-36.
Salamine	M. Yon ed., Salamine de Chypre, Paris 1980.
Salamis	V. Karageorghis, Salamis in Cyprus, London 1963.
Salamis Necropolis	V. Karageorghis, Excavations in the Necropolis of Salamis I-IV Nicosia 1964-68 (= Exc NS).
SCA	Briers & Soren ed., Studies in Cypriote Archaeology (Institute of Archaeology UCLA Mongraph XVIII), Los Angeles 1981.
SCE	Swedish Cyprus Expedition, Pts I-IV Lund etc., 1934-72.
SIMA	Studies in Mediterranean Archaeology.
SIMA 43	K. Nikolaou, The Historical Topography of Kition, Göteborg 1976.
Sotira	P. Dikaios, Sotira, Philadelphia 1961.
SPC	E. Gjerstad, Studies on Prehistoric Cyprus, Stockholm 1926.
Studies PD	V. Karageorghis ed., Studies Presented in Memory of Porphyrios Dikaios, Nicosia 1979.
Temple & House	Lord Raglan, The Temple and the House, New York 1964.

Tenta	I. A. Todd, Excavations at Kalavassos Tenta (SIMA LXXI: 6), Göteborg 1987.
Urbanisme	R. Martin, Urbanisme dans la Grèce Antique, Paris 1982.
Village Planning	D. Frazer, Village Planning in the Primitive World, New York 1968.
Vouni Palace	E. Gjerstad, The Palace at Vouni, in Corolla Archaeologica (pp 144-71).
Vrysi	E. J. Peltenberg, Vrysi, A Subterranean Settlement on Cyprus, Warminster 1982.
Ward Perkins ERA	A. Boethius & J. Ward Perkins, Etruscan and Roman Architecture, London 1970.

Periodicals

AA	Archaeologische Anzeiger.
AAA	Athens Annals of Archaeology.
AAAS	Annales Archéologiques Arabes Syriennes.
AASOR	The Annual of the American School of Oriental Research.
ABADY	Archaeologische Berichte aus dem Yemen.
ADAJ	The Annual of the Department of Antiquities in Jordan.
AfO	Archiv für Orientforschung.
AJ	Antiquaries Journal.
AJA	American Journal of Archaeology.
AM	Mitteilungen des deutschen Archaeologischen Instituts; Athenische Abteilung.
Anatolia	Anatolia.
Antiquity	Antiquity.
ASA	Australian Studies in Archaeology.
BA	Biblical Archaeologist.
BASOR	Bulletin of American Schools of Oriental Research.
BCH	Bulletin de Correspondance Hellenique.
BM (OP)	British Museum (Occasional Paper).
BMB	Bulletin de Musée de Beyrouth.
BSA	British School at Athens Annual.
CRAI	Comptes Rendus de l'Academie des Inscriptions et Belles Lettres.
DM	Damaszener Mitteilungen.
East and West	East and West.
EI	Eretz Israel.
Expedition	Expedition.

IEJ	Israel Exploration Journal.
IJNA	International Journal of Nautical Archeology.
JdAI	Jahrbuch des deutschen Archäologischen Instituts.
JFA	Journal of Field Archaeology.
JHS	Journal of Hellenic Studies.
JMA	Journal of Mediterranean Archaeology.
JNES	Journal of Near Eastern Studies.
JoAI	Jahreshefte des oestereichischen Archäologischen Institut in Wien.
JPOS	Journal of the Palestine Oriental Society.
JPR	Journal of Prehistoric Religion.
JRA	Journal of Roman Archaeology.
KS	Kypriakai Spoudai (Cypriote Studies).
Levant	Levant.
MA	Mediterranean Archaeology.
OA	Opuscula Atheniensis.
OArch	Opuscula Archaeologica.
PAPS	Proceedings of the American Philosophical Society.
PEQ	Palestine Exploration Quarterly.
PPS	Proceedings of the Prehistoric Society.
QDAP	Quarterly of the Department of Antiquities Palestine.
Qedem	Qedem.
RDAC	Report of the Department of Antiquities Cyprus.
RM	Mitteilungen des deutschen Archaeologischen Instituts; Romische Abteilung.
Syria	Syria.
TA	Tel Aviv.
TAPS	Transactions of the American Philosophical Society.
UMM	University Museum Monograph.
VT	Vetus Testamentum.
WA	World Archaeology.
ZAA	Zeitschrift für Aegyptische Altertumskunde.
ZAW	Zeitschrift für die Alttestamentliche Wissenschaft.
ZDPV	Zeitschrift des Deutschen Palästina Vereins.

INTRODUCTION

The aim of this handbook to the ancient building of Cyprus parallels that of the companion volume on South Syria and Palestine — to provide for the first time a conveniently assembled resumé of all the information relating to the subject presently scattered in disparate and often inaccessible publications. And significantly to present this information in an analytic way reduced, as far as possible, to standard architectural categories. Nonetheless, in spite of the parallel aims, some differences accrue in implementing them.

In this volume the didactic background material given in the companion volume is omitted. (In any event, it is immediately available there for reference. However, notably in the classical section, the treatment has been framed within simple definitions of the categories of buildings and forms concerned, since the development of Cypriote archaeology has tended not to specialise in this field.) On the other hand the historical outline of building is considerably expanded since the primary publication of this material is not generally available in individual libraries. In consequence of this the analytical part of this book is correspondingly compressed.

Something must be said here about reference to the social background of Cypriote building. In the interests of conciseness, it would be very acceptable to have programatically omitted all this comment. However this would have run counter to the fashion of the day. Therefore I have tried to put in issue something of the social significance of these ancient building remains. This I have done by drawing commonsense deductions from the material, not by systematically applying social theories, ideologies or methodologies. Here as elsewhere my primary consideration is a negative one — to say as little as possible which is misleading.

The format of the book follows that of the preceeding volume in the series, which format has been said to be helpful in facilitating rapid consultation. In this connection one or two small matters of detail (which might have appeared self-evident) are mentioned in the light of comment.

As is now a common practice, the numbers in the central margin of the pages refer to the relevent illustrations in Volume II.

There is also the question of background literature. This is listed in two instances. In the beginning of the book is an alphabetic list of all works which are of primary or general significance, giving the abbreviated form in which they are cited. Furthermore each section of the text is furnished with a short list of the basic general references dealing with the topics under discussion in that section. These lists are

arranged systematically, i.e. as far as possible they follow the order of treatment in the text. In this way the nature and scope of the references are further revealed (titles are sometimes not as definitive as they might be).

Associated with this matter is the question of citation of references in the text. In conformity with prevailing trends (economy inspired) all possible effort was made to avoid notes. Thus in the substantive part of the book, the necessary authority for statements follows immediately (bracketed) in the text. However this procedure is not feasible for the introductory historical part which is provided with notes in the standard manner of the past. Abbreviations in citation of references are those given in the alphabetic list at the beginning of the book for the basic works. Where the work is not included in this list, it is cited in full on the first occasion and then given in self evident contracted form if cited again in the same context.

A further related question is that of nomenclature.

First of all an excellent convention has been adopted in Cyprus for naming archaeological sites. This is, in fact, exactly the binomial system familiar from natural sciences. Its rationale derives from the peculiar migratory habit of settlement in the Island which revolves about from one station to another in a certain given locality. In this fashion a site is designated by reference to the modern village in the area of which it is situated, qualified (in italics) by the name of the actual locality (e.g. agricultural field name). Thus the site can be visited with the least possible difficulty: any tourist map will guide the traveller to the village and any knowledgeable local inhabitant can direct him to the actual locality. (Unfortunately grid map references are not generally available for sites in Cyprus.) Of course this excellent system of site reference is not to be insisted on for its own sake. Maroni *Vournes* is a practical help. A famous site such as Enkomi or Kouklia is known universally by the single title and it is so referred to here.

Finally in this connection there arises the question which anyone would wish to avoid — the system of rendering proper names. Quite simply the only sensible system is to give Greek names in the Greek script — which anyone should be able to learn *ad hoc* (if necessary) in half an hour. However printing economies preclude this. And thus yet once more something has to be said about an irksome matter of practical importance.

It might be thought that compared with the troubles occasioned by e.g. oriental place names, Greek names would be straightforward to represent. This is absolutely not the case, and any system employed is downright misleading or confusing in one respect or another. This comes about because the phonetic value of the Greek characters has varied across the ages; and the matter is made more acute because we are familiar with many Greek names in a more or less latinised form. The crux of the

problem is that there now exists a standard method for transliterating Greek so that its present day phonetic value is represented accurately. However, in many instances, no one ignorant of Greek in seeing such a version would recognise the original spelling of the name. And thus would not recognise a name possibly quite familiar to him in latin script (where each letter of the Greek has been represented by the equivalent letter in the latin alphabet).

To take actual examples. Supposing someone ignorant of Greek is trying to enquire his way to the locality of an ancient cemetery in the neighbourhood of Kourion named (Ἅγιος Ἑρμογένης). He will see a road sign written AYIOS ERMOYENNIS and if he pronounces this name more or less phonetically, probably he will be understood and directed to the correct locality. In the nature of things it is likely to be of small concern that the name is that of a Byzantine saint, which fact doubtless would have been apparent to the visitor if the first element had been written HAGIOS. The matter is quite otherwise however if there is need to refer to the famous hellenistic architect of the same name. Statements about ERMOYENNIS would never be associated by the visitor with the (probably to him) well known HERMOGENES. What is to be done? Outside the Greek script which will connote both written and spoken usages at the same time, no system can be better than one sided — and sometimes it is difficult to draw the line. Dhimitrios for innumerable localities, but not for the hellenistic ruler active in Cyprus whom we know as Demetrius or Demetrios.

The work of this handbook was carried out under the same auspices as the preceeding volume (Ancient Building in South Syria and Palestine). It is therefore a great pleasure to renew my thanks to Professor B. Hrouda, the editor, who again attended to all the necessary academic and administrative arrangements involved while favouring me with his personal friendship; and equally to the Deutsche Forschungsgemeinschaft for continuing to provide the requisite funds. On all counts it was necessary to be based in Cyprus for most of the work. Consequently I must thank also Dr. S. Swiny, Director of the Cyprus American Archaeological Research Institute in Nicosia, who, during my residence in Cyprus, offered all the facilities of the Institute together with his personal interest and good offices.

Finally it is an unavoidable necessity to give some explanation of the untoward circumstances surrounding this work. Since 1974 the Island of Cyprus has been divided and public policy has ordained that no archaeological visits should be made to the northern part of the Island which is not under the control and supervision of the Department of Antiquities in Nicosia. Accordingly, bizarre though it sounds, this handbook has been prepared without the possibility of visiting the major sites of Enkomi, Salamis, Soloi, Vouni, etc, situated a short distance from Nicosia.

NOTE ON CHRONOLOGY

The chronology given in the last authoritative archaeological history of Cyprus (V. Karageorghis, Cyprus, p. 9) is expressed as follows:

Aceramic / Pre-Pottery Neolithic	8th Millennium — ca 6000 BC
Ceramic / Pottery Neolithic	ca 4500 BC — 3900/3800 BC
Chalcolithic	ca 3900/3800 BC — 2900/2500 BC
Early Cypriote (Early Bronze Age)	ca 2900/2500 BC — ca 1900 BC
Middle Cypriote (Middle Bronze Age)	ca 1900 BC — 1650 BC
Late Cypriote (Late Bronze Age)	ca 1650 BC — 1050 BC
(LC I: 1650 BC — 1425 BC	
LC II: 1425 BC — 1225/1200 BC	
LC III: 1225/1200 BC — 1050 BC)	
(Cypro) Geometric	ca 1050 BC — 750 BC
(Cypro) Archaic	ca 750 BC — 475 BC
(Cypro) Classical	ca 475 BC — 325 BC
(Cypro) Hellenistic	ca 325 BC — 50 BC
(Cypro) Roman	ca 50 BC —

The above epochs are subdivided and futher sub-classified and sub-phased, but the criteria for all these divisions are based on considerations other than building. Observance of them, therefore, adds nothing to an understanding of the overall development of building in Cyprus throughout the ages. Indeed the primary divisions given above are little to this point. According to the present state of knowledge the only termini of any relevance would seem to be: the origin, 8th Millennium BC (introduction of Round House Building); Pottery Neolithic, ca 4500 BC (modifications to Round House Building); EC, ca 2900/2500 BC (introduction of rectangular building); end of LC IIc / beginning of LC IIIa, ca 1225/1200 BC (floruit of Bronze Age urban development); Hellenistic, 325 BC (end of insular autonomy and incorporation into Graeco-Roman world).

NB. Work on this manual was carried out during the years 1986-89. The text was completed and lodged with the publishers at the beginning of 1989 and the illustrations were completed and lodged with the publishers at the beginning of 1990. In this way all material available for reference up to 1987 was given due consideration. Material which became available in 1989 and 1990 could only be incorporated exceptionally as was practical (e.g. in the illustration volume).

CHAPTER ONE

GEOGRAPHICAL BACKGROUND

Cyprus, its location, magnitude, geomorphology and climate. Pronounced regional articulation based mainly on geomorphology: (1) North Coast Regions, (2) Central Lowlands, (3) Central Highland, (4) South Coast Regions. River system defective and much of the land not well watered, but in spite of this supports a properous village economy of cultivation of cereals and tree crops together with raising of sheep and goats. Other natural resources: metals, timber and building stone.

CYPRUS
magnitude

The Island of Cyprus (etymology debated — material equivalence with copper appears obvious)* is the third largest island in the Mediterranean after Sicily and Sardinia, being slightly larger than Crete. It comprises an area of 3,584 sq miles and is extended East and West so that its greatest length is 138 miles and its greatest breadth (North-South) is 60 miles. It is thus something over 200 kms by something under 100 kms with an area of about 10,000 sq kms.

location

1 The Island lies in sight of the Asian coast from two elevated quarters, the Taurus mountains to the North and Mt. Lebanon/Mt. Casius to the East. In the former instance, the sea-crossing to the nearest point of the Cilician coast is 43 miles (70 kms) while it is 76 miles (120 kms) to the shores of North Syria (Latakia). Thus some northern and eastern regions of Cyprus are closer to the mainland than to the opposite coast of the Island.

geology

6 Geologically speaking, Cyprus is something of a curiosity. It is an off-shore island, but in no way residual — or so current tectonics interpretation would have it. According to this analysis, it first saw the light of day in Mesozoic times and its formation is reckoned to be after the following manner. The core unit of the island was what is now the Troodos massif, which was originally a part of the earth mantle on the bed of the Tethys Sea. This was elevated as part of the tectonics which formed the Alps. The massif is not homogeneous but is of annular disposition consisting of a plutonic boss as nucleus around which are disposed intrusive and extrusive rocks. The intrusive series now show as long ridges of harder resistant rock, while the lava flows, whether or not submarine, certainly came into contact at the periphery with cold sea water to produce pillow lavas. The overall aspect of the Troodos complex suggests that of Hawai and this exemplifies the "Oceanic" nature of Cyprus' origins.

mesozoic core
TROODOS

plutonic boss

lava flows

All this is the first geological phenomen of significance in the history of the Island since it was this process which brought about the presence of metals, particularly copper. And this certainly gave Cyprus its "Character" in the ancient world, and probably also its name.

copper deposits

KYRENIA RANGE

Subsequently, but still in the same epoch, the Kyrenia Range was formed as a thrusted

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* Although other derivations have been proposed it is beyond reasonable doubt that the name of the Island and the word for copper were always linked. For the occurrence of the word in the Ebla texts with the significance of copper v G. Pettinato, Ebla, Milan 1979, p. 206, (English edition The Archives of Ebla, Garden City 1981); cf also E. Neu, Das Hurritische, Mainz 1988, pp. 37, 113.

folded sediments anticline rising from the sea. This episode is clearly continuous with folding in Southern Turkey (Amanus, Taurus) to which it appears as an outlier on any geological or physiographical map of the region.

later sediments Finally between the sedimentary girdle of the Troodos massif and the deformed sediments of the Kyrenia Range the present central lowlands consist of tertiary and recent sediments, some of alluvial formation. And in similar fashion are constituted episodic and restricted passages of coastal plain.

In short, Cyprus comprises an original Mesozoic oceanic creation of igneous rocks, a supplementary (Cretaceous-Miocene) sedimentary uplift (Kyrenia Range) and a later alluvial accumulation between and about the binary core. If this process is accepted there arises immediately the geological determinant of greatest moment to the history of Cyprus. Was *land bridge possible but unlikely* there at some era a land bridge to the adjacent mainland shores? This was a structural possibility at any stage subsequent to the formation of the Kyrenia Range. However, present opinion is negative, considering that the intermediate sea bed has been stable and that no land bridge existed at any stage later than Miocene; a fact which obviously is of pervasive and fundamental importance for the origin and development of the Island's history.

lithology igneous limestone marl gypsum copper In accordance with such a geologic structure, the lithology of Cyprus is fairly uniform. Apart from the igneous rocks of the Troodos massif, the rock series are all sediments of comparatively recent formation (late Cretaceous and subsequent). The prevailing type of rock being a limestone of some age or description which passes over in a few places to marble or something approaching it. There are also many chalk and chalky marl outcrops with some quite good gypsum. The igneous rocks of the Troodos are all basic and there is no granite in Cyprus. These igneous rocks (on the periphery) are metaliferous and copper has been mined in Cyprus from Bronze Age times. The contact of volcanic rock with sediments produces a good range of natural earth colours (umbers, ochres, etc.).

climate In general terms, the climate of Cyprus is, of course, Mediterranean but the local variation is remarkable for such a small area and ranges almost from Saharo-Sindian desert to alpine. Above all, even though Cyprus is a relatively small island, for one reason or another (e.g. its landlocked situation) some details of its climate are not characteristically insular/maritime *temperature* but have quite a continental disposition. A usual summer temperature is 30° C (and it can be much higher) for anywhere except the Troodos Mountains, while in winter it is 10°–14°. In the higher mountainous areas, it is always considerably (ca. 10° C) colder and the highest peaks are snow covered for 3–4 months.

rainfall The rainfall in Cyprus is on exactly the same scale as that of the adjacent regions of Syria — i.e. it varies from an extreme minimum of ca. 100 mm per annum in drought conditions to a maximum of something over 1000 mm, and to cross Cyprus means passing through similar zones as crossing Syria from say Lattakieh to Homs or from Beirut to Damascus. The precipitation is conditioned almost totally by contour, although a certain rain shadow is felt to make the Mesaoria the dryest region of the Island. Here particularly in connection with 14 15
rainfall, it is to be noted that the Island of Cyprus manifests a continental character. The rainfall is almost entirely concentrated (over 80%) as heavy driving rain from cyclonic depressions during the winter months of November — March. The summer months are very dry and clear; what rainfall there is coming from violent thunderstorms with much of the water lost immediately by evaporation.

However mean annual rainfall figures are not by any means the critical question for

Cyprus, since variability from the mean figure is both very high and very frequent. There are clearly recognisable cycles of 9 and 50 years, while for the central lowland area (Mesaoria) there is a standing unreliability and inadequacy of rainfall. It is a common experience in Cyprus for a few hundred feet elevation to change the weather completely, so that day after day of cloud and rain is experienced on the mountain side while day after day of clear weather ensues below on the plain.

regional divisions

The geo-morphology of Cyprus and the climate together determine closely the overall major regional divisions of the Island. In essence, these are rather obvious, although it is possible to frame them in somewhat different fashions. The physical features of Cyprus run East-West as in Antolia, and thus contrariwise to those in Palestine-Syria which run North-South. And thus again contrariwise to Palestine and Syria, the natural regions of Cyprus are disposed successively from North to South. The following system of major division is as convenient a simplification as any:

(1) North Coast Regions
(2) Central Lowlands
(3) Central Highlands
(4) South Coast Regions

Furthermore, in addition to this physically conditioned division, it is possible to make a subdivision which is not at all obvious on physical grounds, but which is nonetheless very sensible in reality. (Ultimately, perhaps, this division may owe something to the situation of the Island in relation to its cartographical neighbourhood.)

A variety of factors combine to produce a central meridional backbone to the Island which entails a sort of East-West bilateral symmetry. This fact is reflected in the situation of Kyrenia, Nicosia and Khirokitia. A geological fault provides a pass through the Northern range giving access from Kyrenia to the Mesaoria where it is humped to its greatest elevation (250 m) so that one crosses these lowlands through Nicosia on a sort of ridge. Continuing southward, the main mass of the central highland is skirted so that fairly level going through a saddle takes one to Khirokitia in view of the South coast. This route is thus that which affords the most level passage from North to South Coast and falls about in the middle of the Island. Certainly moving from one side or the other means entering into the east or western half of the Island; and each of the primary zones (except the Troodos Mountains) have an eastern and western component. In the case of the two extremes, the North-Eastern and the South-Western regions, there obtains a definite regional particularism. By reason of its virtually sea-girt isolation, the Karpass Peninsula is quite sequestered from the rest of the Island. Equally, the South-West quarter, the Paphos Region, is effectively separated from the rest of the Island by the Troodos Mountains and outliers, and it is very conscious of its separate identity. Although the distinction is less marked, the Central Lowlands are also subdivided at the meridian of Nicosia so that the western portion is more properly known as the Plain of Morphou.

Something of the character of the primary regions of the Island may be indicated as follows:

(1) North Coast Regions:

coastal plain There is a narrow coastal plain only a few kilometres (ca. 5 kms) broad which resembles the Phoenecian Coast below Mt. Lebanon. In the traditional village economy of modern Cyprus, it was probably the wealthiest region of the Island. It is backed by the jagged Kyrenia Range which rises to heights of slightly over 1000 metres and bars it off from the Central Lowlands. Intercommunication between the two regions is afforded by three passes (Myrtou, Kyrenia, Lefkoniko) through gaps in the range due to faulting. The steeply dipping aquiferous strata of this limestone range provide very copious perennial springs, mainly on the coastal slopes. *spring water* However such springs also occur on the interior slopes where the Kythrea spring waters were led off 40 kilometres across the Mesaoria by aquaduct to serve the needs of Roman Salamis.

KYRENIA RANGE

KARPASS The character of the North Coast Region changes in its easterly extension, the Karpass Peninsula, which is without doubt the most detached and particularised region of the Island. The mountain range falls off in height and precipitousness but still articulates the long constricted peninsula which otherwise is characterised by curious, defined table-lands and sunken basins.

(2) Central Lowlands:

MESAORIA This tract of land is the throughway of the Island and being much traversed, stamps its untoward character on first impressions. Shut in by limestone and lava slopes, its lithology is fragmented limestone and marl with alluvial deposits (fanglomerates at each extremity). In spring, areas can be carpeted with flowering plants "with a transient sweetness", "taking the *arid condition* winds of March with beauty", etc. In the high summer, it is a glaring, dusty, arid expanse which is quite foreign to any maritime setting. It suggests the central rift of Palestine, the Jordan valley and the Wady Arabah, and was good going for the camel trains which provided *fertile soil* for transport in Cyprus a century ago. Much of its soil is very fertile when duly watered.

(3) Central Highland:

rugged massif The Troodos massif is formidable hill country (maximum elevation almost 2000 m) and only continued road developments in the last fifty years have made it possible to criss-cross it without considerable effort. Its strongest development is well to the West and this fact does much to characterise the western part of the Island as wilder and more rugged. With its cedars, the Troodos mountains can not fail to suggest Mt. Lebanon but because of the basic igneous rock formation, it is a darker and more lowering region than Mt. Lebanon.

The establishment of a typical British imperial hill station and its recent development for *heavily wooded* winter tourism have quite divested the region of its proper nature. However it has always been the chief centre for two most valuable natural resources: copper and timber.

(4) South Coast Regions

These are possibly the most varied and welcoming of the Island. Characteristically, the land *limestone slopes* form is of continuous limestone plateaux dipping to the sea. They terminate sometimes in raised beaches, occasionally in constricted coastal plains and are deeply incised by small

19 canyon style river valleys. The western extension: the Paphos District is quite arched around by the Troodos, and so has a strong local character development. The outlyer of this outlying district is the Akamas Peninsula which forms the western counterpart to the Karpass peninsula and is now very remote. The whole of the Paphos District is geologically instable and life there has the additional tensions of earthquake zones (cf. Seneca, Q. Nat. 6.26.4; Ep. 91). It is also in some ways the most "Mediterranean" in aspect of all the regions of Cyprus.

PAPHOS

AKAMAS

earthquake zone

All this amounts to a surprising and surprisingly varied regional development for an island of modest size. However that this geographical division was carried over into social life is not at all obvious. On the contrary, traditional life in Cyprus of recent time does not present an impression of strong regional communalisation. In this connection, it is only necessary to point out that confessionalism has never been established on a regional basis — Moslem communities being spread throughout the Island and often sharing local districts and villages side by side with Orthodox Christian communities.

One of the reasons for this must be that main trunk route communications in the Island have always been well developed. Such routes should have remained constant since very early times. Certainly since the last period of Cypriote independence during the first millenum B.C. If the road map of British days is consulted (when roads were developed basically to provide for the needs of the traditional village economy), then it can be seen that the principal roads pass by way of the capitals of the old Cypriote kingdoms of the Iron Age — *viz.* from Salamis to Kition to Idalion to Ledhra to Amathus to Paphos etc, etc. Naturally details and the over-all accentuation of the network has been varied by the emergence of Nicosia as the metropolitan city of the Island.

good internal communications

8 For the road system in Roman times, some information is to hand (from mile stones and the Tabula Peutingeriana). It appears that there was a more or less complete ring road around the coast except for the Akamas and the Karpass Peninsula — the Karpass was served (as it still is) by a road from Salamis. Apart from the coast road, there was a grand trunk road diagonally across the Island from Kition to Soli via Tamassos. And there must have been direct links to Kyrenia and Amathus. Doubless, movement in and through the Troodos remained very hard going.

Roman roads

It is natural to wonder to what degree land travel was supplemented by coastal sea-faring. In general, the notable lack of interest in the sea evidenced by latter-day Cypriots speaks against such a development. However, in Roman times, it is known that a *Diolchos* (haulage way) existed across the neck of the Karpass to avoid the rigours and dangers of weathering Cape Andreas. And this manifestly was designed for coastal traffic, not for the convenience of deep sea passage.

coastal shipping

The interesting question of transport and communications has been given relatively little attention in Cypriote archaeology — although there is evidence available by way of votive terracottas and pot painting. Wheeled vehicles were known to the Island in ancient times (from the late Bronze Age), yet they were almost entirely absent a little over a century ago when all transport of persons and goods were by saddle and pack animal. Here also it may be remembered that an important factor in pan-Cypriote communications should have been the highly popular rural sanctuaries which were spread along the waysides all over the Island. These obviously were visited by wayfarers and pilgrims not merely by the local folk of the vicinity. An idea of their *Sitz im Leben* is demonstrated by the monasteries (and their organised

Paneyiris) is traditional Cypriote life of the recent past — e.g. Kykko, Ayios Neophytos, Ayios Pantaleemon, etc.

rivers

Finally, something must be said of the economic geography of Cyprus. This involves in the first instance a question of overriding importance, that of the river system. If maps of Cyprus are consulted showing the rainfall distribution and the water-courses, then it would appear that Cyprus should be a well-watered island. However, it has been remarked that because of the great variability of the rainfall, the mean average rainfall is illusory. To a considerable degree, this fact also obtains for the drainage system.

The map shows long, well-formed rivers draining all the regions of the Island except the 9
North Coast, where the Kyrenia Mountains virtually step into the sea so that there are no rivers but the area is well watered by gushing perennial springs. There are a succession rivers ca. 40 kms long intersecting the South Coast regions to form a radical drainage system (cf. e.g. The Maroni, Vasilikos, Kouris, Dhiarrizos Rivers). While the Central Lowlands have two longer, more diversified river systems, the Pedhieas and the Yialios which flow eastward across the Mesaoria proper into the Bay of Famagusta; and the Ovgos-Seraktis system which traverses the Plain of Morphou in the opposite direction to drain into Morphou Bay.

However none of these rivers is well behaved. For a variety of reasons (e.g. the extremely steep gradient of the Troodos slopes and the strong run off from the impervious igneous rocks coupled with extreme porosity elsewhere), these rivers are basically mountain torrents with

irregular flow

intermittent destructive spates and a general picture of dry beds. They are canyon style water courses: wadys. It is technically possible to say that, exceptionally, there are some perennial streams (in the West of the Island). However, as a matter of practical moment, perennial rivers play little part in Cyprus life, least of all in the most important region for agriculture,

MESAORIA

the Central Lowlands. Here, in spite of heavy rains, it was a common observation that generally much more water flowed in old Ledhra Street than was ever seen in the bed of the Pedieas River. In short, as everyone has observed, agriculture in Cyprus is pinched by an

badly watered

antinomy in that where there was plenty of water, there was little good soil, and where there was plenty of good soil, there was little water.

agricultural development

However, in spite of this restriction, Cyprus is, for the Middle East, highly developed agriculturally. The soil is very fertile because of the accumulation of erosion products of igneous rock and about half the total area of the country is kept under crop. Thus it is that the

productive

village economy of Cyprus is wealthier than in surrounding regions. In this respect, the comparison with Greece was (and is) striking — a matter which does not sit easily on the Greek consciousness.

In more recent times with external inspiration and capital, other agricultural products have been developed — e.g. citrus fruits; but the basis of the traditional Cyprus primary producing economy has been corn, oil and wine with lamb's meat and goat cheese to eat in

cereals

addition, and wool for coverings. This gives a land usage of cereal cultivation and tree crops

tree crops

(vines, olives, figs, pomegranate) and pasture. Sheep and goats do well in Cyprus and the

sheep & goats

shepherd with his pipe was conspicuous on the rural scene. Fat tailed sheep are happy in the dry Central Lowlands, while goats range anywhere rejoicing in the maquis and garrigue which seem to be the natural reversionary state of much of the countryside. The vendettas waged by goat herds against the newly instituted forest guards during the first part of the

donkeys

century are still remembered. Oxen are kept but the typical beast of all work was the donkey — Cyprus being renowned in adjacent lands mainly for its large donkeys (there considered as

eponyms). In brief, with small scale mixed farming, timber felling and stone cutting, every rood of Cypriote ground well maintained its man — and the distaff side was occupied very much with the distaff when not in the fields. *spinning*

And yet it is necessary to conclude with a disclaimer. All the foregoing could give the impression of a propitious, well-favoured rural setting, and this is anything but the impression given by Cyprus. Overall, Cyprus has something of an "out of the world" aspect which in places can be very marked. Nothing there is commonplace. A small Greek speaking island in the Mediterranean, its morphological features echo in miniature those of Anatolia. And yet ... much of the prevailing landscape suggests inner Arabia rather than any maritime locality. While, in spite of the continuity in land forms and proximity to Anatolia, Cyprus is not oriented in that direction but seems to look always toward Syria and Egypt, what is now the world of the Arab Middle East — a matter of great moment at the end of the twentieth century. *idiosyncratic character*

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CHAPTER TWO

HISTORICAL BACKGROUND

Archaeological historiography of Cyprus based largely on pottery typology unrelated to habitation remains, so that predicate of accepted periods now questionable.

No convincing demonstration of residual palaeolithic habitation and first known culture, the pre-pottery Round House Neolithic of Khirokitia established fully formed as Syro-Palestian colony ca. 8th millenium BC. Nearly 5,000 years survival of this basic tradition in spite of apparent lacuna before introduction of pottery at Sotira. Rectangular style of building in third millenium associated with great development of rock-cut chamber tomb cemeteries, but very little revealed of settlements. First surviving evidence of large scale urban development (Enkomi, Kition) in latter half of second millenium, linked with active foreign trade and promoted by immigrants from Aegaean (Achaeans) and the Levant (Phoenecians). This constitutes foundation of traditional native Cypriote life organized as assemblage of "Cypriote Kingdoms", and flourishing in the first half of first millenium BC. Cyprus with its mixed ethnic composition involved in Graeco-Persian conflicts from 500 BC and in Alexander's campaigns in Phoenecia. Securely incorporated in Ptolemaic Empire whereby traditional institutions quickly hellenised. Eventual continuance peaceful, withdrawn and prosperous as wholly Greek-speaking Roman province.

general histories

little relevant to building

Cyprus is about as small a geographical entity as can support an enduring history and therefore its history in some ways is not difficult to compass. In this fashion over the years (and especially over recent years) a number of general histories of the Island have been published.[1] Therefore it might be throught simple to abstract a resumée to serve as a convenient historical background to a study of ancient building. However, in fact, this is not so. Indeed, rather surprisingly, such an undertaking seems to bring into focus quite far reaching issues relating to the archaeological historiography of ancient Cyprus. Since these considerations obtrude sooner or later (aspects recur continually), it is better to give some overall indication of the matter at the very outset.[2]

much pottery from tombs

A vast quantity of varied and highly stylised pottery has been recovered (and has always been recoverable) from clearance of tombs in Cyprus. This material was well known already in the second half of last century.[3] Indeed the less decorated wares were so depressed in archaeological worth by their abundance that some excavations of that period set their value in use at a higher rate and distributed them to the local housewives for reuse in the village.

studied & categorised

Nonetheless, very large collections accumulated in the government repositories (and elsewhere) and during the first quarter of the present century, this was studied and analysed into its constituent categories.[4] This process was much facilitated by the pottery's enduring concern for lively decoration, and typological differences were closely recorded. To contemporary minds, nothing appeared to inhibit the assumptions that differences major and minor in pottery styles corresponded with differences in "culture" at large. Equally, in accordance with the liberal optimism then prevailing, differences in pottery styles were considered to be

as basis for chronology

evidence of the progress of time. Thus it was that the overall chronological divisions in the archaeological record of Cyprus were postulated on a basis of typological differences in pottery recovered from tombs.

At that juncture, the succession of the three ages — "Stone, Bronze, Iron" — was

considered to fit all archaeological facts and this basis was adopted for the nomenclature of the Cypriote ages.[5] No material from tombs had been recorded which could be considered "Stone Age"[6] so Cypriote chronology was made to begin with the Bronze Age. In fact, possibly because none of the typological differences related to metal objects, "metallic" terminology was avoided and the successive ages were termed Early, Middle and Late Cypriote (each with triple subdivisions). Doubtless all this categorisation was strongly influenced by the archaeology of "pre-hellenic" Crete. At any rate the terms fell into line with Early, Middle and Late Minoan (and by extension with Early, Middle and Late Helladic or Cycladic).[7] Thereafter connections with the Greek world were sufficient to justify following Greek archaeology and history by the adoption of Geometric, Archaic, Classic, Hellenistic and Roman.

beginning with Bronze Age

then following Greek archaeology

However, although they do not use the word, the earlier periods are manifestly to be equated with the Early, Middle and Late Bronze Ages,[8] considered to be the norm of Archaeological development. Furthermore, by an extension of this "normalising", Cyprus received the "normal" chronology which, consciously or unconsciously, was geared to millenial concepts. Whether there is a profound philosophy of history behind all this or a facile one — or none at all — is not of concern here. Only be it noted that by operation of pottery typology and normalising, Cypriote chronology acquired the general framework of ca. 3000, 2000 (1500), 1000 BC for its prehistory ages.[9] All this became more or less gospel by the thirties so that at this stage there was no hesitation in ascribing a date to any object in a collection of Cypriote antiquities.[10]

Bronze Age chronology

And now before preceeding to further consideration, it is necessary to state baldly the crux of the present concerns, which is this. Whatever may be the justifications in general for such a chronological framework, it is very difficult to see its virtue for a study of ancient building. The periods Early, Middle and Late Cypriote were evolved without any reference either to finds from ancient buildings or to ancient building themselves because, with miniscule exception, no such buildings had been excavated.[11] And it is a surprising fact that at least for the earlier two periods, this situation remains little changed to this day.[12]

not adapted for building history

In fact, no sooner had the above mentioned consensus been achieved, than its finitude was disturbed both quantitatively and qualitatively. It had been repeated continually that no evidence was to be found for a stone age in Cyprus.[13] Then during the thirties and forties, a well conducted excavation programme at a number of sites revealed a sequence of neolithic and chalcolithic cultures extending back on the face of it several millenia before the 3000 BC mark.[14] Initially a chronology was proposed for this new material based more or less on the estimated duration of forms and deposits and beginning ca. 3700 BC.[15] But while the material was still under investigation, physical science afforded novel means of dating the past and the synthesis of the excavation results was based on ^{14}C tests.[16] These tests clearly demonstrated the greater antiquity of the Cyprus Neolithic and subsequent results have tended to bring its chronological origins into line with similar cultures in the nearby mainland.[17] On the other hand, the latest stages of the Neolithic-Chalcolithic sequence appears to cover a great deal of the third millenium[18] which is not the "norm". Indeed, it elbows aside the "normal" E.B. span of the surrounding regions and abrogates the foundation of the millenial dating of the older style Cypriote ages.

discovery of stone age

^{14}C dating

However, even more disturbing to this older framework is the qualitative nature of the new evidence; for this is derived directly from the remains of ancient buildings — actual dwelling

stone age settlements

places of men and their agglomerations.[19] Thus the conflation of these two very differently based systems can not but raise questions as to the ontology of the older system. At least that is to say so far as a study of ancient building is concerned.

validity of archaeological periods

The antinomy has already caused to be aspersed the general chronological validity of the old style divisions (viz. in particular EC).[20] It is possible to give these a regional referent but even more trenchant criticism is permissable.

The EC period by "normal" reckoning should encompass fundamental building developments, and hitherto it has not been possible to associate such developments with this period. Whether this is due to the accidents of discovery or to the existentional nature of the period is now perceived to be an arguable question.

That Early Cypriote as a convenient classification for an assemblage of pottery styles is uncontested, but beyond that its semantic content remains at best controversial and obscure. Philosophically speaking, there are two contrary attitudes to be taken — that of nominalism and that of realism. The term may be a "real" one and thus the further archaeological evidence remains to be discovered. Or the term may be a nominal one — i.e. it stands for a class of known particulars and thus there is no other corresponding evidence to be discovered.

Such a lengthy preliminary is regrettable. However, it has been compressed to a fault. This is its conclusion. An account of ancient building in Cyprus must be expressed in terms

periods used with reservations

commensurable with those obtaining in the general archaeology of Cyprus (and that of the surrounding regions). Since this archaeological literature is articulated by means of EC, MC etc. (and parallel divisions), these terms cannot be avoided.[21] However, the foregoing qualifications must be born in mind, and the mind alerted to misleading inferences proceeding from these names and norms, particularly within the ambit of older (ca. pre-1950) literature.

As has been noted, Cyprus is an offshore island, but it is not in any way a residual.[22] It is of orogenic formation; it emerged "a hissing cinder from the (Mesozoic) ocean".[23] And perhaps it is possible to see this strange ambiguous creation (its being both near at hand yet of a different origin) as a conditioning (or an image) of much of the Island's history. It might also be noted that not only is Cyprus an offshore island, it is doubly so — it is off two shores. The north coast and the east coast of the Island are regionally quite distinct and they look across to two quite distinct regions, Anatolia and Syria.

no land bridge

At all events, the orogenic formation of Cyprus means that for all recent species of fauna, there never was any land bridge[24] and thus the first men got to the Island by way of a sea-crossing. There is evidence for Palaeolithic men elsewhere making longer sea crossings

no Palaeolithic remains

than that to Cyprus, but as it stands there is no convincing evidence for Palaeolithic habitation of Cyprus. The point is disputed but the consensus of opinion is against it.[25] This in turn infers the rather momentous consequence that the original culture of Cyprus was a

neolithic colonisation

"colonial" one — it was brought in a developed stage with the first settlers.[26] And this is certainly the picture as at present revealed. The archaeology of Cyprus opens with a well known (and well formed) quantity, indeed, although it sounds incredible to say so, it opens with its best known quantity for ages and ages.

round house villages

In the pre-pottery stage of Neolithic development the Island was settled with substantial "villages" of round houses — e.g. extending over several hectares to judge from the best excavated sites.[27] Of recent years, after the general features of these settlements have become

42 43

well studied, the origins of this culture has been fairly disputed. The argument has centred on two (related) questions (a) the date, (b) the source.[28] Although the matter cannot be regarded as finalised (being based ultimately on negative evidence which can always be reversed), it would seem that this culture was brought to Cyprus fully formed from the neighbouring Syro-Palestinian mainland — crossing via north Central Syria.

neolithic chronology

The first scientific dates obtained by ^{14}C[29] tests appeared to show a stange time lag for this colonisation. The earliest foundations in Cyprus seem fully consonant with the floruit of the culture on the mainland ca. 8000 BC,[30] but were dated about two millenia later, by which time the culture was virtually superseded on the mainland. Much anthropological expertise was devoted to explaining this "colonial lag".[31] However, the current trend in revising the calibration of ^{14}C results and in obtaining results from new samples appears to have eroded this difference[32] and so it is possible to approach the simple solution that Cyprus was colonised by aceramic Neolithic people from this ecumenical culture at the time of its floruit, ca. 8th — 7th millenium in nearby Syria-Palestine (cf. the well known Jericho Pre-pottery Neolithic A).[33]

long duration

The material and social organisation of this Neolithic culture apparently fitted the Cypriote environment admirably. Whereas such cultures lost their place on the Syrian mainland to newer systems, the tradition lasted much longer in Cyprus. If indeed Cyprus was colonised nearly 10,000 years ago, then it is a striking fact that this original ancient culture contained within it the resources to provide for the developments of nearly half the subsequent history of the Island down to the present day. This is not to say that the material culture of the Island stagnated completely, nor that the Island remained totally cut off from the outside world. A full cultural succession has been identified. Pottery was brought into use and eventually, copper implements, so that the sequence extended to a Chalcolithic.[34] Equally objects of a foreign origin (e.g. obsidian) are found.[35] However this extended succession appears sufficiently self-consistent not to require the arrival of new cultural impeti from outside the Island. New cultural blood may have arrived from time to time, but there is no unequivocal evidence for this in the archaeological record.[36]

apparent lacuna
KHIROKITIA
SOTIRA

As it stands, this record contains one puzzling feature, an apparently protracted lacuna. The ^{14}C dates obtained for the early aceramic settlement (at Khirokitia) and for the later pottery using neolithic site at Sotira leave a hiatus of well over a thousand years from the latest occupation at Khirokitia. Depending on the degree of "calibration" applied to the radiocarbon dates, this hiatus will begin either ca. 6000 BC or ca. 5000 BC.[37] From the first investigations efforts have been made to fill the gap with various minor findings ordered on typological grounds.[38] However, speaking in broad terms, no convincing radio carbon dated material has been obtained to reduce this lengthy anomaly.

Neither is it reasonable to suppose an uneven ^{14}C record for the sites so that in fact habitation lasted much longer at one or both to close the gap. In fact the absence of vertical succession of remains on the sites makes the duration of habitation indicated by the ^{14}C results the maximum likely to have obtained.[39]

Accordingly the possible interpretations of the dating evidence are as follows:

(1) The accidents of discovery have yielded a defective record and other sites exist which fill the gap so that in fact, there is no vagary to be explained in the ancient history of settlement.

(2) For whatever reason (plague, pestilence, seismic disturbance, etc.) the Island was more

or less completely depopulated and was re-settled after a long interval by new colonists from the mainland.

(3) For whatever reasons, there was a marked decline in habitation and after a long period, the Island recovered its prosperity with or without some degree of fresh stimulus by way of new settlement from the mainland.

At this stage assessment of these varying possibilities is largely a matter of common sense. It is difficult to imagine that an accessible island, well in sight of the mainland, should be left totally uninhabited for ages — although it is not impossible. In later history (during the Ummayed regime in Syria), the Island was programatically depopulated by way of mass deportation but this state of affairs did not endure for over long. It is also possible that religious beliefs may have played a part in an ancient desertion: i.e. for whatever reason the island may have gained the repute of a "ghost island" etc. to be religiously avoided until the age old tradition at length disappeared. 176-

Equally, while it is always possible that a new campaign of investigation will discover any number of settlement sites which flourished during the apparent lacuna (a tendency already in evidence), on the other hand, it is rather a strange coincidence should this gap in the archaeological record not represent any variation in the historical circumstances. Thus the most common sense rationalisation would be along the lines of the third alternative: that

with new colonisation

settlement on the island declined and was revived after a long interval by new colonisation which brought the potter's craft (since long highly developed on the mainland).[40]

rectangular building

Moreover, according to archaeological evidence on the mainland, these new colonists would have an established tradition of rectangular building. In this connection, the Cypriote evidence suggests that they found the local inhabitants with their entrenched round house tradition and a *crassis* of these two basic mentalities came about which has in itself an interesting history. The most decided mixing was apparent at the very beginning at Sotira where a system of polyhedral building with well rounded angles appeared.[41] Whereas at later, e.g. Chalcolithic sites (cf. Erimi) the native round house style appears to be the dominant survivor.[42] This is a neat contrast to the Syrian mainland-where round building never vanishes but appears in the later record only as flimsy structures in times of disturbance or new beginnings. In any event, a succession of habitation sites showing mainly round building illustrate life in Cyprus down to or into (depending on ^{14}C calibration) the third millenium. 156 157 158

absence of settlements

At this stage, the archaeological record totally changes. In place of the excavated habitation sites which permit a detailed reconstruction of daily life on the island in that very remote period, there subsists only a vast collection of pottery together with some record of excavated graves. Indeed it would be theoretically possible to advance the interpretation that settled life on the island was abandoned and instead it became a "*Toteninsel*" — a sacred burial place for the adjacent mainland. Recent surveys it is true have located a great number of sites where pottery of the type found in graves occurs as surface finds. However, as yet, no excavation has yielded information regarding the nature of these sites.[43]

In this fashion, the development of a new age (The Early Cypriote) dated at any period from the beginning (by Gjerstad)[44] to the end (by Åström)[45] of the third millenium represents, in fact, stylistic analysis of pottery and its supposed affinities with foreign (Anatolian) pottery.[46] However, Early Cypriote was intended to designate Early Bronze Age in Cyprus; and generally with respect to building, Early Bronze Age has very definite connotations. Contrary to the direct assertions of the poet Hesiod, men did not fashion their dwellings out of

bronze to characterise the new age, rather the Early Bronze Age in the neighbouring regions stands for the period during which settlement evolved an urban pattern, i.e. the period of urbanisation.[47]

What can be said about such a development in Cyprus? First of all, manifestly, there is no positive evidence whatever for it at this period in Cyprus. There is nothing in the nature of the pottery which says it must originate in an urban style of life. However, that there was some change in the basic concepts governing social life *is* indicated by the archaeological record. During the long succession of neolithic and chalcolithic village sites disposal of the dead was as a rule by way of individual inhumation in (round) pit graves within the settlement and often beneath the floor of the dwelling! Various (bizarre) funerary practices indicate that defunct ancestors were venerated and maintained a real presence within the family circle.[48] This would suggest that the social unit was basically the family or clan. However, at the end of this succession, a new type of funerary custom appears, that of multiple interments in rock cut chamber tombs, gathered together in convenient terrain *outside* settlement areas — i.e. the development of cemeteries[49] and with this process a community of the living and the dead within the family gives place to a community of the living and a separate community of the dead organised on the basis of a group other than the family.

funerary customs

176–179

cemeteries

Not only does this seem to warrant postulating a change in the social organisation, but it also may afford some chronological evidence for this change. Such rock cut chamber tombs appeared in the adjacent regions of Syria-Palestine about 3,000 BC = somewhere at the period of transition from the village style chalcolithic communities to the new urban units; which was also roughly the period of large scale mining development. Now Cyprus was both a centre of mining in the ancient world and a place where the rock cut chamber tomb was of most prolific occurrence. Thus it is unlikely that the rock cut chamber tomb (and developed mining) appeared in Cyprus virtually a millenium later than in the neighbouring regions of the mainland. Therefore considered along these lines, the rock cut chamber tomb appears in itself some reason for dating a new age in Cyprus to earlier in the third millenium rather than later.

rock cut chamber tombs

6 157

What this age signified in the history of building is, however, by no means made evident. Nonetheless, inferences are possible. The earliest building remains discovered after the introduction of the new pottery styles found in the rock cut chamber tombs are all reckoned to be considerably later — from the end of this epoch or from the succeeding epoch, the Middle Cypriote Age.[50] They all belong unequivocally to the new rectangular building tradition and show no connection whatever with round houses. Therefore it seems reasonable to suppose that in terms of building history, the E.C. period marked the change to rectangular building.

158 159

rectangular building

Although the Early Cypriote building remains revealed by excavation are very slight, it is possible to hazard some observations concerning them. Rectangular design gives a greater flexibility in complex planning and the main evidence shows continuously built up room complexes not detached individual building units (*Einzelbau* style) as in Neolithic ages. Proceeding by analogy on the very restricted sample, it could be suggested that E.C. settlements might have looked something like settlements on the adjacent mainland in the preceeding epoch — viz. the rectangular Neolithic and Chalcolithic villages of Anatolia and Syria.[51] Such a conclusion would be entirely inferential since no settlement plans of the E.C. period have been investigated *in extenso* — and arguments advanced by way of negative evidence are obviously inconclusive. However, for what it is worth, it may be noted that as yet

mainland analogies

there is no evidence to show that these units or complexes of rectangular domestic buildings form part of towns similar to those existing at the time nearby on the mainland.

origins of urbanisation

To delimit the origins of a new fully urban age in Cyprus from the evidence of excavation is a tentative matter since the evidence is being added to by current excavation programmes. In the first instance, it is to be observed that the type of rock cut chamber tomb established in the preceeding age does not change and remains in use until the end of ancient times. However, some varied habitation remains have been revealed ascribed on the evidence of the associated pottery finds to somewhere about the middle of the second millenium.[52] They are sometimes (or in part) considered MC III and sometimes (or in part) LC I. Thus, on the face of it, this division of eras does not import basic changes in Cypriote life.[53]

It is these remains which might be expected to demonstrate an urban evolution. In fact they remain of doubtful interpretation. There are features characteristic of urban development which might be unearthed in quite small excavations — e.g. building plans designed for public (administrative) function or construction demanding considerable social organisation (e.g. Ashlar masonry). However, as yet, it is difficult to demonstrate such features in a mid second millenium (MC III/LC I) context. To this period are ascribed various fortresses; indeed because of them, earlier surveys characterised the age as "insecure".[54] But isolated fortresses *per se* do not present very direct ground for argument regarding status of settlements.[55] So far as building construction is concerned, one of the fortresses (at Nitoviklia) is stated to show some ashlar masonry.[56] In fact, the exceptional occurrence has given cause recently for commenting on the uncertain chronology of the building — originally proposed on the basis of earlier pottery associated rather than on the later.[57]

full development in LC III

As things stand, the direct revelation of developed urban sites as shown *in extenso* by excavation is only provided at a considerably later date — ca. 1400-1200. At that stage, Enkomi and Kition, mercantile centres on the East Coast in direct contact with foreign lands (both Aegaean and Levantine), have city walls, temples and public buildings and a recog- 48
nisable town plan — i.e. they are towns and quite large ones.[58] All the available evidence shows that their greatest development was in conjunction with the arrival of new population groups (Helladic, Levantine, etc.).[59] However, the history of this is not determined closely and has been much argued. Previous argument was on the basis of objects, for the most part pottery, and for the most part from graves. Whereas now it is possible to adduce ideas directly from the nature of built-up settlements.

ENKOMI KITION

Certainly at 1200 BC Enkomi and Kition were towns after the nature of the larger towns nearby across the waters. However, the origins of this process remain questionable — i.e. whether in fact this development was partly effected by the influence and presence of foreigners or whether in fact a fully urban life evolved locally in Cyprus considerably earlier to be transformed in degree but not in kind by foreign influence. In either event however much Enkomi and Kition of ca. 1200 BC may have resembled contemporary e.g. Ras Shamra or Megiddo, the difference in historical background was enormous. The corresponding towns in Syria had been towns for a thousand years and more before the Cypriote counterparts achieved this status. Moreover not only this, but in many instances several additional millenia of history rested underneath them in layered ruins. The large Cypriote towns of the Late Bronze Age grew up in their age on virgin ground.

At this point, it is perhaps useful to set the preceeding ideas, which are derived directly from excavated remains, into a framework of collateral reference.

foreign connections

During the entire EC period, there were very few examples of foreign objects imported into Cyprus and equally little indication of Cypriote material (e.g. pottery) exported to neighbouring regions. Thus on economic grounds there is little need to posit any advanced political organisation. Increased exchanges are apparent towards the middle of the second millenium[60] to become very big business indeed in LC III times when apparently some sort of three cornered trade existed between the Aegaean (Greece), Cyprus and the Levant.[61] An interesting parallel would be the trade triangle in the eighteenth century between Britain, the West Indies and North America. At this stage a very great bulk of Cypriote pottery or pottery which has passed through Cyprus is found at sites in Syria and Palestine.[62] All of which suggests marked developments in the life style of the island during the later periods.

foreign literary records

By far the greatest part of these exchanges concern Middle East regions, and since these were literate at the time, there thus occurs the possibility of obtaining contemporary information concerning Cyprus by way of foreign literary records. Unfortunately this enquiry has become a subject of great controversy in itself. From early in the second millenium onwards two names are known which could refer to Cyprus. It is possible that both could refer to the same place, but there is no good reason for asserting this. The names are Asy and Alas/*shi*(y)a. Both occur in Egyptian hieroglyphs while Alasia is found also in Cuneiform (n.b. Hittite) epigraphic records.

On the basis of their equation with Cyprus (in whole or part) arguments might be advanced concerning the political organisation of the Island and its changes — e.g. one might say that particularly in the later references, the place is put on the same footing as the city states of Syria. However, the fact is that there is no consensus that these names do refer to Cyprus (or part thereof). The overall situation seems to be that any number of individual difficulties or inconsistencies can be recognised arising from the equation of these terms with Cyprus. On the other hand, the general sense of probability seems to indicate that Alasia should refer to Cyprus.[63]

Cypriote syllabary

An allied question is that of epigraphic records in Cyprus itself. Here again the situation is a double edged one. Clay tablets have been discovered which are given a date in the second half of the second millenium; the earliest reckoned ca. 1500, the majority are later. The script is a syllabic one and has been associated with Cretan linear A writing. However, the baked clay tablets are entirely in the Middle Eastern tradition. The phonetic values of the signs are known but the sense cannot be deciphered and the nature of this autochthonous language "Eteo-cypriote" cannot be identified. It is not Greek.[64] However there remains the quite significant fact that administrative and commercial records existed in LC times but apparently not before. If Cyprus was indeed Alasia, then the records of diplomatic correspondence in Akkadian cuneiform (the *lingua franca* of Middle Eastern chanceries) have not been discovered.

retarded urbanisation

The upshot of all this is that the accompanying evidence of urban society, large scale trading, literacy[65] etc. was present in Cyprus during the later second millenium. What the situation was previously is impossible to say. It is thus at least reasonable to suppose that Cyprus was almost a millenium retarded in urban development compared with neighbouring regions of the Middle East; exactly as it seems to have been so long retarded in adopting the rectangular manner of building.

mixed population

The prospect is clearer. By ca. 1200 (LC III), Cypriote life was centred on quite large (mercantile) towns situated mainly by the coast and inhabited not only by autochthonous

Cypriotes but in part by communities of foreign origin. And this would appear the shape of things to come for almost another millenium. When this is the case, the material culture of Cyprus at the end of the late Bronze Age (as revealed by large scale excavation) must be imagined as the setting for the considerable amount of historical information which has come down to us concerning the succeeding epochs of the first millenium. However it must be noted that once again the direct archaeological evidence from site excavation is virtually nil, especially in so far as the earliest period Cypro-geometric is concerned.[66]

Nonetheless, whatever the historical developments may have been elsewhere (e.g. in Greece), there are indications of continuity in Cyprus.[67] And if this should prove to be so, it may constitute one claim by Cyprus to some importance in ecumenical history. Most significant in this respect is the survival in use of the Cypriote script. Not only did this remain in use for the Eteo-cypriote script, but it was adopted for the immigrants from continental Greece. An iron spit (Homeric *obelos*) has been found in an old Paphos grave from the beginning of the first millenium (Cypro-Geometric I) inscribed in the syllabic script *o pe le ta o* = of Opeltes (in the Arcadian genitive form!).[68] Of equal significance is the fact that the great Sanctuary of Aphrodite at Old Paphos survived more or less unaltered in form and function.[69] Also, although it is true that at this time Enkomi was abandoned, a new site grew up immediately hard by on the sea coast. There was no hiatus in occupation and the new site, Salamis, became a renowned city in the Eastern Mediterranean World disputing with Paphos the claim to be the Island's principal town.[70] However, on the other hand, it must be noted that at Kition, the other great town on the East Coast, large scale excavation has shown that at the end of the Bronze Age, the temple area was abandoned and remained unbuilt up for a century and a half before the erection of a new and very grand temple by Phoenecian immigrants.[71]

The mention in some detail of these several archaeological issues rings up the curtain on the play of history in Cyprus and its interesting *dramatis personae*. It is the epoch of the Greek colonisation legends,[72] set at the time of and in the generations immediately after the Trojan war. Although these lengends were invented at varying dates and to serve varying interests, they nonetheless in part image reasonably enough the formative period which gave Cyprus its historical character.[73]

Greek colonisation legends

Phoenecian colonisation

Colonies of late Mycenaean Greeks and their archetypal oriental rivals, Phoenecians,[74] established themselves in the Island "founding" their fortunes in new and old towns and competing for power and influence with dynasts of the aboriginal population already established in certain major centres (= an overall cast of feature not unlike that in Sicily). In this way was formed the pattern of mutually competing, mutually sustaining regional centres (the old Cypriote Kingdoms), the configuration of which survived all the vagaries of history to remain recognisable down to the "districts" and commissioners of the British Colonial administration.[75]

Cypriote Kingdoms

Henceforward for many centuries there were to be no essential changes in the pattern of Cypriote life. What changes occurred were political which affected the exercise of power, but not the nature of life where the half dozen to a dozen principalities maintained sufficient equilibrium to exploit the wealthy primary producing countryside.

The political changes were eventful enough. Supervening on Greek, Phoenecian and Cypriote local rivalries, there penetrated into the island the effects of the rise and fall of the great Oriental Monarchies.[76] The Kings of Cyprus paid tribute to the late Assyrian Empire from 707 to ca. 650. This was followed by a short period of surprisingly thorough-going

Egyptian domination ca. 570–550. Then with the rise of Persia, the Cypriote kings submitted of their own will to gain the favor of Cyrus, ca. 545. And in 521, Cyprus was incorporated in the Persian Empire as a part of the fifth Satrapy ("Across the River") together with Syria, Palestine and Phoenecia.

For a generation or so the tolerant Persian regime accorded well with the local peculiarities of Cyprus — the petty dynasts were recognised in their status of kings and their coinage remained completely autonomous. However, thereafter external events on the broad stage imposed themselves on the local scene, and Cyprus became a front line conflict zone in the seminal struggle of East and West (according to the model of Herodotos). For a century or so from the time of the Ionian Revolt until the peace of Antalkidos, Cyprus made "headline news" in a way not to recur until the Ottoman Conquest two thousand years later.[77]

Graeco-Persian wars

In general throughout the fifth century, Persia was able to maintain its position in Cyprus by diplomacy and bribery as in Ionia. The culminating phase of the struggle was the age of Euagoras I which warrants brief mention.

Euagoras I

Towards the end of the fifth century one, Euagoras, a member of the fabled Teucrid family of Salamis, was able to gain possession of his ancestral heritage quite in the manner of Ibn Saud at Riyadh towards the end of last century. Thereafter in league with Athens he advanced himself on the stage of world politics, while asserting hegemony over all Cyprus in the sign of aggressive Hellenism. His native abilities were very considerable and quite Greek — incorporating courage, astuteness and breadth of vision. Perhaps Euagoras was flying in the face of facts. In any event, it is impossible not to think of the recent career of the first President of the Cyprus Republic who was able similarly to play off world forces and survive to tread a stage larger than insular, in spite of what might be considered underlying realities — and also in his turn surviving what looked like the end.

Alexander

This thousand year floruit of the Cypriote way of life came to a sudden end (as did the several age old traditions of its neighbours) with the conquests of Alexander. In the struggles
3 of the Diodachoi[78] Cyprus eventually fell securely under Ptolemaic control which endured for 250 years. The political power of the old Cypriote kings was entirely liquidated. Doubtless some ex-royal families survived as notables, but the island was governed by viceroys (*strategoi*) appointed from Alexandria.

The three most talented of Alexander's succesors, Ptolemy, Seleucus, Demetrius, warred in Cyprus during the period 321-294 but the outcome was eventually one of prolonged peace — i.e. in the very real sense of the word Cyprus was fortunate in having no history. Nonetheless this peaceful age in a short space of time changed the basic nature of Cypriote life and put an end to a long-lived insular autonomy. Within two generations (even within a long life time) the old Eteo-Cypriote language died out, as did the syllabic script. Hence forward the language of the Island was Greek, written down in the Greek alphabet. Not only this but the old Cypriote style of the Arcadian dialect gave place to the Koine Greek of the Hellenistic world.

Hellenisation

This momentous change speaks for itself as an image of a new age when life in Cyprus was more closely assimulated to the ecumenical pattern. Obviously life in Cyprus still retained a local character and indeed "The Cypriote Character" was proverbial — connoting an unquestioning conservatism. It was the very non-Greek characteristic of not seeking after a new thing. However the socio-political forms and institutions of Cypriote life became those of the Hellenistic world. There was less difference between e.g. Salamis and Antioch during this

residual local characteristics

period than in their equivalents of previous ages stretching back perhaps to the time when the first round-house culture of the mainland was established on the island.

Ptolemaic administration

That Cyprus remained a part of the Ptolemaic Empire[79] and never fell to the Seleucids was of equal moment. After falling away briefly (306-294) to the Antigonids, Cyprus was re-integrated into the Ptolemaic regime. Thereafter the governor or viceroy was generally a member of the royal family and sometimes Cyprus became part of a sort of dyarchy with a junior Ptolemaic king of its own. The upshot of this was a stable and very experienced centralised administration. It also meant the removal of Cyprus from the vicissitudes and disorders which eventually ate up the Seleucid Empire. Cyprus remained unquestionably a part of the Greek cultural world — there was no room for an "oriental reaction". At all events, it meant the accumulation of wealth.

Roman rule

The wealth of Ptolemaic Cyprus was the direct cause of its annexation by Rome (requiring funds to prosecute its civil wars). In 58 BC Cato was sent to Cyprus to reduce the Island to a Roman province and confiscate the treasures of "Ptolemy King of Cyprus" — which dishonest work he did very honestly, with the consequent suicide of the unfortunate Ptolemy. Thereafter for a generation the Romans brought the disturbance of their civil wars to the Island: and the story-book names Cicero, Brutus, Cassius, Caesar, Antony, Cleopatra were all concerned with its fortunes! However eventually with the Augustan settlement, Cyprus became a senatorial province in 22 BC, once more very peaceful and prosperous.[80]

condition as province

Since the whole Graeco-Roman period of the Island's history is so essentially static, it is perhaps fitting to conclude this brief historical resumé with a slightly extended account of what is known of the Island under high Imperial rule.[81] This sums up the effect of 500 years (a long time) of Hellenism and can be set against the opening phase of Cyprus' history — the perhaps almost 5,000 years of round house village life which opens the story. It thus points up the intervening developments.

Greek language

The Romans incorporated a Greek-speaking province with a hellenised material culture based on the "*polis*". The Greek language, which had driven out the ancient Cypriote tongue, rooted itself so fixedly that it was never to be displaced; in spite of the vagaries of history during which for governmental purposes Latin, Arabic, French, Italian, Turkish and English were successively introduced into the Island. The "polis" did not form the beginning and end of Cypriote life; and obviously some traces of the previous socio-economic organisation remained to give Cyprus its renowned character. How this may have operated in the rural areas and whether it was linked to any residual use of the old language as a "*patois*" are unknown (unknowable) quantities. It must be repeated that no written evidence of the old language remains (even e.g. in rural sanctuaries). Neither did Phoenecian outlast the Ptolemaic conquest (with the associated dispatch of the last Phoenician king, Pumathion of Kition). Furthermore, the numerous Jewish colonies which perhaps took the place of Phoenecians as the semitic element in the island's population were in effect Ptolemaic Jews, Greek speaking readers of the Septuagint. In effect colloquial Greek speech and literary Greek education formed the cultural character of Cyprus in Roman times as it has continued to do ever since.

Greek cities

So far as the political administration of the Island is concerned, its territory was parcelled out among twelve or thirteen "Greek" cities. With the exception of Tamassos and Chytri (Kythrea), all these cities were coastal, which is a complete reversal of the oldest times when the significant centres of habitation were virtually all inland (the change beginning in the

Late Bronze Age).[82] However it is important to note that none of these cities was "free". The imperial government equated Cyprus in legal theory to Egypt, as enemies surrendered at discretion and no cities were granted full *civitas* nor even the limited priviledge. Thus municipal administration could be organised on Roman models and guided by imperial officials — a situation perhaps very much like that under British rule.

Whatever their precise status, these Greek cities were virtually the only corporate legal persons on the scene. There were no exotic entities like the autonomous temple states nearby in Asia. And there were none of the devices of Romanisation. The province was entirely unarmed (except for the Governor's guard) so that there were no army camps. Equally no veterans colonies were established, and no Roman *latifundia*. Only the Roman government must have taken over the Royal domesne of the Ptolemies (inherited by them in turn from the property of the old Cypriote kings). And the Romans continued to work the mines which still contributed so much to the wealth of the Island. *little Romanisation*

At the very beginning of Imperial rule the cities were connected by good Roman roads along which considerable vehicular traffic must have passed. This road building programme was effected by the energies of the Augustan Imperial service, but in later days repair and maintenance were laid at the change of the individual cities. *Roman roads*

8

Social life in Roman Cyprus was that of the Roman provinces in general and of the Eastern provinces in particular, being a continuation of the good life of the Greek city. And civic provision was made for the cultivation of "*mens sana in corpore sano*", viz the gymnasium, the bath, the theatre and odeon, the stadium — and the amphitheatre. All of which, of course, meant an enormous change from the old style of Cypriote "country life". Also from a close study of the building remains it may be possible to recognise with the passage of time a certain romanisation in social mores. *social life public buildings*

Finally there is the question of religion. The pre-classical religion of the Island had been entirely assimilated to the classical model during Ptolemaic days. And this religious system found no difficulty in accomodating the Imperial Roman cults. Indeed perhaps as a result of sharing in the dynastic apotheosis which the Ptolemies had adapted from the old Pharoanic religion, Cyprus seemed positively to enjoy imperial worship. In any event, religion meant much to Roman Cyprus since the only international fame which Cyprus enjoyed came through religion — the world renowned shrine at Paphos was a centre of religious pilgrimage/cultural tourism. *religion*

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Perhaps also in connection with religion, another factor may be mentioned since they are often associated together — *viz* Nationalism. Here the situation was characteristic. The upperclass, educated Cypriotes were very conscious of their ancient heritage. And accordingly a scholarly and scholastic type of nationalism developed — perhaps one might qualify it as of the sentimental, romantic variety, much execrated by contemporary "professionals". It certainly did not serve to throw anyone into opposition to Roman rule. The catylist for Cypriote political nationalism was religion — the Semitic religion of Christianity; but this operated only at a later date. In spite of the dramatic forensic events chronicled at Paphos ca. 47 AD, the Christian religion plays no part at all in the records of the Island during the remaining century or more under study here. *nationalism*

In brief, because of its pre-conditioning under Ptolemaic rule, Cyprus was a trouble free Roman province. The only emperor known to have visited the Island was Trajan, although it is just possible Hadrian might have done so as well. The affairs of Cyprus did not become *peaceful condition*

Jewish Revolt

involved in the larger issues of imperial history and occasioned the Roman government no anxieties. To this general position there was one startling exception — the Jewish Revolt of 116 AD which affected Cyprus equally with Egypt and Cyrenaica. During the course of this disturbance Salamis was said to be devastated and nearly a quarter of a million people are reckoned to have lost their lives. The provincial administration in the Island could do nothing of itself to contain it. Perhaps the whole episode may be likened to the Indian Mutiny — when order was restored by the dispatch of troops from abroad there appeared to be no sequel.[83]

résumé

So far as high Roman officialdom in the Island is concerned, Cyprus was not a posting of great consequence and promise. And for any military pretensions, it was a dead loss since there was absolutely no military command in the Island. Clearly it was a place for a man of cultural and antiquarian interests (Cicero manifested a great affection for the Island and its people). Nor did the Roman authorities make much use of Cypriotes in the imperial service at large. Under Roman rule, Cypriote provincials sought their private fortunes abroad; or at home they prospered in commerce and became very wealthy, or they entered the priesthood — all the while maintaining an interest in and affection for the historic past of their Island. And this is a picture which could refer unchanged to the recent days of British rule in Cyprus.

system of eras

Clearly it has not been easy to provide a meaningful historical background to a study of ancient building in Cyprus — and the foregoing remarks may not be very circumstantial. At least they show how uneven is the surviving evidence and the consequent difficulty in arriving at meaningful historical divisions in this connection. For want of a better system, the development of ancient building will be considered according to the following eras:

(1) The Cypriote Round House Village (Neolithic-Chalcolithic)
(2) Early Cypriote Rectangular Building (EC — MC)
(3) Cypriote Urban Society (MC/LC — Cypro Classical)
(4) Hellenised Cyprus (Ptolemaic-Roman)

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APPENDIX

Historical Register of Principal Architectural Sites

Site & Location	*Buildings*	*Reference*
ROUND HOUSE VILLAGE 8000BC —		
Khirikotia (*Vouni*) South Coast — WD313506	Major Aceramic Neolithic Settlement. City Wall, Round Houses	SCE IV 1_A pp. 5-62 Le Brun, Fouilles Recentes, Paris 1984
Cape Andreas *Kastros* Karpass — XE 436514	Aceramic Neolithic Settlement by sea — Round Houses	Le Brun, Cap Andreas — Kastros, Paris 1981
Petra tou Limniti Morphou Bay — VD 762934	Aceramic Neolithic Hamlet on islet — Round Houses	SCE I, pp. 1-12
Kalavassos *Tenta* South Coast — WD 278458	Aceramic Neolithic Settlement — Round Houses, Wall Painting	I. Todd, Kalavassos-Tenta, Göteborg 1987
Sotira *Teppes* South Coast — VD 870414	Pottery Neolithic Settlement — Round & Curved-sided Houses, cemetery	SCE IV 1_A, pp. 73-105
Ayios Epiktitos *Vrysi* North Coast — WE 384101	Pottery Neolithic Settlement — crowded & dug-out site on headland by sea — Round & Irregular Houses	E. Peltenberg, Vrysi, Warminster 1982
Erimi *Pamboules* South Coast — VD 928372	Chalcolithic Settlement — Round Houses	SCE IV I_A, pp. 113-32
Lemba *Lakkous* Paphos District — VD 457524	Chalcolithic Settlement — Round Houses	RDAC 1979, pp. 69-99, Levant XI 1979, pp. Lemba
Kissonerga *Mythoulakia* Paphos District — VD 443544	Chalcolithic Settlement — Round Houses	RDAC 1979, pp. 69-99, Levant XI 1979, pp. 23-25
Kissonerga *Mosphilia* Paphos District	Chalcolithic Settlement — Round houses with one rectitinear house. Also round house sanctuary model	RDAC 1985, pp. 288ff; 1988, pp. 43ff
Kalavassos *Ayious* South Coast — WD 284458	Chalcolithic Subterranean Chambers & Passages — Living and/or Working Apartments	Arch. in C. pp. 86-88

Site & Location	*Buildings*	*Reference*
Souskiou *Vathyrkakis* Paphos District — VD 620428	Chalcolithic Cemeteries, Rock-cut Pit Tombs	F. Maier Paphos Nicosia 1984, pp. 24–34
EARLY RECTANGULAR BUILDING ca. 2500 BC —		
Lapithos *Vrysi tou Baba* North Coast	EC Cemetry — Rock-cut Chamber Tombs	SCE I, pp. 33-276
Bellapais *Vounous* North Coast slopes	EC Cemetry — Rock-cut Chamber Tombs	J. Stewart, Vounous Lund 1950; P. Dikaios Vounous, Oxford 1940
Dhenia *Kafkalla* Western Mesaoria — WD 129913	EC-MC Vast Cemetery — Rock-cut Chamber Tombs	OA IV, pp. 225-76
Sotira-*Kaminoudhia* South Coast — VD 87148	EC Settlement — sub-rectangular Houses, agglutinative style planning Cemeteries of rock-cut pit and chamber tombs	Arch. in C. pp. 115-24
Alambra *Mouttes* Southern Mesaoria	MC Settlement — Rectangular Terrace Houses	Arch. In C. pp. 125-41
Kalopsidha Eastern Mesaoria	MC Settlement — large Rectangular House	SCE IV 1_B, pp. 1-3
Episcopi *Phaneromeni* South Coast	MC-LC Settlement — Rectangular Houses, agglutinative style planning	SCA, pp. 59-78
Krini Kyrenia Range	MC Fortified Mountain Refuge	CAH I IV_C, p. 168 BCH 1960, p. 298
Nikolidhes South Mesaoria	MC (?)-LC Fortress	SCE IV 1_C, pp. 30-32
Nitoviklia Karpass East Coast	MC (?)-LC Fortress	SCE I, pp. 371–415; SCE IV 1_B, pp. 3-5; SCE IV 1_C pp. 33-35

Site & Location	*Buildings*	*Reference*
Paleoskoutella Karpass East Coast	MC Cemetery & Cult Place — Rock-cut Tombs with tumuli	SCE I, pp. 416-38
Ayios Jacovos Eastern Mesaoria	LC II Rural Sanctuary	SCE I, pp. 356-61; SCE IV 1_B, pp. 1-2
URBANISED SOCIETY ca 1250 — & HELLENISED CYPRUS 320 BC —		
Maa *Palaeokastro* Paphos Region, West Coast	LCII Beachhead — Small Fortified Settlement, Ashlar Masonry	RDAC 1982, pp. 86-108; SCE IV 1_C, p. 42
Pyla *Kokkinokremos* Eastern Mesaoria	LCII Fortified (?) hill top Settlement	SCE IV 1_C pp. 19-20; V. Karageorghis & M. Demos Pyla-Kokkinokremos Nicosia 1984
Kalavassos *Ayios Dhimitrios* South Coast	LCII Planned (& Fortified?) town — Public Building, Houses, rock-cut Chamber Tombs, Ashlar masonry	
Maroni *Vournes* South Coast	LCII Settlement (or Sanctuary) — Public Building. Ashlar masonry	Arch. In C. pp. 195-97
Toumba tou Skourou Western Mesaoria, Morphou Bay	LCI-II Settlement — vestigial remains Industrial Buildings, rock-cut Chamber Tombs	E. Vermuele Toumba tou Skourou, Harvard 1974
Apliki *Karamallos* Troodos North foothills	LCII-III Mining Settlement — Industrial Buildings	Ant J 33, 1952, pp. 133–67
Episcopi *Bamboula* South Coast	LC Settlement — Terrace Houses, Cemetery, rock-cut Chamber Tombs	S. Weinberg Bamboula — Architecture Philadelphia 1983; J. Benson Bamboula — Necropolis, Philadelphia 1972

Site & Location	*Buildings*	*Reference*
Enkomi (*Ayios Jacovos*) Eastern Mesaoria	MCIII-LCIII. LCIII large Fortified & Planned Town — City Wall, Towers, Gates, Temples, Public Buildings, Houses, Industial Buildings, intra mural rock-cut Chamber Tombs. Ashlar masonry	P. Dikaios, Enkomi I, II Mainz 1969; Courtois & Lagarce, Enkomi Nicosia 1986; SCE I, pp. 467-575
Hala Sultan Tekke South East Coast, Larnaca Bay	LCI-II Planned Town — Public Buildings, Cemeteries, rock-cut Chamber Tombs. Ashlar masonry	P. Astrom *et alii* Hala Sultan Tekke I — Göteborg 1978, (Sima XLC); Arch in C. pp. 175-75
Kition South East Coast, Larnaca Bay	LCII-Roman Large Fortified Town — City Wall, Towers, Gates, Harbour Basin, Temples, Public Buildings, Industrial Buildings. Cemeteries, rock-cut Chamber Tombs, Monumental Built Tombs. Ashlar Masonry	V. Karageorghis, Kition, London 1976; V. Karageorghis, Kition Exc. V.1, Nicosia 1985
Old Paphos (Kouklia) Paphos region, South Coast	LC-Roman World famous Sanctuary with Fortified City. Ashlar Masonry	F. Maier, Paphos Nicosia 1984
Myrtou *Pigadhes* N-W Mesaoria	MC-LC Planned Sanctuary-Settlement. Monumental ashlar altar	J. du Plat Taylor, Myrtou-Pigadhes, Oxford 1957; SCE IV 1_C, pp. 5-9
Athienou *Bamboulari* Eastern Mesaoria	LC Shrine & Industrial Building (Metal working)	Dothan & Ben Tor, Excavatios at Athienou, Jerusalem 1983 (Qedem 16)
Ayia Irini Western Mesaoria, Morphou Bay	LC- Archaic Sanctuary	SCE II, pp. 642-824; SCE IV 1_C, pp. 1-4
Phlamoudhi *Vounari* Karpass North Coast	LC & Archaic & Hellenistic Rural Sanctuary	S. al Radhi, Phlamoudhi Vounari, Göteborg 1983; SCE IV 1_C, p. 43

Site & Location	*Buildings*	*Reference*
Salamis East Coast, Famagusta Bay	Geometric-Roman Fortified Planned City with harbour(s). Temples, Agora, Public Buildings, Theatre, Amphitheatre, Gymnasium, Baths. Cemeteries, rock-cut Chamber Tombs, Monumental Built Tombs	V. Karageorghis, Salamis, London 1961; M. Yon (ed), Salamine de Chypre, Lyon 1980
Amathus South Coast	Archaic-Roman Fortified Planned City with Lower Town & Harbour. City Walls, Gate, Temple, Palace, Agora, Nymphaeum. Cemeteries — Rock-cut Chamber Tombs, Monumental Built Tombs	SCE I, pp. 1-141; SCE IV_2, pp 32–42; SCE IV_3, pp 24-26; Arch in C. pp. 227-37
Tamassos Central Mesaoria	Archaic-Roman Fortified City with intra-mural & extra-mural sanctuaries, Royal Tombs	Arch in C. pp 238-55
Idalion Central Mesaoria	LCIII-Roman Fortified City — City Walls, Towers, Gates, Temple, Santuaries. Cemeteries — rock-cut Chamber Tombs, Monumental Built Tombs	SCE II, pp. 460-641; L. Stager *et al* American Expedition to Idalion, Cambridge Mass 1974
Marion — Arsinoe West Coast, Khrysokhou Bay	Geometric-Roman Cemeteries of unexcavated capital city — rock-cut Chamber Tombs	SCE II, pp. 181-459
Soli Morphou Bay	Archaic-Roman Fortified, Planned City with Harbour. City Walls, Acropolis Temple, Palace. Extramural rural Sanctuary at nearby Kholades	SCE III, pp. 399-582; Arch in C. pp. 256-61
Vouni West Coast, Morphou Bay	Late Archaic-Classical Fortified Palace & Lower Town — Acropolis Temple & subsidiary Shrines, large Palace. Cemeteries — rock-cut Chamber Tombs	SCE II, pp. 76-339; SCE IV_2, pp. 13-17, 23-29

Site & Location	*Buildings*	*Reference*
Kourion South Coast	Archaic-Roman Fortified City with Anchorage — Aquaducts, water supply installations, Public Buildings, Agora, Nymphaeum, Stadium, Theatre. Nearby Sanctuary of Apollo Hylates monumentally developed with Temple & Annexes, Baths, Palaestra	R. Scranton, The Architecture of the Sanctuary, Philadelphia 1967, (PAPS 57, 5)
New Paphos (Ktima) Paphos region	Hellenistic-Roman Fortified, Planned City — Town plan, Gates, Temple, Agora, Public Buildings, Theatres, Villas, Cemeteries, Rock-cut Tombs, Monumental Tombs	F. Maier, Paphos, Nicosia 1984, pp. 221-69; Arch in C. pp. 277-91
Meniko *Litharkes* Western Mesaoria	Archaic Rural Sanctuary	V. Karageorghis, Two Cypriote Sanctuaries, Rome 1977, pp. 17-45
Kafizi Central Mesaoria	Hellenistic Rural Shrine — Grotto with Kalybe	T.B. Mitford, Studies ... P. Dikaios, Nicosia 1979, pp. 162-68
Aphendrika Karpass, North Coast	Classical & Hellenistic Cemeteries — rock-cut Chamber Tombs	RDAC, 1937-39, pp. 24-123

NOTES

1. v., e.g. S. Casson, Ancient Cyprus, London 1937; G. F. Hill, A History of Cyprus (Vol. 1), Cambridge 1940; C. P. Kyris, History of Cyprus, Nicosia 1985. Of special relevance for the present study is: V. Karageorghis, Cyprus, From the Stone Age to the Romans, London 1982. All relevant material and literature has been reviewed in connection with the large scale excavations carried out in Cyprus during the late twenties and early thirties by the Swedish Cyprus Expedition, and is now published in the form of an archaeological history of the Island with a separate volume devoted to each of the main periods from the Neolithic down to Roman times. v, Swedish Cyprus Expedition, Vol. IV, parts 1 A,B,C; 2; 3. 1948–72.
2. e.g. R. Merrilees, Introduction to the Bronze Age, Archaeology of Cyprus, SIMA Pocketbook Göteborg 1978; The Absolute Dating of the Bronze Age in Cyprus, RDAC 1977, pp. 33-50.
3. v., e.g. The work of the American Consul L.P. di Cesnola reported in L.P. di Cesnola, Cyprus, Its Ancient Cities, Tombs and Temples, London 1877, c.f. M. O. Richter, Kypros, the Bible and Homer London 1893.
4. v. J. L. Myres & M. O. Richter, A Catalogue of the Cyprus Museum, Oxford 1899; J. L. Myres, Handbook of the Cesnola Collection of Antiquities from Cyprus, New York 1914. The analysis was

further systematised on the basis of extensive field survey work together with some soundings v E. Gjerstad, Studies on Prehistoric Cyprus, Uppsala 1926.

5. For the local origin of this now endemic archaeological terminology v G. Daniel, 150 Years of Archaeology, Cambridge 1978, pp. 38 ff. The universal reception of these terms in "scientific" literature must owe something to man's long familiarity with mythological ages (cf. the ages of man) characterised in the image of metals, viz. Golden Age, Silver Age, etc.
6. For the latest summary of the position then obtaining v E. Gjerstad, The Stone Age in Cyprus AJ 6, 1926, pp. 54-58 at p. 54, "Rich remains from all periods of the Copper and Bronze Age have been found in Cyprus . . . but hitherto there has been no evidence of a Stone Age . . . and no tombs or other deposits of the Stone Age have been discovered at all"; cf. SPC p. 50.
7. v. H. Catling, C.A.H. I_2, XXVI b, p. 808; cf. the parallel chronologies set out in Handbook to the Nicholson Museum, Sydney 1948, pp. 120, 203.
8. v. H. Catling C.A.H. I_2 p. 808.
9. v. R. Merrilees, Introduction to the Bronze Age, pp. 34 ff.
10. As, e.g., in P. Dikaios, A Guide to the Cyprus Museum Nicosia 1947; J. Stewart, Handbook to the Nicholson Museum, pp. 118-199, Sydney 1948.
11. That is by archaeologically controlled excavations. In any event, earlier excavations, e.g. by Cesnola, were directed towards unearthing the monumental so that anything revealed tended to be of Graeco-Roman times. The small exceptions comprised, Gjerstad's 1924 soundings directed towards obtaining stratigraphic confirmation of his typological analyses — cf. the houses at Alambra and Kalopsida and a fortress at Nikolidhes (v. SPC, pp. 19 ff., 27 ff., 37 ff.).
12. The buildings excavated by the Swedish Cyprus Expedition were virtually all of later date, late Cypriote or first millenium. Equally, the recent large scale work has been on late Cypriote (Enkomi, Kition etc.) or first millenium (Kition, Salamis, etc.). The exceptions are re-investigations or extensions of Gjerstad's 1924 work at Alambra (v. Arch in C, pp. 125-141; Cyprus pp. 55-56) and Kalopsida (v. P. Astrom, Excavations at Kalopsida, Lund 1966; SCE IV. 1B, pp. 1-3; Cyprus, pp. 55-56).
13. i.e. until 1926 v Gjerstad A.J. 6 1926 p. 54. Gjerstad looked for such evidence and considered he found a collection of Neolithic flints in a stone age house at Vounistri near Phrenaros in the Famagusta district. Later the S.C.E. Excavated a small, very early pre-pottery Neolithic site at Petra tou Limniti, an islet off the West Coast near Vouni (v. S.C.E. I, pp. 1 ff.).
14. This was the fine work of the young Cyprus Museum director, P. Dikaios, and included the major type sites of Khirikotia, Sotira, Erimi and others — v. P. Dikaios, Khirokitia, Oxford 1953; Sotira, Philadelphia 1961, The excavations at Erimi 1933-35, RDAC 1936.
15. v. P. Dikaios, Khirikotia, pp. 312 ff.; Guide^2 1953, p. 1.
16. v. P. Dikaios, SCE IV, 1A p. 204 (beginning at ca. 5800 BC).
17. v. I. A. Todd, Radio Carbon Dates for Kalavassos Tenta RDAC 1982, pp. 8-11, NB 10.
18. The Chalcolithic II period is carried down to 2300 BC, v. Dikaios, SCE IV, 1A p. 204; Guide^3, p. 17.
19. For a convenient site by site summary, v. Dikaios, SCE IV, 1A pp. 5 ff.
20. cf. e.g. E. Herscherr, Southern Cyprus and the Disappearing Early Bronze Age, RDAC 1980, pp. 17-21.
21. cf. V. Karageorghis, ed. Archaeology in Cyprus, 1960-1985, Nicosia 1985, pp. 13 ff., 138-140.
22. For an outline of the older historical geology which saw Cyprus as a residual, v Hill, pp. 2-4, based on Bellamy & Jukes-Browne, The Geology of Cyprus^2, Plymouth 1927. This understanding survived into the CAH^3, I.1 p. 540.
23. v. I. G. Gass, Is the Troodos Massif of Cyprus a fragment of Mesozoic Ocean Floor? Nature 220, 1968, pp. 39-42. E. M. Moores & F. J. Vines, The Troodos Massif, Cyprus and other ophiolites as oceanic crust. Phil Trans Roy. Soc. A 268, 1971, pp. 443–466.
24. For convenient rehearsal, v N. P. Stanley Price, Colonisation and Continuity in the Early

Prehistory of Cyprus, WA 9, 1979, pp. 27-42 at pp. 27-28; cf. H. K. Wong *et al*, Some Geophysical Profiles in the Eastern Mediterranean. Bulletin of the Geological Society of America 32, 1971, pp. 91-100; Milliman & Emery, Sea Levels during the past 35,000 years, Science 162, 1968, pp. 1121-23.

25. cf. positive suggestions of E. Stockton Pre-Neolithic Remains at Kyrenia, Cyprus, RDAC 1968, pp. 16-19; C. Vita-Finzi, Palaeolithic Finds from Cyprus, PPS 39, 1973, pp. 453-54 (at mouth of Maroni River east of Zyyi in South Coast); J. M. Adovasio *et al*, Prehistoric and Historic Settlement Patterns in Western Cyprus, W.A. 5 1974, pp. 339-69 at p. 362. And negative assessments of N. P. Stanley Price, W.A. 9, 1979, pp. 29-30; E. J. Peltenberg, RDAC 1979, p. 70; I. A. Todd, RDAC 1985, pp. 10-11.
26. v. N. P. Stanley Price, Colonisation and Continuity in the early prehistory of Cyprus, WA 9, 1979, pp. 27-41.
27. v. SCE IV, 1A, p. 6, fig. 2. NB new area excavations by Le Brun v. Expace Collectif à Khirokitia Paris: Musée de l'Homme 1986, pp. 33-46, fig. 3.
28. The two opposing attitudes (which may be termed respectively "colonial" and "evolutionary") were recently summarised by T. Watkins, Some Problems of the Neolithic and Chalcolithic Period in Cyprus, RDAC 1973, pp. 34-61 (evolutionary); and by N. P. Stanley Price, Khirokitia and the Initial Settlement of Cyprus, Levant IX 1977, pp. 66-81. For a more recent review v I. A. Todd, RDAC 1985, pp. 10-13.
29. Those published by Dikaios, SCE IV, 1A, p. 204, Guide^{3} p. 1, and verified by N. P. Stanley Price, On the Dating of Khirokitia, PPS 41, 1975, pp. 46-49.
30. v. J. Mellaart, The Neolithic of the Near East, London 1975, pp. 42 ff.
31. v. N. P. Stanley Price, Levant IX, 1977, pp. 78-79.
32. v. I. A. Todd, The Vasilikos Valley and the Chronology of the Neolithic/Chalcolithic Periods in Cyprus, RDAC 1985, pp. 10-14.
33. cf. I. A. Todd, Arch in C, p. 88.
34. v. Cyprus, pp. 30-39; cf. H. Catling, Chalcolithic Cyprus CAH^{3} I_1, pp. 551-56; T. W. Watkins, Some Problems of the Chalcolithic Period in Cyprus, RDAC 1973, pp. 34-61, at pp. 43 ff.
35. v. I. A. Todd in Arch in C, p. 89.
36. cf. Cyprus, p. 27.
37. v. Cyprus, p. 26.
38. v. Cyprus, p. 27.
39. N. B. Dikaios before C_{14} dates were available tried to estimate the duration of the various Neolithic cultures by dead reckoning on depth of deposit etc. and in this fashion made the whole Neolithic Chalcolithic sequence fit into ca. 1000 years, cf. Khirikotia, pp. 312 ff.
40. cf. N. P. Stanley Price, Colonisation and Continuity in the Early Prehistory of Cyprus, WA 9, pp. 27-41, at pp. 35 ff.; cf. Cyprus, p. 27 & I. Todd, Arch in C. p. 89.
41. v. E. J. Peltenberg, The Sotira Culture, Levant X 1978, pp. 55-74, at pp. 56 ff.; N. P. Stanley Price, The Structure of Settlement at Sotira in Cyprus, Levant XI 1979, pp. 46-74; cf. Cyprus, p. 20.
42. cf. Cyprus, pp. 31 ff.
43. v. H. Catling, Cyprus in the Early Bronze Age, CAH^{3} I_2, pp. 808-823; cf. Cyprus, pp. 40 ff.
44. v. E. Gjerstad, The Origin and Chronology of the Early Bronze Age in Cyprus, RDAC 1980, pp. 1-14; cf. Cyprus p. 43.
45. v. P. Astrom, Archaeologia Viva, March-May 1969. For general discussions, v. J. Mellaart, A Note on Cypriote EBA Chronology, RDAC 1974, pp. 38-41; R. Merrilees, The Absolute Chronology of the Bronze Age in Cyprus, RDAC 1977, pp. 33-50.
46. For a recent review v. E. Gjerstad, The Origin and Chronology of the Early Bronze Age in Cyprus, RDAC 1980, pp. 1-16.
47. For this process in Palestine cf. G. R. H. Wright, Ancient Building in South Syria and Palestine, Leiden 1985, pp. 33-42.

48. This mainly concerns the skull cult so strikingly revealed at Neolithic Jericho and Ain Ghazal etc. For general notices: v J. Mellaart, Neolithic of the Near East, London 1975, pp. 47, 54, 61, 102. For its incidence in Cyprus v. Stanley Price, Khirokitia and the Initial Settlement of Cyprus, Levant 9, 1977, pp. 68-89 at pp. 79 ff. cf. Cyprus, pp. 23-75.
49. The origon and nature of the EC period was maintained on finds from the cemeteries at Vounous, Vasilia, Ayia Paraskevi and controverted on those from the cemeteries at Philia, v Cyprus pp. 42-45. For exceptional extra-settlement cemeteries in the previous period, v Cyprus, p. 32 (Sotira) & p. 35 (Souskiou); but the graves are pit shaped, not chamber tombs.
50. e.g. at Alambra in the middle of the Island, v. Catling, Cyprus in the Early Bronze Age CAH^3 I$_2$ p. 817 (Gjerstad's house); Cyprus p. 54 (Alambra-Mouttes). cf. in general J.A. Barlow Middle Cypriote Settlement Evidence, RDAC 1985, pp. 42–54.
51. cf. e.g. at Çatal Hüyük, Hacilar, Ras Shamra, Byblos, Tuleilat el Ghassul.
52. v. Cyprus, pp. 54-56.
53. cf. Cyprus, p. 52.
54. v. H. Catling, Middle Cypriote Settlement in CAH^3 II$_2$, p. 168; cf. Cyprus p. 53.
55. For settlement in general v. J. A. Barlow, Middle Cypriote Settlement Evidence, RDAC 1985, pp. 47-54.
56. CAH^3 II$_2$, p. 169; G. Hult, Bronze Age Ashlar Masonry Göteborg 1983, pp. 15-16.
57. *per* V. Karageorghis who is conducting research on this question.
58. v. for convenience Cyprus, pp. 90, 93, 94 (Enkomi); & 90-91, 94-98 (Kition).
59. For a recent review of this historical episode, v J. D. Muhly, The Role of the Sea Peoples in Cyprus during the LC III Period in Karageorghis & Muhly ed. Cyprus at the Close of the LBA, Nicosia 1984, pp. 39-56.
60. v. P. Johnson, The Middle Cypriote Pottery Found in Palestine, OA XIV:6, 1982, pp. 49-72; D. L. Saltz, The Chronology of the Middle Cypriote Period, RDAC 1977, pp. 51-69, n.b. p. 69; cf. Cyprus, p. 60.
61. Myceanaean Commerce has now become a specialised field of study. The opening statement was Wace and Blegen, Pottery as Evidence for Trade and Colonisation in the Aegaean Bronze Age, Klio 32, 1939 pp. 131 ff. Now see J. D. Muhly, The Nature of Trade in the LBA Eastern Mediterranean, in Early Metallurgy in Cyprus 4000-500 BC, Nicosia 1982, pp. 251-69.
62. v. B. Kling, Myceanaean IIIC 1b Pottery in Cyrpus ... Historical Context in Karageorghis & Muhly ed. Cyprus at the Close of the LBA, Nicosia 1984, pp. 29-38; V. Hankey, Mycenaean Pottery in the Middle East, BSA 62, 1967, pp. 127-28; G. R. H. Wright, Some Cypriote ... Pottery Recovered from the Shechem Excavations, 1964, O A. VII 1967, pp. 47-75; B. Gittlen Cypriote White Slip Pottery in its Palestinean Stratigraphic Context in the Archaeology of Cyprus: Recent Developments; N. Robertson ed 1975, pp. 111-20.
63. v. (*in extenso*) I. Vincentelli Alasia in Studi Ciprioti e Rapporti di Scavo, vol 2, Rome 1976, pp. 9-49; L. Hellbing, Alasia Problems (Sima L VII), Göteborg 1979; For a brief summary of the very conflicting interpretations, v R. Merrilees, Alasia in Praktika 1, pp. 111-19 (Alasia ≠ Cyprus), cf. *per contra*; H. Catling, Cyprus in the LBA — The Identification of Cyprus with Alasia CAH^3 II$_2$, pp. 201-205; Cyprus, pp. 75-77; J. D. Muhly, in Early Metallurgy in Cyprus, Nicosia 1982, pp. 251-69. The most recent contribution puts Alashiya on the eastern margin of the delta in the vicinity of the canal zone (cf. el Arish), v. A. Nibbi, Wenamun and Alashiya Reconsidered, Oxford 1985. For Caphtor/Keftiu as Cyprus v. J. Strange, Caphtor/Keftiu, Leiden 1980; cf. RDAC 1982, pp. 244-51. This question seems unending. It has once again been resumed in the greatest detail by R. S. Merrilees, Alashiya Revisited, Paris 1987.
64. For a succinct outline of the question, v. Cyprus pp. 74-75, cf. H. Catling, Literacy in the LC Period, CAH^3 II$_2$, pp. 205-07. A recent review prompted mainly by the attempt to identify the language with Hurrian is Knapp & Marchant, Cyprus, Cypro-Minoan and Hurrian, RDAC 1982, pp. 15-30.

65. cf. the interesting Chart 1 in Knapp & Marchant, RDAC 1982, p. 22.
66. v. Cyprus, p. 116.
67. v. Cyprus, pp. 114, 121; cf. N. Coldstream, Archaeology in Cyprus, pp. 50-51. *per contra* H. Catling, Cyprus in the Late Bronze Age, CAH^3 II$_2$, pp. 188-216; nb. p. 196, cf. Cyprus, p. 114.
68. v. Cyprus; p. 120; cf. M. E. Voyatzis, Arcadia and Cyprus: Aspects of their Interrelationship between the Twelfth and Eighth Centuries BC, RDAC 1985, pp. 155-63.
69. v. F. G. Maier, in Arch in C, pp. 149-59.
70. v. Cyprus, pp. 115-116.
71. v. Cyprus, pp. 117, 123-24.
72. v. Hill, Chap V, The Greek Colonisation, pp. 82-94.
73. These legends have been much studied for their historical significance, v E. Gjerstad, The Colonisation of Cyprus in Greek Legend, O Arch, III, 1944, pp. 107-127; H. Catling, The Late Cypriote Period and the Foundation legends, CAH^3 II$_2$, pp. 215–16; M. Fortin, Fondations des Villes Grèques à Chypre: Légendes et Découvertes Archaeologiques, Melanges ... M. Lebel, Quebec 1980, pp. 25. ff.
74. v. E. Gjerstad, The Phoenecian Colonisation and Expansion in Cyprus, RDAC 1979, pp. 230-254; A. Dupont-Sommer, Les Phoeneciens à Chypre, RDAC 1974, pp. 75-94.
75. Already in Roman times the principal administrative districts were Salamis (cf. modern Famagusta), Paphos, Amathus (cf. modern Limmasol) including Troodos, Lapethus (cf. modern Kyrenia); v. Hill, p. 231.
76. v. Hill, Chap VI, pp. 95-110, cf. N. Coldstream in Arch in C, pp. 47-59.
77. v. Hill, Chap VII, From Cyrus to Alexander, pp. 111-153; cf. V. Tatton-Browne, in Arch in C, pp. 60-72.
78. For the period of the successors v. Hill, Chap VIII, pp. 156-172; cf. V. Tatton-Browne, in Arch in C, pp. 60-72.
79. For Ptolemaic Cyprus, v. Hill, Chap IX, pp. 173-211; cf. V. Tatton-Browne, in Arch in C, pp. 60-72. And, for authoritative epigraphically based survey, R. S. Bagenall, The Administration of the Ptolemaic Possessions Outside Egypt, Leiden 1976, pp. 38–79.
80. v. Hill, Chap XI, pp. 59-83; cf. V. Chapot, Les Romains et Chypre in Melanges Cagnat, Paris 1912, pp. 59-83, cf. V. Tatton-Browne, in Arch in C, pp. 60-72.
81. For an excellent detailed survey of Roman Cyprus v. T. B. Mitford in Temporini & Haase ed. Aufstieg und Niedergang der Römischen Welt, Vol. II$_7$, Berlin 1980, pp. 1286-1384. This can be compared for its differences in emphasis of detail with R. S. Bagenall, The Administration of the Ptolemaic Possessions Outside Egypt.
82. v. H. Catling, The Pattern of Late Cypriote Settlement, in CAH^3 II$_2$, p. 189.
83. v. Hill, pp. 241-243.

CHAPTER THREE

HISTORY OF BUILDING

I. THE CYPRIOTE ROUND HOUSE VILLAGE

Round house building revealed at series of settlement sites. Apparently introduced fully formed by colonists from mainland. Initial date now considered contemporary with similar building on mainland; viz ca 7000+ BC. Tradition subsists until after 3000 BC, thus encompasses half the known history of the island. Two successive cultures, aceramic and pottery using apparently separated by long period of more than a millenium with little settlement. Aceramic type site Khirokitia. Pottery neolithic tradition with examples at Sotira, Vrysi, Kalavassos Ayious, Erimi, Lemba Lakkous.

Resumé of development: Settlement planning; round house unit design and construction; possible social functions of units. Graves originally house burials, later evolution of cemeteries.

prominent in Cyprus

Round House building is a most interesting aspect of the building history of Cyprus — exactly as it is perhaps the most interesting aspect of the relation between Cypriote building and the development of building in general. How much this situation is due to the accidents of discovery still remains to be discovered.

ecumenical history

Certainly at the moment a very curious situation is evidenced. This form of building, according to anthropological showing, has for long been seen as that of "primitive man" in general[1] i.e. hunters and food gatherers (cf, e.g. the building in Africa south of the Sahara and the Arctic tundras). Indeed it has been qualified as the building form of residual mesolithic societies. On the other hand, archaeologically speaking, its earliest conceivable centre of development (in enduring construction) has been located in the Palestinian area.[2] Here the style seems to flourish for a millenium or two before being superseded by rectangular building construction.[3] 2

exceptional history in Cyprus

Yet, near-by in Cyprus, where the style must have been introduced by colonists coming from the Palestianian region, the type of building continues over an enormous period of time after it ceases to be significant in its original centre.

This anomaly, in fact, serves rather well to introduce an account of the round house remains in Cyprus. And in seeking to explain the matter, it is best to mention immediately another anomaly. Although Cyprus geographically (and historically) is so immediate to the Levantine mainland, yet the basic habit of settlement building

settlement type in Cyprus

was categorically different. Ancient settlement sites did not continue to be redeveloped age after age (as on the mainland) to produce artificial hillocks of superposed ruins (tells, hüyüks, teppes). Instead after an age was out a decayed and decaying

settlement was abandoned and a new site built up at another suitable locality in the
44 neighbourhood.[4]

Whatever the reasons for this difference may be (and these are to be discussed in the proper context), the practical results for archaeological investigation are manifold and very great. Consider but two. Time is not rendered spatially by the vertical superposition of the later over the earlier. Thus stratigraphical succession over long ages is unavailable to provide chronological evidence. On the other hand, no building remains are deeply buried (eg 20 m or so) beneath an overburden of later deposits. Thus it is that, in general, the earliest building remains in Cyprus have remained just as accessible to investigation (and destruction) as the later, but their sequence (and duration) in time has not been self evident.

field investigations

It was in this fashion that Dikaios in the thirties and forties, when he schemed to elucidate the stone age origins of Cypriote culture, was able to locate sub-surface remains at several sites which pertained to this remote epoch[5] and without the necessity of removing any overburden, he was soon able to gain considerable information regarding the nature of these settlements. However, since there was no continuous succession of habitation from age to age, he could not establish the chronological relationship of the sites by stratigraphy and was forced to attempt this entirely on the basis of typology.[6]

KHIROKITIA
SOTIRA
ERIMI

In issue here were three principal sites: Khirokitia, Sotira and Erimi, and in fact
2 the most patent of distinctions were applied to the finds from these several sites. At Khirokitia the artifacts did not include any pottery, its place being taken by characteristic stone bowls. On the other hand, pottery was found at both Sotira and Erimi, but, in addition at the latter site, there were some fragments of copper. Dikaios thus established a convincing cultural succession in terms of the most elemental of age distinctions since aceramic, or pre-pottery, settlements clearly preceeded pottery using ones. Equally the presence of metal must denote a later stage in development and, notwithstanding the subsequent introduction of quite revolutionary means of chronological determination, this succession has remained a valid base for a relative chronology of the earliest habitation in Cyprus.

chronology

Having established a succession of settlement, Dikaios was then faced with the problem of the duration of the settlements. And here he encountered the negative face of things. At that stage there was no comparative material available for analogy, and as there was no continuous stratigraphic succession, he could only estimate the duration of each settlement by the depth of deposit[7] and hope there were no *lacunae* between the different settlements.

Unfortunately, the mechanics of settlement deposit formation in Cyprus were then (as now) little considered; and in fact there was a very salient *lacuna* intervening

protracted lacuna

between the Khirokitia stage and the Sotira stage — a *lacuna* of ca 1500 years,[8] a longer time than Dikaios apportioned to the entire sequence.

In any event, proceeding in this fashion, Dikaios produced a chronology for the Cyprus "stone age" as follows:[9]

Khirokitia	(Aceramic Neolithic)	= 3700—3400
Sotira	(Ceramic Neolithic)	= 3400—3200
Erimi	(Chalcolithic)	= 3200—2800

This is still of interest because it incorporates Dikaios' assessment of the duration of habitation based on depth of deposit — and this is a factor which needs to be kept in consideration.

^{14}C dating

Hard on the publication of this *schema* came the first ^{14}C datings. These revealed a *lacuna* between the Khirokitia settlement and the Sotira settlement. Accordingly Dikaios revised the chronology as follows:[10]

Khirokitia	(Aceramic Neolithic)	= 5800—5200
	Lacuna	5200—3500
Sotira	(Ceramic Neolithic)	= 3500—3000
Erimi	(Chalcolithic)	= 3000—2500

Palestinian analogies

However, subsequent to this publication, much work was done on the pre-pottery Neolithic A in Palestine. More material became available for comparison and dating and eventually it has been agreed that the ^{14}C process, if properly controlled, gives a date for the period's origins in Palestine of ca 8000/7000 BC. In the light of these developments, it has been considered that the beginning date proposed for the analogous culture in Cyprus represents not so much the complication of history as inadequate application of ^{14}C processes. Accordingly both by way of revising (calibrating) existing results and by obtaining readings from new samples, the net effect has been to raise the dates of Khirokitia to bring it fully into line with Palestinian chronology[11] — thus:

Khirokitia	(Aceramic Neolithic)	= 8000/7000—6000
	Lacuna	6000—4500
Sotira	(Ceramic Neolithic)	= 4500—3750
Erimi	(Chalcolithic)	= 3500—2570/2300

renewed research

Subsequent to Dikaios' investigations, there has been recently a new generation of research into this period. Old sites (Khirokitia)[12] have been reinvestigated and new sites excavated.[13] Much consideration has been given to the enigma of the protracted

lacuna between the Aceramic and the Ceramic Neolithic,[14] also much attention to the equally mysterious transition between the end of Chalcolithic or the Early Bronze Age Periods.[15] Nonetheless, the above outline of the developments which is formulated entirely on the basis of Dikaios' investigations still serves as a framework for setting out the history of building during the age. This is to be done by examination of the principal sites. One preliminary general observation alone is to be made. These established divisions, which are without doubt real ones, would never have been arrived at on a basis of building developments themselves.

Khirokitia and the Aceramic Neolithic

It is not profitable to base detailed argument on negatives so the following treatment accepts the existing indications that round-house building was introduced to Cyprus fully formed by colonists from the adjacent mainland. Some dozen or more sites have been noted and doubtless more are being recorded in the files of the Cyprus Survey.[16] Here reference will be made only to those sites which have been published in some detail. *colonial origin*

The various sites investigated show a great uniformity in material culture — and as yet, speaking broadly, little trace of development within the phase has been determined.[17] This, however, is a question which at the moment is being qualified in detail. Some interesting observations have been made on the location and the distribution of these sites. There are both coastal and inland sites so that the culture certainly spread throughout the island. *cultural uniformity* *geographical distribution*

The recently excavated site on the easternmost cliffs of Cape St Andreas,[18] the very lands-end of Cyprus, could well be at the original land fall of the colonists[19] and the little "homestead" on the western islet of Petra tou Limniti in the offing from Vouni[20] may be the product of exploratory coasting.[21] The type site, Khirokitia, is on an outlying rise of ground overlooking the southern plainland dipping to the sea 8—10 kilometres away.[22] It is thus a first inland station from natural landing places on the south coast in the vicinity of the modern harbour at Zyyi.[23] This fact is made apparent by a quite untoward event in the Mediaeval history of the Island. At this same site in 1426, the invading Mamelukes defeated the Lusignan forces with great slaughter and took King Janus captive into Egypt.

A topographical feature common to both coastal and inland sites is their juxtaposition to a rocky bluff providing a landmark/landfall. The suggestion is that this indicates advance into unknown regions, i.e. colonisation.[24]

Khirokitia

The site is at the eastern extremity of a rocky spur contained by a bow of the Maroni River. This terminal bluff which rises to a height of 50 m or more above the river bank is separated from the body of the spur to the West by a saddle depression in the rock of ca 10 m or more. The excavated remains are exposed in a strip climbing up from the river to the saddle.[25] The total area exposed is ca 3,000 m^2, however it is now stated that geo-prospecting indicates that the settlement spread over much of the terminal bluff.[26] If this indeed was so, it would give a total settled area of anything up to 4 hectares, which is about what has been estimated for pre-pottery Neolithic A Jericho.[27] An unlooked for extent at this epoch and about that of the average Bronze Age Palestinian town of ca five thousand years later. *location* *extent*

The unifying feature of the excavations is a substantial ribbon of masonry ca 2—3 m broad which ascends the southern slopes from river bank to saddle (and doubtless continues on down the northern slopes to near the river). Since the building remains appear equally on either side of this feature, the *main feature*

central street?

original excavator was perplexed as to its function and concluded that, in spite of structural appearances, it could not be a wall but that it was a raised street — a freeway through the overcrowded site.[28] However recent excavations have indicated that the buildings to the West of it all post-date the structure and hence represent a spill over expansion of settlement beyond what was as all intrinsic

boundary wall

appearances suggest, a boundary wall.[29] It has been emphasized also that the significance of this wall is not so much defensive as of enclosure and isolation.[30] Certainly taken together with the river and cliffs, it encloses the semi-detached bluff in the most rational and regular way — for whatever reason designed.

If the settlement of Khirokitia was centred on the eastern bluff, then it was a strong natural position.[31] Quite steep slopes and cliffs on three sides were reinforced by the wady bed. To build a wall across the neck of land so as to cut off access from the ridge to the West would form an obvious system of defence — and are well recognised in latter ages (it was a favorite device for securing an acropolis in Hellenistic times). Although built on much slighter scale, the Khirokitia wall suggests the PPNA wall at Jericho where a fosse was hollowed out of the rock to further accentuate the barrier.[32] The degree to which such walls were defensive in intent can only be determined from the ensemble.

That they were a (magic) sign of demarcation is clear. They established the bounds of order: they marked off cosmos from chaos, sacred space from natural space (all "cities" were originally holy). Within their bounds a rule of life prevailed which did not obtain in the wild state beyond.[33] This concept survives strongly in the Roman *pomerium*.

One obvious factor in connection with the Khirokitia wall has not been discussed. It has been traced for a length of ca 180 m — i.e. for more than half its apparent course. Whatever its functions, evidence of a gate might have been expected. So far none has been revealed.

All the preliminary concepts of "town planning" at Khirokitia were led on a false trail by the interpretation of the boundary wall as a road way.[34] In this fashion, what is apparently the margin of the settlement was taken as its centre. Whatever may have appeared to be the case in the latter eventuality, what can be stated now about planning is limited since we have only a uniformly peripheral strip of settlement to consider, the very opposite of a cross section.

On the other hand, when it is agreed that we have to do with a settlement boundary wall, then various consequences follow relating to the global development of the site. Most immediate is the fact that the

size of settlement

settlement overflowed its limits and spread outside the wall. Since according to all indications, the wall bounds a large area, the obvious inference is that the settlement was, or became, a very large one indeed. A recent estimate is 1.5 hectares[35] but certainly more space is available within the natural confines of the site. That the Khirokitia settlement occupied a large area is quite possible since the PPNA settlement at Jericho appears to have been an extensive one, while it is suggested that the contemporary site at Ain Ghazal near Amman covered an enormous area. However, in this connection, there are latent matters of some interest to consider.

stratigraphy duration

The sections of Dikaios' excavations to bed rock show a total depth of deposit of ca 3 m and the remains of 3-4 superposed round buildings.[36] On the basis of such a record, Dikaios allowed ca 300 years for the duration of the settlement. This, in principle, is, if anything, too long. Such buildings are not likely to remain serviceable for a century — a single short life time is much more likely. However, as opposed to this, the disparity in the ^{14}C dates obtained from the material would indicate a much greater duration for the settlement — ca one millenium at least. 152

Here immediately is in point the pervasive question of settlement mechanics. Is it conceivable that a site continuously built up for a millenium should show in characteristic section the remains of but three or four rubble cabins? The obvious inference is that if the site of Khirokitia remained inhabited for the long period suggested by ^{14}C samples, then the built up area migrated over the centuries about the spacious site. And this in turn qualifies ideas concerning the size of settlement at any one period. 152

movement of settlement

The control normally applicable to this issue would be the typological development of the remains. Unfortunately this enquiry admits of limitations because of the supposed static social condition obtaining at this early juncture. This question leads beyond the study of building. Only it may be noted

that the remains recently cleared outside the boundary wall more or less parallel in typology the adjacent remains within the walls.[37]

The excavations at Khirokitia are of limited value as a sample, but in total area they are considerable and could well amount to ca 10% of the site. Thus they reveal some picture of the disposition of habitation units although it is by no means certain that this is necessarily the only type of disposition obtaining on the site.

The system seems to consist in a group (3—6) of round houses organised in such a conformation (an
154 arc or more or less complete ring) so as to demarcate a private area (courtyard) where the varied business of living took place — i.e. eating, working, meeting, etc. These habitation complexes provided *primary habitation complex* in principle for an extended family group, say up to a dozen people. The complexes were fitted into available space with a density varying somewhat in different quarters of the excavations. The space between them appears as a residual which served for passageway and disposal of refuse, etc.[38] Whether in turn this overall pattern varies in different quarters of the settlement or is, in fact, a uniform *residual circulation* development is a question only to be decided by excavation in other areas.

According to the recent excavator, precision in stratigraphy has made possible clearer perception of comtemporaneity of the round house units and thus of their organisation into complexes. This is achieved in the main by simple juxtaposition of units, but on occasions short stretches of auxilliary
155 curtain walling appear (always curvilinear). The developed complex is comprised of a principle dwelling unit (plus on occasions subsidiary ones) together with a storage unit, kitchen, etc.[39] All these units are replications of the one round house form as stereotyped as its modern representatives, the *single building form* wigwam, teepee, rondavel, etc. Moreover the functional assemblage can be paralleled in any context of a comparable climate today — e.g. in the Arabian Tehama, culturally a part of Africa drifted across the Red Sea.[40]

There remains now singled out for consideration the individual unit round house. At Khirokitia these *the round house* buildings are for the most part quite truly circular in plan.[41] In some instances the walls are preserved to
223 head height and this enabled very convincing reconstructed drawings (perspective, general views, etc) to be made of them showing the beehive form well known in modern versions (cf the famous villages of North Syria) and in ancient representations (Egyptian and Assyrian). However the recent excavator has called attention to various details which in his opinion go against this interpretation and support a flat roof as is found in later rectangular building. He adduces fallen sections of mud plaster on wooden
223 bearers and the fact that the apparent inclination of walls could be due to differential pressure of earth on the sloping site.[42] These qualifications are in themselves reasonable; however the genre of the beehive
153 form (the tholos) is so consonant with the mass of evidence as published by the first excavator[43] that the description will be given along these lines.

In general, the tholos at Khirokitia is set on a semi-sunken emplacement so that the internal floor level is somewhat below the outside ground level and thus there is a step or steps down from the door sill. Since the plastered floors were resurfaced regularly, this difference could be considerably reduced with the passage of time.[44] The walls were built of rubble stone, mud-brick and rammed earth in varying *materials* combinations, with at least a socle of rubble and the vaulting (as presumed) entirely of mud brick.[45] Wall faces were plastered over and probably white-washed. The inner face was sometimes painted with red paint.[46]

Both excavators[47] have seen good reason to divide these tholoi into groups characterised in the first instance by size, since allied with this distinction are various others of design and construction. The *two types*
155 large structures, "Big Tholoi" have an external diameter of e.g. ca 10 m and an internal diameter of ca *large* 5 m to give a floow area of ca 20 m^2. The small Tholoi have an external diameter of e.g. ca 3.5 m, an *small* internal diameter of ca 2.75 m and a floor space of ca 6—7 m^2. Thus according to rational ideas, two to four people could have made use concurrently of the larger tholoi, while the smaller were in effect for one person to move about in.[48]

More enlightenment regarding usage is available by considering the other distinctions between the two groups. Some of the smaller buildings reveal low projecting (50 cm — 70 cm) partitions. In addition

gallery

to delimiting a special area, it is thought that these acted as supports for benches or staging running across to the walls, thus augmenting the space by way of a croft or gallery.[49] However, in several of the larger tholoi, this feature appeared on a much more massive scale: two solid piers of masonry set perpendicular to the diameter create at the least a dais at head height in one half of the building or act as supports for an upper staging extending over half the building.[50]

every day life

On the other hand, installations relating to everyday activities, pits, platforms, fireplaces, etc, are rarer to non-existent in the large tholoi as compared with the smaller ones or in the private "yards" annexed.[51] In other words, everyday life was centred on the courtyards or in the small tholoi which served as kitchens, stores or workrooms, etc.[52]

tomb & temple

What then of the distinctive larger tholoi? In the first instance, according to direct evidence, they were tombs and mortuary temples. For these functions a wealth of detailed evidence survives. Contracted burial in pits below the floors of buildings is common to both types of tholoi, but it is much more prominent and numerous in the larger ones.[53] Also the hearths and fireplaces while demonstrating little connection with cooking or eating as in the smaller tholoi are, on occasions, related to these graves.[54]

thalamos

Proceeding beyond this evidence, it is possible to suggest the other essential aspect of the large tholos — in addition to being the venue for rituals of death, they also served for those of birth. The large tholos was essentially a thalamos.[55]

construction

The construction of the round house of Khirokitia incorporates matters of interest. Three distinct materials are used with discrimination; rubble, mud brick and rammed earth (terre pisée).[56] The detailing of these several materials is surprisingly varied and of interest both in itself and for the light it casts on the structural system employed. It seems there was, or was achieved, a sophisticated appreciation of the different issues involved.

stone

The stone supply is twofold: field stones of the Koronia limestone formation and dark coloured boulders of Andesite brought down by the Maroni and strewn about plentifully in the wady. Almost all

socle

the round houses are set on a rubble masonry socle of some sort.[57] In the simplest instance, this comprises in effect stone footings exactly as more or less universal in later rectangular mud brick buildings.[58] Their function is to act as a damp proof course (DPC) to combat the effects of rising damp; and also in the special vulnerability of mud brick construction, the stone acts against the catastrophically sapping action of standing, running or splashing water at ground level.

272 273

In some instances these footings are broader than the thickness of the rising masonry, projecting beyond the wall face on the inner side.[59] This is not a device for distributing the excessive load, but is designed to protect the structure better from the mechanical wear and tear of daily usage.

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However, beyond this quite stereotyped usage of stone footings which applies equally to any type of building, there is a highly distinctive employment of rubble which is very specially referrable to round buildings. This consists of an additional external skin or girdle of masonry either somewhat less than or the same thickness as the rising wall itself.[60] Whether or not the rising wall rests on stone footings, this external skin is always of separate construction and is not bonded into the rising wall. In section this girdle leans against the outer face of the wall following its inward inclination. Thus it is clear that it was added later as a separate construction. Its height varies from a low bench to above head height. The

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buttress

coping detail leaves no doubt that these girdles were designed to act as buttressing.[61]

domical construction

The combined contour of the two skins is exactly that of a modern masonry dome thickened at the haunches to counteract the tendency of the dome to crack and spread in the tension zone. On this showing there can be little question that (at least some of) the round houses were beehive tholoi. And there also can be no doubt that the stone age builders of Khirokitia learned (by experience) something of the theory of domical construction.

Nowhere was a round house preserved to its crown, however several of Dikaios' sections show the vaulting preserved well up the haunches and shoulders.[62] The material of construction here appears either as terre pisée or mud-brick. Where it is mud-brick, the section shows the individual bricks (large and flat) set radially as voussons[63] and not corbelled out horizontally. Since, furthermore in strict theory, the above mentioned statics are more relevent to a true dome than to a corbelled one, the

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question arises of the true system and method of construction of these beehive round houses. Apparently functioning to some degree as true domes, were they fashioned with the aid of centering? It is an interesting question.

Finally, in some of the larger tholoi there was yet a third ring, an additional low outer girdle of
339 masonry[64] serving equally to protect the structure from mechanical damage at ground level and to contain the extreme effect of thrust.

As things stand, Khirokitia would seem to be a cradle of master builders of the round house form. No construction of the same degree of complexity has been remarked on the mainland. And thus once more the question obtrudes as to the degree to which round house building on the Island was a local development.

According to both Dikaios[65] and Le Brun[66] the big tholoi are characteristic of the later levels and the simpler small tholoi of the earlier levels. Furthermore, Dikaios reports that the earliest level at Khirokitia (his Period I) closely overlying bed rock is marked by circular depressions containing numerous habitation remains but associated with little traces of superstructure.[67] This picture is identical with that of the first traces of habitation at PPNA Jericho[68] and the common inference is that we have the semi-sunken emplacement ("scoops") for round huts of fugitive materials, wattle and daub or even sticks and fabric. *structural development*

Thus, whatever may be the impression given by the associated objects, it would appear that very considerable development in building techniques is evidenced at Khirokitia. This does not go against the colonial origin of the culture, only it speaks for the vitality of its local development. If the remains are more or less contemporary with PPNA Jericho, then the larger tholoi at Khirokitia are achievements at least commensurable with the famous Jericho Round Tower. To make more significant comparisons depends in part on a still unresolved question. What is the duration of the aceramic sequence at Khirokitia?

273 The uppermost levels of Khirokitia (= Period III) produced the remains of slightly built round houses containing red lustrous pottery of a type which was later found to characterise the settlement site at Sotira.[69] Unfortunately (as has been noted) instead of the direct succession originally presumed which would have set a limit to the duration of the aceramic Neolithic at Khirokitia, ^{14}C dates show that Period III remains must represent a return of settlement to a long abandoned site. And thus the duration of the original culture remains undetermined and a mystery. If the building remains of Period III were constructed on a deserted ancient site, then the fact should have been demonstrable in the stratigraphic record.[70] On the other hand, if the pottery yielding contexts of Stratum III represent a squatting re-occupation in the ruins of the latest levels of the pre-pottery settlement,[71] then can anyone seriously contend that rubble and mud beehive huts would retain their form so as to invite re-use after exposure to the elements on a rain and wind swept hillside for more than one thousand years? *stratigraphical evidence*

At all events, similar pottery to that of Period III Khirokitia characterised the settlement at Sotira, and if the ^{14}C dates there are to be trusted, an entire age has been leap-frogged. Whatever calibration be applied to ^{14}C results, mainland analogies for the new culture are to be sought not in the remotest beginnings of sedentary life, but in, or verging on, Chalcolithic times. And thus begins the strange phenomenon for Cyprus to lag a formal age behind its immediately adjacent neighbourhood. *cultural lag*

Sotira and the Pottery Neolithic Tradition

Sotira

61 Sotira[72] (at the place Teppes) is located in the southern fringes of the Troodos, about 5 km from the coast behind the classical city of Kourion (and the modern village Episcopi). A narrow tongue of
43A highland runs out southward between the two tributaries of the Symboulas River and terminates in a
43B crest of ca 330 m.[73] The ancient settlement occupies the summit area (ca 50 m × 40 m) of this crest and

SOTIRA *topography*

spreads down its eastern slopes. The western slopes are steeper and the excavator did not consider them to be built over. Thus the total area occupied by the settlement should be between one and two hectares. At the north-western margin of the summit area a bank of rubble, ca 10 m broad (in parts), has been considered as a retaining wall heaped up following earthquakes when clearing the site of its stony ruins. No other evidence of a boundary wall in other quarters has yet been revealed. [74]

stratigraphy

Several campaigns with supplementary investigations indicate that no great depth of deposit existed on the summit where indeed bed rock outcrops in places. Three to four building phases have been recognised (SCE IV 1A p. 76 figs 39, 40). However, building activity was not interrupted for any length of time in spite of some general disturbances (e.g. earthquakes). On this showing, habitation was virtually continuous and could not have lasted through more than four to six generations, i.e. it lasted somewhere between 100 and 200 years[75] somewhere during the period ca 4500 BC — 4000 BC according to calibrated ^{14}C dates.

general plan

A general plan of the building remains[76] show the area crammed tight with irregular looking unit buildings. However, some recent analysis has helped to make sense and order both out of the unit forms and of the general distribution of building. 156

house types

round houses

quadrilateral buildings

Whatever may be the interpretation, there is a noticeable variety in the plans of the individual units and Dikaios categorised them on formal grounds into a half a dozen types.[77] There are some simple round houses (Dikaios types I & II), but they are not the dominating feature. Nonetheless, it is evident that the building units at Sotira are influenced by and are within the ambit of the round house. The major structure at Sotira is a larger (up to 6 m × 6 m) quadrilateral building, roughly equilateral, i.e. it is a centralised building. And it ranges from rectilinear with rounded angles to curvilinear with defined angles (Dikaios types III & IV). Dikaios' other types (V & VI) are really *ad hoc* secondary enclosures of space bordered by and between existing buildings.

dominant buildings

subsidiary buildings

According to recent studies in palaeo-sociology,[78] it is the largest quasi-rectangular buildings which are the dominant foci of site development. These buildings with an interior floor space of up to 30 m^2 are revealed to be primarily the living and working centres. (They are, thus, among other things, industrial buildings.) Around them, and in connection with them, subsidiary buildings developed — round houses or irregular space enclosures. It would seem that these latter provided the supplementary dormitory accomodation as the family/group increased. In all this there is little evidence of *al fresco* installations (cooking, storage, etc). Such, at any rate, is the latest interpretation based on the analysis of findspots of artefacts, tools, utensils, etc. 157

settlement planning

According to this analysis, one dominant rectangular building inevitably engendered the accretion of subsidiary irregular structures. And thus, generally speaking, another dominant building of the same type could only be built at some remove. In this way the whole area became crowded out and no pattern of residual or reserved spaces emerges. Moreover, within the limits of the area excavated, no structures (or rather groups of structures, as here defined) showed any particular eminence.

An interesting observation emerges from this analysis. If the dominant rectangular type of buildings are given over significantly to industrial (craft) usage; and if the significant cultural development in this stage of the neolithic is the appearance of pottery, then it is to be imagined that the rectangular buildings are the centres of pottery production at Sotira.

construction

In general the buildings at Sotira were not preserved standing to any height. They were constructed on a foundation or socle of small to medium field stones — flattish limestone fragments i.e. 40 × 25 × 25 cms); and the body of the wall was of mud brick or terre pisée (according to the evidence of the fall).[79]

rubble footings

Generally the rubble substructure conformed closely to what was to become the norm for traditional village building. It stood to a height of ca 30 — 50 cms (i.e. 2 or 3 blocks superimposed), but was not regularly coursed. What is absolutely regular about the construction is that it was made up of an outer and inner facing of sizeable stones with the core and interstices packed out by smaller stones, pebbles and mud. At one occasion, the mud wall was founded directly on the ground and in some instances the rubble construction continued much higher (e.g. 1.40 m). However, it is interesting to note that this elemental and characteristic building practice of rubble footings is so clearly manifested at Sotira.

floors

The floors[80] were of what may be variously described as mud plaster or beaten (tamped) earth. Although on one occasion a thick floor of limey soil was noted, there were no examples of "plastered" floors (i.e. of highly polished lime plaster, on occasions painted).

doors

The doors[81] to these houses were ca 70 cms wide all looking out across the open view to the South and the sea. Generally the threshold was at primary floor level, but in some of the earlier houses, the original floor was set down considerably lower than the outside ground level and thus three or four steps were fashioned in the door way. Otherwise some sort of sill was provided, generally out of stones.

roofing

157 Although so little of the superstructure remains standing, considerable evidence for the roofing is provided by emplacements in the floors for supporting posts. These indicate some variety of detail in the roofing (from pitched to flat) but show clearly that in all cases the roof was formed on wooden beams, battens, etc.[82] It seems the roofing system varied sensibly. According to the plan, round houses were given a central support, to the truck of which were tied raking spars from the tops of the walls. These round houses were thus in the form of conical huts like so many modern e.g. African dwellings with a roofing of (probably) wattle and daub. The more curved plans (ellipsoid or ovoid) have either two posts at the foci supporting a ridge pole with raking spars from the walls thus giving a pitched barn roof or in another case, the roof was of the conical type. Where the ground plan was more rectangular (the larger houses) several lines of post holes suggest more or less flat mud roofs on beams and battens. All these considerations combine with the fact that there is no trace of multiple layers of walling as at Khirokitia means that there were no beehive vaulted roofs at Sotira.

installations

Houses were furnished in general with various installations, e.g. hearths[83] of different sorts including one framed by four postholes to support a square aperture in the roof above (cf the hearth in the Mycenaean megaron). There were also platforms and benches[84] designed for sitting (e.g. while working), and possibly for sleeping. In some instances, low partitions or enclosures[85] marked off working or storage space.

graves

At Sotira, there were no burials beneath the house floors. However, a number of (oblong) pit graves[86] were found grouped together about 80—100 m away down the slope to the East (near a modern threshing floor). These were shallow (ca 25 cms) cuttings in the soft rock, ca 90 × 70 cms, for contracted inhumations.

Ayios Epiktitos-Vrysi

AYIOS EPIKTITOS

Situated diametrically opposite to Sotira on the North coast of the Island, the contemporary site of Ayios Epiktitos at the locality of Vrysi[87] affords much complementary information concerning the building practices of this period. Unfortunately here it is possible to speak only in generalities since the detailed excavation records were cut off by acts of war. However, in spite of this limitation, what is perhaps the most important fact at Ayios Epiktitos is fully demonstrated. This is the subterranean habitat of the settlement, a device which in one manner or another is found in several Cypriote settlements of the period.

topography

Ayios Epiktitos *Vrysi* (spring) is located on a small compact headland 9 kms East of Kyrenia.[88] In this region a quite deep layer of marl overlies the aeolionite bed rock which terminates to seaward in a wave-cut cliff of ca 9—10 m. The excavations extending over an area of ca 30 m × 15 (ca 600 m^2) show that depressions approaching 7 m deep (below the present surface) existed in the marl. Neither the overall comformation nor in fact the origin of these depressions have been determined with certainty. The most straightforward explanation is that they were entirely and purposefully dug out to secure a concealed emplacement for the settlement.[89] If that is so, then it presupposes a very considerable level of communal organisation — however obtained.[90]

At all events, published records of the excavation show a north sector extending over much of the present extremity of the headland (it is being eroded back by the sea). Here over an area of ca 15 m × 15 m the marl was hollowed out and in this hollow were built half a dozen or so houses which, in essentials, are similar to those at Sotira. Immediately to the South of this, there ran what appears to

have been a defensive ditch, cut across the neck of the headland.[91] Apparently this ditch was later occupied by the expanding housing on the settlement and where the eventual landward boundary of the settlement may have been is not determined. In any case, the total area of the site could not have been less than half a hectare.[92]

It seems that in the earlier stages, the southern depression or defensive ditch was revetted on the inner banks by a rubble wall which might have been carried up above surface level in mud bricks.[93] This would mean that, while the nature of the settlement remained hidden, its existence was advertised (at least from landward). Thus concealment would have been most effective from the sea — but can we believe that sea faring was so common at this epoch as to warrant these precautions? Were neolithic coastal dwellers in constant fear of a flotilla of pirate coracles paddling down on them?

concealment

No ancient settlements maintained public sanitary services, and refuse was inevitably dumped and spread about the vicinity of the habitations. In the case of a subterranean settlement, this accumulation grew up even more rapidly with the added downwash etc. Thus after two or three rebuildings, the level of the dwellings at Vrysi rose above ground level.[94] Therefore, whatever the motive prompting subterranean dwelling (whether protection from an intemperate environment or from human aggression), the settlement continued for some time after this purpose was no longer fulfilled.

stratigraphy

The considerable accumulation of habitation deposit at Vrysi does not witness so much to longevity of occupation as to the rapidity of deposit in a subterranean emplacement. In fact ^{14}C results confer that within limiting dates of ca 4400 BC — 3800 BC occupation lasted a few hundred years only.[95] This seems to be about the modulus of duration for stone age settlements in one locality. It encompasses 6 or more generations and thus extends far beyond the compass of hearsay, i.e. to its inhabitants the settlement has endured for time out of mind.

At Vrysi the type of housing is basically that of Sotira — only the restricted subterranean locale imports some modifications to the system. The individual building unit is like the dominant form at Sotira, the squarish plan with well rounded angles, however, because of space restrictions this main unit is not provided with secondary annexes. In fact the units are built hard against one another and, in this way, they are frequently deformed.[96] Also the means of circulation was minimal, a narrow winding passage and in some instances, it is conjectured that approach to houses was only by way of neighbouring roofs.[97]

house form

The internal floor space is somewhat less than that of the dominant buildings at Sotira. The average being just under 15 m^2.[98] Since there are no subsidiary structures and there is evidence at Vrysi that these buildings were used very much for workshops (as at Sotira) then the question of living and sleeping accomodation is a vexed one. The floor space is dominated by a hearth and, in addition, the house is furnished with a sizeable bench along one wall. In this fashion, if any extended family lived in a Vrysi house, then some subsidiary sleeping accomodation would seem to have been necessary. Thus as the walls appear to have been of reasonable height (more than 2 m), it is possible that some sort of loft was a feature of these houses (as in the Khirokitia tholoi).[99]

construction

The building construction was of the same nature as at Sotira. The walls were of mud brick or rather more generally of terre pisée raised above rubble socles. The breadth was ca 40—50 cm and their total height was considerable, ca 2.00—2.70 m. The rubble socle was itself proportionably high — half or more of the total height, viz a metre or more. The terre pisée was mud plastered especially on the interior. The doorways were timber framed and initially the sill was well above the internal floor level. Timber posts supported bearers for traditional flat roofs of mud plastered reeds. However, there were variant forms of roofing — e.g. conical. In addition to the roofing supports, in some instances, timbers were set as raking struts to brace the walls.[100]

walls

doors

roofing

No burials were discovered within the limits of the excavated settlement at Vrysi, and thus it is presumed that, as at Sotira, there were pit graves grouped together in the close neighbourhood.[101]

graves

Kalavassos Ayious Area

Because of prompt and concise interim publication, details are available of a site which illustrates other aspects of subterranean installations — aspects quite different from those at Ayios Epiktitos *Vrysi*. The site is Kalavassos *Ayious* recently (1978—80) excavated by I. Todd as part of a comprehensive programme of investigation of the Vasilikos valley area.[102] The Vasilikos river is one of the South coast river systems which drain the southern slopes of the Troodos. Its course is some 4 kms or so West of the Maroni (Maroniou) River, above which is situated Khirokitia. This region is thus more or less on the central meridian of the island and additionally is (and was) of importance because of the minerals occurring in the area above Kalavassos. The area of the site is something of a crossroads, since here a route along the river valley from the Troodos uplands down to the coast is crossed by the principal East-West route of the island — i.e. that from Larnaca to Limmasol and Paphos) now become a "free way".

KALAVASSOS AYIOUS

topography

Ayious lies about 2.5 kms S.S.W. of Kalavassos village on a plateau rising above the East bank of the river. It looks directly across the river to Tenta, the better known site about half a kilometre distant; which site parallels very closely the remains at Khirokitia. In 1947, Dikaios made various soundings close by to the South of Ayious.[103] Subsequently it was the construction of the new auto-highway which necessitated the latest excavations as rescue work since the course of the new highway runs directly across the site, which is thus now for the most part covered by busy motor traffic. Despite large area clearances, no evidence of standing structures was discovered, instead various types of underground installations were brought to light. Since this also was the main tenor of Dikaios' findings in the close vicinity, it is possible to consider the several investigations in combination.

no standing structures

In the Ayious area (extending over say 10,000 m^2) something like 2,000 m^2 was cleared to reveal ca 50 pits of various shapes and sizes. The larger ranged in diameter from ca 1.5 m — 2.75 m and were cut down to a depth of ca 2.0 m below present surface level.[104] In addition to simple pits, there was one
167 complex feature. This consisted of what now appears as a large pit (N° 25), 2.75 m in diameter and ca 2.3 m deep with undercut sides spreading widely to the floor. About 8 m away to the N.E. a small stepped cutting gave entrance to a low, constricted tunnel (slightly more than a metre in height) which admits of a man crawling underground across to pit 25. Furthermore, at mid-run, a circular trap (N° 27) has been cut in the roof of the tunnel, with it would seem emplacement for a closing cap stone (so constituting a "man hole").[105] Since the competence of the matrix (stated in passing to be marl) has supported this tunnel across the ages, it is to be considered whether the large pit (25) was not originally cut as a cave (or something like one), since otherwise there is little point to be seen in the tunneled entrance.

pits

The nature of these various subterranean features is by no means clearly to be recognised in their form. The only obvious probability is that they served differing purposes. Some of the smaller pits are hearths or ovens and some are presumed to have been for storage. However, with the larger pits, associated features make it possible that they sheltered some form of occupation. In some of them occur compacted earth surfaces (floors) on which were found stone and pottery vessels, etc. While in the fill, there are lumps of daub (mud plaster) which either originated in collapsed roofing over the pits or in some destroyed structures close by, the ruins of which have been washed into the pits. No post holes were identified in pits which might have lodged props for a roof, but this evidence may have been lost through erosion. With respect to the tunneled complex, whatever may be the purpose of the other features, it is impossible not to think it was designed for some shamanist ritual, initiation ceremony or the like — n.b. the presence of broken figurines in the fill.[106]

possible functions

The date of the remains at Ayious is given by ^{14}C as 3000 BC-2660 BC, and this calibrated is equivalent to a period ca 3600 BC-3300 BC.[107]

period

In view of inconclusive findings at Ayious,[108] it is advisable to adduce for comparison the soundings made close by in 1947 by Dikaios. These are published in SCE IV 1A pp 106 ff, 133 ff, as Kalavassos sites A & B; the area is Kalavassos *Kokkinoyia/Pamboules* and lies ca 600 km S.E. of Ayious. At both soundings,

KALAVASSOS KOKKINOYA

pits Dikaios recorded pits excavated in the soft rock very similar to those at Ayious. They were ca 2—3 m in diameter, ca 0.80 m — 1.80 m deep with undercut slides.[109] He was quite certain that they were *surface dwellings* semi-sunken dwellings, the light roofing of which being supported by posts set up on the floor of the pits and at the verges resting on the peripheral rock. Dikaios also noticed more or less surface level dwellings, light structures with a ring of posts inclined inwards to form a conical shelter. These latter he considered were the successors of the sunken dwellingss when accumulated debris had filled up the pits.[110] For this identification as pit dwellings, Dikaios had the additional evidence at his soundings of post holes, and in some instances, installations such as hearths or benches. In any event, it is impossible to dissassociate this related evidence from findings at Ayious. Dikaios arrived at a chronology for his soundings on a basis of pottery typology. He reckoned Site A (Kokkinoyia) to be of the same pottery Neolithic period as Sotira, while Site B (Pamboules) he considered to fall into the subsequent (chalcolithic) period of Erimi.[111] And this accords with the ^{14}C dates obtained from Ayious which are equivalent to transitional Sotira — Erimi.

Erimi and the Chalcouthic Development

Erimi

Erimi *topography* The village of Erimi is situated on the East bank of the river Kouris close by the main road to Paphos, about 8 miles West of Limmasol. And the ancient site (locality Pamboula) is (was 1936) immediately at the rear of the village. The general region of the village comprises a plateau backed by the outlying foothills of the Troodos and overlooking coastal slopes falling away South to the sea about 3 miles distant.

excavations The excavations made at Erimi, although very restricted in area (ca 150 m^2), reached a depth of about 5 m and were the pioneer substantive investigations of the "prehistoric" period in Cyprus. Certainly, they brought to light a mass of information which was very closely observed, considering that there was little *comporanda* then available as a guide.[112]

chronology The considerable vertical succession — ca 13 superimposed building levels with an average of something like 40 cms per level — is very unusual for Cyprus, both in the overall depth of deposit and in the mass of remains for each level. For this succession, Dikaios estimated an overall interval of about 400 years (ca 3400 BC-3000 BC).[113] At first this opinion appeared to be negated by later ^{14}C dating which suggested a period ca 3000 BC-2500 BC. However, subsequently it has been reckoned necessary to apply some sort of calibration to these figures and this has raised the beginning date of Erimi to ca 3500 BC, more or less in accord with Dikaios' original suggestion.[114]

stratigraphy As clearly marked in section, these remains are unmistakeably divided into two types which the excavator set out as Periods I and II.[115] These are:

I. Four levels with light structures occypying a depth of 1.80 m set in a depression in the bed rock.

II. Nine levels of solid structures with rubble foundations occupying a deposit of ca 3.60 m to the present surface level.

Here very unmistakeably is presented a succession often postulated for round house sites, both in Cyprus and elsewhere, *viz* original "shelters" partly sunken in hollows or "scoops" followed by more *construction* solid masonry constructions. However, as Dikaios justly pointed out, whereas the construction changed markedly, the design was throughout identical — the standard round house.

settlement pattern According to Dikaios, from surface indications habitation remains extended over an area of ca half a square mile.[116] This is, of course, an enormous expanse comprising ca 125 hectares. What the pattern of settlement may have been over this area is completely unknown since the restricted excavations gave no idea of settlement planning.

house planning Within the 15 m × 10 m confines of the excavation, two or three round houses were revealed on a level.[117] The average external diameter was ca 6.50 m — 7.50 m, and in Period II, the rubble wall

foundations were quite substantial, ca 50 cm — 70 cms.[118] The round houses are of simple unitary design except in the case of House VIA of layer VI (v RDAC 1936 Erimi P1 III_2) which has a contrived interconnecting annex of a smaller round unit abutted against it (apparently a kitchen — v SCE 1A p. 115). These houses do not manifest very striking features of subsidiary planning. In the later houses there is a central stone circle to secure the base of a vertical post. The houses are also provided with hearths and other stone platforms or benches, usually circular. Nothing can be seen resembling supports for lofts (as at Khirokitia).

The main interest at Erimi is, in fact, the varied details of construction.

construction

Dikaios divided the houses into four types according to various constructional details.[119] These details constitute not so much building types as various degrees of solidity of construction which are (then as now) likely to co-exist or replace one another according to circumstance. For the early structures in the rock depression, only evidence of the floors subsist, so the superstructures must have been of the flimsiest. Dikaios speaks of circumferential post holes and understands a conical shelter of the "wigwam" type.[120] He understands that the succeeding houses above ground level were more robust, although as summarised in SCE IV 1A p. 113, he takes the structural system to be always the same, viz a wooden frame of poles (and cross pieces?) with a more or less conical profile, clad with brushwood and mud plaster. This is, in effect, what is generally termed wattle and daub, and he recovered intact lumps of this material from the very earliest levels.[121]

originally flimsy

subsequent solid masonry

However the houses of Period II (his levels VI to XIII) above the general surface of the rocky plateau, are characterised by a perimeter of quite solid (ca 50 cm — 70 cm) rubble masonry.[122] Dikaios refers to this masonry as walls or foundations, but his other remarks show that he did not envisage solid upstanding masonry continuing above the two courses of rubble which usually survive. Thus these low stone perimeters were neither the remains of nor the foundations for load bearing masonry walls. Dikaios considered that he recognised post holes either around the foot of the interior of the stone perimeters or set into the top of the stone masonry itself. Thus again he thought of the superstructure as wattle and daub, but here in conjunction with a solid masonry footing.[123] All this is structurally quite possible or probable. The stone masonry is not load bearing in any way; it serves a different function, that of protecting the more fragile materials of construction from external shock and wear and tear at ground level. Whether the wood frame, daub clad superstructure was always conical, is, of course, another question. Such a construction with vertical walling (ca 1.5 m — 2.0 m high) covered by an "umbrella" roof is common enough.

with light superstructure

In any event, Dikaios avoids any reference to upstanding masonry walls, either of rubble or mud, as at Khirokitia. The evidence for these should have been recognisable in section and presumably he was correct. However, the peripheral masonry of one house is exceptional and of interest in this connection. House IX B (v Erimi p. 20 pl. IV2) is enclosed by masonry not of the usual 50 cms — 70 cms but of about twice this depth; and it shows, moreover, some evidence of being built in two skins. This detailing resembles the construction at Khirokitia, and thus, it is at least a possibility that some form of beehive masonry superstructure may have been intended.

possible tholos

That the principle support for the roofing was a strong central timber upright is clear from the remains in plan. Many houses of Period II show a circular construction of rubble or the central which served to anchor firmly the base of this principal structural member.[124]

floors

Floors were generally of beaten earth but in the uppermost houses, lime plaster (*havara*) floors occur. In general the central part of the floor was at a lower level than the periphery, and was flushed up to the floor of the masonry wall in a curve (v RDAC 1936 p. 24). The doors were sometimes provided with a stone slab threshold (Houses VIA — VIIIA). In one instance, the sill is lime plastered, sunk into which is a limestone door socket (House XIIIA).[125]

graves

The excavation at Erimi did not reveal very much evidence on the funerary customs at the settlement. Only three pit graves with contracted burials were encountered, one of them beneath the floor of a house (cf SCE IV IA p. 117).

Lemba

area survey The Erimi Excavations were very restricted in area and recently efforts have been made to supplement the information from this epoch by wider ranging clearances of buildings. This work proceeded from a very conscious appreciation of the endemic peculiarity of settlement history in Cyprus, *viz* that habitation in one place is short term, shifting and intermittent. Accordingly extensive and intensive surveys were made to try to precise areas which might complement one another in giving both a larger field of excavation and a more extended time range. The region selected was in the West of the Island, (an area previously reckoned unsettled in earlier Neolithic times), comprising the lowlands north of Paphos.[126] In fact, the results as appearing in the preliminary reports are probably more notable for bringing into issue far reaching questions both of chronology and typology than for elucidating details of building development. Even less do they elucidate questions of settlement planning — in fact, if anything, they tend to minimise this question.

PAPHOS LOWLANDS

excavations Excavations were made at three separate sites strung out over 2 kms north and south[127] along the coast road ca 10 kms north of Ktima. All these sites revealed buildings which were clearly related to those at Erimi and indeed in some respects to Khirokitia. Some of the pottery suggested connections with the neolithic pottery at Sotira while the ^{14}C dates range well over 1000 years, extending down until the middle of the third millenium.

Nowhere have deep deposits been excavated, and all these indications come from more or less single layer surface clearances of no great area. Therefore, the overall picture emerges that in this period and region (at least), the pattern of settlement was of very small communities indeed which, after several generations, "replaced" their habitations nearby or moved elsewhere; small size and mobility being virtually two faces of the one coin.[128]

settlement pattern

LEMBA LAKKOUS

The most coherent group of buildings have been revealed at Lemba *Lakkous* — the latest in date of the three sites (^{14}C dates range from ca 3000 BC-2500 BC).[129] This site lies 1 km from the sea on a low ridge confined between the Agriokalami River and a congruent stream to the South. It is thus built on a gentle slope beside a (once perennial?) stream without other defined bounds. (If the stream were not perennial, then it is a possibility that the site was only a seasonal habitation).

excavations As evidenced by various modern disturbances (ploughing, terracing, pipe-laying, etc) building remains extended over 3 hectares.[130] Two excavation areas separated by some 100 m were opened up and eventually between them comprehended about 1000 m^2 (i.e. each ca 25 m × 20 m).[131] From restricted superposition of remains and from typology, some temporal succession can be recognised. There are a group of substantial houses in Area II with, in parts, underlying remains of a slighter construction. While in Area I can be observed buildings similar to the latter, themselves overlying original pits which may or may not have been habitations.[132]

settlement planning Unfortunately, in neither area can anything like a comprehensible settlement plan be discerned, partly because buildings on one level are by no means necessarily contemporary. Indeed, within the excavated area, the contemporary buildings are so few that the excavator speaks in terms of a "homestead". And where, in Area II, the most coherent planning is revealed, he speculates on a small circular compound (i.e. a *kraal*).[133] And this on a site inhabited for half a millenium where remains extend over 3 hectares! Certainly nothing like a boundary wall has been revealed.

In effect, these speculations indicated how difficult it is to define early settlement planning in Cyprus. If small groups of contemporary buildings can be recognised in association, there is still no telling that other such groups are not spread out widely spaced in the neighbourhood, for this type of settlement plan is exactly that adopted by recently sedentarised bedouin at the present day.

round house plan At all events, there is no mistaking the individual building type at Lemba which is exactly the round house of Erimi. On whatever structural system and from whatever materials the inhabitants of Lemba built their houses, they envisaged no other design than that of the unitary round building.[134] The smaller lightly built units are ca 5 m — 6 m in external diameter. The major solidly built houses are ca 8 m in external diameter, the internal living space being of the order of 30 m^2 — 40 m^2. They are quite

regularly circumscribed and the trace of the peripheral wall obviously was set out with the aid of a cord fixed to a central nail to keep the radius constant. In only one instance was anything approaching a composite plan revealed; this was Building 2 and 3 of Area II where the smaller unit 3 (presumably a kitchen) was built against 2.

elevation

Nowhere were buildings preserved to any great height so their structure in elevation must be deduced from the remains as they stand. However, in all surviving instances, there is a conspicuous emplacement for a heavy central post. On the other hand, there are very scanty remains of fallen walling material (of either stone or mud) but instead considerable deposits of ash. Therefore, it is reasonable to assume that the buildings were covered by a conical roofing of wattle and daub or the like resting on more or less low peripheral walls. In this fashion, it is the nature of the periphery wall which characterises the scale of the building.

walls

The emplacement for the building was sometimes cut down slightly on the upslope side and, for the smaller houses, the wall is, in fact, virtually a revetment of the earth surround. However, the more substantial buildings have solid (dry stone) rubble walls 50 cms — 60 cms wide and fairly well coursed, standing anythign up to 6 courses high. The interior faces of these walls was often thickly coated with mud plaster. The entrances are substantial openings ca 75 cm — 100 cm broad with a sill or threshold out of stone or plastered over giving a step into the interior of the building. One example survives of a stone socket or pivot for a door post (B3). And it is conjectured that the more pretentious structures may have been provided with a small porch set off by posts.

floors

Floors are of beaten earth or, in places, of a hard white lime preparation ca 15 cms thick. The latter arrangement represents something of a notable development since it is a very early employment of a most ubiquitous building material. This is havara (Turkish from Arabic *huwwar*) — the soft friable bed of surface limestone, which is, in fact, a secondary redeposit of calcium dissolved in rising ground water. This substance can be dug and cut into almost like earth and thus is of two fold significance for building. The formation can be hollowed out to form stable caves and emplacements while the spoil is easily worked into a durable plaster.[135]

Havara is also used for a rather striking feature in these houses. On occasions, the centre of the floor is occupied by a circular platform, a metre or more in diameter and standing 15 cms high. This houses the emplacement (ca 40 cms in diameter) for the central post to support the roof. Perhaps this was conceived as a functional device to prevent ground rot attacking the post. In addition to this central post hole, other post holes are found halfway to the periphery of the floor and these suggest a ring of uprights supporting the raking principals at mid span or perhaps indicating a double pitched (mansard type) conical roof.

Very many minor stake holes exist in the floors forming various patterns (or even no pattern). In some measure, these may represent lodgements for reed screens to compartimentalise the buildings. In one instance (Area II, B1) a sort of groove in the floor wedged with pebbles may have lodged the frame of a screen to serve the same purpose.

internal partitions

graves

Prominant at Lemba is the presence of burials both beneath the floors and also clustered around the exterior of the houses, also in particular under the walls. These burials were always of children and so it is to be presumed that adults were interred in specific cemeteries at some distance from the habitations (as at Sotira). The graves were in the form of rectangular pits dug in the havara ca 60 cms × 30 cms, and cut down 40 cms. The pits were capped with one to four kafkalla (limestone crust) slabs. If necessary, a cylindrical cutting was made down through debris until havara was reached. Sometimes these graves were provided with "access" holes or channels to permit the pouring of libations or the like.[136]

long tradition

The brief survey of round house building in Cyprus may provoke some wonder by its essentially unchanging duration over what latest scientific dating would have to be many millenia. On the other hand, it is possible to abate the wonder somewhat by pointing out that essentially the same type of building survived as ruling forms until

quite recently over wide areas of e.g. Africa — and it is at least possible that the tradition there went back uninterruptedly to the eariest times, i.e. the tradition was part of the same ancient continuum as the prehistoric building in Cyprus.[137]

possible development

Before attempting a resumée of the various aspects of this building style, it is best to provide some assessment of its possible overall development during the long period concerned. All excavations have been careful to observe developments, and these observations have been made the basis for far reaching speculations on the Island's history. Inevitably, observations of changes in building have been equated with arrival of new settlers in the island from the neighbouring mainland region. General reflections on this question were published recently under the title of "Colonisation and Continuity".[138] In fact, apart from the virtue of alliteration, it is not necessary to force the issue to colonisation — what is at issue is innovation under external influence and continuity. Put this way it can be seen that, before inventing foreign contacts or immigrations, it is advisable to assess what constitutes innovations in the prehistoric buildings of Cyprus. And examined according to general building criteria, it would seem that much of what hitherto has been considered "innovations" by archaeologists are matters of incidental and local import.

external influence

In dealing with this matter, it is necessary to draw attention to the basic distinction of design and construction.

construction

So far as can be judged, men undoubtedly built light structures of sticks and leaves, of wattle and daub, semi-permanent tents, yurts, etc, before they built solid structures of stone and brick. They certainly used natural building materials (wood) before they used artificial materials (brick). This is the course of the overall life history of building. However, that any individual occasion when lighter materials are used necessarily conotes an "innovation" in the building history of the region is an unwarrantable assumption. Here the individual local development naturally rehearses the development of the species.

design

Equally, so far as can be judged, men built round houses before they built rectangular ones. However it is not a matter of course that in any individual local circumstances the design development is likely to recapitulate the succession so that the earliest buildings on the site are likely to be round in form and the later rectangular. In short, more heavily constructed buildings are a natural evolution from lighter ones anywhere and at any time, but the substitution of one design for another represents an "innovation".

development in construction

In fact the observed differences in the building remains of this ancient period of Cyprus are for the most part ones of construction. And almost inevitably it has been observed that at any site there is a progression from earlier lightly constructed buildings to later more solid construction. In the archaeological literature, these

changes have very often been linked with suggestions of new arrivals bringing other building tradition. However these variations are more naturally to be thought of as local and incidental expedients within the one round house tradition.

variation in form

On the contrary, the evidence of variation in building form (design) of this ancient period in Cyprus would seem as a matter of logic to admit of two very basic deductions.

SOTIRA

foreign influence

Firstly the larger angular structures at Sotira come from outside the round house tradition of Khirokitia and therefore they suggest influence from the mainland where at that fifth millenium date rectangular building was current.

ERIMI

Secondly since both at Sotira and even more markedly at later sites (Erimi, etc) the round house tradition survives and revives to become again the ruling form, then it can never have died out in the Island, because at this later date there is no other place known on the mainland where round building was the dominant style. All of which is to say that there can be no absolute lacuna in the habitation of Cyprus after the aceramic of Khirokitia. Certainly the most striking characteristic of Cypriote prehistory affording such a salient contrast with adjacent regions is the continuance of the round house form after it had lost its position on the mainland.

round house survival

SETTLEMENT PLANNING

social background

As with much "new archaeology" the question of settlement planning in Cyprus has become involved with social science theory. In this particular instance there is some valid motivation arising from the fact that it simply is very difficult to equate the long duration of settlement at various sites as given by ^{14}C dating with the material remains on the ground. This, of course, is another application of the endemic puzzle of the absence of tell formation in Cyprus.[139]

absence of tells

In any event, if the stratigraphic record were interpreted on normal canons, one would have a succession of a few building levels of not very substantial structures and thus a duration of say 200 — 300 years at the most, whereas the time range of the ^{14}C dates at the site is much longer. One theoretical way of reducing this discrepancy is to advert to the unusual nature of settlement in Cyprus, *viz* that it shifted around from place to place in the one vicinity rather than remaining fixed for ages to the same ground. In this fashion, it is supposed that the wide ranging ^{14}C dates for the one area might arise through what one might say circulating settlement.[140] All this is a possibility, however no direct stratigraphic evidence for it has ever been demonstrated.

circulating settlement

general background

Additionally these suppositions have been linked with social anthropological theory. It has been asserted that the typical round house settlement is not so much a

normal village as a compound, a kraal with its own particular social system which governs both its planning and its duration. The planning consisting of relatively spread out units restricted in duration by the fact that it is much easier to renew the settlement in a nearby place than to continue rebuilding in the same locality.[141]

These matters must be considered in detail in the analytical chapter. Here it may be remarked that in prehistoric Cyprus, the phenomena of restricted material remains and apparently discontinuous settlement do not appear necessarily linked with round house building, but continue in later epochs of rectangular building. Equally no positive evidence in plan has been recorded for the *kraal* type of settlement. In fact, at places like Khirokitia and Sotira where a reasonable area has been cleared, building units are closely packed together.[142]

Cypriote evidence

42 43

Also it may be noted that on purely architectural grounds, it is very difficult to draw the line between what might be called settlement planning and what is house planning. Does the systematic grouping of several "round house" units connote a "dwelling" or a "quarter"? It is clearly impossible to give a general answer and each particular case must be judged on its merits. Moreover, even then, the answer is arbitrary unless it is founded on social theory (which it would be much neater to avoid).

One question which certainly relates to settlement planning is the matter of defining the overall limits of the settlement. In the aceramic neolithic, emphasis is now laid on the ritual act of demarcating the sacred precinct, a holy space marking off the limits of the higher life, different from the natural wild state beyond. Within is the space where there is peace on earth as opposed to outside space where obtains the law of the struggle of all against all, and life is nasty, brutish and short. Parallel with this, it is considered that the round house village is in general not strongly fortified. At Khirokitia (perhaps the Cypriote Jericho), it is now agreed that the substantial masonry traversing the ridge is a boundary wall but constructed in the interest of defining the settlement area, not fortifying it. This distinction is, of course, to some degree, one of semantics. The purpose of defining the settled area was to protect it not physically from human aggression but to protect it magically from the hostile forces of nature, the spirits of the wild. Here it may be remembered that all "round planning" is ritually based — comprising circles or mandalas. And both of these terms retain in modern times their primaeval magical significance — cf. the magic circle, the charmed circle.

settlement bounds

fortification

ritual significance

So far as the internal organisation of the settlement site is concerned, it can be repeated that it is difficult to speak meaningfully about this without going into questions of social organisation. Avoiding as far as possible these controversial issues, the following aspects may be noted. At Khirokitia, groupings of building units

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are recognised to demarcate a "private" space — an "area".[143] This may either be more or less completely enclosed circular space, or an open fronted semi-circle. Exactly what such a conglomeration of units constitutes is alas! largely reserved for paleo-sociological discussion. In any event, whatever this unit may be, there is as yet little observed differentiation between the various units so constituted. *grouped units* 154 155

As opposed to this egalitarian organisation, it may be possible to recognise a quite different system of settlement planning at the contemporary pre-pottery site of Tenta, situated only a few kilometres away from Khirokitia.[144] Here the excavation may have afforded a quite illustrative sample of the complete settlement covering about 2 hectares at the summit of a small natural hillock. The settlement seems to be formed about the 14-29 building which has a complex plan. The smaller round houses appear to be spread about this central complex in successive circles. This arrangement would cut across egalitarian ideas and emphasize a possible central controlling authority in the community. TENTA 272 *dominant unit*

Further socio-economic considerations obtrude when we come to the pottery using neolithic at Sotira, where it is possible to base considerations on varying forms of the building units. Here it has been suggested that the closely built up pattern of settlement evolved from the implntation as discrete units of the larger quadrilateral buildings as dominants with the inevitable accretion about each of subsidiary dependencies, more or less round sleeping huts and also other irregular space fillers providing for services.[145] In the contemporary (below ground level) settlement at Ayios Epiktitos *Vrysi*, because of the very restricted space available, these dominant units were crammed up against one another and various facilities/services were wedged into odd nooks between the houses. SOTIRA 156 157 *dominant & subsidiary units* VRYSI

All this is quite far away from the idea of sparse and shifting occupation which have been adduced to account for both the extended dating of remains and the absence of tell formation. Here it may be possible that later sites like Lemba are more in point.[146] LEMBA

THE ROUND HOUSE UNIT

The individual round building is not well adapted to complex planning, thus its structure tends to remain a unitary one (which however is by no means equivalent to saying that the unit of habitation remains an individual unitary structure). With a resurgent interest in the "primitive", this round house and its virtues become quite familiar through its modern survivors. And there is no doubt that a well disposed group of "rondavels" presents a sympathetic and impressive spectacle. The essential *unitary form* *pleasing composition*

uniformity of the elements heightens the effect of variation in detailing and of the grouping of the ensemble.

In principle, this was the character of round house building during its long period of ascendency in prehistoric Cyprus. The unit building was nearly circular in plan varying in size from somewhere ca 4 m in diameter to ca 8 m in diameter. The *tholos* elevation proper to this plan is a sort of beehive form (a *tholos*) — i.e. similar to the traditional round houses of North Syria.

complex plans Although the round house is so predominantly of a unitary design, there are some instances of diversification of design. These may be considered as falling under room formation by way of addition and by way of division.

First of all, room complexes by addition. The round house clearly is not a unit which may be added to readily or combined with other units, but this can be done *cellular* and in several ways. The most thorough going method is to form a cellular complex, BEIDHA the so-called honeycomb style, which is found, e.g. at Beidha near Petra in Southern Transjordan.[147] No example of this style are known as yet in Cyprus.

ambulatory The most natural way of augmenting the design of the round house is to surround it in whole or part with a peripheral girdle, a ring — either an ambulatory or a succession of chambers. This device has always remained associated with round buildings, and in latter day religious architecture of round form, it has a definite function in isolating the sacred space from the profane.

KHIROKITIA Although not common, the peripheral ring occurs among prehistoric Cypriote round houses. Clear examples of it can be seen at Khirokitia and at Tenta. The well known building Dikaios Tholos 1A is partly built around with a "lean to" roofed at a 153
TENTA lower level.[148] While at Tenta, the centrally situated complex 14-29 which appears to 272 be the commanding structure of the settlement, likewise has a peripheral girdle, whether originally compete or not is unclear.[149]

tandem There are also known instances where two round house buildings are abutted against each other and made to interconnect. Whether this is an original design is not very obvious. If the archaeological facts have been interpreted correctly and the two buildings were in contemporary use, then it is likely that the subsidiary one is a later contrived addition and the wall of the original building was broken through to secure the inter connection. Examples of this can be found in the later stages of the epoch — ERIMI e.g. at Erimi,[150] and it is possible that influence from outside the tradition may be at work here.

So far as room division is concerned, although the round house always connotes more or less open internal planning, some form of partitioning or screening was known. Perhaps the major consideration here is the question of vertical development *lofts* — i.e. upper floor staging or lofts. This is clearly demonstrated in the large tholoi at

Khirokitia[151] and it may exist in some form or other in many buildings. Here the KHIROKITIA
153 supports of such staging or platforms themselves constitute partitions and enclosures at ground level. There is also some evidence in certain houses by way of post holes and grooves in the floor for light screens.[152] Again the question of the functional significance of this spatial articulation is one which goes over into ancient social anthropology.

In this general connection, it is to be pointed out that it should not be assumed that inconvenient and squalid overcrowding was a necessary concomitant of ancient round house building. This is not so in modern settlements of this type. The unit is simple to build and can be multiplied, so generally the individual enjoys consid- *privacy*
erable privacy.

Finally some account must be taken of "foreign connections". Within the long age *foreign influence*
during which the round house building prevailed in Cyprus, at one juncture (the pottery neolithic of Sotira), can be seen some examples of another tradition. Here SOTIRA
only preliminary remarks can be made. The obvious question is whether these buildings are exact examples of the original (mainland?) type or whether, as they appear in Sotira, they are already modified by local associations. The question will be discussed in the analytical chapters, but certain facts may be observed. These buildings are unitary, more or less centralised structures. They evidence no more tendency towards composite planning than do the true round houses. And although they are not square buildings, they are not far from it. It would not be very difficult to think of them e.g. as *Breitbau* in form like the standard rectangular buildings of their epoch in Palestine and Syria with their rounded out houses about them. However, contrary to the immediate assumption, it might well appear that they are not round buildings on their way towards rectangularity, but are rectangular buildings on their way to becoming round ones.

So much for the planning of the Cypriote round house. For its design in elevation, *elevation*
there is less certainty. The round form is naturally expressed in the corbel vaulted masonry structure. A light, wood-framed wattle and daub structure gives both a concial "wigwam" or an umbrella type roof over upstanding walls. Flat mud roofs of the type later to become universal in rectangular building have been supposed in some cases (both in Cyprus, e.g. Khirokitia, and elsewhere, e.g. Mureybat on the Euphrates). However, unless the individual evidence is conclusive, on all accounts, a form of apical roofing is more appropriate to the centralised plan.

A notable feature of the round house in later ages has often been tasteful orna- *ornament*
mentation, sometimes in painted plaster. This type of decoration is generally wom- *plaster*
en's work. For such house decoration in prehistoric Cyprus, the best evidence is provided at aceramic Tenta. Here instances were noted of plaster floors painted over TENTA

painting

all red. While, in addition, depending on the calibration applied to ^{14}C dates, there must be one of the earliest examples known of figural painting on a built structure (House 17). It depicts two human figures, the better preserved with upraised arms. It is carried out in red ochre (cf the continued mining of natural earth colours in the vicinity).[153] The date of this painting must not be far removed from the extensive mural paintings at the famous aceramic site of Catal Hüyük in Southern Anatolia.[154]

construction

If suppositions are in any way correct, the construction of round houses in prehistoric Cyprus was varied. The most interesting construction is undoubtedly the earliest type recorded, that of the heavy rubble and earth structures at Khirokitia (and Tenta), the so called tholoi.[155]

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tholoi

Although the matter is now controverted, it would seem that at least some of these were beehive vaulted structures of the nature of those still surviving in the neighbouring regions of North Syria where the masonry of the walls is continued upwards to give a dome of paraboloid section.[156] Judging from the published drawings of some of the remains at Khirkoitia where individual tholoi are preserved to a considerable height, it is even a question as to whether the classical construction is essentially

corbelling

corbelled or, in fact, proceeds on a true domical system with the units set radially and thus put into compression vertically. In this eventuality, whether the construction necessitated some sort of form work is also to be considered. Certainly at Khirokitia the very marked device of separate buttressing girdles of masonry around the lower parts of the tholoi suggest that the builders were aware of a tendency for the construction to fail in tension and so crack or split in this region.

339

339

double walling

Whatever may have been the prevalence of this beehive construction during the aceramic period, it appears to have been replaced in the later pottery neolithic by other systems.

There is continuing evidence of lighter pole framed structures, the smaller example probably more or less conical inform. The presence and position of post holes in the larger examples perhaps betokens a more ample contour, i.e. double pitched or bulbous. This ribbed style of construction has survived the ages as what is now termed "pavilion" vaulting.

light wooden construction

In fact, during the later ceramic period, all excavations emphasise the light framed construction as preponderating, even when rubble masonry footings survive, e.g. at Erimi and Lemba — i.e. the latter are not taken to be carried up in solid masonry. It is only with the anomolous "quadrilateral" buildings at Sotira and Vrysi, where the precise relation to the true round house is uncertain, that upstanding walls of solid masonry are mentioned, together with flat mud roofs of the type traditional in later rectangular construction.[157]

ERIMI LEMBA SOTIRA VRYSI

There is another matter which is to be mentioned under construction. At various

subterranean dwellings

junctures and in different connections, the question of substantially or completely subterranean dwellings obtrudes. The connections range from individual excavated cave dwellings to groups of dwellings (or a settlement) built in excavated hollows. This question is not necessarily a unitary one, nor even one of uni-linear development. However, on occasions, a development has been seen from wholly excavated dwellings to partly sunken dwellings in hollows with built roofing rising above ground level to be succeeded eventually by wholly surface level dwellings. Such a succession is the natural result of accumulation in the hollows of habitation and destruction debris. Something like this succession has been asserted at Vrysi[158] and Kalavassos.[159] How much these interpretations owe to the model of the well known subterranean dwellings at Beer Sheba is worth consideration. Beer Sheba was probably later than most of the supposed instances in Cyprus.

In any event, there is undoubtedly an ancestral affinity of the round house for a sunken emplacement. A light shelter over a scooped out floor is a primitive refuge which still obtains.

functional planning

As a rule, the planning of the round house unit is not conditioned by its function in society. Indeed, difference in the purpose of a round house unit is revealed by difference in size[160] rather than difference in form — e.g. at the extreme instance, ovens and then silos may be identified not by their different detailing in plan but by being smaller than dwelling houses. Otherwise distinction in the function of various round house units can only be determined by close analysis of the archaeological finds and their distribution — and this leads into statistical investigations remote from a history of building.[161] Nonetheless, it is necessary to set out what may be inferred of the main social categories of building during the long round house age — even only if for its negative interest.

circuit walls

FORTIFICATIONS. At a number of sites quite substantial settlement barriers
42 have been revealed. These take the form of heavy walls (ca 2 m broad) and/or ditches hewn out of the earth or soft rock (of Khirokitia,[162] Tenta,[163], Vrysi[164]). Whether the purpose of these features was protection and obstacle against human aggression is anything but certain. In the latter connection, it may be noted that hitherto no examples of gates nor towers have been identified with these barriers.

gates towers

house temple

TEMPLES. In the earliest aceramic neolithic it may be taken that each house was indeed a temple — in fact, that it was a temple perhaps more than a dwelling, for it was designed to shelter the rites of birth, of death (and of rebirth?). However, in the latter part of the epoch (e.g. in the third millenium) it is likely that special buildings (or enclosures) existed for religious puposes. The evidence for this can only be

sanctuaries

mentioned here since it derives from the succeeding age. It introduces a factor of
models great importance in the study of building in Cyprus — viz the architectural model. 86–88
They are very well known and interesting terra cotta models not much later in date than the last round house. The models clearly represent scenes of religious life, including schematic representations of sactuary enclosures, etc. And it is of the utmost significance that the most complete version shows the enclosure to be "round" in form whereas the contemporary secular building was entirely of rectan- 87
gular design.[165] This raises the strongest presumption that such religious enclosures were an ancient tradition, maintained by the operation of "religious conservatism" — i.e. they were descended from the ancient round house building period. NB. Such a model has now been discovered at Chalcolithic Kissonerga *Mosphilia*, i.e. in the context of the Round House building it images (RDAC 1988$_1$ pp. 43; Levant XXI 86
1989 pp. 195—97).

PUBLIC BUILDINGS. It is an obvious matter to try and signal out a larger or more substantial building as being a seat of power in the community. And the composite planning of the "ambulatory" type building has drawn attention in this connection. Certainly the ambulatory type building with its central position at Tenta might well be that of a headman's dwelling. However, this matter is not as obvious as is often assumed. In fact, in modern communities of this nature, any noticeably larger or different looking building is more likely to be the community guest house (*istirahat*) or the like, rather than a chief's house.[166]

STORE HOUSES. The efficient storage and preservation of food stuffs was a fundamental basis of sedentary life. That what was produced out of the earth could be conserved beneath the earth to be brought forth again at will was a discovery — a step in human development. And storage pits may well have been the nucleus of settlements. In prehistoric Cyprus, both within and about the round houses, many storage pits have been recognised. The extensive formation of havara provide great scope for the development of the storage pit in Cyprus, and it remained a notable feature of the village economy until within living memory.[167] Additionally, although as yet little considered, it is a matter of interest to enquire to what degree smaller round house units were used as store-houses, silos, etc. In modern round house settlements such grain stores are conspicuous items[168] and the round building remained the standard form for this purpose in later antiquity.[169]

TOMBS. Much of the information concerning the round house age in Cyprus comes from graves. Furthermore, there are the rather ideal circumstances that, for the most

part, the tombs have been investigated in connection with the settlement. These are circumstances unusual in Cyprus, and in general, they are unknown until a much later date (latter part of the second millenium). Some overall development can be observed in funerary practices; here only those matters expressed in the location and form of the graves are considered. In the first instance, all burials were more or less contracted inhumations in shallow, more or less roundish, pit graves.

pit graves

At Tenta and Khirokitia, the two major aceramic sites, the details are similar. Dikaios devoted much attention to the burials at Khirokitia.[170] These were pit graves dug mainly beneath the floors of the round houses (the tholoi). They were, for the most part, of size and shape as would most economically admit of the deposition of a single contracted burial — i.e. ca 0.80 m × 0.50 m by 0.20 m — 0.40 m in depth. In the later stages at Khirokitia pits with double inhumations were found, generally for an adult and child, but sometimes for two adults.

TENTA
KHIROKITIA

house burials

It is perhaps the positioning of these graves which is most interesting and idiosyncratic. The two basic installations of a prehistoric house are the hearth and the "bench". Where as elsewhere, e.g. in Chatal Hüyük, house burials are largely arranged in and under benches, at Khirokitia, in so far as there is a particular association, it is with the hearth. Burials are dug against or near hearths, or equally hearths are arranged over burials. This practice responds to a whole congery of primaeval ideas concerning the essential element of fire (in life).

by hearth

What is most interesting is a certain difference in distribution between burials in the larger and in the smaller tholoi. Burials are more frequent in the larger tholoi — and particularly adult burials. Since rites attested suggest some form of ancestor worship, it would appear that the larger tholoi were the main religious centres of the group. Again these considerations can be referred to ideas concerning the essential origins of the round house — cf. Lord Raglan's The Temple and the House.

ancestor worship

The new pottery using culture, manifested after the passage of many, many centuries at Sotira and Vrysi, is accompanied by a marked change in burial practices. Although the type of pit grave inhumations remains more or less the same, instead of these graves being organised within (or about) dwelling places, they are grouped together a short distance away from the habitation. Such an arrangement is revealed at Sotira[171] and may be inferred at Vrysi because of the absence of all intra-mural burials in the areas excavated.[172]

SOTIRA
VRYSI

no house burial

The evidence obtained by Dikaios at Sotira does not allow entirely unequivocal characterisation of the new custom. The settlement at Sotira did not appear to be bounded by any barrier wall and according to the evidence of the excavated areas, it appeared to be disposed in several slightly separated agglomerations. It was in the vicinity of what appeared to be an outlying settlement area (Area A) that the graves

SOTIRA

43B

were discovered. Accordingly, Dikaios thought in terms of a separate "cemetery" for each quarter. If this were so, it would be considered as a formal stage in the transition from house burial to cemetery. This is a most basic cultural change and serves to emphasize the innovation which the pottery neolithic constituted in Cyprus. It also serves to associate this culture with a funerary tradition which remained a ruling one on the mainland but was not to be entirely so in Cyprus.

EREMI LEMBA

The later sites of Erimi, Lemba, etc show interesting combinations of the aboriginal round house burial and the establishment of a separate community of the dead as at Sotira. The restricted area excavated in the Erimi settlement brought to light only three pit graves. For what it is worth, this constitutes a reversion to the general picture at Khirokitia. However, at Lemba *Lakkous*, many graves were revealed.[173]

house burial for children cemetery for adults

These were essentially pit graves below and about the round houses as in the ancient tradition. However, they were virtually all for children, hence it is to be presumed that adults were buried in a "cemetery" at some distance from the settlement. Also some development could be seen in the form of the grave. If possible, the cutting was made in the soft rock and the burial pit tended to be quadrilateral with rounded angles. When the surface of the rock was covered by a considerable overburden of

in rock

soil, then a sort of cylindrial shaft was sunk down to rock level and the burial cutting made from here. Also the grave itself was generally capped by several slabs of kafkalla at rock surface level. 176

SOUSKIOU *cemetery*

The tendencies surmised at Lemba are more strikingly manifested at the more or less contemporary burial place of Souskiou *Vathyrkakos*, about 2 km N.E. of Koukila (Old Paphos). This is a cemetery (or three cemeteries) on a rocky plateau above the Diarrizos river system and the associated settlement is some distance (ca half a kilometre) away. Many graves had been plundered here because of the valuable grave goods contained (figurines). However, the Department of Antiquities were able to clear some intact graves.[174] The form of the graves at Souskiou resembles those graves at Lemba which have been cut down more deeply to bed rock. However, 176

shaft graves

at Souskiou, the (ca 2 m) deep shaft cut down through the rock and the graves are, in fact, to be described as "shaft graves" not "pit graves". The shafts were closed with cap stones and they spread at the base to admit multiple burials.[175]

The developments are very noticeable ones. Such graves, although not rock cut chamber tombs according to the general understanding of the latter category, seem to be evolving in that direction. And it is possible on occasions for them to take a form (accidentally?) which is virtually indistinguishable from a recognised type of chamber tomb (that entered high up in the wall). This whole subject could be very significant indeed for the broadest questions of cultural history.

résumé

In brief resumé, the burials associated with round house building show first of all a

ruling tradition of house burial; and then in the later stages, a movement away from this towards burial in separate cemeteries.[176] This is essentially a matter connected with religion. In general, later ages came to regard house burials as morbid in the extreme. Opinion tolerated it only in as much as the burial imports some type of veneration (worship). Typical examples of this can be seen e.g. in the burial of the prophet in his house at Medina; and for modern Europe, quintessentially, in the burial of Wagner in Villa Wahnfried at Beyreuth. In short, if the house is not in some way a temple, it is no place for a tomb.

It is impossible to conclude this survey without some general recognition of a very notable episode.

the round house

For long ages during the fifth, fourth and third millenia, the round house settlements of prehistoric Cyprus must have been a source of interested comment among visitors to the island from the neighbouring mainland. Such people would have reacted in the same way as did later visitors to Africa (south of the Sahara), i.e. with mingled surprise and approval, indeed at times, admiration. Doubtless some lucky archaeological sounding one day will chance on the record of such a mainland trader's rectangular house close by a Cypriote round house site. The picture will be much the same as e.g. a Dutch trading castle in West Africa or a Shirazi mosque on the Swahili coast.

regional survival

It is all noteworthy — the long unchallenged survival of the tradition, its eventual total supercession. What were the mechanics of society which enforced both. As the archaeological record becomes fuller, one thing seems certain. For a considerable period (several centuries) in the third millenium the round house living style must have survived in parts of the island (the West) after it had been succeeded elsewhere by rectangular bulding.[177]

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NOTES

1. For round houses in general v F. Oelman, Haus und Hof im Altertum, Berlin 1927.
2. cf. ABSP, pp. 23 ff., 282 ff.
3. cf. ABSP, pp. 27–28.
4. There has been an increasing realisation of this fundamental phenomenon and of its archaeological importance. Cf. E.J. Peltenberg, The Sotira Culture, Levant X 1978, p. 55; T. Watkins, Some Problems of the Neolithic and Chalcolithic Period in Cyprus, RDAC 1973, pp. 34 ff. at p. 57.
5. v. Arch in C p. 3. He directed his searches by first enquiring for the most copious springs in the neighbourhood.
6. v. SCE IV 1A, p. 192; cf. Khirokitia, pp. 326 ff.
7. v. Khirokitia, pp. 326 ff., NB. p. 327.
8. v. SCE IV 1A, p. 194.
9. cf. Khirokitia, pp. 326 ff.
10. v. SCE IV 1A, pp. 193 ff.
11. v. I.A. Todd, Radio Carbon Dates from Kalavassos-Tenta, RDAC 1982, pp. 8–11; Arch in C, pp. 87–88. cf. Cyprus p. 17.
12. v. A. Le Brun, Fouilles récentes à Khirokitia 1977–1981, Paris 1981.
13. E.g. at Cape St. Andreas, v. A. Le Brun, Une Site Néolithique pré-céramique en Chypre: Cap Andreas-Kastros, Paris 1981; Arch in C, pp. 73–80. And at Tenta, v. Arch in C, pp. 81–91.
14. cf. T. Watkins, Some Problems of the Neolithic and Chalcolithic Periods in Cyprus,RDAC 1973, pp. 34–61.
15. cf. T. Watkins, RDAC 1973, pp. 46 ff.; E.J. Peltenberg, Recent Developments in the Later Prehistory of Cyprus, Göteberg 1982.
16. For recent listings v. WA 9, 1977, p. 29; RDAC 1973, p. 38.
17. cf. Khirokitia, p. 313.
18. v. A. Le Brun, Arch in C, pp. 73–80; Un Site Néolitique pré-céramique en Chypre: Cap Andreas-Kastros, Paris 1981.
19. v. N. Stanley Price, Colonisation and Continuity in the Early Prehistory of Cyprus, WA 9, 1977, pp. 27–41 at p. 32.
20. v. E. Gjerstad, SCE I, p. 1 ff.
21. v. N. Stanley Price, WA 9, 1977, p. 32.
22. v. Khirokitia, pp. 4–6.
23. The ore from Kalavassos mines (a few kilometres west of Khirokitia) is freighted nearby; and one or two derelict hulks still witness to harborage of small craft in the traditional economy of the first half of this century.
24. v. N. Stanley Price, WA 9, 1977, pp. 32–33.
25. v. Khirokitia, pp. 6–9, pls. I & II; now cf. Khirokitia FR.

26. v. Cyprus, pp. 17–18.
27. v. ABSP, p. 25.
28. v. Khirokitia, pp. 186 ff.; Cyprus, p. 19.
29. v. Arch in C, p. 75; Cyprus p. 19, fig. 4.
30. v. Arch in C, p. 78.
31. v. Cyprus, p. 2.
32. v. ABSP, p. 25, fig. 80.
33. v. ABSP, p. 164; W. Muller, Die Heilige Stadt, Stuttgart 1961.
34. v. Le Brun, Arch in C, p. 75.
35. v. Le Brun, Espace, p. 42.
36. v. Khirokitia, e.g. figs. 18, 36.
37. cf. Le Brun, RDAC 1982, p. 5.
38. v. Le Brun, Espace, p. 43.
39. v. Le Brun, Espace, pp. 37 ff.
40. v. H. Wickman ed., Architektur der Vergänglichkeit, Basel 1983, p. 126; also for convenient illustrations of black African buildings of this nature at pp. 144–59.
41. cf. Khirokitia, figs. 1, 2; Le Brun, Espace, figs. 3–6.
42. v. Le Brun, Khirokitia, A Guide, Cyprus Museum, p. 6.
43. v. Khirokitia, e.g. figs. 36, 102, 103.
44. v. Khirokitia, p. 199.
45. v. Khirokitia, pp. 18, 196 ff., 222 ff.; cf. Cyprus p. 18.
46. v. Khirokitia, p. 201.
47. cf. Khirokitia, pp. 196 ff.; Le Brun, RDAC 1982, pp. 1 ff.
48. 10 m^2 is a modern living space module per person.
49. v. Khirokitia, pp. 202 ff.
50. v. Khirokitia, pp. 19 ff., 223 & fig. 2A.
51. v. Khirokitia, pp. 226 ff.
52. v. Khirokitia, p. 227.
53. v. Khirokitia, pp. 228 f.
54. v. Khirokitia, pp. 204.
55. For a doctrinaire background to this aspect: v. Lord Raglan, The Temple and the House.
56. v. Khirokitia, p. 18, figs. 2A, 102, 103; cf. Cyprus, p. 18.
57. v. Khirokitia, pp. 196 ff.
58. v. Khirokitia, fig. 102.
59. v. Khirokitia, fig. 102 1c.
60. v. Khirokitia, figs. 102, 103.
61. v. Khirokitia, figs. 102 IB, 103 IIA.
62. v. Khirokitia, figs. 36, 102, 103.
63. v. Khirokitia, fig. 102 IC, 103 IIB.
64. v. Khirokitia, fig. 103 IIB.
65. v. Khirokitia, pp. 231, 312–13.
66. v. Le Brun, RDAC 1982, pp. 1 ff.
67. v. Khirokitia, pp. 196, 313.
68. v. ABSP, p. 24; cf. K. Kenyon, Archaeology in the Holy Land, London 1965, p. 43.
69. v. P. Dikaios, SCE IV 1A, p. 194.
70. cf. Khirokitia, e.g. fig. 36 which shows no unconformity, the Period III tholos directly and conformably overlying the Period II tholos.
71. This seems to be the sense commonly received but it seems to conflict with specific opinions expressed concerning the durability of such building remains. Dikaios, SCE IV 1A, p. 194 is patently ambiguous.

72. v. In general P. Dikaios, Sotira, Philadephia 1961.
73. v. S C E IV 1A, p. 73, N. Stanley Price, The Structure of Settlement at Sotira in Cyprus, Levant XI 1979, p. 46.
74. v. Levant XI 1979, pp. 47–50.
75. v. Levant XI, pp. 50 ff., 80 ff.
76. v. Sotira, pl. 8.
77. v. S C E IV 1A, pp. 76–77, fig. 41.
78. v. Levant XI 1979, pp. 77–80.
79. v. S C E IV 1A, p. 43.
80. v. S C E IV 1A, p. 79.
81. v. S C E IV 1A, p. 79.
82. v. S C E IV 1A, pp. 76–77.
83. v. S C E IV 1A, p. 79.
84. v. S C E IV 1A, p. 81.
85. v. S C E IV 1A, p. 80.
86. v. S C E IV 1A, pp. 82–84.
87. v. In general E.J. Peltenberg, Settlement Aspects of the Later Prehistory in Cyprus, in Arch in C, pp. 92–114; Vrysi, A Subterranean Settlement in Cyprus, Warminster 1982; The Sotira Culture, Levant X 1978, pp. 55–74; Ayios Epiktitos Vrysi, Preliminary Results, PPS 41 1975, pp. 17–45. For ^{14}C dates (as calibrated, ca 4500 — 4000 BC) v. Levant X 1978, p. 65, fig. 5.
88. v. Vrysi, p. 1; Arch in C, p. 92, pl. III, 1.
89. v. Vrysi, pp. 93, 104–5, Arch in C, p. 92.
90. v. Arch in C, pp. 95–96.
91. v. Vrysi, p. 107; Arch in C, p. 94.
92. v. Levant X 1978, p. 56 & fig. 2.
93. v. Vrysi, pp. 96, 103, 105; Arch in C, p. 94, "A minimum 5 m high wall, cutting off the occupied tip of the headland from the coastal plain beyond, was erected in the South Sector as a revetment to the northerly or interior side of a V-shaped ditch with flat bottom, 4.50 m deep by 7.00 m wide".
94. v. Arch in C, pp. 93–95.
95. v. Levant X 1979, p. 65; Arch in C, p. 95.
96. v. Vrysi, p. 96; Arch in C, p. 94.
97. v. Arch in C, p. 93.
98. v. Vrysi, p. 96.
99. v. Vrysi, p. 97, fig. 9.
100. v. Vrysi,, p. 96; Levant X 1978, pp. 56–57; Arch in C, pl. III, 2.
101. v. Levant X 1978, p. 61.
102. v. In general the latest résumés, I. Todd, The Vasilikos Valley R D A C 1985, pp. 8 ff.; The Vasilikos Valley in Acts of 2nd National Congress of Cypriote Studies, Nicosia 1985, Vol. 1 pp. 8 ff.; Excavations in the Vasilikos Valley, in Arch in C, pp. 86 ff.
103. v. R D A C 1985, pp. 9–10.
104. v. R D A C 1985, p. 8; Praktika 2, p. 9, fig. 5; Arch in C, p. 86.
105. v. R D A C 1985, p. 9, fig. 5; Praktika 2, p. 9, figs. 6, 7; Arch in C, p. 86, fig. 4, pl. II.
106. v. R D A C 1985, p. 9.
107. v. R D A C 1985, p. 10; Praktika 2, p. 9.
108. v. R D A C 1985, p. 9; Praktika 2, p. 11; Arch in C, p. 88.
109. v. S C E IV 1A, p. 106, fig. 52 (type 1); p. 133, fig. 63 (type 1).
110. v. S C E IV 1A, p. 106, fig. 52 (type 3); p. 133, fig. 63 (type 2).
111. v. S C E IV 1A, pp. 182, 184–5.
112. All information relating to Erimia can be found in P. Dikaios, The Excavations at Erimi 1933–35, RDAC 1936, pp. 1–81; with summary in SCE IV 1A, pp. 113–129.

113. v. R D A C 1936, p. 69.
114. v. S C E IV 1A, pp. 193 ff. For the latest ^{14}C interpretations v. E.J.Peltenberg, in J. Reade ed. Chalcolithic Cyprus, BM Occasional Paper, London 1981, pp. 21–40.
115. v. R D A C 1936, p. 23; S C E 1V 1A, p. 128.
116. v. R D A C 1936, p. 2.
117. v. R D A C 1936, Erimi, pls II–IV.
118. v. S C E IV 1A, p. 115.
119. v. S C E IV 1A, p. 113, R D A C 1936, pp. 24–25.
120. v. R D A C 1936, p. 23.
121. v. R D A C 1936, p. 23.
122. v. R D A C 1936, p. 23.
123. v. R D A C 1936, p. 25.
124. v. R D A C 1936, p. 24.
125. v. R D A C 1936, p. 24.
126. For the region in general v. E.J. Peltenberg, The Prehistory of West Cyprus. Ktima Lowlands Investigation 1976–78, R D A C 1979, pp. 69–99; Lemba Archaeological Project Cyprus 1976–77, Levant XI 1979, pp. 9 ff.
127. For location plans v. R D A C 1979, p. 82, fig. 1 & pl. V.
128. v. R D A C 1979, p. 74; R D A C 1983, pp. 13–14.
129. v. Levant XI 1979, p. 15; Settlement Aspects of the Later Prehistory of Cyprus, in Arch in C, pp. 96–99.
130. v. in general R D A C 1979, pp. 84 ff; Levant XI 1979, pp. 15 ff; Levant XII 1980, pp. 9 ff; Levant XIV 1982, pp. 37 ff.
131. v. R D A C 1983, p. 9; for area plans v. Levant XIV 1982, pp. 36, 38.
132. v. R D A C 1979, pp. 85–87.
133. v. R D A C 1979, p. 88.
134. For basic description of buildings v. Levant XI 1979, pp. 15–16; R D A C 1983, pp. 12–13.
135. cf. Levant XI 1979, pp. 16–19; XII 1980, p. 13; XIV 1982, p. 39.
136. For a general summary account of burials v. Levant XI 1979, pp. 22–23.
137. v. K.V. Flannery, The Origins of the Village, in Man Settlement and Urbanism, ed. P. Ucko *et alii*, London 1972, pp. 23 ff. at p. 30.
138. v. N.P. Stanley Price, Colonisation and Continuity in the Early Prehistory of Cyprus, WA 9, 1977, pp. 27–41.
139. cf. T. Watkins, Some Problems of the Neolithic and Chalcolithic Period in Cyprus, RDAC 1973, pp. 34–61. E.J. Peltenberg, RDAC 1983, pp. 13–14.
140. cf. RDAC 1973, p. 57.
141. v. K.V. Flannery, The Origins of the Village, pp. 29 ff.
142. v. A. Le Brun, Khirokitia, A Guide, Nicosia, pp. 3–5; Espace Collectif et Espace Domestique à Khirokitia, pp. 33–45.
143. v. A. Le Brun, Espace Collectif et Espace Domestique à Khirokitia, pp. 33–45.
144. v. I. Todd, Arch in C, p. 83.
145. v. N.P. Stanley Price, The Structure of Settlement in Sotira in Cyprus, Levant XI 1979, pp. 47–81.
146. cf. E. Peltenberg, Arch in C, pp. 96 ff; RDAC 1979, p. 87.
147. v. D. Kirkbride PEQ 1967, fig. 1; cf. ABSP, fig. 206.
148. v. P. Dikaios, Khirokitia, p. 20, fig. 2A; S C E IV 1_A, p. 9; cf. ABSP II, fig. 203.
149. v. I. Todd, Arch in C, p. 83, fig. 3.
150. v. S C E IV 1_A, p. 115, fig. 47.
151. v. S C E IV 1_A, pp. 10, 11.
152. v. E.J. Peltenberg, Levant XI 1979, pp. 19–21.
153. v. R D A C 1985, pp. 6–7; Arch in C, p. 85.

154. v. . Mellaart, Catal Hükyük, London 1967; A B S P, p. 151.
155. v. S C E IV 1_A, pp. 5 ff.
156. v. (for convenience) A B S P, figs. 23, 204.
157. v. E.J. Peltenberg, Levant X 1978, p. 56.
158. v. Arch in C, pp. 93–95.
159. v. S C E IV 1_A, pp. 106, 139.
160. cf. Dikaios categorisation of the Khirokitia Tholoi, v. S C E IV 1_A, pp. 5 ff.; and A. Le Brun, Remarques sur la taille des constructions de Khirokitia, R D A C 1982, pp. 1–7.
161. cf. Levant X 1978, p. 63.
162. v. Arch in C. p. 75.
163. v. Arch in C, p. 85.
164. v. Arch in C, p. 94.
165. v. S C E IV 1_A, pp. 118 ff., pls. VII–X.
166. cf. K.V. Flannery, The Origins of the Village, p. 31.
167. v. Antiquity 30 1956, p. 223.
168. v. A B S P, fig. 23_{13}.
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170. v. Summary in S C E IV 1_A, pp. 12–14.
171. v. S C E IV 1_A, pp. 82–84.
172. v. E.J. Peltenburg, Levant X 1978, p. 61.
173. v. E.J. Peltenberg, Levant XI 1979, pp. 22–23; contrast report in RDAC 1979, pp. 88–90; cf. Cyprus, p. 34.
174. v. V. Karageorghis, B C H 97, p. 637; Cyprus, pp. 36–37.
175. v. E.J. Peltenberg, R D A C 1979, p. 88; 1983, p. 15.
176. v. E.J. Peltenberg, Levant XVII 1985, p. 58.
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2. EARLY CYPRIOTE RECTANGULAR BUILDING

Rectangular style of building not a completely autonomous development, but mainland influence apparently restricted to building form and did not condition settlement planning. Examples of settlements at Sotira-Kaminoudhia, Episcopi-Phaneromeni, Alambra, Kalopsidha. Rural sanctuaries — the Vounous model, Ayios Jacovos, Fortresses at Krini, Nicolidhes. Cemeteries at Vounous, Paleoskoutella.

Résumé of development. Knowlege of settlement form deficient. No indication of fortified settlements: nor functional differentiation of building in settlement, e.g. temples, public buildings. Existence of fortified localities and religious centres outside settlements. Extensive development of cemeteries with chamber tombs cut in rock. Technical resources of building construction.

rectangular building

The replacement of round house building by rectangular designed building was a development which could not have been wholly evolutionary. It must represent some form of influence from the mainland. Although excavation has not been extensive in sites of this period, the process is reasonably illustrated by archeological discovery. This shows it to have taken place at a time (during the third millenium) when settlement on the mainland had assumed an urban form and it would be natural to assume that the changed manner of building in Cyprus would likewise be cast in urban settlements. However, surprisingly, this does not seem to be the case.

No indication of urban development has been revealed either by extensive surface exploration or by the small scale excavations. The age is thus that of pre-urban rectangular building and it is terminated by urban development on the island. The age apparently endures throughout the EC and MC periods and urbanisation does not seem to be established in Cyprus as the ruling form of life until the latter part of the second millenium. Its origins will be considered in the next section. This characterisation by way of a negative is, of course, insecure, since it can always be upset by later discovery. Particularly is it uncertain here since the revealed data are patently insufficient. *non urban*

Recent excavations by the American School of Oriental Research in Cyprus have (in small compass) brought clearly into focus a surprising variety of factors concerned with the earliest development of rectangular building in Cyprus.

43A The settlement at Kaminoudhia[1] lies on the terraces immediately to the North of Sotira village (as the pottery Neolithic site two thousand year older lies immediately to the South-West). Thus again is demonstrated the circulatory habit of settlement in Cyprus and another individual voice speaks on the question of tell privation. From surface evidence the 21 settlement occupies an area of a hectare or more. However, as at present, only some 750 m^2 have been excavated in three separate areas[2] which in themselves reveal nothing of the overall form of the settlement and its bounds, natural or artificial. KAMINOUDHIA *location* *limits*

22 On the other hand, much can be seen of the individual building units. Two factors of the greatest interest are immediately apparent. The style of the building is (sub) rectangular, yet almost like a text book example, it shows much residual influence of round building. Secondly, the remains are not a collection of detached unitary buildings (*Einzelbau*) but form extended room complexes. And further to this latter characteristic, the planning manifests a distinct agglutinative aspect.[3] All of which evidences salient development away from the old round house style, but nonetheless, appears to demonstrate anterior connections with the older form. It is, as one might repeat, text book material. *sub rectangular building* *agglutinative complexes*

Little information is available regarding the building construction. Walls were entirely 224 built of field stone, rubble and the original height of one wall could be estimated at nearly 4 m. Although some rooms were fairly large, very little evidence survived for posts to bear the roofing. Lime plaster was employed both on the faces of walls and for floors.[4] Notable installations in the rooms were benches along the walls. *construction*

Obviously the close dating of these remains is of the greatest interest. Unfortunately no results from physical tests are yet available;[5] thus the chonology derives solely from the typology of the small finds (pottery). *chronology*

The settlement was founded virtually on bed-rock and evidence in section does not show a long succession of habitation — the report speaks of two phases only. Few objects remain *in situ*, but a considerable amount of pottery, stone and metal objects were recovered. The overall resemblance is said to be to the Philia Culture.[6] This is the name applied to assemblages of pottery originating (mainly in tombs) at sites in the Ovgos Valley in the central-west Mesaoria and its historical significance was a cause of much contention in Cypriote archaeology a generation ago.[7] One interpretation saw this culture as earlier than *Philia Culture*

the EC period and thus marking the transition between Chalcolithic and EC.[8] The other rival theory saw in it a regional culture which was contemporary with much of the EC and extended on into MC.[9] In fact now both points of view have been affirmed and combined, so that Philia material is reckoned Chalcolithic-EB in its origin and considered to extend so that it is contemporary with much pottery hitherto classified as EC (and MC), whatever this classification may mean chronologically.[10] Certainly the nature of the building remains at Kaminoudhia are such as might be predicated of the Philia culture on *a priori* grounds.

tombs
2 cemeteries

In addition to the settlement area at Kaminoudhia, 20 odd rock cut tombs were cleared.[11] Two cemeteries were located near the settlement and presumed to have served it. Again the finds are said to parallel those of Philia culture cemeteries and also include EC items.[12] Some

rock cut shaft tombs
incipient chamber tombs

published sketch sections of these rock-cut tombs are of great interest.[13] They show both the campaniform shaft entered vertically (the shaft grave type of Souskiou) and recognisable versions of the chamber tombs in its incipient stages, i.e. when entrance is gained high up on 176 one side with undercutting on the other to form a rudimentary chamber. Thus again as with room plans of the settlement, the forms of the rock cut tombs are just as might be expected in a period of initial development away from the old neolithic tradition into a new age.

PHANEROMENI

It is interesting to compare the findings at Sotira-*Kaminoudhia* which must stand very early in the period of rectangular building with those at a near by site which is from a later stage in the period. This site, Phaneromeni, ca 5 km away to the S.W., was excavated in the late 70s by an American expedition following on trial trenches made in 1955 by S. Weinberg.[14] It lies on alluvial land at the mouth of the Kouris river very close to the West bank of the stream. It is thus on the S.E. outskirts of the modern village of Episcopi exactly as 44 Bamboula, the later Bronze Age site, is on the N.E. margin of the village. Four or five kilometres to the West is the major classical city of Kourion.[15] Thus it is with settlement sequence in favoured localities in the Island. As a result of trial trenches and an area

chronology

clearance, various remains were identified of the later MC and beginning LC periods, i.e. of the first half of the second millenium. These comprehended both settlement sites and cemeteries.

Traces of the MC period settlement were brought to light by trenches immediately behind the modern Turkish Cemetery (area G).[16] The building remains were very restricted but could be recognised as closely similar to those half a kilometre to the South on lower land (Area A); which could be dated by the pottery to LC IA (i.e. ca 1600 BC). Thus what was determined at the latter site can be taken as roughly valid for the two areas.

A considerable area (ca 1000 m^2) was cleared, but from surface indications it is apparent

limits undetermined

that the LC settlement extends further to the South and West, and no idea of its overall form 23 and delimitation is available.[17] The published plan[18] shows what can only be thought of as a

high density rectangular housing agglutinative complexes

patch of high density housing comprised of rectangular constructions, the overall aspect of which is distinctly agglutinative. The published comment is scanty but just. "The excavated area contains two architectural complexes with a road passing between them. Each complex consists of multiple (10–15) irregularly shaped rooms and courtyards".[19] Until more records of this type are available, it is premature to hazard opinions as to the functional planning (and its sociological background). In general, however, the agglutinative formation seems notable.

traditional construction

Almost nothing is reported of the construction,[20] but the stone for stone plan gives the essential information. The walls were set directly on the levelled earth and consisted of a rubble socle with a mud brick superstructure. The rubble socle is well constructed in the

traditional building manner — faces of sizeable uniform (river) boulders with core of small stones, pebbles and packed mud. No ashlar or squared stone is in evidence. In the only instance where the wall was preserved to any height this construction was carried up four courses. Numbers of cup-stone bases for posts indicate the typical flat mud roof. In several rooms benches were installed along the walls.

Phaneromeni Site A was occupied for a relatively short time — several generations only, say ca 1600–1500.[21] It is a loss that neither here nor at Kaminoudhia is anything revealed concerning the overall settlement planning. However, it is of interest and importance that the style of building at Phaneromeni is essentially similar to that at Kaminoudhia (half a millenium or so earlier). It is more regular in form but no striking new features are apparent, either of design or construction.

Some further information on the period is to hand from another region of the Island — the lower country to the East of the Troodos where the shortest way to the south coast skirts the mountains. The place is named Alambra.[22] This is not, as might be thought, a corruption of the Arabic Al Hamra (as in other instances) but is the survival of a place name attested in classical antiquity as a dependency of Idalion (Dhali), 5 kms away to the N.E. At the present day Alambra village lies very close to the Nicosia-Limassol road, about half way towards the south coast region (ca. 20 kms from Nicosia). The road however does not pass through or by the village and the area is rural and remote. ALAMBRA

In 1924 Gjerstad made excavations in the neighbourhood to try to obtain some information concerning early Cypriote settlements which hitherto was entirely lacking. As if by magic, he produced like a rabbit from a hat, the plan of an early house,[23] apparently complete in itself but with nothing left over from its surroundings. South-west of the limits of the present day village the ground rises 50 m or more towards a ridge (Mouttes). Gjerstad's site was on the far shoulder of the ridge, something like 1 km beyond the village. All traces of his small excavation have long disappeared. 159A *Gjerstad's house*

Gjerstad explained his discoveries as follows. Two rooms of similar form (ca 5.50 m × 3 m +) are abutted one on the other, end to flank, to give an L shaped plan. There is no intercommunication and the rooms have separate entrances, thus some form of enclosure is postulated and Gjerstad's plan shows, in effect, the room complex set in the angle to two small walls which are taken to be those of the enclosure. Gjerstad's text gives details of this enclosure.[24] It is 35.60 m long (N-S) by ca 10 m broad. Only in limited part is it enclosed by masonry walls, the remaining boundary being in his opinion formed by thornbush etc. However, since this information is based on trial pits and trenches, it is to be treated with some reserve. *L plan with enclosure*

The best reason for regarding the house complex as complete in itself is that the plan so drawn is a typical one for Early Bronze Age houses elsewhere (Palestine) and this fact was not known at the time of Gjerstad's work. The door of the side room (the store room) is in the long side to give a *Breitraum* disposition, but the door to the end room (the living room) is removed around the corner in the short side to give a type of long room. However the ensemble constitutes just that primal development by addition to the simple one room, broad room cabins which can be observed at a number of Palestinian sites.[25] Thus if Gjerstad's interpretation is correct, we have a simple detached building which contrasts markedly with remains at Kaminoudhia and Phaneromeni.

The construction[26] is eactly that which became standardised in the "traditional building" *detached building*

of the region and as such survived into modern times (mud brick walls on a rubble socle, line plastered on the inner face; with flat mud roofs supported on substantial wooden beams).

chronology

Two floor levels were noted quite closely superimposed both yielding somewhat similar pottery types which are classified LC III-MCI — i.e. Gjerstad's house was inhabited for a limited time (perhaps fifty years or more) somewhere early in the second millenium.[27]

This house might have continued to occupy a rather solitary place on an empty scene but that recently an American expedition sought out the site and has conducted renewed excavations nearby. Their findings have been totally different.[28]

American Excavations

MOUTTES

settlement limits

On the nearer slopes of the Mouttes ridge about half a kilometre from the village (where Gjerstad had a trial pit) the expedition opened up an area (A) of ca 1000 m^2.[29] Once again this gives a very revealing picture of the building types but says absolutely nothing of the overall limits and conformation of the settlement. However this question was addressed through continuous surface survey work.

According to preliminary references, the slopes all round the Mouttes-Spilion ridge were investigated.[30] Various soundings were made (C, D, E) and tombs were cleared in several localities (F, Z), while military entrenchments extending 300 m or so along the crest of the ridge above Area A reveal ancient habitation remains throughout their course. From the evidence so afforded fairly specific conclusions were drawn:

limited duration

(a) The pottery yield throughout is restricted in type and uniform; thus "occupation lasted a fairly sort time. Area A was probably inhabited not much longer than a century — if that long".[31] The excavators were decidedly chary of using the standard chronology based on pottery typology, but roughly the associations are with MCI — MC II and thus the date should be in the early part of the second millenium, ca 1800 BC.[32]

wide extension

(b) Occupation was spread out over an extended area. Direct evidence of standard buildings in the region of Area A extends over some 6 hectares, while interpretations of surface evidence range from an inhabited area of about 12 hectares to more than twice that expanse.[33]

If the latter figure is realistic and that expanse uniformly built up, then Alambra would be a very major early rectangular building site. Presumably it was a central one on the island and the ancestor of near-by Idalion, the capital of one of the later Cypriote kingdoms. However, all the endemic questions already encountered remain at issue in interpreting this evidence. The excavators themselves note that even with respect to the evidence revealed by excavation, the interpretation is not straight forward. "The architectural evidence suggests

overall pattern undetermined

that the buildings might be very densely situated in places, as in Area A, where they share party walls, but that elsewhere, as in the military trenches, they might be spaced out as far apart as 50 m or more".[34]

All this is more or less necessarily true of the buildings over a great area (e.g. 28 hectares) — and Gjerstad's *Hürdenhaus* on the rear slopes of the ridge may well have been a pastoral farm house in the fields as Gjerstad suggested. However, over and above this variable density, remains still the possible incidence of circulating occupation. Even in a short period two or three generations of housing can spread non-contemporaneously across a wide area.

Area A

The buildings of Area A are interesting. They are very well preserved (in considerable part to the full height of the stone substructure = ca 1.5 m) and they were occupied for a limited time only. Their planning is thus quite clear to see. It is rather idiosyncratic, and gives a different impression from e.g. Phaneromeni. This fact may be partly due to the exigencies of

159B

the terrain. The slopes of the ridge are of folded sediments fractured in the process and subsequently eroded. And to get contiguous building sites a series of platforms were cut and hammered out of the broken sediments by following bedding planes and removing erratics, etc.[35] The houses were thus "terrace" houses and designed as such.[36] In essence, the scheme is of adjacent "long house" units with party walls (the typical terrace or row house plan). As excavated, the houses give the impression of Iwan design but, in fact, it seems that the front walls have been lost in the continued erosion of the gully. There seems to have been one major transverse wall dividing the house into a front and rear compartment. The front compartment was, for the most part, left undivided, but the rear section was further compartmentalised by a curious contrivance of small units in the angles. This system gives something like 3 to 5 "rooms" to a house. However, what in fact are rooms and what open yards or courts is a question.

terrace housing

How far this rather uncharacteristically regularised plan is typical of building in general at Alambra cannot be known. It is quite possible that it is a characteristic of the terraced emplacement only. In any event, it is an entirely different manner of building from Gjerstad's house. It is again high density housing and not unlike various terrace housing developments elsewhere.[37]

The construction which is entirely within the traditional building manner is intelligent and
225 good.[38] Walls were founded throughout on bed rock and details varied in as much as they were party walls, partition walls, or terrace and revetment walls. Some of the latter were preserved up to 3 m, which speaks for the soundness of construction. In general, rubble sub-structure and mud brick superstructure must have been approximately of equal height, ca 1.5 m. The rubble work is from compact field stones (chert and limestone) and there is no evidence of squared masonry.

construction

A number of graves contemporary with the settlement were excavated in a cluster on the rear slopes of the ridge (Area 2). Surprisingly there were not chamber tombs but rather pit and shaft graves.[39]

pit & shaft graves

Quite another house form which should be more or less contemporary with Alambra Area A is known from Kalopsidha in the Eastern Mesaoria on the road to Famagusta, situated about 16 kms inland from the Bay of Famagusta and about the same distance from Dhekelia to the South on Larnaca Bay. This is definitely a town house type and if its origin were unknown, the plan would be ascribed unhesitatingly to an urban environment.

KALOPSIDHA

town house type

The house was excavated by Gjerstad in 1924[40] and he carried his excavations down in certain parts to establish a lengthy succession of occupation levels — seven in all, of which only the upper two belong to the house. The lower levels were contained within a structure, almost certainly an earlier house (or houses) but nothing whatever is known of the plan. In 1959 P. Astrom reinvestigated the site in connection with his publication of SCE IV 1B.[41] His interests however were stratigraphic. He substantiated Gjerstad's statement that the house was bordered by a street to the South and another house lay adjacent to the East, but did not proceed further to investigate the overall settlement plan. It is frequently stated that Kalopsidha was the metropolitan centre for Eastern Cyprus preceeding the Late Bronze Age towns of Enkomi and Kition.[42] This may be likely on topographical considerations but no precise observations are available substantiating the size and development of Kalopsidha site.

possible metropolis

A good and coherent plan was recorded of the house.[43] This is a regular building approximately square overall, ca 14 m × 12 m, and thus covering about 170 m² — a middling, substantial house of a dozen rooms. Its general disposition is in the Hofhaus tradition; not, that is to say, closely following the neatly designed Mesopotamian houses of the age (e.g. in Ur),[44] but in the broad sense that rooms are set around the sides of a four square block and general circulation is by way of open space(s) in the middle of the block. 160

Hofhaus plan

In addition, the plan shows rather striking details which, if they are correct, have interesting connotations. Entrance is from the North (so an open space or lane must be on this side) and gives immediately into an outer and inner court. Flanking this entrance court and opening immediately on to it is a megaron type unit complete to the detailing of the parastadhes. The domesticated version of this unit was a feature of Greek houses prominent in Hellenistic times when it is prolifically illlustrated at Priene.[45] Another sophisticated feature is that on the Western side of the house (which thus again must have been bordered by a passage way) two rooms (4 & 7) open directly to the exterior and have no access from the interior. They are thus *tabernae*,[46] which no doubt prompted Gjerstad to characterise the building as a merchant's house. Between these two *tabernae* lies room 6, oriented in the opposite sense and communicating with the central court. It was completely open fronted to the court and thus depending on the detailing gives the impression of an Iwan.

megaron unit

tabernae

Iwan

The construction was in the traditional style but the socles of walls were not bonded at the angles. However should it be suggested on this account that the house was of piece-meal construction, it certainly assumed a rational coherent plan: the overall plan of this house would not be out of place in any Syrian[47] or Mespotamian town of the age.

construction

Whatever may have been the planning of settlements in this age, and whatever types of building they may have contrived, there is quite circumstantial evidence that one type of building stood outside the settlement. This was the religious sanctuary. In the earliest of round house settlements, the round house unit sheltered the relics of the family dead and therewith served a religious purpose as much as providing for the material requirements of habitation. However, throughout later ages a feature of Cypriote life was a simple enclosure, removed to a greater or less degree from the houses of the living, where rites were practised and, above all, offerings made to divine powers. As has been mentioned previously, the type of this sanctuary is portrayed in a (Red Polished) pottery model found in a tomb at the E.C. cemetery of Vounous in the mountains near Kyrenia. The date of this model should fall at the end of the third millenium.

rural Sanctuaries

VOUNOUS

Based on this model, there has been much interesting speculation concerning religious practices and beliefs in prehistoric Cyprus.[48] What is represented structurally is as follows. The sanctuary is truly round and large enough to house comfortably a dozen or so celebrants, worshippers — together with some sacrificial beasts penned inside the door; one would think of say 10–15 m in diamter. The enclosure wall is sufficiently high to necessitate an outsider scaling it to steal a view of the proceedings, and the entrance gate, complete with lintel, is carried up higher to constitute a (symbolic) architectural feature. Opposite to the gate, idols of the deities are set against the wall, and on either side of them are seating benches with a *kathedra* for the presiding authority. 87

model sanctuary

No contemporary sanctuaries of this nature have been discovered and the earliest such sanctuary excavated is possibly to be placed in a later age (LC II, ca 1400–1300). This is the sanctuary at Ayios Jakovos in the region of Trikomo.[50] Here stood a roughly circular area ca

AYIOS JAKOVOS

89 10 m in diameter, partitioned across the middle by a rubble barrier or screen. The confines were doubtless fenced in with wood or the like. Repositories with many offerings spread about stood in the forward part and two circular altars in the rear compartment. Beneath the floor of the LC sanctuary *bothroi* of a previous MC sanctuary were found, although it was not possible to investigate in any way the plan of this structure. However, since the LC sanctuary conforms to the type of the EC model, it is only reasonable to suppose that its MC predecessor was also of this general disposition. Thus taken together the model and its aftermath infer round sanctuaries beyond the limits of settlement throughout the early rectangular building period, the round form being a typical instance of religious conservation.

circular enclosure

The remains of fortified localities outside settlement areas have been discovered both by way of excavation and through surface exploration. This information however has its limitations. Very little detail is available for the building noted in surveys; while some uncertainty is now expressed regarding the date given the fortresses excavated. These were considered by the Swedish excavators of fifty years ago to be from the end of MC and the beginning of LC days. It is now thought that they are probably LC in date. In any event, they would fall at the end of the age under consideration if not extending into the succeeding age.

fortifications non-urban

The locality Krini lies at the southern scarp of the Kyrenia Range overlooking the
69 Mesaoria plain some kilometres west of the Kryrenia Pass. Above the modern village there is a spur with a sheer drop at its southern extremity. It was secured at its northern approaches by heavy and sophisticated masonry defences. An outer line of massive limestone boulders is
70 strengthened by solid bastions regularly spaced, the complex still standing to a height of 2 m. There is additionally an inner parallel line of smaller masonry. This description corresponds to a refuge stronghold for a regional population (and livestock) without defences for their dwellings. Other similar strongholds have been noted in surface surveys, but as yet it is difficult to refer to details of construction or chronology — the date given is MC (cf. CAH II_1 IVc p. 168).

KRINI
location
walling
refuge
chronology

Fortifications of a different nature were excavated by Gjerstad in 1924 at Nicolidhes, a locality a few kilometres or so to the north of Idalion (Dhali) and thus not far East of the central meridian of the island. Close by is the modern village of Ayios Sozomenos in the Yialias/Alikos valley, and on the bluffs of high land to the North are the remains of several fortified compounds (CAH II_1 IVc p. 168). One of these (Nicolidhes/*Glyka Vrysi*) has a very strong purposeful plan (v. SPC p. 39, fig. 5). Indeed, in the abstract, the plan suggests a late Roman limes blockhouse or the like. However, according to Gjerstad, pottery finds indicate that the fortress was built at the very end of MC III or the beginning of LC I, was violently destroyed soon after and immediately rebuilt.

NIKOLIDHES
location
chronology MC III–LC I

Details evidence some sophistication of military engineering. Essentially the plan is of a rectangular block house just under 20 m × 10 m with ramparts probably varying from 5 m–10 m high. There was an outer bailey to the South and a cluster of servile offices (stores, workrooms, etc) to the East commanded by the strong high walls of the keep. This blockhouse keep was built with massive perimeter walls (the eastern rampart being almost 3 m in breadth, with two masonry faces and earth filling). Cross walls divided the fortress into successive compartments of which the south was an entrance court and the other two were probably carried up each successively higher so that the fighting platform of the northern unit

block house

construction commanded the ensemble. The construction was in the traditional style with rubble substructure and mud brick superstructure. The north and south end walls project somewhat presumably for enfilading the east and west faces.

If Gjerstad's plan and description is correct, all this is not makeshift, untutored design.

VOUNOUS *rock cut cemetery* The extensive and extensively excavated cemetery at Vounous typifies so many aspects not only of funerary architecture in Cyprus but also of basic developments in Cypriote archaeology that it is worthwhile giving some brief account of the work there and its attendant circumstances. The then newly appointed museum curator, P. Dikaios, was confronted with a typical situation. "Early in 1931, the district Police at Kyrenia sent to the Cypriote museum a number of Red Polished vases collected on the site of Vounous ... Soon afterwards I was *looting* able to proceed to the site and saw that extensive looting was being carried out ... I pointed out to the authorities of the Museum the necessity of saving the site which appeared to be promising. Although the funds available were very small ... I was authorised to start excavation ... on a small scale ... Through donations collected by Mr. R. Gunnis, then ADC *salvage* to the Governor etc ... our operations lasted for about three weeks. During this period tombs 1–20 were cleared. News was, however, coming regularly that the villagers had resumed looting and in June of the same year I was able to spend about a fortnight excavating another 11 tombs. The following years, thanks to a generous donation ... I was able to spend, in May, a third season and clear another group of 17 tombs, thus reaching the total figure of 48 tombs.

"The greater number of the tombs excavated was situated on the western part of the Necropolis where the rock is of good quality and looting naturally easy. Our excavations, however, saved a good part of the necropolis. In 1933 the National Museum of France obtained permission to excavate at Vounous in collaboration with the Cyprus Museum and Mr. Claude F. Schaeffer and myself directed the operations. In 1937, Mr. J. Stewart at the *extended excavations* head of an expedition sponsored by the British School at Athens conducted an excavation in the Eastern part of the necropolis never touched by us. Looting in this part had been on a very small scale, as practically all the tombs had fallen in owing to the soft quality of the rock. Thus a good part of the site was saved". (Archaeologia LXXXVIII 1940, pp. 1–3).

location The Vounous cemetery is situated on slopes at the foot of the Kyrenia Range above the villages of Kazaphani and Ayios Epiktitos about 4 miles east of Kyrenia. "It extends over the north sloopes of a hillock which is bounded on the East and West by ravines and on the South *topography* is separated from the northern slopes of the Kyrenia Range by a deep valley ... The necropolis is therefore independent and bounded naturally on the three sides, the South, the East and West ... The slopes of the hillock extend northwards and to the sea uninterruptedly". (Archaeologia 1940, p. 4) The area so described is something over half a kilometre from East to West and the crown of the hillock is ca 300 m above sea level. "The *settlement undiscovered* settlement of the necropolis has not been satisfactorily located". (Archaeologia 1940, p. 4)

The orientation of the tomb cuttings is almost invariably N-S: viz the entrance to the South and the chamber to the North which is simply a reflection of the slope of the rock, so as to minimise the depth of the cutting necessary for the entrance to give on to a chamber of *chamber tombs of standard form* reasonable head height. The Vounous chamber tombs are of fully developed form showing the following canonical elements: an entrance cutting (*dromos*) giving admittance via a door, porthole, mouth (*stomion*) to a cave chamber (*spilion*). At Vounous, the *dromoi* were of two types: (1) short pits (1.50 m–2.00 m long) with parallel sides and rounded backs, (2) longer (ca 3 m+) passages tapering towards the rear. The depth of the entrance cutting was ca

1.50 m–2.00 m. If necessary, one or more rough steps at the rear and/or a general slope towards the chamber entrance makes it reasonably easy to get up and down into the *dromos*. The entrance to the chamber (the *stomion*) may be either rounded or rectangular and is closed by a large slab or boulder (*stomion* stone) chocked and wedged with small lumps of rock. There is generally an abrupt step (of ca up to 1.00 m) down from the *stomion* to the floor of the chamber. In general, the chambers are more or less rounded in plan (the larger 4–5 m × 4.5 m, the smaller ca 3 m × 3 m). However, there are irregularities of outline which in some cases constitute niches or loculi for the deposition of bodies. These can be marked off by a curb or exist as raised benches. The chamber may be more or less vaulted in section or the roof fairly flat. It is clear that these tomb chambers were used for successive burials, and where and as necessary the remains of earlier burials and the accompanying grave goods were moved aside and gathered up out of the way to make room for the latest deposition.

manner of use

So far this general description conforms to the type of simple chamber tomb, however, there was a special characteristic development in the Vounous tomb. "Besides the main chamber, there are side chambers of smaller size opening on either side of the dromoi" (Archaeologia 1940, p. 97). These may be either small and used for offerings, or larger and used for burials of either children or adults. These subsidiary burials (or rather the cutting of the small chambers) may be either contemporary or subsequent to the main chamber.

small subsidiary chambers

179.1

Vounous was one of the first cemeteries to be excavated both extensively and rigorously; thus some of the general issues of basic importance relating to sepulture in Cyprus here come up for close consideration.

The first question which occurs to anyone who has to excavate such rock cut tombs is that if it is such a difficult matter now for an excavator to locate such a tomb, how was its position recognisable in antiquity for subsequent burials? There are two obvious answers to this obvious question:

re-entry to tomb

(a) the *dromos* was left open after each burial

(b) the *dromos* was filled in and a marker of some sort set up over it.

Close observation at Vounous (cf. Archaeologia 1940, p. 102) indicated that the second measure was taken. The *dromos* was filled in after each use of the chamber and indeed countless section drawings made since then of excavated tombs show the lines of subsequent digging out and refilling clearly revealed in the dirt section. Thus when the dromos was refilled, a tell-tale small mound of fill was left standing above it and/or a stone was set up by it. Such standing stones are not recorded in published excavations, but it is not to be thought that they would survive *in situ*. (In fact I have noticed, ca 1951, such stones *in situ* by graves in a remote and desolate part of the western Mesaoria near the village of Ayia Marina). NB. Now the careful work in the Salamis Necropolis has shown that at this period (mid 1st millenium BC) the dromos was refilled after each burial and a marker "tomb stone" was erected above the chamber. Also illustrations are provided of these "tomb stones" still standing by Archaic tombs near the village of Ayios Georghios ton Rigaton (v. Salamis Nec II pp. 224–25).

"tomb stones"

AYIA MARINA

SALAMIS

AYIOS GEORGHIOS

Connected with this question is that of the systematic operation of the cemetery. If a limited area is to be used to the maximum advantage for interments, this requires organisation. Many social questions are involved here. However, in brief, it can be stated that a pattern was clearly evident in the settlement of the dead at Vounous. Graves were not cut into the rock at random all over the hillock, but were positioned regularly the one near the other so

cemetery organisation

that they spread over the area available in a more or less orderly fashion (Archaeologia 1940, pp. 95 ff.). On western part of the hillock where he worked, Dikaios was able to notice four groups of tombs going successively from East to West on the higher regions and then moving down slope. From the grave goods deposited there groups could be correlated with the chronological periods I, II, III; which in fact constitute the subdivisions of the EC age in the traditional Cypriote chronology. Subsequently, when J. Stewart excavated the eastern part of the hillock, it was found that the tombs there were earlier (Archaeologia 1940, p. 99) and stood at the very beginning of the use of the cemetery and thus at the beginning of the Early Bronze Age in Cyprus.

metal tools

Since the eastern part of the cemetery was in softer rock, Dikaios developed a theory of improvement in the quality of metal tools available permitting exploitation of the harder rock with consequent increase in the size of the hollowed out chambers. Only as the area available became crowded out were the later tombs cut more or less anywhere as space could be found. (Archaeologia 1940, p. 96).

All of this presupposes tomb markers and cemetery administration.

The burials at Vounous were accompanied by a great wealth of grave goods. In addition to large and elaborately ornamented pots, very interesting terra-cotta models were found. These afford valuable indications of the daily life of the community, both in work and worship. Unfortunately, however, as has been noted, the settlement which maintained this cemetery was never located and no remains other than funerary have ever been excavated. For the ancient men of Vounous, the dead are the spokesmen of the living.

PALEOSKOUTELLA *chamber tombs*

In a sequestered locality half way up the Syrian shores of the Karpas, is a funerary site of unique interest. This is Paleoskoutella,[51] near Nitoviklia, a fortress in the region of the modern village of Galinoporni. The major type of chamber tomb in this cemetery is of a characteristic disposition with a long narrow dromos and a chamber which shows a sort of twinning by way of a partition reserved in the rock wall at the rear. This type of chamber tomb has an international distribution and much has been written about it.[52] However it is not the form of the tomb cutting which renders the cemetery notable. While it is possible that the position of some rock cut tombs in other cemeteries may have been indicated by small mounds of earth (beside the dromos), at Paleoskoutella, the graves were surmounted by full scale tumuli — e.g. ca 20 m in diameter and several metres high. Such a feature is unknown elsewhere in Cyprus except for the earth mounds heaped over some built tombs of later ages. Moreover, not all the tumuli marked chamber tombs, others were heaped over various open cutting in the surface rock, i.e. pits and shafts, etc., some quite small. All appearances suggest that some form of funerary cult was practised at the site.

182.3

surmounted by tumuli

182.3

funerary cult

183

varied building types

The small scale excations hitherto carried out at Cypriote sites of this age have revealed a rather surprising variety of rectangular domestic bulding. Formless agglutinative complexes, well formed regular plans for terrace houses, a *Hofhaus* type plan, a rural looking *Hürdenhaus*. None of these plans would be out of place nearby on the mainland in the third millenium. In short, it seems that much of the range of house building on the mainland was available in Cyprus by ca 2000 BC if

not before. However, equally, it seems that the overall building programmes demanded in Cyprus were very different from those on the mainland.

settlement structure little known

Our knowledge of settlement structure in Cyprus of this time is quite deficient. It is expressed almost entirely in negatives and until a settlment site of the period has been excavated in reasonable area, nothing can be stated with full confidence. It is just possible that skilful "geo-prospect" surveying might afford some more positive understanding.

rural urban

Although the matter has not been debated in so many words, the tenor of passing statement is that EC and MC (?) settlements were unwalled and "rural" rather than "urban" communities.[53] Expressed in terms of building remains, urban development connotes:

(a) reasonable dense building over a reasonable area.

(b) some functional differentiation of building units, i.e. the existence of public buildings as well as private dwellings.

(c) generally speaking, some form of "display architecture" (associated with public buildings).

(d) generally speaking, some form of circuit defences.

Present knowledge responds to these criteria as follows:

(a) surface surveys indicate building remains extend over considerable areas (i.e. several hectares) and excavations reveal small areas closely built up. However, the pattern of building over an extended area is unknown.

(b) as yet, no obviously differentiated public buildings have been identified.

(c) all building construction is uniformly in the traditional building style and no examples are known of "display architecture" (e.g. dressed stone masonry, regular system of ornament).

(d) no settlement circuit walling, gates, towers, etc., have been identified.

Once again it must be insisted that the sample evidence is very slight but since all these criteria are met in settlements of the latter half of the second millenium in Cyprus, and none of them are demonstrated for previous settlements of the third and second millenia, then it can only be judged that, during this period, society in Cyprus was not an urbanised one.[54] The typical settlement was not to be reckoned a town, with its attendant political organisation — a marked contrast with the situation obtaining nearby on the mainland.

non-urban society

Taken in this manner, it may be possible to regard positive evidence of other building feature as complementary. In the first place, strong looking buildings have been revealed outside the limits of any settlement. These are reckoned fortresses and their *Sitz im Leben* is discussed in terms of whether they were designed to withstand foreign invasion or are evidence of mutually hostile political units within the Island.[55]

fortresses

as government centres

Either or both these explanations may be in point — but it is also possible to think of fortresses as the normal form of power centres. Political power being exercised not from the fortified city (of the mainland) but from isolated strongholds which controlled, judged, etc., a collection of agricultural village communities in the region. Here also it is to be mentioned that such control may have been exercised over mining as well as agricultural production.

rural sanctuaries

Equally the evidence suggests that religious sanctuaries existed outside settlements from this early period as in later times. It is thus possible that these sanctuaries not only provided for the organised religion of the island but that they also played a part in its socio-political organisation, i.e. that a regional sanctuary provided that administrative organisation and judicial control necessary to regulate the activities

as government centres

of village communities. This would then be an example at a rudimentary level of the type of league shrine, amphictyony etc which have been much discussed in both Palestine and Greece of a later age.[56]

Whether or not regional sanctuaries may have provided some of the administrative services and skills necessary to keep the communities of the living in order, it is quite plausible that they did so for communities of the dead. The discovery of the model shrine at Vounous cemetery immediately draws attention to this possibility. A religious sanctuary requires skilled management and it is possible that this management which administered the regional sanctuary also administered the cemetery.

connection with funerary cults

The connection could be imagined as very close. Perhaps religion was still (like antecedent neolithic religion) mainly chthonic and in some instances the early sanctuary may have been part and parcel of the cemetery — and its rites may have been to some degree those of funerary cults.

cemeteries

Certainly to casual observation, the salient feature of the new age is not the change in building design but the vast development of cemeteries of rock cut tombs. Present day circumstances make this feature striking but perhaps also render tendentious the observations to which it leads.

In any number of localities the following picture obtains (or obtained in the traditional Cyprus of the first half of this century). The huge EC-MC cemetery at 181

conspicuous modern survival

Dhenia serves as a model.[57] In a remote and barren landscape there may be only a very small modern settlement anywhere near, and certainly no indication whatever of an ancient settlement. Yet all about are to be seen piles of broken earth with scattered pottery fragments, and (on closer observation) holes and hollows in the ground — some choked up with earth, some gaping caverns. These represent rifled chamber tombs, either the misdeeds of years gone by or of current operations. They can be counted perhaps to a hundred or more without detailed search.

The contrast between absence of signs of the living and presence of signs of the

dead is bizarre in the extreme and gives rise to speculation regarding sacred burying grounds for dwellers from far and wide (cf. Abydos, Karbela, etc.). In fact a local population of several hundred over a century or two demands many, many chamber tombs for its dead (probably several hundred). It is thus differential preservation which produces the apparent anamoly. If men lived in underground houses as they deposed their dead in underground chambers, then the balance of appearances would doubtless be restored.

The opposite line of speculation is no better founded. The event of the funerary provisions has been taken in itself to infer the existence of a town nearby. This is an over-extended chain of inference. Neither the degree nor the kind of public works administration involved in rock cut chamber tomb cemeteries is obvious and it is always possible that it would have been provided by other than municipal organisation (e.g. as aforesaid, by religious organisation).

Continually it has been necessary to emphasize the insufficiency of the data avilable concerning the buildings of the age. Nonetheless the record such as it is appears to suggest some important observations. First of all, the ousting of the long lived round house style by rectangular building must have been due to influence from the mainland. Ample historical evidence is available (e.g. from Africa) to show that round house building maintains its form invariably. It does not evolve but is eventually supplanted by an outside tradition. Furthermore the particular rectangular house plans clearly belong to a mainland continuum. The builders of these houses were (or had been) colleagues of builders on the mainland and shared in the same resources both of design and construction.

mainland influence

On the other hand this mainland influence on the island did not take the form of a "Norman conquest". The social culture of the island survived and the political institution of the fortified city state was not introduced as the vehicule for rectangular building. The settlement form of the age (which is so ill known) was something other than the kraal/compound of the preceeding age, but evidently not the walled town of the contemporary mainland. Being so, its affinities could only be with the unwalled village of the mainland which had survived there from Chalcolithic times. Will it ever be possible to account exactly for this development? On ethno-political grounds? On environmental determinist grounds?

not a complete domination

Hitherto archaeologists have sought to reconstruct the events of this period from the abundant ceramic remains found in the rock-cut chamber tombs. The relationship of both these features (viz the pottery styles and the type of the graves) to their predecessors during the foregoing ages can be and is seriously controverted. Do they represent novations introduced by influences from outside the island, or are they in fact essentially internal developments from forms current in the Island during its

local development

previous history? The most emminent authorities took opposing stand points in this matter (e.g. Gjerstad[58] asserted the novation and Stewart[59] emphasized the development).

chronology

Equally they disputed the chronology. The extreme dates advanced for the inception of the new organisation range from the very beginning of the third millenium (Gjerstad,[60] Mellaart[61]) to somewhere near its end (Astrom, Stewart[62]). This antinomy can well be reduced by allowing that the new organisation was introduced and became established in parts of Cyprus while the old round house tradition continued to subsist in other parts of the island. Such is a picture which has been reproduced in historical times with respect to round and rectangular building.

cultural overlap

At all events, it is the introduction of rectangular building in settlements which defines the age. And from this vantage point, it is more possible to estimate justly the significance of the other archaeological evidence.

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25. cf. for convenience A B S P II, fig. 213.
26. v. S P C, pp. 21 ff.
27. v. S P C, p. 23, fig. 2.
28. v. Interim publications J.G. Coleman, Investigations at Alambra 1974–1984, in Arch in C, pp. 125–41; Cornell Excavations at Alambra 1982, R D A C 1983, pp. 76–91.
29. v. Arch in C, p. 132, fig. 4; R D A C 1983, p. 77, fig. 1.
30. v. Arch in C, pp. 129 ff., figs. 2 & 3.
31. v. Arch in C, p. 134.
32. v. Arch in C, p. 137.
33. v. Arch in C, p. 130.
34. v. Arch in C, p. 130.
35. v. R D A C 1983, pp. 79–80.
36. v. Arch in C, pp. 131 ff.; R D A C 1983, pp. 81 ff.
37. cf. A B S P II, figs. 230, 231.
38. v. R D A C 1983, pp. 80–81.
39. v. R D A C 1983, pp. 82–84.
40. v. E. Gjerstad, S P C, pp. 27–37.
41. v. P. Astrom, S C E IV 1B, pp. 1–3.
42. cf. e.g. H. Catling CAH^3II_1, p. 168; J. Stewart, S C E IV 1A, p. 299; V. Karageorghis, Cyprus, p. 53.
43. v. S P C, p. 28, fig. 3; S C E IV 1B, p. 2, fig. 1.
44. v. A A A O, p. 56, fig. 21.
45. v. B. Carr Rider, The Greek House, Cambridge 1916, pp. 242 ff.
46. Tabernae are known in the ancient orient.
47. cf. at Megiddo v. A B S P II, fig. 223.
48. v. P. Dikaios, Archaeologia 88, 1940, pp. 118 ff., pls. VII–X; Syria XII 1932. Now cf. Ionas, L'Architecture Religieuse au IIe Millenaire, Lyon (Thesis) 1983, pp. 17–19.
49. cf. R. Dussaud, Culte Funéraire et Culte Chthonique à Chypre à l'Age du Bronze, Syria XIII 1932, pp. 223 ff.; P. Dikaios, Les Cultes Prehistoriques dans l'Ile de Chypre, Syria XIII 1932, pp. 345 ff.

50. v. S C E I, pp. 356–361; S C E IV 1C, p. 1, fig. 1; E. Sjoquist, Problems in the Late Cypriote Bronze Age, Stockholm 1940, p. 2.
51. v. S C E I, pp. 416 ff.; S C E IV 1B, p. 10; CAH³ II$_1$, p. 171.
52. cf. A B S P, p. 325, figs. 270, 271.
53. v. CAH³ II$_1$, pp. 168, 175.
54. cf. S C E IV 1A, p. 299.
55. cf. E. Sjoquist, Problems, p. 12, CAH³ II$_1$, p. 168.
56. v. G.R.H. Wright, Vetus Testamentum 21 1971, pp. 572–602.
57. cf. P. Astrom & G.R.H. Wright, OA IV 1962, pp. 225–276.
58. v. E. Gjerstad, SPC, pp. 293 ff.; R D A C 1980, pp. 1–16.
59. v. J. Stewart, S C E IV 1A, pp. 210 ff.
60. v. E. Gjerstad, R D A C 1980, pp. 1–16.
61. v. J. Mellaart, A Note on Cypriote Early Bronze Age Chronology, R D A C 1974, pp. 33–50.
62. v. J. Stewart, S C E IV 1A, pp. 282–285; cf. V. Karageorghis, Cyprus, pp. 40–44.

3. CYPRIOTE URBAN SOCIETY

Urbanisation in Cyprus apparently long delayed — inception ca 1500 or later, possibly ca 1250; but likely continuity thereafter. Examples of LC urban development at Enkomi, Kition, Ayios Dhimitrios. LC — Archaic sanctuaries at Mrytou-Pigadhes, Ayia Irini. Archaic-Classical sanctuary and royal tombs at Tamassos. Archaic-Classical palace at Vouni. Archaic-Classical town at Amathus.

Resumé of Development. Urban settlements comprising large areas (10 hectares and more) with regular (gridded) town plans and massively constructed defensive walls in existence by latter half of 13th Century. Not as yet certain that this development is one of local evolution or the result of foreign (Mycenaean) conquest. Large public buildings partly built in imposing finely dressed stone masonry. Urban temples, but also continuance of sanctuary centres outside towns. Disturbed political history at end of Bronze Age and deficient archaeological evidence of settlement history in early Iron Age, but inferences support essential continuity of material culture. Prominent survival of great religious centre at Paphos. Unbroken development in funerary architecture and increasing prominence of monumental masonry built tombs in Archaic and Classical times. Elements of Classical Greek architecture appear sporadically in 5th Century, but building style remains indigenous both in design and construction, evidencing continuing contacts with old Middle Eastern building traditions.

urbanisation by LC III

Comparatively speaking, there is a great amount of evidence to demonstrate that there were large architecturally developed towns on the Island, ca 1200 BC (LC III). If the preceeding chapters' analysis is accepted then, as up to the middle of the millenium, there is little positive evidence for full scale urbanisation. Thus the inception of urban development in Cyprus is circumscribed to 300 years or so — ca 1500–1200, viz the LCI-II periods. Therefore the first task is to provide some explanation for the appearance of these large towns at this late juncture.

There then follows the task of explaining the subsequent destiny of towns in Ancient Cyprus. And here Cypriote archaeology takes a quite new complexion, since a considerable body of literary and epigraphic information concerning the matter survives, but material remains again become sparse. However, in effect, all evidence infers the continuance of the political structure of the Island down to classical times while there is little to support an intervening period of wholesale destruction of urban

with subsequent continuity

civilisation (the Dark Ages). Therefore, *a priori*, it is to be taken that the style of building of the end of the second millenium survived little changed into the first millenium. This in itself is one of the great interests resident in the study of Cypriote building, for it is of considerable general significance in the history of ancient building.

ENKOMI

location

The modern village of Enkomi lies in the Famagusta District, some 7–8 kms to the north of that town along the road to the Karpass. The village is situated on a ridge of rock which overlooks the plains of the Mesaoria to the west and slopes down eastwards to the coast about 2.5 miles (ca 4 kms) away. Close by to the south the Pedhias River (the longest in Cyprus) finds its way around the southern extremity of the ridge to reach the sea. Secondary roads serving various localities in the N.E. part of the Mesaoria unite and pass through Enkomi village to join the coast road to Famagusta.[1] Clearly the position is an important one geographically, and it has been known for long that there are important ancient remains in the vicinity. From the end of the last century a number of campaigns were carried out to locate tombs. Such activities ranged from the British Museum Expedition (1896)[2] to those on behalf of the Cyprus Museum in 1913[3] and in 1927,[4] and were of varying degrees of academic inspiration. Perhaps as a result of what they saw going on about them, the villagers in turn gained the reputation of being expert and audacious tomb robbers.

9 57

excavations

Later when the Swedish Cyprus Expedition began operations in 1927, a campaign at Enkomi took a prominent place in their work.[5] The expedition cleared twenty odd rock cut tombs in the flat land immediately below the scarp of the ridge west of the village at the locality known as Ayios Jakovos after a Byzantine chapel nearby. These tombs ranged in date from MC III to LC III.[6] During operations the expedition noticed remains of walls etc in the vicinity which they reckoned to be Byzantine in date according with the chapel.[7] Very shortly afterwards (in 1932) Claude Schaeffer arrived on the scene.[8] For some years he had been excavating the important Bronze Age site of Ras Shamra on the opposite coast of Syria, and he came to Cyprus to search out trading contacts etc which would serve to place Ras Shamra in its proper context. Among various other activities, his attentions were directed to Enkomi and he ascertained that the area where the Swedish Cyprus Expedition had excavated late Bronze Age tombs was, in fact, an extended late Bronze Age settlement.[9] The walls etc which the Swedish expedition had encountered above the tombs were not sporadic Byzantine vestiges as previously supposed, but formed coherent parts of an important ancient site — even though there was nothing approaching a tell to mark the fact.[10]

Schaeffer deemed it necessary to excavate this site on a reasonable scale and some work was carried out before the Second World War interrupted plans.[11] After the end of the war, Schaeffer returned immediately to the site and then a joint mission was arranged with the Cyprus Antiquities Department whereby each party would operate in separate areas at different times of the year in order to put to best use the local resources available. In pursuance of this agreement, regular and intensive campaigns of work were undertaken by both parties from 1948 onwards. The director of the Cypriote work, P. Dikaios, brought his field activities to a close in 1958, and a systematic publication of the results appeared in 1969.[12] Schaeffer's operations continued until all work in this region was blocked by the division of the Island in 1974; and from time to time interim publication of different aspects of

his campaigns have appeared.[13] As a result of these various activities, Enkomi has become without doubt the premier Bronze Age settlement site of the Island, and perhaps the only one where archaeological information has been made available over an extended compass permitting direct comparision with sites on the mainland.

siting

The siting of Enkomi is quite strange according to normal understanding of the siting of ancient Middle Eastern towns, however it is possible that a closer knowledge of local Cypriote developments may explain matters somewhat. At all events, the site lies on the flat land of the eastern extremity of the Mesaoria immediately beneath the abrupt scarp of a rocky ridge elevated some 10 m above it. This, defensively speaking, constitutes an unpromising situation for a walled city. The scarp is, of course, geologically very recent but there is no question of it post-dating the ancient settlement.[14] Although this anomaly has not been subject to detailed consideration, the off-hand explanation generally given is that it is in the interest of concealment from approach by sea.[15] The matter demands further examination in due course.

chronological development

Clearly for the critical question of settlement form, Enkomi is the critical archaeological site in the Island since the excavations appear to have encompassed chronologically a development from a non-urban to an urban settlement. Moreover, they have been sufficiently extensive to give an adequate view of the latter stage. Tombs and habitation remains show that the site was settled from MC III times (late 17th century = Dikaios Level A) onward.[16] The remains of the earlier periods lie beneath an extensive development at the end of LC times (ca 12th century) and thus have been examined only in very limited soundings. However, proceeding on this evidence, it would seem that the settlement originally took the form of dispersed agglomerations of housing (hamlets) — each one with adjacent burials and the ensemble was protected (or governed) by one or more strongholds (fortresses).[17] This, in fact, is a settlement pattern which *mutatis mutandis* appears to have been recognisable in the earlier ages of the third and second millenium. By 1200 BC, such a settlement had given place 48
to an extensive walled city, closely built up on a regularly laid out town plan.[18] Thus the archaeological record at Enkomi apparently witnesses to the critical change from a non-urban to an urban settlement. And while it is not excluded that this transition could have occured earlier in other sites, the general reason of things is that the archaeology of Enkomi serves to indicate the age at which Cyprus was urbanised.

However, having emphasized the importance of the site, it is only fair to indicate some of the deficiencies in its record (both in excavation and publication), and equally to emphasize what an enormous amount of unrevealed information still resides in the site, both in the form of unpublished excavation (cf private housing) and material as yet unexcavated (cf. the pre-urban settlement). Furthermore, it is not easy to present a summary account of the site, if only for the fact that the publication is so disparate. By far the largest area of excavation (Schaeffer's) is available only in episodic *ad hoc* contributions,[19] whereas the much smaller area of the Cypriote Departmental Excavations has appeared in a definitive overall version.[20] Thus any brief account must depend disproportionately on the latter publication of P. Dikaios (N.B. Most recently several secondary treatments[21] have appeared which are of assistance).

limited pre-urban exposure

Above all, the restricted compass of the information relating to pre-urban Enkomi has never been made sufficiently clear. This, in fact, consists of the well excavated and well published succession of "strongholds" near the North Gate of the City and various soundings

below floors of the urban period building within the City. Conveniently published accounts of these soundings are moreover limited to those beneath the two monumental buildings: Schaeffer's "Batiment 18" and Dikaios Site I "The Ashlar building".[22] When it becomes possible to recontinue the work at Enkomi, a patent need is to prospect a region where pre-urban remains exist and excavate the earlier period in reasonable area.

North Gate fortress

Dikaios' excavations at Area III, the strong building by the North Gate provide a token documentation of the development in the form of settlement. Here a succession of buildings were excavated going back to vestigial MB III remains.[23] All appearances suggest that the successive buildings and rebuildings maintained the same over-all function — a stronghold/
74 power base. In LC I times (16th–15th centuries) there appears a heavily constructed sizeable (45 m × 13 m) free standing building, which is described as a fortress[24] (cf the contemporary fortress at Nicolidhes). Certainly its size (ca 600 m^2) makes it a public building. Through the course of several reconstructions, it became perhaps more akin to a seigneurial dwelling; its "ruling" function being attested by the metal working it sheltered.[25]

Then in the middle of the 13th century (LC IIC) this formerly free standing stronghold was
134 135 entirely remodelled to appear as an urban building set against the inner face of a circuit wall close to a gate,[26] the extensive clearances in other areas showing that at the stage a ca 1.5 km long city wall was built to enclose a town site of ca 16 hectares.[27] The position now occupied by the building (hard by a city gate) is a common one for official dwellings on the contemporary mainland,[28] and the building doubtless continued to be an important one. However, a momentous socio-political change had occurred and henceforth the building was no longer the self contained dominating unit of a scattered settlement as heretofore but took its place among other imposing buildings in a (rapidly) built up city laid out on a very regular overall town plan. Manifestly, the construction of a city wall and the development of a town plan are closely related aspects of a (new) socio-political dispensation. Neither can be accomplished instantaneously and both are likely to have proceeded simultaneously; the city wall most likely being completed before the enclosed area was entirely developed and built up.[29]

The date of this city wall and town plan layout at Enkomi are based ultimately on the niceties of Mycenaean pottery analysis — e.g. the distinction between Mycenaean III B and Mycenaean III C pottery (with, indeed, further sub-categories brought into evidence).[30] However no one wishes to go outside a period of half a century (ca 1250 BC-1200 BC) for this momentous development, and this dates the inception of a major epoch as closely as is consonant with most archaeological issues. The chronology of this development continues to be disputed,[31] but these disputes concern closer dating within the period which is of significance for theories as to the source of inspiration for the developments and these can be considered in due course. It is now necessary to describe broadly the Cypriote town (perhaps city is a better term) of Enkomi as it appeared ca 1200 BC — i.e. at the beginning of the LC III period.

town plan

The extent of Schaeffer's work has meant that the essential scheme of an overall town plan
48 can be identified. This has been admirably presented in a large scale fold-out drawing (Alasia I, Folding Plan IV); while a clear schematic version is also available (RDAC 1986 p. 103, fig. 3). Closer scrutiny shows that a good deal of this is dotted, but nonetheless it can hardly be amiss in essentials.

The orientation is very close to the cardinal compass points, and two main thoroughfares intersecting at right angles in the middle of the town divide the city into four "quarters".

city gates These main thoroughfares find their egress at four city gates, of which only the North Gate has been closely investigated archaeologically; and the position of the East Gate is hypothetical, dependent on the line of the City Wall *vis à vis* the scarp. However, appearances suggest that it was symmetrically positioned with respect to the West Gate and thus stood above on the ridge. It was the Sea Gate — "I am the Gate which fronts the sea/O sailorman pass out of me" etc. All this makes the City of Enkomi fall into line with one of man's most basic images:

idealised form Ideal Space, properly set out into its four quarters with the regents or wardens of spatial order keeping the gates secure against the forces of outer chaos. On earth as it is in heaven.[32]

city wall The line of the city wall is non-geometric and in its wavering course must have been conditioned by the lie of the land (or previous building). The overall length of the enclosed townsite (from North to South Gate) appears to be ca 440 m and from the West Gate to the meridional axis, it is ca 200 m, so it is likely that the site was ca 400 m overall from West to East. Depending on the line of the East Wall, the overall disposition of the town must have approximated to an apsidal form. The North Wall being made more or less straight and the South Wall forming an apse. In this fashion, the area enclosed is of the order of 16 hectares.

street plan It would appear that a ring road ran around the inside of the city wall distant say 20 m or so from the ramparts. This served to regularise the city limits somewhat. Within the space, a series of parallel east-west streets (cf. *decumani*) intersected by the meridional north-south

insulae street (*kardo*) formed the grid which gave 10 long narrow insulae extended east-west, each divided into two by the Kardo. In a rough and ready way (working from a small scale schematic plan) it would appear that some simple mensuration system was in evidence. From the most northerly to the most southerly street was a distance of ca 360 m. This gives 10

metrology insulae of ca 33 m breadth with streets ca 3.3 m broad. All of which immediately suggests the rather surprising fact that the town plan was laid out not in cubits but in (long) feet of ca 33 cms, to give insulae of ca 100′ broad and streets of ca 10′ breadth. This long foot of 33 cms (Petries Great Northern Foot) has been recognised in adjacent regions.[33]

The main East-West street (cf *Decumanus Maximus*) is displaced to the north so that there are four insulae to the north of it and six to the south of it. However, here something like the principle of equal areas for the quarters must have been in mind, since the overall apsidal conformation means that the southerly insulae are truncated. No subsidiary north-south streets (*kardines*) have been revealed and thus the insulae are very long drawn out, viz ca 1 ×

cf Hellenistic norm 5–6. This fact apart, the town plan of Late Bronze Age Enkomi looks somewhat similar to those of Hellenistic settlements of a millenium or so later.[34]

zoning So far the information, so good; indeed much better than expectation. However, when it comes to the distribution and zoning of building within this plan, the publication is remiss. The very considerable acreage of building uncovered by the French excavations has not been 49
resolved into its individual components by close analysis. Therefore only the most general observations are possible regarding zoning. The obvious would appear to hold good. The most monumental public building lies on and near the meridional north-south street and particularly at the central part of its run.[35] The crossing of the two streets which give on to the City Gates is marked by a paved place, a *plateia*, and hard by this a sanctuary has been identified (the Sanctuary of the Column). In the insulae immediately to the north (nos 5 & 4) are found the most integral remains of large public buildings extending a complete block in depth (i.e. more than 30 m). Two such public buildings published in some detail are Dikaios' "Ashlar Building" of Insula 4W[36] and Schaeffer's "Batiment 18" adjacent in Insula 5W.[37]

These buildings have been described as princely or patrician dwellings, but what this indicates in terms of social reality is by no means obvious.

public buildings

Eschewing these far reaching questions, it is worth noting that a pragmatic test for a public building is available. And that not from building design but from building construction. The building programme which so quickly transformed discontinuous groups of dwellings into continuous and uniformly fronted city blocks clearly necessitated the work of professional building contractors. Among their personal were master masons: quarry men who could win stone from bed rock, stone dressers who could shape it so that the joints of one block accorded exactly with those of another, and walling masons who could set and fix such blocks into stable constructions (walls). All these operations involve no very abstruse level of technical accomplishment, but they do involve very considerable capital expenditure and works organisation. It is thus fairly axiomatic that finely dressed stone masonry is only found in public building, sacred or profane.[38] (Or in a society where great inequality in wealth has developed.)

construction

in fine stone masonry

Various publications reveal that much finely dressed stone masonry was incorporated in (especially the facades of) the buildings in these centrally situated parts of insulae 4, 5, 6 etc. And on this account alone these buildings are rightly designated "public buildings". Unfortunately there is little record of the converse, viz that buildings in the outlying regions do not incorporate dressed stone masonry, and on this single ground, as on general considerations, are houses, workshops or the like.[39]

On the evidence presently available, it is not practical to derive much evidence for zoning from the design of buildings. The general plans of Enkomi excavations show astonishing detail but at this scale individual buildings are not easy to analyse at the best. This position, however, is much worsened because of the question of different periods. Manifestly, these small scale plans show all and any walls uncovered, therefore they give a most imperfect idea of integral plans at any one period.

In this connection it now must be stated that far more attention has been given to the urban development of Enkomi from a diachronous rather than a synchronous point of view. However extensive the area covered or in which quarters of the city, this picture of fine stone masonry was but fleeting. Within some fifty years the very lately built up city of Enkomi was ransacked by hostile action (sometime about the beginning of the 12th century — ca 1190 BC). Thereafter, although the urban form on the same overall town plan was maintained, no further construction took place in monumental masonry. Such surviving walls or parts thereof which were susceptible of re-use were incorporated into new buildings, displaced blocks of ashlar were re-used as building material but all within a new construction of rubble. The rise and fall of the monumental city must have been very dramatic indeed. From architectural clogs to clogs in three generations. The destroyed city was re-built and urban life continued for over a century until sometime in the first half of the 11th century BC, but if the excavators are to be believed, the construction reverted to the traditional Cypriote manner and the grand halls and courts of public buildings were blocked up with secondary rubble walls to make humbler dwellings, Ichabod! Ichabod!

short floruit

Since the occupation of the site bestrides the pre-urban and the urban epochs, Enkomi acts as a microcosm of building development in Cyprus. And in no connection is this more marked than in fortifications. At odd intervals in its long history Cyprus has produced notable

fortifications

fortifications, both urban and non-urban. Both categories are in evidence at Enkomi within a relatively short time span.

North Gate area Dikaios' Area III[40] spread across the North Gate of the city. Immediately to the West of the Gate in the period before the city took form Dikaios uncovered successive stages and reconstructions of a large public building. Both its nature and its position suggest that originally at least it incorporated defensive qualities, and Dikaios referred to it as a fortress. Certainly its position on the line of the later city wall and close to the gate infers that it was designed to command a (the) major approach to the settled area of Enkomi. The original *LC I* "Fortress" is from the LC I period (= 16th–15th centuries BC).[41] This is the date ascribed to other "fortresses" in Cyprus, e.g. Nicolidhes, and there is a generic resemblance between the 65 building at Enkomi and Nicolidhes — they are of the blockhouse type.

The Enkomi building is well over 500 m^2 in ground plan, and there are steps to upper levels — by its area it is clearly a public building. The outer walls are massive, ca 2 m in breadth, thus giving the unmistakeable impression of a "blockhouse". In essence the plan is a broadly disposed (E-W) building (ca 45 m × 15 m) with a sort of Iwan style northex projecting from the short east end which opens toward the road (at least if this road follows the same course as in later times). This was presumably a reception and dispatching area. The ground floor of the blockhouse seems to be divided into three units, the central one being a court. The *metal working* western apartments already show some signs of housing metal working, while the eastern apartments are rather formally designed and may have been used for administrative purposes. It is also possible that some sort of tower/turret crowned the S.W. angle of the building.[42]

With restorations, alterations and additions, this blockhouse building survived for 150 years or more without significant alteration in character. However, near the end of the *LC IIA* fifteenth century (= LC IIA), a wholesale rebuilding on the site materially changed the aspect of the building. The sense of the siting was retained and the overall area considerably *metal working* increased to something approaching 1000 m^2. Furthermore the metal working activity was maintained and increased. However, apart from the eastern "narthex" the heavy external walling and the blockhouse character disappeared. In its place the building assumed the aspect of a seigneurial residence open to entry from both North and South. A thorough *residential* reconstruction after about a century (ca 1300 BC) further accentuated this development. By 134 *complex* this stage the ground plan evidenced something like 50 densely packed rooms and corridors extending over an area almost 1500 m^2.[43] Several residential suites can be recognised and in the western part is a vastly expanded metal working area with a slag dump immediately outside its walls. This building manifests itself in no way as a detached blockhouse in a relatively unbuilt-up area but as an urban style residential and administrative complex which might be found e.g. in a contemporary Syro-Palestinian town.[44]

city wall According to the excavator, it was while the LC IIC (Level IIB) residence flourished that a city wall was built which in this locality ran adjacent to the north facade of the residence, thus 26 135 enclosing it within the city limits.[45] Thus according to the excavator's interpretation, at the northern extremity of the site of Enkomi, a fortified blockhouse existed from ca 1575 BC (if not earlier) until ca 1400 BC and then after 150 years (1400 BC–1250 BC) where little concern was apparent for defence, imposing urban fortifications were constructed.

It has been difficult to associate stratigraphically the building of the city wall with the building up of the town plan. Manifestly the processes are associated ideologically. In any event, it seems agreed that the city wall was built about 1250 BC.[46] A city must be walled

around as quickly as possible; whereas its inner development accords with quite other factors and rythms. That (some of) the monumental construction within the city is later than the town wall is only to be expected. Some sort of circuit must have been completed quickly, say, within a few years. Thus the city wall at Enkomi had a lifetime of ca 200 years at the most. Two hundred years is about the working lifetime of a city wall at this period, and the archeological evidence indicates that basically the original wall survived in use. It was a notoriously disturbed period in ancient history and doubtless the city wall suffered local damage in various occasions involving local repairs, alterations and additions but as yet there are no indications of overall archeological periods in the wall's history.

The urban fortifications of Enkomi comprise a curtain pierced by several gates. There is also evidence for face towers and turrets of varying disposition, but in general, these have not been closely investigated (nor published!).[47]

design & lay out

The curtain shows little sophisticated design. It is a continuous trace, non-geometric affair
48 — partly crooked straight stretches, and partly random curved. Only in the S.E. quarter near the scarp its character changes completely. This region was obviously a special case — both structurally since presumably the wall had to mount the scarp face; and also defensively since whatever course the wall took, its battlements would be commanded by high ground close by to the East. Here the trace became more sophisticated with a succession of four or five closely spaced (5–9 m) rectangular salients (of e.g. 4–5 m breadth × 2–3 m in projection).[48] Whether these were primarily structural or defensive in intent is not clear. As to the eastern closure of the enceinte, absolutely no evidence survived. It has been assumed that the wall mounts on to the ridge with a sea-gate on high (this assumption at least has the backing of symmetry).[49] On the other hand it has been reported that the wall bears off to the south following the line of the ridge to form an entrance corridor leading to a harbour gate by the riverside.[50]

city gates

Of the logical four gates, one (the North) has been fully excavated, one (the West) has been traced, one (the South) remains uncertain, and one (the East) is entirely conjectural. However on the general plan another (minor?) South gate is shown associated with the salients near the scarp. The design of the North gate is a primevally effective one — a hole in
75 the wall with direct access blocked by a large building on the interior to give a bent entry.[51] Immediately to the east of the gate there is a very large rectangular bastion (21 m × 17 m). Although positioned to command the gate, its spaciousness and relatively slight construction call its military significance into question.[52] There are indications of smaller face towers.[53]

secret tunnel

Finally one unusual feature has been recorded. Along the internal face of the wall in the area, to the West of the former fortress, a tunnel was fashioned from mud brick with section in the form of half vault. Whether this was a secret gallery to a sally port or a drain etc could not be determined by the excavator from the very limited clearance. In fact, if the published sections are to be trusted, the cross section was so cramped (ca 1 m in breadth and head height) that the only human passage would have been by crawling on all fours.[54]

The construction of the Late Bronze Age city wall at Enkomi is of considerable interest. There are variations in detail over different stretches of walling and these have been noted with great attention from the archeological point of view.[55] In fact these variations in the main probably witness to the simultaneous construction of the wall in sectors by different gangs, groups, wards, etc. — the necessary method to ensure rapid completion which has been in evidence at all times and in all places (e.g. Nehemiah 3–4).

construction

The wall was of mud brick raised on a stone socle of substantial height (ca 2 m; from the

fallen mud brick remaining on the ground the total height can be assumed as not less than 5 m). The stone socle was faced with massive boulders or detached fragments (some well over 10 tons). These were set up "on edge" after, in some instances, being knocked into shape a little with the hammer (specimen dimensions 2 m high, 2.50–4 m long and ca 1 m deep). This is rude monumental masonry of the style called Cyclopean by the classical Greeks, an evocative term which has been retained in modern archaeology. Actually since the massive stone work is in the main only facing, the term "Bastard Cyclopean" might be more descriptive. In general terms, this Cyclopean masonry appears on the external face of the wall with the other face built up in solid rubble. However in some stretches both faces are more or less of massive blocks. The facing blocks are wedged and chocked with smaller stones and the interstices between the two faces are packed out with a fill of earth and stones etc. The breadth of the wall varies from ca 2.50 m–3.5 m. In the stretch of the north wall excavated by Dikaios, the wall was strengthened by running the hypotenuse as an outer face across the angle where the wall followed the N-W angle of the old fortress and using the enclosed space as casemates.[56]

75

bastard Cyclopean

It is possible that something like this technique of masonry had been employed in preceeding times (but not, as once said, the barrier wall at Krini, west of the Kyrenia Pass).[57] However, its large scale occurrence at Enkomi (and elsewhere) at this juncture seems another development proceeding from the centralisation of capital and social organisation, factors which generally conduce towards urban life.

In 1948, almost at the beginning of his work at Enkomi, Dikaois made a striking discovery in one of his allotted sectors — Area 1, situated in the N-W quadrant of the town plan, viz in the insula 4 W (numbering from the North). Here a city block type building with much ashlar masonry came to light (similar in general to Batiment 18, Excavated by Schaeffer in the adjacent insula to the South). And in the much disturbed ruins of its upper levels a small bronze statue of a horned god was discovered. The apartments where this discovery was made thus became known as the Sanctuary of the Horned God, forming part of a larger complex which, because of its monumental construction, was referred to as the Ashlar Building. However, the relation of the Sanctuary to the Ashlar Building as a whole proved to be anything but obvious, both spatially and temporally speaking. Thus, in order to gain an understanding of the possible character of the Sanctuary, it is unfortunately necessary to rehearse what is known about the development of the entire block-complex.[58]

136 137

city block public buildings

The region was excavated (in part) down to bed rock and the excavator reported the following development. The region was marked by a depression in the bed rock which, as in other instances, seems to have attracted the earliest builders. It is stated that the disposition of the hollow conditioned the orientation of the building — yet this orientation was maintained throughout all later developments including incorporation into the overall town plan and its grid! In any event, in the earliest period on the site demonstrating coherent buildings (Level IA = LC IA = ca 1575–1525) a complex was erected consisting of a dozen rooms grouped about two courts and provided with corridors for circulation and stairs for access to an upper storey. Whatever may be imagined as the nature and function of this complex, it is hardly a collection of small separate houses. This complex maintained its form (with interim burning and reconstruction = Level IB) until it was violently destroyed towards the end of LC IB (ca = 1425/1400).[59]

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insula 4 W development

LC IA

During the next (ceramic) period LC II (= ca 1400–1230) when Dikaios' remarks in

LC II

general two building periods at Enkomi (IIA, IIB) the ruins were abandoned for a time and then rebuilt and incorporated in a complex extending to the north, so that in effect two
25 adossed complexes, one (the old) oriented south and the other (the new) oriented north, were brought into communication via a central court (B).[60] Moreover both complexes were designed essentially the same, forming rooms grouped into three ranges disposed on three sides of a court. With this development the basic character of the complex was fully achieved, viz a block building. Moreover, the North, East and South façades were those delimiting the complex in all subsequent reconstruction. Sometime in the latter part of this period (LC IIC = ca 1250 BC), it is reckoned that Enkomi was fortified with an enceinte wall.[61] It is hard to dissociate in concept these urban fortifications from the development of a town plan,[62] and the external limits of the Area I complex at this period coincide with the lines of the town plan. Therefore it is difficult to arrive at any other understanding but that the complex took shape in conformity with the lines of this plan which thus must have been demarcated in some way, even if the streets etc were not developed.

construction LC III

At this stage (LC IIc) the building construction of the complex was still in the traditional manner of mud brick walls raised on rubble plinths. However, at the beginning of the next (ceramic) epoch (LC IIIA = ca 1230 BC) this large building complex (of ca 800 m^2–900 m^2)
136 was apparently sacked and after about 10–20 years (i.e. ca 1220/1210 BC) was then rebuilt in splendid style so that although in design it maintained its pre-existing character, the character of its building construction was entirely changed, since a considerable part was
237 carried out in ashlar masonry.[62] Moreover its ashlar façades flanked the street of a well planned town.[64] The "Ashlar Building" however was a descendent of the preceeding LC IIc building. The connection is unbroken; as many existing walls as possible were re-used or served as foundations.[65]

ashlar masonry

In turn this new monumental building was violently destroyed by hostile actions (ca 1190 BC) to be almost immediately reconstructed (Level IIIB). This work was hastily contrived, in large measure re-using material from the destruction and renouncing any pretensions to
37 restoring the monumental nature of the building.[66] Nonetheless, in spite of its demeaned state, the reconstituted building had a long lifetime. There was another destruction towards the end of its days, ca 1125/1100 BC, but the building was reoccupied for a further 25 years or so until ca 1075 BC (Level IIIC).[67] Thus it continued in use for over a century.

Sanctuary of The Horned God

It was in this demeaned reconstruction of the Ashlar Building (Levels IIIB–IIIC during
96 97 the LC III period) that the Sanctuary of the Horned God existed, comprising the hall 45 and opening from it the small side rooms (9, 10) contrived out of the now divided up main central hall of the Ashlar Building. The entrance arrangements were not fully evident: they could be either from the South or the East. In any event, there would be a relatively indirect entrance by way of a corridor. And so far as the small rooms 9 & 10, there would be a very much "bent entry".[68]

It was the finds in rooms 9 & 10 which identified this ensemble as a sanctuary. Beside the famous bronze statue, Room 10 also contained nearly 300 Base Ring bowls stacked against a wall — manifestly the relics of long continued libation offerings.[69] However although these finds identified the ensemble as a sanctuary beyond reasonable doubt, they did not explain its functional planning and organisation. The statue was discovered in a pit of the short latest period (Level IIIC), placed or secreted there after its recovery from the ruins of the

preceeding main period (Level IIIB),[70] thus it would be difficult to postulate with much certainty anything concerning religious organisation from such circumstances.

plan

As noted, the core plan of the sanctuary consists of a hall 45 and two small, interconnecting side chambers 9 & 10. The functioning of this ensemble depends on the nature of the cult and its ritual — a matter which in general for the day and age is little understood.[71] Was the sanctuary principally an *Erscheinungstempel* (a place where the god was made publically manifest for adoration; or was it principally a *Wöhnungstempel*, the private dwelling place of the divinity? In any event it might be said that the small rooms 9 & 10 are not the centres of a public cult,[72] but jointly or severally they may constitute either or both a sacristery (*diakonikon*) and/or a *thalamos*.

Beyond this core plan it is possible that the sanctuary comprehended additional premises — the details of communication are not definitive. At least at some periods (e.g. Level IIIC) the apartments to the North (26, 13) may have served as appurtenances to the cult.[73] However, in addition to this possibility, Dikaios the excavator, considered he had some evidence for the religious function of other apartments in the "Ashlar Building".

twin Sanctuary of The Goddess

In the South East quarter, thus more or less symetrically opposed to the apartment already described, are the hall 12 and the small sideroom 11. In the latter room was discovered a small bronze statuette of a goddess (Astarte type) with hands placed on her breasts, while the hall 12 was rich in pottery. Thus it was possible for Dikaios to postulate another (twin) sanctuary for a goddess, the consort of the Horned God.[74] If this were so, then much of the south half of the refurbished Ashlar Building was devoted to religion — i.e. an area of something like 250 m^2. 96 97

In the light of this development, it is at least possible to ask some specific questions concerning the type of the Sanctuary of the Horned God (and of its possible twin).

Dikaios did not much consider building typology in his presentation of the evidence.[75] Only he more or less assumed two things which implicitly coloured his conception of the Sanctuary:

(a) it was contrived *de novo* in Level IIIB, ca 1190 BC[76]

(b) within a building constituting a patrician dwelling[77]

In fact neither of these assumptions is watertight.

Both the sanctuaries are centred on a large hall (45 & 12) and these halls with their basic circulation arrangements existed in the original monumental design of the Ashlar Building. Although nothing was found to suggest a religious function at this period, the ruins may well have been cleaned out and it is not impossible that the sanctuary/sanctuaries go back at least to Level IIIA (LC IIIA). Dikaios very much identified the entire complex of the Ashlar Building as a patrician (or seigneurial) residence showing social affinities with the contemporary Mycenaean palaces (e.g. Pylos).[78] This is, of course, possible but in this event it should be noted that such a complex would contain seperate and seperable elements, e.g. storage, industrial, commercial, administrative sectors, etc. On the other hand, it is also possible that such an urban block building would constitute a large tenement building containing several quite distinct apartments not all of them necessarily residential nor even controlled by the same interests.[79]

character of sanctuary

On the balance of probabilities, it would seem that the Sanctuary of the Horned God, whatever its precise levels, is not an independent building unit designed as a public cult centre — i.e. what we normally understand by the word "temple". Whatever the nature of

the Ashlar Building complex as a whole, the sanctuary consists of apartment within this complex, not structurally detached and under the same roof so to speak as other apartments which do not have a religious function. This in general terms corresponds to our understanding of the word "chapel" — apartments for more or less private worship within a larger building. Although Dikaios assumed that the Ashlar Building was more or less a Palace, he did not however specifically identify the sanctuary as a type of Palace Chapel. Should this be done? The Sanctuary of the Horned God at Enkomi is quite different from say the contemporary religious buildings at Kition. Should the difference be accounted for along these lines — i.e. palace chapel as opposed to city temple?[80] The answer to be given at this point is "not necessarily so in any way". The question of temple types among the various cultural groups possibly concerned at Enkomi is a very little studied one. These matters must be considered in due course before discussing the "type" of the Sanctuary of the Horned God at Enkomi. *chapel*

In 1961, within the French sector of Enkomi almost at the centre of the town, numerous terra-cotta figures were noticed on the surface. Excavation was begun at the locality in 1962 and in the following year the finds indicated a sanctuary building, the excavation of which was completed in 1965. The French excavator, Courtois, has published several articles and accounts of this work,[81] while recently the findings have been reconsidered by I. Ionas.[82] *Sanctuary of the Ingot god*

95

The site of the sanctuary is, as already mentioned, absolutely central: it lies in Insula 5E hard by the intersection of the *Kardo* and the *Decumanus Maximus*, immediately to the East of the paved civic square (*plateia*) marking the crossing.[83] *location*

Chronology was worked out from a series of (six) floor levels and associated (Mycenaean) pottery.[84] There has been controversy regarding the equivalence of these floor levels with Dikaios' periods.[84] However in the round, so far as building development is concerned, the chronology is straight forward and consonant. The two earlier floors (VI, V) pertained to the original ashlar built structure on the site erected somewhere in the latter half of the thirteenth century.[86] After the destruction of this building, the rubble and walls of this Sanctuary of the Ingot God were founded on burnt destruction debris overlying Floor V. The earliest building levels of the Sanctuary constitute the excavator's Floor IV, dating from the first half or middle of the twelfth century, and the Sanctuary remained in use until the end of the city's occupancy, somewhere in the eleventh century (ca 1050 BC).[87] Thus to all intents the Sanctuary of the Ingot God is co-aeval with the Sanctuary of the Horned God. *chronology*

The design of the Sanctuary is distinctive.[88] In the ruin field of the southern part of the insula a large rectangular building 17.50 m × 12.50 m was constructed so that an unbuilt up area to the West lay between it and the paved town square. This building was set back from the Decumanus Maximus and an indirect entrance was afforded by way of a lobby giving onto a door in the West end of the long southern wall of the Sanctuary. Since the focus of sanctity appears to have been at the opposite end of the building, there is a distinct bent entry (*knickachse*) disposition. In addition to this entry lobby three other small exedrae emanate from the main building in a rather characteristic way. One (S) on the short west end which affords passage to the open area in the West; one (G) at the north-western angle which appears an important extension of the main building; and a very small exedra (P) opposite near the south-eastern angle which is a well chamber. *plan*

The main building is planned as follows. There is a heavy longitudinal E–W wall set slightly off axis to the South which divides the building into a shallow (southern) compartment backed by a deeper (northern) compartment. It also may be possible that a line of posts

and poles may have subdivided longitudinally the northern compartment. Additionally, at the north-east angle, a small (ca 2 m square) chamber (D) was enclosed by partition walls. The rectangular building so planned contained a notable installation of benches set around the South, West and East walls. This together with the contents of the small North-East angle chamber leaves no doubt that the Sanctuary was oriented to the East (N.B. against the sense of the pre-existing town plan!).

installations

From this planning alone it would be possible, by way of analogy, to suggest a religious identification for the building.[89] However the finds within the building reinforce this identification to the utmost.[90] In the opening at the western end through the medial wall two sizeable altars were found; while between these and the entrance door were a succession of hearths. Also stacked on and strewn about the floor and bench of the northern compartment were many Base Ring bowls, figurines (centaurs) and bucrania. Again apparently purposefully buried within the small N–E angle chamber there was a bronze statuette of a male deity with a lance standing on a bull's hide copper ingot (the Ingot God or, perhaps better, the God on the Ingot). In addition to these finds within the building the undelimited open area to the West produced many terra-cottas and was obviously associated in the cult activities.[91] The combination of all this evidence shows that the sanctuary of the Ingot God is one of the more convincingly identified religious buildings in the region. 91

Proceeding on this basis, it is now possible to suggest the functional organisation of the Sanctuary. In this connection arises the preliminary question of the roofing arrangements.[92] The sanctuary building is clearly divided into two compartments and thus *à priori* there are three possibilities as to its roofing:

roofing

(a) one compartment was roofed and the other unroofed
(b) both compartments were unroofed
(c) both the compartments were roofed.

The excavator embodied the first explanation in his publication, but it is recorded that, on occasions, he entertained the second idea, that the building was entirely unroofed. The heavy construction of the medial wall suggests, on the contrary, that it was a load bearing wall and a heavily charged one at that. Therefore, unless there is some differential between the paving of the two compartments to support the concept of a hall fronted by a court, an entirely roofed main building is a reasonable assumption. The entrance vestibule and the three exedrae may or may not have been roofed — and if they were roofed, most likely were roofed at a lower height than the main building. Roofed in this fashion, the building would approximate in appearance to what has been surmised of some contemporary religious buildings in Palestine.[93]

character & function

The basic religious functioning of the Sanctuary seems fairly evident. It was a largish city temple (with a roofed area of well over 200 m^2). A screened and indirect entry gave access to a large hall which was the cult centre. This was divided into two compartments (a front one and a rear one) by a longitudinal wall, and this wall may have acted in a fashion resembling an iconstasis — i.e. the more holy religious ceremonies took place behind it (cf the distribution of the finds). In this way we might speak of a pronaos and a naos or the like. Built in the angle furthest from the entrance was a small square chamber.[94] In it was found the divine image,[95] and undoubtedly it was the strong chamber where the image was habitually lodged. It could be termed either a *thalamos* (the private chamber of God) or the sacristy (the storage place of the idol) depending on the philosophy of images entertained. In plain English,

structurally it was a cell — or if things were buried in it, even a cellar — it was definitely not a *cella* in the technical sense of the word as touching religious buildings.

The west exedra (S) was an associated cult place accessible both from within and without. It thus afforded a connection between those rites which were celebrated within and those activities which took place in the open area to the West, and resulted in the deposition of many figurines.[96] Within the exedra (S), a small monolithic pillar was found. At first thought to be structural, it is now more or less recognised that it was a cult object, a *baetyl*, a *mazzebah*, or the like.[97] Taken together with the open western area, it brings up for consideration the entity of tree and pillar cults.[98] The functioning of the exedra (P), the well-house, is self explanatory, while the exedra (G) in the vicinity of the God's chamber was probably a priest's room. All told, the Sanctuary of the Ingot God seems a well defined city temple, very much akin to some temples in Palestine and Philistia of the age.

cf Palestinian temples

In the interest of attempting better to define the type of both establishments, it is useful to conclude by a brief tabulated comparison one with another of the two sanctuaries at Enkomi — that of the Horned God and that of the Ingot God.

SIMILARITIES:

(a) Virtually contemporary, during the post-Ashlar stage of Enkomi (twelfth and eleventh centuries BC).

(b) The building construction was of mediocre rubble set among the ruins of fine ashlar construction of the previous age.

(c) The design essentially comprises a large hall with an indirect entry and a small side chamber (an annexe where the divine image was stored).

(d) The cult as attested by finds concerned with artifice in metal (bronze idols) and the bull (bucrania masks).

DIFFERENCES:

(a) As opposed to the Sanctuary of the Horned God which comprises a suite of apartments within a larger building, the Sanctuary of the Ingot God is a seperate building (contrived in a ruin field perhaps, but nevertheless an independent temple).

(b) Connected with the preceeding fact, the temple of the Ingot God stood in close relation with an open area where related cult activities took place.

In accordance with this tabulation, it would seem that the two Sanctuaries are expressions of the same "type" — the one constituting a city temple, while the *Sitz im Leben* of the other is less easy to define.

The preceeding buildings thought to be sanctuaries belong to the same building epoch, that when the monumental ashlar constructions of the 13th century BC were reformed or reconstructed in a poorer, makeshift way with rubble walls. That no monumental ashlar building in its original design was identified as a temple was long a notable fact. Regrettable also in so far as it excluded evidence of monumental temple design. Now most recently it is possible that some information is to hand in this connection. A general survey of the findings at Enkomi published by members of the French Expedition in 1986 reports on an ashlar building in Insula 6E, immediately to the South of the Sanctuary of the God on the Ingot.[99] This is in no way an exhaustive account and there are many important questions left uncertain or unmentioned. However the substance appears to be as follows:

Sanctuary of Insula 6E

ashlar construction

The sanctuary is from the 13th and 12th centuries. The period is the original ashlar construction, which is here exceptionally fine and monumental, so that, even where robbed out, the lines of the walls are clearly recognisable. It is a spacious building, larger than the Sanctuary of the Ingot God. The report specifies 19 m × 16 m (= more than 300 m^2).

plan

However this raises the principal uncertainty. These dimensions apply to a plan consisting of two successive broad rooms, one behind the other, oriented East-West. This makes an 94
entirely recognisable and rational plan; and the published description is in terms of a vestibule and a cella: the vestibule ca 6 m deep and the cella ca 9 m deep (internally), both rooms showing evidence of medial supports on the transverse axis. On the other hand, the plans published on p. 38 (schematic, fig. 7; stone for stone, fig. 8) appear to show a succession of three broad rooms which is an even more familiar design for a temple; a tripartite long building.[100] A door can be clearly seen at the rear of the "cella" opening into a further broad room which presumably an adyton of some sort, the store room of the cult objects, the God's house.

It is preferable not to discuss this "sanctuary" in any detail until there is a more definitive description available. However, one matter should be mentioned. The photographic illustration (Plate XIII) bears the caption "Sanctuary of the Column" and shows several unfluted column drums conspicuous among the ruins. The designation has also appeared sporadically in previous resumées of work done. If these column drums are thought to belong to the putative L.C. temple, then it is a matter of considerable note in building history. However, they very much resemble intrusive Hellenistic-Roman drums; and if so, the name Sanctuary of the Column should be lost as soon as possible to avoid confusion.

There have been suggestions of other possible sanctuaries/temples at Enkomi but without any record whatever of the building form. However, in the two instances, properly recorded buildings have been interpreted as of a religious nature. Although these identifications are quite uncertain, they are of interest from the point of view of building design. Indeed the situation is somewhat the reverse of that applying in the two acknowledged sanctuaries. There the building form is not very distinctive (or at least this is so with the Horned God Sanctuary) but it is the nature of the finds and installations which support the identification. In the present instances the finds are of little significance but the building is rather distinctive.

North Gate Sanctuary

First to be considered is what may be called the North Gate Sanctuary[101] which is contemporary with the two acknowledged sanctuaries.

When Dikaios first began to investigate the north wall of the city, the modern road up to Enkomi village passed through the gate area and obscured the relation of some substantial masonry which was visible on the surface to the East. After the road was resited it was possible to see that immediately to the East of the Gate a very large rectangular bastion (ca 21 m × 17 m) stood out from the face of the city wall. Without question Dikaios assumed this 75

nature disputed

to be (gate) tower,[102] the only difficulty consisting in the lack of an apparent communication through the city wall with the interior of the town. Dikaios supposed the tower to have been added to the wall after the first construction phase and before the wall was strengthened in the adjacent region by the addition of an other skin of masonry.

There the matter rested for some years until H. Catling[103] proposed that the building was not part of the fortifications but was a sanctuary outside the gate for the benefit of wayfarers coming in or out of the city — perhaps a Hermes/Janus type cult. Catling's proposition has

been disputed and in the interests of brevity it will be best to summarise arguments under the following three theses:

(1) It is a tower.

(2) It is not a tower.

(3) It is a temple/sanctuary.

(1) *It is a tower.* All that has been advanced here is general appearance, i.e. that the structure is in a position to serve as a tower protecting or controlling the gate and its overall form is consistent with this function.[104]

(2) *It is not a tower.* Here several arguments of detail have been advanced, not all of them compelling:

(a) There is no intercommunication at ground level with the interior of the town. There need not be! The communication may be at battlement level so that loss of the tower does not open easy entry into the city. Indeed detached ("cavalier") towers are known.

(b) The lateral walls are not bonded into the city wall. This, of course, is the usual solecism. According to military engineering theory, towers should not be bonded into the curtain — since attack is concentrated on the towers and if they are brought down, it is preferable that they do not bring down the adjacent curtain with them.

(c) The structure encloses a very large area (ca 350 m^2) and its walls are relatively slight (ca 1.50 m) so that it is not a strong defensive unit. This is a reasonable observation. However, it raises a question which is, in fact, uncomfortably open ended, *viz* the purpose the tower was designed to serve. It may have been intended not so much as a defence against hostile action, but as a means of controlling and regulating transit and traffic, i.e. an administrative guard house, etc.

(d) In general the structure is different in character from the other wall towers which have been traced in outline. Thus, once again, the most compelling argument is a very general one.

(3) *It is a sanctuary.* Outside of an attempt to involve the reported presence of figurines in the area, again the argument is of general appearance. The "tower" looks different from other towers and the position is one appropriate to a religious building in all ages. Additionally such features of internal planning as survive are reasonably consonant with a religious function. This is the most circumstantial of the indicia but it has been the least discussed. The features consist of (a) a well and (b) a demarcation of the southern end of the building extending to a breadth of 6 m from the city wall. Here the floor is of a different construction and there are some residual traces of supports for bases along the margin.[105] Thus the plan interpreted as a religious edifice would comprise a large court with one end sheltered and screened off by posts with hangings to constitute a *"beit"*, a god's house.[106] On the other hand, of course, a substantially walled court with a covered portico along one end (a stoa) is a suitable arrangement for many public purposes.

construction
ashlar facing

If anything is to be added to these indecisive considerations, it may come via the building construction. The description of the construction indicates that the walls (or socles) were faced with dressed stone — i.e. were in the "ashlar" technique which is characteristic of LC IIIA (late 13th century). The tower was thus butted against the city wall shortly after its construction as Dikaios inferred — and there seems little reason to trouble much more about its date since this does not affect the issue of its character.

However perhaps the masonry style of the walls might be adduced more directly as evidence of the character. The illustrations (Enkomi IIIA pls 14, 22, 23) are deficient in

detail, however they confirm that the socle facing is in the ashlar style, while the facing of the city wall is in the "cyclopean" style of masonry. This, in fact, exactly parallels the north wall or rectangular tower at Kition of the same period. By and large where reasonable analogies are available (as in Palestine and Syria) ashlar masonry is not found in Late Bronze-Iron Age city walls, but is found used in public buildings of a civil or religious character. However, ashlar masonry is used in city gates (in Palestine towers are not in evidence) which, of course, have both a military and a civil function in those regions. Thus again the evidence is inconclusive.

All that can be said is that a large rectangular enclosure stood alongside the North Gate as a bastion set against the city wall of LC III Enkomi. Clearly it functioned as a public building of some sort, but whether it was primarily military or civil engineering is not clear. Even if it be reckoned part of the fortification wall system, it is still possible that essentially it was of administrative (or commercial) significance, i.e. to control trade and traffic. In this fashion it may have partaken of the nature of a *khan*.[107] On the other hand, it is quite possible that the building may have constituted a sanctuary by/outside the gate, a common enough place for setting up shrines, altars, memorials, etc.

Area III Blockhouse chapel

During the pre-urban period at Enkomi when the (or a) focus of settlement was the fortress/stronghold in the region of the later North Gate, a house chapel/domestic sanctuary may be existed within this building. The evidence concerns the rebuilt structure of Level 1B (LC1 A–B, ca 1525–1425 BC).[108]

The rooms 107/112, 113, 114, 115 to the East of the central court are considered as belonging to the residential parts of the structure as distinct from the industrial (metal working) appartments to the West of the court. Room 107/112 is reckoned to be a main circulation hall with a staircase installed, and these things may be. The contents of Room 113 were so singular as to convince the excavator that it was a cult chamber. Ranged along one side of the (square) room was a compartmentalised bench which appears to show the emplacement for a wooden post or small tree trunk and a vase was sunk into the floor as though for libations. 74

Whether or not these installations warrant taking the Room 113 as a cult place, the design of the overall building unit is very distinctive and regular. It comprises a square to slightly *Breitbau* unit divided transversally so that a broadly extended vestibule fronts a triapsidal cella — and this is a very basic type of temple plan demonstrated in many ages and places. A somewhat confused perception of its ubiquity led Thiersch to identify it as "The Old Mediterranean Temple Type".[109] In this way it is of some interest that the excavator arrived at a sacred association for the area on altogether different considerations.

secular public buildings

pre-date urbanisation

The Enkomi excavations have provided a wealth of information on major public buildings. And this information must be eventually of great significance in picturing the social organisation of Ancient Cyprus. The buildings appear to extend in time from before urban development to the days when the city was fully built up. Equally these buildings appear to demonstrate the closest of interconnections existing between the various functions of public life, for, in addition to the residential and administrative apartments looked for, they make provision for military (fortification), industrial (metal working) and religious activities (house chapels, etc connected with metal working). Certainly these remains of public buildings raise up those strong negative comparisons with adjacent regions which seem such a feature of Cypriote building.

It is the public buildings which have been individually published (cf Dikaios' Areas III & I[110] and Schaeffer's Batiment 18[111]) and the following observations are based on this published material, although, of course, a great amount of further evidence is hinted at in the large scale town plan.

Area III blockhouse

The succession in Area III (the North Gate Area) is interesting. The earliest surviving
74 structure (Level I = LC I) is clearly of the blockhouse type, with marked defensive characteristics, so that while harboring a metal workshop and a possible house shrine, it has been considered above in connection with fortification.[112] Successive rebuildings on this site were conditioned by the original outlines of the building and maintained the character of an important public building, increasingly connected with metal working. The building became larger and more ramified but it lost its defensive character. But for the archaeological knowledge of its antecedents, no one would consider it in that connection. During the 13th century BC (Level IIB = LC IIC) it extended over ca 1200 m^2 comprising ca 50 rooms etc.
26 The plan presents an *ad hoc* appearance where through walls mark off major units which, in turn, are broken up into small cells by partition walls. This rubble walling does not conform to any regularity of design or execution — it is off straight and off parallel.[113]

demilitarised

long corridors

Perhaps the one conspicuous design feature is that circulation is often effected by long corridors leading directly into the middle and rear of the building.[114] In some ways the corridors appear to have been a characteristic device for articulating plans. One result is that this planning has a closed in, tortuous appearance — labyrinthine almost. The overall impression is of a series of small house plans jammed together according to need.

city wall

Somewhere about the middle of the 13th century, a newly planned city wall was made to engage this pre-existent building on the north façade and thus gave it an entirely changed locale.[115] It now occupied a significant position — set against the ramparts close inside the city gate. In contemporary cities (e.g. on the Syrian mainland) this position is one of consequence and generally occupied by a public building (or "palace").[116] According to the excavator, at Enkomi the pre-existing building survived in its new situation virtually unchanged in plan over a long period (ca 150–200 years).[117] It is curious. The most rational explanation would be that the building was changed from a blockhouse type into an unfortified public building at the time of constructing the city wall.

Area I

In Area I the development was from open semi-detached building units (possibly the plan is incomplete) to a continuously fronted city-block (insula) building, much of it executed in finely dressed stone masonry.[118] (N.B. this development has been outlined above in connection with the Sanctuary of the Horned God, later to be installed on the site. Here it is discussed more critically.)

The earliest building (Level I = LC I = 16th–15th century BC) is founded in a ca 1 m deep
162 depression in the bed rock. If the plan of this building is reasonably complete, then it spreads over ca 500 m^2 comprising up to 15 rooms with 2–3 courts.[119] It is difficult to think of any currently meaningful terms to describe the nature of this building. It can hardly be thought of as a single dwelling, even for an extended family. Perhaps something like chiftlik/manor-house/villa might possibly be in point. To what degree this constitutes a public building can not be decided until a broad spectrum is available for the site at this period.

pre-urban villa

Whatever the precise historical details may be, formally this building evolved by the process of agglutination into a much more extensive complex of the same overall character — *viz* a series of detached and semi-detached wings articulated about 3 courts, the ensemble

comprising about 40 rooms extending over an area approaching ca 30 m × 30 m or nearly 1000 m². The wings are so disposed so as to encompass each of the courts on three sides. Within the various wings circulation is by way of long corridors and there is clear evidence of stairs to upper building levels. The design seems episodic but so far as the published plans reveal, the rubble wall construction is regular, walls being straight and parallel.[120] 25

"palazzo"

If such a building were encountered e.g. in Syria-Palestine, it undoubtedly would be identified as a palace. Perhaps the renaissance Italian usage of Palazzo avoids the conotation of royalty loosely inherent in the Egnlish word. Thus the residential headquarters of a ruling class family (something after the fashion of e.g. the Palazzo Pitti) seems to be a fair description of Area I, Level IIB, sometime in the mid 13th century BC. Such an establishment is not (necessarily nor usually) the only one of its kind and clearly there were others in the neighbourhood at Enkomi (e.g. Batiment 18 immediately to the south).

The Italian renaissance analogy, particularly as invoking the plurality of these buildings, raises the question of the social environment. Such buildings are in the renaissance essentially features of the urban scene. What then was the nature of the settlement at Enkomi in the mid thirteenth century BC (LC IIC)?

urban status

It is agreed that the city wall was built during the currency of the period (i.e. ca 1250 BC).[121] Moreover, although the façades of the Area 1 building are discontinuous, its overall limits are clearly confined by the street plan as achieved in the succeeding epoch (LC III).[122] It is, therefore, difficult to avoid the conclusion that Enkomi was already urbanised (at least in prospect) when this building flourished.[123]

city block building

At all events, somewhere later in the second half of the 13th century (ca 1220/1210 BC) after destruction by acts of war, this extensive complex was refounded as a magnificent city block building. The façades were rendered continuous to constitute street frontages on three 136
sides (Decumani on the North and south, and the Kardo on the East). And what is more, the new sections of the external façades together with significant inner walls were constructed in finely dressed stone masonry. As corollary of the external closure of this building, the traditional open *ad hoc* planning of the interior was superseded by-a more analytical overall plan. The articulating feature of this plan is a monumental central hall (approached via an entrance corridor) while on either side and at the rear are ranges of rooms and apartments. This constitutes a very recognisable schema which necessitates detailed consideration in due course.

All this, of course, constituted a striking change of aspect which might be well thought to mark a new age. And indeed, in his analysis, the excavator, P. Dikaios, accepted this fine building as the sign and image of a new urban Enkomi.[124] Such an understanding also conduces towards a rather straight forward chronology and aetiology: the momentous ideological developments being the work of new arrivals who brought their concepts of urban life with them. Unfortunately there are difficulties in this view.

anterior continuity

The large open complex of LC IIC times is a development from the initial smaller complex of LCI. Planning and orientation are the same, it differs only in extent. On the other hand the magnificent city block building of LC III reproduces exactly the overall limits and orientation of the preceeding LC IIC building and differs from it in design and construction. Now since the orientation and the overall limits of the building are, in fact, part and parcel of the town plan, then it is manifestly very difficult to assert that the town plan was a product *de novo* of LC III times (ca 1220 BC). This may be possible but archaeological appearances are

against it. Everything suggests that the town plan was already in mind (at the least) when the LC IIC traditional type building was organised.[125] And this, of course, involves historical difficulties with new arrivals from abroad (recognisable from their pottery) as the authors of urbanism in Cyprus.

short floruit

Be all this as it may, the new magnificence lasted but a span (ca 1220–1190 BC) — its rise and fall being well within the compass of a single lifetime. Its spoliation after a scant 30 years doubtless afforded melancholy vindication of the tirades and anathemas delivered by local
137 Jeremiahs, shocked at the departure from good old fashions. The ruins were refurbished immediately — utilising the expansive accomodation to the full, and crowding it out by compartmentalisation. However these partition walls were of old fashioned rubble and, so far
237 as can be seen, there was an end to fine stone masonry at Enkomi. In plan all the hall-marks of the previous schema were lost. The grand entrance hall and chambers of the northern half were parcelled up for utilitarian (and industrial) usage, (probably the residential apartments were on the upper floor), while the southern half became the focus of dignity — now, however, converted in part (or perhaps virtually in whole) to a religious building, the Sanctuary of the Horned God (and perhaps that of his *paredra*).[126]

later impoverishment

Batiment 18

In the insula (5W) immediately to the South of Dikaios' Area 1, Schaeffer excavated an even larger public building (18) of the same type and history. Unfortunately there is no systematic publication of its architectural form and development.[127] It is of monumental proportions, ca 55 m × 33 m and thus extends over 1800 m^2 or more; and during the latter part of the 13th century, it incorporated much finely dressed stone masonry. From the vignettes of the planning available, it may be surmised that the overall schema followed that of Dikaios' Ashlar Building. The main entrance to Batiment 18 is at the middle of the south façade and this central entrance suite consists of a hall approached by an entrance corridor. It is evident that on either side of this central suite are spacious apartments, thus the overall conformation of the south front of Batiment 18 is essentially that of the north front of the Ashlar Building.

houses

It is not as yet profitable to discuss the private houses at Enkomi. Detailed publication has concentrated on the major public buildings and it would be quite uncertain to attempt an analysis of wall vestiges appearing on the general plan.

industrial buildings

It has been said that "Enkomi appears to have been a city dedicated to copper working . . ." and ". . . the by-products of copper working litter the great site".[128] Thus evidence of wide-spread and long continuing metal working abounds — both as to the production and to the product. Moreover it is possible to link the objects found with the activities in several ways .[129] The activity began with the first occupation of the site in MC times and continued until the end of its occupation. However the majority of the evidence is from the built-up city of LC IIc — LC III times.[130]

As a preliminary it is useful to set out the several metallurgical processes which are in point.[131] These are:

(1) primary extraction of metal from ore = smelting
(2) secondary extraction of metal from ore = refining (or purifying)
(3) fashioning of metal objects = casting, founding.

The difference between the first two operations is of degree only and both give rise to the highly characteristic waste product, slag (the residual elements of the ore after the metal has been separated). Since much copper slag is in evidence on the site, short of arguing that the

slag was generated elsewhere and brought there as such, it is clear that smelting or refining copper was practised at Enkomi.[132] However it is not as yet always clearly determined what evidence represents smelting and what represents casting since combustion at high temperature (pyrotechnology) is required for each process.

The surviving evidence for copper working[133] may be considered in two connections:

(a) the location and distribution of metal working establishments.

(b) the type of buildings which housed metal working.

In fact these questions are closely connected and the circumstances by no means as might be reckoned.

zoning

The sulphurous smoke given off by reducing copper ore is very noxious and thus it might be thought that such metal working activities as involved smelting and refining would be segregated in a special industrial quarter of the town (close to the walls down wind).[134] All the evidence is against this. It is true that the fortress at the northern border of the settlement was an early centre of metal working. However there is also evidence of metal working at this period (ca 16th century) provided by cuttings in the bed rock at the very centre of the later city.[135] Moreover once the town wall was built and the city developed, metal working was discontinued on the site of the fortress building.[136] On the contrary, such establishments were found in the centrally situated insulae on either side of the *kardo* towards and at the crossing with an important public building.[137] This was apparently the pattern in pre-urban times and remained so after urbanisation[138] with dire effect on the clear air of this large and populous city.[139]

The question carries over from the distribution to the type of metal working establishments. Speaking generally the evidence is not of separate specially designed industrial buildings but of metal working installations in (or in conjunction with) buildings which serve other functions (residential, administrative, religious). Where these installations concern smelting/refining, then it might be thought that at the least the furnaces would be in the open air, but such is not always apparent.[140]

specialised installations

The architectural details of the installations are not well published. One building unit which appears to provide for metallurgical operations is a small concreted yard set on a distinct slope (ca 10°) with a canalised drainage to a sump.[141] The presence of stone powder plus traces of slag indicated that this was a crushing floor where the ore was broken up in association with a washing process. One published complex which includes this unit is in Insula 5E hard by the Sanctuary of the Ingot God.[142] The crushing and washing floor is in the centre of the establishment with slag heaps to the North near the street and the evidence for casting to the South (towards the sanctuary). It is an obvious suggestion that the cult statuette of the God on the Ingot was cast here (LC III = 12th century). According to this published plan, the complex consists of 25 or so small compartments with little to say which is roofed or unroofed.[143]

At an earlier stage (LC II = 13th century) the large public building at the northern margin of the site harboured intensive metal working.[144] The whole of the west sector of the building was used for the installation of extensive copper workshops. Nearly every room in this sector yielded important evidence of copper smelting and associated works.[145] Perhaps the focus of the work was in the central court or hall. And just outside the building to the N–W there was a large slag dump. Now the west sector referred to formed complete in itself a typical building unit consisting of a central entrance suite of a court or hall approached by a corridor with

ranges of rooms on either side and at the rear.[146] This is a basic design which was used for residences and public buildings etc. It demonstrates that no need was felt for a specially designed or located industrial building to house copper working. The work was carried on more or less in whatever premises were available, the nuisance of the fumes, smell and noise notwithstanding. *no specialised plan*

Enkomi first obtained archaeological recognition as a tomb field and although it is now of paramount significance because of its urban development, nevertheless its cemeteries are still very important; not the least for the light they throw on settlement history. Many, many tombs have been cleared in and about Enkomi[147] but their relationship to the contemporary habitations is often ill defined. A great number of tombs were cleared (e.g. those by Murray Smith & Walters,[148] by Myres,[149] and by the Swedish Cyprus Expedition)[150] before it was realised that there was Bronze Age habitation on the site. It was the percipience of Schaeffer which established this fact[151] and over the years of his work at Enkomi he cleared many tombs. However although numbers of these have been published[152] and their contents well discussed, their relation to the habitation remains is not clearly illustrated. On the other hand Dikaios, who also included the clearance of tombs in his work at Enkomi, was interested in using tombs in conjunction with buildings to elucidate settlement planning and history — and he published his findings succinctly.[153] In these circumstances it is perhaps best to summarise Dikaios' specific conclusions and then to attempt some assessment of them in the light of the material in general. *tombs*

74 162 Dikaios found a consonance of evidence in his two areas (III, the region of the North Gate, and I, Insula 4W — the site of the Ashlar Building). In both instances there was an isolated building founded more or less on bedrock MC III/LCI times (= ca 1600 BC) and spread about the confines of these buildings were about half a dozen rock cut chamber tombs. According to Dikaios this amounted to a picture of a settlement consisting of spread out building agglomorates each set about with its graves (or graveyard).[154] This type of organisation survived throughout the LCII A & B epochs.[155] However in LCIIc times these individual agglomorations took on a more formalised aspect so that from being irregular "islands" of buildings, they in fact approached the condition of *insulae* — rectangular blocks delimited by streets. Nevertheless according to Dikaios sepulture continued to be in open spaces adjacent to each block.[156] *funerary practices* *pre-urban*

According to all evidence, it is somewhere towards the end of the epoch (ca 1250) that the settlement was transferred into a town within a city wall and by subjection to an overall rectangular grid street-plan. Since the complete building up of such an extended street plan would require a term of years (e.g. one generation), it would be possible for the old burial habits to survive and this would result in the rather salient (but possibly unintentional) practise of intra-urban burial.

Be all this as it may, according to Dikaios' analysis after a scant generation (ca 1230 BC), Enkomi was sacked and then rebuilt on a grand scale and in a grand manner with continuously fronted, monumentally constructed blocks.[157] Such a process inevitably would impinge on the preceding burial customs since no longer would there remain open spaces available for interments not far removed from any particular group of buildings. Therefore such space would have to be provided by planning within the city limits or else burial would have to be extra-mural. In fact according to Dikaios' findings in his limited excavation area there was no further evidence of rock cut chamber tomb burials within the city. Instead a few *urban*

pit burials within the earth were encountered and none containing any luxury imported pottery.[158] Since the date of 1230 BC for this new urban development was arrived at on the basis of the copious Mycenaean IIIc pottery which recurred in the new building level, Dikaios considered these graves to be those of helots while the new (Mycenaean) masters of the city were held to have buried their dead in chamber tombs outside the walls, doubtless supplying them with the luxury Mycenaean IIIc pottery which was so strikingly present in their new urban buildings.[159] 185

available evidence

Before commenting on these views in the light of general evidence, it is very necessary to indicate what the evidence comprises since this is subject to misconception. Outside of Dikaios' material there are probably something like 150 tombs at Enkomi published in some form or other — and for all these a reasonable estimate of the date can be given. However beyond that the information becomes attenuated. About 100 tombs were cleared and published by British Museum expedition at the end of last century.[160] For these we have only a very rough indication of their individual location; we know almost nothing as to their individual form and nothing at all of their stratigraphical relationship with the surrounding buildings. Of the twenty odd Swedish tombs we have good and full accounts of the forms of the tombs but again only an approximate idea of their individual positions and nothing as to their stratigraphical relationship to the buildings. However on occasions something of this relationship can be estimated from the reports by way of interpretation.[161] The crux of the matter thus rests with the French tombs.[162] And here it is necessary to put the situation bluntly. The form of many of these tombs is recorded and their position is accurately marked on the general plan.[163] However in spite of prevailing assumptions, there is still little indication of their connection with the settlement buildings (that is, as far as reasonably accessible publication is concerned). The stratigraphical connection is not recorded, the relationship of the tombs with the buildings is divined from pottery comparisons — and this drastically limits the information.

Now if Dikaios' account is set against the above record the picture may be filled in as follows:

overall chronology

The overall chronological limits are secured. The earlier attested burials fall in the latter part of the MC period (e.g. Swedish tomb 12;[164] French tomb 11.[165] On the other hand no tomb has been cleared on the site significantly later than the end of LC III. Dikaios, looking for extra-mural LC III tombs, cleared a Cypro-Geometric & Archaic tomb about a kilometre to the north of the site. He considered this to mark the presence of a cemetery of the period which corresponded to a resettlement of the site of Enkomi at this period, the evidence for which has been almost entirely eroded away.[166] It could, of course, equally well indicate a settlement anywhere else in the vicinity.

The bulk of the tombs excavated at Enkomi are from LC I & LC II times, the preponderance being, LC II.[167] Since the latter stages of this period must on any analysis mark the beginning of the process of urbanisation, obviously the tombs of this period are of particular interest. It is recorded in various publications[168] that a number of these tombs are sealed by LC III floors and pavements. The type example is Swedish tomb 18 located within the precincts of the imposing residence building in Insula 5w which, for convenience of reference Schaeffer designated Batiment 18.[169] This tomb was not only the type but also, historically, a limiting case. The circumstances have been summarised as follows: "It has been a common practice at Enkomi in LCII for family vaults to be hewn out of the rock between the

courtyards of the town (*sic!*) house. In the rebuilding that was the sequel of the LBIIc destruction, new construction encroached on the yards from which they were entered. This closure applied to the very important tomb No. 18 of the Swedish Excavation which was last used either shortly before or immediately after the catastrophe (*of ca 1230 BC*)".[170]

This says as much as is warranted but in fact the crucial question is avoided — since in fact direct information is lacking. Many tombs used in LC II times are found below the confines of city block buildings. However because of the lack of stratigraphic context, it is difficult to say whether these tombs were originally constructed in open spaces in and around the irregular limits of earlier buildings and were later built over by the extension and regularisation of these buildings, or, on the other hand, was it the custom in later LC II times to hollow out rock cut chamber tombs like vaults below the floor levels of dwelling places? This is, of course, the practice at Ras Shamra[171] and it has been more or less assumed to carry over in Enkomi — but the direct evidence for it is not presented.

connection with city block building

The one instance where the matter has been carefully investigated in the field and considered in the report is the unusual case of a built tomb. This is a tholos-like structure of rubble and mud brick located in Insula 5E. (There are two other similar tombs in the vicinity — one excavated by the Swedish Excavation and one by the French). It was apparently constructed in LCI and remained in use or was reverenced for some 100–200 years down to the end of the LC II period. After an enquiry into the stratigraphy it is concluded that when built it was in open land and that as the area was built up it was respected and eventually came to be enclosed within a city block building.[172] How regrettable that such specific information is not available for later tombs!

built tombs

Further illustration of the uncertainties which accrue from the lack of stratigraphic regard is provided by the (again) unexpected occurence of three other built tombs of a different type. These are found close together in Insula 4E, lying beneath the floors of LC II buildings.[173] On this account they are considered to be LC II in date but no stratigraphic evidence is provided. In form they appear as simple rectangular chambers, but they are constructed of finely dressed blocks of masonry (ashlar). Since care was taken to demonstrate that ashlar stone masonry was brought to the site after the 1220 BC destruction (i.e. is an LC III feature) — these built tombs would thus constitute the first occurrence of ashlar construction at Enkomi.[174] It would be very interesting to know that the period of construction of these tombs was LC II and that they were built beneath the floors of pre-existing dwellings.

195 239

LC III earth burials

Whatever the burial practices as urbanisation proceeded, it is clear that the transition to LC III marked a significant change as Dikaios postulated. There is some evidence of the re-use of rock cut chamber tombs[175] but so far as can be ascertained there is no clear evidence for the construction of such tombs *de novo* during this period (12th–11th centuries). On the contrary the Swedish Expedition documented a number of simple earth inhumations from this period,[176] the burial pit being lined in some cases with rubble[177] or the like. It is also of note that some of these graves were set in the earth overlying LC II chamber tombs.[178] Since always the funerary offerings were of simple local wares there is something in Dikaios' conception that such burials are of subject local helots. Certainly where the rock cut chamber tomb is known, simple inhumation is without doubt second class burial (fit only for infants etc.). However such a custom is a novelty at this stage in Cyprus. Moreover the converse supposition still remains undemonstrated — *viz* that the (Mycenaean) lords of LC III Enkomi were buried in rock cut chamber tombs outside the walls.

Without doubt the variation in funerary customs should be highly significant in elucidating the process of urbanisation at Enkomi. As at present, however, in spite of the prolific material the information is limited. The LC II tombs of the 13th Century do not tell their full story because of lack of stratigraphic determination. While for the later period of the 12th and 11th centuries the sepulchral evidence still remains curiously defective.

site of major importance

Through the complementary works of Schaeffer and Dikaios the archaeological remains at Enkomi are among the most important in the pre-classical world of the Middle East. They give a striking picture of a development into urban form which can be dated to the 13th century BC. Equally striking is the appearance of finely dressed stone masonry (ashlar) during the same century. Also two successive destruction levels separated by only a bare generation. (ca 1230 BC and ca 1190 BC) have invited interpretation in the light of Egyptian historical records and ancient Greek legend, thereby the former has been associated with Achaean immigration and the latter with the raids of the Sea Peoples. These are three factors of very major significance. However it is possible that interpretation of the site evidence has been overly determined by conflating these factors into rigid unilinear analysis.

KITION

Kition, the ancient site underlying part of modern Larnaca, is quite atypical and because of this it must be described here, even though relatively little of it (i.e. as compared with Enkomi) has been revealed by excavation. It has been noted that in Cyprus generally habitation did not endure over successive ages on the one site, and partly because of this, settlements are not marked by tells, thus the overall limits of ancient settlements are generally unknown, and hard to trace even when considerable excavation has been carried out.

continuity of settlement

However, at Kition, habitation apparently endured from Bronze Age times down to the present, and partly as a consequence of this, mounds formed which made the general overall limits of the ancient site more or less recognisable to intelligent observation even before excavation and in spite of limited excavation.[179]

topography

In outline the historical circumstances seem to be as follows. Since late pleistocene times there has been a continual seaward advance of the coastline in the vicinity of Larnaca. This 54
has resulted in a typical succession from sea to lake and marsh to coastal flats. In this way the salt lakes to the South of Larnaca were roomy, sheltered bays in the second millenium and the sea shore stood two hundred metres or more inland of the present Larnaca Marina, with another sizeable bay to the North of the present Museum, washing the foot of higher land ca 10 m above sea level in this area.[180]

Accordingly it would seem that a major seaport town (Hala Sultan Tekke) existed on the shore of the present salt lakes by the Um Haram Tekke; while there was some occupation of the higher ground of present day North Larnaca. During the second half of the millenium the sea continued to retreat so that the bays to the South of Larnaca were cut off from the sea by sand bars to become "*sebchas*" with disastrous results to the great trading town at Hala Sultan Tekke. At this stage its active inhabitants probably moved to the higher land by the northern bay and there, at ca 1300 BC, established themselves in a walled sea port, as has been clearly revealed by recent excavations. Thereafter although the sea continued to retreat and left the northern limits of the town high and dry, a restricted inlet formed a harbour basin hard against a stretch of the eastern wall of the town. In this way the town endured as a sea port throughout antiquity, i.e. for something like two thousand years — from late second millenium BC to the Arab raids in the seventh century AD. Thereafter the inlet silted up (or was

allowed to silt up), and the basin became a pestilential marsh, morass, infecting the air of the village(s) which succeeded to the locality.[181]

The upshot of all this was that a natural plateau (ca. 1.5 km × 0.5 kms) of compact, sandy marsh capped by conglomerate extending parallel to the sea at about half a kilometre from the present shore has always remained defined and recognisable. This rose in certain areas to a height of more than 10 m above sea level (partly due to the continued occupation). Furthermore massive city walls of Bronze Age and succeeding times further defined the perimeter and indeed survived in places to casual view until the eighteenth and early nineteenth century. Thus it has always been known that ancient Kition was a large city in antiquity, something approaching 50 hectares in area, standing "between the Scala (the landing from the roadstead) to the south east and Old Larnaca, the village, to the north west".[182]

modern investigation

The outlines of this ancient settlement (with its real or supposed walls) appeared on the plans made by visitors during the eighteenth century and from the middle of the nineteenth century, excavations were made among the tombs (some of monumental masonry structure) which were found about the confines of the ancient city. At this time the harbour basin
113 against the East Wall was still variously a lake or morass and so noxious that the new British administration immediately (1879) filled it up. This they did by cutting away the neighbouring part of the small tell (Bamboula mound) which in antiquity constituted the acropolis (?) of the city.[183] The Swedish Cyprus expedition (1917–31) conducted excavations in what remained of this mound and identified sanctuary buildings.[184] Then, in the sixties and seventies, a series of excavations were made by the Department of Antiquities at the North and North-West extremity of the ancient town. These brought to light monuments of the greatest interest and provided a sample illustration of the history and building development of Kition over a millenium extending from the foundation of the Late Bronze Age town to its conquest by Ptolemy Soter (i.e. from 1300–300 BC).[185]

chronological development

In the Kathari locality very large blocks of stone could be seen breaking the surface and constituting the line of a (city) wall. Here excavation was begun in vacant lots among suburban houses. Eventually about a hundred metres run of a city wall was revealed with external bastions and against it, on the inside, a temple area. These eventually fairly extensive excavations were carried through with meticulous attention to stratigraphy and since the ceramic chronology is closely refined, the historical succession is very accurately determined. Nonetheless it must be emphasized that the topographical information they give is very limited. Nothing has been published to indicate the extent of this Late Bronze Age city at Kition and it is a far cry from 100 m run of city wall to a circuit of over 3 kms indicated for later (classical) times. In the same way, from the excavations, nothing can be said of the overall urban development since only a hectare or more has been excavated out of a total area of ca 50 hectares or so. Whether anything like the grid system at Enkomi with its regular insulae was laid out for the first urban development of Kition is entirely unknown.

LB city

However, so far as the overall extent of the first city is concerned, some indirect evidence is available. Mention has been made of the great numbers of tombs about the confines of the city and from accumulated clearances over many years, it is possible to suggest some sort of chronological distribution in the cemetery areas. "... the tombs of the Early Middle and Late Bronze Age lie to the North, those of the Geometric, Archaic and Classical period to the North West and West and the Hellenistic and Graeco-Roman ones to the South West and the

South."[186] There are, of course, many individual discrepancies to this systemisation, however it appears regular enough to corroborate the evidence of recent excavations that the northern part of the ridge was the nucleus of the urban development and (on the general rule that burial is organised as near at hand as possible) it would seem that the city area spread progressively to the South. As to the possible northern limits of the original Bronze Age town there is again only inferential evidence available. The whole virtue of the Kition site was that of a sea port. Therefore it is likely that the original town extended as far south as the 113
Bamboula mound where the harbour was established throughout the later history of the site. (Of course it is also possible that, at the earliest stages, harbourage was still available further to the North at and near the Kathari area itself.)

Iron Age city

For the topographical development of Kition in the first millenium BC, the evidence is almost entirely superficial and/or literary-epigraphic. A nearly continuous scarp with, in places, a well defined ditch delimits the higher ground and there is little argument that in general this marks the limit of the ancient city at its greatest development. However, although various clearances and sounding have been made on this line, they have brought to light virtually no convincing evidence of the city walls themselves. Both Kimon (449 BC) and Ptolemy Soter (312 BC) assaulted the defences of Kition and the latter is stated to have slighted them.[187] Whether the defences were restored and maintained in later ages is not known. Perhaps it is unlikely that a new more extended circuit was constructed in the peaceful, unified island of Graeco-Roman times. Therefore it is perhaps reasonable to assume that the present evidence for the circuit refers to that existing in the middle of the first millenium, serving the capital of the independent Cypriote kingdom. For the town of this period there also survives the evidence of a "citadel" on the Bamboula Hill commanding a adjacent harbour basin immediately against the Eastern Wall. On this citadel stood temples of the city God, Heracles Melkaart, and of the Goddess, Aphrodite/Astarte, which were 113

intra-mural sanctuaries

excavated by the Swedish Cyprus Expedition.[188] This sacred area endured throughout Archaic and Classical times and was apparently sacked by Ptolemy Soter (312 BC).

extra-mural sanctuaries

There is also evidence for and of various other sanctuaries, both within and outside the city walls. Generally speaking, as is normal in Cyprus, these seem to have been established in the Archaic period and to have survived on down into Ptolemaic and Roman times. Prominent are the sanctuaries of Artemis Paralia[189] a half a kilometre to the South-East of the town going towards the Salt Lake, and also a sanctuary of Eshmun-Melkaart[190] on a large tongue of land projecting into the South-East part of the Salt Lake. Within the city limits material evidence has been revealed of two sanctuaries in the North-West quarter by the Chrysopolitissa Church[191] and also of a sanctuary by the Eastern wall near the Commercial Lyceum.[192] The dedications of these three sanctuaries remain unknown.

tombs

Finally mention has already been made of the innumerable graves in the region of the ancient city.[193] Indeed it was noted as early as the 18th century that the modern name 190A
Larnaca derives from the Greek *larnax* (= coffin). Cesnola when he was American Consul at Larnaca in the last days of Turkish rule reckoned to have "investigated" 3,000 graves there.[194] And the distinct chronological pattern formed by the graves of Kition provides valuable information concerning the city limits in early times.[195] Most of the graves prior to the Ptolemaic period are rock cut chamber tombs of various forms. However from archaic times some monumental masonry tombs were built. Two of these tombs were known to visitors in previous centuries: the Evangelis (Bargigli) tomb and the Phaneromeni tomb. It is 195 210

possible that these monuments may be some indication of the position of city gates. The Evangelis tomb is a type example of the simple straightforward design employed for masonry tombs in Cypro-archaic or classical times. A steep flight of steps leads down to an underground burial vault ca 8 m long and 2 m+ broad with the crown of the vault 2m+ high. The far end of this is walled off to form a more or less square burial chamber containing a sarcophogus. This construction is entirely in substantial ashlar masonry.[196]

As opposed to the limited topographical knowledge available of ancient Kition, the recent excavations at the northern wall of the city have afforded a very complete sample of the historical succession from the foundation of the town to the end of its independence in 312 BC consequent on its capture by Ptolemy Soter I.

Kathari Excavations Area I

The Department of Antiquities excavations evolved over the years into two neighbouring areas.[197] The site of the original investigation (Area I) was constricted by modern building but revealed interesting evidence of the conjunction of housing and burials. There were first of all some EC III (ca 1800 BC) chamber tombs deriving from occupation elsewhere in the vicinity, witnessing to a period before the actual site of the excavations was settled. Sub-
173 sequently in the 13th century the area was built over and traces of a metal workshop were revealed, also a bathroom. And contiguous with these settlement remains three contemporary chamber tombs were discovered. Thus area I testified to the unusual practice of cutting tombs about and beneath the houses of the living exactly as in Enkomi as the same age.

Sanctuary Area II

On the other hand the excavations in Area II produced as coherent and extensive a historical picture as anything known in Middle East archaeology. By the city wall a sanctuary area with industrial annexes maintained its overall form and function throughout a millenium.[198] For the first part of this period the site looked equally to the Aegaean and to the Levant, while for the latter five hundred years the site was a colony of Tyre. Nonetheless it achieved a status equal to that of the mother-city in the ecumenical politics of the Middle East, and Assyrian, Egyptian, Persian and Greek pressures and forces were in evidence on the spot.

city wall

Early in the 13th century BC (LC II) the northern confines of the higher land were
76 77 enclosed by a substantial (2 m broad) city wall of mud-brick on rubble foundations. In the 100 m run exposed two sizeable stone bastions (18.50 / 15.50 × 5.00 m) were built against the external face. These structures are still more or less flooded by rising ground water for most of the year. At some stage they may have been washed by open water and indeed may have constituted mooring stages.[199]

Sanctuary Area

98 99 Inside the wall was a sanctuary area comprising (as revealed) about half a hectare with two temples standing some 20 m apart and between them a sacred garden with something like sixty plantings.[200] Much copper slag in the debris indicates the presence of metal workshops. The two temples, a larger (14.50 m × 9.00 m) and a smaller (6.75 m × 4.15 m) are essentially of the same plan: *Langbau* hall buildings with an eccentric wall entry and at the rear a narrow store room (with a similar eccentric wall entry). The construction was of mud brick on a rubble socle. These two buildings reproduce a temple type common in Palestine at this period. This intra-mural sanctuary was to remain in existence for nearly three centuries throughout a turbulent epoch of the changing of nations and the uprooting and wandering of people. Repeatedly sacked and abandoned the area was built up again on the old *schema* as soon as possible. This was the era which marked the end of the old insular Cyprus and its full
0 integration into the Aegaean and Levantine world. Mycenaeans, Achaeans, the Sea Peoples;

the Trojan War, the Dorian Invasions and the return of the Heraklidae. All the famous names and events of history have been associated with the archaeological findings of the period ca 1300 BC–1000 BC at this sanctuary area of ancient Kition.

At the end of the 13th century both areas I and II were abandoned and the floors covered with soil, while the mud brick city wall was fallen to the ground. However the quarter was rebuilt with greater magnificence by newcomers considered to represent the archaeological equivalents of the legendary founders of Cypriote towns, wandering Achaeans mostly connected with Trojan War stories. However be it noted there is no Greek foundation legend for Kition!

The city wall was rebuilt in a massive construction ca 2.5 m thick consisting of a substructure (1.25 m high) very large stone blocks and sizeable boulders. This is exactly the construction of the contemporary city wall at Enkomi, and is referred to rather loosely as Cylcopean. 76 77
The external bastions remained in commission and along the outside of the eastern bastion there is a roadway (heavily rutted by vehicular traffic) presumably leading to a gate in the projecting north salient of the city wall.[201]

The sanctuary area was redeveloped maintaining the individual components of two temples and a sacred garden but incorporating them in a single formally planned ensemble ca
Temple 2 50 m × 20 m in extent. The larger temple (2) remained recognisably temple 2 but the smaller 100
Temple 3 temple (3) was suppressed and instead the sacred garden was walled in and became the
Temple 1 forecourt (or, as now determined, the hall) of a large temple (1). Both temples communicated
Temenos B directly with a Temenos B which occupied the residual space of the heavily walled architectural ensemble. Between this complex and the city wall, 15 m to the north, the intervening space
Temenos A was taken up by another temenos (A) plus workshops and foundries communicating directly 174
with the sacred palace.[202]

Thus in place of the episodic "rural" lay-out of the preceeding age the sanctuary area acquired an entirely urban central planning aspect. However it was in the building construction that the greatest innovation appeared for here in place of the rubble and mud brick walls of the earlier age was introduced the ordonnance of monumental marginally draughted ashlar masonry. Whether or not Achaeans were the "*Bauhern*" of the newly laid out sanctuary area of Kition, its analogies both in design and construction are with the Syrian Levant — e.g. Ras Shamra and Tell Kamid al Loz. One architectural feature at Kition, however, seems to be more referable to the Aegean and that is the form of stepped capital to the pillars which is of common recurrence in Cyprus at this time. Something like it appears in Greek Architecture but as yet it has not been reported in the Middle-East.

At this period a new unit was added to the Sanctuary area which was to remain very fixed
Temple 4 and enduring. A later (1974) extension of the excavations showed another temple (4) set hard 104
against the city wall just to the East of the main complex. This was a largish building (ca 15 m × 8 m) and was oriented in the opposite sense (*viz* to the East). It was of the same architectural type, *Langbau* with an eccentric entry but it revealed the novel development of a tripartite "*debir*".[203]

With the addition of this temple and also of another (5) located immediately opposite it to 98 104
the south, the sanctuary area maintained its overall lay-out until a definitive abandonment ca 1000 BC, although its existence was a violently disturbed one. Soon after the construction of the ashlar buildings (ca 1190 BC) they were destroyed (this reckoned to be evidence of the Sea Peoples[204]), but were immediately rebuilt. Then after a century or so it would seem that the

whole area including the city wall was brought low by an earthquake.[205] However again there was a major rebuilding of the sanctuary in its old form. Only it would seem that the city wall was not rebuilt in this quarter, but the sanctuary area was enclosed by a slighter mud brick wall. This re-occupation was of short duration and lasted a generation or two to ca 1000 BC. These later resettlements at Kition have always been brought into relation with the disturbances occasioned by the Dorian invasion.

If the archaeological observations are correct, at the end of its days the sanctuary no longer lay within the city bounds; however, nothing is known of a new line of city walling. In any event whatever the limits of the city may have been ca 1000 BC, it seems that the sanctuary area was abandoned and deserted for something like two centuries after this date — and this ends the first half of its history. However at the end of the ninth century the deserted ruins were put into commission again.[206] And this marks the second half of the life of the sanctuary — as the site of a major (if not the major) Phoenecian temple. In its monumental construction it incorporated a great deal of imposing ashlar masonry and it was quite comparable with the Temple at Jerusalem, its slightly older contemporary.

sanctuary abandoned ca 1000 BC

renewed development ca 800 BC

The foundations of the former Temple I were reused as convenient but the building was broadened to the South so that the overall dimensions became ca 31 m × 22 m. Furthermore
105A a large open court (Temenos B) added another twenty metres to the overall length of the complex which thus approached 100 × 50 cubits. The plan of the temple remained *Langbau* but became more architecturally developed. The long (ca 3 × 2) rectangular building was provided with two monumental entrances, eccentrically disposed at the west front and a broad shallow adyton/*debir* at the east end. This was given three entrances and flanking the central entrance were two free standing columns (or piers) recalling Jachin and Boaz. The former enclosed sacred garden had become a true House of the Forest of Lebanon with four rows of seven wooden columns (doubtless cedars of Lebanon). Thus in effect the Phoenecian temple at Kition doubled both the Solomonic Temple and the House of the Forest of Lebanon. Whether the central (broader) nave was hypaethral or arranged as a clerestory is not exactly determined.[207] NB Recently final publication determines the temple as fully roofed with clerestory (Kition Exc V_1).

Phoenecian Temple of Astarte

This very monumental building was to have a continuous history of half a millenium, being finally destroyed by Ptolemy Soter as protagonist of missionary hellenism. Four rebuildings can be identified archaeologically, but the variation in plan is of detail only. The variation
105B consists in the main of the suppression of the forest of cedar columns (ca 800 BC) and their replacement by two rows of six stone piers to give a three aisled *heykal*. Later the in-
105C tercolumnation of these piers were walled up to an indeterminate height and offering benches were built against the north and south walls. Finally in the last part of the temples existence
105D from ca 450 BC the central aisle was compartmentalised by cross walls. All of which amounts to a gradual loss of monumentality in the long surviving building.[208]

During this extended period the old Bronze Age Temple 4 also remained in commission, its structure even more closely conforming to its original design. If anything there is again a loss of monumentality and the tripartite sanctuary was suppressed to be replaced by a storeroom, thus reverting to the simple Bronze Age type of Temples 2 & 3.[209] There are moreover indications that Temple 4 remained in commission during Ptolemaic times. If it retained the same form then it is noteworthy that no effort was made to redesign it along the lines of a Greek temple. In any event the unhesitating maintenance of the Syrian temple forms through

the first millenium when the Greek language was current in the island demonstrates clearly the reality of Cyprus' proximity to the shores of Asia and its distance from Greece.

temple workshops

Throughout the history of the Sanctuary in the next millenium it is evident from finds that various crafts were practised in its vicinity and in the later reconstructions of the temple (from ca 600 BC onward) once more a metal workshop existed in the temple dependencies (as in Bronze Age times). Thus across the millenium of its existence the dedication of the sanctuary remained constant. It was the sanctuary of the goddess, and with her was associated the artificier-craftsman god known in Greek mythology as Hephaestos: the association which is expressed in classical mythology as (ill-matched) wedlock.

The information regarding building development which accrues from these excavations is vital and very extensive. One significant matter alone remains unclear. In general it has been assumed that the circuit evident at the margin of the higher ground marks the line of the city walls of Kition in the first millenium BC. In that event some evidence should be revealed in the sanctuary area excavations of a rebuilding of the city wall during the period on the lines of the old Bronze Age Cyclopean Wall.[210] No such evidence is reported.[211] It is thereby indicated that the very urban looking sanctuary lay outside the later city wall — cf. the Solomonic Temple Area (Haram).[212]

AYIOS DHIMITRIOS *excavations*

In spite of the inevitable restriction to a fairly narrow compass[213] one of the recently excavated sites which contributed much to understanding the process of urbanisation in Cyprus is Kalavassos *Ayios Dhimitrios*.[214] Excavations here were begun (1979) within a salvage programme occasioned by the construction of the Nicosia-Limassol auto-route which passed hard by the neolithic site of Tenta where in the thirties Dikaios had noted pre-pottery remains akin to those at Khirokitia. The results of episodic volunteer work were so striking that of necessity a regular expedition was mounted in 1982 and excavations are still proceeding.[215]

limited history

The special significance of Ayios Dhimitrios stems in large measure from its very restricted and clear chronology. According to the pottery (Myc. III B) which shows little variation the site was inhabited for a relatively short period, three generations or so in the thirteenth century BC — say for something like 100 years until it was abandoned (peacefully) ca 1225 BC, i.e. its age is LC IIc according to the standard chronology.[216] The short, virtually single period history of the site is of capital importance since it admits of very little dubiety in stratigraphical analysis. At Enkomi, where a vast area has been uncovered with a very considerable stratigraphic succession extending over four or five centuries, it is still a matter of debate at what stage in the succession crucial developments in the settlement planning took place. However at Ayios Dhimitrios there is no such doubt what is revealed by excavation is dated to the fourteenth and thirteenth century, and the excavations (restricted though they are) reveal an urbanised settlement pattern.[217]

LC II C

location

The site of Ayios Dhimitrios is located very specifically at an important crossroads, *viz* the intersection of the way from the Kalavassos mines (ca 8 km further up country) down the Vasilikos River valley to the sea (3–4 km to the south) with the main arterial road along the south coast connecting Eastern (and central) Cyprus with Western Cyprus i.e. the way from Larnaka, Enkomi (and Nicosia) to Limassol and Paphos. The track of both these routes has moved about in the course of the ages though only within very small limits (a kilometre or so). At the present day the way down the Vasilikos valley is on the east bank, while the new Freeway which traverses the site is two hundred metres north of the old "New Road".

However all evidence suggests that the way down the valley generally followed the west bank of the river and thus the site of Ayios Dhimitrios could have been developed precisely at the crossroads.[218]

topography

The built-up area lies on a table of higher land descending gently (from ca 64 *m* above sea level to ca 48 *m* above sea level) towards the Vasilikos Valley from the higher hill country to the west. On the other three sides (North, East, South) the small plateau is demarcated by terraces (East) and small valley scarps (North, South). Depending on its undefined western limits the settlement extended over an area of 10–11 hectares — i.e. it was a sizeable town site.[219]

town plan

Although only a small part (ca. 5,000 m^2 = ca 5%) of the terrain has been excavated so that virtually no details of the town plan have been defined, yet it can be seen that there was an overall gridded plan extending throughout the large expanse, since the buildings in the widely spread excavation areas are all on virtually the same orientation.[220] Moreover one 15 m stretch of a N–S street has been cleared.[221]. This shows a made-up gravel surface and is nearly 4 m broad. There can be little doubt that Ayios Dhimitrios was laid out systematically with a system of parallel N–S streets and one or more transverse (E–W) avenues. According to the small scale general plan (of RDAC 1980 p. 29 fig. 2) the orientation of this ancient town plan (ca 25° East of North) accords very closely with the line of the modern freeway as it crosses the site.[221]

zoning

Furthermore according to the sample evidence of the several areas of excavation, it appears that a form of zoning operated although the precise interpretation of this system rests on the functional nature of the individual buildings which to some degree depends on the undetermined question of upper floors. In any event the public building sector was in the north, while in the centre and east were substantial private buildings presumably residences *cum* industrial or commercial establishments, while poorer buildings occupied the western outskirts where they were unevenly distributed and considerable open space remained available (perhaps for working). However that working or storage areas exist separate from residential areas can not as yet be determined.[222]

fortifications

The excavations have not been sufficiently extended to settle definitely the question of urban fortifications. All that can be said is that the evidence to date gives no positive indication of any such system; and this even though the fairly precipitous north and south limits of the plateau should delimit closely the possible lines of walls in these areas.[223] A boundary wall has been revealed enclosing the large Building X on the north (near the city limits). This however did not appear substantial enough to the excavators to be reckoned a city wall and they raised the possibility of an unfortified town with enclosure walls for various wards or complexes (toll zones etc.). Certainly nothing like Cyclopean stone walls known at other late Bronze Age sites has been revealed. What is the differential operative here?[224]

temples not revealed

Within the settlement there is no evidence of religious buildings — neither recognisable temples (as at Kition) nor chapels within building complexes (as at Enkomi). Both may well exist, the excavations have not been extensive enough fully to characterize the town.

public building (X)

On the other hand a most impressive public building (X) has been more or less completely
133 excavated in the N.E. sector of the town.[225] This building covers an area of 35 m × 30 m (= 1000 m^2+) and thus constitutes a major public building in any context. Finds of clay cylinders inscribed in Cypro-Minoan characters,[226] together with the existence of centralised storage facilities determine the administrative function of the building; such residential

apartments as may have existed are not identifiable in the surviving plan, but may have been incorporated in an upper floor — a *piano nobile*. Thus if Building X was in any way a palace, then by omission the surviving plan says something of its character and affinities.

plan schema

Although by no means fully defined the plan can be recognised in its essential lines, and is an interesting one. It shows a sophisticated provision for functional requirements within some overall concern for functional design. It is anything but additive or makeshift. It is analytic in conception and reduces to the four room (four unit) scheme: three parallel long compartments in front backed by a broad compartment at the rear. The main façade is to the South and this must have been given some monumental distinction, part of which is still apparent in the recessing of the wall face to mark the central unit. It is within this central unit and the parallel unit to the West where distinct design concepts are evidenced. The central entrance unit consists of a deep entrance hall or passage (flanked by service chambers, stairwells, etc) which gives on to a central four column/pier court or hall. The western unit forms a long storage gallery and the remains of large pithoi covered the floor indicating that the pithoi stood in closely set rows. Down the middle of this hall was a range of heavy monolithic stone pillars set on stone slab bases.

The remaining units of the plan are not so clearly differentiated. The eastern analogue to the pithoi hall is little excavated while the rear unit appears subdivided into smaller chambers. From this region a rear door leads out into an area enclosed by a boundary wall running at a slight (5°) angle to the building. This area was in part also used for storage in pithoi. A special feature of this overall plan is that additional circulation facilities are provided by two narrow corridors running between the three parallel front units and giving directly on to the rear compartment.

The plan of this building indicates it to have been, without doubt, a public establishment of some sort; and this fact is emphasized by its construction which incorporated a very considerable amount of finely dressed masonry, including the monumental monolithic piers of the Pithoi Hall. Further odd dressed blocks in the neighbourhood of Building X suggest that this was the public building quarter of the town.

houses

Ten or more recognisable buildings plans have been brought to light at Ayios Dhimitrios and thus it is also possible to say something of the private house plans even though these are not as striking as Building X.

First of all in the Western Area three or four plans were revealed of small private buildings (IV, V, VI, VII). These were ca 100 m^2–120 m^2 in area, the normal for poorer housing. They consisted of ca 5–8 small rooms grouped around a central room or court.[227] This quarter was apparently not closely built up. It was in the outskirts of the town and the vacant lots may have been used as working space.[228] However it can not be assumed that the buildings were non-residential.

with corridors

In the Eastern and Central areas were more elaborate buildings.[229] Perhaps a characteristic feature found among these plans is a longish entrance corridor or hall. Householders were apparently fond of this circulation device in larger building and one can almost speak of corridor houses (cf. II, VII, IX). Several of these buildings seem to be combination of

associated workshops

residential and industrial etc in nature (cf III, IX).[230] The finds indicate that Building IX was the residence or workshop of a metal worker.[231]

As a corollary to this fact there is as yet no great evidence for separate storage and industrial buildings. However it is always possible that a special quarter for such buildings

may exist, as may e.g. a temple area. Indeed the two may be found in conjunction. Surely the site would repay more extensive area excavation.

tombs

A number of graves have been cleared at Ayios Dhimitrios but the pattern of funerary arrangement is not made plain. A group of rock cut tombs were revealed in the centre of the site on the line of the new free way. Tombs 4 and 11 were rich in objects but earlier than the period of settlement. However it is possible that Tomb 1 might be almost contemporaneous. On the other hand, Late Bronze Age cemeteries have been located East of the Vasilikos River, but the relationship to the site of Ayios Dhimitrios is not known. Thus while it is clear that the site of Ayios Dhimitrios was partly occupied by a cemetery before its settlement, it is not known for certain what were the funerary practices of the settlement and whether they included intra-mural burial.[232]

construction

ashlar masonry

231–233

While the settlement planning and the design of individual buildings at Ayios Dhimitrios are of great interest, equally so is the building construction. Notable, of course, is the monumental finely dressed masonry, programatically employed for the imposing public building (X). There are reported earlier occurences in Cyprus of odd blocks finely dressed[233] but the LC IIc date of Ayios Dhimitrios is as early an occasion of the large scale systematic use of such masonry as is known.[234]

rubble masonry

With the exception of Building X the remainder of the buildings are constructed of selected field stone rubble.[235] In general the walls rest on the bedrock (conglomorate) and for some of the more massive walls foundation trenches were cut into the rock. Projecting foundations (footings) were not usual but the foundation courses were of larger stones. The common wall breadths were 60 cms–70 cms but extremes of 45 cms and 92 cms occurred. From evidence surviving *in situ* walls were carried up in stone to a height at least a metre, but it would seem that the upper parts were of mud brick and terre pisee. The rubble was set with reasonably fair faces from suitably shaped stones with a core of irregular stones and pebbles. At times the facing was more or less coursed. Larger stones were used for coigning and joints etc. Bonding was not invariable and many instances of butted straight joints occur. Doors were most frequently located against a wall in the interests of simpler construction.

floors

Floors were variously formed — of white plaster, of pebbles set in mud and also of large pithos sherds as well as of beaten earth. Indications in plan (heavier walls, step installations etc.) suggest that in places upper floors existed. Little evidence has been preserved of roof construction. This question of upper floors is a critical one in assessing the functional nature of individual buildings and of the town plan organisation.

(bastard) ashlar

231 232

Building X is of a quite different order of construction.[236] The walls are very solid, varying between 80 cms–1.20 cms or on occasions are up to 1.80 m in breadth. The height to which the walls were carried up in stone is not determined but the upper parts were of mud brick faced with white plaster (both bricks and plaster patches surviving among the debris). There is nothing tentative nor experimental about the usage of finely dressed masonry — the manner of use and its distribution conform to a well established ordonnance. And here it must be stated first of all that according to modern technical terminology this system does not constitute ashlar construction proper. The finely dressed blocks are used as facing for rubble and thus the system is what is now known as Bastard Ashlar. Much of the "ashlar" was robbed out, probably in Roman times — but it seems that it was applied mainly to external faces and significant internal faces. Small blocks (ca $0.40 \times 0.25 \times 0.20$) were used to form a levelling course on which were set long blocks (eg. $0.50–1.00 \times 0.30/0.47 \times 0.20$) and in

some instances in the Pithos Hall there were blocks over 2.50 m long. In addition to wall facing, finely dressed blocks were used as bases and also for the monolithic piers. The largest blocks are dressed on the faces with marginal draughting and sometimes also show residual lugs or bosses. On the upper beds rectangular dowel holes can be seen. The ashlar masonry at Ayios Dhimitrios was derived from some developed masonry tradition. 277 231 232

PIGADHES *sanctuary* *location* *topography*

The site at the place Pigadhes[237] lies about 2 km before Myrtou on the road from Nicosia which is about 18 miles (ca 32 km) distant. This is an important line of communication. On the one hand it goes on through Myrtou to cross the Kyrenia Range by the most westerly pass and descends to the north coast plain in the region of Lapithos. While on the other hand various ways lead from Myrtou westward into the Cape Kormakiti peninsular where is situated, e.g. the renowned sanctuary of Ayia Irini. At Pigadhes the valley of the head-waters of the Aloupos River broadens into a small upland (ca 220 m.a.s.l) plain which is very good cultivable land, watered from wells (hence the place name); and the ancient site lies near fruit trees just to the west of the main Nicosia-Myrtou road.[238]

excavations

Trial soundings were made in 1949 by an expedition of the Ashmolean Museum led by Joan du Plat Taylor, formerly Assistant Keeper of the Cyprus Museum. These soundings partly uncovered dressed stone blocks which formed a monumental altar, and revealed stratification belonging to the late Bronze Age. The substantial excavations carried out in 1950–51 were centred about the altar; however various soundings indicated ancient remains to extend over an area of half a hectare or more.[239] 90 91

Sherds demonstrated that the site was first inhabited at the end of the MC period (ca 17th century); while after the sanctuary buildings had been destroyed and deserted for ca two centuries, part of the site was reoccupied in the Iron Age (CG II-III = 10th–8th centuries) and an extensive deposit of broken pottery (quite characteristic of sanctuary sites of the period) was piled against and spread about the ruins of the altar. However the site was built up during the late Bronze Age (ca 15th century BC) and the sanctuary flourished in the LC II-III period (13th–12th centuries) to be destroyed ca 1175 BC.[240] During this period of say 200 years or more Pigadhes was manifestly an important religious centre of a native Cypriote type cult, the symbol of which was the bull.[241] However in spite of the able excavation (on a reasonable scale for the period) it is by no means certain what architectural form the cult premises took. In fact the remains are ultimately ambiguous on this issue! e.g. a sanctuary court with monumental furnishings surrounded by miscellaneous tenements, or a court associated with a temple building/buildings. The excavations disclose evidence of the former, but do not exclude the latter.[242]

religious centre

90

LC II–III Sanctuary

It is the period V–VI (LC IIc–LC III) when the remains assume a coherent form which proclaims the site a sanctuary. Somewhere about 1300 previous buildings were razed and the area levelled for constructing a new complex, where at the intersection of two streets a sizeable court (ca 14 m × 14) contained the monumental dressed stone altar. This was possibly designed to be on a base 2.5 m square rising in 4 slightly stepped courses to the same height, at which level were set coffered blocks forming stylised horns of consecration.[243] Within the confines of the excavation two room complexes were revealed one on the West and the other on the East of the N–S street. The west complex delimits the court, but neither complex displays any manifest connection with the court which appears related more to the two streets.[244] This has led to the suggestion that an associated temple might be somewhat further removed along either of the streets.[245] In fact, however, these buildings are clearly 91

revealed by their plan to be non-domestic; they are public building complexes of some sort and certain aspects, by analogy, suggest religious associations — e.g. it is not impossible that rooms 10, 11, 23 of the eastern complex (with slight emendations of plan) might form a shrine.[246]

general planning

The overall planning aspect of these buildings is of interest. Although not systematically orthogonal, they are quite regular, bordering two straight streets. They appear as if laid out by someone familiar with ordered urban development.[247] A court at the significant intersection of two streets is a feature of the more or less gridded town plan of Enkomi.[248] In this way Pigadhes is of great interest for its varied potential connections — and thus for the varied potential lessons it may represent in different developments. If on the one hand it is primarily an open air sanctuary and thus associated with the tradition of Ayios Jakovos going down to the typical rural sanctuaries of archaic times;[249] on the other hand by its fairly formal planning it may appear a relative of urban "sanctuaries" as temple complexes at more or less contemporary Enkomi and Kition.[250] Something of this picture is reflected in the building construction. Although the building construction at Pigadhes is not specifically dealt with in the excavation reports, from illustrations and general descriptions, it can be seen that it was in the traditional style, viz of rubble based walls with mud brick superstructure. However the monumental altar was fashioned from finely dressed stone blocks as reflecting the ashlar masonry technique gaining currency at this juncture.[251] In addition to the altar there were a few other blocks of dressed ashlar masonry, but it is clear that ashlar played virtually no part in the general building construction of the areas excavated. The overall situation at Pigadhes was thus not unlike that obtaining at contemporary Ayios Dhimitrios, where ashlar was reserved for specially significant constructions.

construction

On all accounts it would be most advantageous to know the total entity at Pigadhes, its nature and its possible relation to a settlement — if this should prove to be of the essence of its *raison d'être*.

AYIA IRINI

Shortly after the Swedish Cyprus Expedition commenced operations with (for the period) quite exceptional resources, they were confronted with work requiring just such exceptional resources. In 1929 at the very remote locality of Ayia Irini (10 km west of Myrtou and near the coast of the Kormakiti peninsula), the village priest, while ploughing his fields, discovered a large terra-cotta figure. This was soon shown to be one of thousands of votive offerings made in a rural sanctuary.[252] Large "gatherings" of these figures have since become strikingly realistic exhibits in the museums of Cyprus and Sweden and are very well known indeed. However the extended but quite erratic architectural development of the sanctuary is little known.

sanctuary

votive terra-cottas

From Myrtou there is an important pass across the Kyrenia Range to the North, but to the West through Dhiorios the rocky plateau slopes unevenly down to the sea, sequestered territory with patches of woodland. The site of the sanctuary is beyond the western limits of the village of Ayia Irini just past the village church (!) in sight of the coastal dunes. The area is now inaccessible for political reasons.

location

Because of the wealth of objects the excavators were able to date the building remains very closely. They separated out seven building periods[253] of which the last one was a poor revival in late Ptolemaic times after a long abandonment of the site. In fact however there is a succession of three major developments (with some minor modifications); the life cycle

chronology

extending over seven centuries or so, ca 1200 BC to 500 BC, from Late Cypriote III through Cypro-Geometric and through Cypro-Archaic.[254]

LC III complex

The late Bronze Age Sanctuary was totally different from its successors.[255] It was (as far as revealed) a sophisticated complex of buildings after the style of the Late Bronze Age sanctuary at Pigadhes 12 km away, south of Myrtou. In itself it constituted an extension of urban style building, although it seems clear that the complex was an entirely isolated one. Apparently there was also a salient difference in the cult from that practised at the sanctuary in later times as there were no blood offerings of sacrificial beasts. 107

The area excavated was governed by the later definition of the sanctuary and thus the LC III complex is not known in its totality. Also the later temenos walls further obscured some peripheral parts. However in essence the complex comprises a series of regular broadly fronted buildings set around a large courtyard (30 m × 20 m). The complex is oriented exactly to the quadrantal bearings (NW–SE). The North-East and the South-East buildings form an ensemble with the interesting planning feature that the entrance is indirect *via* a corridor formed by a screen wall placed along the front of the N–E building. The North-East Unit appears to be the temple or shrine while the incompletely excavated building adjacent to the South East was probably the sacred repository for cult paraphernalia etc. (the Diakonikon, Skeuophylakeion). The extended range of buildings along the North West margins were probably the secular store rooms of the sanctuary (many pithos fragments found on the floors). Only the barest indications were revealed of the existence of the other building on the North West side of the court. On *à priori* grounds it might have comprised priestly accommodation.

broad building

diagonal orientation

corridor entry

temple

sacristry

stores

priest's house

construction

The building construction was entirely in the traditional manner — mud brick walls on (high) rubble socles with flat mud plaster roofs. The walls were founded on bed rock and since it is rocky terrain the floors were largely levelled off rock. Within this tradition the construction is of good quality, true regular and solid.

design

Some aspects of the planning are of interest. An odd looking device is repeated twice (in the stores and in the shrine). It consists of a large elbow in an internal wall to form a sort of alcove just inside the entrance door. This suggests a stair emplacement (or inbuilt cupboard?) and bespeaks a functional roof terrace, if not second storey.[256] However most striking is the congery of main planning features; *Breitbau* units set around a courtyard which unmistakably refers this complex to Ancient Middle East traditions.[257] And the screened entrance is a feature which can be paralleled in Syrian temples of the same epoch.[258] The marked use of wall side benches and also the orientation with the angles to the cardinal points are other features perhaps worthy of note in this connection.

geometric

rustic shrine

Guided by the finds the excavators were able to state that early in the Cypro-Geometric period (i.e. ca 1000 BC) after no lengthy disuse, remains of the LC III sanctuary buildings were purposefully obliterated by heaped up banks of red earth and a sanctuary of a completely different nature was organised at the site.[259] It was an entirely rustic affair consisting of an earthen peribolos wall (or aggar) enclosing an irregular temenos roughly correspoonding to the court of the LC III Sanctuary (ca 11.50 m × 8.0 m) and containing no structure except a low rubble altar and an adjoining libation slab. With this transformation to rustic simplicity there is evidence (from tombs) that a contemporary village settlement lay close by.[260] With some minor refurbishing this simple religious venue erected early in the 108

Cypro-Geometric I period remained in use down to the middle of Cypro-Geometric III, i.e. from ca 1000 BC–700 BC.

108 Somewhere about 700 BC the rustic sanctuary was reorganised. It was extended and elaborated somewhat, but its character as a rural sanctuary remained unaltered.[261] A new peribolos wall of rubble with wooden railings etc. was built on an enlarged circuit so that the temenos now attained an expanse of ca 40 m × 30 m and assumed a roughly triangular disposition. The old altar remained in use but some additional features were introduced into the temenos, tending to screen off an inner sanctum. There were two open sheds or shelters on poles (the rustic equivalents of stoai); one built against the north wall and one screening off the altar to the east. However more significantly to the south of the altar there was a solid two-celled rubble structure. From the organic nature of the earth fill this contained, it would seem the structure housed twin sacred trees. Such features are attested in Cyprus and elsewhere both in the Aegaean and in the Ancient Near East.

Archaic temenos

shelters

sacred trees

This epoch of the prosperous Cypro-Archaic I period (ca 700 BC–600 BC) was the acme of the sanctuary's fortune. During the succeeding century the site was inundated several times by flash floods. Twice it was refurbished but after the third occasion, ca 500 BC, it was definitively abandoned.

abandonment ca 500 BC

The extended yet precise chronological record of Ayia Irini is of interest. It shows an active religious tradition spanning the late Bronze Age and continuing unbroken through the Iron Age exactly as at the Kathari site at Kition. On the other hand it shows at the beginning of the Iron Age the replacement of sophisticated buildings by very simple countrified arrangements. How much this was a local phenomenon and how much it represented general history is obviously a question of great importance.

extended sequence

Tamassos, one of the ancient Cypriote "kingdoms"[263] lies by the modern village of Politiko about 20 kms S–W of Nicosia, approaching the foothills of the Troodos Mountains. With Idalion (Dhali) and Ledra (Nicosia) it forms a sort of triangle of sites in the very centre of the Island. And notwithstanding the current megalopolitan development of Nicosia, the region still has something of a rural, up-country air. The contrast is marked between this region and the bustling town life of Larnaka, Famagusta, Limassol, etc — and it seems that the same contrast operated in ancient times between Tamassos as opposed to Salamis, Kition, etc. Any particular eminence of Tamassos in ancient days appears only in Christian legend, according to which it saw the beginning of the Cypriote Church in Apostolic times.[264] Pagan records also notice the existence there of a Sanctuary of Aphrodite — Ovid refers to the garden (i.e. *Hieroskepos*) of Aphrodite of Tamassos (Metamorphosis X. 644–650).

TAMASSOS

central location

Various excavations and investigations were carried out in the vicinity by M. Ohnefalsch Richter from 1885–1894.[265] Then from 1940 onward the Cypriote Department of Antiquities were called on to clear tombs accidentally discovered in different localities about the site.[266] However it was in 1970 that a decade of purposeful excavation began at Tamassos, carried out by H.G. Buchholz for the German Archaeological Institute.[267] These excavations and the various studies and interim reports based on them afford a sample outline view of the ancient site and its development. It must, however, be emphasized that because of the restricted resources available in these latter days the excavations are far from being on the scale of e.g. Enkomi, i.e. the archaeological record at Tamassos is not extensive.

excavations

From the various investigations mentioned it would seem that during the third and second millenium there were cemeteries from time to time in different parts of the site area.[268]

Bronze Age cemeteries

urbanisation

However the earliest settlement occupation appears to be from about 850–800 BC, i.e. at the transition from Cypro-Geometric to Cypro-Archaic.[269] This probably signified the extension of the urban way of life over further areas of the interior which had continued in the mould of traditional Cypriote rural settlements long after the coastal towns had developed towards the end of the Bronze Age.

There is perhaps independent epigraphic evidence for the beginnings of Tamassos. A now famous inscription from the Phoenician Temple at Kition records that a man with a Phoenician name from Tamassos made his vow to the Goddess at Kition accompanied by an offering of his shorn locks.[270] If this indeed is the correct translation, the inscription is rather significant. From its archaeological context it establishes that Tamassos was in existence by 800 BC — and even more significantly that the region was already a field for the expansionist energies of Phoenician Kition.[271] The object of these energies was doubtless copper, for Tamassos is a mining centre. It should be noted that the inscription does not strictly imply that Tamassos was already a town at this date. It is possible that its precursor village (somewhere nearby?) was referred to; however the apparent date of the inscription is roughly that indicated by excavation for the beginning of urban Tamassos.

connection with KITION

copper mining

In any event, Tamassos figures on the prism of Esarhaddon (613/2 BC) as one of the Cypriote cities paying tribute to Assyria.[272] From this period onward into Classical times the excavations show that Tamassos was a walled city containing important religious buildings evidencing a connection with metal working (after the manner of Kition and Enkomi).[273]

Archaic capital city

During the conflicts in the Classical Period (5th and 4th centuries BC) Tamassos was more or less linked with Kition in the Persian interest. Eventually, shortly before 350 BC, the insolvent king of Tamassos sold his "kingdom" for 50 talents to Pumathion, the pro-Persian king of Kition and retired into private life at Amathus. However, not long afterwards, Alexander upset this arrangement in the settlement he imposed on Cyprus and forced Pumathion to hand over Tamassos to Pyntagoras, king of Salamis.[274] Moreover in any event with Ptolemaic control, Tamassos, like the other Cypriote kingdoms, lost its autonomy[275] — as a result of which its city wall disappeared.[276] However it retained its civic dignity and was still referred to as a city by the geographer Ptolemy in the second century AD[277] by which time, if legend is to be trusted, various saints had already established the Christian faith there.

linked with KITION

Alexander's order subject to SALAMIS

early Christian centre

POLITIKO

The modern village of Politiko stands above the West bank of the River Pedhiaeos, the course of which is here due northward towards Nicosia from its source in the Troodos 15 kms to the South beyond Makhairas Monastry. The bed of the Pedhiaeos is here broad with, in general, sharply defined banks — dry during much of the year but on occasions a torrential stream. It is a relatively well-watered region, fertile and productive. The village is built on sloping ground a kilometre or so from the river and the intervening terrain is cultivated with orchards and gardens. Partly beneath the village and partly under these fields lies the ancient Tamassos with its adjacent cemeteries and sanctuaries.[278] Discoveries over the last 100 years show these remains to extend a kilometre or two to the Monastery of Ayios Herakleidios, but unfortunately the actual limits of the city have never been traced nor even approximately revealed. However reinvestigation by Buchholz of Ohnefalsch Richter's excavations have now afforded a very striking vignette of what may be the north east limits of Tamassos.

location

topography

CHOMA-ZOUDHIA *cemetery*

During the year 1889 Ohnefalsch Richter located a later Iron Age cemetery at the locality of Chomazoudhia/Chomazouka north and east of the village of Politiko going towards the

river. He cleared something like two dozen tombs, the majority of which were simple chamber tombs cut (not in rock but) in the compact, competent marl. However, in the
199 southern part of the area nearer to the village he discovered three monumental royal tombs *royal tombs* built of large finely dressed limestone slabs. One of these tombs was immediately smashed up by villagers for building stone, but the remaining two were safeguarded and have been kept open to the present day.[279] In recent years they have been conserved against further decay. Ohnefalsch-Richter's projected monograph on his work at Tamassos was never published but his MS records survived in Berlin and Buchholz has reinvestigated the area on the ground and published a collation of the results.[280]

Immediately to the south of these tombs Buchholz opened a sizeable area and was able to identify the sanctuary complex dedicated to "the Goddess" (Aphrodite/Astarte/Cybele)[281] *Sanctuary Area* which Ohnefalsch Richter had encountered and recognised in 1889. Whatever may be the overall extent and disposition of the city, the juxtaposition of the above features indicates this region to be astride the city limits. Ohnefalsch-Richter located a stretch of city wall separat- *inside city wall* ing the sanctuary from the tombs and eventually Buchholz was able to confirm the existence of such a wall.[282] Moreover Buchholz also ascertained that the Sanctuary Complex was bordered on the East by another stretch of city wall (running N–S). For the short run exposed, both stretches of wall are rectilinear and if they are to make any sense at all they must mitre at something like a right angle. Whether this regularity is characteristic of the design of the city walls as a whole cannot be said.

Two successive stages of the city wall were recognised on the East margin. The earliest *city wall* (Cypriote Archaic) was slighter, 2.50 m broad, and the later (Cypriote Classical) was heavier, 4.50 m in breadth.[283] The construction was of mud brick on a rubble socle (both faces of substantial masonry with medial filling). This construction is basically that of the house walling in the area.

It is striking that the various buildings investigated over the years at Tamassos have all been religious complexes. Several kilometres to the S–W on the way to Analiondos, Oh- *religious centre* nefalsch-Richter cleared the sanctuary of Apollo at Frangissa which yielded splendid life size FRANGISSA statues (and provoked a law suit between Richter's sponsors in the newly set up district *Sanctuary* courts of the Island). This was obviously an extra-mural sanctuary pertaining to Tamassos.[284] Fifty years earlier an even more sensational find was made on the banks of the Pedhiaeos River. When the German traveller Ross visited Tamassos in 1846, he came on the scene just after the villagers had discovered a larger than life size bronze statue of the fifth century and had hacked it to pieces to share out the scrap metal evenly. The head alone was reserved from this *sparagmos* and survived to become the famous "Chatsworth Apollo" of the *Chatsworth head* British Museum.[285] The locality of this savage act was subsequently sought out by both *sanctuary* Ohnefalsch-Richter and Buchholz.[286] It has been identified as a kilometre or so to the south of the Tombs of the Kings near the river bank. It should be not far outside the city walls, although it is just possible that the city may at some stage have extended far enough in that direction to have included the area.

Finally there is the Sanctuary of the Goddess excavated by Buchholz which is just inside *Aphrodite-* the city walls.[287] This complex has now been revealed in considerable extension (ca 80 m *Kybele Sanctuary* E–W × ca 50 m N–S = ca 400 m^2). At the deepest levels some early Archaic walls were laid
119 bare and overlying these a reasonably coherent plan from Archaic times. After a destruction at the beginning of the fifty century this was succeeded by a plan from the Classical period

and the sanctuary continued in use (on an augmented scale?) during Ptolemaic times. While the details of planning change from period to period, the overall continuity is notable: the orientation remains exactly the same and the general "*Raumform*" likewise does not change. 120

sacred court From the schematic plans and sketch reconstructions published, it can be seen that the sanctuary is essentially formed about substantial walled enclosures with one or more simple shed like buildings set against the walls. Although doors are not indicated in the schematic

broadroom building block plans, appearances suggest that these simple buildings were disposed in Broadroom style.[288] In effect the scheme is that of the oriental courtyard temple/sanctuary (i.e. in the *Hürdenhaus* tradition), and there is no connection whatever with Greek temple planning. All this notwithstanding Buchholz notes the discovery of an early Ionic Capital reused in foundations apparently built after the destruction associated with the Ionian revolt.[289] Such fragments should only come from a Greek style temple, however rudimentary; but nothing in 293

Ionic votive column? Buchholz' plans approximates such an entity. However perhaps it was a votive column — a common enough use of Ionic in the 6th–5th centuries.[290] (cf. Homer Od. 1. 182–184).

metal working In closest association with the sacred precinct were workshops and stores connected with metal working (both copper and iron) which was obviously under the control of the sanctuary authorities.[291]

construction The building construction of this sanctuary complex from its beginnings down through Cypriote Classical times was apparently for the most part simple — plastered mud brick

traditional rubble squared masonry walls on rubble socles and flat mud plastered roofs.[292] However Buchholz reports some isolated use of squared masonry — whether this was exceptional, or whether it is residual after stone robbing is not made clear. In any event it seems to embody the old Bronze Age system of socle construction which is familiar from Enkomi and Kition.[293]

This may be described in cross section as follows. A slab plate was laid down over rubble foundations as a levelling course and on this two orthostate slabs were set up as wall faces (the medial space more or less hollow, or more or less filled) and another horizontal slab plate was laid across the top of the orthostates to form a seating for the mud brick superstructure. This was a structurally simple sevice, economical in the quantity and drēssing of stone and relying entirely on dead weight for its stability. Its presence in classical times in Tamassos affords a striking illustration of the conservative temper of Cyprus.

tombs At Tamassos, as almost always in Cyprus, graves are the most prominent feature. Spread out in all directions around the village of Politiko, tombs of all periods from the second millenium BC onwards have been located and cleared.[294] In addition to the previously mentioned cemetery of Chomazoukia to the north east where Ohnefalsch Richter made his spectacular discoveries in 1889, there is the large Bronze Age cemetery to the South East of

LAMBERTIS HILL the village centred on the Lambertis Hill behind the Monastery of St Heracleidios. There is another cemetery further to the South at Troulli, while tombs have been cleared to the West and North-West of the village in the vicinity of the deserted Monastery of Ayios Mnason.[295]

Royal Tombs Of all the ancient remains it is, however, the royal tombs just outside the city walls by the Sanctuary of the Goddess which make the most striking witness to the past of Tamassos.[296]

The two surviving tombs are of exactly the same type — one (XI) being a simpler, plainer version of the other (V).[297] They belong to a standard type of built tomb in Cyprus, but (speaking always with principal reference to V) their detailing is such as to make them *sui generis*. 199

design The basic plan and construction which they share with the standard type consists of a long

relatively narrow stepped passageway (dromos) descending below ground level to give access to a sizeable rectangular subterranean chamber with (in this sub-type) a ridge roof formed out of pairs of inclined slabs resting against each other at the crown. Equipped with a sarcophagus for the burial, this supplies, the necessary components of the design. Frequently, however, the plan is elaborated to a greater or less degree by the incorporation of further chambers opening off the initial one which thus becomes s sort of entrance hall. At Tamassos (V) there is only one further chamber, the burial chamber, opening axially from the rear of
319 the hall; but two false doors in the side walls of the hall bespeak a plan centralised on the hall with chambers opening from 3 sides and the dromos entering from the front.

construction

The construction of such tombs follows an obvious and elementary system. An overall area sufficient to accomodate the design of the tombs is excavated in reasonably compact earth (extending at times partly into bed rock). The walls of the tomb are then built up as a revetment of dressed stone masonry backed by a filling of the excavation spoil. The roof may be slabbed across, corbelled over, or vaulted in construction and in form be flat, arched or, as here, ridged.

detailing

Against this framework the individual detailing of the Tamassos Tombs may be now indicated. It is probably most convenient to consider this question by way of successive reference to design, construction and ornament. So far as design is concerned the more elaborate Tamassos tomb (V) is standard enough. The two false doors[298] in the sides of the entrance chamber are unusual, and of course suggest Egyptian stylistic influence operating divorced from its liturgical context. However there are aspects of the dromos and its possible functioning which call for particular comment. The initial part of the dromos near ground level has been subject to repeated damage (and for the last 100 years repeated restoration) so that its details are not accurately known.[299] This, of course, is of little interest in itself but it has a bearing on the important question of the functioning of the dromos — which has been little considered on its particular merits.

access

Proceeding on general lines it would be assumed that the dromos was entirely unroofed and would have been filled in with earth after (each) use. Such is the fashion of the ancestral rock out chamber tomb and of other built tombs of this type in Cyprus and elsewhere. This back filling would have been barred from entering the tomb by the door to the chamber (of stone or bronze plated). In fact when Ohnefalsch-Richter cleared the tomb, the door was missing yet nevertheless little earth had entered the chamber from the dromos.[300] However some details suggest that there may have been a refinement to the closing of this tomb. The masonry revetting of the dromos does not continue by any means up to surface level. Nonetheless it follows the same upper line at both sides in a manner which suggests it may have been designed to lodge roofing slabs.[301] The terminal line is not horizontal but inclines downwards as it runs back from the façade of the chamber until it intersects with the steps probably about halfway back along the dromos. Thus whatever the details of the anterior limits of the dromos may have been, it is thus likely that after use the tomb was closed not only by the door to the entrance chamber, but also by slabbing over part of the dromos. Then above and before this roofing the approach to the tomb was filled with earth.

metrology

There is also one general matter concerning the design of this tomb which warrants comment — unfortunately negative comment. The tomb is quite regularly set out and accurate dimensioned plans exist. Nonetheless no obvious unit of measurement is at all apparent.

conservation During the seventies a thorough going programme of conservation was put into effect[302] and in the course of this all the original rubble fill behind the masonry revetment was evacuated revealing many details of the original construction. The first thing to be noted was that the overall limits of the excavation were very little larger than those of the masonry facing it housed, so that the design and setting out needed to be precise. More important, direct observation apparently confirmed what is suggested by the aspect of the masonry revetment.

masonry Two types of facing appear. Large slabs not far off square (ca 1 m+ × 1 m−) which are set generally as stretchers but sometimes vertically. With these appear long narrow units ca only 25 cms broad which are set for the most part vertically but also appear horizontally. This bespeaks the employment of reasonably standard slabs, sometimes used as "*carraux*" but on occasions set edgewise ("*parpains*") with the length tailed back into the fill both to compartmentalise this and to bind together the facing and fill as is rational. The report affirms this but unfortunately the meticulous drawings indicate the contrary (presumably by oversight).[303] The interest here is that such a system is reminiscent of the (*emplecton*) patterns formed by a composite concrete type construction referred to by Vitruvius as *Structura Graecorum*. In any event the important fact should be noticed that the masonry of the Royal tombs at Tamassos is a stone revetment to rubble backing, not solid load bearing stone masonry.

ornament There is finally the question of ornament and here the Tamassos Royal Tomb V is quite individual and very striking. The masonry of the burial chamber is sober and plain but that of the entrance chamber shows a profusion of variously inspired ornament and decoration. First of all the entrance portal is framed with recessed orders and surmounted by heavy dentils.[304] The crowning rests on pilasters with massive aeolic (proto-aeolic, temorah) capitals.[305] 283
Within the chamber each wall face exhibits its ornamental feature. Centrally placed in the two lateral walls are false doors with recessed orders and bearing the canonical decoration of a false door bolt in high relief.[306] On the other hand in the pediment above the real doors are false masonry windows, below each of which is a finely carved frieze or balustrade featuring 319
highly ornate "tree of life" motifs. The last element to be mentioned is perhaps the least expected. The soffits of the inclined slabs forming the triangular roof are carved in the semblance of contiguous logs (or half logs); i.e. it is a log-cabin roof.[307]

foreign connections Taken in its ensemble this repertoire has affinities with three quite distinct sources. The skeuomorphic carpentry of the roofing and the door with its dentils is obviously closely connected with the rock cut architecture of Anatolia, notably Lycia.[308] The aeolic plaster capitals and "tree of life" in window balustrades belong to a Levantine continuum best known in Palestine and Syria[309] while the false doors as a motif are, of course, Egyptian in

chronology origin. The date of construction of the tombs must be somewhere in the 6th century BC (i.e. in later Cypriote Archaic times). At this period the rulers of the Tamassos showed an interest in various eastern decorative styles and could command their expert reproduction. Apparently Greek architectural ornament did not attract them at all.

traditional eminence Later Classical authors preserved a tradition that at some previous stage Tamassos (the kingdom of Tamassos) had been especially eminent or pre-eminent in Cyprus.[310] Nothing of the little that is known of Cypriote history in the first millenium BC gives any circumstantiality to such a view. Kition, Salamis, Amathus — all seem of more significance; that is so far as political history is concerned. However it is possible in view of its almost exactly

religious significance central location in the Island that Tamassos may have acquired some sort of religious distinction or prestige — a sort of Cypriote Delphi. In any event, excavation on a large scale

within the city of Tamassos during the period of its existence as an independent kingdom would be rewarding as illustrating possible variations in the culture of the Cypriote Kingdoms.

VOUNI

location

One of the successes of the Swedish Cyprus Excavations was the highly ideosyncratic site of Vouni which crowns the summit of a prominent isolated hill about 5 kms beyond Soli on the way round the West coast to Polis.[311] The hill stands some 150 m above the modern road to the South While its northern slopes descend uninterruptedly 250 m to the sea. From the summit area there is a magnificent view — "Yonder is the sea". And this Homeric tag insinuates something of the singular nature of Vouni. It is a palace complex and suggests the Palaces of Mycenaean times (e.g. Pylos), but its date (from the beginning of the fifth century BC) is more akin to the period when the Homeric epics were set down in writing.

historical origins

Vouni was so to speak an artificial creation, and as frequently happens in such cases, it was relatively short lived. According to archaeological ingenuity, the commanding site was fortified and settled as an observation post and to overawe the town of Soli which had shown anti-Persian resolution during the Ionian revolt.

Thus it is postulated that the Medising dynasty at Marion was charged to establish the strong point at Vouni as a check to possible rebellion. However Kimon's Cypriote liberation mission (449 BC) included the capture of Marion and the replacement of its dynasty by Philhellenes. This event is held to be reflected by rather striking changes at this time in the reorganisation of Vouni Palace. The new Philhellene rulers of Marion are presumed to have had their seat at Vouni and flourished there until the disturbances brought about by Euagoras. At this stage (390 BC) Soli with Persian support opposed Euagoras' ambitions and in the struggle Vouni was sacked and laid waste, never to be resettled.[312]

topography

Whereas it was once a standard place to be visited, political development in the Island has made Vouni well nigh inaccessible and the following account of the site recapitulates the
51 excavation reports of fifty years ago. Sprawled out curvilinear walling which follows contours where possible encloses a total area almost a hectare (ca 9000 m), an ovoid upper town with a rectangular lower ward running down the slopes toward the sea. In contrast to the modern road which keeps to the higher ground inland of the site, the ancient road system followed the coast to within two hundred metres or so and thus passed below the site at its north or seaward limits. Accordingly in ancient days approach was made through the lower ward of houses up to the summit area where the palace lay and 15 m higher up still, on the ramparts above the steep landward cliffs, a temple (of Athena). The roofs of this temple furnished a very conspicuous land mark (e.g. they would be clearly visible on direct approach from Nicosia already at Peristerona 25 km to the east. And conversely from the summit ramparts all approach from Soli or across the Mesaoria is clearly in view.[313]

excavation

Knowledge of the Vouni settlement in its ensemble would constitute a microcosm of building development in the later Cypriote Kingdoms. Unfortunately our knowledge is restricted to what the Swedish Cyprus Expedition was able to investigate during the course of the year 1928–29 and subsequently publish in SCE III. Although this material is quite
118 138 extensive it is not at all completely representative. It comprises (beginning at the summit of
139 the hill) The Temple of Athena,[314] The Palace[315] (and its surrounding chapels).[316] Below this on the seaward slope was a belt of open and empty chamber tombs cut in the exposed rock slope.[317] These were not published. Further down at the foot of the site in the rectangular lower ward of private housing two restricted trial trenches were opened solely to check on the

stratigraphy,[318] so that in effect the domestic building at Vouni remains to be examined. More surprisingly nothing is said of the fortifications. All that can be seen from the general plan[319] is that apparently these comprised only the one enceinte/city wall, with no indication of any citadel wall or the like. However it is stated that a terrace wall following the 240 m contour separated and screened the palace from the lower town.[320] Gates were located in the east and west walls of the lower ward[321] but were not investigated and whether there were wall towers is not stated.

PARADISOTISSA *temple*

On the other hand one or two outlying features were studied. About 1.5 km to the northwest of Vouni a small valley is enclosed by hills after the manner of a natural theatre looking out over the sea; the terrace constituting the orchestra is about 20 m above the waves. The sequestered vale is watered by two rills and between them a temple was built (to be succeeded by a small chapel dedicated to the Virgin of this little paradise — Panayia Paradisotissa. This temple is of considerable architectural interest since, although very rural, it appears to be designed after the style of a Greek Temple in antis.[322] Apparently it continued in use for some time after the destruction of Vouni early in the Fourth Century BC.

KORAKES *tombs*

In addition to the temple some other ancient remains have survived cut in the rock of the hill slopes: viz some tombs, a quarry which supplied part of the stone for Vouni and possible traces of copper mining.[323] Finally at a place called Korakes in the hills standing above in the valley of Paradisotissa and about half a kilometre west of Vouni (16) rock cut chamber tombs 188 were cleared predominantly with narrow stepped dromoi and rectangular chambers. The finds indicate that like the temple these tombs continued in use for some time after the destruction of the Palace (i.e. well into the fourth century = Cypriote-Classical II).[324]

palace

The Palace of Vouni as designed at the beginning of the fifth century BC is an elaborated and monumentalised version of the archetypal Cypriote schema for a public building.[325]

original design *π form*

Originally this schema was simply a three winged complex confining (π fashion) an open fronted court. However urban development resulted in closure of the plan on the main façade by the insertion of an entrance suite (a flanked hall or corridor etc.) which gave onto the now internal court (or hall). In fact at Vouni a primaeval three winged open fronted unit was reproduced as the nucleus of a far more elaborate plan. This was formed by adding a very monumental entrance suite in front of the sourt together with service apartments in front of and around the side wings. The focal π form unit was ca 35 m × 30 m (= ca 1000 m) and the elaborated complex as a whole was ca 50 m × 50 m (= a quarter of a hectare in area).

The functional organisation was in outline as follows.[326] The entrance suite was in plan a 138 139 three chambered gatehouse which gave axially on to a central court, peristylar in form and incorporating a *piscina* for water conservation. This was supplied by run off from the roofs and in turn its contents reticulated to the cisterns in other parts of the complex. (There were no sources of underground water on the rocky hill top and water supply and conservation was a matter of great importance.) The private living apartments (the *oecus*) should have comprised the three rooms of the rear wing opposite the entrance. The eastern wing contained the large banqueting hall public reception room (later sub-divided), while the opposite wing lodged the private bathrooms established in the angle with the *oecus*. The additional apartments on either side of the entrance suite were of unequal development. On the left was a large service ring of storerooms, offices, servants quarters etc., while on the opposite side was a more or less detached kitchen wing.

remodelled plan

Somewhere about the middle of the fifth century this sophisticated palace plan was utterly

140 recast by way of both alterations and additions.[327] The alterations were made with great imaginative insight. This involved abandoning entirely the traditional planning *schema* and, by a few dramatic interventions, reversing the sense of the functional plan. A new entrance was formed at the northern angle thus breaking into the building by the former *oecus* complex. In lieu thereof a new residential and reception complex was formed on the other side of the court out of the old entrance suite simply by walling in the original entrance. In this way the gatehouse became a throne hall which in plan corresponds to a megaron. Again all concern for axiality was renounced and a picturesque three-quarter entrance was arranged on the direct way up from the lower town rather than by making a ceremonious entry from the summit area. Additional to this a new enclosed courtyard complex was completed against the east flank of the palace, adding an area of ca 45 m × 35 m to the palace so that its overall dimensions now became something like 81 m × 50/60 m (with a total area approaching half a hectare). Moreover extensive upper storey apartments were developed as is evidenced by remains of steps and stairs at this period.[328]

foreign connections

It is, of course, possible to see in these planning changes the expression of new cultural concepts. While the grand axial entrance to the traditional scheme is at least consonant with Achaemenid planning, the diagonal entry and the megaron like staterooms can be affiliated to the classical Greek spirit — and hence have been referred to as an outcome of Kimon's intervention at Marion.[329]

construction

It is however the building construction of the palace at Vouni which is of quite extraordinary interest and that interest covering an ecumenical setting. Basically there is the same mixture of stone with mud brick superstructure which characterises the Bronze Age tradition of monumental building in the Levant region.[330] The stone substructure is of variable proportions. It ranges from bare foundations to a socle of several courses, while in some instances the entire ground storey walling is of stonework. This stone masonry is in general very sophisticated. There are passages of random rubble,[331] but the usual form of walling

masonry

254 255 consists of dressed stone facing with a medial fill of rubble, pebbles etc. an aggregate bound together by some cementitious agent (lime, gypsum etc).[332] The (more or less) ashlar

ashlar facing

257–259 revetting is arranged in various *schemata* to secure the greater bonding with the ground mass. This involves either or both alternations in the aspect of successive courses and alternation in the aspect of successive blocks in the one course — viz aspectual patterns reminiscent of English and Flemish bond brickwork.[333]

concrete

From this general description it can be seen that there is in issue a form of concrete construction and because of the characteristic interwoven pattern of the revetting, both in construction and in aspect, this walling is materially equivalent to the *Structura Graecorum* of Vitruvius and its emplecton.[334]

columns

In addition to load bearing walls, vertical structural members included piers, columns

254 etc.[335] The main columnar construction is the peristyle of the central court. Here stone

290.1 columns were set directly on rectangular slabs (plinths) and fixed by lead. No shafts survived and the evidence for them is derived from markings and vestiges remaining on the plinth. The columns were ca 47 cms in diameter (= 1 cubit). However a curious vagary was manifested in the terminal members of each row. What was required here was an elongated pier but

290.2 responding to the columns. However instead of making the ends curved, the curvature was applied to the long sides — a very uncertain solution. Obviously the columns were not a familiar building medium at the time. One Hathor headed capital survives. Additional to

these remains from the peristyle a neat stone torus and plinth base[336] came to light, from a trench in the lower domestic ward. This would have supported a wooden column of the style familiar in North Syria during the Iron Age.[337] 290.3

floors Floors[338] are usually of lime plaster (or cement) of various colours and consistences. In one room (14) for heavy duty (storage of firewood) stone slabs were used.

roofing Roofing[339] was very important at Vouni since the settlement depended on run off from the roofs for its water supply. No trace of roofing tiles were discovered and it is clear that the roofs were essentially the traditional flat roofs of mud plaster construction, incorporating a slight fall (say ca 1 in 5) necessary to ensure and direct efficient run off to the cisterns.

religious structures In addition to the Palace complex, the various religious buildings excavated at Vouni are worth close attention. Half a dozen or so buildings have been identified as religious in function — some indubitably so from finds and installations, and some by analogy from their design and location. The Temple of Athena[340] occupies a position on the summit of the hill which in distinction is equal, or superior, to that of the Palace, while five other chapels/sanctuaries/shrines etc. are grouped around the flanks of the Palace in what would appear subordinate positions.[341] Additionally there is the extra-mural Temple at Paradisotissa[342] close by the shore, a kilometre and a half away. Perhaps its presence there marks a small landing place, permitting direct approach to Vouni by sea.

Temple of Athena 118

palace chapels 117

Paradisotissa Temple

urban forms These religious buildings manifest some variations in type[343] and also in some cases possibly evidence foreign connection. Vouni is a built up area and thus the elemental rural enclosure-sancturay is not in evidence. One and all, the examples are roofed buildings of a definite form. At the simplest this consists of a unitary structure detached from any dependencies (i.e. not connected with a Temenos). As opposed to this there is a more developed complex consisting of the integration of such a chapel into a system of (two) courts in accordance with some notion of design. There is finally the special case of the Paradisotissa Temple which is a simple detached building but its form seems to be modelled on a classical Greek temple *in antis*. The construction of these buildings is *mutatis mutandis* similar to that of the Palace.

square cella These well preserved building plans identified as sanctuaries make it possible to say at least something concerning room and building form at Vouni in Cypro-classical times. It is interesting to observe that for religious purposes the square room was held to be fitting. The chapel 101[344] consists of such a simple square chamber without other elaboration, while the chapel 113–114[345] is in plan but two identical square rooms set side by side (perhaps a double shrine!). Moreover the centralised square room also appears as an element in the complex plans. It forms the cella inserted at the rear of the enclosed court in the Temple of Athena[346] and appears again in a similar fashion as chamber 121 at the rear of the forecourt[422] in the Main Temenos Complex (121–129).[347] 117.3 118

The other room form (*Raumform*) which is clearly evidenced is the slightly elongated room — e.g. with proportions of ca 4:5. These proportions are well attested in neighbouring regions.[348] Chapel 117[349] is a simple single chamber unit of this form while a Sanctuary 132–135 is based on the form, appearing as the Naos 134.[349] It is associated here with a pronaos (133) and a small holy of holies (135). The latter is (very properly) square, indeed was most likely a cube — a *kaaba*. 117.1 117.1 117.4

The foregoing observations are perhaps most revealing in the negative sense. It will be seen

that no religious building appears to be based on the broad room (Breitraum) which is of so wide spread occurence in the neighbouring regions of the Ancient Middle East. *not Breilbau*

About half the religious structures at Vouni are of reasonably complex plan and their building type (*Bautyp*) must be noted. The chapel (152–155)[350] discussed immediately above is a long building (*Langbau*) and details of its design, an eccentric entrance and a very small apse-like holy of holies, link it with the religious buildings in the neighbouring regions. Equally the Paradisotissa Temple,[351] although not so well preserved, is also a long building type. However, as far as can be seen, the details of design seem to suggest rather strikingly the *in antis* plan of contemporary Greek temples. *Langbau design*

The largest and most elaborate of the religious buildings are clearly the Temple of Athena *Main Temenos*
117.1 and the Main Temenos (121–129). The Main Temenos appears to be a composite plan encompassing more than one period of construction.[352] Essentially there are two elongated courts adjoining end to end at the middle, each with a square exedra at the far end. What the original entrance arrangements were is not clear. However, subsequently along the south flank a porch was contrived of three adjacent open-fronted rooms (Iwans); and through and along side these entrance was gained to the court[353] so that the approach to the end chambers
118 was a bent (*Knickachse*) one. Finally there remains to be considered the Temple of Athena. *Temple of Athena*
Here, as previously remarked, a square cella was inserted at the end of a long court to give a scheme something after the style of the Main Temenos.[354] The entry, however, was axial (there was possibly also a forecourt), and the ensemble was of the long building type. The notable feature, however,is the presence of three adjoining rooms set in the front of and to one side of the entrance to the temple.[355] In their disposition (and contents) these rooms suggest themselves to be versions of the treasuries found at classical Greek sanctuaries (e.g. as at *treasuries*
Delphi). Connecting the rear of these treasuries with the rear of the Temple was probably a small temenos wall which has now disappeared through collapse of the cliff margin. The S C E seems to assess this complex justly in the following terms "The square sanctuary at the rear of several courtyards behind each other ... may be taken as a plan characteristic of Cyprus while its combination with treasuries may indicate Greek influence".[356]

Exceptionally a few remarks on Amathus are included here. The exceptional purpose is not AMATHUS
so much what Amathus reveals of urban development in Cyprus during the period of the Cypriote Kingdoms, as how it illustrates the circumstances governing this lack of information. A wealth of objects and great number of tombs indicate that an important *history*
settlement flourished at Amathus from early Geometric times (11th century BC) onwards. Furthermore the general limits of the site are closely defined and several monumental architectural features have been excavated. However the simple facts of the matter are that these architectural features are virtually all of later date and thus it is difficult to say anything directly concerning building at Amathus during the Geometric, Archaic and Classical periods when it is known from historical sources to have been an important town.

Amathus lies on the south coast about a dozen kilometres to the East of Limassol (i.e. from
50 the centre of Limassol, the coastal ribbon of modern holiday housing now closely approaches *location*
the ancient site).[357] At this point the coast line is exposed and featureless without any trace of a natural harbour; while the foothills and outliers of the Troodos mountains run almost down to the sea. It is thus difficult to see any natural advantage in this location. Nonetheless the site *topography*
of Amathus is clearly recognisable on and about a rugged spur which approaches to within

one or two hundred metres of the sea. This site, in fact, now lies closely confined between the old Nicosia-Limassol road hard by the sea and the new Limassol freeway a little inland.

The rocky spur which appears something like a finger pointing North is defined by steep scarps on the East and West sides and particularly so at its Northern (inland) tip which forms a natural pinnacle rising ca 88 m above sea level. However it is undefined on the south where the surface level spreads out and falls away evenly to the sea. The defined summit area is something like 300 m (N–S) × 200 m (E–W) and thus comprehends an area of ca 60 hectares. This is the present day site of Kastros and is the emplacement of the acropolis of ancient Amathus. Remains of city walls can be recognised standing up above the scarps and running across from scarp to scarp to close the site off on its South front about 200 m from the sea shore.

About the site and on all sides from the sea inland, on ridge and flat there are remains of ancient building: tombs, aqueduct, shrines, residences and harbour. This building extends over a tract nearly 3 kms E–W by one and a half kms N–S — thus covering an area of something like 400 hectares. However such ruins themselves testify that the site was continuously inhabited until the Arab raids of the seventh century AD, and except for tombs it is very difficult to come on features from the early period of its history.

Nonetheless of this early history there is some record in ancient sources.[358] Amathus has a foundation legend which is obviously aetiological. The town was said to be founded by Kinyras and his followers evicted from Paphos by Agamemnon, settling an old score.[359] This was designed to provide a background to the fact that the inhabitants were reckoned of native Cypriote lineage (autochthonous), rather than deriving in any way from either Greek or Phoenecian colonists. However during historical times the town seems to have been generally pro-Persian. It stood siege during the Ionian Revolt and was relieved (or liberated) by the Persian army in 490 BC. Later (391 BC)[360] it opposed Euagoras[361] but it elected for Alexander (332 BC).

aboriginal population

The site of Amathus has attracted the attention of travellers and archaeologists from Venetian times onward.[362] The two gigantic stone craters standing in the Sanctuary of Aphrodite on the summit of the Kastros ridge were known in Lusignan times. Then in 1860 attention was drawn to them by de Vogüe and after much dispute one of the vases was transported to the Louvre.[363] Neither Cesnola nor Ohnefalsch-Richter was particularly active at Amathus and the significant foreign archaeological missions have been that of the British Museum in 1893–94,[364] the Swedish Cyprus Expedition in 1930[365] and the current French Mission which began work in 1975.[366] The Cypriote Department of Antiquities have been called on often to clear tombs, and particularly of recent years with the spread of tourist activities about Limassol. Latterly the Department also has undertaken important excavation in the lower town of an important complex of public buildings at the site called Palea Lemesos near the ancient harbour.[367]

archaeological investigation

When Amathus was first settled (ca 1000 BC) it is evident that defence was a main consideration, since the site has little in the way of expansive hinterground. Its original focus is obvious by inspection but its early development is not clear.[368] All that can be said is that the main sanctuary (of Aphrodite) from at least the 8th century BC crowned the higher point of the ridge at its northern limit[369] and that there was a major public building from at least the 6th century BC immediately inside the gate in the late South Wall.[370] In view of these facts it

topography

acropolis sanctuary

would seem that the line of the late wall follows that of the southern limit of the original site or some distinct part of the original site.

In later times as noted there was extensive occupation of the regions below this southern wall extending down to the sea shore in conjunction with the development of a harbour.[371] The obvious question is whether there was a lower town and harbour area already established in the early stages of the town's existence. Since the situation of Amathus is that of a sea port it might appear that some such occupation was an early development even though no positive evidence as yet has been revealed. Under-water investigation of the artificial harbour indicates that it was a later Ptolemaic feature.[372] *lower town & harbour* 59 60

Various stretches of city wall have been revealed as well on the crest of the scarp defining the rocky spur as the South Wall of the upper town. Indications of a sea wall also appear.[373] Apart from the fact that the South Wall assumed its present condition in the seventh century AD nothing has as yet been determined conclusively about the chronology of the city walls.[374] Almost certainly the fortification of the independent Cypriote city would have fallen into desuetude during Ptolemaic and Roman rule. *city wall*

If these negative recitals of independent Amathus are considered as a whole, perhaps positive observation emerges. The general scheme of the town site resembles very closely that of Vouni which is quite fully recorded.[375] There is the same topographic feature of an isolated hill rising from the coast with a precipitous inland scarp. Also there is evidence for a lower town as a residential area, and an upper town containing the public buildings (palace and sanctuaries — the major sanctuary occupying the pinnacle).[376] These overall concepts are by no means alien to Greek urban development schemes and certainly nothing like them appear in the earlier (Bronze Age) Cypriote urban development of e.g. Enkomi. *siting scheme* 52

Unfortunately the striking general parallels between the site of Amathus and of Vouni as yet can not be further extended by a close comparison of the main individual elements, viz the Acropolis Sanctuary and the Palace.

The Sanctuary of Aphrodite at Amathus[377] was reckoned to be second only to that at Paphos, and if the foundation legend means anything it was a daughter establishment of the Paphos Sanctuary. In position it corresponds exactly to the Temple of Athena at Vouni. However the Greek type temple, and the building remains immediately underlying it at Amathus, go back only to the late Ptolemaic and Imperial times. The existence of the Sanctuary area prior to that date is abundantly testified by objects (votive offerings, going back to the mid 8th century BC). So far as the possibilities of excavation extend it is clear that across the centuries until well on into hellenised times the Sanctuary of Aphrodite was essentially a traditional Cypriote Sanctuary in form, viz a sacred enclosed space with provision for ceremonies and votive offerings about an altar (and other cult objects). Utilitarian buildings may have been situated in the area, but the cult itself was not housed in a main building. There were, of course, the two gigantic stone craters (seemingly of late archaic date) which stood in the area, one of which was removed to the Louvre by de Vogüe in the middle of the last century. It is possible that these long remained a focus of sanctity.[378] *Sanctuary of Aphrodite* 131

Lower down in the area immediately inside the existing gates is a major public building.[379] Again the finds infer that it is a palace probably with associated cult place (or places) after the style of the famous Palace at Vouni with which it is contemporary. Furthermore a magnificent Hathor head capital has been found there exactly as at Vouni. Unfortunately the ensemble planning is little known. *palace* 288

If these particular circumstances are considered, they bring sharply into focus a very significant contrast between Amathus and Vouni. Subsequent to the period under consideration here (Geometric, Archaic and Classical times) Amathus remained continuously built up for a further one thousand years — i.e. until the Arab raids. Vouni was an episodic creation of historic events with its single century (ca 490 BE–390 BC) of development remaining available to the excavator virtually on the surface.

These particular observations suggest a general conclusion. The main reason why so little is known of the independent Cypriote towns is principally that (as opposed the traditional habit in Ancient Cyprus) from the period of urbanisation in the first millenium onwards major town sites remained continuously inhabited over the centuries.

tombs

One feature at Amathus stands outside these considerations. From the beginning of reported excavation in Cyprus, Amathus has been a favoured venue for tomb clearance. In the latter part of the last century great numbers of tombs were investigated there by Cesnola (1870),[380] Ohnefalsch Richter (1885)[381] and then the British Museum Expedition of 1893–94[382] (they cleared 312 tombs). Again in 1930 the Swedish-Cyprus Expedition undertook a campaign of tomb clearance at Amathus (29 tombs).[383] While in the last year both the Cyprus Department of Antiquities[384] and the current French Expedition[385] have brought to light yet further tombs.

built tombs

Among the large numbers of tombs so revealed are included many important built tombs. It is these built tombs which are more strictly relevent in discussing the urban development of Amathus. The presence of tombs (rock-cut chamber tombs) denotes the existence of a settlement somewhere in the vicinity, but *per se* it does not indicate an urban settlement. On the other hand built tombs constructed out of more or less monumental squared masonry infer an urban society to provide the social capital and organisation necessary for such industrial activities. Thus it is that failing testimony from other buildings, the tombs excavated at Amathus afford some information concerning the town of Amathus from its foundation down to the end of its independence.

afford chronology

In the first place the complete array of tombs of all descriptions rather surprisingly indicates that there was no significant settlement in the vicinity prior to the very end of the Bronze Age (11th century BC).[386] While the series of partly built and of built tombs begins in Cypriote Geometric (ca 1000 BC) and continues uninterruptedly through the Geometric, Archaic and Classical periods.[387] This lack of earlier Bronze Age tombs corroborates the foundation legend of Amathus which specifically designates it as a foundation on a new site.

typological development

However additionally the evidence of the Amathus tombs reveals quite individual local features which inform as well both the urban development of Amathus and the development of built tombs in Cyprus. These particular considerations were well exposed in the work of the Swedish Cyprus Expedition and its various publications.[388]

early shaft graves

Surprisingly the earlier tombs at Amathus do not take the form of rock-cut chambers but of shafts cut down into the rock from the surface.[389] These are rectangular in plan (ca 3 m to 7 m long) and access is provided by dromos disposed to give a variety of plans (i.e. set variously at one end of a long side, in the middle of a long side or, less commonly, on the long axis). The tomb plans so formed may thus be designated L-shaped, T-shaped and Z-shaped. Although it can not be demonstrated in every case it seems certain that these burial shafts were roofed over by stone slabs and this system also extended, at least in some instances, to the dromos. The interest of this system is that it opens one obvious line of development towards the fully

built tombs of Archaic times.[390] Since built tombs occur in Cyprus from the late Bronze Age,[391] there is no question of this being the *fons et origo* of the class as a whole. However the evidence at Amathus shows that an important connection exists.

95 197 198 Several formal stages in the development from shaft grave to built tomb can be seen at Amathus. In addition to the slab roofing, the Geometric shaft graves incorporate other masonry features. The stomion becomes a built portal, generally a trilithon and sometimes a tetralithon when there is a stone sill.[392] While in one instance (SCE Tomb 24) one wall of the chamber is revetted with roughly squared masonry.[393] Many of these shaft tombs at Amathus remained in use (or were re-opened) in Archaic times[394] and such tombs with masonry revetting were fashioned during this period (cf SCE Tomb 9).[295] *built tombs*

From the view point of construction the development to the built tomb simply means that the masonry revetting becomes structural (load bearing) masonry walling, inevitably more or less ashlar because of the engineering requirements of subterranean construction (*Tiefbau*) and the slab roofing is carried on as one of the normal types of roofing in built tombs (other forms are corbelled, ridged and vaulted). From the view point of the design something like the distinctive T form of shaft grave can be seen in an early archaic (?) built tomb at Amathus (SCE Tomb 1)[397] and somewhat similar plans can be found elsewhere.[398] Thus the sudden appearance of these slabbed shaft graves at the newly founded town of Amathus and their possible ecumenical influence on tomb building in Cyprus are both matters of some importance which as yet have been little clarified. In any event they contribute some of the very few examples of masonry construction from early Geometric times. *geometric masonry*

The interesting and varied archaeological material heretofore set out might be thought sufficient to define the essential nature of building in Cyprus during the period of the independent kingdoms. Yet this is not so. Even the addition of the expert and knowledgeable current work serves only to bring the issues into focus rather than to settle them.

All the positive evidence suggests the very late development of urbanism — possibly during the course of the 13th century BC. This epoch is relatively well furnished with historical sources[399] — literary records in the Middle East; and there is also the highly distinctive Aegaean pottery, closely dated and abundant in the Island and all neighbouring regions. In this fashion there is every predisposition to associate the urbanisation of Cyprus with the migration of Aegaean people (Achaeans, etc) attested at the end of the 13th century in epigraphy, by pottery and above all, in legend. And in particular to associate it with a certain wave of migration ca 1240 BC.[400] *origins of urbanisation* *foreign connections*

However, apart from the improbability of making anything of this antiquity turn on an archaeological dating to within, say, half a generation or so (ca 15 years), overall appearances are simply not clear cut. It may well be that such a basic, social innovation as "the urban revolution" should be associated in principle with a new life force, and that everything suggests that successive detachments of Mycenaean

Greeks arrived in the Island at this time as colonist-conquerors, since it is at this period that the Greek language became current there.

models

Nonetheless the plain fact of the matter is that if such groups provided the social machinery for urban development, they certainly did not bring the architectural models for this with them from their homeland. Large, closely built up areas of 10 hectares and more with regularly planned and laid out streets fronted by city block type public buildings — analogies can be found for this development but certainly not in Late Bronze Age Greece.[401] Careful recent excavation has suggested advance military camps of Mycenaean invaders[402] in both the East (Kokkinokremos, heights)[403] and in the West (the Maa Headland)[404] of the Island at the mid 13th century BC. This may do much to illustrate the arrival and conquest by people from mainland Greece. Again, however, it does nothing to clarify the consequent (?) urban building development at Enkomi, Kition, Paphos, etc.

not Mycenaean

local planning traditions

Recall briefly the following matters. A strongly characteristic design scheme for major urban public buildings (cf Building X at Ayios Dhimitrios[405] is a manifest development of a type of plan traditional in Cyprus (rooms built around three sides of a court).[406] Thus urban building meant no complete break with the Island's architectural past. Another and perhaps the most significant feature associated with the process of urbanisation is the striking development of finely dressed stone masonry.[407] Comparable stone masonry is to be seen in many parts of the Eastern Mediterranean and Levantine world at this time and also in the immediately preceeding period.[408] If there were a single place of origin for this technique it has not been determined; but in any event, one place which would never be suggested as its original home is Mycenaean Greece.[409] Thus considered solely from the aspect of building, the derivation of the new urban building in Cyprus is not obvious.

133

ashlar masonry

later continuity

Unfortunately similar uncertainty attends its continuance, progress and development. Ample archaeological records directly attest the destruction and abandonment of some newly built up Cypriote towns at the end of the Late Bronze Age (LC III) — e.g. at Enkomi, Ayios Dhimitrios, etc.[410] Thereafter, and especially in the crucial period immediately succeeding (Cypro-Geometric), the evidence for (urban) building is almost entirely indirect.[411] All appearances indicate the immediate foundation of new towns (Salamis,[412] Amathus,[413] etc) or the survival of existing ones (Paphos,[414] Kition,[415] etc). The principal evidence is, of course, sepulchral. Extraordinarily wealthy graves have been cleared at Salamis[416] and Kouklia (Skales)[417] demonstrating that a highly prosperous settlement existed in each area at the beginning of Geometric times. It is *a priori* possible to argue that this settlement could have reverted to a non-urban form — yet such a thesis is intrinsically improbable,

Cypro-Geometric

186

since e.g. there was no loss of literacy. On the other hand, as yet no direct evidence of (urban) buildings from this period has been revealed by excavation.

The earliest substantial monumental building known in Cyprus after the Bronze Age entails a lapse of several centuries, since its date is at the end of Geometric times, ca 800 BC. At this time the apparently derelict Bronze Age Sanctuary area of Kathari at Kition was redeveloped with the grand "Phoenecian Temple".[418] Then several hundred years later (ca 500 BC) at the end of Archaic and the beginning of Classical time, an elaborate palace complex was built at Vouni on the west coast of the Island.[419] Both the monumental design and the construction embodied in these buildings are basically in the tradition of the Cypriote Late Bronze Age towns, Enkomi, Kition, etc. Particularly notable is the fine stone masonry which preserves the Bronze Age mode of ashlar facing to a rubble fill core.[420] Thus differences in this later building are to be seen as ones of evolution in detail rather than as representing a new building tradition. Innovations seem to be restricted to super-added features, e.g. there are novelties of ornament such as the Palm(ette) style, Proto-Aeolic (Temorah) Capital,[421] the Hathor-headed capital,[422] etc., while the Bronze Age stepped capital is no longer in use.

Cypro Archaic
KITION *temple*
VOUNI *palace*
in LC tradition

250–259

37
284–289

The picture afforded by the scant temple and palace building is reproduced in the voluminous evidence afforded in cemeteries. In general the same types of tombs are employed in Geometric, Archaic and Classical times as at the end of the Late Bronze Age[423] — both as concerns rock-cut chamber tombs and built tombs. The latter are more prominent subsequently than in the Bronze Age, but their essential nature is unchanged. Only (e.g. at Tamassos) they include new ornamental features (Proto-Aeolic capitals, Tree of Life balustrades, etc).[424]

cemeteries
traditional tomb types
built tombs prominent

In many ways more information regarding Cyprus of the independent Cypriote kingdoms during Archaic and Classical times is available from literary and epigraphic sources than from monumental archaeology. Once again these sources proffer a similar overall impression. The Cypriote kingdoms centred on their capital cities of Salamis, Kition, Paphos, etc., may have been established in the main by the energies of Mycenaean adventurer-refugees more or less as Greek legend suggests. However the institution of these kingdoms during the first millenium BC has little resemblance to what is known of contemporary Greek political institutions (royal as in Sparta or otherwise) but appear to belong to the monarchic traditions of the ancient Middle East.[425]

literary sources

It cannot be denied that much of the foregoing summary is inferential and based on negative evidence. Nevertheless it seems in order to make one similar concluding observation. If the monumental building of the first millenium BC represents in some significant measure a newly introduced building tradition and is not the direct

classical Greek building

inheritance of Late Bronze Age building, then whatever may have been the source of this new tradition there is little to associate it with contemporary Greek building. A few Archaic and early-Classical Ionic capitals have been found in Cyprus.[426] Some of these may be from votive columns, and it is possible that odd temple buildings may have been designed on classical Greek models.[427] It is however clear that Cyprus was not a Greek architectural province in Archaic and Classical times. Full scale and fully developed Greek temples appeared early enough (ca 600 BC) in more remote places than Cyprus — e.g. on the African coast at Cyrene.[428] However, these were built by colonists from contemporary Greece. The descendents of Mycenaean Greek colonists did not automatically adopt such architectural styles. Classical Greek architecture as a ruling mode came to Cyprus only in a subsequent age when the Cypriote kings with Greek pedigrees going back to Homeric gods and heros had been despoiled of their ancient heritage. The classical orders were introduced into Cyprus by the Ptolemaic regime and, even more significantly, by Rome.

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not received as a norm

until later

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1. For a summary topography v. Murray Smith & Walters, Excavations in Cyprus, London 1900 pp 1, 3 — NB plans at pp 1, 30; SCE I p. 467.
2. v. Excavations in Cyprus pp. 1–54.
3. Carried out by Myres & Markides.
4. Carried out by Gunnis cf SCE I p. 467.
5. v. SCE I pp. 467–577.
6. v. SCE I p. 575.
7. v. SCE I pp. 467–68 *et pass.*

8. v. C.F.A. Schaeffer, Missions en Chypre 1932–35, Paris 1936 (henceforth Missions).
9. v. Missions pp. 67 ff., at pp. 83 ff.
10. cf. SCE I p. 467 "there extends for half a mile a flat plateau where the white limestone rock is covered only by a thin layer of sandy earth".
11. v. Missions pp. 67 ff.
12. v. P. Dikaios, Enkomi Excavations 1948–58, Mainz 1969–71 (henceforth Enkomi).
13. v. C.F.A. Schaeffer, Enkomi-Alasia I, Paris 1952 (henceforth Enkomi-Alasia I); Alasia I Paris 1971 (henceforth Alasia I). And latterly, J.C. Courtois *et al*, Enkomi et le Bronze Récent à Chypre, Nicosia 1986 (henceforth Enkomi & BRC).
14. Various ancient cuttings have been investigated in the scarp (v. Enkomi & BRC pp. 47–48).
15. cf. the somewhat similar circumstances at neolithic Ayios Epiktitos-*Vrysi*.
16. For a convenient outline of the chronology v. Enkomi II chaps VI, VII; cf Enk & BRC pp. 2 ff.
17. v. Enkomi II p. 499.
18. v. Enkomi II pp. 514 ff.; cf Enk & BRC pp. 2 ff.
19. v. Enkomi-Alasia I; Alasia I.
20. v. Enkomi I & II.
21. v. Enk & BRC; RDAC 1984 pp. 51–65; RDAC 1986 pp. 97–121.
22. cf. I. Ionas RDAC 1984 pp. 51–65.
23. v. Enkomi I pp. 15–152.
24. v. Enkomi I pp. 16–20; Enkomi II pp. 501.
25. v. Enkomi I pp. 34–45; Enkomi II p. 506.
26. v. Enkomi I pp. 47–66; Enkomi II p. 510.
27. v. Enkomi I pp. 66–79; Enkomi II p. 512.
28. cf. ABSP pp. 161–62.
29. As was common. On occasions some of the area enclosed never was built up.
30. cf, e.g. Enkomi II pp. 484–88.
31. cf. O. Negbi RDAC 1936 pp. 97–121.
32. For an outline of these concepts v. W. Muller, Die Heilige Stadt, Stuttgart 1961.
33. e.g. at Gaza in Palestine, cf. ABSP p. 356.
34. cf., e.g. The Hippodamic and the Planned City, Beersheva 1978.
35. v. Enk & BRC pp. 8 ff.
36. v. Enkomi I pp. 171 ff.; cf. Enk & BRC pp. 13 ff.
37. v. Enkomi-Alasia I pp. 239 ff., cf. Enk & BRC pp. 18 ff.
38. cf. the economic analysis of its occurrence in Palestine v. ABSP p. 265.
39. cf. Ashlar pp. 4–8, NB Quartier Rempart pp. 7–8.
40. v. Enkomi I pp. 15–152.
41. v. Enkomi II p. 501.
42. v. Enkomi I pp. 34 ff.
43. v. Enkomi I pp. 46 ff., Enkomi II p. 510.
44. cf., e.g. ABSP II figs. 183–85.
45. v. Enkomi I pp. 66–80; Enkomi II p. 512.
46. For a summary of the chronological background v. I. Ionas RDAC 1984 pp. 50 ff.; O. Negbi RDAC 1986 pp. 97 ff., N.B. p. 105.
47. The only overall accounts of the city wall are J.C. Courtois *et al*, Enkomi et le Bronze Récent à Chypre, Nicosia 1986 pp. 2–5, fig. 7; M. Fortin, Military Architecture in Cyprus during the Second Millenium BC, London (thesis) 1981 pp. 214–223, 249–266. Some of the more significant reports on various aspects are Enkomi I pp. 66–87, 120, 152; Enkomi II pp. 512–13, 517; Enkomi - Alasia I pp. 26–27, pls 83–86; Alasia p. 571, pls XXV–XXXIII.
48. v. Enkomi BRC p. 4. The most detailed drawing is Alasia I Folding Plan IV. cf. Fortin pp. 226–29.
49. cf. O. Negbi RDAC 1986 pp. 101–02; cf. Fortin p. 226.

50. v. Enkomi-Alasia I p. 27, pl 86; Alasia I p. 572; BCH 95 1971 pp. 374–78, cf. Enk & BRC p. 4; Fortin p. 230.
51. In fact with internal developments, the entry became double bent, v. Enkomi I pp. 127–29, 145–46; Enkomi II pp. 512, 517, 525, pls 254–56; Fortin p. 225.
52. The question is discussed below under sanctuaries cf. H. Catling RDAC 1975 pp. 50–53; Fortin pp. 224–25.
53. v. Enkomi I p. 125, pl 21:3; cf. Enk & BRC p. 4; Fortin p. 223.
54. v. Enkomi I pp. 71 ff., pls 24:1, 253; Enkomi II p. 513.
55. Variations in structure summarised in Enk & BRC pp. 2–5.
56. v. Enkomi I pp. 120–24, pls 254–57; Enkomi II p. 517. cf. Fortin pp. 219–23, Enk & BRC p. 4.
57. v. H. Catling OA 4 1962 p. 140, CAH II_1 p. 162 & II_2 p. 197; Cyprus p. 133; Fortin pp. 118 ff.
58. For a full report of the excavation of the Ashlar Building and the Sanctuary of the Horned God v. P. Dikaios, Enkomi I, pp. 153–220 & Enkomi II pp. 449–532. This matter is usefully resumed and various aspects discussed analytically in I. Ionas, Architecture Religieuse, pp. 172–227.
59. v. for resumé, Enkomi II pp. 502–03 (with reference to documentation in Enkomi I).
60. v. Enkomi II pp. 507, 509–10.
61. v. Enkomi II p. 512.
62. cf. O. Negbi RDAC 1986 pp. 97 ff. at p. 105.
63. v. Enkomi II pp. 514–16.
64. v. Enkomi II p. 516.
65. v. Enkomi I p. 172; cf. Ionas p. 175.
66. v. Enkomi II pp. 523–24.
67. v. Enkomi II p. 532.
68. v. Enkomi II p. 524; Ionas pp. 181 ff. 220 ff.
69. v. Enkomi II p. 524; Enkomi I pp. 194 ff., 198 ff.; Ionas pp. 186–89.
70. v. Enkomi I pp. 197, 216, Enkomi II p. 531; Ionas pp. 194–95, 210–11.
71. For Dikaios' views on the functioning of the sanctuary v. Enkomi I pp. 194 ff., Enkomi II pp. 527 ff.
72. cf. Ionas p. 224.
73. v. Enkomi II p. 531; Ionas pp. 196, 208, 224.
74. v. Enkomi II p. 524; Ionas pp. 191–92, 224–26.
75. cf. Enkomi II pp. 527–30.
76. v. Enkomi II p. 524.
77. v. Enkomi II pp. 514 ff.
78. v. Enkomi II p. 515.
79. cf. Ionas pp. 215 ff.
80. cf. Ionas pp. 226 ff.
81. v. J.C. Courtois, La Sanctuaire du dieu au l'ingot d'Enkomi-Alasia, Alasia I pp. 151–362; Un nouveau sanctuaire de la fin de l'age du Bronze et du début de l'Age du Fer à Enkomi, CRAI 1963 pp. 155–61; Le Sanctuaire du dieu au l'ingot d'Enkomi-Alasia (Chypre) et les lieux de culte comtemporains en Mediterranée Orientale, CRAI 1973, pp. 223–241.
82. v. I. Ionas, L'Architecture Religieuse au 11e Millenaire à Chypre, Lyon (thesis) 1983, pp. 228–275 (henceforth Ionas).
83. v. Enkomi town plan Alasia I folding plan 4 reproduced (reduced) Ionas Pl 31; RDAC 1986 p. 103, fig. 3 (reduced schematic).
84. cf RDAC 1984 pp. 60–62.
85. A collation has been attempted recently v. I. Ionas, Stratigraphies of Enkomi, RDAC 1984 pp. 50–65; *per contra* O. Negbi, RDAC 1986, pp. 97–121.
86. v. Alasia I pp. 198–211.
87. cf. Ionas p. 247 ff.; RDAC 1984 pp. 60–62.

88. v. Alasia I pp. 152 ff., figs 1 & 2; Ionas pp. 229 ff.
89. cf. Palestinian Temples of the later LB Age Tradition e.g. Lachish Fosse Temple v. (for convenience) ABSP I pp. 225 ff., II figs 144–146 & 157–60.
90. v. Alasia I pp. 178–308, Ionas pp. 235–46.
91. v. Alasia I pp. 326–356.
92. v. Alasia I pp. 152, 159, 162, 240; Ionas pp. 234–35.
93. cf., e.g. ABSP II figs 146, 148 (Lachish Fosse Temple, Tell el Farah Temple).
94. v. Alasia I pp. 308–10.
95. v. Alasia I pp. 506–10.
96. v. Alasia I pp. 326–56.
97. v. Alasia I p. 314.
98. For *a mise en scène* v. Sir A. Evans, The Mycenaean Tree and Pillar Cult, London 1901.
99. v. J.C. Courtois *et al* Enkomi et le Bronze Récent à Chypre Nicosia 1986 pp. 37–39.
100. cf. e.g. the later Temples at Atshana, v. PEQ 1971 p. 27.
101. v. Enkomi I pp. 125–26; cf Ionas pp. 276–84.
102. v. Enkomi I p. 126, Enkomi II p. 517.
103. v. RDAC 1975 pp. 50–53.
104. v. Enkomi II p. 517.
105. v. Enkomi I p. 126; RDAC 1975 p. 52 figs 1, 2.
106. v. RDAC 1975 p. 53.
107. v. Ionas pp. 282–83; cf J.C. Overbeck & S. Swiney, Two Cypriote Bronze Age Sites at Kafkallia (Dhali) SIMA XXXIII 1972 pp. 25–26, fig 4.
108. v. Enkomi I pp. 26–28, Enkomi II p. 502; cf Ionas pp. 286–88.
109. v. H. Thiersch, Ein Alt Mediterraner Tempeltyp, ZAW 1952 pp. 75–86; cf GRH Wright, ZAW 1968 pp. 27 ff. & ABSP I p. 136.
110. v. Enkomi I pp. 15–152, 153–220; Enkomi II pp. 501–02, 506–07, 509–10, 514–18, 523–25, 531.
111. v. Enkomi-Alasia I pp. 239–370.
112. v. Enkomi I pp. 16–20; Enkomi II p. 501.
113. v. Enkomi I pp. 46–56; pls. 251–252.
114. v. Enkomi I pp. 47, 48, 50, 57, etc. Pls. 251, 252.
115. v. Enkomi I pp. 66-8; Enkomi II p. 512.
116. cf. Levant X 1979 pp. 162–67; ABSP pp. 272–73, figs 184–85.
117. v. Enkomi I pp. 91–152, Enkomi II pp. 524–531.
118. v. Enkomi I pp. 153–222, Pls 267–79.
119. v. Enkomi I pp. 155–58; Enkomi II p. 502, pls. 267–269.
120. v. Enkomi I pp. 143–170; Enkomi II p. 509, pls. 271–72.
121. v. Enkomi I pp. 66–80; Enkomi II p. 512; cf Enk & BRC p. 4.
122. cf. Enk & BRC p. 13, "... delimités en fonction des trois rues en tourant des lors cet îlot".
123. v. Enk & BRC p. 5 "... au cours d'une phase avancée du chypriote Récent II ...", cf O. Negbi RDAC 1986 pp. 102–05.
124. v. Enkomi II pp. 514–16.
125. cf. O. Negbi RDAC 1986 pp. 102–05.
126. v. Enkomi pp. 191–210; Enkomi II p. 523.
127. The interim publications are of the excavations rather than the buildings, v. Enkomi-Alasia I pp. 239–370; Enk BRC pp. 18–22.
128. v. J. Muhley *et alii* ed., Early Metallurgy in Cyprus, Nicosia 1982 (henceforth EMC) pp. 105, 112.
129. e.g. as constituting founders hoards, stock in trade, etc. cf. Enk & BRC pp. 31, 61 ff.
130. Inevitably since the vast preponderance of excavation is from this period. It would be difficult to maintain the evidence from Enkomi supported the fact that metallurgical development was significantly an urban feature.

131. For a general background on metallurgy in Ancient Cyprus v. EMC *pass*.
132. cf. EMC p. 102.
133. Convenient surveys of this evidence appear in Enk & BRC pp. 60 ff.; Alasia I pp. 381–432; J.C. Courtois, L'Activité Métallurgique . . . in EMC pp. 115–74.
134. v. Enk & BRC p. 61.
135. v. Enk & BRC pp. 30, 60 ff.
136. v. Enkomi I p. 120; Enkomi II pp. 516–17.
137. For a convenient schedule of metallurgical establishments according to location v. EMC pp. 155–64. N.B. establishments in Insula 1W (in the fortress and its successor public building during pre-urban times, LC I-II. In Insula 4W (in Ashlar Building and serving Sanctuary of the Horned God; in Insulae 5W & 6W (in and near the residence Batiment 18); in Insulae 4E & 5E (serving Sanctuary of the Ingot God); in Insula 6E (near the temple of the Column); in Insula 8E (near the "Maison des Bronzes"). cf the plans EMC p. 156, fig 1; Alasia I p. 425, fig 26.
138. cf. the metal working establishments in the "Fortress" near the later North Gate (v. Enkomi I pp. 56–62).
139. cf. EMC pp. 95, 175.
140. v. EMC p. 175.
141. v. Enk & BRC p. 60.
142. v. EMC pp. 161–63.
143. v. EMC p. 162, fig 3 (*atelier sud*).
144. v. Enkomi I pp. 56–62.
145. v. Enkomi I. p. 56.
146. cf. EMC p. 157, fig 2.
147. Rifled tombs are beyond reckoning. So far as published records indicate, tombs cleared in the interest of archaeology approach something like 200.
148. v. A.S. Murray A.H. Smith H.B. Walters, Excavations in Cyprus, London 1900 pp. 1–54.
149. v. J.L. Myres, Annual BSA 41 1940–45, pp. 69–72.
150. v. SCE I pp. 467–575.
151. v. C.F.A. Schaeffer Missions en Chypre pp. 67 ff. at pp. 84 ff.
152. v. Missions pp. 67 ff.; Enkomi-Alasia I pp. 105–238; Alasia I pp. 57–122. Summary notices in Enk & BRC pp. 8–50 *pass*. For finds v. J.C. Courtois Alasia II Paris 1981.
153. v. P. Dikaios Enkomi I — II Mainz 1969–71.
154. v. Enkomi II p. 503.
155. v. Enkomi II p. 507.
156. v. Enkomi II p. 510.
157. v. Enkomi II pp. 514–18.
158. v. Enkomi I pp. 432–33; Enkomi II p. 518.
159. v. Enkomi II p. 518.
160. v. Exc in Cyp pp. 1–54. For location v. Missions p. 64, fig 27; Enk & BRC pp. 40 ff.
161. v. SCE I pp. 467–575. "Byzantine Walls" are to be understood as LC settlement walls. For location v. Missions, p. 64, fig 27; Enk & BRC pp. 48 ff.
162. As things now stand it is impossible to know how many tombs have been excavated over the many seasons works. For summary v. Enk & BRC pp. 8–50 *pass* with references.
163. cf. Alasia II p. 10.
164. v. SCE I p. 575.
165. v. Missions pp. 68–70.
166. v. Enkomi I pp. 434–37; Enkomi II p. 536.
167. e.g. in the carefully analysed report of the SCE work LC II burial groups amount to 27 out of a total of 43 groups (with LC I accounting for a further 8), v. SCE I p. 575.
168. v. Enkomi II pp. 427–30.

169. v. Enkomi-Alasia I pp. 239–370.
170. v. CAH II 2A p. 208.
171. v. for convenience, ABSP pp. 330–31; cf Ugaritica I pp. 77–97.
172. v. Alasia I pp. 51–122.
173. v. Enk & BRC p. 24; cf. Exc in Cyp p. 35, figs 63 & 64.
174. cf. G. Hult, Bronze Age Ashlar Masonry, SIMA LXVI, Göteborg 1983 pp. 8–9 (also contains information on additional tombs from MS source).
175. cf. Enk & BRC p. 30 (French Tomb 5).
176. v. SCE I pp. 530, 538, 540.
177. v. SCE I pp. 536–37, figs 203 & 204: 1–2 (Tomb 14); pp. 537–38, figs 204: 3, 205 (Tomb 15); pp. 558–68, fig 213: 2 (Tomb 19A).
178. v. SCE I pp. 498–500, fig 194:6 (Tomb 7A); p. 510, fig 198:1 (Tomb 11A); pp. 558–68, fig 213:2 (Tomb 19A).
179. For all aspects v. K. Nicolaou, The Historical Topography of Kition, (SIMA 43), Göteborg 1976. Henceforth SIMA 43.
180. v. SIMA 43 figs 1, 2, 3.
181. v. SIMA 43 pp. 1–16; cf V. Karageorghis, Kition, London 1976 pp. 22–25.
182. cf. SIMA 43 pp. 18–35.
183. v. Kition pp. 17–18.
184. v. SCE III pp. 1 ff.
185. v. Kition *pass.*
186. v. SIMA 43 p. 160.
187. v. SIMA 43 p. 17.
188. v. SCE III pp. 1–75; cf SIMA 43 pp. 102–106.
189. v. SIMA 43 pp. 108–11.
190. v. SIMA 43 pp. 111–13.
191. v. SIMA 43 pp. 113–14.
192. v. SIMA 43 p. 114.
193. cf. SIMA 43 pp. 158–216.
194. v. SIMA 43 p. 161.
195. v. SIMA 43 pp. 159–60.
196. v. Kition p. 149, fig 26.
197. v. Kition pp. 26 ff.
198. Now cf. the analysis of I. Ionas, Architecture Religieuse, Lyon (thesis), 1983 pp. 105–71.
199. v. Kition fig 9, pl. 30.
200. v. Kition pp. 55–57.
201. v. Kition figs 10, 11.
202. v. Kition pp. 61 ff., fig 11.
203. v. Kition pp. 76 ff., figs 13, 14, 15.
204. v. Kition p. 81.
205. v. Kition p. 90.
206. v. Kition pp. 95 ff.
207. v. Kition fig. 18.
208. v. Kition figs 16, 17, 19.
209. v. Kition fig. 11.
210. cf. SIMA 43 p. 65.
211. cf. Kition pp. 119, 140.
212. cf. ABSP pp. 61–62.
213. The passage of time with its changes is no more an unqualified benefit for archaeological excavation than for anything else. As new developments e.g. in physical science confer certain

advantages, other facilities once taken for granted cease to be available — e.g. sufficient labour to operate over reasonable areas.

214. For summary reports of work to date v. A South Todd, The Late Bronze Age in the Vasilikos Valley in 2nd Internal Congress of Cypriote Studies, Nicosia 1985 pp. 113–124; Kalavassos - *Ayios Dhimitrios* and the Late Bronze Age, in Cyprus at the Close of the Late Bronze Age, Nicosia 1984 pp. 11–18; also interim reports in RDAC 1980, 1983, 1984.
215. v. RDAC 1980 pp. 28–30.
216. v. Cyprus CLBA p. 12; Praktika 2 p. 121.
217. v. Cyprus CLBA p. 12; Praktika 2 p. 117.
218. v. Cyprus CLBA p. 12; Praktika 2 p. 116.
219. cf. Enkomi = 16 hectares.
220. v. Cyprus CLBA p. 13, fig 2; RDAC 1980 p. 31.
221. v. RDAC 1983 Pl. XIV, 3 (building III).
222. v. Cyprus CLBA p. 12; Praktika 2 p. 118.
223. v. Cyprus CLBA p. 12; Praktika 2 p. 118.
224. v. RDAC 1984 p. 24; RDAC 1983 p. 115.
225. For stone for stone and reconstructed plans v. RDAC 1984 p. 18, fig 2, p. 20, fig 3. In general v. RDAC 1984 pp. 18 ff.; RDAC 1983 pp. 94 ff.; Cyprus CLBA pp. 13 ff.; Praktika 2 pp. 117 ff.
226. v. Cyprus CLBA p. 16; Praktika 2 p. 119.
227. v. Cyprus CLBA p. 13, fig. 2; RDAC 1980 pp. 42–43.
228. v. RDAC 1980 pp. 43–44.
229. v. Cyprus CLBA p. 12; Praktika 2 p. 117; RDAC 1980 pp. 33–42; RDAC 1983 pp. 101–104.
230. v. Cyprus CLBA p. 12, Praktika 2 p. 118; RDAC 1983 pp. 103–104; RDAC 1980.
231. v. Cyprus CLBA p. 14; Praktika 2 p. 119.
232. v. RDAC 1980 p. 38.
233. e.g. at Nitovikla (LC1?) v. SCE I pp. 378 ff.; Ashlar p. 15.
234. v. Praktika 2 p. 121; RDAC 1988 pp. 42–43.
235. v. RDAC 1980 pp. 32–33.
236. v. RDAC 1984 p. 19.
237. v. J. du Plat Taylor, Myrtou-*Pigadhes*, Oxford 1957 (henceforth *Pigadhes*). cf I. Ionas, L'Architecture Religieuse au llème Millenaire à Chypre, Lyon (thesis) 1983 (henceforth Ionas) pp. 31–77.
238. v. *Pigadhes* p. 1 & figs 1, 2.
239. v. *Pigadhes* p. 1.
240. v. *Pigadhes* pp. 10–23, fig 7.
241. v. *Pigadhes* pp. 103–12, NB pp. 111–12; cf Ionas p. 77.
242. v. Ionas p. 77.
243. v. *Pigadhes* pp. 12–16, figs 8–11. For an alternative (low) reconstruction by M. Loulloupis v. Acts MEM pp. 227–229; cf. Ionas pp. 41 ff., 71 ff.
244. cf. *Pigadhes* fig 7; Ionas p. 77.
245. cf. Ionas pp. 76–77.
246. cf. e.g. The Mekal (Court) Temple at Beth Shan of slightly earlier date (ca 1400 BC) v. A. Rowe Beth Shan I Philadelphia 1936 fig 1; PEQ 1971 pp. 22–23; ABSP fig 161.
247. cf. Ionas p. 76; NB also the well constructed drains.
248. v. Alasia I Depliant IV.
249. cf. Ionas p. 77.
250. cf. Ionas pp. 76,77.
251. v. G. Hult, Ashlar pp. 14, 16, 17, 73, 77, 88, fig 13.
252. v. SCE II pp. 642–824.
253. v. SCE II pp. 666 ff., fig 263.
254. v. SCE II pp. 820 ff.

255. v. SCE II pp. 820–21; SCE IV 1c pp. 1 ff.
256. cf. SCE II fig 263; Rooms I & II, V & VI.
257. cf. ABSP pp. 130, 133.
258. cf. ABSP II fig 132 (Ras Shamra), fig 175: 11–15 (Ras Shamra, Beth Shan, Kamid el Loz, Mari).
259. v. SCE II pp. 671; 817, 822; SCE IV_2 p. 1.
260. v. SCE IV_2 p. 1.
261. v. SCE II pp. 671 ff., 823 f.; SCE IV_2 p. 4.
262. cf. E. Sjoquist, Die Kulturgeschichte eines Cyprischen Temenos, AfRW XXX 1932 pp. 308–59; Sir A. Evans, The Mycenaean Tree and Pillar Cult, London 1901; ABSP II fig 140 (Qatna).
263. For a source history v. RE IV pp. 2095ff.; cf Der Kleine Pauly 5 cols 504–05.
264. v. for convenience G. Jeffery, A Description of the Historic Monuments of Cyprus, Nicosia 1918 (London 1983) pp. 211–14.
265. Ohnefalsch-Richter's activities are summarised in H.G. Buchholz, Der Beitrag der Ausgrabungen von Tamassos zur antiken Baugeschichte Zyperns, in Archaeology in Cyprus Nicosia 1985 (Arch in C) pp. 238–55 at p. 238. Some first hand notices appear in M. Ohnefalsch-Richter, Kypros The Bible and Homer, London 1893 (Kypros) pp. 7 ff. & *pass*. Unfortunately the specific work on Tamassos continually referred to was never published.
266. v. Arch in C p. 239, cf. V. Karageorghis, A Late Cypriote Tomb at Tamassos, RDAC 1965 pp. 11 ff.; S. Hadjisavas Politiko *Kouphos*, An Archaic Cemetery RDAC 1978 pp. 125 ff.
267. v. Arch in C pp. 238–55. Also interim reports in AA 1973, 74, 78 and part summary in Cyprus p. 151.
268. v. e.g. V. Karageorghis, A Late Cypriote Tomb at Tamassos, RDAC 1965 pp. 11 ff. N.B. The Lambertis Cemetery v. OA IV 1963 p. 153, n° 132; p. 159, n° 141; p. 168, n° 212.
269. v. Arch in C p. 240. For Bronze Age settlements in the region of Politiko v. H. Catling OA IV 1963 pp. 129 ff. at p. 153, n° 133; p. 168, n° 213 and folding plans.
270. v. Dupont-Sommer RDAC 1974 pp. 91 ff.; cf, for convenience E. Gjerstad RDAC 1979 p. 237; also Cyprus p. 124.
271. On this subject v. the excellent study of E. Gjerstad, The Phoenecian Colonisation and Expansion in Cyprus, RDAC 1979 pp. 230–34; cf. Cyprus p. 139.
272. v. Campbell Thompson, The Prisms of Esarhaddon and Ashurbanipal, p. 25; cf. RDAC 1979 p. 238, also Cyprus p. 129.
273. v. Cyprus p. 151.
274. v. Sir George Hill History of Cyprus I p. 150; cf. RDAC 1979 p. 254.
275. v. Cyprus pp. 172 ff.; cf. RDAC 1979 p. 254.
276. v. Arch in C p. 241.
277. Cyprus p. 178.
278. v. O. Masson, Recherches sur les Antiquités de Tamassos, BCH 88 1964 pp. 199 ff.
279. v. AA 1973 pp. 325 ff.; AA 1974 pp. 589 ff.
280. v. AA 1974 pp. 322 ff.; AA 1974 pp. 578 ff.; AA 1978 pp. 177 ff.
281. v. AA 1974 pp. 589 ff. v. AA 1978 p. 217, fig 18.
282. v. AA 1974 p. 568.
283. Arch in C pp. 240–41.
284. v. AA 1975 p. 340, n 87; AA 1978 pp. 209–210. cf. Kypros pp. 7 ff.
285. v. AA 1973 p. 340, nn 88–91; AA 1978 pp. 210–15.
286. v. AA 1978 pp. 209 ff.
287. v. AA 1973 pp. 342–56; AA 1974 pp. 555–68; AA 1978 pp. 217–30.
288. v. AA 1973 pp. 348–49.
289. v. Arch in C pp. 247, 250; figs 9, 10.
290. cf. AJA 75 1971 pp. 47 ff. at p. 49.

291. v. Arch in C pp. 241–43; AA 1973 pp. 361 ff. N.B. The possible references to Tamassos in Homer, cf. Od 1, 184.
292. v. AA 1973 pp. 350 ff.; Arch in C p. 248, fig 8.
293. v. AA 1973 pp. 350 ff. & figs 50, 52–55. cf Alasia I
294. For some general account of tomb clearances in the Tamassos area v. RDAC 1975 p. 11, fig 1; AA 1973 pp. 301–37; AA 1978 pp. 177–209.
295. v. AA 1974 pp. 570–77.
296. v. AA 1973 pp. 322 ff.; AA 1974 pp. 578 ff.; AA 1978 pp. 195 ff.
297. The numbering of these tombs has been utterly confused, Ohnefalsch-Richter having used several different systems. The numbers here are those adopted by Buchholz consequent on his researches into Richter's manuscript records.
298. v. AA 1974 p. 582, figs 45–49.
299. v. AA 1974 p. 598.
300. v. AA 1974 p. 580.
301. v. AA 1974, p. 588, fig 49.
302. v. AA 1974 pp. 589 ff.
303. v. AA 1974 p. 598, fig 49.
304. v. AA 1974 p. 582, figs 39, 50c.
305. v. AA 1974 p. 582, figs 45–50.
306. v. AA 1974 p. 522, figs 39–44.
307. v. AA 1974 p. 522; figs 36, 37, 48, 50.
308. cf., e.g. AA 1974 p. 535, fig 23.
309. v. ABSP pp. 423 f.; AAAO p. 196, pl. 170B.
310. cf. Ovid Metamorphosis X, 644.
311. Very fully published by E. Gjerstad in SCE III pp. 76–339. The Palace was treated more compendiously v. E. Gjerstad, The Palace at Vouni, Corolla Archaeologica pp. 145–171.
312. cf. SCE III pp. 286–88; SCE IV_2 p. 426; AJA 37 1933 pp. 593 ff.
313. for the topography v. SCE III pp. 76–85.
314. v. SCE III pp. 85–111.
315. v. SCE III pp. 111–290; SCE IV_2 pp. 23–29.
316. v. SCE III pp. 111–290 *pass*; SCE IV_2 pp. 13–17, figs 2, 4, 5.
317. v. SCE III pp. 81–82.
318. v. SCE III pp. 82–84, 291–92.
319. v. SCE III Plan VII.
320. v. SCE III p. 81.
321. v. SCE III p. 77, Plan VII.
322. v. SCE III pp. 292–98.
323. v. SCE III p. 293.
324. v. SCE III pp. 298–339.
325. cf. SCE IV_2 p. 231; The Palace at Vouni pp. 168–69, 171.
326. v. SCE III pp. 205–15, fig 120, Plan XXVI; SCE IV_2 pp. 23–27, fig 6; The Palace at Vouni pp. 147-48, fig 7.
327. v. SCE III p. 215–19, fig 119, Plan XXVII; SCE IV_2 pp. 27–29, fig 1; The Palace at Vouni pp. 149–50, fig 2.
328. v. SCE III pp. 210–224.
329. v. SCE III pp. 287–88, SCE IV_2 p. 426.
330. for convenient summary cf. ABSP pp. 414–15. Some details of mud bricks have been recorded from the mud brick walling at Vouni. Both square and rectangular bricks occur e.g. 46 × 46 × 14 and 48 × 22.5 × 16. These two forms were doubtless used alternately for successive courses since

two rectangular bricks as headers together with the mortar joint (22.5 + 22.5 + 1 cm) are equal to the face of a square brick (46 cms) — v SCE III pp. 145–46.

331. v. SCE III pp. 135–145.
332. v. SCE III pp. 111–135; The Palace of Vouni pp. 145–46.
333. cf. SCE III Plans XVIII-XXII.
334. cf. Vitruvius II.8; G.R.H. Wright, Masonry Construction at Marib and the "Interwoven Structure" (Emplecton) of Vitruvius, ABADY IV 1988 pp. 79–86.
335. v. SCE III pp. 154–56.
336. v. SCE III p. 291, fig 158.
337. For convenience, v. ABSP p. 431; cf. R. Naumann, Architektur Kleinasiens, Tubingen 1971 pp. 136 ff.
338. v. SCE III pp. 147–153.
339. v. SCE III pp. 153–54.
340. v. SCE III pp. 85–111.
341. v.SCE III pp. 111–290 *pass.*
342. v. SCE III pp. 292–298.
343. v. SCE IV_2 pp. 13–17, figs 2, 4, 5.
344. v. SCE IV_2 p. 13; SCE III pp. 214–15.
345. v. SCE IV_2 p. 19, fig 2_3; SCE III p. 212.
346. v. SCE IV_2 p. 15, fig 4_3; SCE III pp. 85 ff.
347. v. SCE IV_2 p. 14–15, fig 4_2; SCE III pp. 210 ff.
348. v., for convenience, ABSP p. 135 & fig 21 C_1.
349. v. SCE IV_2 pp. 13–14, fig 2_2; SCE III p. 225.
350. v. SCE IV_2 pp. 13–14, fig 2_2.
351. v. SCE IV_2 p. 23, fig 5_2; SCE pp. 292–98.
352. v. SCE IV_2 pp. 14–15.
353. v. SCE IV_2 p. 15.
354. v. SCE IV_2 pp. 15–16.
355. v. SCE IV_2 p. 16.
356. v. SCE III p. 97.
357. For general accounts of the site v. Amathonte I, Paris 1984 (Etudes Chypriotes IV); P. Aupart & Hermary, Fouilles Françaises à Amathonte 1975–1984, in Arch in C pp. 227–37; RDAC 1980 pp. 217–18; RA 1986 pp. 199–203; SCE II pp. 1–4.
358. v. P. Aupert in Amathonte I pp. 11–56.
359. cf. Theopompos of Chios FGH III; commentary with other ancient authors in Amathonte I pp. 109–17 & RDAC 1980 p. 217.
360. v. Herodotos V 104–05, 108–14.
361. v. Diodoros XIV, 98.
362. For a complete record v. Amathonte I chapters III & IV.
363. v. Amathonte I p. 102; Syria 8 1927 pp. 239–47.
364. v. A.S. Murray, A.H. Smith, H.B. Walters, Excavations in Cyprus, London 1900 at pp. 87–126.
365. v. SCE II pp. 1–141.
366. v. Arch in C pp. 227–237.
367. v. BCH 103 1979 pp. 706–07.
368. For a good general plan v. RDAC 1984 p. 266, fig 1; also RDAC 1980 p. 220, fig 2. For a very good aerial photograph v. BCH 110 1986, p. 882, fig 1.
369. v. Arch in C pp. 232–35; RDAC 1980 pp. 231–35; RDAC 1984 pp. 269–277; RA 1986 pp. 202–03.
370. v. Arch in C p. 232; RDAC 1984 p. 268.
371. v. RDAC 1980 p. 228; BCH 108 1984 p. 956.
372. v. RDAC 1980 p. 219, fig. 1 & p. 224; BCH 110 1986 pp. 899–907.

373. v. RDAC 1984, p. 266 fig 1 (bottom left).
374. v. RDAC 1980 pp. 223–24.
375. v. SCE III pp. 76–339; Corolla Archaeologica pp. 145–171; cf RA 1986 p. 200.
376. In later days the upper town probably became more or less deserted of every day life and was a venue solely for religion. Most probably when the fortifications were renewed in the face of the Arab menace it meant virtually the reoccupation of an abandoned site.
377. v. BCH 110 1986 pp. 881; RA 1986 pp. 202–03; Arch in C pp. 232–35; Praktika 2 pp. 279–86.
378. v. Amathonte I pp. 86–89, 102, figs 21–26.
379. v. Amathonte I p. 107; RA 1986 pp. 200–02; Arch in C p. 232; RDAC 1984 p. 268; RDAC 1980 pp. 226–27.
380. v. L. de Cesnola, Its Ancient Cities, Tombs, Temples, London 1877 pp. 249–92.
381. v. Kypros *pass.*
382. v. A.S. Murray, A.H. Smith, H.B. Walters, Excavations in Cyprus, London 1900 pp. 87–126 at pp. 91–92.
383. v. SCE II pp. 1-141.
384. v. (for convenience) Amathonte I p. 106. NB built tombs recently excavated by M. Louloupis are very important, v. BCH 99 1975, p. 836; BCH 101 1977, p. 765.
385. v. RDAC 1980 p. 229.
386. v. SCE II pp. 139-41; cf. Built Tombs p. 53.
387. cf. Built Tombs pp. 32-35, 52-54.
388. v. SCE IV_2 pp. 32 ff., 39 ff.
389. v. SCE II pp. 1 ff.
390. v. SCE IV_2 p. 32; Built Tombs p. 31.
391. e.g. at Enkomi; v. Built Tombs pp. 42–43.
392. v. SCE IV_2 p. 32.
393. v. SCE IV_2 p. 32.
394. v. SCE IV_2 p. 39.
395. cf. SCE IV_2 p. 38, fig 11, N° 7 & p. 39.
396. cf. Built Tombs *pass* N.B. p. 50, fig 20.
397. v. Built Tombs p. 32, fig 8; SCE II pp. 4 ff.
398. For the persistence of this tomb type v. Built Tombs p. 53 n 6; cf SCE Tomb 9 at Kountoura Trachonis (SCE I pp. 450 ff.).
399. cf. C. Baurain, Chypre et La Méditerranée Orientale à l'Age de Bronze Récent (Etudes Chypriotes VI), Athens 1984; J.D. Muhly & V. Karageorghis ed., Cyprus at the Close of the Late Bronze Age, Nicosia 1984; J.D. Muhly, The Late Bronze Age in Cyprus, in Arch in C pp. 20–46.
400. cf. e.g. V. Karageorghis Cyprus pp. 86–89.
401. cf. Cyprus p. 92; for general considerations *per contra* v. J.D. Muhly in Cyprus CLBA pp. 44–55.
402. v. Cyprus pp. 87–88; cf V. Karageorghis, Deux Avant-Postes Militaires de la Fin du XIIIe Siècle avant J.C. à Chypre, CRAI 1982.
403. v. Cyprus pp. 87–88; cf V. Karageorghis, M. Demas, Pyla *Kokkinokremos*, Nicosia 1984.
404. v. Cyprus p. 91; cf V. Karageorghis, M. Demas, B. Kling, Excavations at Maa - Palaeokastro RDAC 1982 pp. 86–108.
405. v. RDAC 1984, p. 18, fig. 2; p. 20, fig. 3.
406. v. Enkomi I p. 154 (cf. pp. 35 ff.).
407. v. Cyprus p. 91; cf G. Hult, Bronze Age Ashlar Stone Masonry, SIMA LXVI Göteborg 1983 pp. 3–18, 88–90.
408. cf. Ashlar pp. 3–18.
409. cf. Ashlar pp. 34ff, 61ff, 89; N.B. Cyprus CLBA p. 52.
410. v. Cyprus pp. 112–13.
411. for a general survey v. J.N. Coldstream in Arch in C pp. 47–59.

412. v. Cyprus p. 112; V. Karageorghis, Salamis in Cyprus, London 1963 pp. 20–22; M. Yon, Salamine de Chypre, Paris 1980 pp. 75 ff.
413. v. Arch in C p. 230.
414. Paphos because of its great, ecumenical shrine is a special case where there can be little doubt that urban life continued unbroken into the Iron Age v. F.G. Maier & V. Karageorghis, Paphos, Nicosia 1984 pp. 119 ff., N.B. p. 126.
415. v. Cyprus p. 112; V. Karageorghis, Kition, London 1976 pp. 90–94.
416. v. Cyprus pp. 115–16; Salamis pp. 20–21.
417. v. Cyprus pp. 118–21; V. Karageorghis, Palaepaphos - *Skales* (Alt Paphos III), Konstanz 1983; cf. Paphos pp. 129–50.
418. v. Arch in C p. 51; Kition ch 5.
419. v. SCE III pp. 76–339.
420. v. SCE III pp. 111–35, plans XVIII–XXII.
421. v. Arch in C p. 246, fig 5.
422. v. Arch in C p. 232, pl. XXI.5.
423. v. SCE IV pp. 29–47.
424. v. Arch in C p. 246, fig 5.
425. v. L. Antoniadis, L'Institution de la Royauté en Chypre Antique, KS 1981 pp. 29–52. For a compendious collection of Greek sources v. K. Hajiyoannou *E. Archia Kypros Eis Tas Ellenikas Pegas* (Ancient Cyprus in the Greek Sources) I–IV. Nicosia 1971–83.
426. e.g. at Tamassos v. Arch in C p. 250, figs 9, 10; and Kouklia v. Paphos pp. 222–23; fig 204.
427. e.g. The Paradisotissa Temple near Vouni, v. SCE III pp. 292–98.
428. v. L. Pernier, Il Tempio di Apollo a Cirene, Bergamo 1935.

4. HELLENISED CYPRUS (PTOLEMAIC-ROMAN)

Political developments, viz loss of autonomy and incorporation in Ptolemaic Empire, result in thorough going Hellenisation of Cypriote life with consequent introduction of Greek monumental building forms to provide for new social usages. Distinct "Alexandrian" regional style.

Relatively little Ptolemaic period building revealed but notable monumental remains from succeeding early Roman period, which latter evidently continue the style of building developed during Ptolemaic times. Architectural expression in the Island eventually transformed by introduction of ecumenical Roman Imperial mode (Marble decor) at end of second century AD.

Detailed instances provided at cities of Salamis, Soli, Kourion and Paphos. Evidence of standard Hippodamian town planning; atrophy of urban fortifications; maintenance of traditional Cypriote sanctuary form at Old Paphos, but Graeco-Roman temple forms introduced elsewhere; striking development of civil monumental building forms (theatre, stadium, nymphaeum, etc.). Major public works, of harbours, water supply, roads, etc. Appearance of new forms of monumental tombs, viz rock cut peristylar tombs after Alexandrian model and arcosolium graves, including true domical construction in early Roman times.

Sub-ashlar limestome masonry construction general for public buildings of all descriptions. Architectural ornament predominantly of hellenistic Doric and heterodox Corinthian style.

The ancient authors preserve a sensational story of the self destruction of a Cypriote king which extended to his whole family in the holocaust of his palace.[429] This is recorded of Nikokles the last independent king of Paphos, but various details of the story have led some modern scholars to interpret this as a simple mix-up of names and assign the story to Nikokreon, the last king of Salamis.[430] On the face of it the

story should refer to one king or the other, not to both, since in the latter case this would be so notable an occurrence that the ancient authors would have spoken of two kings, not one. In fact it does not matter much since the story is a clear symbol of the end of an age. And indeed, all the independent kings of Cyprus lost their kingdoms within a very short span of years; they (as many others) being hapless victims of the wars of the Diodachoi. In sum, the story is of the Sardanapalus type and can well stand for the whole generation of minor royalty.

end symbol

The vast change in Cypriote life ushered in by these events is not merely a matter of historical interest and inquiry. It is an experiential fact of the present day. Part of the present day setting of life in Cyprus is composed of the buildings erected in this new age, i.e. these public buildings form not an inconsiderable part of what Cyprus is in the 20th century. Classical culture is a part of the Western European heritage and the theatres of Cyprus (the true temples of the classical spirit), with some renovation, not only witness to that spirit and so re-awaken it in the modern breast; but they also fulfil the same social function now as then. The extreme historicism of the late 20th century has effected a high vulgarisation of classical studies so that a performance of Attic tragedy in one of these theatres is nowadays well attended (promoted by contemporary internationalism, itself a repeat of the Hellenistic-Roman phenomenon). Equally the Olympic cult of athletics can still find a venue in the refurbished Greco-Roman stadium.

survival of early Roman monuments in contemporary use

It now only remains to say that perhaps the most visually striking feature of ancient Cyprus in modern life marks, in fact, the end of the age under review. This feature is, of course, the marble column, the groves of which are definitive of the "classical landscape" concept.

There were columns aplenty in Cypriote building throughout Ptolemaic-Early Roman times, but they were built up of limestone frustra which do not survive so readily. What is apparent today at Salamis, Kourion, etc., are the marble monoliths which transformed the expressions of building from a regional into an ecumenical cast. The date of this transformation is obviously not to be put down in terms of this or that year, but roughly speaking it must have been of the generation at the end of the second, beginning of the third, centuries AD — perhaps it might be said of Severan times and later, i.e. about 1800 years ago. Thus the story of ancient Cypriote building has an end still visible today. Moreover, it is at least possible that these marble columns will outlive the fero-concrete, high-rise apartments which are their contemporary analogues in Nicosia, Larnaca, Limmasol and Paphos.

marble columns

of later Roman building

SALAMIS

location

Salamis[431] is without doubt the Cypriote town which enjoyed the greatest repute in historical antiquity, and probably it was linked more closely with Greece over a longer period than any

other Cypriote town. For all that, however, its situation was anything but conveniently approachable by sea from the Aegaean. From the West and the North it was barred off by the Karpass Peninsula; on the contrary it looked directly across to the nearby Syrian coast. The
57 site developed to stretch along the coast northward from the mouth of the Pedhiaeos River. *topography*
The Pedhiaeos is the nearest approach to an arterial river in Cyprus: with its main sources in the Troodos Mountains and minor tributaries joining it from the Kyrenia Range, it flows eastward past Nicosia through the entire length of the Mesaoria plain. This flat land was the agrarian heart of the Island, and Salamis was thus the natural outlet for its produce.

Of all the Cypriote foundation legends, that of Salamis maintained the most lively presence *foundation legend*
— i.e. it was the most popular.[432] According to its terms, Salamis was founded by Teucer (Teukros), the half brother of Ajax Telamon, in the sequel of the Trojan War. Returning to his island home (Salamis) bearing the news of the miserable end of his noble brother, Teucer was driven away by his father Telamon, and after wanderings, established a kingdom in Cyprus at a place which he called Salamis after his lost patrimony. And, say the sources, the line continued down to Euagoras in the fourth century BC.[433]

The site of Salamis remained known through mediaeval and modern times[434] and during the latter part of the last century attracted the attention of the first generation of Cypriote *excavation*
archaeologists.[435] Cesnola recorded that he spent large sums of money at the place on three different occasions,[436] while his brother Alexander published a book on his activities at the site (in progress at the time of the British occupation).[437] During the early years of British rule (1880's & 90's) several different expeditions were at work in Salamis. In 1890–91 many trial trenches were run across the site by an expedition working on behalf of the Cyprus Exploration Fund.[438] While in 1896 a British Museum Expedition sought for tombs in the region.[439] Perhaps the most ironic circumstance was that at this time Ohnefalsch-Richter (clearly the most talented and committed of all these people), who was temporarily working as a forester in the colonial service, was ordered to plant a eucalypt forest over the area as a soil stabilisation measure. This was a most unwelcome task to him personally, but, in fact, may well have conserved the antiquities better than otherwise would have been the case.[440]

Following these activities at the end of the last century only minor and peripheral work was carried out at Salamis for the next 50 years.[441] The most important operations were those of Jeffery, the knowledgeable architect, for long curator of monuments in Cyprus. He identified the public building now known as the Gymnasium (*olim* Marble Forum) and also investigated the Temple of Zeus.[442]

However, in 1952 the Department of Antiquities began quite large scale work at the Gymnasium under the direction of V. Kargeorghis which continued there and on other monuments with increasing amplitude.[443] In 1964 V. Karageorghis undertook an additional charge of the greatest moment; the excavation of the crowded and wealthy cemetery (a royal cemetery) principally of Geometric and Archaic date.[444] At the same time long term, large scale work was undertaken by a French Expedition from the University of Lyon.[445] These several activities were proceeding when in 1974 the Cyprus Government was ousted from the region. Since then access has been impossible to what had become the most developed archaeological site on the Island, a fact which explains obvious deficiencies in the following record.

Salamis is a major site of the ancient Mediterranean world and the above mentioned *history*
compaigns in no way illustrate its wide development. However, they afford an interesting

outline of its history.[446] For long it was considered that the legend of the (half Asiatic) Teucer was sited at Enkomi, the Late Bronze Age metropolis twenty minutes' walk inland from Salamis. However, it is now apparent (notably from tombs) that Salamis was indeed founded at the end of the Late Bronze Age — viz in the 11th century BC, and its foundation overlapped the final stages of occupation at Enkomi. In short from beginning to end, Enkomi was Enkomi (or Alasia!) and Salamis was Salamis.

Although few building remains of the independent Cypriote kingdom have been cleared, the extremely wealthy burials of this period show the continuous importance and prosperity of the town. While during the Cypro-classical times Greek historical sources testify to the political importance of Salamis. It seems that the original nucleus of the site was at its southern limits by the Pedhiaeos River mouth. Over the centuries the drift of expansion was apparently to the north. For geographical reasons the Ptolemies made new Paphos the administrative capital of the Island. However, economic realities continued to ensure the prosperity of Salamis during Ptolemaic times. Only sporadic evidence of the building of this period is known, but from Roman times very extensive complexes of public buildings have been laid bare in the central and northern parts of the site. This predominance of Roman remains is the archaeological norm in the Graeco-Roman world of the Eastern Mediterranean and it is the Roman Salamis of the first two centuries of the Empire which is here to be described as a type city of Hellenised Cyprus. The site continued to flourish in early Christian and Byzantine times and was eventually extinguished by the Arab raids of the seventh century BC.

urban development

Ancient Salamis was a harbour town built on the sea front about 8 kms north of modern Famagusta and about 2–3 kms NE of the village of Enkomi (and of ancient Enkomi-Alasia).[447] The site came to stretch something over a kilometre along the coast (N-S) and something under a kilometre toward the interior. Thus the total urban development at its maximum extent probably occupied one square kilometre, or 100 hectares, which is about the norm for a major Graeco-Roman town in the Eastern Mediterranean.[448] The terrain occupied is low coastal flats, marshy by the river mouth and exposed to blown sea sand. At the present day a very regular off-shore reef, in places awash at low water, runs for about 2 kms or more along the coast, ca 100 m from the shore. Its composition is of beach rocks, and thus it is likely to mark the former coastline indicating a subsidence of ca 1.5 m. Underwater research[449] has shown that in places ancient installations (road ways, etc.) lie in the sea bed of the present day lagoon. However, since this reef runs in a virtually straight line, it is obvious that one or more basins must have existed behind this line to provide harbourage for the ancient city. Without doubt the original harbour was at the southern extremity of the reef by the river mouth, but with the extension of the city northward, there should have been a northern basin to serve this region.[450] (N.B. two harbours are to be inferred from the account of the struggle for possession of Salamis between Ptolemy and Demetrius—Diod. Sic. 20.46.4; Plut. Dem 15.1–17.) 57

harbour

Excavation to date is quite insufficient for revealing the town planning.[451] French excavations at the S.E. extremity of the City have brought to light features of the earliest (Sub-Mycenaean, Proto-Geometric) days of the city.[452] These include a massive city wall, ca 9–10 m thick, of singular construction compounded of mud-brick, terre pisée and stone — the latter constituting a sort of armature. It appears to have been destroyed in the 6th century BC and was overlaid with later habitation levels. What the overall course of this wall may have been is nowhere stated and thus nothing is known of the extent of the original settlement. On

city wall

the other hand in late antiquity a restricted area of ca 10 hectares at the centre of the site was enclosed by a wall with towers. However, no details have been revealed to show how the extended 100 hectares site of Graeco-Roman Salamis may have been bounded. Topographical indications (extended ridges) give an approximate idea of the periphery. But how and during what periods this may have been constituted by functional urban fortifications is not known. Certainly Salamis would have been walled until Ptolemaic times, but after that the city wall may have fallen into desuetude.[453]

grid plan

In view of the gridded town plan of LC II–III Enkomi, it would be no surprise if the initial settlement at Salamis were laid out in a similar fashion. And it is to be expected that new areas of expansion in Ptolemaic and Roman times would be so laid out. However, nothing has been determined of this matter. The major public buildings at the north end of the city do not appear to follow a grid system. On the other hand the disposition of the agora and the Temple of Zeus at the centre of the town may indicate lines of a grid following the trend of the coast, slightly West of North.[454]

146 150

132

Rather than listing the many important aspects of Salamis which remain unknown,[455] it is more profitable in the present connection to list the significant buildings which have been revealed. These buildings demonstrate the striking changes in the fabric of urban life brought about by the loss of Cypriote autonomy.

The founder hero Teucer went back to a god in the conventional three generations: the father of Aeakos was Zeus. And from the prevalence of bull motives at the site, it seems this was the (traditional fertility) form under which Zeus was venerated at Salamis across the ages. Moreover, in view of the personal dynastic relationship of the Teukrids and then the divine status of the Ptolemies followed by imperial worship, possibly a ruler cult element, was always associated there with Zeus worship.[456] A sanctuary more or less contemporary with the original 11th century foundation which endured to late Archaic times has been reported but nothing is published.[457] And nothing whatever is known of a place of worship during the high prosperity of the Cypriote kingdom in Classical times — e.g. did Euagoras I glorify his status by a temple as well as by the issue of gold coinage? Be these things as they may a very important temple of Zeus from late Ptolemaic - early Roman time has been uncovered in the central part of the town. It is to say the least, possible that this may be the Temple of Zeus Salaminios, the major shrine of the city and one of the three premiere temples to which the right of Sanctuary was accorded in AD 22.[458]

ruler cult

Temple of Zeus

The temple building was excavated in 1890 by the Munro-Tubbs expedition on behalf of the Cyprus Exploration Fund[459] and after a generation the exposed remains were systematised somewhat by Jeffery,[460] then with the lapse of a further generation, in 1970 the French Expedition began a new programme of excavations which were interrupted in 1974.[461] Interim reports have been published both of the work in the nineties and of the recent campaigns, but hitherto no definitive study of the Temple architecture has appeared. In these circumstances and with the present inaccessibility only somewhat tentative remarks are possible concerning this important building.

According to the French excavators, the Temple of Zeus was erected over the rased vestiges of an earlier structure on a different orientation.[462] The region nonetheless was reckoned to be a new development of Ptolemaic times extending the older city limits.[463] (N.B. most recently it has been stated that the earlier remains are those of extra mural water supply installations.[464]) Whatever its antecedents, this region on the central western limits of the

enlarged city was developed on a grandiose scale in later Ptolemaic times, and in this connection, a monumental Temple of Zeus was constructed commanding the South (short) *siting* end of an elongated public place flanked by colonnaded porticos. The siting of this temple is immediately of interest in itself since its rigidly axial conception has clearly nothing to do with the Greek tradition and if not Roman must be of oriental inspiration.[465]

Conformably with its siting the nature of the Temple of Zeus is anything but that of a *podium temple* classical Greek temple. According to the published summary accounts, the temple was a 132 podium temple raised on a krepis (!) designed fully peristylar, 6 × 12 (?) about a simple sekos (?); the order being heterodox Corinthian (?). Whatever its exact design it was a sizeable construction, its dimensions being 22·20 × 27.50 m at podium and 16.40 m × 15 m at sekos.[466] Again the only traditions which would reasonably comprehend such a mixed design are Roman Temples[467] or (Roman) Temples in Syria.[468] In fact recently a suggested reconstruction has been published which shows the temple most definitely to belong to the latter tradition. The sekos is shown as articulated internally with attached semi-columns and with a podium type adyton.[469]

chronology The recent French investigations state that the temple was built ca 100 BC and the monumental approach ramp was added something like 100 years later (i.e. in early Roman times).[470] Since, on grounds of general probability, it is most likely that the distinction between the podium and the approach ramp is constructional rather than historical, it can be better said, that the temple was completed by the latter date.

In the past it has been assumed that the resplendent public place with which the temple is associated was an agora or forum — and it was denominated "The Stone Agora". Recently this view has been revised and it has been pointed out that much of the evidence for commercial activities are in fact late secondary installations.[471] In this fashion the whole *sanctuary area* complex extending over an area of something like 250 m × 60 m (= ca 15,000 m², i.e. 1.5 hectares) is now reckoned to be planned as a vast 'Sanctuary Area' and this in fact aligns the feature very definitely with Syrian (or better, Middle Eastern) traditions. The Sanctuary of Zeus at Salamis with its monumental court entered by a magnificient, multi-arched gateway, immediately suggests exactly comtemporary schemes in neighbouring lands carried out on PETRA the same scale, of e.g. the Nabataean Qasr el Bint Complex at Petra and Herod's Temple at JERUSALEM Jerusalem.[472]

At the opposite (northern) extremity of the elongated *plateia*, axially confronting the *water supply* Temple of Zeus are the massive remains (known as "The Loutron") of a great masonry 64 cistern (ca 60 m × 20 m) with vaulted roofing carried on 39 piers and 12 responds).[473] This is clearly the main water storage unit for the town of Salamis and presumably it was supplied by a Roman aquaduct bringing water from the springs of Khytroi (Kythrea) at the southern foot of the Kyrenia Range some 40 kms distant across the Mesaoria. Short stretches of this *aquaduct* aquaduct remained visible to the West of the City between the monastery of Ayios Barnabas and the village of Ayios Sergios.[474]

It is not possible to specify that these large scale public works definitely fall within the Early Roman period. In accordance with inscriptions from Kythrea they have usually been thought of as Severan or later;[475] and, of course, the columnar cistern has always been compared with the Bin Bir Direk (The 1001 Columns) reservoir at Constantinople. However, the cistern appears to have been designed as part of (or with close regard to) the monumental lay-out of the Temple of Zeus ensemble.[476] Certainly when roofed the cistern would have

constituted an imposing public square fittingly disposed at their town centre of Ancient Salamis. A very close parallel occurs at Tolmeita (Ptolemais) a Ptolemaic foundation of the Libyan Pentopolis.[477] The latter monument which is larger (ca 66 m × 71 m) than the Salamis cistern must date from no later than the mid-second century and has been called by its excavators "The Square of the Cisterns" — a name which might well be descriptive of the Salamis feature. Moreover remains have been noted of an earlier conduit leading towards the Loutron from the West.[478] The whole complex would repay close investigation when this becomes possible. TOLMEITA

To pass from a consideration of sacred to secular public buildings is immediately to flood with light of individual circumstances the general issue of the essential distinction between the buildings of Hellenised Cyprus and that of the old Cypriote kingdoms. Although neither palace nor town council chambers have been revealed, nonetheless with the exception of the Temple of Zeus, more or less all the monuments investigated are secular public buildings. They comprise those buildings reckoned to be essential for the good and full life of the city — gymnasium, baths, theatre, etc., buildings providing for a way of life unknown in the previous (essentially oriental) society of the old Cypriote kingdoms. *public buildings*

These amenities are grouped together at the N.E. extremity of the town close to sea.[479] Their ruins by the shore as displayed (until 1974) afforded one of the choice locales of contemporary proletarian tourism. At what period this area first assumed its character is not yet evident, certainly it was fully developed in Augustan times. And in Augustan times, a citizen of Salamis may well have found in these precincts true contentment with his lot, the reward of a well-exercised mind and body.

Unfortunately little is published of these buildings *qua* buildings. Most information is available for the gymnasium.[480] This complex was sounded in 1890 but from 1952 onward throughout the fifties the Cypriote Department of Antiquities conducted extensive clearances and excavations together with the mise-en-valeur of the remains. *gymnasium*

The gymnasium at Salamis (known in older guidebooks as the Marble Forum[481]) is a major relic of antiquity. Unfortunately, however, the lack of definition in this class of monuments as a whole, and equally the fact that there is no final publication of the Salamis gymnasium excavations taken together mean that only tentative remarks in this connection are as yet possible.

There is no doubt as to the significance of gymnasia during Graeco-Roman times, both in general[482] and for Cyprus in particular.[483] The gymnasium (the embodiment of *paidia*) was the institution of the Hellenic way of life most readily received and adopted by the ancient world of the Middle East.[484] On the other hand, the gymnasium was the one class of Greek public building which the character of Roman rule did not favor at all.[485] Vitruvius is categoric on this point.[486]

In describing the excavated remains of the Salamis Gymnasium reliance must be placed on short interim publications, thus much information may exist which is not readily available.[487] However, according to the general plan the excavations reveal two juxtaposed units which are formally of very different character. Now as far as is agreed the traditional type of the gymnasium consists of two dissimilar juxtaposed units.[488] However, it must be pointed out that this ensemble in no way matches the ensemble at Salamis.

150 At Salamis there is first a large, nearly square (ca 70 m × 60 m) peristylar court; one portico of which is of larger dimension than the others. The unit indeed answers to one *design*

peristyle component of the typical Gymnasium — ranges of rooms set around a peristyle.[489] However, the other element of the Gymnasium, the basically outdoor facilities of running tracks with associated walks[490] is quite other than the second component at Salamis. Instead the second element of the Salamis complex consists of massive structures, very considerably remodelled, *bath* evidencing bathing installations. So massive were these structures that they acted as the kernal of a commanding sand dune on which Ohnefalsch-Richter's forester's hut was built (it survived to serve as the excavation H.Q. for the earliest seasons work in the fifties). Now the prominence of bathing installations is a significant factor in the architectural development of the Gymnasium.[491] Thus it is useful to begin an account of the Salamis Gymnasium remains with some statement of what is recorded of their historical development. And that is a long lived one, apparently verging on nearly a millenium (from the fourth century BC to the seventh century AD).

Some evidence of the early origins of the complex are reported. Both in the first excavations *historical development* (1890) and again in the fifties a deep sounding was made against the entrance from the east portico to the northern part of the bathing establishment. Nothing was encountered below the floor level of the portico but the masonry continued below the entrance in a character *Ptolemaic* which was considered to be of the fourth century BC.[492] Thus a Ptolemaic structure, whatever its function lay beneath the complex containing the bathing facilities. On the other hand, epigraphic evidence has long been known that there was a Gymnasium at Salamis in mid-Ptolemaic times[493] (whether or not it refers to this structure).

Augustan Next (according to preliminary notices) an extensive Gymnasium was constructed in Augustan times over these Ptolemaic remains and extending slightly to the adjacent area to *Antonine* the West.[494] This gymnasium was extensively reconstructed in the second century AD.[495] In turn it was destroyed during the earthquakes at the middle of the fourth century AD.[496] Then, after lying in ruins for a long time, it was put into new order to serve as a public bathing establishment with members salvaged from other buildings.[497] And with the Antiquities Department anastylosis of the somewhat ragged army of re-used Corinthian columns this late antique renovation affords the picturesque elevation of today and gave the building its old name of "the Marble Forum".

However, while this appearance in elevation is quite misleading, the essential plan of the peristyle unit remains what it always has been, and the excavations have afforded some earlier details of the complex to the East. It is thus possible to discuss in general terms a major gymnasium of the first two centuries AD.

palaestra Whatever form the original Ptolemaic Gymnasium may have taken, the large and regular peristylar unit answers in some detail to the Palaestra component of the Gymnasium, both as manifested in surviving examples (e.g. that at Priene[498]) and as described by Vitruvius (V. 11. 1–2). The principal factor is that one of the porticos is larger (broader) than the others. This may be arranged either by "doubling"[499] (i.e. running an extra medial line of columns) or, as here, broadening the portico by providing heavier columns to support the greater span.[500] Vitruvius specifies that the larger portico should be the northern one[501] and thus in some *Rhodian peristyle* respects the feature is allied with the Rhodian Peristyle.[502] The specification of the north portico as the special one is entirely due to climatic reasons, to best provide shelter against inclement weather (in Europe). In other regions the inclement weather may come from another quarter — e.g. in Libya it is the South. Here in Cyprus it would seem to be the East so that at Salamis the East Portico is the enlarged one with the heavier columns.

On the other hand perhaps the distinction of the East Portico was conditioned by pre-existing building. In the typical gymnasium the range of rooms behind the larger portico house the significant specialised apartments of the Palaestra which include the bathing facilities attendant on physical training.[503] At Salamis the place of this range of rooms appears to be taken by more elaborated baths set in the old gymnasium building contiguous to the East. Incompleteness of excavation and publication makes the discussion of this feature less profitable. As surviving it appears substantially in the light of an Imperial bath complex, doubtless vaulted according to its heavy walls. However, the published plan suggests that it follows the overall lines of the earlier (Augustan) building, which in itself must have included significant bathing facilities.[504] *baths*

It is, of course, equally possible that some of the specialised chambers (other than the bathing installations) which Vitruvius locates ideally in the range of rooms behind the enlarged portico may have been situated elsewhere at Salamis. Or at least they may have come to be situated elsewhere. The West portico of the peristyle appears to have directly fronted a street with ready access available through 10 doorways.[505]

Of Vitruvius' *xystoi* and *paradromides* (the outdoor walk and running track) no trace appears on the published plans. However, more recent interim notices speak of subsequent discovery
57 of a *xystos* in the vicinity of reservoirs to the S.E. of the bathing complex, but the precise association of this feature with the gymnasium is not made explicit. N.B. in general the length of the stadium makes it an awkward feature to fit into a developed town plan and so frequently it abuts on the gymnasium block at an awkward angle.[506] *training track*

In this manner, so far as can be made out, the Salamis Gymnasium seems to consist of a Palaestra somewhat truncated in other respects but augmented with hypertrophied bathing establishments. All of this, of course, is entirely consistent with developments in Roman times.[507] Romans, as Vitruvius pointed out, did not value the athletic training facilities of Greek gymnasia. Indeed in some respects this became inappropriate with the imperial peace — since one of their applications was to keep the citizen military forces fighting fit. Thus in brief it may be said that the Salamis Gymnasium as represented by the remains of the first two centuries of Roman rule are fairly representative of the Cypriote condition — a province of established Greek culture under peaceful Roman rule. There is a strong survival of a traditional Greek building type, but modified in the Roman manner.

theatre

An interesting public building at Salamis is the theatre which has been substantially
146 cleared and reconstructed.[508] It is worth note both for its magnitude and for its design. It is in fact one of the largest theatres of the ancient world with ca 50 tiers of seating accomodating ca 15,000 spectators; while the proscenium (or raised stage) was ca 40 m broad × 5 m deep. According to stratigraphic indications the theatre was originally built in the time of Augustus.[509] Like all ancient theatres it was subject to later alterations providing for changes in the type of spectacles to be staged, e.g. in the third century AD the orchestra was completely enclosed and rendered as a waterproof basin to facilitate aquatic displays (e.g. *naumachia*) — the equivalent of today's ice shows. However, throughout the period considered here the theatre appeared to retain its original design, certainly its original type. Since there has been as yet no detailed publication of the monument, it is somewhat hazardous to speak of the architectural history of the monument. Nonetheless in general terms it would seem that if the design of the theatre is Augustan, then it is of interest as an early example of a more or less usual trend, the Romanisation of the Greek theatre.[510] *dimensions* *later adaptions* *Roman plan*

Again it is necessary to point out that the building is not published except for preliminary general notices. Therefore it is better to reserve details for discussion in context with those Cypriote theatres which have been fully published.[511] However, some obvious points may be

built cavea mentioned. The Salamis theatre was a free-standing built-up theatre not an excavated landscaped one. The inner half of the auditorium (*cavea*), that part (at least) originally cut into a rocky prominence, was supported on a solidly built up masonry mass, while the outer part was carried on a complicated system of heavy walls and vaults. The theatre was built on

siting flat ground and although very close to the shore, it turned its back on the sea in an un-Greek way. It was, in fact, conceived as a monumental building to be seen and it sought no

design rapprochement with topography in order to gain either its ambience or its outlook (the natural back drop to the action portrayed). Furthermore this free-standing building was of an unified design. The *cavea* and the scene structures from an overall unit and the *paradoi* (the lateral entrances) were covered passages within the building. On the other hand the *cavea* and the orchestra are noticeably in excess of a semi-circle. Also the *scenae frons* (the permanent stage-set) whatever be the details of its treatment in elevation, is in plan rectilinear and not broken up into salients and recesses, hemicycles, exedrae, etc.

In short although undoubtedly a Roman theatre in conception, details of the Salamis theatre look back to memories of the traditional Greek theatre, and do not follow the taste of those regions of the Roman world where the theatre was an imported novelty. In the

Eastern type Roman theatre conventional (but inexact) terminology, the Salamis theatre belongs to the Eastern not the Western type of Roman Theatre.[512] Its nearest analogies are to be found in Asia Minor and the theatre at Aspendos[513] may be noted for comparison.

amphitheatre The most prominent Roman development (or equivalent) of the theatre was the amphitheatre.[514] This was once reckoned to be an anomaly in the eastern provinces of the Empire with their Greek cultural background. However, it is now appreciated that this was not, in fact, the case and that gladiatorial combats and wild beast hunting shows with the facility to exhibit them were reasonably commonplace in the East.[515] Theatres were adapted to this effect or converted into amphitheatres[516] and amphitheatres were built. 57

epigraphic evidence At Salamis inscriptions were found in the theatre indicating that a citizen "repaired the amphitheatre which is between the theatre and gymnasium".[517] With such precise notice it was not difficult to locate the monument and define it by removing its overburden of sand. However, before it could be excavated, the site became inaccessible. The inscription is clearly dated to Flavian times so the Salamis amphitheatre must have been constructed at a

CYRENAICA seemingly early date. Nevertheless in the provice of Cyrenaica which has a somewhat similar basis of cultural history as Cyprus there is evidence of amphitheatres at the same early Roman date (first century AD) at both Berenice[518] and Ptolemais (Tolmeita).[519]

hippodrome Finally it should be noted that the British Expedition of 1890 mark a race course (circus or hippodrome) on their topographical plan. This is located ca 300 m to the South of the Temple of Zeus and thus close outside the S.W. limits of the city. The text however gives no meaningful information concerning this interesting feature — and there has been no subsequent confirmation of its existance (JHS XII, 1991, p. 106). 57

cemeteries In considering the funerary arrangements at Salamis during the Ptolemaic-Roman period, we come immediately on the usual polarity. The striking floruit of the city in Archaic times is brillantly revealed in the numerous rock cut and built tombs excavated in the area between its western walls and the Monastery of the Apostle Barnabas,[520] whereas the actual building 200–205

remains of the city are still virtually unknown. On the other hand for the monumentally built up city of the Ptolemaic-Roman period relatively few graves have been investigated.[521] There are, however, some individual matters of interest.

First of all there are indications that as the development of the city migrated northward, so the cemetery areas moved *pari-passu*. "The development of the Necropolis of Salamis may be followed from the 11th century, the initial stages of the life of the city when its cemetery extended West of the harbour area (viz at the old mouth of the Pedhiaeos River on the Southern limits of the city). Then in the Cypro-Geometric III — Cypro Archaic Period we find tombs ... between the boundaries of Salamis Forest and the Monastery of St. Barnabas ... In the Classical period the same cemetery was used. There are also tombs of this (and later) periods north of the city ... (towards) the village of Ayios Sergios".[522]

rock cut chamber tombs
cist graves

Equally the few published records indicate a change from the type of tomb so prevalent in Archaic times with its single chamber and long splaying dromos. From the third century BC there are indications that the standard cist grave of the age was in use, although in fact almost all the burials encountered of this period were simple inhumations in a populous grave field. "The character of these burials might suggest mass burial at a time of war or epidemic. Several limestone slabs discovered among the skeletons suggest that some of the graves were built like the one near the facade of Tomb 31".[523]

193 *arcosolium tomb*

The British Expedition of 1890 recorded (in rudimentary fashion) one tomb near Apostolas Barnabas Monastery which is apparently an example of the arcosolium tomb. This is a standard Roman tomb type, but seems uncommon in Cyprus (v. JHS XII, 1891, p. 104).

194 *hypogeum*
loculi

A burial practice very characteristic of latest Hellenistic and Roman times is revealed in Ayios Sergios Tomb 1, a loculus type hypogeum 300 m south of the limits of that village.[524] The overall development in length of this complex is ca 22 m, with a long dromos, two successive chambers and 17 loculi. The tomb is cut in the hard sandstone bed rock but the traditionally shaped long splaying dromos is built up of irregular masonry stuccoed over. The outer chamber is a broad room and the inner a long room, intercommunicating via a door with moulded framing. The loculi are rectangular ca 2 m+ × 1 m− and generally cut ca 1 m above the chamber floor level. Both clay and stone sarcophagi were used for the actual burials. It is possible from finds to define the period of use of the hypogeum as extending from ca 150 BC to ca 300 AD; and this large hypogeum was doubtless the property of some burial guild or commercial undertaker.[525]

One further matter deserves notice here because of the sidelighting it throws on several aspects of life in Ancient Salamis of the period. This is a secondary refurbishing in Roman times of an older monumental tomb. Towards half way along the path to the Monastery of Apostolas Barnabas is a sizeable megalithic structure (Tomb 50) appearing in the nature of a

202–204 *Tomb of St. Catherine*

broadly set cella or chapel with an apse. It has been known through the ages as the Tomb or Prison of St. Catharine and is still (as at 1974) in consecrated use as a chapel dedicated to a saint of that name — locally accepted as the beautiful martyr of Alexandria.[526] Commented on by travellers from mediaeval times onwards, it was investigated and discussed by the first generation of archaeologists at the end of the last century.[527] Ohnefalsch-Richter[528] provided a lengthy catalogue of alternative functions and in 1913–15 both Myres[529] and Jeffery[530] made clearances and concluded that it was a Graeco-Roman tomb — and in this character it has been accepted ever since.

original archaic tomb

In fact Myres and Jeffery were partly correct. The structure was used in Roman times but

its original design and construction was of a much earlier period. Initially it formed one of the series of opulent monumental tombs of archaic times (7th century BC).[531] It lay less than 100 m to the N-E of another monumental tomb (N° 47).[532] Both tombs were of the same overall design, consisting of a subterranean, broadly set open patio (ca 10 m × 5 m) giving access to a long room burial chamber ca 4 m × 2 m.[533] This latter was constructed out of two huge blocks hollowed out and set one on top of the other to form body and roof.[534] This ensemble was approached by a 28 m long descending dromos with sides splaying out to the breadth of the porch. In the dromos of both tombs intact beneath the levels of subsequent robbery and disturbance survived the graphic remains of sacrificed horses which had drawn the hearses to the mouth of the burial chamber.[535] 200 201

Roman adaption

In Roman times Tomb 50 was brought to light again and made subject to cleverly organised alterations and additions which transformed its design and possibly its function.[556] The lateral arms of the porch were extended somewhat and the frontage enclosed in new masonry, then the resultant cella was roofed over with a massive barrel vault. The masonry of the added walling is of a different character from that of the original porch; and even though it was provided with a heavy cavetto cornice to match the original, yet the dimensions of the new cornice are slighter and the details of the moulding different.[537] Apparently the additional run of cornice blocks were taken from the ruins of Tomb 47 nearby which the Romans must have also dug out at the time. The dromos immediately to the front of the chamber was cleared out for entrance installations including columns and entablature of a composite type order. There are Ionic bases with capitals of draught Corinthian form (or rather what survives is part of a type of Nabataean capital).[538] The date of this reorganisation of the archaic tomb has been given by the excavator as third century AD,[539] but it is possible it may have been somewhat earlier to bring it within the period under consideration in this study. The function of the newly contrived monument is not entirely evident. There were no traces of burials, although in view of the monument's later history this is not be wondered at. A reasonable suggestion is that the structure was designed as a heroon or the like,[540] which would help to account for the later continuity of sacred tradition attaching to it. 340 341 313

There remains to be mentioned a highly idiosyncratic monument which falls marginally at the very beginning of the Ptolemaic period. Associated finds date it to the period 320 BC — 300 BC and it has been associated with the violent end of the whole family of the last king of one of the Cypriote kingdoms. Archaeological scholarship has interpreted this story to refer to Nikokreon, last independent king of Salamis. The monument is a commanding tumulus situated on the eastern outskirts of the village of Enkomi. This mound of earth was ca 52 m in diameter and stood at the time of excavation ca 10 m high, but was originally higher. 216

tumulus

When eventually cleared by the Department of Antiquities in 1966[541] the tumulus was found to overlie a rectangular mud brick platform ca 9 m × 14 m set on a standard looking crepis and approached axially on the short end by a ramp. In the centre of the platform floor a circular pyre had been defined by a curb wall. This pyre, however, contained the ashes and relicts not of human cremations, but notably the remains of life size human figures modelled in clay. Whether or not these are surrogate for the family of Nikokreon (by interpretation self immolated in their palace), the feature obviously commemorates revered dead of the end of the fourth century BC — i.e. it is a heroon-cenotaph.

mud brick platform

heroon

Set about the margins of the platform are alignments of post holes containing the charred remains of heavy wooden posts. V. Karageorghis, the excavator, interpreted these as the

stakes or perhaps crosses (i.e. *stauroi*) on which were fixed the life size clay effigies before their immolation. However, subsequent detailed study raises the possibility that these posts were
207 the upright members of the wooden frame for a light (and inflammable) structure ca 5 m × 8 m; the overall aspect being that of a hellenistic pavillion-shrine.[542] *wooden pavilion*

Although little has been adequately recorded, the ruins of Ptolemaic-Roman Salamis afford some examples of architectural ornament which are worth note. *ornament*

Certainly there is a striking exhibition of a style of ornament which is the historical aftermath of the present inquiry: the mass produced white marble Corinthian capital, a rigid, lifeless version of the orthodox Vitruvian form, which became standard throughout the later empire of the third century. This is the (misleading) impression of Salamis given to the casual visitor (before 1974) by the anastylosis of the late antique colonnades of the gymnasium.[543] In fact several varied and idiosyncratic capitals survive, evidencing the individual heritage of Salamis, old Cypriote town and a notable participant in oriental hellenism.

297 308.3 First in point of time is the well-known exhibit in the British Museum, the bull protome capital recovered by the 1890 expedition in the vicinity of the Temple of Zeus. Although deriving ultimately from Achaemenid exemplars, it is more probably a hellenised version of the third century (or later) akin to the hybrid bull capitals at Delos, Ephesus, etc.[545] *bull protome capital*

From a somewhat later date several capitals survive to witness developments which are highly characteristic of regional, oriental hellenism during the centuries about the turn of the eras. In the vicinity of the N.E. angle of the Gymnasium peristyle the 1890 excavations came upon a mass of architectural *membra disjecta*, which now can be seen to have included not only members of the late renovated peristyle, but also elements from its predecessors of Hellenistic-Augustan times and on into the second century AD.[546] Among these is a draughted out (*Bossenform*) capital, v. JHS XII, 1891, p. 114. The report notes that the block illustrated is incomplete but may have gone together with another block nearby (not described) to make up a complete capital of unusual shape.

Apparently sometime during the Department of Antiquities' Excavations the two elements were recovered and assembled so that they could be seen (prior to 1974) set up on standing masonry near the S.E. angle of the Gymnasium peristyle.[547] This capital appears to be of the same form as the capital from the Temple of Aphrodite at Amathus.[548] The detailing differs somewhat from the form which is familiar at Petra and Medain Saleh.[549] The upper block has a moulded abacus and horizontal bar supports under the schematic volutes; while the lower block gives a more evocative impression of the two rows of acanthus leaves, than does the "necking" normally found with Nabataean capitals in Arabia. A somewhat similar type of capital was found at Kourion; because of its additional detailing, it was described as "Cypro-Corinthian".[550] *Nabataean capital*

Of a type quite different in appearance, but related and equally characteristic of the same art milieu are the capitals from the Temple of Zeus precinct.[551] Again, unfortunately, these are unrecorded except for a sketch of one block given in JHS XII, 1891, p. 69. Corinthian capitals made up out of two blocks, they are worked with flowing naturalistically carved foliage but not corresponding in design to the orthodox Vitruvian schema. Thus they are
311 "Heterodox" Corinthian, members of a wide ranging group varied in detailing commented on by Ronczewski[552] and others.[553] The uniting feature of the manifold varieties of this group is that they all lack the orthodox cauliculi whence sprout both lateral and medial spirals. The illustration in JHS shows the Temple of Zeus capital to belong to Ronczewski's Group I of *heterodox Corinthian capital*

which the best known examples are the colossal capital set up on the Khartoum column in 1900 (v. Ronczewski, p. 4, fig. 2) and the capitals in the court of the Temple of Hathor at Dendereh (v. Ronczewski, p. 9, fig. 56). The origin and development of the heterodox Corinthian capital is a very involved subject. Certainly Ptolemaic Egypt was at the centre of the later diffusion and thus it is not surprising to find examples in Cyprus. Again a date at the turn of the eras (or even earlier for this variety) would be in order.

SOLOI

The ancient city of Soli (Soloi) located in the North-West of the Island on the Bay of Morphou has received large scale excavations. Unfortunately the events of 1974 have had a peculiarly unfortunate impact on the site. It is now inaccessible to the archaeologist.

location

The site of Soli lies a kilometre or so beyond Karavostasi, the (pre 1974) mining terminal; and about 5 kms before (east of) Vouni Palace. It was a seaport serving the mining regions—Skourisotissa, the principal ancient mining centre being 8 kms to the S.E. It was also the most westerly port in easy overland communication with the eastern part of the Island, since it stands at the very western margin of the Mesaoria plain. Immediately beyond Soli the mountains of western Cyprus send outliers right down to the sea, putting an end to easy overland going. Moreover, in addition to its good communications eastward across the central plain, Soli also was admirably situated for direct access into the Troodos (and the cupriferous area) since the two river valleys which narrowly flank it, the Kambos to the West and the Xeros to the East, afford reasonable going up into the mountains.

topography

The ancient city covered an area of ca 30 hectares extending almost 1 km inland from the sea. The lower (northern) half of the site lay on the spreading coastal flat (up to the 10 m 52
contour); the upper (southern) part was built on steeply rising terrain with a peak at ca 70 m above sea level constituting the inland margin of the town. The modern roadway to the West of the island (pre 1974) passes through the centre of the town and it is most likely that this was also the case in antiquity.

history

Soli (in the form Si-il-lu) was named in the Esarhaddon prism (ca 673-72 BC) and there is no reason to presume that this mention does not refer to the present site. The only question

foundation legend

here arises from the well known foundation or name legend of the town. According to this legend Solon while on his travels became a close friend of the Cypriote king of a town named Aipeia located in the mining region of North-West Cyprus. Anxious to take advantage of the celebrated wisdom of his friend, the king requested advice which would benefit his state, and Solon accordingly advised him to transfer his capital to the coast. The Cypriote king followed his advice and in gratitude named the new town Soli after his Athenian friend (v. Plutarch Solon 26).

excavation

Whatever its origins, Soli took its place in historical times as an important Cypriote kingdom. In general it was philhellene in sympathy. It was besieged and captured by the Persians during the Ionian revolt and it made notable contributions to Alexander's campaigns. It is also possible that the last independent king of Soli was permitted to retain his throne some years longer than his colleagues.[554]

Soli was one of the main sites excavated by the Swedish Cyprus Expedition, and during the years 1930–31, they uncovered monumental remains on a large scale there. This work was at three main areas, two within the upper city and the third an extra-mural site somewhat less than a kilometre to the West of the town. The expedition uncovered a temple occupying the very summit of the acropolis of the ancient city and also a theatre high up towards the East side of the city. However, their most striking results were at the extra-mural sanctuary site of

Kholades, where a succession of temple buildings were revealed extending through the Ptolemaic and Early Roman periods and continuing to flourish into the 4th century AD when Christianity was well established in the Island.[555]

The work on the Acropolis has not been fully reported but the theatre which is considered of Antonine date, and the Sanctuary of Kholades are very important monuments of the Ptolemaic-Early Roman Period.

After thirty years or so, work was resumed at Soli by a Franco-Canadian Expedition from Quebec and continued until 1974 when it was interrupted by the military operations in the area. This work comprised tomb excavations (indicating habitation from ca 1100 BC), reinvestigation of parts of the upper city and, perhaps most significantly, large scale excavations in the lower city. Unfortunately, because of the rude interruption of the field work, that concerning the Ptolemaic-Early Roman period has not yet been published. However, the publication of a large Early Christian Basilica also excavated in the lower town has recently been issued.[556]

urban development AMATHUS VOUNI

Nothing has so far been published concerning the overall town planning at Soli, but this is not at all necessary in order to see that this conforms to a definite formula known elsewhere in the Island. In essence the system is reproduced at Amathus and also at nearby Vouni. Essentially the scheme is to site a coastal town so that the spreading lower (commercial) city with access to the harbour is backed by a tongue of steeply rising ground, up the flanks of which the city walls can be run to terminate at a constricted pinnacle which is naturally cut off at the rear by a declivity (or col or the like). This formula was generally esteemed in Hellenistic town planning with well known instances at Priene etc.[557] There is, however, an interesting distinction. The Hellenistic examples strongly fortify the pinnacle in the military instance as an acropolis-citadel. Whereas the Cypriote towns reserve the commanding locality for a temple — doubtless to the city's patron deity: Aphrodite (Polias) at Amathus, Athena (Polias) at Vouni (the deity at Soli is not known). And it is on the next terrace below that the palace area appears to be developed. This is very clear at Vouni and was indicated at Soli by the SCE trial excavations in that quarter.[558]

acropolis

harbour

Soli was a harbour town and its harbour was a naturally well sheltered one, however, apparently it silted up in later antiquity. The basin was still more or less apparent to the Swedish excavators and was formed by enclosing breakwaters.[559] Recently something has become known (by way of preliminary reports) of the lower commercial city of Soli which depended on the harbour.[560]

lower town

The work of the Franco-Canadian expedition in the lower city was under the direction of R. Ginouvès, a most knowledgeable authority on oriental Hellenistic and Roman building. He conducted excavations firstly in depth and then in area to reveal so far as possible both the chronology and character of the city development. He was able to show a continuous chronological succession from archaic through Classical and Hellenistic times culminating in a very monumental Roman building programme. Although the area excavation could not extend to the scale necessary to reveal a system of grid planning, it was clearly shown that there was monumental urban development based on expansive terraces supported by massive retaining walls. And within this scheme, somewhere about 500 m from the sea, the expedition brought to light an ensemble of colonnaded street from the East Gate of the city, agora and associated nymphaeum. However, this notable city development was most likely

terraces

Severan, post 200 AD, and thus a distinguishing mark of the following era with its marble style decoration.

In fact not much published detail from within the Soli city relates primarily to the Ptolemaic-Early Roman period.

Nothing has been published in detail concerning the city defences, and only the line of the walls in the upper part of the city appear on the Swedish general plan (SCE III, p. 400, Plan XXXIII). This shows no details of gates nor towers. Since it is known that the Persians besieged and captured the city ca 499 BC, then it is to be presumed that these are the walls which stood the Persian seige. It is in the nature of things unlikely that there were any major developments of these fortifications during the Ptolemaic-Early Roman period.

acropolis temple

The acropolis temple is published only in the most summary fashion;[561] and the date is not stated, presumably it is of the preceeding classical period. One long wall has not been preserved and thus the basic form of the temple remains in issue. According to the published plan, the temple should be a sizeable (ca 25 m × 10 m) Greek style temple in antis oriented to the East. However, in the vestigal condition of the remains, it is optional to envisage a temple in the local Middle-East tradition — a broad building, three cella plan oriented to the North. The masonry is said to be ashlar.

theatre siting

The one substantial monument which falls within the period (although towards its end) is the theatre.[562] The theatre is a sizeable one and cut into the rock high up on the shoulder of the upper town. It thus looked out clear over the roofs of the town below it to the sea. In this typically Greek emplacement the seating is virtually all rock cut (and the limestone slab seats originally provided have now disappeared). The cavea is ca 52 m in diameter with 23 tiers of seating giving a capacity of ca 3,500. 147

Thus the theatre is closely comparable in size to that of Kourion. The stage building is ca 36 m × 13 m. Its design is not fully preserved but this can be reconstructed sensibly by applying Vitruvian norms.[563] It is of the rectilinear "Eastern" type like the other Cypriote theatres. The interesting difference at Soli is that this theatre has no history of adaption and readaption but seems a one period monument. The surviving fragments of marble columnar decor for the *scenae frons*, together with other archaeological finds, suggest an Antonine date somewhere in the second half of the 2nd century AD.

design

Antonine date

KHOLADES

In the present state of publication it is the extra-mural site at Kholades which undoubtedly constitutes the most interesting group of remains at Soli.[564] It marks the latter end of the age long Cypriote tradition of the rural sanctuary going back to the beginning of the Bronze Age at least (as per the Vounous model); and it lasted on to maintain itself against the full tide of early Christianity. During its six hundred or so years existence, the design ramifications of the buildings were varied, but it is notable that at no stage did any classical temple form intrude. In the subsequent, later Roman Period non-insular types appeared (although non-classical ones) but during the earlier floruit of the Sanctuary in Ptolemaic-Early Roman times the scheme and forms of the Sanctuary were entirely within the native Cypriote tradition. 121 122

sanctuary

At its greatest development during this epoch the Soli Sanctuary extended over a 600 m^2 and was composed of a growing series of courts and appurtenances in association with first one and then two cellae.[565] The sanctuary seems to have been dedicated originally to the worship of Aphrodite-Kybele; but in Early Roman times the second chapel was added for the worship of Isis. Later this complex was extended and further ramified with one or two more chapels while an entirely new complex was added alongside consisting of two more or less

monumentally designed temples, one of which was most likely a Mithraeum but this was in Late Roman times.[567]

historical development

The excavators postulate two significant building phases within this period: the original phase ca 250 BC — 100 BC (i.e. Early Ptolemaic), the second phase ca 50 BC — 100 AD (i.e.
121 early Roman).[568] In the Early Ptolemaic phase entry by steps and a small vestibule gave on to a longitudinal court behind which lay a transverse court with a squarish cella projecting into one rear angle. Adjacent to the inner court were fragmentary remains which may have been a
122 priest's house. In the second (Roman) period, the original cella remained unchanged, but the surround was reorganised and extended. The original outer courtyard was rebuilt (enlarged and trued up somewhat). While what had been possibly the priest's house to the South of the inner courtyard was succeeded by a second temple consisting of a courtyard backed by a transverse portico giving (eccentric) entrance to a broad room cella, this second ensemble being entered by steps from the outer courtyard.

Archaeological considerations disposed the excavators to assign also to this early Roman period the forerunner of one of the temples of the second monumental complex of Late Roman times.[569] The temple eventually was of the broad house triple-cella type. However, this matter is not architecturally very convincing.

design development

The overall trend of the development suggested here is away from a loose, irregular aggregation of courts and buildings to a more unified, coherent ensemble.[570] This, of course, is a basic process common in religious architecture of other traditions (e.g. in Egypt and South India).

construction

The wall construction of these sanctuary buildings was entirely of mortared (and plastered) rubble (water-worn river boulders).[571] Numbers of (fragmentary) blocks of ashlar were incorporated in the structure but these were all reused. The uniform rubble material was, however, employed in two different structural systems: the one more or less coursed rubble, and the other a pier and a panel system whereby strong well cemented rubble piers were constructed at intervals to full wall height and the spaces between them were filled up with loose, random rubble. It seems that in the first period there were traditional flat roofs, but during the second period roofing tiles were in use for the cellae.[572]

It is possible to discuss the collateral relations of the Kholades Sanctuary temples (as Westholm has done *in extenso*[573]). There are many valid analogies but it must be pointed out that there is no need to draw on them to explain the forms at Kholades. These are entirely explicable within the local Cypriote tradition, with the temples and shrines of the previous age at nearby Vouni as excellent examplars.

VOUNI KOURION

The region of the ancient city of Kourion is topographically a rather well defined one, since the physiographic development of the Akrotiri has effected a triangular corner of coastal plain
19 44 between the foothills of the Troodos along the North and the projecting spit to the East. Kourion itself stands on a bluff at the apex of the triangle commanding the region from the West, while the Kouris river (one of the few rivers in Cyprus which are, or were, something like perennial) defines the opposite side. Beyond the city of Kourion to the West, the Troodos foothills run out into the sea as cliffs, forming rough country which separates the region off from the Paphos area and the West of the Island proper.[574]

location

The maximum run of the Kourion region so defined is only ca 6 kms and in this way its compact limits have been well explored archaeologically. This exploration was promoted by the fact the large village of Episkopi at its Eastern margin which is the mediaeval and modern

successor of Kourion was a pleasant place several decades ago. So it was that in the thirties two able archaeologists settled there — a wealthy American, G. McFadden who became something like a Schliemann of Cypriote archaeology and his English neighbour, Col. J. Last who was a professional surveyor. Between them they contributed much to the careful examination of the area. This reveals it as perhaps the type example of the settlement "habit" in Cyprus, viz for the continuity of habitation in a well favoured locality to take the form of successive settlements established at some little spatial remove one from the other, rather than for there to be continuous rebuilding on the one site over a very long period as is known on the mainland adjacent.

If the region is extended a few kilometres into the higher ground of the Troodos foothills a succession of excavated sites go back almost unbroken from present day Episkopi to neolithic Sotira. The earliest (Neolithic-Chalcolithic) sites kept to the higher ground; the Early-Middle Bronze Age sites moved down to the low ground by the river mouth. Then the movement was back again inland so that the Late Bronze Age site (Bamboula) is hard over modern Episkopi. Eventually the large city of Kourion came to stand at the opposite extremity on a high bluff rising (nearly 100 m) over the sea coast with the rough woodlands immediately behind it to the West. More elaborate public works of the later age enabled it to draw its water supply from these hills and to establish its amenities nearby in them — e.g. a 61
stadium[575] and a sanctuary.[576]

harbour

Kourion was in its siting an ideal maritime city — commanding the sea, and not commanded by it. Clearly it possessed a harbour and this fact was reported by Strabo (XIV 483 — "ὅρμον ἔχουσα"). However, as yet no traces of the harbour have been verified by investigation, it is possible that its presence is indicated by weed and massive boulders visible in the sea during calm weather at Kourion Beach where the access way debouches. The alignment suggests a mole.[577]

history

The name of Kourion can be traced back to the latter part of the second millenium BC since it seems to occur (as Kuri) in an Egyptian inscription of the age of Ramses III (1198–1167 BC).[578] It is next found in Assyrian records of Sargon (673 BC)[579] and Herodotos recounts the (somewhat discreditable) activities of its king Stasinor at the time of the Ionian revolt against Persian rule (498 BC).[580] Without doubt the city ruled by Stasinor was sited on the bluff at the west extremity of the Kourion plain. Equally certainly if a Cypriote town was known to the Egyptians as Kourion, ca 1200 BC, then it was sited at Bamboula by modern Episkopi, since excavation there has yielded pottery with incised markings in the Cypriote syllabary which can be read in the identical form (Kuri).[581] Thus if there is anything in the latter day tradition that Kourion was a specifically Argive foundation,[582] then this refers to the Bamboula site. However, the site of the city which paid tribute to Sargon is a matter of some conjecture. At this period the sanctuary in the woodlands was already in existance according to direct archaeological evidence, but as yet no coherent archaeological remains have been unearthed of the period (Cypro-Archaic and Cypro-Geometric) beneath the monumental ruins of Kourion. All such ruins so far excavated are of Ptolemaic, Roman and Byzantine date. And the previous development of the city is still unattested archaeologically.

Sanctuary of Apollo

About two and a half kilometres to the West of the city of Kourion is the Sanctuary of 125
Apollo Hylates (Apollo "Woodlander").[584] Because of the peculiar traditions of Cyprus the origins of this Sanctuary are not necessarily dependent in any way on the presence or fortunes of the adjacent city. The relationship need be at the most complementary rather than

dependent. Furthermore since the Sanctuary has been much more definitively excavated than the city (revealing a more extended historical development), then it is better to begin the treatment of Kourion with the Sanctuary. The Kourion Sanctuary is possibly the most fully defined architectural complex in Cyprus (cf. only Vouni Palace). Equally it evidences the longest continuous history (cf. only Ayia Irini Sactuary) being established in mid Archaic times (ca 700 BC) and flourishing uninterruptedly until the end of paganism (ca mid 4th century AD). Architecturally its maturest period was the early empire of the first century AD and on into the second century during which time it must have been a joy to visit — a modest and tastefully designed complex, extremely well appointed and very pleasing in its rural setting. It was doubtless a show piece of the Island, and a show piece for more than the Island.

The rural sanctuary of Apollo Hylates taken together with the other major sanctuaries, Myrtou *Pigadhes* and Ayia Irini, affords a synoptic view of the Cypriote rural sanctuary from its formalisation in Bronze Age times down to the end of paganism in the Island, the Kourion Sanctuary illustrating the latter millenium of this development. Within this time range probably three fairly distinct building periods can be recognised: first, the Archaic Sanctuary developed essentially in the seventh century BC; second, the Ptolemaic Sanctuary perhaps largely achieved during the third century BC; and third, the Roman Sanctuary essentially of the first century AD with Augustus, Nero and Trajan the principal motivators.[585]

historical development

It seems fairly evident that originally the Archaic Sanctuary comprised an enclosure of
126 some 500 m^2 at the central area of the later extended sanctuary.[586] It was made up in the first place, historically and functionally, of a sizeable (6 m in diameter) circular altar[587] — a raised up mound of piled rubble, a *bamah*. This is an analogue of the well known circular altar associated with the Bronze Age temples at Megiddo in Palestine.[588] Other features soon appeared, if they were not in part co-aeval with the altar. To the West of the altar a street or pathway led to a simple "sekos" temple (?), the predecessor of the Roman Temple. Associated with this complex a series of pits and channels have been discovered cut into the bed rock. It is suggested that they are ca fifth century BC in date and after much dispute as to their function, it seems that they are to provide for planting of trees and hedges, etc., in a word, they are landscaping devices to bring (or keep) the woodland close about the Sanctuary, cf. the Shrine of Artemis at Skillous in Greece mentioned by Xenophon (Anabasis 5.3, 7–13).[589]

Archaic Sanctuary

circular altar

temple?

plantings

These elements form a complex of religious properties of such primordial significance that they are worth a little notice. The two elemental features are, of course, the altar and the building across the pathway to the West. In accordance with religious conservatism both are round, the spiritual heirs of the old Cypriote round house tradition. From the evidence of pits cut in the bedrock the round building seems designed to contain a group of sacred trees — i.e. to monumentalise an image of the original "wood".[590] In this way we have a counterpart of the Canaanite "*bamah*" and "*asherah*" complex, which the authorised version of the Bible translates so picturesquely as "high place" and "grove".[591]

round building

the wood or grove

One or two traditions of the Kourion Sanctuary have been preserved by classical authors. Aelian tells us that hard by the shrine was a deer park wherein the creatures of the wood had inviolable sanctuary from predatory man and beast; a fact instinctively recognised by man and beast.[592] Also Strabo remarks that any man touching the altar answered for it with his life, being hurled down from the sea cliffs, a kilometre or two to the South.[593] In this

combination of natural refuge and unnatural violence we sense a counterpart of the famous wood by the lake in Italy:

Lake Nemi

"... where the ghastly king doth reign,
The king who is the slayer
And shall himself be slain".

These religious properties go back to a time when man scarcely built at all; and man continually has taxed his invention to create built up places which on the one hand accord with his idea of civilised dwelling and on the other preserve primitive, religious feelings. Possibly the first Godshouse of the Sanctuary (whether of the sixth century or later) was an Archaic temple after the Greek style both in design and construction.[595] From the vestiges which remain open to view it was a "sekos" (ca 10 m × 15 m) set on a crepis of two steps (instead of the canonical three of the classical crepis). The masonry was, at least in the lower courses of the walls, revetted externally with finely dressed and regular ashlar, and there was a base moulding to the socle. Also the fact that this moulding does not return around the present entrance aperture[595] doubtless signifies that the door was constituted by an inset frame of moulded stonework as is common in the later building on the site.[596]

Archaic temple?

Adjacent to these essential religious installations were developed the secular installations necessary for the efficient operation of an isolated centre frequented by large crowds of visitors. These comprised premises for administration, reception, accomodation, circulation, recreation, storage, etc., together with the attendant facilities of hygiene, etc. Some sort of rudimentary provision for these purposes was required from the very beginning, although at this stage it was possibly light and impermanent construction — consisting of wood cabins and booths. On the other hand, the plan of the early Archaic enclosure for the round altar appears to show a long building set against the east wall of the enclosure in a manner reminiscent of Ayia Irini.[597] In any event it is clear from the excavations that more solid structures for these purposes were developed without much delay and that during the Ptolemaic period the overall development of the Sanctuary was of the order revealed by the remains of Roman date.

facilities

Archaic

Ptolemaic

In this summary account, however, it is not very productive to discuss this question for the following reason. During the original Pennsylvania excavations, the field director G. McFadden was himself more interested in such archaeological questions whereas Prof. B.H. Hill, the overall supervisor of the work, was relatively more concerned for the exposure and conservation of the monumental ensemble of the Roman Sanctuary. Unfortunately, McFadden's interest was terminated by a fatal accident with an inflatable dinghy early in 1953 before he had either published or organised for final publication the detailed archaeological records of his excavations. Thus it is that the overall result of the extensive work carried out at the site from the thirties onward is basically expressed in the architectural record of the beautifully conserved and restored Sanctuary of early Imperial times.

excavation records lost

The Sanctuary of Apollo Hylates as organised during the first century AD is certainly very noteworthy, both functionally and aesthetically.[598] It fully deserves in its own way to be recalled in association with the famous metropolitan sanctuaries of the God at Delphi and Cyrene, particularly in respect of its siting — its felicitous adaptation to a superb natural

Roman Sanctuary

125 127

setting: rising and gently rolling woodland or parkland with sheer sea cliffs scanning the blue waters of the Mediterranean only a kilometre or so to the South.

general layout

In the religious instance the Sanctuary is oriented North-South, with the temple of Apollo raised up on its podium dominating the area from the higher northern apex of the enclosure. Entrance is at the southern foot of the area which is extended East-West parallel to the Kourion-Paphos road. Thus there is the Kourion Gate at the S.E. angle and the Paphos Gate at the S.W. angle of the enclosure and running between them a broad way flanked on the South by an extended stoa behind which lie a series of dormitories given a fine architectural form (*Zenones, Zenodokhia*). Midway along the north side of this street another paved way forms a T-junction leading northward axially to the Temple façade. On either side of this street are the two enclosed areas of original sanctity: the West Enclosure with its Round Building containing the sacred trees (or grove), and to the East, the original circular altar preceeded by the official residence of the priest and the adjacent sanctuary treasury.

gates

dormitories

grove

Attached to the perimeter of this complex are further premises of more secular nature. If one enters the sanctuary by the East (Kourion) Gate, then one approaches the gate between a palaestra to the South and a well designed bath building within its enclosure to the North.

151 Taken individually the bath building is an unusually good example of the Roman public bath in Greek lands, while taken in conjunction with the palaestra opposite, it evidences the Greek habit of close association of bath and gymnasium. At the other end of the main way, if one enters by the West (Paphos) Gate, the external approach is flanked by two building complexes, the West Complex and the South West Complex which also lie outside the peribolos wall proper. The functioning of these buildings remains unclear. Then immediately on entry through the Gate an imposing flight of steps on the left hand leads up to a long hall or gallery (the North West Building). From the evidence of finds, this may well have been a place for displaying the choicer offerings of devotees, perhaps coupled with the reception of devotees of substance. Built against the northern angle of this hall and thus just outside the peribolos wall of the Sanctuary are quite massive cisterns and other installations for water conservation and reticulation (the Castellum).

baths

palaestra

All told these varied and well articulated buildings cover an area of ca 1 hectare — perhaps about 7%–10% of the area of Kourion city. Thus the Sanctuary of Apollo Hylates on the account of magnitude was also notable.

A few brief remarks may be added concerning some of the more monumental individual buildings.

128–130 First to be mentioned is, of course, the Temple of Apollo.[599] It was apparently constructed in Neronian times by converting the old sekos walls into a ca 1.5 m high podium for a temple with pronaos and naos, either *distyle in antis* or *tetrastyle prostyle*.[600] In this way a Greek looking archaic(?) temple on a rudimentary crepis of one or two steps was transformed into a very Roman-looking podium temple. The order was that type of draughted out Corinthian, well known in Provincia Arabia as Nabataean — with or without a necking component.[601]

Temple of Apollo

129 (Soren's reconstructed drawings do not include the necking,[602] while this is supplied for the

130 angle column as rebuilt by the Department of Antiquities.[603] Both solutions are hypothetically possible.) Masses of terra-cotta roofing tiles were discovered, evidencing some variations of detailing but all of the Corinthian form.[604] The masonry construction appears in the main to be what is called bastard ashlar — fairly rough stone work stuccoed internally and revetted externally with ashlar style blocks.[605] Beyond fragments of the main order, virtually

no other ornamental nor decorative elements have survived, as e.g. of interior marble enrichment.

hostel

The other building complex which is most impressive in its surviving remains (thanks to skilful reconstruction) is that occupying the entire south flank of the sanctuary (ca 60 m) and designed to provide rest and shelter for visitors from distant parts. It was in fact the sanctuary hostel.[606] It is made up of five almost identical long room units (ca 10 m × 18 m) arranged in parallel behind a portico and separated one from the other by narrow passageways. Each unit is designed on the triclinium principle with raised (sleeping) benches around the two sides and rear of a paved central area. Along the margins of the benches are set rows of small columns and, from the quantities of terra-cotta roofing tiles, it can be seen that a clerestory ridged roof was set across the central area with shed roofs over the lateral benches discharging into the passageways. Doubtless by rigging curtains between the columns, it was possible to arrange small cubicles of some privacy. It is, of course, also possible that sleeping in such precincts may have comported a religious aspect, viz the practice of "incubation". An interesting building inscription survives from the main façade commemorating the (progressive) construction of these "exedrae" under the reign of Trajan.

At the western extremity of this complex there lay opposite across the street and flanking the Paphos Gate on the North what could well have stood out as the largest unitary structure in the Sanctuary. However, since there has been no restoration apart from the commanding flight of steps, the surviving structure is not impressive and it is still referred to by its excavation name — the North West Building.[607] The building is in outline, an elongated hall ca 15 m × 32 m (or including the monumental stepped approach 15 m × 42 m), and its long side extends the entire West flank of the Sanctuary enclosure in such a manner that it is rather difficult to appreciate whether the building is to be reckoned inside or outside the Sanctuary peribolos. This is a matter of some importance since it has a bearing on the function of the building.

gallery hall

Detailed analysis of the masonry foundations do not resolve this question structurally[608] but a glance at the general plan shows that the North West Building in its positioning is clearly related to the South Building (and also the Palaestra and the Baths). Thus it should appertain to services rather than constitute a centre of sanctity, as its external form might suggest. During the initial excavations, its excavator, G. McFadden certainly took it in the latter sense and for some time spoke of it as "The Temple".[609] Perhaps he had the Pythion at Delos[610] in mind as an analogy. However, the access and internal dispositions can not be seen in this light and corroborate the impression gained from its siting that it served a utilitarian function.

In the first place the building seems to have been divided medially on the long axis by a colonnade and there were axial front and rear entrances for each side. Both sides were apparently organised with lateral benches and a central sunken aisle; however, the planning was (later) reorganised more on the lines of the South Building-Hostel so that the aisle and the marginal benches returned around the rear of the building. This community in overall planning with the South Building can not but infer that there was a basic resemblance in function. There is furthermore a resemblance in internal structure since rows of columns were set along the margins of the benches. These combined with the axial colonnade (if the reconstruction is to be trusted) give the plan of the North West Building the semblance of a

forest of columns. It thus associates itself immediately with the class of buildings of such wide-spread ramification known as The Hypostyle Hall.[612] *hypostyle hall*

There is, of course, for immediate reference within the same Hellenistic cultural province, the Hypostyle Hall at Delos.[613] But Cyprus being Cyprus, some of the older oriental representatives of the class may be called into account. Indeed to casual glance the plan of the North West Building could be mistaken for that of the Solomonic House of the forest of Lebanon;[613] likewise a unit in a famous sanctuary and likewise of undetermined function. And indeed it is interesting to observe that, without any reference one to the other, the various suggested functions are almost identical in both cases: storage and accomodation for man (and beast). Further intensive study of the remains of the North West Building and its excavation records could make a contribution to the functional understanding of such buildings in general. N.B. since the "recent" work at Kouklia has made more sense out of the planning of the later Sanctuary of Aphrodite a certain resemblance may be seen between this building at Kourion and the long halls of the Roman Sanctuary at Kouklia.

Special note should be taken of the ensemble of Palaestra[614] and Bath[615] flanking the Kourion Gate entrance way. Not only does this demonstrate the functional naturalisation of the Roman Bath into Greek social usage — additionally the design of the Bath is of great interest. This owes nothing to the native Greek form of Balaneia with its typical circular emplacement of Sitz-baths (as at Gortys, Epidauros and Cyrene[616]). In the essence of its planning the Kourion Bath is a Roman bath building. However, whereas the Roman Bath, whether on a great or a minor scale, likes to affect certain sophistications of design — apses and exedras, etc., the Kourion Bath is the most straightforward, matter of fact, workmanlike building, with no fashions and fancies of curvilinear planning. It is possible but not likely that additional apartments stood in front of the present remains.[617] However, as it stands, the plan shows the simplest possible solutions to the basic requirements of entry into a large reception "cold" apartment and then passage behind into successive warm and hot compartments. *baths*

It might be thought that such a simple solution would show many parallels. Yet this is not the case. Nonetheless, two minor bath establishments which reveal this simple straightforward design are found in a closely related milieu. They were excavated in Ptolemais (Tolmeita), a city of the Libyan Pentapolis, both standing on the Street of the Monuments.[618] The Roman Baths in the Public Building[619] (which could very well be a Gymnasium) are of the same period as the Kourion Sanctuary Baths. While The City Baths,[620] further along the Street, although of Byzantine date in their surviving phase, obviously continue down from a Roman forbear. TOLMEITA

It is also of interest that the materials and construction in the Baths at Kourion are somewhat exceptional for the site. There is evidence of arches or vaulting.[621] While it appears that the warmer interior areas had glass partitions to admit sunlight but keep out cold draughts.[622] *construction*

The Palaestra on the other hand is very typical in construction and was perhaps the most elegantly designed and finished building of the Sanctuary.[623] It is notable for its agreeable peristyle with cordiform angle piers.[624] This feature manifests what is a general characteristic of the Sanctuary — that of fitting scale, striking just the right balance between the monumental and the rural. *palaestra*

The enclosure wall of the sanctuary is not marked by any distinct character,[625] obviously taking form as extra units were added to the ensemble. Indeed in considerable measure it is *enclosure wall*

the building units themselves which came to constitute the limits of the sanctuary (more precisely speaking in the utilitarian southern area). The two gates however are of some interest, evidencing two different concepts of design.

Kourion Gate

The more monumental appears to have been the East or Kourion Gate. The gate is very ill-preserved but it seems that external approach between the Bath enclosure and the Palaestra terminated in a flight of steps. The steps led up to a monumental entrance now represented by vestiges of three closely set parallel walls (or foundations) running transversely across the passageway. The central of these lines of masonry is the most substantial. Thus it is possible to envisage the schema of a broad squat H with the actual gateway on the central bar prefixed both internally and externally by a broad shallow columnar porch.[626] This corresponds to a recognised form of Propylaion.[627] Cornice fragments indicate monumental entablature but there is no evidence of gables.

Paphos Gate

The Paphos or West Gate on the other hand appears designed on a different principle — that of the chamber or courtyard gate. It was again set between two flanking building complexes, but these formed a deep court on the inside of a simple gateway prefixed by a small porch with columns. Two different types of capitals found in the vicinity suggest that the court was also articulated at its inner face by two columns.[628]

Having given some outline of the building design of the Kourion Sanctuary in early Roman times, it is now necessary to make brief reference to its building construction and ornament.

ornament

The Sanctuary buildings at the period were modestly and tastefully ornamented. Virtually no significant items of architectural ornament have come to light from earlier periods,[629] but it is clear that the ornamental tradition is entirely a late Hellenistic one so that there is nothing innovatory in what survives. The very great majority of the pieces are either cornice fragments[630] or capitals[631] and they constitute a stylistic unity.

Doric order

With the exception of the Nabataean/Draught Corinthian order of the Temple, almost everything pertains to the Doric style — not the classical Doric of the Parthenon but the late Hellenistic Doric of slighter capitals coupled with hybrid Ionic entablatures. The Doric which Vitruvius considered unfitting for temples.

When, with the Parthenon, the Doric capital achieved its ultimate balance, further development came only by way of manners and mannerism. The manner which eventually came to hold the field was the "Angular" capital where all the curves (in section) flattened out into rectilinearity and were set off by marked steps, fillets and incisions. In this way the annulets passed from being a subsidiary articulation of the echinus to become a primary element in themselves. This is the style of the Kourion capitals in their varied detailing — a style which goes back in origin to ca 300 BC and is standard in the Eastern Mediterranean by the turn of the eras. It is specially receptive to and fosters the use (and repeated reuse) of stucco.[632] 299 300

Equally the evolution is away from the classical distinction in the weight and gravity of the orders. The later "civil" Doric became light and graceful so that all the orders tended to the same norms of proportion and their various elements were interchangeable. In this way it becomes the norm for such Doric columns to be provided with Ionic style cornices (with modillions), while shafts were usually unfluted and sometimes set on Ionic bases.[633] This is the style of ornament at the Kourion Sanctuary in the first century AD.

construction

The building construction at the Kourion Sanctuary is congruous, being neither pretentious nor shoddy. It fact the question is worth note, since the circumstances are by no means

obvious to the casual glance. A great deal of wall masonry can now be seen upstanding to a
269 270 greater or less degree up to head height or more. The majority of this standing masonry is mortared, more or less coursed rubble of an unassuming "native" looking character, stiffened *coursed rubble* and compacted into sections by the dressed stone frames of doors and windows.[634] However, *framed* on inspection, it can be seen that in principle this is virtually all archaeological rebuild, much of it from the University of Pennsylvania work of a generation ago. Nonetheless it is confidently asserted that in spite of its imprecise constitution, the circumstances of fall were such that the rebuild represents to all intents an identical repositioning of individual stones.[635] This mortared rubble was, of course, stuccoed and the stone frames perhaps stood proud of *stuccoed* the stucco to give a pleasing animated elevation.[636]

On the other hand close study reveals another type of masonry construction prevailing in
267 268 the first century AD. The material is reasonably compact local limestone. And main external *sub ashlar* bounding walls were of sizeable ashlar, course heights being ca 50 cms (= 1 cubit) and blocks of 1 m+ in length. Whether this masonry extended up to the full height of the walls is of course not certain. Perhaps this description should be qualified somewhat. Ashlar, as technically defined, is a somewhat flattering term. The blocks are dressed truly enough, but in places the jointing is not fine. There is a sizeable mortar bedding and the practice of chinking (filling out or stuffing up the mortar beds with stone chips) was common.[637] As opposed to this it must be repeated that the quality of the stone dressing is very competent, e.g. in the moulded details. It is as fine as the quality of the stone will take.

A tasteful feature of construction is evident in some of the flooring which is made up of *flooring* characteristic elongated pebbles, sea shingle of igneous origin from the Troodos. These are not pebble mosaics but simply well laid and graded pebble flooring in a cement bedding.[638]

333 334 Finally from the large masses of tile fragments which litter the area it is clear that the roofing must have been almost entirely of terra-cotta tiling in the Corinthian style.[639] *roofing*

KOURION CITY

The site of Kourion city is a striking one and well defined naturally. Yet in spite of this, the city development remains virtually unknown. Neither the defences nor the city layout have been investigated, even in a specimen way. On the other hand various individual building complexes have been excavated which are of great interest. Although some of these are later than the period under study (e.g. the 4th–5th AD century House of Eustolios[640] at the east end of the city and the very imposing 5th–6th century Christian Basilica Cathedral[641] in the centre of the site) some are of later Ptolemaic or early Roman times).

The city of Kourion thus continued to flourish in later antiquity. Much damaged by the *extended floruit* earthquake of the mid-fourth century, it was re-built in an expansive manner to become a notable centre of Christian Cyprus.[642] In this way the restrictive but selective excavations coupled with successful restoration mean that the site gives a cameo impression of the passage of building history. A particularly enlightening view is afforded of the building style which succeeded the close of the present study.[643] This is the period from the end of the 2nd century *late Roman* AD onwards, the later imperial age when Cyprus took its place in an ecumenical devel- *building* opment which in some ways is parallel to the circumstances obtaining at the present day. The universal signs of these times were the mass developed Corinthian columns. These came in large measure from the quarries of the Asia Minor coasts and islands, so Cyprus was handily situated for its imports. These columns were unfluted monoliths of coloured marble (generally dark, blueish grey) and the capitals and bases were of stiffly cut white-marble.[644] With these status symbols went another conspicuous status symbol — the elaborate figural mosaic,

and the latter in Cyprus are of first rate quality.[645] All this is of another age, and little related organically to the nicely evolved local limestone building which preceeded it — just as little related, in fact, as the Cyprus building of 1990 AD is to the Cyprus building of 1950 AD. And then followed the ancient basilica churches with their extensive mosaics of another style which ruled until the destructiveness of the mid 8th century. All this is to be clearly seen at Kourion.

city origins

As yet however, the origins of the city are unrevealed. Perhaps some oblique evidence concerning the early development of the city of Kourion may be available from the Sanctuary of Apollo. In the Cypro-classical period (fifth century BC) a change is noted in the prevailing character of the numerous terra-cotta votive figures accumulated about the "Archaic Precinct". Previously (i.e. in Archaic times of the 7th and 6th centuries BC) the figurines were typically of simple human or animal subjects — i.e. plainly attired men or sacrificial beasts (bulls, sheep, goats, etc.). However, from classical times the preferred offering is of a richly clad or armed man represented as a cavalier or charioteer — i.e. as a citizen of no mean city. This definitely suggests a change in the life style of the dedicants from the rural to the urban. This, in turn, might be taken to indicate that the nearby site of Kourion was built up as a prosperous city at about this time.[646] Certainly nothing has as yet been unearthed on the site to demonstrate its prior development; but the argument proceeds entirely from archaeological negatives and the question awaits further excavation for its settlement.

theatre
rock cut cavea

Unmistakeable evidence of Ptolemaic Kourion comes from the magnificently situated theatre.[647] This stands at the East extremity of the city cut in a defile of the cliff high above the entrance way from the Amathus Gate and looking out over this to the sea, which formed the uninterrupted natural setting for dramatic performances in the theatre. The *cavea* of the theatre has been almost totally restored, and to the Roman form obtaining in the second century AD.[648] However, excavations clearly revealed an earlier Greek theatre design constructed during the second century BC. In fact the Kourion theatre subsisted through a very full cycle of remodellings during which it experienced the successive avatars which are severally quite well known among theatres in the Greek East throûgh Imperial times. These are worth enumeration since they throw some light on socio-political conditions at Kourion across the centuries.[649] 144 145

history

Hellenistic theatre

The first known Kourion theatre,[650] built apparently towards the end of the second century BC, appears to have conformed to the Epidauran tradition in its essential design. With the *koilon* (*cavea*) carried well beyond the semi-circle; open, oblique *parodoi;* but with, it seems, a high (hellenistic type) *proskenion* (stage building) after the manner of theatres at Oropos and Oeniadae. The latter feature together with the evidence of coins suggests a date in the second century BC.

Augustan theatre

This typically hellenistic theatre was remodelled in Augustan times into a Roman type theatre with a semi-circular *cavea* and *paradoi* on the lines of the stage building but not evidently covered. (The excised terminal seating blocks were re-used in the masonry of the new *paradoi* walls.) The radius of the outer wall of the theatre was ca 26 m containing something like 20 tiers of seating.[651]

Trajanic theatre

After some rebuilding on the same lines during the time of Nero,[652] the theatre was substantially remodelled and enlarged under Trajan during the early part of the 2nd century AD.[653] The theatre in the details of its design was a standard Roman theatre of the Eastern (or better, Asiatic) type with a narrow *pulpitum* (or stage) and a basically rectilinear *scenae frons*

Eastern type

avoiding baroque exedras, recesses, etc.; the *cavea* overrunning the *paradoi* to coalesce with the stage building. Such, in effect, was the theatre, essentially similar to those at Salamis and Soloi, which served the needs of Kourion during the remainder of the period under study, the period during which very long lived traditions of building materials and construction recognisably continued.

construction

As it happens the Kourion theatre was a sensitive indicator of this general state of affairs. From the earliest Hellenistic remains through the Trajanic enlargement the masonry was of local limestone, in significant part massive and finely dressed, set closely and regularly.[654] Equally of limestone was the columnar ornament of the stage building which during the 1st century AD appears to have been a form of heterodox Corinthian.[655] Then at the end of the second century and thus at the end of this story, typically the Trajanic stage building was redone in marble — marble revetting and marble ornament with spiral fluted, coloured marble columns and white marble capitals, etc.[656] Soon afterwards the theatre was converted into a hunting arena (θέατρον κινηγετικόν).

later marble work

Then after a generation or so, it was reconverted back to a theatre[658] to be soon enough thrown down by earthquakes and abandoned in the fourth century.[659] From pretentious to desolate; after display the rubbish dump.

city population

The population of ancient cities is always a matter of dispute, and in this connection, the evidence of theatres is of great significance. By this means and avoiding much conjecture, it is possible to arrive at a relative estimate for the Kourion population.[660] The seating accomodation of the Kourion theatre was ca 3,000–3,500;[661] that of Salamis 15,000–17,000; i.e. the population of Kourion could have been only a quarter of that of Salamis. The intra-mural area of Kourion (ca 20 hectares) was something less than a quarter of that of Salamis (ca 100 hectares). However, according to existing evidence, Kourion was the first Cypriote town to afford the cultural amenity of a theatre (with the possible concurrence of New Paphos).

Hellenistic water supply

At the opposite Western region of Kourion a series of buildings brought to light by the Department of Antiquities in recent years also witness to the city's development in Ptolemaic and early Roman times. These buildings lie north of the tourist pavilion and the custodians office.[662] Beneath a later Roman public building (forum?) are extensive Hellenistic water installations including a very large open reservoir 9.5 m × 8.5 m × 3.5 m with hydraulic line plaster (containing crushed pot-sherds). This is said to be of early Hellenistic construction and to have been abandoned ca 50 BC.[663] This being the case, it is of great importance in determining the chronology of any water supply scheme with which it was connected. If it can be shown to have been connected with the piped water scheme investigated by J. Last, then that scheme is at least early first century BC in date and of Hellenistic construction.[664]

Nymphaeum

Whatever the exact circumstances of the water supply in this quarter, it is clear that it was a centre of water distribution for the city. Immediately to the West of the reservoir area is a very major public building. This is basilican in form but incorporates at the western end features (basins, fountains and the like) normally associated with Nymphaea.[665] However, as surviving the building does not display *in situ* the profuse ornament characteristic of a nymphaeum as generally known in the East, i.e. the "U-form" nymphaeum, or grotto nymphaeum. In type it appears more reminiscent of the Hall Nymphaeum, usually a private amenity, e.g. in a villa.

The building was erected in the first century AD and had a long history until its overthrow by the fourth century earthquake. It was rebuilt and extended in Trajanic times, and thus

during two periods comprising the first and second centuries AD, it constituted as good an example as may be seen in Cyprus of the monumental building of this epoch. The masonry of its eastern apse is standing to over 2 m, although this well preserved building has been consolidated and rebuilt to some degree, it still gives a good idea of the style of monumental building construction practised at Kourion in the flourishing period of the 1st and 2nd centuries AD.

construction

The walls are of quite massive ashlar masonry — of course heights 50 cms+, with blocks ca 1.50 m–1.80 m in length. The blocks are dressed true and the jointing is fine. However, it is not dry stone masonry, cement mortar was used in the setting. Furthermore the fine jointing is restricted to the face of the wall. The rising joints open to the interior and the blocks are set with rough backs. Where the wall is a massive one, it is built up of facing blocks dressed in the manner described with a core of sizeable squared, but less finely dressed, blocks. Surviving evidence shows that this meticulous ashlar facing did not remain exposed but received a veneer of marble panelling. It is, of course, very possible that this was a later embellishment of the third century when a large hall was added to the south flank ornamented with mosaic floors. 267

It is thus interesting to note that this fine monumental stone masonry is not altogether in the best classical Greek style of perfectly solid ashlar finely jointed throughout the thickness of the walling. In part it may be aligned with the old Middle Eastern tradition of monumental masonry going back to the Bronze Age. In any event it is *opus quadratum*.

later mosaics

Behind this building strung out at the western extremity of the site are a series of opulent residences or the like which in the third century and later manifested very fine figural mosaic floors, nowadays well conserved and displayed *in situ*.[666] However, it is likely that these buildings are in part of older structure. The next complex excavated to the West of the Nymphaeum appears to be a public building, or at least to have some public apartments. Notable is a large peristylar court with two cordiform angle piers. The peristyle is from local limestone and is of the draught Corinthian (or Nabataean) order with elegant bases.[667] It is possible that this style betokens a date not later than the second century AD for peristyle's origins.

ornament

Doric

Corinthian

The various remains brought to light by the Department of Antiquities in the western sector of Kourion afford some idea of the overall character of building construction and ornament during Ptolemaic and early Roman times. Although the situation is nothing like so clearly evident as at the Sanctuary of Apollo, nonetheless it may be recognised that the situation is basically similar. Again there is a surprising prevalence of Doric (of various post classical forms). Corinthian style capitals occur both in a draught form (viz Nabataean style) and in a heterodox, freely carved version (from the theatre). While there is much indication how these fashions were superseded by stiffly cut, mass imported marble Corinthian nominally of the Vitruvian orthodox schema. 308.1 305.1

stadium

An additional distinction of the ancient city of Kourion is the possession of a well preserved stadium. Half a kilometre or so along the Paphos Road from the western margin of the city the remains of the stadium retained their form recognisably throughout the ages, a fact commented on by Cesnola a century ago.[668] The site was cleared by the Pennsylvania Expedition in the years immediately before and after the Second World War.[669] And further investigations were undertaken by the Department of Antiquities in 1963–66. At this time the masonry structure

was conserved and re-established as to its overall lines together with a section of the seating.[670]

The construction is in massive blocks of local limestone regularly dressed and truly set. The external wall was ca 6 m thick. The overall dimension was 229 m × 24 m to provide for the stadium length (= 1 furlong = 220^{x} or 200 m) with its hairpin bend. There were seven tiers of seating and thus its capacity was ca 6,000 spectators or about twice that of the theatre. This may or may not say something regarding the relative popularity of physical culture and "high" culture in Ancient Kourion. The archaeological feature of some interest is that the stadium site lay on the line of the ancient conduit which brought water to the city from the mountain slopes near Sotira site, and part of the conduit had to be redirected around the curved western end.[671]

The stadium was built in the second century AD and remained in use until the destructive earthquake of the middle and latter part of the fourth century AD.

water supply

The water supply of Kourion has been well surveyed.[672] Whereas originally (e.g. in Ptolemaic times?) supply was by rainwater cachement and carting, eventually two distant
61 ground-water sources were utilised. A western source pertained to the Symbolou stream basin and an eastern one connected with the Kouris river drainage system.[673] The eastern system is later and only the western scheme can be shown to have been in service during early Imperial times. The latter scheme was refurbished two or three times and a convenient idea of its chronology is offered by the fact that the original pipe line ran across the S.W. angle of the emplacement of the Stadium. And when the monument was constructed in the 2nd century AD, the pipe line in this quarter had to be relaid on a deviation. Thus the earliest stage of the western scheme appears to have been early in Roman times (1st century AD?).[674] Presumably it was the more prodigal use of water in "Roman" baths etc. which required a piped supply. The question, however, is somewhat complicated by the fact that the western scheme serves both the city and the Sanctuary of Apollo. Moreover, in fact from its course, it appears as though designed primarily in the interests of the Sanctuary. Should that be the case, was it the construction of the Trajanic baths which instigated the scheme. However, common sense would suggest that the scheme was conceived as in the joint interests of city and sanctuary from its inception.

Eastern Source
Western Source

The source of supply is at Ypsimasikarka 2 kms N.W. of the neolithic site of Sotira and following the route of the pipe line about 11 kms from the west walls of Kourion city. There is involved a fall of about 190 m and thus the conduit descends at a gradient of ca 1 in 50. The water is taken not directly from the spring but from the stream bed nearby — and it is run through terra-cotta pipes of ca 20 cms external diameter and 20–50 cms in length with moulded spigoted and socketed ends to ensure close fitting. The joints were further secured by lime mortar. Something like 31,000 or more pipes were required for the 11 kms runs.

terra-cotta pipes

Although the conduit was thus (for the most part) a closed one, its line closely followed the contour and no instances have been observed where the water was made to flow under high pressure (i.e. siphoned). The preferred method was to set the terra-cotta pipes on a satisfactory bedding at the foot of trenches of varying depth from a mere groove to over 2 m (whether cut in earth or in bed rock).[675] On occasions, however, it was more convenient to carry the conduit above ground level. The vehicle was channeled stone blocks (0.50 m–1.80 m long) and the problem of water-tight jointing was severally dealt with by (a) setting continuous terra-cotta pipes in the channels; (b) spacing out the blocks and forming the

following contour

connections via a terra-cotta pipe; (c) providing a hydraulic cement but joint between contiguous blocks.[676] Inspection and maintenance were facilitated by stone settlement boxes, while at about 750 m north of the Sanctuary of Apollo a similar stone box was provided with a second (lateral) outlet to act as a distribution box forming the junction between the direct continuation of the pipe line to the Sanctuary of Apollo and the diverging pipe line to Kourion City. As noted the city pipes passed adjacent to the Stadium and then entered the city at its N.W. apex. The later Eastern Scheme made almost the same point of entry being carried on a masonry aqueduct of 60 m by 3 m broad and 5 m high at the lowest point of the saddle where the present Limmasol-Paphos road passes.

Considerable evidence has been identified within the city of the continuation of the aqueduct towards the eastern (baths and theatre) area: the built aqueduct is supplemented in places by rock cut channels and tunnels. There are also capacious cisterns of rectangular plan varying in size from e.g. ca 4 m × 3 m to 8 m × 6 m. Cisterns of this type can be distinguished from bottle shaped cisterns. These follow the old Middle Eastern traditional form for subterranean storage and were originally cut as rainwater and carted water reservoirs. However, none of the work is reliably dated in the report and thus much of it is likely to have been coaeval with the later scheme.

population

Such detailed information as to a water supply scheme inevitably invites estimates of its capacity and thereby the population it was designed to serve. It is reckoned that the West Conduit might provide 25 metric tons or ca 5,000 British gallons per hour, i.e. ca 120,000 British gallons a day. On a per capita consumption standard of 30 gallons a day, this indicates a population of 4,000. The later Eastern Scheme was designed to provide four times the supply of the old scheme, and thus it is possible that the needs of a population of ca 20,000 was then in view. These figures may be compared with the seating accomodation of the theatre = ca 3,000 and of the Stadium = ca 6,000. A further check is the total built-up area of the city = ca 10–20 hectares which would allow for a population of 6,000–10,000 on a density ratio of 300–500 per hectare.

cemeteries

Tombs of all periods abound and have been excavated in the vicinity of Kourion, but there is little point in cataloguing their main distribution since published records are almost derisory. A detachment of the British Museum tomb digging expedition at the end of the last century was active in the region and the publication gives a summary statement of the overall scene as then obtaining. They note the general resemblances in the post-Mycenaean period tombs with those of Amathus. And this is probably just. Their activities, however, are without benefit to the study of building since they provide no drawings whatsoever of the tombs they excavated.[677]

Their site B is the Ayios Ermoyenis (Hermogenes) Area down on the flats to the S.E. of the city. Their location plan indicates also the tombs excavated by Cesnola in this area, which was again to be the main centre of McFadden's tomb digging in the thirties. McFadden in turn makes interesting mention of various types of graves in the area but, no more than

Tomb 8

Murray, Smith and Walters, does he give any illustrations, with the exception of one tomb N° 8.[678] This tomb, however, is of interest on several counts. 208

It was fashioned in the third century BC and continued in use until the first century AD. It is of considerable development both in design and magnitude with an overall length of 20m+ and the burial chambers attaining a depth of 8 m below ground level! The several main units are all approximately the same size ca 5–6 m in length. They comprise an open rock-cut

dromos giving out onto a saddle roofed stepped dromos built of ashlar masonry. This in turn leads through a masonry framed portal into a transverse antichamber slightly askew. Both the latter chambers are rock cut, but the roofing details are unclear since there has been total collapse.

The influence of the earlier Amathus "T model" tombs is clear. However, with the main burial chamber added, there is an adossed double T design. Tomb 8 clearly demonstrates the interconnections between rock cut and built tombs which can be seen in the historical development at Amathus. The masonry lined, stepped dromos has widespread affinities, since it is the same element as occurs in the built royal tombs e.g. at Tamassos. Hence its excellent preservation is important, since it explicitly attests the inference required by common sense, viz that these passages were closed at their mouth by a slab door and thus kept free of earth filling. On the other hand, the initial rock cut dromos or forecourt was filled with earth after each use of the tomb. In this connection Tomb 8 also explicitly attests another necessary feature — the tomb marker. Here it takes the form of a built masonry monument standing immediately in front of the rock cut dromos. The partial clearance of this small monument revealed the die wall of a podium ornamented with a base moulding. *sepulchral monument*

The nature of such monuments was more fully illustrated in a trial trench nearby. This revealed a pleasantly designed little structure ca 2 m × 3 m (a small heroon) consisting of a podium with a three stepped approach on which was set a naiskos with antae. At the rear of
209 this *naiskos* was a *bema* furnished with an elegant base moulding. This construction is also of the third century BC.[679] The monument flanked the dromos of a tomb which was set by a street leading (most probably) into the city via the Amathus Gate. There is an additional interest to this monument in that its precisely cut masonry indicates the use of a long foot of 0.33 cms (= 13 1/2″).[680]

In the quarry area nearby to the North some rock cut tombs exist of an unusual type. This is the arcosolium tomb where a sarcophagus is set in or before an arch headed recess.[681] Monumental (built) versions of this type have been excavated recently at Paphos. *arcosolium tomb*

Considerable evidence has accumulated at Kourion of burial within the city limits, although this does not necessarily mean that the particular area was inhabited at the time of interment. Indeed the question has an important bearing on the chronology of the city's origin. In the area of the recent Departmental Excavations near the custodian's office the earliest remains discovered were "pre-hellenistic tombs . . . cut in bed rock".[682] As likely as not they indicated that this area was at that period not built-up.

On the other hand, at the eastern extremity of the site adjacent to the theatre, there is a funerary feature of great interest. This is within the area of the later Eustolius complex, a palatial residence with baths containing fine mosaics. As surviving this complex is of the 4th and 5th centuries AD, but it overlies late hellenistic remains — possibly in turn of a palatial
316 residence. On the east margin of this complex and at the verge of the scarp forming the city's limits is a pebble mosaic which can be dated to ca 200 BC. This is not the floor of a house but is set above a hellenistic chamber tomb. The general layout of the mosaic is that of the andron (the formal banqueting room) and it was furnished with a *kline*. Since a cutting exists communicating with the burial chamber, it seems that these remains represent part of a heroon.[683] *Hellenistic heroon*

The ancient town of New Paphos[684] (Nea Paphos) which is partly overlain by the village of Lower Paphos (Kato Paphos), the harbour area of the small modern district town of Ktima, NEW PAPHOS

lies some 10 miles/16 kilometres to the West of Old Paphos (Palai Paphos), the site of the world famous shrine of Aphrodite and now the location of Kouklia village. Until yesterday (1950's) the unfrequented backwater of an unfrequented island, the region of New Paphos has today become an international holiday-retirement centre with its own jet airport. Historically speaking, nothing is sacred!

location

Nea Paphos is situated at a blunt headland which might be described as the S.W. point of the Island since more than any other feature, it marks the position where an East-West 55
trending coastline gives place to a North-South trending one — i.e. it delimits the South coast from the West coast of the Island. The ancient harbour, far more deeply indented than the modern one (which has half silted up) was a semi-circular bay immediately (half a kilometre) east of the headland, lying in the lee of it and thereby protected from the Westerly gales. It was thus the most convenient point of arrival (or departure) in the Island for all sea traffic crossing the Mediterranean to North, West and South. The harbour bay was almost 1 km across and originally extended inland up to 500 m. It was thus very capacious and the harbour town which was laid out to the North of it was a large one. The circuit of its walls defined an area close on 1 sq kilometre, i.e. 100 hectares. This is about the size of ancient Salamis, and of some larger Hellenistic foundations in the East.[685]

topography

The area of the city forms a coastal flat only slightly above sea level, fronting the sea both on its south and west margins. Within this area are two low outcrops of coastal limestone: a ridge forming the N.W. limits of the city and a bluff forming the N.E. angle. The former is in part (Fanari) the site of the modern lighthouse and was the acropolis area, while the latter is today known as the Fabrica Hill and provided the emplacement of an early theatre.

Until very recently the area of the ancient city was bisected by the modern road descending from Ktima to the harbour: to the West were open fields, while to the East of it lay the decayed modern village of Kato Paphos, but even within the village limits were more ruins than houses. At the present day the whole area is lacking in a surface draining system and during heavy rain storms (commonplace in winter) the eastern built-up part sheds its run-off in gutters, runnels and sheets. However, originally two steams flowed into the bay in this eastern sector; one through the middle of the village and one further east beyond its limits. In many localities good fresh water is obtainable from wells.

history

Nea Paphos was founded in the full light of ancient history and there is a considerable amount of textual evidence concerning relevent events. The circumstances are unique for a major Cypriote settlement and they relate directly to the ferment in the area of the Ancient East caused by the campaigns and conquests of Alexander. And it would seem that the latest of the ancient Cypriote rulers and the first successors of Alexander were equally involved.[686]

Formerly scholars accepted the statement of the ancient authors that the foundation of Nea Paphos was the work of the Arcadian hero Agapenor in the aftermath of the Trojan War.[687] However, renewed attention to the fact in the light of recent excavations[688] has carried conviction that the Late Bronze Age foundation was Palaipaphos and that, as a large city, Nea Paphos can be ascribed to the generation at the end of the fourth century BC. It would

Nicocles

seem that the last of the Kinyrad kings of old Paphos, Nicocles[689] was something of a latter day Euagoras who sized up and siezed on the nature of his age with an ambition to step beyond his insular context. In this he overstepped the mark and was forced to commit suicide (or was this his contemporary — Nicokreon of Salamis). Apparently realising that the conquest of Alexander gave his kingdom of Paphos a strategic position in the new East-West

axis, he extended his seat of power from Old to New Paphos so as to establish the latter as his "modern" political and commercial capital, while retaining his traditional priest-king status at the shrine of Old Paphos (i.e. his religious capital). In thus seeking to play his cards in the company of the Diodachoi he overbid his hand and his foundation was appropriated and consolidated (in augmented form) by Ptolemy Soter. For him it provided the naval base and shipyards required by his maritime empire extending from North Africa to the Dodeconese and the Asia Minor coast (v. RDAC 1987, pp. 213–66). *Ptolemy Soter*

In the upshot as is well known, New Paphos became the most significant centre of Ptolemaic Cyprus and supplanted Salamis as capital of the Island — remaining so under Roman rule (cf. the famous story of St. Paul and the Roman governor of Cyprus in Acts 13). Because of this continuity of development the monumental archaeological remains of New Paphos as largely accessible are all from the period of the later Empire and Byzantine times. However, intelligent topographical investigations coupled with various archaeological soundings afford an idea of the development history of the city under Ptolemaic and early Roman rule. *Island Capital*

Significant investigation of antiquities at New Paphos is almost entirely an affair of recent days. The site remained inhabited and identified throughout history. It was continually visited by travellers from the West because of its position on the pilgrim shipping lane to the Holy Land — and many of these visitors commented on it (in the light of both Aphrodite and St. Paul!).[690] In modern times Hogarth had an affection for the place and often visited it in connection with the Kouklia excavations at the end of the last century. He provided a picturesque account of its topography and visible remains as at the end of the "pre-modern" period.[691] A generation later (1915–1925) Jeffery, the architect, made interesting observations concerning the famous rock-cut tombs in the quarries to the North of the site.[692] However, the magnitude of the site and its monuments precluded excavations until larger budgets became possible in the sixties. Since that time very important work on a large scale has been carried out by both the Department of Antiquities[693] and a Polish Expedition (1965–) under the leadership of W.A. Daszewski.[694] To these most recently has been added a German Expedition from the University of Trier.[695] Both the Antiquities Department and the Polish Excavations revealed and conserved for display *in situ* very striking mosaics of the later Roman Period. In this way, New Paphos has been declared a centre of the World's cultural Heritage. *excavation*

For the history of Hellenistic and Early Roman building in Cyprus, New Paphos has one feature of great interest — its town plan.[696] According to the current view the entire enceinte and its enclosed grid plan dates from the original foundation period. This, of course, is not to say that the entire area was built up in a single generation or so — which indeed is most improbable. Even though in the special case, Ptolemy I is reported to have transferred the entire population of Marion to New Paphos, presumably in order to speed up its urban development.[697] *town plan*

What is already clearly established is that the entire area New Paphos was laid out in a
56 Hippodamian grid plan extremely characteristic of the Hellenistic Age. Its overall disposition has been made evident and it is seen to incorporate two sectors set out on slightly divergent orientations.[698] The distinction between the two occurs more or less on the meridional axis of the site. Various preliminary conjectures have been advanced to account for this distinction. Explanations may take a topographical or a chronological emphasis — *grid development* *two sectors*

although these emphases are in no way exclusive. It is suggested that the eastern sector with its rational cartographic orientation (i.e. N-S × E-W) was the original Nicocles foundation and the western sector which has an orientation skewed 10° to the east of north (i.e. 010° × 190°) was the later (Ptolemaic) extension.[699] It has also been suggested that the skewing of more exposed westerly sector was to avoid the streets being swept by westerly winds (in accordance with doctrinaire, Vitruvian precepts).[700] Any number of factors might (and, indeed, if it is good town planning, all factors should) have influenced this matter. To glance at the sketch reconstruction of the layout shows the following facts:

(1) the eastern sector is laid out so as to give the main N-S avenues an axial approach to the harbour water front.

(2) the western sector parallels the lie of the Western shore line thus maximising the insula development in the area by avoiding residual spaces where the grid otherwise would have intersected obliquely with the confines of the city area.

This picture may or may not represent a chronological succession. In any event for whatever reason the picture is a very common one in (Hellenistic) town planning schemes. As a matter of common sense, the junction of the two systems is here (as normally) effected at a large open civic feature (agora area or the like).[701]

dimensions

Reasonably defined overall dimensioning has been recovered for the planning of New Paphos. This standard insula appears to have been the typical elongated one; and here it is a double square of ca 33 m × 66 m.[702] Whatever precise details may turn out to be, this cannot but infer the use of a standard foot — in this case the long Ptolemaic/Cyrenaican foot of ca 33 cm (in fact fractionally over 33 cms).[703]

zoning

It is still conjectural to proceed beyond the fact of Hippodamian town planning at Nea Paphos so as to consider the attendant question of urban "zoning". However, it is possible to say something. As a matter of common sense the commercial agora area was located to the South, down by the water front.[704] While the overall East-West partition appearing in the varying orientation roughly corresponded to a functional distinction. In accordance with this, the official public building sector was the West[705] and the private domestic sector was apparently the East[706] (the site of the pre-existing, pre-urban village settlement of Archaic-Classical times).[707] It is also apparent that the two limestone hillocks arrogated to themselves conspicuous monumental development.

Fanari Acropolis
Asklepeion

The Fanari hill reveals on its summit the rock cut emplacement of a temple[708] and on its shoulder was the ruler's residence (i.e. it was the upper city or acropolis area).[709] Also cut into its eastern slopes was an odeion[710] flanked by a shrine of Asklepios,[711] the which ensemble overlooked a large official agora (with a peristylar court ca 100 m square) on the flat immediately to the East.[712] This last-mentioned group of buildings appears to date from ca 100 AD. To the south of this area (in the Ktisto-Maloutena quarter) lay the patrician residences, palatial villas. Only the later Roman residences with their striking mosaics have been excavated but it is known that they stand upon earlier Hellenistic buildings of the same nature.[713]

villas

Fabrica Hill
Temple of
Aphrodite

The other eminence, the Fabrica hill ca the North East area, was developed in similar fashion. On its rocky summit can be seen foundation cuttings for a large temple (in antis) oriented to the East. This was doubtless the temple of Aphrodite Paphia[714] since the "sacred way", the ceremonial processional road to the great shrine at Old Paphos, departed from the

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N-E City Gate nearby.[715] In the southern slopes of the hill an early (third century BC) theatre was fashioned with a large part of its *cavea* cut out of the rock.[716] *Hellenistic theatre*

The odeion, agora ensemble by the Fanari hill has been under excavation for some time, while excavations on the Fabrica theatre have just begun! Unfortunately, as yet, little published information is available of these Hellenistic-Early Roman building complexes.[717]

There is another feature which may be of early date. It is located by the north wall of the city in the vicinity of the centrally situated North Gate. It takes the form of a series of rock cut chambers or grottos which have only been partially cleared. The circular or apsidal nature of some of these suggest a ritual purpose as in e.g. a mystery cult place.[718] *North gate rock cut cult place*

If ever there was an ancient city which owed its existence to its being a sea port, it was New Paphos. However, again little has been published concerning this question.[719] It would seem that in essence the ancient harbour arrangements have survived until the present day. Up to the middle of this century the harbour at Kato Paphos was a flourishing harbour for traditional caique shipping to Alexandria, and Egyptian Arabic was to be heard on the waterfront. Harbourage is formed by two moles disposed like embracing arms, and recent investigation has shown that in ancient times they both extended further than is presently visible above water level. The western arm is ca 235 m and the eastern arm ca 480 m leaving a centrally positioned harbour mouth of only 150 m breadth. An additional line of masonry can
56 be seen extending 50 m to the south from the western breakwater and it has been conjectured at times that some sort of barrier was thrown out a further 2 1/2 m (4 kms!) to tie in with the Maulia reef so as to constitute an outer harbour or roadstead.[720] The width of these breakwaters is ca 10 m, in places more. Supplementary to these arrangements it might also be conjectured that the enclosed basin was artificially deepened and/or cut back into the shore line[721] since it appears to have formerly extended to the foot of the Frankish castle at Saranda Kolones. In any event, it is at least possible to say that New Paphos harbour could have been a very major facility comprising sophisticated works of engineering — the masonry of the breakwaters was secured by bronze clamps according to early observations.[722] *harbour*

There was apparently also another public works feature of some magnitude. Early travellers reported remains of a substantial Roman aquaduct bringing water down from the North.[723] The source was ca 10 kms distant in the region of Ayios Neophytos monastery and the line came via Lemba and Ktima to enter the town at the Fabrika hill. Here old quarry cuttings were adapted in antiquity to serve as storage cisterns. It is possible that some such scheme was already operating in Ptolemaic times.[724] *aquaduct*

New Paphos was fortified with a well designed circuit of walls, gates and towers.[725] The scheme should be the project of Nikokles,[726] perhaps completed under Ptolemy I. In any event, the scheme was coaeval with the city's foundation at the end of the fourth century BC. This is clear but the details of the circuit are not as clear as they are shown in some guide books.[727] Virtually no upstanding masonry survives (or rather none has been excavated) and it is only foundation rock cuttings which provide the basis for reconstructions. In any event, it is apparent that as much advantage as possible was taken of the peripheral rock outcrop in the sector by way of scarping. And this was also augmented by a rock cut fosse. A striking arched causeway reserved in the rock afforded approach across the fosse to the N-W Gate.[728] *city walls*

The total length of the circuit was ca 3 kms. Something like 20 towers have been postulated and 4 gates of which latter there could well be one or two more. It would appear that the walls ran out along the breakwater of the harbour (with towers?), but that there was ever a sea-wall *towers gates*

(or harbour wall) is not attested. The same question arises in other coastal cities of the age and milieu. So far as can be determined from the foundation rock cuttings (as recorded), the wall was not massive. Hence it must have been of solid ashlar masonry throughout (ca 1.5 m–2 m in breadth). However, this matter is not completely determined — it is just possible that surviving indicators refer to the outer facing of casette style construction. Nothing informative can be said regarding the city gates. The towers (both face towers and angle towers) have all been confidently shown as round towers (or rather semi-circular towers open to the interior). Some of these doubtless were of this form, which is of interest in connection with Hellenistic developments in the art of fortification, bearing in mind that Demetrios Poliorcetes was on the scene in person.[729]

round towers

The foregoing notes show that, apart from the indication of the city planning on the grand scale, there is little building at present laid bare which witnesses to the development of New Paphos in Ptolemaic and Early Roman times. The situation, however, is quite other with respect to funerary features.

cemeteries

Immediately about the periphery of the city are to be seen examples of monumental tombs, both rock cut and built. These include inter alia two different types of tombs each of which is unusual in the Island and of an importance extending beyond the Island.

Tombs of the Kings

First and foremost are the rock cut tombs in the quarries at the northern margin of the coastal plain to the North of the City. They are known as the Tombs of the Kings and are tombs of dignitaries of the Ptolemaic regime during the third century BC and later.[730] There is nothing else like them in the Island and so far as I am aware little quite like them elsewhere, except their original prototypes at Alexandria[731] developed in the years immediately after the foundation of the City (which it must be remembered was more or less exactly contemporary with the foundation of New Paphos). These tombs at New Paphos have been noticed with informed interest for more than 100 years[732] and very recently they have been subject to renewed archaeological investigation.[733]

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ALEXANDRIA

Within this cemetery area, as is now being demonstrated, there were various types of rock cut tombs, but the form which evoked the designation Tombs of the Kings is characterised by a sunken peristylar court excavated in the rock. This is approached by a descending stepped passage, and opening from the rock walls of the court are one or more rock cut funerary chambers. The sepulchral arrangements in these chambers are provided by narrow loculi (*kokhim*) radiating perpendicularly from the sides of the chamber. This arrangement is common to other simple chamber type tombs in the cemetery, thus it is the architectural peristyle which is the distinctive and distinguishing feature. The peristyle columns are all of the Doric order, and this rock cut ornament was supplemented on occasions by inset or engaged blocks.[734]

Doric Order

The other tomb type of great interest is from the subsequent Roman period, ca 2nd century AD. This also occurs in burial areas to the North of the City, but quite close to the city walls. One of these tombs (by the Melina Hotal) has been published (it is now reconstructed and kept open for visiting).[735] The type in question is the well recognised arcosolium tomb, which name connotes its essentially arcuated forms. In this tomb type a (square) burial chamber is entered at one side by a stepped approach, while around the other sides are arranged burial accomodation in the form of sarcophagi set in lateral recesses which are arched over. These arches thus give the formula for domically roofing the square chamber. This tomb type may be more or less entirely rock cut. In which event it is arcuated in form but not in construction.

arcosolium tomb

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However, the Melina Hotel tomb was to all intents an entirely built tomb: an emplacement having been excavated in the bed rock so as to admit the ashlar masonry construction to the tomb.

early cut masonry dome

In this fashion the chamber was roofed by a true dome of masonry voussons. The particular form was a low (saucer) dome or a dome raised on continuous pendentives. The second century AD date advanced seems reasonable and this Paphos built tomb is one of the earliest examples recorded of a true masonry dome on pendentives. Since other early examples of this construction are said to occur at Jerash, Amman and Petra in Trans Jordan,[736] the occurence of the form in Cyprus is obviously a matter of importance in the general history of architectural development.

A tomb of similar form but with a rock cut chamber was excavated half a kilometre to the North (at the place Glyky Nero) and could be dated by its contents to Antonine times,[737] while other somewhat similar built tombs had been cleared previously close to the West near the city wall (at the place Ammoi). This later tomb is also open for inspection.[738]

construction

ashlar masonry

There is not a great deal of Hellenistic and Early Roman building construction generally visible at New Paphos, however a considerable bulk has been cleared at the Odeion complex.[739] The basic construction is solid ashlar. The stone is fairly friable limestone and erosion has opened the joints somewhat. However, it can be seen that, at least with main external walls, the jointing was originally quite fine. The blocks were set in regular courses and there was no evidence of cramping.

ornament

Although not many coherent passages of architectural ornament are preserved *in situ*, a considerable number of capitals are to be seen lying about in odd places on the site of New Paphos or have been displayed in the local museum at Ktima. These include examples of all three orders.

orders

An exception to the general circumstances occurs at the rock cut Tombs of the Kings where much columnar ornament is preserved *in situ*.[740] This serves to reinforce the prominence of
37.1 305 Hellenistic type Doric capitals. However, among the odd material, what is most noticeable is the common occurence of freely carved heterodox Corinthian capitals closely resembling those collected in the Graeco-Roman Museum at Alexandria.[741] These capitals seem special-
37.5 ly prominent at Paphos, rather than the draught Nabataean capitals noticed elsewhere (e.g. at Kourion and Salamis). Ionic capitals are rarer, however examples have been discovered
296 recently by the Polish Expedition from an earlier residence underlying the later Roman villa of Theseus and the Maloutena site.[742] They are post classical, somewhat simplified capitals but not the vestigial "domestic" style known from these times.

Doric

heterodox Corinthian

Ionic

fluted columns stuccoed

granite monoliths

There is plenty of evidence for fully fluted columns including instances of cannuluring — the latter also carried out in stucco. Also spread about the site (or prominently reused in later Christian and Mediaeval monuments)[743] are large monolithic columns of grey granite. As yet the dating of their original occurence (the agora?) has not been well demonstrated, but it is to be expected that they would be late second century AD or later.[744]

OLD PAPHOS

Finally in discussing the building remains at New Paphos it should be repeated that Nikokles' establishment of the city as his capital (together with its later adoption by the Ptolemies as the capital of Cyprus) did not mean the decay of Old Paphos (or at least its decay as a religious centre). It still remained world renowned. Although little building remains from the Hellenistic period have been revealed by the long standing Swiss excavations at Palaipaphos, a very considerable amount of early Roman building has been investigated.

habitation area In general it would seem that the older extension of habitation to the area East of the Sanctuary was abandoned in favour of a development in the areas to the West and South West.[745] Furthermore the stretch of the old city wall in the eastern region was not maintained *defences* after ca 300 BC.[746] It is possible that there were no defences to speak of at Old Paphos from that time onwards, since there would be no need for them with the definitive establishment of Ptolemaic rule. This, in turn, highlights the converse inference that the extensive city defences of New Paphos were designed and carried out before this period — i.e. basically at the end of the 4th century BC. 46

cemeteries Large numbers of Hellenistic-Roman tombs mainly on the S-W outskirts of the city testify to the material prosperity of Old Paphos during the Hellenistic-Early Roman period.[747] However, of prime importance for the history of building is the fact that in the later first *sanctuary* century AD the venerable Sanctuary of Aphrodite was completely redeveloped.[748] It is the remains of this building which dominate the site as presently excavated[749] — so much so that until the recent excavations, it was considered that the surviving ruins were entirely of Roman date.[750] This, in fact, is not so, since at the southern margin of the complex, the original Late Bronze Age sanctuary was preserved (at least in part) throughout the ages. However, all traces of interim building have been effaced and the bulk (well over half a hectare) of the sanctuary area is taken up with the Roman development. What is of great interest is that, although carried out in more or less contemporary construction, this extended sanctuary preserves the ancient scheme of an open air holy place with servient apartments (here in the form of columnar stoai) and no attempt was made to incorporate a contemporary designed Graeco-Roman temple as part of the scheme. 92 93

houses Additionally remains of houses of the early Roman period have been revealed in the Western part of the city area.[751] Particularly notable is a large peristylar house immediately to the West of the Sanctuary. This was originally constructed in the first century AD, and may well have been official residence of the High Priest of the Cult:[752] an office perhaps second only in status to the governorship of the island.

orders From these various buildings a considerable amount of architectural ornament survives.
Doric The columnal expression of the Roman Sanctuary was Doric.[753] But there are, in addition,
Corinthian some interesting heterodox Corinthian capitals displayed in the site museum.[754] Here also is 303
Ionic to be seen a monumental limestone Ionic capital which appears to be of the fourth century 294
BC.[755]

the rule of the West The five hundred years covered by the Ptolemaic and Early Roman period in Cyprus were epochal in world history. It was the period of the unchallenged ascendency of the West; the first age in which the Ancient World was dominated by Western culture. And Cyprus entirely shared in this experience. It was possible for traditional manners of building to survive but only within the overall complex of the Graeco-Roman architectural manner. The fairly considerable remains exposed in Cyprus of monumental building from the first two centuries AD indicated something of this ancient Westernisation of Cyprus.

Hellenistic building style First of all it was a process worked out under the political framework of the Ptolemaic kingdom.[756] When the Romans extinguished this latest left Greek govern-

ment, architecturally speaking in Cyprus, they brought to building only a new plenitude of resources, they did not change the mode. As yet no examples have been found in the Island of that style of Roman concrete building, the natural expression of which was curvilinear as much as, or more than, rectilinear. Monumental building in Cyprus during these five hundred years was essentially rectilinear in design and solid dressed stone masonry in construction. Structures were essentially trabeated based on load-bearing wall, pier and column. All this is to say that, during the entire period, the manner of building in Cyprus remained Hellenistic[757] and the architectural ornament applied was predominantly of styles well known in Alexandria and its dependencies by the end of Ptolemaic times.

In fact the stereotomy of arcuated masonry was known and occasionally exploited in Cyprus during the second century AD, but in very restricted circumstances. It occurred, first of all, in minor ornamental contexts (niches, etc.).[758] However, there are two recorded instances of structural masonry domes of this age — both in built tombs.[759] The latter features, therefore, comply with the old classic feeling which accepted such construction as proper ones for *Tiefbau*. Vitruvius, if he had occasion to work in Cyprus, would have been well content with what he saw.

Various particulars of Cypriote building during this period may be noted as follows:

town planning

Towns were planned and replanned on rational Hippodamian lines (cf. New Paphos, Salamis) similar to a great number of Hellenistic cities elsewhere.[760] There was never any legionary presence in Cyprus and so far no evidence has been observed of "colonial" Roman type town planning. After the initial hurly-burly, free for all Cyprus from 290 BC enjoyed great peace and there is little evidence of important urban defences or other fortifications. On the other hand, public works programmes were carried out on a very considerable scale. Harbours protected by moles and breakwaters were established in Ptolemaic days (New Paphos,[761] Karpasia[762]). While from Augustan times onward there is ample evidence of an efficient roads department.[763] (Because of its relatively even countryside with only minor, and mainly seasonal, watercourses there was little occasion in Cyprus for bridge building on a monumental scale). Together with the public highway system probably the most notable innovation of Roman engineering in Cyprus was the public water supply brought to a large and growing urban population from a remote source. The Kourion schemes were gravity flow through terra-cotta pipes laid in the earth, following the contour line. On the other hand a masonry aqueduct carried water tapped from the copious springs of Kythrea (Chytroi) 40 kms across the Mesoaria to Salamis. However, it is likely that this scheme belonged rather to the succeeding age, or at any rate fell at the very end of the period under consideration, since it was

public works

56 58 NEW PAPHOS
KARPASIA

8

water supply

KOURION

SALAMIS

probably Severan or later[764] — but now see possible epigraphic evidence for Neronic construction (RDAC 1963, p. 98).

religious building

The age is illuminated by its religious building. One Cypriote tradition was of the Sanctuary as a prime unit in itself, situated in natural surroundings and more or less independent of any urban development. And this basic feature of society endured throughout the Ptolemaic-Early Roman period unchecked by other developments. The famous Sanctuary of Aphrodite at Old Pahos, the Sanctuary of Apollo Hylates by Kourion and the Sanctuary of Aphrodite/Kybele-Isis at Kholades by Soli were all greatly developed during this period. 93 125 121 122

It is possible to suggest that from Archaic times onward there was an overall trend towards formalisation of design in the major sanctuaries. In this way the original dominant open space with servient sheds and shelters evolved into recognisable dominant temple building. Proceeding on this analysis, it is interesting to regard the end stage of Hellenistic-Roman sanctuaries. The picture is diverse.

sanctuaries

OLD PAPHOS

Apparently the weight of tradition in the Sanctuary at Old Paphos was sacrosanct and the monumental renovation of Early Roman times changed the building style but retained the original design concept of the '*aperto*' cult object in the sacred court.[765] At the Kourion Sanctuary the original archaic temenos with its circular altar was provided by way of addition with an architectural temple by Hellenistic times and this temple was re-built in the recognisable Roman form of a podium temple during the first century AD.[766] At Soli[767] there was an enormous tangle of architectural remains which the excavators resolved into two basic developments: one development was that of Temples A, B, C, (& D?) with two major periods, the first Hellenistic of the third century BC and the second beginning with the earliest Roman presence and extending into the first century AD. The other development was that of Temples E & F. This was of the third and fourth centuries AD and so beyond the present scope. The former development may be thought of as from courtyards with a cella to a cella with an extensive surround. While in the latter development of Temples E & F can be seen highly interesting (eclectic) temple design — but this falls beyond the Early Roman period.

SOLI

urban temples

SALAMIS

AMATHUS

As opposed to the Cypriote Sanctuary tradition, urban temples of well established architectural form were constructed during Hellenistic-Roman times at e.g. Salamis (Temple of Zeus)[768] and Amathus (Temple of Aphrodite).[769] The latter is a non peristylar temple on a crepis, with pronaos and perhaps opisthodomos and thus resembling a Greek temple in basic form. While the Temple of Zeus at Salamis is a Roman type temple on a podium, a grander version of the Roman Temple of Apollo at the Kourion Sanctuary. A striking feature of Cypriote archaeology is that as yet no example of a canonical classical Greek peristylar temple has been revealed. 132 131

Clearly the most distinguishing feature of Ptolemaic-Early Roman building in Cyprus is the introduction of utterly new categories of public buildings: gymnasium baths, theatre etc.[770] — cultural amenities which once again form part of the Western way of life. The details reflect the position of Cyprus as part of the Hellenistic World, e.g. the association of the (public) bath with the gymnasium rather than the appearance of the autonomous Roman bath complex.[771] Similarly the theatres of Cyprus are interesting. Obviously there were theatres constructed in Ptolemaic times (at New Paphos) and the three theatres excavated of Roman date are basically similar and show affinities with the Asia Minor type of theatre, where the stage building and its ornament is basically classic and rectilinear, not baroque and curvilinear as with the theatres introduced in Roman times to provinces lacking in Hellenic traditions.[772]

public buildings

150

bath & gymnasium

theatres

144–147

Very little has been revealed directly of domestic building during Ptolemaic and Early Roman times. A large house adjacent to the Sanctuary of Aphrodite at Old Paphos of 1st century AD date has not been well published.[773] However, a number of patrician houses (or villas) have been revealed from later centuries (e.g. at New Paphos);[774] and these are of the characteristic Hellenistic type of peristyle house well known from Delos.[775] Therefore it is reasonable to surmise that this was equally the prevailing type of house during the earlier period.

houses

A feature of all ages in Cyprus is the abundant funerary remains. And here Hellenistic-Roman times saw the introduction of some forms and features current in neighbouring lands which came to take their place along side other types with a long background in the Island.[776] Of prime importance here is the introduction in Ptolemaic days of the long constricted loculi set end on to the walls of the burial chamber to maximise accomodation (this is the *Kok/Kokhim* feature of neighbouring Palestine).[777] With this interment device there appeared in the third century BC a striking innovation — the rock cut peristyle tomb (at New Paphos Tombs of the Kings) with its background in the Alexandrian cemeteries.[778] Also notable are the arcosolium tombs of New Paphos which, when of masonry, evidence the true masonry dome, and this at a very early age (second century AD).[779] On the other hand there is nothing quite to suggest the mass tenement burials of the Roman catacombs.[780]

cemeteries

loculus tombs

194

peristyle tomb

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212

arcosolium tomb

Finally although it is perhaps not in order to speak in too categoric fashion, it seems that sepulture in Cyprus always preferred a subterranean habit. There is nothing like the tower Tomb so prominent in Syria. And there is little evidence for the elegant funerary constructions which stood above ground flanking the principal streets leading in and out of Roman cities. Cippi abound, particularly from the Amathus region, while interesting small sepulchral monuments occur at Kourion.

no free standing built tombs

in humation
no cremation

However, in both connections, the associated burials were deposed beneath ground. Perhaps a conditioning factor in these matters is that cremation (although known in Cyprus from Homeric times) seems to have been an exceptional (foreign) custom which never became anything like a norm.[781]

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434. For records of early travellers v. V. Karageorghis, Sculptures from Salamis II, Nicosia 1966, pp. 10–11.
435. For a convenient résumé of the archaeological work at Salamis v. A. Courbet, Historique des Découvertes à Salamine. In: Salamine, pp. 51–58.
436. v. L. Palma di Cesnola, Cyprus its Cities, Tombs and Temples, London 1877, pp. 200–2.
437. v. A. Palma di Cesnola, Salaminia, London 1894.
438. v. H.A. Tubbs, Excavations in Cyprus 1890, JHS 12, 1891, pp. 59–108; cf. A. Wilson, in Salamine, pp. 59–69.
439. v. Murray Smith & Walters, Excavations in Cyprus, London 1900, pp. 1 ff.
440. (For convenience) v. V. Karageorghis, Sculptures from Salamis II, p. 7. When 50 years later the

Department of Antiquities began their work at Salamis, the forester's house became the dig house and the forest mantle had to be uprooted over the areas of excavation.

441. e.g. Joan du Plat Taylor excavated a cistern by the sea south of the Gymnasium. V. Antiquaries Journal 13, 1933, pp. 97 ff.
442. v. G. Jeffery, The Ruins of Salamis, Nicosia 1946, p. 3; Ant. J. 8, 1928, pp. 344 ff.
443. Because of the untimely interruption of the work v. general accounts given by V. Karageorghis in Salamis, pp. 165–196; Sculptures from Salamis, Nicosia 1964–68, Vol. I, pp. 1–6, Vol. II, pp. 1–11.
444. v. V. Karageorghis, Excavations in the Necropolis of Salamis I–IV, Nicosia 1967–78; Salamis, pp. 23 ff.
445. v. the series by various authors, Salamine de Chypre, Vols. 1–12, Paris 1969–84.
446. For an outline history v. Salamis *pass* (archaeological); Salamine X (source history).
447. For a general account of the site development v. M. Yon, Mission ... de Salamine, in Arch in C, pp. 202–18; J. Pouilloux, Presentation de Site, in Salamine de Chypre, pp. 32–42.
448. cf., e.g. Ptolemais of the Libyan Pentapolis, v. Kraeling, Ptolemais, Chicago 1962 (OIP XC), pp. 37–48.
449. v. N. Fleming, in RDAC 1974, pp. 163–73.
450. v. J. Pouilloux, in Salamine de Chypre, pp. 35–36.
451. cf. M. Yon, in Arch in C, p. 205.
452. v. J. & L. Jehasse, Le Rempart Meridional de Salamine, in Salamine de Chypre, pp. 147–52.
453. cf. J. Pouilloux, in Salamine de Chypre, p. 38; M. Yon, in Arch in C, p. 205.
454. v. Published general plans e.g. Cyprus, p. 179; Salamine de Chypre, pp. 17, 60. N.B. Recently a circumstantial diagramatic lay-out of such a grid development in Ptolemaic times has been published, but it is stated that this remains to be verified by excavation, v. O. Callot. Praktika 2 (1982), p. 365, fig. 1.
455. cf. Les inconnues de Salamine, in Arch in C, pp. 198–201.
456. For classical sources v. Salamine X, nos. 2, 37, 39, etc. For Zeus at Salamis, the bull and ruler cults v. M. Yon, Zeus de Salamine, in Récherches sur les Religions de l'Antiquité classique, Paris 1980, pp. 85–103.
457. v. Arch in C, p. 207.
458. v. Arch in C, pp. 207–08; RDAC 1975, pp. 122 ff.
459. v. J.A.R. Munro & H.A. Tubbs, Excavations in Cyprus 1890. JHS XII, pp. 59–121. V. Wilson, The Tubbs Munro Excavations at Salamis 1890, in Salamine de Chypre, pp. 59–67.
460. v. RDAC 1975, p. 122.
461. v. O. Callot *et al.*, Le Temple de Zeus à Salamine, RDAC 1975, pp. 122–41.
462. v. RDAC 1975, p. 138.
463. v. Arch in C, p. 206.
464. v. O. Callot, in Praktika 2 (1982), p. 363.
465. For Greek concepts of siting v. R.D. Marthiensen, The Idea of Space in Greek Architecture with Special Reference to the Doric Temple and its Setting, Johannesburg 1956.
466. v. RDAC 1975, pp. 124 ff. & fig. 7.
467. For general surveys of the Roman Temple type v. D.S. Robertson, A Handbook of Greek and Roman Architecture, Cambridge 1954, pp. 205–30; L. Crema, Architettura Romana, Turin 1959, pp. 37 ff. *et pass.*
468. cf. O. Krencker & W. Zschietzschmann, Römische Tempel in Syrien, Berlin 1938; Th. Busink, Der Tempel von Jerusalem II, Leiden 1980, pp. 1252–1358.
469. v. Praktika 2 (1982), pp. 363 ff., fig. 2a.
470. v. RDAC 1975, pp. 138–140.
471. v. Praktika 2 (1982), p. 366.

472. cf. Damaszener Mitteilungen 2 1985, pp. 321–325; Th. Büsink, Der Tempel von Jerusalem von Salomo bis Herodes, Leiden 1970.
473. v. SCE IV_3, pp. 16–18, fig. 14; JHS XII 1891, pp. 81 ff.
474. v. SCE IV_3, p. 17; R. Gunnis, Historic Cyprus, p. 420. The useful sketch plan (Ant. J. XIII 1933, p. 99, fig. 1) shows this aqueduct veering north within the city in the direction of the Baths and the Gymnasium, rather than making a direct link with the Loutron.
475. v. SCE IV_3, pp. 17, p. 244.
476. v. Arch in C, p. 204, fig. 1.
477. v. Ptolemais, pp. 62–73; pls. VIII, IX; Plans V, VI.
478. v. SCE IV_3, p. 18; Ant. J. XIII 1933, p. 99, fig. 1.
479. v. Salamis, pp. 167–96; Cyprus, pp. 181–82, fig. 131.
480. v. Salamis, pp. 167–92.
481. In the British Excavations of 1890 it was referred to as Site B or the "Sand Site" or The Temenos of Zeus (*sic*!) in the sand near the Forester's House; v. JHS I2, 1891, p. 106.
482. For a survey of the gymnasium, its development and significance v. J. Delorme, Gymnasion, Paris 1960 (henceforth Gymnasion).
483. The function of the gymnasium in Cypriote society has received considerable attention proceeding from epigraphic sources. v. R.S. Bagenall, The Administration of the Ptolemaic Possessions Outside Egypt, Leiden 1976, pp. 48, 67; A.C. Avraamides, Studies in the History of Hellenistic Cyprus, University of Minnesota (Thesis) 1971, pp. 61 ff.; cf. Sir G. Hill, History of Cyprus I, p. 180. T.B. Mitford discussed a particular gymnasium (at Kythrea) in JHS LVIII, 1931, pp. 33 ff.
484. v. Gymnasion, pp. 422–32, 477–79; cf. R. Ginouvès, Balaneutike, Paris 1962 (henceforth Balaneutike), pp. 146–47.
485. v. Balaneutike, p. 149.
486. v. Vitruvius, 5.XI.$_1$.
487. However for epigraphical evidence v. J. Pouilloux, Les Trois Gymnases de Salamine de Chypre, Rev. Arch 1966, pp. 339 ff.
488. Gymnasion, pp. 374–87 & 387–94; cf. Vitruvius 5.XI, 1–2 & 3–4.
489. In some excavated gymnasia this unit is not complete or is not completely regular, e.g. there may be less than 4 *ptera* to the peristyle (e.g. at Delos The Granite Palaestra v. Gymnasion, pl. XX) or the ranges of rooms may fail on one or more sides (e.g. as at the Delos Gymnasium v. Gymnasion, pl. XIX).
490. v. Gymnasion, pp. 387–94, pls. XIX, XLI; Vitruvius 5.XI.3–4. In the surviving remains this facility is on occasions completely lacking — which fact, in some instances, may be due to incomplete or faulty excavation.
491. On this subject v. especially Balaneutike, pp. 109–50.
492. v. Salamis, p. 167.
493. v. Gymnasion, p. 198 (in the reign of Ptolemy IV Philometer 181–146 BC). Cf. Revue Archéologique 1966, pp. 331 ff.
494. v. Salamis, pp. 167–68.
495. v. Salamis, pp. 185–90.
496. v. Salamis, p. 190.
497. v. Salamis, pp. 190–92.
498. v. Gymnasion, fig. 49.
499. e.g. as at Epidauros v. Gymnasion, fig. 19; cf. Vitruvius 5.XI.1.
500. cf. the gymnasium at Miletus, fig. 34.
501. v. Vitruvius 5.XI.1.
502. v. Vitruvius 6.VII.3.
503. For these apartments: the youths room, the punching bag training room, the oiling room, the

powder drying room and the various bathing facilities v. Vitruvius V.XI.2; cf. the ideal plan given in Gymnasion, figs. 67, 68.
504. cf. Salamis, pp. 167–68.
505. v. Salamis, p. 189.
506. v. BCH 88, 1964, p. 366, fig. 101; BCH 92, 1968, p. 353, figs. 141, 142. For instances in other Hellenistic towns of the juxtaposition of the stadium and the gymnasium which seem to resemble that at Salamis cf. R. Martin, Urbanisme dans la Grèce Antique[2], Paris 1982, p. 280, fig. 62 (Delos); p. 278, fig. 61 (Priene).
507. cf. Balaneutike, pp. 149–50.
508. For a summary account of the Antiquities Department excavation and reconstruction of the theatre between the years 1959–74 v. Salamis, pp. 193–96, pls. 107–09; Cyprus, p. 181, fig. 130.
509. v. Salamis, p. 193.
510. On this complicated question v. M. Bieber, The History of the Greek and Roman Theatre, Princeton 1961.
511. The theatres at Soli and at Kourion (v. infra).
512. cf. A. Boethius & J. Ward Perkins, Etruscan and Roman Architecture, London 1970, p. 166.
513. cf. Salamis, p. 193. Bieber uses the term Graeco-Roman for this group of theatres, v. pp. 213 ff.
514. For the architectural community of the amphitheatre and the Theatre cf. Bieber, pp. 197–201. For the type v. D.S. Robertson, Greek and Roman Architecture, Cambridge, pp. 283–89.
515. v. L. Robert, Les Gladiateurs dans l'Orient Grec, Paris 1940.
516. cf. L. Crema, Architettura Romana, Turin 1959, p. 550.
517. v. Salamis, p. 196.
518. v. J. & G. Roux, REG LXII, pp. 287–96.
519. v. C. Kraeling, Ptolemais, Chicago 1962, pp. 95–96.
520. For a comprehensive and succinct outline of this important work v. V. Karageorghis, Salamis, London 1969, pp. 23–164; also Cyprus, pp. 130–36.
521. e.g. the last sepulchral feature considered worthy of record in Salamis (1969) is the possible cenotaph of the unfortunate last native king ca 311 BC.
522. v. Salamis Necropolis IV, pp. 2–3.
523. v. Salamis Necropolis IV, p. 7. For a summary recital of early travellers v. V. Karageorghis & C.C. Vermuele, Sculptures from Salamis, Nicosia 1966, pp. 10–11.
524. v. Salamis Necropolis IV, pp. 27–58.
525. v. Salamis Necropolis IV, p. 58.
526. v. Salamis, pp. 54–63; Salamis Necropolis I, pp. 90–116, pls. LXXXVI–CIV.
527. v. Salamis Necropolis I, pp. 90–94.
528. v. Salamis, p. 54; Salamis Necropolis I, p. 90; JHS IV 1883, p. 112.
529. v. Salamis, p. 55; Salamis Necropolis I, p. 90; Archaeologia LXVI 1915, pp. 180–194.
530. v. Salamis, p. 55; Salamis Necropolis I, p. 90; G.E. Jeffery, Rock Cutting and Tomb Architecture in Cyprus during the Graeco-Roman Occupation, Archaeologia LXVI, 1915, pp. 159 ff. at pp. 171–175.
531. cf. Salamis, pp. 25–150.
532. v. Salamis, pp. 50–54.
533. v. Salamis, figs. 8, 9; Salamis Necropolis I, figs. XXXIII, XXXVI.
534. v. Salamis Necropolis I, fig. XXXVI.
535. v. e.g. Salamis, figs. 5–8, 10; pl. 22.
536. v. Salamis, figs 11–14; Salamis Necropolis I, figs. XXXVIII, XLII, pl. CXLV.
537. v. Salamis, fig. 11.
538 v. Salamis Necropolis, pls. XCIX, CXLVII; figs. XXXII–XLIV.
539. v. Salamis Necropolis I, p. 116.
540. v. Salamis, p. 62.

541. For a graphic excavator's account v. Salamis, pp. 151–64; cf. Salamis Necropolis III, pp. 128–202, figs. XXI ff.
542. v. C.L. Cheal, Early Hellenistic Architecture ... in Cyprus, Brown University (Thesis) 1978.
543. v. Salamis, p. 190; pls. 107, 108, 114, 115.
544. v. JHS XII, 1891, p. 78, pp. 133–35, fig. 4; Salamine, pp. 65 ff.; Salamis, Sculptures II, pp. 24–25, pl. XIX, figs. 7–8; E. von Merklin, Antike Figuralkapitelle, Berlin 1962, p. 29, N° 86.
545. v. G. Roux, Le Chapiteau a Protomés de Taureaux Découverte à Salamine de Chypre, in Salamine, pp. 257–272, figs. 12–16.
546. v. JHS XII, 1891, p. 114.
547. v. Praktika I, pp. 175–78, pl. XXXII.
548. v. Arch in C, p. 235, fig. 3; Praktika 2, pp. 279–286, fig. 18; RDAC 1984, p. 235, fig. 3; BCH 106, 1982, p. 748, fig. 7.
549. v. for convenience Praktika I, pp. 175–78, pls. XXXIII–XXXVI. A recent survey of the Arabian development is given in Eretz Israel 17, Jerusalem 1984, pp. 291–304. (In Hebrew).
550. v. BCH 98, 1974, p. 894, fig. 80.
551. v. JHS XII, 1891, p. 69. The only recent notice is in Salamine, pp. 363–68, at. p. 364, but the capitals are not illustrated.
552. v. K. Ronczewski, Description des Chapiteaux Corinthiens et Variés du Musée Greco-Romain d'Alexandrie, in Bulletin de la Société Archéologique d'Alexandrie, Supplément du Fasc. 22, 1927, pp. 1–36 (henceforth Ronczewski, Alexandria).
553. e.g. D. Schlumberger, Les Formes Anciennes du Chapiteau Corinthien en Syrie, en Palestine et en Arabie, in Syria XIV, 1933, pp. 283–317; G.R.H. Wright, in D. White *et al.*, Apollonia, Supplement to Libya Antica IV, pp. 189–223.
554. cf. SCE III, pp. 405–07.
555. v. SCE III, pp. 399–582.
556. v. Arch in C, pp. 256–61.
557. For well known instances v. Martin, Urbanisme, p. 115, fig. 11 (Priene); p. 193, fig. 35 (Alea); p. 200, fig. 38 (Latmian Heraklea). For a close analogy in Cyrenaica v. Ptolemais, Plans I & XXII.
558. v. SCE III, p. 413.
559. v. SCE III, pp. 407–10.
560. v. Arch in C, pp. 257–60.
561. v. SCE III, pp. 412–13, fig. 217.
562. v. SCE III, p. 548–82, SCE IV_3, pp. 12–15, fig. 12.
563. v. SCE III, pp. 571–73, fig. 312.
564. v. SCE III, pp. 416 ff.
565. v. SCE III, p. 484, figs. 269, 271.
566. v. SCE III, p. 546.
567. v. SCE III, pp. 487 ff., figs. 272–279.
568. v. SCE III, pp. 482–488, 537–43.
569. v. SCE III, p. 487.
570. v. SCE III, p. 490; SCE IV_3, p. 3.
571. v. SCE III, pp. 416–19.
572. v. SCE III, p. 491.
573. v. SCE IV_3, pp. 34–48.
574. For a very convenient archaeological survey and discussion of the Kourion area v. H.W. Swiny (ed.), The Ancient Kourion Area and the Akrotiri Peninsula, Nicosia 1982. There is also a brief account of the city environs in Murray Smith & Walters, Excavations in Cyprus, London 1900, pp. 57–58.
575. v. (for convenience) Kourion Area, pp. 75–79.
576. v. (for convenience) Kourion Area, pp. 58–69.

577. v. Kourion Area, p. 88, Map 2.
578. v. (for convenience) Kourion Area, p. 89.
579. v. T.B. Mitford, The Inscriptions of Kourion, Philadelphia, p. 4; Kourion Area, p. 89.
580. v. Herodotos 5.113.
581. v. Kourion Area, p. 44; UMB 7, 1937, p. 16.
582. v. Herodotos 5.113, Strabo 14.6.3; cf. UMB 8, 1938, pp. 56 ff.
583. cf. Kourion Area, p. 57.
584. v. (for convenience) Kourion Area, pp. 58–67, 70–74.
585. The architectural results of McFadden's Excavations were eventually published after his death by R. Scranton in Transactions of the American Philosophical Society, NS Vol. 57, 5 1967 as The Architecture of the Sanctuary of Apollo Hylates at Kourion (henceforth Kourion Sanctuary). Useful interim reports by D. Soren of the recent American work appear in RDAC, pp. 232–244; Acts of the International Archaeological Symposium "Cyprus between the Orient and the Occident", Nicosia, September 1985, pp. 393–404. Now see D. Soren, The Sanctuary of Apollo Hylates, Tucson Arizona 1987 (henceforth Apollo Sanctuary).
586. v. D. Buitron, Excavations in the Archaic Precinct at Kourion, RDAC 1982, pp. 144–47; 1983, pp. 228–31.
587. v. RDAC 1983, p. 228 & fig. 1 & pl. XXXV.
588. v. ABSP, p. 231, figs. 130, 131. Megiddo II, figs. 180, 394.
589. v. D. Soren & G. Sanders, The Mysterious Rock Cut Channels of Kourion, RDAC 1984, pp. 285–93.
590. v. Kourion Area, pp. 63–64, fig. 51 & p. 73; Soren, Apollo Sanctuary, pp. 37–39, fig. 20. N.B. the votive terra-cotta model showing figures dancing around a sacred tree, Kypros, Plate CXXVII[4] & Kourion Area, pp. 70–71, fig. 4.
591. cf. ABSP, pp. 249 ff.
592. Aelian, On the Nature of Animals, XI, 7; cf. Strabo XIV, 683.6.3.
593. v. Strabo XIV.6.3.
594. The publication of earlier temple remains wholly defective partly due to the destruction of evidence by the early excavations of Cesnola and also to the premature death of G. McFadden who re-exposed the remains fifty years later during the thirties v. RDAC 1983, pp. 232–37. Cf. Scranton, Kourion Sanctuary, pp. 21–22; Soren, Apollo Sanctuary, pp. 119–127.
595. v. Scranton, Kourion Sanctuary, p. 21; Soren, Apollo Sanctuary, p. 127.
596. cf. Scranton, Kourion Sanctuary, p. 16, fig. 10; p. 48, fig. 43; p. 50, fig. 44.
597. RDAC 1983, p. 229, fig. 1, pl. XXXV.
598. A brief outline of the Sanctuary is given in Kourion Area, pp. 58–66, fig. 48. A full account appears in Scranton, Kourion Sanctuary, N.B. Plan 1.
599. So far as the second temple now quite fully published by both Scranton and Soren, v. Scranton, Kourion Sanctuary, pp. 21–25; Soren, Apollo Sanctuary, pp. 119–215.
600. cf. Kourion Sanctuary, pp. 23–24; Apollo Sanctuary, p. 127.
601. v. Kourion Sanctuary, p. 22–23; Apollo Sanctuary, pp. 127–35.
602. v. Apollo Sanctuary, pp. 163–164, fig. 106, 107; RDAC 1983, p. 239, fig. 3.
603. v. ARDA 1986, p. 21, figs. 3 & 17.
604. v. Apollo Sanctuary, pp. 263 ff.; Kourion Sanctuary, pp. 5–6.
605. v. Kourion Sanctuary, pp. 21, 24.
606. v. Kourion Area, pp. 60–61; Kourion Sanctuary, pp. 26–38.
607. v. Kourion Sanctuary, pp. 38–44.
608. v. Kourion Sanctuary, p. 40.
609. v. Kourion Sanctuary, p. 67.
610. v. Lawrence, GA[1], pp. 263–64, fig. 149.

611. v. Robertson, GRA, pp. 180–82 and *in extenso* G. Leroux, Les Origines de l'Edifice Hypostyle, Paris 1913.
612. v. Lawrence, GA[1], pp. 270–74, figs. 157–60.
613. v. ABSP, p. 278, fig. 249.
614. v. Scranton, Kourion Sanctuary, pp. 47–55, plan VII.
615. v. Kourion Sanctuary, pp. 57–62, plan VIII.
616. On this whole question v. R. Ginouvès, Balaneutike, Paris 1962.
617. Kourion Sanctuary, pp. 57–58.
618. v. C.H. Kraeling, Ptolemais, Chicago (OIP XC) 1962. For a general plan of this large city showing both bath buildings (N°s 8 & 15) v. Plan XXII, and for a detailed plan of the Street of Monuments v. Plan VIII.
619. v. Ptolemais, pp. 140–60, fig. 143.
620. v. Ptolemais, pp. 160–75, fig. 161.
621. v. Kourion Sanctuary, p. 59.
622. v. Kourion Sanctuary, p. 59.
623. cf. Kourion Sanctuary, p. 55.
624. cf. Kourion Sanctuary, p. 53.
625. v. Kourion Sanctuary, pp. 63–64.
626. v. Kourion Sanctuary, pp. 56–57.
627. cf. e.g. The Propylaion of Appius Claudius Pulcher at Eleusis, v. H. Hörmann, Die Inneren Propyläen, Berlin 1932; Dinsmoor, AAG, pp. 286 ff.; Lawrence, GA, pp. 221–23, fig. 125. And going back to the Propylaion at the Sanctuary of Athena at Priene v. Lawrence, GA, p. 193, fig. 105 and to the great Propylaia of classical Greece, e.g. that of Olympia, v. Lawrence, GA, figs. 89, 90.
628. v. Kourion Sanctuary, pp. 45–46.
629. A Doric capital of classical style (and one of Archaic style!) are reported from the Sanctuary by Jeffery in the twenties but they were never re-identified in the subsequent work at the site, v. G. Jeffery, Notes on the Origin of the Doric Style of Architecture, Archaeologia 78, 1928, pp. 41–44; cf. Scranton, Kourion Sanctuary, p. 65. It seems much more likely that Jeffery was taken in by archaising manners in late Hellenistic or Roman capitals, which field was in those days little studied.
630. v. Kourion Sanctuary, figs. 4, 8, 14, 19, 28, etc.
631. v. Kourion Sanctuary, figs. 6, 21, 30, 31, 37, etc.
632. For a brief summary of these highly involved matters focusing on a closely related province v. G.R.H. Wright, The Extra Mural Doric Temple, in Apollonia, The Port of Cyrene (ed. J. Humphreys), Supplement to Libya Antiqua IV, pp. 68–69. For the application of stucco v. Scranton, Kourion Sanctuary, p. 36.
633. v. In general Lawrence, GA, p. 201, Plommer, ACA, p. 259; and for the application in a closely related province v. G.R.H. Wright, Building Construction, in Ptolemais City of the Libyan Pentopolis (ed. C. Kraeling), Chicago, pp. 215–25; For modillions v. Ptolemais, p. 224; Plommer, ACA, p. 278; Ashby, RA, p. 47.
634. For the interesting question of stiffened rubble construction in Hellenistic building v. R. Delbrueck, Hellenistische Bauten in Latium, Strasburg 1912, pp. 88, 99; cf. for its background in the ancient East, ABSP, pp. 407–08, fig. 322.
635. v. Scranton, Kourion Sanctuary, p. 32.
636. v. Kourion Sanctuary, p. 5.
637. v. Kourion Sanctuary, p. 5.
638. v. Kourion Sanctuary, p. 4.
639. v. Kourion Sanctuary, pp. 5–6; Soren, Apollo Sanctuary, pp. 263 ff.
640. v. (for convenience) Kourion Area, pp. 132–39; UMB 14,4, 1950, pp. 27–35.

641. v. (for convenience) Kourion Area, pp. 114–24; RDAC 1979, pp. 358–65.
642. v. (for convenience) Kourion Area, p. 91.
643. cf. the Roman Forum, Kourion Area, pp. 110–12. Also the N-W Areas I & II v. Kourion Area, pp. 98–105.
644. For the ecumenical aspect of this phenomenon v. Ward Perkins, ERA, pp. 386 ff, 494.
645. v. Kourion Area, The Mosaics, pp. 98–105; W.A. Daszewski, Nea Paphos II, Warsaw 1977.
646. v. RDAC 1983, p. 231.
647. Fully published by R. Stillwell, Kourion: The Theater, in Proceedings of the American Philosophical Society 105, 1 1961, pp. 38–78 (henceforth Kourion Theater). v. also, for convenience, Kourion Area, The Theatre, pp. 125–131.
648. The restoration work was carried out during 1961–63 by the Department of Antiquities advised by J. Travlos, v. ARDA 1961–63.
649. v. Kourion Theater, pp. 41–43, 77–78.
650. v. Kourion Theater, pp. 43, 77.
651. v. Kourion Theater, pp. 41, 77.
652. v. Kourion Theater, p. 77.
653. v. Kourion Theater, pp. 41, 77.
654. v. Kourion Theater, pp. 73–76.
655. v. Kourion Theater, p. 75, N° 31, fig. 34.
656. v. Kourion Theater, pp. 69–73, N.B. p. 73 n 55.
657. v. Kourion Theater, pp. 41, 78.
658. v. Kourion Theater, pp. 41, 78; cf. Dio 78, 9, 7.
659. Kourion Theater, p. 78.
660. However, a strong caveat must be issued regarding the tie between public building size and population numbers. This is not necessarily direct. Remember that Cobbet in recent times was led to conclude that the rural population of 12th century England was greater than in his own day because of the much larger size of parish churches preserved from that period.
661. v. Kourion Area, p. 130.
662. v. M.C. Loulloupis, RDAC 1971, pp. 86–116; D. Christou, RDAC 1983, pp. 266–80. v. also, for convenience, Kourion Area, pp. 98–105, 110–13.
663. v. RDAC 1983, p. 269.
664. v. RDAC 1983, pp. 269–71, NB n6.
665. v. RDAC 1983, pp. 272–73.
666. v. Kourion Area, pp. 98–105; RDAC 1971, pp. 86–116.
667. v. for convenience, Kourion Area, p. 104, fig. 80.
668. v. for convenience, Kourion Area, p. 76.
669. Under the supervision of John Young; v. for convenience, Kourion Area, p. 76.
670. v. V. Karageorghis, BCH 88, 1964, pp. 366, 369–71; BCH 91, 1967, pp. 358–59.
671. J. Last, Kourion — The Ancient Water Supply, PAPS 119, 1975, pp. 39–72 at pp. 47 & 58, fig. 8.
672. v. J. Last, Kourion — The Ancient Water Supply, PAPS 119, 1975, pp. 39–72. This is a detailed account of the observations made on the ground over a number of years. It was published posthumously and contains no comparative analysis nor chronology, etc. v. also, for convenience, Kourion Area, pp. 106–09 & Map 2.
673. v. Last, Water Supply, Map 1.
674. The date of inception of the scheme is to be determined by dating the water distribution features within the city supplied by the scheme. The latest reports infer that the large Hellenistic reservoir near the custodian's office was connected with the piped scheme (v. RDAC 1983, pp. 269–71, n6). If so then the scheme is Hellenistic in origin. Certainly there are very similar terra-cotta pipes from Kouklia (Old Paphos) said to be of the second century BC (v. J. Last, PAPS 119, 1975, pp. 52–53, 72). However, nothing is as yet very precisely determined.

675. The report is not fully clear as to whether we are to understand that the trenches were refilled or that they were kept (partly?) open to facilitate inspection and maintenance.
676. The report infers that the open channels in the stone blocks were originally covered with slabs.
677. v. Murray, Smith and Walters Excavations in Cyprus, London 1900, pp. 57–58.
678. v. G.H. McFadden, A Tomb of the Necropolis of Ayios Ermoyenis at Kourion, AJA 50, 1946, pp. 449–89. v. also, for convenience, Kourion Area, pp. 140–45.
679. v. AJA 50, 1946, p. 456, figs. 2 & 3. v. also, for convenience, Kourion Area, p. 142.
680. v. AJA 50, 1946, p. 457.
681. v. Kourion Area, p. 146, fig. 115.
682. v. Kourion Area, p. 110. These tombs are said to be "without architecture".
683. v. D.W. Rupp, RDAC 1978, pp. 254–65; cf. Kourion Area, p. 139.
684. For an excellent account of the general topography of New Paphos v. K. Nicolaou, The Topography of Nea Paphos in Melanges ... K. Michelowski, Warsaw 1966, pp. 516–601. An atmospheric description of the site as at the end of the last century is in D.G. Hogarth, Devia Kypria, Oxford 1889, pp. 3 ff.
685. cf., e.g., the more or less contemporary Polemaic foundations in Cyrenaica, v. C. Kraeling, Ptolemais, Chicago, 1962; Pedly *et alii*, Apollonia, Supplement to Libya Antiqua IV.
686. The foundation history of New Paphos has received much attention recently, the results of which are summarised by W.A. Daszewski, Researches at Nea Paphos, in Arch in C, pp. 277–91; cf. also his remarks on the Early History of Nea Paphos, RDAC 1987, pp. 171–75.
687. v. Strabo 14, 6, 3; Pausanius 8, 5, 2.
688. cf. especially the negative results of a wide ranging search for tombs of the Mycenaean period, J. Deshayes, La Necropole de Ktima, Paris 1963.
689. For a brief note of Nicocles v. F. Maier, Paphos, Nicosia 1984 (henceforth Paphos), pp. 221–22.
690. For the mediaeval period at Paphos and its visitors v., for convenience, Paphos, pp. 300–24 (N.B. the English pilgrim Willibald who was there during Easter of 723, v. p. 301).
691. v. D.G. Hogarth, Denia Cypria, pp. 3 ff.
692. v. G. Jeffery, Archaeologia 66, 1915, pp. 168–69.
693. For the Departments Excavations under the charge of K. Nicolaou see the progress report in RDAC 1963, pp. 10–25; 1967, pp. 56–72. Also in BCH 92, 1960, pp. 343–45; 93, 1969, pp. 558–60; 95, 1970, pp. 415 ff.; 97, 1973, p. 678; 102, 1978, p. 930. v. also K. Nikolaou, Ancient Monuments of Cyprus, Nicosia 1968, pp. 28–32. In recent years the Department has also carried out important work on tombs under the control of S. Hadjisavvas, v. Arch in C, pp. 262–68.
694. For the Polish Excavations v. the numerous series of reports by W.A. Daszewski *et alii* in RDAC, BCH and other places listed in Arch in C, pp. 289–91.
695. Under the leadership of Prof. G.Grim. The work is centred on the Fabrica Hill Area.
696. Most recent (and accessible) interim considerations of the town plan are J. Mlynarczyk, Remarks on the Town Plan of Nea Paphos, Praktika 2, 1982, pp. 317–25; W.A. Daszewski, Nicocles and Ptolemy — Remarks on the Early History of Nea Paphos, RDAC 1987, pp. 171–75. N.B. these accounts are at times contradictory with respect to dimensions.
697. v. Diodoros 19, 79, 4; G. Hill, The History of Cyprus, 1949 p. 164; RDAC 1987, pp. 171–175.
698. v. Praktika 2, 1982, p. 322, Ill. 2.
699. v. RDAC 1987, pp. 173–74; Praktika 2, 1982, p. 320, n. 6.
700. v. Praktika 2, 1982, p. 324 (*apud* Vitruvius I, 6).
701. v. Praktika 2, 1982, p. 322. For comparable schemes, v. R. Martin, Urbanisme dans la Grèce Antique, Paris 1956 *pass.* For a Ptolemaic extension to an existing plan cf. Euhesperides (by modern Benghazi) v. Ptolemais, p. 43, fig. 6.
702. v. Praktika 2, pp. 320 ff. These detailed assertions seem questioned in RDAC 1987, p. 173, n 34.
703. For this unit identified at nearby Kourion v. AJA 50, 1946, p. 457.
704. v. Praktika 2, p. 322.

705. v. Praktika 2, p. 324.
706. v. Praktika 2, p. 323; but cf. the later statement rather to the contrary, RDAC 1987, p. 174, n. 35.
707. v. Praktika 2, p. 317; RDAC 1987, p. 172.
708. v. Praktika 2, p. 322.
709. v. Praktika 2, p. 323.
710. Properly termed an odeion since from the massive presence of tiles it appears to have been roofed v. Paphos, pp. 251–52, fig. 225.
711. v. Paphos, pp. 251–52.
712. v. Paphos, p. 251.
713. v. Praktika 2, pp. 319–20; Arch in C, pp. 281–82; Paphos, p. 253.
714. v. RDAC 1985, pp. 286–92.
715. v. Praktika 2, p. 323, for the sacred way v. Strabo 14, 6, 3.
716. v. Praktika 2, p. 324; K. Nicolaou, Topography, p. 580. The early dating is based on epigraphic (palaeographic) grounds.
717. For preliminary notices of the Fanari quarter complex v. BCH 93–103, 1969–79 as listed in Paphos, p. 296, n. 12.
718. v. K. Nicolaou, Topography, pp. 587–88, fig. 19.
719. The latest supplementary remarks can be found in RDAC 1987, p. 174, n. 39; v. also Nicolaou, Topography, p. 578.
720. v. K. Nicolaou, Topography, p. 578, n. 44.
721. An artificially cut basin (as opposed to simple moles and breakwaters) has been considered as a distinguishing mark of Hellenistic engineering in the region — cf. the Seleucid port of the Lattakia (v. H. Seyrig, Seleucus I and the Foundations of Hellenistic Syria, in W. Ward, ed. The Role of the Phoenecians, Beirut 1968, pp. 53–64 at pp. 61–62, Pl. XVII.
722. v. K. Nicolaou, Topography, p. 578, n. 41; D. Hogarth, Devia Kypria, p. 7. The harbour work most immediately referrable to Nea Paphos is that of Ayios Philon (the ancient Karpasia) in the Karpas, v. RDAC 1980, pp. 154–56, fig. 20, cf. Devia Kypria, p. 90. Since this harbour is mentioned by Pseudo Skylax it already existed in the middle of the 4th century BC.
723. v. RDAC 1985, p. 292; 1977, pp. 227–28, pl. LXXX$_1$.
724. v. J. Deshayes, Le Necropole de Ktima, Paris 1963, p. 237.
725. v. K. Nicolaou, Topography, pp. 567–78.
726. v. K. Nicolaou, Topography, p. 572; RDAC 1987, p. 173, n. 32; Paphos, p. 222.
727. v. K. Nicolaou, Topography, p. 568, fig. 3 (taken from Antiquities Guide Book).
728. Now see Arch Rep. 33, 1986–87, p. 87; cf. BCH 1983, p. 937, 1985, pp. 945–47, 1986, p. 856.
729. For this seminal period in history of fortification v. A.W. Lawrence, Greek Aims in Fortification, Oxford 1979, pp. 425–29.
730. v. SCE IV$_3$, pp. 22–23; 33, 51, fig. 17; Topography, p. 600; A.W. Lawrence, GA, p. 247, pl. 143; M. Hadjisavvas, The Tombs of the Kings, Nicosia 1986.
731. v. A. Adriani, La Necropole de Mustafa Pacha, Annuaire de Musée Greco-Romaine 1933–34; 1934–35. cf. A.W. Lawrence, GA, pp. 246–47 Pl. 137. D. Kurtz & J. Boardman, Greek Burial Customs, London 1971, pp. 302–04. The Alexandrian tombs are, of course, themselves a development of Macedonian tombs and for the question of the Macedonian origin of and possible direct Macedonian influence on the Tombs of the Kings, v. Arch in C, p. 268. For the Macedonian Tombs v. Kurtz & Boardman, pp. 273 ff.
732. v. e.g. E. Pottier, Les Hypogées Dorique de Neo Paphos, BCH 4, 1880, pp. 497–505; G. Jeffery, Archaeologia 66, 1915, pp. 168–69.
733. v. S. Hadjisavvas, Arch in C, pp. 262–68.
734. v. Arch in C, pl. XXIV, 2.
735. v. S. Hadjisavvas, Unique Roman Built Tomb in Paphos, RDAC 1982, pp. 202–06.
736. In general K.A. Cresswell, Early Moslem Architecture, Oxford 1969, Vol. 1, pp. 459 ff., n.b.

Qusayr an Nowayjis at Amman, p. 460, fig. 517; Baths at Jerash, p. 461, fig. 520; Tomb at Samaria, p. 462, fig. 521. All these monuments could be 2nd century AD — "... it would appear that it was in the latter region (*i.e. Syria — Jordan*) the true solution (*to the problem of a dome on pendentives*) was found and a series of examples perfect in theoretical conception and practical execution was found there" (p. 471). Cf. also The Baths at Petra, Bachman & Watzinger, Petra, Berlin 1921, pp. 45–47, figs. 39–41, which should be 1st century AD from the capital form.

737. v. RDAC 1982, p. 206; BCH 104, 1980, p. 794, fig. 89; 108, 1984, p. 905.
738. v. Arch Reports 22, 1975–76, p. 64, fig. 64.
739. For a view of the Odeion as reconstructed v. Paphos, p. 251, fig. 225; BCH 100, 1976, p. 904, fig. 105. For other general views of the complex showing the masonry construction v. BCH 101, 1977, pp. 773 ff., fig. 109; 102, 1978, pp. 930 ff., figs. 109, 110.
740. v. Paphos, p. 235, fig. 217; S. Hadjisavvas, Tombs of the Kings, Pl. 1.
741. For these capitals in general v. Ronczewski's well known description in Bulletin de la Société Archéologique 1927, pp. 1–36.
742. As yet unpublished.
743. v. Paphos, pp. 251, 291; Arch in C, Pl. XXXV.
744. v. Paphos, p. 251.
745. v. Paphos, p. 238, fig. 218.
746. v. Paphos, p. 238.
747. v. Paphos, p. 238; JHS 9, 1988, pp. 266 ff., cf. SCE IV_3, p. 23.
748. v. Paphos, pp. 272 ff., figs. 245–250.
749. v. Paphos, p. 274, fig. 74, 245 (Sanctuary II).
750. v. Paphos, pp. 87 ff.
751. v. Paphos, p. 280.
752. v. Paphos, p. 280; Ant. J. 31, 1951, pp. 57–60. cf. F. Maier, RDAC 1971, pp. 45–47; 1979, p. 172.
753. v. Paphos, p. 273.
754. v. e.g. Paphos, p. 238, fig. 219.
755. v. Paphos, p. 222, fig. 204.
756. For an outline of the political history of Cyprus in Ptolemaic times v. SCE IV_3, pp. 220–37; A.C. Avraamides, Studies in the History of Hellenistic Cyprus 323–80 BC, Minnesota (Thesis) 1971.
757. For the Hellenistic building tradition v. Ptolemais, p. 216.
758. As in nymphaea and fountains etc. at Kourion, Amathus, Soli.
759. v. RDAC 1982, pp. 202–06.
760. For the general background of Hellenistic Town Planning v. R. Martin, L'Urbanisme dans la Grèce Antique^2, Limoges 1983, pp. 153–85.
761. v. RDAC 1987, p. 174, n. 39.
762. v. RDAC 1980, pp. 154–56.
763. For Roman roads in Cyprus v. T.B. Mitford, Roman Cyprus, in ANRW pp. 1732–37.
764. v. SCE IV_3, pp. 16–17; JHS XII, 1891, pp. 81 ff.
765. The matter is controversial. The difficulty arises in squaring the very explicit images on coins with actual remains, v. for general background SCE IV_3, pp. 7–9, and for the latest judgment, Paphos, pp. 272 ff.
766. v. D. Soren, The Sanctuary of Apollo Hylates, Arizona 1987.
767. v. SCE IV_3, pp. 2–7; A. Westholm, The Temples of Soli, Stockholm 1936.
768. v. RDAC 1975, pp. 122–41.
769. v. Arch in C, pp. 231–34.
770. For such public amenities in general v. Urbanisme, pp. 275–86.
771. cf. Balaneutike, pp. 149–50.
772. cf. Ward Perkins, ERA, p. 166.
773. v. Ant. J. XXXI, 1951, pp. 51–60; Paphos, p. 280.

774. v. Arch in C, pp. 282 ff.
775. For the peristyle house at Delos v. Urbanisme, pp. 237–48. For similar style houses in the Ptolemaic province of Cyrenaica v. Ptolemais, pp. 84–89.
776. For summary of funerary development in Cyprus during the Ptolemaic-Roman period v. SCE IV_3, pp. 18–30.
777. For good illustrations of the hypogeum tomb type with such loculi v. J.M.C. Toynbee, Death and Burial in the Roman World, London 1971, pp. 199 ff. For the *kok* in Palestine v. A. Barrois, Manuel d'Archéologie Biblique, Vol. II, p. 299, and for its early origins ABSP, pp. 328–29.
778. v. SCE IV_3, pp. 22–23; cf. Kurtz and Boardman, Greek Burial Customs, London 1971, pp. 302–04, pl. 78–79.
779. v. RDAC 1982, pp. 202–06.
780. For the Roman catacombs v. J.M.C. Toynbee, Roman Burial, pp. 234–44.
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CHAPTER FOUR

ELEMENTS OF BUILDING

1. DESIGN

a) General Consideration: Measure, Form, Ornament

I. *Measure — units, scale, proportion; continued use of foot.*

II. *Form — planning in Cyprus not marked by strongly developed formal types. Most noticeable building types: The Round House; The π form plan; The Old Mediterranean Temple; The Rural Sanctuary with cella.*

Expression in elevation stable for long ages with only two or three striking mutations. Original beehive/conical form of Round House. Primal mud block of village rectangular building. This compounded and increased in scale with building boom at time of urbanisation but essential simplicity unchanged. Developed foreign styles manifested from ca 500 BC and wholesale transformation of external expression in Graeco-Roman times.

III. *Ornament — Wall painting in Neolithic Round Houses. Sacred Gate in earliest EC shrines. Cypro-Mycenaean stepped capitals. Phoenecian or Aeolic style in Archaic tombs and shrines, etc. Egyptian type painted decoration in Archaic tomb at Salamis. Little coherent evidence of use of Greek orders in Classical times. Abundant remains of Ptolemaic Alexandrian style architectural ornament surviving into Roman days.*

I. MEASURE

There has been little systematic metrology practised in Cypriote archaeology (although a programatic study is now announced as being underway (RDAC, 1984, p. 43). In this fashion the following remarks are limited to a statement of some obvious matters which may serve as introduction to future investigations.

A) Units

available data

Previous excavators have not sought to induce ancient units of measurement from their records. There are virtually no dimensioned plans and it is not very practical to scale off measurements from small scale published plans. The Swedish Cyprus expedition constitute a welcome exception in that they list precise measurements in the description of the more architecturally developed building complexes excavated. Also, as a rule, the dimensions of the Neolithic and Chalcolithic Round Houses are stated and listed in comparitive tables.

Doubtless future detailed analysis will establish varied and varying units but the

information already to hand is sufficient to identify an unexpected unit in widespread use. It was not a cubit (long or short) which was commonly employed in Cyprus for buildings of some rational design but a foot — both a short foot of ca 30 cms and a long foot (Petrie's Great Northern foot) of ca 33 cms. This foot emerges in the first instance from buildings of the Late Bronze Age (LC IIc — LC III); the regularly designed public buildings associated with the urban development of the Island, e.g. at the sites of Enkomi, Kition, Ayios Dhimitrios, etc. However it appears to continue into later times and may also subsist from the very beginning of round house construction — cf., e.g. dimensions at Khirokitia, Tenta and Lemba. In the listed dimensions of the houses at Tenta (Tenta, pp. 60 ff.) internal diameters of ca 7′ and 9′ (of 33 cms) appear noticeably. These dimensions are also evident in the list given by Le Brun for Khirokitia (RDAC, 1982, p. 7). N.B. A larger tholos is cf 14′ external and 11′ internal diameter. At Lemba some smaller tholoi are 10′ (of just over 30 cms) in internal diameter, and a large tholoi is 16′ (Lemba, figs. 11 ff.).

the foot short & long

G. Hult begins her investigation of Cypriote metrology at the LC II–III site of Hala Sultan Tekke (RDAC, 1984, pp. 42–49) and was able to conclude (p. 46) from a pilot study that "a module of 30 cms has been used for the walls and that the standard wall thickness has been two modules. This unit is very close to a foot used e.g. in Minoan architecture (c 30.66 cms)". In perfect accordance with this unit the contemporary administrative building (X) at Ayios Dhimitrios is set out as a
32 squarebuilding 30 m × 30 m — in effect a hekatompedon of 100′ × 100′ (RDAC, 1984, pp. 18–24).

of ca 30 cms
AYIOS DHIMITRIOS

Again at the contemporary (LC IIc) site of Maroni Vournes, a few kilometres to the South of Ayios Dhimitrios, the main building (A), an administrative building of the same class as Building X at Ayios Dhimitrios, evidences a well preserved
275 external wall with several courses of mud brick superstructure virtually intact on the rubble socle. The bricks are 66 cms × 50 cms to give a wall thickness of ca 132 cms, i.e. 4 long feet of 33 cms (cf. RDAC, 1987, p. 84). This same foot appears very prominently in the town plan at Enkomi which was set out at about this time. The
48 regular grid scheme gives a series of insulae spreading E–W but of limited depth N–S. This depth appears to be 33 m, while the transverse bounding streets are something like 3.3 m in breadth, i.e. the insulae were designed as blocks 100′ in depth and the cross streets were ca 10′ broad (RDAC, 1986, pp. 101–105, fig. 3). To be compared with this are the dimensions of two ashlar built tombs of the period at Enkomi (v. Hult Ashlar, p. 8): 2.92 m × 2.31 m (British Tomb 66) and 2.39 m × 1.83 m (French Tomb 1349). This appears to represent original dimensioning of 9′ × 7′ and 7′ × 5.5′ on a foot of ca 33 cms.

MARONI

of ca 33 cms
ENKOMI
town plan

Of exceptional interest is the fact that when New Paphos was developed on a

NEW PAPHOS

town plan Hippodamian town plan at the end of the 4th century BC, the same unit appears to be recognisable. The preliminary appraisal of the town plan (Praktika 2, 1982, pp. 317–25) states that the insulae are double square in form, 66 m × 33 m i.e. 200′ × 100′. The foot of ca 33 cms, of course, was also known as the Ptolemaic or Cyrenaican foot (Sir W.M.F. Petrie, Ancient Weights and Measures, p. 41). Other instances of the use of this foot occur at exactly the same time (end of the fourth century) at Kourion. Here in the cemetery of Ayios Ermoyenis (Hermogenes) to the East of the town various passages of monumental masonry record the unit with great accuracy as 33.87 cms = 13 1/4″ (AJA 50, 1946, p. 457). 56

KOURION *cemetery*

In the face of this striking evidence for the use of a foot, it would be of great interest to document the use of a cubit in Cyprus. If nowhere else, this well might be expected at Kition and its dependencies during the Phoenecian regime. However little evidence of this is available. The Sanctuary of Apollo at Golgoi near Athienou excavated by Cesnola in 1879 contained a rectangular hall, regularly designed with three rows of pillars (cf. Phlamoudhi pp. 72–73, fig. 13). This looks at first glance something like a provincial version of the great Phoenecian Temple at Kition — which it may have been. Nevertheless the published plan (which is unusual in being dimensioned) shows the building as 60′ × 30′ (English feet = ancient foot of ca 30 cms). 36

cubit

GOLGOI *sanctuary*

Of course it is not difficult in many contexts to find individual dimensions of e.g. ca 52 cms — wall thickness, course height, etc. It is salient evidence for the use of this unit in systematic design which is lacking at first sight and requires further research. However in this connection, once again there is an unexpected observation. The external dimension of the cavea of the Theatre at Soli is ca 52 m; while more or less the same dimension is the radius of the vast theatre at Salamis — i.e. the latter is twice as large with a diameter of ca 104 m. This cannot help but suggest that the Soli Theatre was designed with an overall dimension of 100 (long) cubits and the Salamis Theatre with an overall dimension of 200 (long) cubits. Although why a specifically classic type of western building in Roman times should use an oriental unit of measure is difficult to explain. 147 146

SOLI theatre

SALAMIS theatre

Finally as an indication of the lack of certainty regarding units of measurement employed in Cyprus it is of interest to report the findings of a recent metrological analysis of the Temple of Aphrodite on the acropolis at Amathus (RDAC$_2$, 1988, p. 145). This temple is of early Roman date and the architect states that the dimensions at the upper step of the crepis can be rendered in terms of any one of four different units — a longer (36.30 cm) and a shorter (31.87 cm) foot and a royal cubit (54.86 cm) and a short cubit (45.72 cm).

inconclusive analysis AMATHUS *temple*

B) Scale

As in general, the passage of the ages in Cyprus registers an increase in the scale of building, however the trace of this increase is an individual one. In this connection it is always possible to invoke gaps in the record, but other than this the pattern of increase in the size of buildings witnesses in itself to different social developments in Cyprus from those obtaining in the neighbouring mainland.

154 155 339 At Khirokitia (ca 7000 BC) the individual Round House buildings clearly fall into two classes — large and small. The larger ones have an internal floor space of ca $20\,m^2+$ (internal diameter ca 5 m); with an overall area of ca $70\,m^2$–$80\,m^2$. This latter figure gives something of an inflated idea, since the external walls at ground level are usually girdled with extra skins of masonry to sustain the domical construction. The smaller tholoi have a floor space of ca $6\,m^2$–$7\,m^2$ (internal diameter 2.75 m, external diameter 3.5 m). KHIROKITIA *round houses large* *small*

And these figures remain normative for the ensueing ca 5,000 years, e.g. at Lemba in late Chalcolithic times the larger Round Houses have a floor space of ca $30\,m^2$. LEMBA

There are one or two aspects of this type of building which may be thought to revise the norm upwards somewhat. First of all round houses exist of a compound design (i.e. with surrounding ambulatory in part or complete). The central building at Tenta (Complex 14–19, v. Tenta, pp. 80 ff., figs. 32, 33) has an overall diameter of ca 12 m + and an area of ca $100\,m^2$. Also there is the more basic consideration that the individual building is not the dwelling unit which may comprise one large plus one or more smaller units (and the space between them). However, strictly speaking, the analysis here is of building structure not social structures and we may take an operative area of ca $30\,m^2$ as being the upper norm. TENTA

22 According to the evidence at Sotira Kaminoudhia these individual round houses were succeeded in the latter part of the third millenium by agglutinative complexes where it is difficult to assess the scale of the building unit. However early in the 159A second millenium some individual house forms have been revealed at Alambra in Central Cyprus. Gjerstad's house, a *beit* within an enclosure very much in the style of the Chalcolithic house on the mainland, consists of two rooms with a floor space respectively of $19\,m^2$ and $16\,m^2$, giving a total internal floor space of $35\,m^2$. Again if overall dimensions were taken including an annexed door yard, the area would be ca $70\,m^2$ which is all virtually the same as the larger round houses of the previous epoch. KAMINOUDHIA ALAMBRA

159B There is a reasonably contemporary row of terrace houses at the locality of *Mouttes* at Alambra where individual dwellings have an area of ca $100\,m^2$ — not entirely 160 roofed. The somewhat later MC-LC *"Hofhaus"* style building at Kalopsidha in the Eastern Mesoaria has an area of something like $175\,m^2$ — a respectably sized private KALOPSIDHA

NIKOLIDHES

house at any time. About the same period a fortress like building at Nikolidhes in the centre of the Island to the East of Alambra is solid and regular in design. The keep encompasses ca 275 m^2 overall (with heavy external walls) and there is an outer bailly enclosure of ca 100 m^2 — which is a small public building in stature. A similar type of building, of more or less the same MC-LC date, is the blockhouse at the northern limit of the site of Enkomi. This building which probably controlled the scattered hamlets lying to the south covered something like 500 m^2 with a semi-enclosed yard of ca 150 m^2. This is a fair average size for a modest public building and would seem to be about the maximum size of building in Cyprus prior to an urban environment. 65

ENKOMI 74

Two or three hundred years later during the 13th century BC Enkomi was rapidly built up into a large city extending over ca 16 hectares. The blockhouse became transformed into an administrative building set against the North Wall by the City Gate with an area of ca 1250 m^2. Within the city the regularly laid out town plan with its insulae ca 33 m deep was built up closely. In the vicinity of the main axial thoroughfare there were city block buildings (seigneurial dwellings, apartment houses or the like) of the same order of size e.g. Dikaios' Ashlar building ca 1000 m^2, Schaeffer's Batiment 18 ca 1,800 m^2; although the functional homogeneity of these buildings may not be easy to define. And this scale was not limited to Enkomi. At Ayios Dhimitrios near the South Coast the Administrative Building X covered ca 1000 m^2 in area. 134 48 49 136 32 133

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religious buildings

It is more difficult to illustrate the scale of religious building since the native Cypriote tradition seems to have been that of the rural sanctuary where the enclosure was itself the original holy place. And this only gradually passed from being a courtyard with a shelter or subsidiary building to becoming a building with an associated courtyard. However the excavation by the Department of Antiquities of the Kathari Sanctuary Area on the northern limits of ancient Kition gives an idea of developments. The original temple buildings (N° 2 & 3) at the first establishment of the area earlier in the 13th century are very small, non-monumental buildings ca 30 m^2 (N° 3) and 180 m^2 (N° 2) in overall area. However by the end of the 13th century in the fully urban environment girdled by a massive stone wall the monumental Temple N° 1 which came to overlie the region of the small temple N° 3 covered an area of ca 1000 m^2 with an enclosed courtyard of ca 150 m^2. If the attached Temple N° 2 (rebuilt in slightly enlarged form) is considered, then the whole complex of two temples and enclosed court covers an area of ca 1200 m^2–1300 m^2.

KITION 33 34

The upshot of all this is that in the urban development boom of the Island late in the Bronze Age, the scale of building was pushed almost immediately to maximum limits. The Phoenecians rebuilt the Temple 1 & 2 complex at Kition in the 9th

105 century BC converting it into a single monumental temple with a forecourt, but not extending the area. The largest classical style temple building known, the Temple of
131 Aphrodite crowning the acropolis at Amathus (early 1st century AD), was ca 500 m^2 AMATHUS
125 127 in area. The largest single building in the Santuary of Apollo Hylates at Kourion, the KOURION Trajanic South Building or Hostel is ca 1400 m^2.

Only exceptional individual circumstances bring an increase in scale. The famous Bronze Age Sanctuary of Aphrodite at Old Paphos (Ktima) was greatly extended OLD PAPHOS during Roman times, but the Sanctuary maintained its traditional open "rural"
92 93 design, so that comparisons in area are not altogether just. The overall area including courts, stoas, halls, etc, was perhaps something like 4000 m^2 — taken together with the surviving Bronze Age Sanctuary perhaps half an hectare.

This is also the order of magnitude of the most notable native Cypriote building of later times — the famous Palace of Vouni. However here again the area includes VOUNI
138 139 large courtyards. The original Asiatic Palace (ca 500 BC) was ca 2000 m^2 overall.
140 The later extension (ca 450 BC) by the addition of another wing made the "Greek Palace" approach ca 4000 m^2 overall but the total roofed area was more like 3000 m^2.

Finally to be considered are buildings of a new and specialised nature, the civic amenities of Roman times: gymnasia, theatres, amphitheatres, etc. Some of these *Roman public buildings* extended over great areas but, of course, they are essentially open air features. The very large theatre at Salamis of the first century AD with an external diameter of SALAMIS
146 more than 100 m covers an area of more than 5000 m^2, i.e. over half a hectare. This is, *theatre* of course, an enormous building. Even if this were largely unroofed it was carried up to a great height and incorporates massive substructures and monumental construction.

This outline recital of the development in scale of building in Cyprus can be *summary of development* summarised as follows. Until after the middle of the second millenium BC (i.e. the Late Bronze Age) building in Cyprus was virtually akin in scale to village building, as compared with that on the neighbouring mainland. Then in the 13th century BC, with the space of a generation or two, building of a different order suddenly appears, buildings as large and larger than those on the mainland. And these buildings of 1000 m^2 and over were in fact on as large a scale as almost any subsequently erected in the Island, except for the special circumstances of complexes including large courtyards, etc. Finally it was imperial Roman building modes in the Island which constituted a new step up into larger scale building, ca 5000 m^2.

C) PROPORTION

The number of buildings excavated in Cyprus where it is profitable to investigate

any system of proportional design is not great. Unitary buildings (*Einzelbau*) aiming at a certain rational overall form are few. In any event their dimension in height is always obscure, so whatever proportions can be divined are incomplete! Without doubt it is the LC II–III temple buildings at the Kition sanctuary which provide the bulk of useful information in this respect.

round house

Building proportions in Cyprus start with a known constant. For five thousand years the prevailing Round House form meant a centralised building where ideally all horizontal dimensions are equal and the principal axis is in fact the vertical one. But thereafter it is not until the urban period that meaningful proportions again come into play.

KITION
temples
arithmetic proportions

Certainly with the five temple buildings excavated by the Department of Antiquities in the Kathari Sanctuary it is obvious that simple arithmetic proportions (of. 1 : 2 : 3 : 4) were in the minds of the designers as ideal formulae on which to base their planning. And these moreover were worked out in units of feet of ca 33 cms.

temple 3
temple 2

The oldest (LC IIc) temple N° 3, which is very irregular in form, would if trued up give an internal floor space of a double square of 8′ × 8′ (i.e. = 16′ × 8′). Temple 2 of that epoch is of the same plan with the addition of an entrance chamber (*ulam*). Here the internal floor space of the temple proper (including the rear sacristy) is a double square of 20′ × 20′ (i.e. = 40′ × 20′), while the floor space of the entrance chamber was a double square of 10′ × 10′ (= 20′ × 10′). 33 34

temple 1

In the succeeding LC III period the vastly more monumental complex of Temple 1 and the rebuilt Temple 2 shows a different scheme of proportions. Temple 1 is a major hall temple with columns and thus of broader proportion. Here ideal overall proportions of 3 : 2 are the basis of the design. At the same time a principle dimension (in length) of 100′ (cf. 33 cms) was sought. The two concepts were harmonised by means of a projecting, eccentric entrance porch which brought the length up to the symbolic 100′. Necessary adjustments to the plan of Temple 2 increased its breadth somewhat and lost the old exact 2 : 1 proportions.

temple 4
temple 5

The two other lesser temples of this period, Temples 4 and 5, are to all intents replicas in design system of Temples 1 and 2, being based on the double square. Temple 4 which is ranged along the inside of the city wall is itself a double unit. Thus the overall dimensions of the added structure (i.e. excluding the North City Wall) can be seen as two successive double squares set end to end, i.e. a very long building of proportions ca 4 : 1 (on a square of 24′ × 24′). Temple 5 is defective in its front wall and as excavated merges into a forecourt enclosed by the return of the city wall. Supplying the front wall ideally as indicated by the south entrance, the building is an overall double square of 32′ × 32′ (i.e. 64′ × 32′). A small chapel set against the south wall of the Temple is a square 12′ × 12′. 35

Other proportions may have been worked into the design of these buildings but the simple arithmetical ratios stated above are clearly to be seen as a basis of design.

It is interesting to compare with the Kition Temples another building of the same age but of different design and function. This is the large and monumentally
32 constructed administrative building (X) at Ayios Dhimitrios. The building is designed on the old Cypriote schema of the π form (open fronted court). Although an additional rear unit was compounded with the plan, this is clearly extraneous. Building X is not a centralised plan, but the outline of the building proper was designed as a perfect square 100′ × 100′ (of ca 30 cms).

AYIOS DHIMITRIOS *building X*

perfect square

These various instances seem to establish that the first developed rational planning in Cyprus proceeded on very obvious ideas of simple arithmetic proportions such as were and had been current in the neighbouring region of the mainland (ABSP, pp. 124–25, fig. 21). So far as can be seen there is no need to invoke geometric proportions to explain the design.

The one class of buildings from the Iron Age which has been reasonably defined by excavations is the Sanctuary, generally known or thought of as the "Rural Sanctuary", although some of these buildings are located in urban or semi-urban environments. They are particularly notable during the Archaic period but continue on into Graeco-Roman times. The characteristic building form is a small chapel for the most part set in some way into a complex of courts. A surprising number of such buildings have been recorded, perhaps 20 or more. They show that the normal form of the chapel is square or near square ("squarish") as contrasted with the long building (ca 2 : 1 or 3 : 2) of the Late Bronze Age.

rural sanctuary

squarish proportions

The proportions of the near square buildings warrant some notice here. The overall ratio is often ca 5 : 4 or the like. In fact these squat proportions probably arise from the use of a 3 : 4 : 5 right angle in ensuring the rectangularity of the building. The precise overall proportions arise from the position of the setting out lines, taken into conjunction with the size of the building and the relative thickness of the
116–122 external walls. Chapels with proportions determined by this setting out device include e.g. the Sanctuaries at Vouni (SCE III, pp. 76 ff.; IV2, pp. 13–16), Voni (SCE IV2, p. 10, fig. 3 : 4), Meniko (Meniko figs. 2, 3), Soli (SCE III, pp. 391 ff.; IV3, p. 2–7) etc.

VOUNI
MENIKO
SOLI

So standard are these squat dimensions in the context that they serve to highlight by way of contrast the few examples of religious buildings which may derive from the Classical Greek Temple form — e.g. the Temple of Apollo in the Sanctuary of Apollo
128 Hylates at Kourion where the proportion at stylobate/podium verge up beyond 2 : 1 (RDAC, 1983, p. 240, fig. 1). This is also approximately the proportion of the
131 acropolis Temple of Aphrodite at Amathus and seems to reflect the use of the Golden

classical style temples
KOURION

AMATHUS

Section ratio (1 : 1.618) — i.e. 1 : 1.618 + 0.5 = 1 : 2.118 (cf. RDAC$_2$, 1988, pp. 144–45).

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II. FORM

analysis of building form little practiced

Room form and building type analysis as developed by the Deutsche Orient Gesellschaft school of architectural history (for summary outline in English v. ABSP, pp. 126–44) has not been an accepted part of building studies in Cyprus. Only the Swedish Cyprus Expedition (notably Gjerstad and Westholm) employed its resources but marginally and, one might say, somewhat extraneously. Indeed the rather wild use they made of it contrasted strangely with the very painstaking and sober style of their substantive work. Therefore in accordance with the general Cypriote background this class of analytical terminology (*Langbau, Breitbau, Herdhaus* etc) will not be introduced systematically into the present study.

The remains of ancient building in Cyprus are not notable for stylised form — e.g. at the most basic level it would be difficult to assess whether the Island is more properly a broad building region or a long building one. And this matter carries over into contemporary traditional building. In fact traditional building in the lowland areas is broad-room, but some long-room building exists in the mountain areas (v. Acts COO, pp. 520–31, figs. 1, 2, 3).

traditional modern building broadroom

There are however a few instances where buildings of a certain function appear to develop more or less a standard type of plan which can be recognised across intervals of time and place. To this degree we may speak of certain Cypriote building types and set them out as follows:

The Round House. Obviously the most significant type of building ever known in Cyprus was the earliest type, the neolithic Round House, which employed a unique dominance for 5,000 years or more until the middle or late 3rd millenium BC (v. O. Aurenche La Maison, pp. 181–91). All the evidence has been taken to indicate that this type of building was brought to Cyprus in a developed form by colonisation from the mainland in early neolithic times (ca 8th millenium BC). However earlier 152

origins

colonisation remains a possibility and recent investigation of palaeontological sites in the Island appears to raise the date of first human settlement (RDAC, 1988, pp. 1–11). The jist of the evidence is the location of pygmy hippopotamus bones in association with human artifacts (stone tools) and burning. These provide C_{14} dates of ca 9000 BC. If settlement of Cyprus were in Nautufian times, it would tend to emphasize the evolutionary development of the Cypriote Round House. Although, of course, the basic form of the Round House was already established on the mainland in those times.

survival

The long continued survival of the Round House type in Cyprus ages after it had passed out of usage in the Middle East as a whole gives the Island a certain significance in the ecumenical history of the building type. Particularly in connection with the question of its possible ancestral influence on later form of round building. In subsequent ages Round Building was held to be specially appropriate for temples and tombs. Round temples appear later in historical times (*Aedes Rotundae*) seemingly as the product of classical intellectualism, but round tombs (the tholos) occur from the 3rd millenium. It has been conjectured that, e.g. the round (vaulted) tombs of the Mesara in Crete (O. Pelon Tholoi Tumuli, pp. 43–49; K. Branigan, The Tombs of Mesara, London 1970, pp. 52 ff.) are in some ways derived from the old neolithic Round House tradition (Praktika 2, pp. 43–49). If this is valid then the obvious line of transmission should pass through Cyprus. In such fashion the tholos form built tombs at Late Age Enkomi have been suggested as also in the same line of descent (Acts MEM, pp. 250–51; Alasia I, pp. 120–22).

The π form plan. The very basic type of planning (when unconditioned by proportions) appears very truly to have been a norm in Cyprus building of some development, e.g. from the mid second millenium BC. The first person to remark on it was Dikaios who encountered it in his two principal areas at Enkomi in the pre-urban levels. Discussing Area I (Level I) he spoke of "the central court" (Enkomi I, p. 154) and then in Level IIB he remarks (p. 163) "The plan of the new building retained the traditional principle of the court surrounded by rooms on three sides but the principle has been adopted in a larger and more complex structure. This was composed of two main sectors, the northern and the southern, each based on the principle above mentioned ... Thus in addition to the two courts A and C provided for each of the two sectors there was a central court B which formed the core of the whole building". Dikaios also advertised (p. 35) the enduring nature of this type of planning "... open courtyards bordered at the far end(s) by the dwellings and along the street by low walls surmounted by thorny brushwood ... is a typical feature in the rural areas of modern Cyprus".

ENKOMI

162

25

169

The same planning can be recognised e.g. in the administrative building at

MARONI

AYIOS DHIMITRIOS VOUNI

Maroni Vournes, the monumental Building X at Ayios Dhimitrios and also very clearly in the disposition of the basic units of the first Palace at Vouni. 32 138

the "four room house"

This system is, of course, a basic planning device and it informs e.g. The Four Room House of Palestine (ABSP, pp. 134–36, figs. 31, 229). However the particular expressions of the formula are distinguished in character by the detailing. The Four Room House is a fairly exact blue print plan with a set of proportions where the several "rooms" are approximately equal in size giving a slightly long building of ca 5 : 4 or the like. The π shape building is an overall scheme not necessarily involving any particular proportions. The four elements can be arranged on varying ratios and what is most significant are divided internally in any convenient form.

the corridor

It may be worth while noting as an addendum that in a number of instances this type of planning in Cyprus manifests a curious adjunct. This consists in providing direct communication with the rear wing of the building by a long corridor which runs the length of one (or both) of the lateral wings and parallels other circulation via room chains. The feature can be seen very clearly both at Ayios Dhimitrios Building X and Enkomi Area III. It is very striking and idiosyncratic feature which must represent some interesting social patterns now completely unknown. 32 33 26 134 135

AYIOS DHIMITRIOS ENKOMI

The "Old Mediterranean" Temple. This strongly marked type occurs in Mycenaean Greece and in Late Bronze Age Palestine at the same period (the latter part of the Late Bronze Age) when it is found in Cyprus. It is not very likely that the plan originated in Cyprus and therefore it is to be taken as an imported element from the time of the folk movements about the Eastern Mediterranean.

distribution

plan

This temple type is not in essence monumental. It comprises a simple rectangular hall building (e.g. Temple 2 at Kition ca 9 m × 20 m = ca 180 m^2). The entrance(s) is/are at and/or near one end, possibly embodied in a porch or lobby, while at the other end some sort of small chamber, alcove or partition forms a store or housing for the cult objects. The body of the hall, the place of congregational worship and ceremony, contains the altar, offering place, etc. It may be furnished with wall benches and also may incorporate in its structure posts or columns etc. 99

KITION

ENKOMI

Essentially this temple form is embodied as a unitary building (*Einzelbau*) as at Kition (v. Kition Exc V. 1, pp. 24 ff.). However in the idiosyncratic circumstances obtaining in Cyprus its elements were reproduced as constituting a "chapel" within the confines of a larger (city block) building as at Enkomi (e.g. The Chapel of the Horned God, cf. Enkomi I, pp. 191 ff.; II, p. 524). 96 97

historical development

The Rural Sanctuary. The organisation of religion by way of sanctuaries outside the confines of settlement is a native Cypriote tradition going back to the early Bronze Age, if not Chalcolithic times. The sanctuary was originally constituted by

111 enclosed "holy ground" but gradually a chapel building (cella) within the enclosure came to be a focus of sanctity. In this format there is a most impressive development of the rural sanctuary during the Archaic Period which survives on through the succeeding centuries into Roman times.

Throughout this long span the chapel building/buildings manifest a characteristic
117.3 square or squat, near square, cellular plan — sometimes as twin cellae (Vouni 113 & *plan*
122 114, cf. SCE III, p. 212, fig. 119) and sometimes as triple cella (e.g. Soli, v. SCE III, VOUNI
p. 486, fig. 276). Since this squarish cella form is not evident in Bronze Age Cyprus SOLI
and since it occurs from earliest times at e.g. Byblos (ABSP, p. 234, fig. 24, 124), it is BYBLOS
to be taken that the square, squarish cella of the Rural Sanctuary is of Phoenecian *origin*
origin.

Regarding the overall manner of general planning in Cyprus comment is restricted by the lack of settlement excavation. In general, planning was unitary and *unitary plans*
analytic — i.e. by division of larger units. For the long ages of the Round House the situation is obvious. However the earliest rectangular building appears to provide a surprising exception to the general position stated here. At both Kaminoudhia KAMINOUDHIA
22 (Chalcolithic-EC) and Episkopi Phaneromeni (MC-LC) the planning of a village PHANEROMENI
23 settlement appears agglutinative (additive) in principle (cf. Arch in C, pp. 116–24, *agglutinative planning*
figs. 1–3). Thereafter so far as is known general planning is on the principle stated above. However more detailed publication of the extensive urban city block development at Enkomi in LC II times would clarify these matters.

It now remains to suggest something of the characteristic appearance in elevation *elevation*
of ancient building in Cyprus. Over the many millenia covered by this study, the general appearance in elevation of building in Cyprus remained static for long ages to experience some two or three striking mutations.

First of all the Round House building dotted the landscape with agglomerations of *round houses*
beehive huts in a fashion well known from remote areas of the modern world (cf. ABSP, figs. 23, 204, 206; Village Planning *pass*). It is possible that some of these
153 339 round houses had flat roofs but many/most must have shown the conical or domical form proper to the type (cf. Tenta, figs. 21, 22).

Then in the latter half of the third millenium building took on a rectangular *rectangular building*
disposition — the simple rectangular plan being matched by the equally simple
28–31 rectangular elevation, the primal mud-brick block well-known in the Middle East until the middle of the present century.

In the great building development associated with the urbanisation of the Island *simple block form*
in the thirteenth century buildings of this type were much expanded in scale and incorporated finely dressed masonry construction, however the essential elevation remained little changed; although on occasions the expression now assumed a

compound form of several adjacent and/or superimposed blocks as upper storeys, became common place befitting urban conditions. However there is little evidence of any developments to produce variegated elevations. Columnar building was well known but it remained almost entirely an internal feature and there were no columned porches, porticos or façades. Equally roofs remained the flat mud roof — there is little evidence by way of roofing tiles that the skyline was broken by pitched and gabled roofing. For a general impression in elevation at this stage, cf the reconstructions of the Kition Temples, Kition Exc V.1, figs. 68 ff.).

flat roof

KITION 101 102

There is an almost total lack of record of monumental building within settlements during the prosperous era of the native Cypriote Kingdoms. However again in essence the overall scheme of expression in elevation probably remained for long unchanged. The Palace at Vouni is a very grandly designed project but fundamentally it consists of a series of block like units. Here with the addition of a foreign style gate-house.

VOUNI 139 140

classical period

This date ca 500 BC perhaps marks the turning point in the archaeological expression of the Island. The old traditional mud-brick block building survived (as it did until a few years ago) but after this period monumental building could be and was decked out with imported foreign distinction. Either Middle Eastern (cf. e.g. the Mesopotamian type Residence at Old Paphos, the Perserbau) or Greek (buildings adorned with early types of Ionic columns). At this period roofing tiles are found and thus on occasions the pitched tile roof came to break up the monotony of form and colour inherent in the mud-roof — virtually only a horizontal wall.

OLD PAPHOS 141

pitched roofs

columnar expression

332–336

These developments doubtless were sparse and exceptional. The next mutation in Cypriote building came about with the political incorporation of the Island into the Hellenic world and was augmented in Roman times. From the third century BC onwards building in Cyprus came to exhibit two different outer expressions: the old mud brick tradition for village and humble buildings and an international style for monumental civic and religious buildings. Finely carved columns and cornices, tiled roofs with terminal terracotta ornaments; lengthy colonnades and buildings raised up on high platforms; also tier upon tier of stone seating looking onto highly ornamental façades and out over the blue sea. All of which made a marvellous change in the landscape.

Hellenisation

village building

monumental building

132

144 145

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III. ORNAMENT

succession of styles

At least from the period of urban development in the Late Bronze Age onwards, there would appear to have been a continuous succession of ornamental styles each with distinct chronological indications. To speak in an introductory fashion, there were: the Cypro-Mycenaean; The Phoenecian/Aeolic; The Classic; The Hellenistic/Ptolemaic; and marking the end of the period studied here, The Imperial Roman (Marble) Style. Unfortunately in large measure the subject is known from individual elements (*disjecta membra*) rather than from any coherent illustration of the ensemble, the building style — i.e. the order. Particularly does this apply to most of the 1st millenium BC. Whereas some idea is available of the order of Late Bronze Age building (e.g. from Kition) and a perfectly adequate idea exists of Ptolemaic and Early Roman Building (e.g. from New Paphos, Amathus, etc) virtually nothing is known of any building ornamented in the Phoenecian or in the Classic greek style.

painted decoration KHIROKITIA TENTA

The first evidence of architectural ornament in Cyprus takes the form of painted decoration, both floor and mural painting in the early Neolithic Round House. Evidence of this painting has been recovered at Khirokitia (SCE IV, 1A, p. 7) and Tenta (Tenta, pp. 45, 47). However additionally at Tenta some interesting representational painting has survived. This was applied to the face of a loft pier in an otherwise undistinguished small house (n° 11) in the vicinity of the large central building. It depicts two standing (?) human figures, one reasonably preserved, the other vestigial. The overall height of the figures is represented as something under a metre. The vehicle is red ochre on cream wall plaster (Antiquity 55, 1981, pp. 47–51, fig. 2; Cyprus, pp. 20, 21). This must have been as old or older than any other figural painting on a building. It should be not much later in date than the wall painting at Mureybit (Period III) on the upper Euphrates (NNE, p. 47); and it could be earlier than the famous wall painting of Chattal Hüyük from the 6th millenium (NNE, pp. 108–11). It is of course ancestral to the lively painted interior decoration to be found on many modern round houses.

figural painting

the sacred gate

The next style of architectural ornament in Cyprus may well have taken a form which stands at the beginning of ornamental development in a number of instances. This may be called the embellished gate — The Sacred Gate. The gate is representative of the whole building and the vulnerable point where the interior and the exterior merge, thus it is often treated so as both to proclaim the nature of the

building and/or to protect it (cf. R. Levy, The Gate of Horn, London 1948; B. Goldman, The Sacred Portal, 1966). Unfortunately no direct evidence of such ornamented gates survive in late Cypriote building, but inferential evidence of their existence is available from models and also from certain tombs.

VOUNOUS

The well known EC pottery model of a round house sanctuary from the Vounous Cemetery shows just such a "High Gate" (Archaeologia LXXXVIII, 1940, pp. 87
118–25; Cyprus, p. 49, figs. 31, 32) with tall flanking posts and a non structural lintel, a wooden "trilithon". This type of sanctuary is also represented by more cursory models showing only the votive scene before the xoana or plank idols affixed to the inside of the sanctuary wall, an episode included in the Vounous model (v. RDAC, 88
1970, pp. 10–13). It should be noted that the plastic idols (or rather their originals) themselves constitute a type of ornament and they are very much in the tradition of the plastic ornament on the walls of the buildings at Chattal Hüyük — i.e. they are survivals.

As far as the stylised gate itself, this is not superseded but survives on to be merged with other ornamental developments. The essential expression comes to be the free standing posts, columns, etc set immediately before the door jambs. This feature is universally known from the highly ornamented Jachin and Boaz before Solomon's Temple (ABSP, fig. 161). Other examples exist — e.g. at the Temple of Kamid el Loz in South Lebanon (ABSP, figs. 138, 139). N.B. Also representations of the Temple of Melkarth at Tyre (Eretz Israel 9, 1969, p. 7 pl 1). A Jachin and Boaz likewise stood

KITION

before the main Phoenecian Temple at Kition (Kition, p. 98). Also these symbolic 105
columns appear very distinctly on numbers of model shrines (Studies PD, pp. 109–10; AJA 75, 1971, pp. 427–28). N.B. for possible epigraphic evidence of the term *equ* used in this sense in Phoenecia (a temple at Sidon) cf. Nimrud Letter XIII, v. H.W.F. Saggs in Iraq 1955 pp 130–31, pl XXI (there rendered "water course" but elsewhere as a pillar like sacred object, v. History of Religion 5, 1965, p. 256, n 24).

Supplementary evidence of gate ornament appears on rock-cut tombs from the earliest times (Antiquity, 1939, pp. 46 ff.). Although the form of these tombs is non monumental — i.e. the cutting is utilitarian and does not set out designed form — nonetheless in some instances the *stomion* is more finely dressed to represent a gateway with mouldings (viz recessed orders as in the later shrine models). There is also an EC tomb from Vounous with incised chevrons above the door (a common motif in contemporary pottery decoration).

A much later built tomb provides evidence of the other aspect of gate ornament — symbolic protection. Dancing figures appear in relief above the door of an archaic built tomb in the Karpass which are obviously apotropaic (SCE I, pp. 464–65, fig. 186).

It is with the advent of dressed stone masonry that architectural ornament not only takes on a precise standard form but survives across the ages. In Cyprus this stage is reached with the 'ashlar" building style which is one expression of the urbanisation of the Island in the later 13th century. Since the phenomenon is closely linked with the occurrence of Mycenaean type pottery, it has always been associated in one way or another with Mycenaean origin. However in this, as in other aspects of material of the period, it is difficult to find exact parallels in mainland Greece for Cypriote manifestations, so perhaps it is best to qualify the new ornamental style which goes with ashlar building as Cypro-Mycenaean.

ashlar masonry

37.1 278 279 At a number of sites (Myrtou, Enkomi, Kouklia, Kition) squarish stone blocks (e.g. ca 1 m × 1 m × 0.50 m) finely dressed with stepped mouldings have been recognised as constituting the terminal elements of (wooden) pillars (AAA IV, 1971, pp. 101–07). Most of the blocks show receeding fasciae, below which is a cavetto. These have been rightly interpreted as capitals (the cavetto is a crown moulding). However other blocks similar in form have been discovered (at Hala Sultan Tekke) 281 with three or more steps but no cavetto. These have been reckoned as bases (Praktika 279 280 2, 1982, pp. 18–19). These may be alternative forms to the flat stone slabs seen elsewhere (e.g. at Kition).

capitals

bases

These elements constitute a simple architectural order, the first recognisable in Cyprus. Like most other ornamental stonework it would seem to reproduce forms originally proper to another material — in this case obviously wood. As previously stated, this style of ornament goes with the use of ashlar masonry for the socle of mud brick walling. To us, with our taste for monumental ruins, the ashlar stone masonry 241–245 of these buildings is very ornamental with its euthynteria and orthostate courses, marginally draughted and on occasions displaying handling lugs. However its builders would never have viewed the masonry in this light, indeed it is quite possible it was plastered over.

simple order

It must now be pointed out that this architectural order is to all intents an internal order. Such pillars etc support halls or form porticos inside courtyards. As a rule they are not part of the external aspect of the building. In general this remains a sober block composition diversified only at the gate. There is one possible addition — stone horns (of conservation) are well represented in the finds e.g. at Myrtou and Kition 91 Sanctuaries. These undoubtedly crowned monumental altars — they were the outward symbol of sanctity. But were they also used to crown the angle of the building itself (which was also holy)? It is quite possible. Certainly no other type of crowning ornament has as yet been discovered during this epoch — e.g. cornice, crow stepping, etc.

horns of consecration altars

The next set of ornamental elements in Cypriote building are more variegated and

draw on a richer tradition of ornament. They reproduce a few motifs which have widespread and lengthy background in the old Middle East centring on Syria and Palestine. However while the background of the motifs as motifs is clearly to be discerned, the origin and spread of the structural members incorporating these motifs is not entirely clarified. What is at issue is a plant form capital with rising volutes related to a tree of life motif. Capitals of this form are well known in Palestinian building during the days of the Hebrew Monarchy (ABSP, pp. 149–50) but all indications are that their focus was in the (non-preserved) Phoenecian building (Y. Shiloh, Proto Aeolic Capital, Jerusalem 1979; The Israelite Timorah Capital, PEQ, 1977, pp. 39–52). Virtually the same ornamental form appears in early Greek architecture as the Aeolic Capital — i.e. its habitat was the North East Aegaean in the 6th C. BC (P. Betancourt, The Aeolic Style, Princeton 1977). The dates of most of the examples known in Cyprus are sufficiently late in Archaic times for them to be related to this Archaic Greek Aeolic Capital form. However their aspect relates them to the Palestinian form (although the Cypriote development is more varied than in Palestine). Therefore this type of architectural ornament in Archaic Cyprus is probably to be regarded as originally of Phoenician inspiration (examples survived from the later date in Palestine, v. ABSP, p. 150). With this capital a crowning element is proper, the cavetto cornice ultimately of Egyptian origin but naturalised in Phoenecia and Palestine — and the form is known in Cyprus (e.g. on the Royal Tombs at Salamis).

Middle East styles

Timorah Capital

Aeolic Capital

37.2 38

cavetto cornice

Unfortunately almost all the evidence of this type of ornament is from monumental tombs or from old excavations of sanctuaries, thus we lack evidence of how this type of ornament was expressed in buildings. However if it is correct to ally the occurrence of the form in Cyprus with its Phoenecian-Palestinian background, then we are reasonably safe in arguing that it was used to ornament monumental portals, being expressed as gate pilasters (e.g. The Royal Tombs at Tamassos) or in medial pillars supporting the lintels of spreading entry ways (cf. ABSP, figs. 334, 335). Excavation of Archaic levels in important settlements (e.g. Salamis, Kition, Kouklia) are necessary to illustrate ornament in this very prosperous period of Cypriote history.

TAMASSOS

199 238

According to the political vicissitudes of the later Cypriote Archaic period there is another possible source of ornament — Egypt. Cyprus was under Egyptian domination ca 570–540 BC; and very distinctly Egyptianising statuary exists from this period. As yet nothing like a coherent Egyptian style of architectural ornament has been revealed. In fact Egyptian Architecture was never for export. However individual elements were adopted, e.g. in Phoenecia, and worked into the local idiom (P.

Egyptian elements

Wagner, Der Agyptische Einfluss auf die Phonizische Architektur, Bonn 1980). And this is most likely to have been the situation in Cyprus.

The one element of Egyptian architectural ornament which has come to light
37.3 prominently in Cyprus is the Hathor headed capital. There are several well known *Hathor headed capital*
occurrences of this beautiful (but rather non-tectonic) form: one at Vouni (SCE III, VOUNI
288 289 pp. 155, 238, Pl LVII) — others at Amathus. The Vouni capital is said to have AMATHUS
crowned the columns of the court peristyle but some of these capitals could well have occurred in a non-structural context. For the form in general and its usage now see Amathonte II, pp. 70–73 and for a possible Egyptian(ising) column shaft cf. the facetted fragment from Idalion ca 500 BC (v. SCE IV, p. 6). In addition to these capitals there is also a most striking *in situ* example of Egyptian inspired ornament in the painted decoration of a built tomb (80) at Salamis (Salamis, pp. 98–99, fig. 57).

The style of ornament of the succeeding age is strangely enough the least anchored *classical orders*
in actuality of all — the Greek orders of architecture. So far as can be ascertained no building whatsoever has been excavated ornamented in one of the orders of the classical period. A number of late archaic or classical looking capitals have been recorded, but always as *disjecta membra*. The obvious question is what was the origin of such pieces or alternatively in what manner were monumental buildings of the Cypro-Classical period ornamented. And it appears that information related to these questions is sparse and negative. For example when the Palace of Vouni was VOUNI
greatly enlarged and reorganised at the middle of the 5th century BC in a manner which betrays some evidence of Classical Greek planning, no evidence survives of it being embellished with classical ornamental elements. Classical temples in antis or prostyle temples may have existed in Cyprus, but there is little to suggest that
291–295 peripteral temples were (ever) built in Cyprus. Closer examination makes it difficult *no peripteral temples*
to identify any Doric capital of the classical age, and the several early Ionic capitals which exist could be from votive columns. *votive columns*

Following this unsubstantial historical episode there is a complete change in the record for the last style of architectural ornament in the period studied. When Cyprus was brought under Ptolemaic control at the beginning of the third century BC, the type of architectural ornament ruling in Alexandria was brought to Cyprus. As presently revealed nothing of traditional Egyptian building in its Ptolemaic form *Alexandrian style*
came to Cyprus. The ornamental forms which were introduced into the Island were the Hellenistic versions of the orders as received in Alexandria (cf. H. von Hesberg in Das Ptolemaischen Aegypten, pp. 137–45).

37.6 301 There are some of the slighter Doric capitals (domestic Doric) known from this age *Doric*
37.5 296 and a few instances of Ionic, but for the most part what is in evidence is the *Ionic*

Corinthian Corinthian order. This is entirely in various heterodox forms well known in Alexandria (but not only in Alexandria). Very marked in the Paphos region are the varied freely carved forms studied by Ronczewski in the Graeco-Roman museum at *Nabataean* Alexandria. Also the so called Nabataean capital (with variants) is in surprising evidence (at e.g. Salamis, Amathus and Kourion). This evidence is useful in supporting the ultimate Alexandrian origin of the type (Praktika 1, pp. 175–77). Associated with all these forms of capital is always the same (mixed) type of entablature with a Doric triglyph frieze and a Corinithian type cornice with modillions (v. H. von Hesberg in Ptolemaischen Aegypten, p. 140).

303–305 37.9 308–314 41

mixed entablature

To complete this summary characterisation, it is important to emphasize that *limestone* essentially the vehicle of all this ornament was freely carved limestone. This medium carries on unchanged under the first two centuries of Roman rule. And it is the *marble* importation of mass produced marble architectural ornament which marks the end of this study of ancient building in Cyprus.

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b) Town Planning & Public works

Relatively little direct information on settlement planning but this indicates surprising variance from adjacent mainland. N.B. absence of tells. Outline of developments: round house village; non-urban rectangular built settlements; belated urbanisation in Late Bronze Age; survivals; considerable evidence of augmented urbanisation under Ptolemaic-Roman rule. Examples from Khirokitia, Kaminoudhia, Phaneromeni, Alambra, Enkomi, Salamis, Nea Paphos. Questions of origins of urbanisation in Late Bronze Age — Mycenaean imposition v local evolution. Separation of motive force from constituent elements. Probable links between changes in settlement form and foreign impeti. Absence of tells possibly a reflection of social patterns.

Few monumental public works and these from Ptolemaic-Roman times: breakwater type harbours, Roman road system, various types of aqueducts and water storage installations.

Town Planning

The great amount of archaeological activity in Cyprus over the years notwithstanding, the archaeological record there has surprisingly little to say about ancient town planning — but what it does have to say is very surprising. In spite of the meagre information, it can be seen that the circumstances are entirely different from the very uniform picture obtaining on the Anatolian and Syrian mainland so near at hand. This fact is attested in a striking fashion by the present day landscape of Cyprus itself — virtually no habitation mounds (tells, hüyüks etc) exist in the Island. *no tells*

Since there is such a salient difference between Cyprus and its closely neighbouring regions, it is best to highlight the situation by initially setting out the normal picture presented in those regions.

Both in Syria-Palestine and in Anatolia the landscape is dotted with mounds rising to heights of ca 30 m or so above their surroundings and covering (at base) areas of (typically) something up to 10 hectares — and on occasions considerably more, e.g. 25 hectares (v S. Lloyd Mounds of the Middle East). In certain nodal sites the original occupation was at the beginning of settled life in the pre-pottery Neolithic times (ca 8th millenium BC) and the site remained occupied, with perhaps some intermittent periods of abandonment across the millenia down to classical times or later. Indeed on occasions a modern settlement exists on the summit of such mounds. Visible in the eroded scarps of these mounds are traces of the heavy city walls which girdled the settlement as a defence, and equally at the same time, retained its accumulation against crumbling or collapse; which function they continued to perform to a greater or less degree during the ages after habitation had come to an end on the site. Outside of some rare instances (e.g. at Jericho) the earliest date for the erection of these girdling walls was at the beginning of the third millenium BC. And at this time the settlement evidenced other attributes, e.g. public buildings, temples, which characterised it as a town. *mainland picture*

As opposed to this picture of age-long continuity of settlement on the very same site incorporating the development of towns ca 3000 BC, in Cyprus the historical record is quite other. *Cyprus record*

round house period

The earliest settlements (ca 8th millenium) in Cyprus are very similar in description to the contemporary settlements on the (Syrian) mainland — both being constituted by "Round House" building. However, thereafter, the historical development of settlements appear to differ in all points for something approaching 5000 years. Whereas on the mainland this type of round house settlement was succeeded in the sixth millenium by a new type of rectangular building settlement, in Cyprus the round house survived as the ruling form until on into the third millenium BC. However, in spite of this continuity of form, it is difficult to account in the stratigraphic record for anything like this immense expiry of time. At any one site there appears in section a maximum of four or five superposed buildings giving a maximum depth of deposit of ca 4 or 5 metres!

rectangular building

Then at a time (3rd millenium) when the large walled towns were built on the mainland (e.g. Jericho, Megiddo, Byblos, Ebla, Tarsus, etc), in Cyprus the round house settlement was succeeded by settlements composed of a different rectangular type of building. However no such settlement has been laid bare which constitutes anything like the walled city of ca 5–10 hectares then existing on the mainland. Furthermore there are absolutely no instances of any protracted succession of building remains on the one site. In brief, from the middle of the third millenium to after the middle of the second millenium, nothing approaching a town has been revealed in Cyprus. And this notwithstanding that very great numbers of well furnished tombs have been cleared belonging to this epoch.

sudden LC III urbanisation ENKOMI etc.

Then it seems, suddenly, in the latter part of the first millenium (i.e. 13th century BC) very imposing walled towns were built up on the Island. These towns (Enkomi, Hala Sultan Tekke, Kition, etc) were in every way comparable with the contemporary towns on the mainland adjacent (e.g. Ras Shamra, Tell Atshanah, etc) and in point of size Enkomi (ca 16 hectares) is more extensive than many mainland counterparts (and cf. its Syrian trading partner, Ras Shamra, ca 20–25 hectares). However these Cypriote towns were either founded on virgin ground (e.g. Ayios Dhimitrios) or were underlain by simpler building remains of only the previous two hundred years or so (e.g. at Enkomi). In turn, after a short history of several rebuildings, these towns were abandoned, not to be reoccupied — with the exception of Kition (old Larnaka) and Palai Paphos (present day Kouklia village).

AYIOS DHIMITRIOS

survival into Iron Age

The circumstantial evidence of some major sites (e.g. Old Paphos, Kition, Salamis) infers that in principle urban type settlements continued to exist in Cyprus during the succeeding centuries of the first millenium BC. However again, in spite of the enormously wealthy cemeteries, very little building remains have been revealed from the Geometric and Archaic periods. Then from classical times, and *a fortiori*, from Ptolemaic times onward at a number of sites (Salamis, Soli, Kourion, Nea

Ptolemaic Roman towns

Paphos, etc, etc) there survive the building remains of towns in every way similar to other towns throughout the Graeco-Roman world. And moreover these urban settlements were continuously occupied throughout the remainder of antiquity; being abandoned and falling into ruin only because of the pressure of world politics — the devastation of the Arab raids in the 7th century AD.

variation in pattern over time

and from contemporary mainland

This brief historical survey raises two interrelated issues concerning ancient "town" planning in Cyprus. First the nature of settlements in Cyprus seems to vary remarkably both from age to age (diachronous variation) in Cyprus and for much of history to vary remarkably from contemporary settlements in the neighbouring mainland (synchronous variation). Secondly the topographical habit of succession of settlement appears different in Cyprus than in the neighbouring mainland.

It is clear that this strange picture is due in part to the paucity of settlement remains excavated. However it can not be discounted that this lack of archeological material may be due in part to the differences to be explained. In the face of these anomalies all that can be done is to recapitulate the little which may be inferred.

round house settlement

Much of the restricted archaeological information refers to the Cypriote Round House settlement which endures for so long and across several historical divisions based on other cultural criteria — e.g. Aceramic Neolithic, Ceramic Neolithic, Chalcolithic. This type of settlement particularly in the early (Aceramic) phase provides the only substantial building remains cleared approaching in any way the appearance of a town prior to the later second millenium.

KHIROKITIA

42 At the major site of Khirokitia an area of ca 4 hectares was sharply delimited by a combination of natural feature and peripheral walling. Of this expanse less than half an hectare has been excavated. Here in typical vertical succession can be seen
152 something like 3–4 superposed rubble built "tholoi". If this is considered to represent continual habitation in the area, then the historical succession is unlikely to extend for longer than a few centuries at the most. Perhaps the circular design, by avoiding the weakness of angle collapse, makes this construction more stable than rectangular rubble buildings. However it seems very difficult to believe that these tholoi would remain functional for more than a century. All this is as Dikaios sensibly estimated in the first place. However subsequently C_{14} dates indicated a much greater period of habitation for the site. Furthermore recent electromagnetic prospecting is said to indicate that the whole area of ca 4 hectares was occupied by buildings. Seen in this light, the question of migrating habitation area is raised. And this is of primary significance in thought on town planning.

contemporary round house villages

Here it must be noted that the age long survival of this type of settlement in Cyprus should not of itself occasion surprise. Similar types of settlement are widespread both in time and space, and in peripheral regions they show a totally conservative and

exclusionist disposition. Indeed many settlements of this nature survive up to the present (e.g. in Africa south of the Sahara, Indonesia, the Arctic, etc — cf. Village Planning *pass*).

Recently modern settlements of this Round House type have been much studied (for comprehensive bibliography v. House Form, pp. 136 ff.). Although some reportage on these modern communities is influenced (to varying degrees) by ideological considerations, it provides an initiating focus for an attempt to precise the settlement planning in Ancient Neolithic Cyprus. Reducing to its essence, the enormous amount of observation and opinion in the socio-anthropological/architectural literature, two informing principles emerge:

provide background

(1) The Round House settlement is totally and intimately organised in its lay out according to ideas which we would now regard as religious or magical: the necessity to make the settlement conform to the order of existence. This meant the settlement must be laid out in the image of this order, or to put it another way, the settlement is planned as a symbol of cosmic order. It is a mesocosm mediating between the cosmos and man (the microcosm) and it serves to assure the proper connections between the two (the macrocosm and the microcosm) on which settled life alone can be founded and secured (cf. Village Planning e.g., pp. 37 ff., 46 etc; House Form, pp. 49 ff.).

(2) Spatially the whole settlement is the significant unit and all space within it is organic and holy — i.e. the settlement is not to be thought of as a collection of individual buildings/enclosures etc with connections, utilitarian spaces, between them. All the space in the settlement is meaningfully interrelated and occupied as such — which is, of course, to say that in the Round House settlement "town planning" achieved its maximum significance at the very beginning of its history (cf. House Form, pp. 69 ff.).

If these very basic considerations are applied to the remains of the remains of the ancient round house villages of Cyprus, they give rise to some rather pointed observations.

Firstly, so far as the overall conformation and delimitation of these round house settlements are concerned, they clearly exemplify the magico-religious prophylactics. The original situation in Cyprus was in this respect very illustrative. The first colonists were alone and afraid in a world they had in no way made. Yet it soon must have become apparent to them that this world was empty both of predatory man and beast. Nonetheless devoid of any inherited possessions (or experience) to protect them, what they needed was magic, or perhaps better, psychological protection. In defining the borders of their settlement they drew about them the charmed circle; where, settled at the centre of the (meso-) cosmos of their making, they were safe from interference from the unsettled wilds outside (Khirokitia FR, p. 21).

Ancient Cyprus

defence

On the other hand, the excavated remains as yet are not sufficient to reveal attempts at the cosmic articulation of the settlement structure (lay-out) so characteristic of the modern round house villages. Here not only are there macrocosmic symbols — e.g. cardinal directional symbolism of astronomical and terrestrial import; but there are also microcosmic symbols, i.e. villages have head, feet, genitalia, etc. *symbolic structure*

In this general connection it is perhaps possible to make one historical comment. Presumably with accumulated experience of the actual scene this need for protection came to be regarded as less unconditional by the early inhabitants of the Island. After some time settlement in Khirokitia pushed beyond the Western wall, thereby confusing the first interpretations of the site. While during later prehistoric times, e.g. in the Chalcolithic settlements of the Paphos region, habitation appears to be spread out widely and the delimitation of the settlement was perhaps not very real (E. Peltenberg RDAC, 1979, p. 87).

So far as the other principle is concerned, the organic meaningfulness and utilisation of space within the settlement, in spite of the limited excavation areas, it has already been perceived that this applies to the Cyprus Round House settlements, particularly in the early periods. Some indication of the rather complicated ecological/anthropological considerations involved here can be found in the studies of Le Brun (e.g. Espace Collectif); Stanley Price (Structure of the Sotira Settlement) and Peltenberg (Vrysi; The Sotira Culture etc). *total space*

Finally it is to be repeated that these round house settlements were the venues of what might be called total life — viz that supra-ordinate which included the conditions we know as birth, life, death (and rebirth). Thus, in the early stages at least, each round house complex was totally functional. It was tower, tomb and temple in one; and there were no strongholds, cemeteries or sanctuaries beyond the settlement. *total life*

Much of this original *Weltanschauung* appears to have broken down in Cyprus over the millenia, and by Chalcolithic times, the salient change had been made to extra mural cemeteries (as at Souskiou). However the round house building form endured. When it was finally displaced some time in the third millenium it seems likely that there developed a characteristic settlement pattern (and eventually structure?) which has remained somehow normative to the insular nature of the Island ever since. *new order ca 2500 BC*

During the fifties an expert and energetic Archaeological Survey of the Island was instituted by H. Catling and although subsequent political events inhibited its continuance, sufficient ground has been covered so that it accurately reflects the overall situation. However it is

settlement patterns surface survey

important to realise that the results of this surface survey, while giving an idea of settlement patterns at the various epochs, gives no information about settlement planning. Whatever can be said about this position elsewhere, in Cyprus it is categoric — since insufficient test excavations have been carried out to enable the collections of surface sherds and scattered stones to be equated reliably with detailed types of building.

site differentiation

For the Bronze Age, H. Catling published a "*catalogue raisonné*" of the survey results (OA IV, pp. 129–69; cf. S. Swiny Levant XIII, 1981, pp. 51–87). At the broadest and most basic level, some of this published material is of relevence here. First of all Catling was able (or thought he was able) to identify different functional categories of sites: he identified cemeteries separated (considerably) from settlements, and he identified sites which appeared primarily fortifications and he identified sanctuaries. If this division is just, then already the normal process of social development had found its characteristic expression, viz functional specialisation of building forms (cf. R.S. Merrilees, Settlement, Sanctuary and Cemetery). On the other hand, Catling's findings concerning the distribution of settlement is in itself of interest. In a surveyed area settled in the Bronze Age, the density and distribution of settlement sites appear fairly similar to the picture of traditional modern Cyprus settlement — i.e. in agricultural regions sites are close together (normal interval ca 3 kms). This may suggest that in nature the ancient and modern settlements were alike, viz agricultu-

agricultural villages

ral villages sited to exploit the cultivable land and the siting governed by agricultural considerations rather than anything else.

Passing from speculation based on surface surveys to planning data actually revealed by excavation, site differentiation during the Bronze Age is fully attested. Sites other than residential agglomerations existed — both strongholds (e.g. Niko-

fortresses

lidhes) and sanctuaries (e.g. Ayios Jakovos). Indeed recent excavation (at Phlamoudhi *Vounari*) indicates that it may be difficult to distinguish between these categories according to surface indications above.

sanctuaries

So far as residential agglomerations are concerned, gradually some direct indications of the possible nature begin to accumulate. The following sites have been excavated (however incompletely) so as to reveal something of their structure: Sotira Kaminoudhia (transitional Chalcolithic-Earliest Bronze Age/Philia Culture); Alambra Mouttes (late EB-early MB); Episkopi Phaneromeni (late MB-Early LB); and the pre-urban levels of Enkomi (LB I–II).

village settlements

The site of Kaminoudhia near the village of Sotira (and the pottery neolithic site) 21
is of the greatest interest. According to the pottery typology, it is of the Philia culture and could thus be at the very beginning of the change from Round House building. The building remains fully bear out this assessment. The building form is sub-

rectangular with curved and rectilinear walls combined. Even more striking is the
105 settlement form. None of the excavated area show detached individual dwellings, but rather room conglomerations more or less extending over the entire area (e.g. 100 m^2 or more). Penetration into these complexes is by way of long corridors (or alleyways). On this basis and on other analyses it may be possible to suggest individual components but the building is continuous. A curious feature of the planning is the tendency for walls to spread out radially so that enclosed spaces take on a segmental aspect. One can only use the term "hive" to evoke the character of this strange building.

Various factors suggest something like a hectare for the settlement area. Whether this was occupied by several distinct hives or whether it was taken up in the main by one enormously spreading agglomeration should be determined by continued excavation. Nothing quite like Kaminoudhia planning is known in Cyprus, neither previously nor subsequently. It is certainly the very antithesis of the spaced out, discrete individual round houses of the preceeding Chalcolithic era (e.g. at Lemba Lakkous).

23 In some ways related to Kaminoudhia are the coherent remains excavated at Phaneromeni, 8 kms or so away to the S.E. on the river flats near the mouth of the Kouris. The date of this site is ca 1500 BC and thus a half millenium or more later than Kaminoudhia, but the 1000 m^2 clearance shows something of the agglutinative aspect although here the building form is completely rectilinear. Ploughing has furrowed out parts of the plan but the scheme is quite coherent. Something like 30 rooms and/or courts straddle a through street. Although the plan is additive in its genesis it is quite cogent with corridors and yards facilitating the circulation.

PHANEROMENI ca 1500 BC

The overall area of the settlement has not been assessed. Presuming the site verged toward the river bank, there would be ample space for an extension of several hectares (SCA, pp. 59–78).

That the combined evidence of Kaminoudhia and Phaneromeni suggests an early (regional?) type of communal living settlement is an interesting speculation. And equally interesting is the possible link with the Philia Culture, known in the main only from its grave goods.

Evidence of quite another sort of planning comes from Alambra, a site half way down the main road from Nicosia to the South Coast. The site appears to date from earliest MB times and this is approximately mid way in point of time between Kaminoudhia and Phaneromeni (v. Arch in C, pp. 125–41).

ALAMBRA ca 1800 BC

The ancient habitation appears to spread over the slopes of rising land to the west of the modern village and recent surface survey coupled with observations of evidence revealed by military entrenchments suggests that habitation was spread

out over an extended area e.g. ca 12–25 hectares. However there is no indication that occupation was evenly spread out over this area, nor even that it was necessarily contemperaneous over the area. On the other hand, excavation of an area of ca 1000 m^2 on the eastern slopes of the Mouttes ridge has clearly revealed a housing quarter (Area A) a row of terrace houses, which is urban style high density housing (of regular long house units). Since another type of house (cf. Hofhaus style) at Kalopsidha in the eastern Mesaoria roughly from the same MB epoch is also of an urban type (v SCE IV IB, pp. 1–3), there is circumstantial evidence that quite developed settlements may have existed at this time. Direct evidence *in extenso* of their structure however is still lacking.

ENKOMI 1600 BC–1250 BC

Perhaps the most revealing direct evidence of pre-urban settlement planning comes from the deeper levels at Enkomi. Excavation of these levels is not extensive overall. However specimen soundings were made at various areas of the site and a fairly definite picture has been envisaged. It seems that the settlement at Enkomi during the period ca 1600 BC–1250 BC was an unwalled one made up of several slightly dispersed housing agglomerations (or hamlets) each one with its adjacent cemetery. The overall ensemble was protected/governed by one (or more) block-house type fortresses/strongholds. If this is a just estimate of the situation, it would be consonant with some of the partial evidence from the previously mentioned sites: and moreover, it would serve to integrate into the normal "social" picture the various "fortresses" of the age which have been identified both by excavation and surface survey. N.B. these features are by no means completely understood. Over and above their intrinsic significance, they may well have much to say concerning the course of urban development in the Island — and will be discussed in the following chapter (v *in extenso*, Fortin and in particular the site of Dhali *Kafkallia*).

urbanisation

Admittedly the foregoing evidence is partial at best and largely made up of omissions. It is, however, coherent to this degree — nothing so far is recorded in any way akin to the urban development at Enkomi in the latter part of the 13th century BC (LC II–III).

ENKOMI LC IIC–LC IIIA

Seldom can any archaeological succession have evidenced such a dramatic change as at Enkomi between Levels IIB–IIIA (LC IIC–IIIA). Apparently well within a generation the open terrain on which stood scattered groups of rambling houses was enclosed by a massive cyclopean wall and laid out grid fashion with a system of avenues and streets covering ca 16 hectares. And these insulae were very soon built up with continuously fronted city block buildings presenting façades of finely dressed stone masonry — an urban explosion which is only paralleled in the Island by that which has taken place in the current generation since the end of the British rule (v. RDAC, 1986, pp. 97–121; cf. RDAC, 1984, pp. 50–62).

city wall
grid plan
48 49

ashlar masonry

Since these spectacular changes are accompanied by an almost equally pronounced change in the Island's ceramic repertoire — viz the sudden vast increase in the occurrence of Helladic (Mycenaean III BC) pottery, and since ancient history knows this age as one of migration by sea and land, the urbanisation of Cyprus (as revealed at Enkomi) has been put down unquestioningly to the energies of Homeric type heroes — Achaeans, Sea Peoples (Enkomi II, pp. 512 ff.; Cyprus, pp. 86–89). Archaeological finds, ancient records, legends, all concur. Only it must be observed that there is no model of any sort for this planned city in the Aegaean homelands of Homeric heroes. Indeed simply considered on planning analogies *per se* no one would seek for the origins of the Enkomi town plan in Mycenaean Greece.

sources

migrations

models

In reaction to this view associating the late inception of the planned city in Cyprus with Aegaean conquerors, a recent study has represented the phenomenon as a gradual local development throughout the late Bronze Age culminating at Enkomi in the fashion described (O. Negbi, The Climax of the Urban Development in Bronze Age Cyprus, RDAC 1986, pp. 97–128). In support of this latter view it is certainly true that recent excavations on the South Coast at Ayios Dhimitrios (and Maroni *Vournes*) have revealed extensive use of finely dressed stone masonry at a period (according to pottery typology) prior to the Enkomi Explosion. In fact this evidence (and it is the evidence at Ayios Dhimitrios which is most significant), while it may derogate from an Enkomi-centric view of the question does not in itself demonstrate very conclusively that the large planned city in Cyprus is entirely a development within the framework of local resources.

local development

At Ayios Dhimitrios an extensive settlement (apparently over 10 hectares) has been revealed with an imposing public building employing ashlar masonry. It is reckoned to be a one period site (LC IIc) flourishing in the 13th century for some generations prior to and overlapping Enkomi town (i.e. ca 1500 BC–1225 BC). It may be surrounded a town wall and it is probably laid out at least in part with rationally planned streets (Cyprus CLBA, pp. 11–18). Thus in the first place this evidence only slightly alters the chronology of the crucial developments; and whether this is enough to defeat the whole idea of foreign (Aegaean) causation is not necessarily clear. It certainly provides corroborative evidence (if any is required) that the notable elements of planned city (rational street system and fine stone masonry) do not necessarily emanate from the Aegaean homelands. Beyond that, the chain of evidence for continuous local development is not particularly strong. The city of Enkomi still stands in marked contrast to the earlier scene (whether or not this is mainly due to the differing energies of C.F.A. Schaeffer!). None of the other sites mentioned (e.g. Hala Sultan Tekke, etc) as yet have been made to show from a distinctly earlier period anything like the urban development at Enkomi. This may

Ayios Dhimitrios

Enkomi

prove to be so, but the evidence cited for it in the study is almost entirely based on surface surveys. Moreover the views in the study are avowedly programatic — to bring the situation in Cyprus into line with that obtaining in neighbouring Palestine, where the cities flourished in the Late Bronze Age but were eclipsed in the early Iron Age (and as Schaeffer expressed in his own chronology, LC III in Cyprus = Iron Age I on the mainland).

So far as the urbanisation of Cyprus is concerned for the moment it may be useful to keep the energy and the elements separately in mind. It seems that it was a fairly sudden affair, that it was very late compared with the neighbouring mainland regions, and that most likely this sudden new development (mutation) was due to immigrant energies (or command). The question of origins of the elements of the planned city and its schema in Cyprus remains uncertain — i.e. whether these elements were all locally available or were derived from foreign models.

later survival of LC towns

There is no point wasting words in attempting to detail the survival of the Bronze Age urbanisation as revealed at Enkomi. It seems that urban life continued unbroken at Old Paphos and perhaps at Kition, while Salamis site may have been built up on urban lines immediately following the abandonment of Enkomi. However there is no direct evidence *in extenso* of the structure of these developments; and, indeed, very little for the undoubted urban capitals of the old Cypriote Kingdoms in Classical times. Whether these were in the main laid out in the Hippodamian style is presently unknown.

new towns of Iron Age

One matter of some interest may be noted. Several towns were developed on new sites during Geometric (?) and Archaic times. These show a surprising uniformity of pattern in site structure. For the desired maritime emplacement a site was sought out where a coastal flat was backed by a laterally confined ridge running up to a sharply defined peak, cut off from the hinterland by a ravine or gap. This afforded an excellent civil and military conformation. The city walls followed the ridge and ran down to the sea, giving a lower harbour town on the flat and a distinct acropolis at the summit (where the commanding position was occupied by a temple). This formula can be recognised at Amathus, Soli and (*mutatis mutandis*) Vouni. According to all general analogies, the inspiration for such a concept must have been Greek not Oriental (cf. the "Great Circuit" of Hellenistic times).

AMATHUS
SOLI
VOUNI

Graeco-Roman towns
NEW PAPHOS
SALAMIS

Evidence of what must have constituted a definitely new phase in urban development in the Island accrues in Ptolemaic-Roman times. The newly founded town of Nea Paphos shows a typical Hippodamian town plan (Praktika 2, 1982, pp. 317–25) and some such overall planning scheme has been reconstructed for Salamis (O. Callot Praktika 2, fig. 1). The extent of these towns also assumed another scale — 56 57

they approached 1 sq. kilometre = 100 hectares in area. Equally significant was the change in quality of the urbanisation. Those public facilities necessary for the good life were incorporated in the city — baths, gymnasia, theatres, amphitheatres, etc. In fact, once again, as in Late Bronze Age Enkomi, a major town in the Island, was undistinguishable from such a town at large. Salamis and Nea Paphos in Cyprus during Ptolemaic and Roman times, for example, must have closely resembled e.g. Ptolemais in Cyrenaica (cf. R. Martin, Urbanisme).

of ca 100 hectares

with secular public buildings

Considered along the above lines, it is possible to think that significant developments in settlement planning in Cyprus (perhaps the most basic of all cultural phenomena) were associated with foreign impeti. The round house village was a colonial establishment from Syria; the rectangular built village made its appearance when pottery shows evidence of foreign influence (from Anatolia?); the planned city emerges when Mycenaean presence is attested; while the Cypriote town assumes a new dimension under Graeco-Roman rule. It is also rather a strange coincidence that in Cypriote archaeology the ages which display the most opulent collection of objects (pottery statuary, etc) seem to be little represented by building remains viz the EB-LB II periods on the one hand and the Geometric Archaic periods on the other.

foreign influence

One enigmatic question abides. Why in general are there no tells on the Island to mark the ancient towns? Broadly speaking, explanations can take two lines: the matter was determined by physical conditions, or the matter was determined by social considerations. Taking the former line it could be suggested that building was not primarily of mud brick but of other materials (wood, rubble) which were not conducive to tell formation. Certainly collapsed mud brick makes a firm, even foundation, but collapsed rubble dwellings do not provide an easily levelled building platform. It is easier to take away the rubble as building material and rebuild somewhere else. However it is doubtful that this goes to the heart of the matter.

absence of tells

physical causes

It is more profitable to seek this out in the social, economic and political considerations which relate to urbanism. Where the state is organised about large walled cities, to change the location of such cities is a drastic matter. Above all an enormous amount of social capital is invested in the city fortifications, and the continuance of these in itself is enough to predispose things towards the maintenance of habitation on the same site. On the other hand, when the state is based in the main on small unwalled villages serving the needs of agriculture, it is a light matter to change the site of such settlements. There are no big public works involved like the building of urban defences and a limited number of households can organise themselves into a removal squad without much ado.

social causes

When Cyprus was unmistakeably urbanised in Graeco-Roman times, habitation did continue on the same site over the centuries. But by then the sites were so large that the habitation accumulation did not assume the tell pattern.

Public Works

Ancient Cyprus is not conspicuous for monumental public works and such as survive are from the Ptolemaic-Roman period.

pre classical

From earlier times there is little. There seems to have been plenty of arable land in Cyprus for the clearing (Strabo I4, 684–85) Ancient Cypriote agriculture was based on aerial water supply not terrestrial. There are no ancient irrigation canals or *qanats* (which latter might well have been instituted in the Mesaoria fed by the aquifers at the foot of the Kyrenia Range). On the other hand there is relatively little evidence of the irrigation devices proper to aerial water supply, viz diversion damming in wadys and field terracing. Something of the latter have been observed (e.g. at L.B. Kormakiti *Navas*, OA IV, 1962, p. 165 N° 133) but far less as compared with e.g. the slopes of Mt Lebanon in Phoenecia or throughout Southern Arabia. So far as communications are concerned, no prehistoric roads, bridges, harbours have been investigated.

water supply & conservation

terracing

Graeco-Roman harbour works

From the period of Ptolemaic rule onwards some public works features survive. There is evidence of harbour installations at New Paphos (RDAC, 1987, p. 174 n. 39); Karpasia (Ayios Philon RDAC, 1980, pp. 154–56); Salamis (RDAC, 1974, pp. 163–73; Salamine, pp. 35–36); and Amathus (RDAC, 1980, pp. 219, 224). These are all based on the breakwater and enclosure principle, not on the cut out, dredged out basin apparently known and utilised during Hellenistic times at e.g. nearby Lattakia in North Syria (H. Seyrig, in Phoenecians, pp. 61–62).

55

New Paphos

58

Karpasia

Salamis

59 60

Amathus

On the other hand it is possible that the latter type of scheme (the Cothon) was embodied in the harbour at Kition (Kition, p. 14; Kition Exc. V.1 appendix IV, pp. 384–86) and perhaps also in a harbour for Kourion at the present Salt Lake of the Akrotiri Peninsula (Kourion Area, pp. 44, 88). At all events, in spite of being today notoriously deficient in natural harbour facilities, during classical antiquity Cyprus was regarded as an *Insula portuosa* (Ammianus Marcellinus XIV 8.14). N.B. now most recently the whole question has been compendiously documented (RDAC, 1987, pp. 213 ff. at p. 216).

Kition

54 113

Kourion

roads

Evidence from milestones (GCM, pp. 224–25) shows that in Roman times an adequate carriage-road system was established and maintained in the usual manner of Roman colonies. It was not dissimilar in pattern from that immediately set up by the British administration where previously in Turkish days all transport was via tracks for saddle and pack animal. There are virtually no perennial rivers of any magnitude in Cyprus, and for this and other topographical reasons, bridges and viaducts were little in point. One Roman bridge of dressed stone masonry has been recognised in the Paphos region (RDAC, 1977, pp. 227–28, pl LXXXI).

8

bridges

The most significant examples of public works surviving in Cyprus are the provisions for water supply and conservation to meet the augmented requirements of the "*in corpore sano*" life style of Graeco-Roman times. The gravity flow, surface contour schemes at Kourion have been closely studied (J. Last, Kourion, The Ancient Water Supply, PAPS 119, 1975, pp. 39–72). There were two schemes. The
61 original Western one was early Roman if not Ptolemaic. The water was run through end-jointed terra-cotta pipes a distance of 11 kms from a source in a stream bed giving a fall of ca 190 m at a gradient of ca 1 in 50. Generally the pipes were laid below the surface in trenches but on occasions the water was carried at surface level through channelled stone blocks (like the specus of a normal aqueduct). Within the city of Kourion there are various rock cut cisterns and tanks turned to account in the piped water scheme, but many of them originally cut for rain water cachement.

water supply

aquaducts
KOURION

The water supply for Salamis and Nea Paphos was evidently engineered on grander lines. At Paphos remains of a substantial aqueduct were noted last century bringing water down from a source near Ayios Neophytos monastery some 10 kms to the north (RDAC, 1985, p. 292; 1977, pp. 227–28, pl LXXX.1). For Salamis the source was the (still) prolific springs about Kythrea, 40 kms away across the Mesaoria at the foot of the Kyrenia Range, and the water was carried quite directly to the city by a substantial built masonry aqueduct. Some stretches of this survived into modern times. The pointed arches are a Lusignan restoration (R. Gunnis, Historic Cyprus, p. 420; E. Enlart, Gothic Art . . . in Cyprus, London 1987, p. 384, fig. 340). A number of inscriptions also survive relating to this aqueduct. Those about Kythrea indicate a Severan date (SCE IV3, p. 17). However recently an inscription came to light at Angostina on the line of the aqueduct which appears to indicate the construction of the aqueduct by Nero in the mid-first century (v. RDAC, 1963, p.
64 48). Certainly what must be the city terminal of any aqueduct, "The Loutron" a large columnar masonry cistern (SCE IV3, pp. 16–18, fig. 14) appears associated in design with the Temple of Zeus (of early Roman date).

NEW PAPHOS

SALAMIS

Other inscriptions record aqueducts of early Roman date which have not been preserved: e.g. at Soli (under Nero, GCM, p. 223 n° 21), and at Kyrenia (under Claudius, GCM, p. 222 n° 20).

150 Excellent and typical public latrines are preserved at the Salamis gymnasium (RDAC, 1966, pp. 16–17, figs. 1–3).

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c) Fortifications

Fortifications apparently of late development in Cyprus. Origins involved in dubieties of urbanisation of the Island. Non-urban fortifications (fortresses) of various descriptions from ca 16th century BC. Examples: Nitovikla, Glyka Vrysis, Enkomi, Krini Merra, Dhali Kafkallia. Possible fortified settlement of foreign invaders in 13th century at Pyla Kokkinokremos & Maa Palaikastro. Urban fortifications at end of 13th century BC: Enkomi, Kition, (?) Idalion. Possible continuity into Archaic times at Idalion. Well preserved Archaic city wall and gate with Persian siege mound at Old Paphos.

Curtain design not sophisticated; rectangular face towers; simple aperture gates with internal development giving bent entry; also overlapping curtain gates. Survival of forms from Late Bronze Age into Archaic times. Construction: (Cyclopean faced) stone socles with mud brick superstructure. Hellenistic walls at New Paphos probably of finely dressed stone masonry. Cyprus as province (ca 300 BC–200 AD) peaceful and unfortified.

early recognition of ancient fortifications

Because of its varied topography, its ways crooked and straight and its rough places and plain, Cyprus affords many naturally strong points for fortification. It is not surprising that from the beginning of the archaeological exploration and survey of the Island numbers of sites have been identified as "fortifications" (OA IV, 1962, pp. 148 ff. n° s 48, 76, 167, etc). Whether, of course, this is just or not is another matter (to be discussed in the following pages). 12 13

In some measure these attributions were influenced by the undoubted examples of fortifica-

tions in the Island at a later age. From feudal times (Byzantine and Frankish) there are still to
13 be seen the monumental and very picturesque relics of castles (e.g. St Hilarion, Kantara, etc). It is thus natural to extrapolate into the past when confronted with building remains on topographically similar sites. However it must not be overlooked that from the same mediaeval period there subsist quite similar monuments (some still functional) on equivalent sites. These are the rural monasteries which have been such a feature of Cypriote life, socially and politically (e.g. Bellapais, Stavrovouni, etc). And it certainly would not be possible to distinguish between castle and monastery on superficial impression of site and monumentality alone. Another preliminary matter must be mentioned. It is customary to examine fortifications under two headings: urban fortifications and non-urban fortifications. In Cyprus, however, this straight forward matter is complicated by the uncertainty which obtains on the application of the unusual/idiosyncratic nature of the Island's story.

mediaeval remains

castle & monastery

urban & non urban

It is reasonable to begin a compressed account of fortification in Cyprus at Bronze Age times. This rides curiously over the lengthiest epoch in the Island's history — the Neolithic and Chalcolithic periods. First of all the entity of specialised, non-urban fortifications is unknown to the spirit of that age. Secondly although (in the earlier millenia) Neolithic settlements were established in naturally strong and
42 isolated positions, and further isolated by walls and ditches, the prevailing assessment seems to be that this evidences not so much military defence against men, but magical protection against inimical natural forces. In any event, to date nothing has been discovered in Neolithic Cyprus similar to the "Great Wall of Jericho" (ABSP, p. 25, fig. 80).

historical survey

Neolithic

If we thus omit the girdling walls of Khirokitia, Tenta, etc (and cf. Vrysi), then the first clearly demonstrable military engineering in Cyprus could be as late as the middle of the second millenium. Here once again the strange dubieties of Cypriote archaeology ultimately rest on ceramic studies — and the hitherto confident assumption that typology = history. Indeed perhaps in no category of building is understanding so obscured by the uncertain chronology as with fortifications. The following type sites illustrate developments in fortification within the Island and this restricted period.

mid 2nd millenium BC

SITE	TYPE AND DATE	REFERENCE
Ayios Sozomenos (Nikolidhes) *Glyka Vrysis*	Blockhouse-fortress LC I–II	Fortin , pp. 45–50; SCE IV1 B, pp. 3–5, IV1 c, pp. 30–32
Korovia *Nitovikla*	Fortress LC I	Fortin, pp. 152–83, SCE IV1c, pp. 33–35
Krini *Merra*	Fortress LC I	Fortin, pp. 118–25
Dhali *Kafkallia*	Fortified Settlement MC — LC I	Kafkallia, pp. 25–28
Pyla *Kokkinokremos*	Fortified Settlement LC IIc	Kokkinokremos, pp. 6 ff. N.B. pp. 23–24
Maa *Palaikastro*	Fortress Headland Settlement LC II	Fortin, pp. 359–83; Paphos, pp. 110–113
Enkomi	Blockhouse-Fortress & Urban Fortifications LC I–III	Fortin, pp. 210–66; SCE IV1c, p. 38; Enkomi I, pp. 66–81, 120–52; Enkomi II, pp. 512–13, 517; Enkomi BRC, pp. 2–5
Larnaka *Kathari* (Kition)	Urban Fortifications LC II–III	Fortin, pp. 268–92; Kition Exc. V_1
Sinda *Sira Dash*	Urban Fortifications LC III	Fortin, pp. 193–207
Dhali *Ambelleri* (Idalion)	Urban Fortifications LC III	Fortin, pp. 50–56; SCE II, pp. 460–641; SCE IV1c, pp. 35–38, SCE IV_2^2, pp. 2, 5 ff.; Idalion, pp. 44–48
Salamis	Urban Fortifications 1st Millenium	Salamine, pp. 147–52
Amathus	Urban Fortifications 1st Millenium	RDAC, 1984, p. 266; RDAC, 1980, pp. 223–24; Cor. Arch, pp. 145–71; RA, 1986, p. 200
Soli	Urban Fortifications 1st Millenium	SCE III, p. 400
Old Paphos	Urban Fortifications 1st Millenium	Paphos, pp. 192–215
New Paphos	Urban Fortifications Early Hellenistic	Paphos, p. 231, SIMA, 43, pp. 367–68

earlier development of non urban

then superseded by urban

total decline in Graeco-Roman times

On the face of it this table affords several observations. First of all if the chronology is in order, reasonably defined fortresses appear in Cyprus at a somewhat/marginally earlier date than urban fortifications. There could be a time difference of ca 300 years, viz ca 1550 BC and 1250 BC. Secondly if present archaeological evidence is reliable, once Cyprus was urbanised security was effected from fortified towns and the category of rural and way side fortresses disappears from the record. Thirdly with the definitive subjection of Cyprus by the Western world powers of Greece and Rome, fortification of any nature in the Island was of little account. (It was revived hastily in the 7th century AD with the threat from a resurgent Arabised orient. Thereafter it was of great account until the definitive establishment of Ottoman rule.)

fortresses

social background

According to this overview, the story of fortification in Cyprus should begin with numbers of fortresses apparently of the mid-second millenium. However, first of all their nature must be questioned. They occur suspiciously well grouped both in time and place. Are they a real historical category or are they an archaeological construct? Does their existence corroborate the urbanisation of Cyprus? They have certainly been the mainspring of the most ingenious theorising about ancient Cypriote history: regional conflicts, foreign exploitation, dominion, observation, refuge. What exactly lies at the basis of such wide ranging speculation?

Like so much in Cypriote archaeology, the concept of the fortress was systematised by Gjerstad (SPC, pp. 37 ff.). In his early survey of the Island he noted and excavated what appeared to be a stout blockhouse of ca 160 m–200 m with some
65 tenements attached. This was at the site of Nikolidhes (now more exactly Glyka Vrysis) near the village of Ayios Sozomenos in the centre of the Island between Nicosia and Dhali (Idalion). He stated that he could observe no sufficient traces of a settlement large enough to warrant such a massive building, so he identified the building as a fortress = non urban fortification. Most likely he was correct in divorcing the building from a town, but whether it was divorced from a settlement is another question.

NIKOLIDHES

During his exploration of the Island at this period, Gjerstad also visited some standing ruins far away in the N.E. part of the Island (SPC, pp. 10–11) which had previously been noted by Hogarth (Devia Cypria, pp. 77–78). At this juncture, Gjerstad identified the remains as comprising a cemetery adjoining a town dominated by an acropolis. Five years later when he led a Swedish expedition back to Cyprus, Gjerstad included these ruins in its excavation programme and they proved
66–68 to be the impressive fortress site of Nitovikla on the east coast of the Karpass Peninsula near the village of Korovia (SCE I, pp. 371–407). Following on the publication of the field excavations, the building has been described and discussed

NITOVIKLA

several times (Problems, pp. 10–11; SCE IV 1B, pp. 3–5; SCE IV 1C, pp. 33–35; Fortin, pp. 152–82).

According to the area plan (SCE I Plan IV 2) some high ground running down to the sea terminated in a sizeable plateau ca 30 m above sea level. On this relatively level expanse girdling walls enclosed a roughly rectangular area of ca 4 hectares (ca 400 m × 100 m). The block plan shows a surprisingly mediaeval looking castle complex. In fact there is a single large heavily walled enclosure prefixed by a roughly walled in cemetery, and having at a rear angle overlooking the sea a four square fortress-keep or donjon. Accepting the reconstruction, this fortress was set partly projecting beyond the angle and covering an area of ca 40 m × 40 m, i.e. 1600 m^2 — i.e. the fortress itself was roughly 10 times as large as Nikolidhes *Glyka Vrysis*, and 3 times as large as the blockhouse at Enkomi. There exists a very pleasing perspective reconstruction view of this fortress (SCE IV 1C, p. 34, fig. 19), although it is by no means obvious to match up the regular four-square fortress (central court, lateral ranges, twin-tower entrance plus angle towers) of the reconstruction with the incomplete and straggling walls shown in the plans (SCE IV 1C, p. 33, fig. 18). 66 67 68

ENKOMI

One of the first areas of excavation opened up by Dikaios at Enkomi in 1948 (Area III) provided very crucial evidence on the historical development of fortification in Cyprus (v. Enkomi I, pp. 18–152, Enkomi II, pp. 449, 501–02, 506, 509, 516, 524, 531).

block house

On the northern perimeter of the ancient city area there came to light a large (500 m^2) blockhouse type of building with quite massive walls. Its original period was LC1 (middle 2nd millenium) exactly as postulated for the buildings at Nikolidhes and Nitovikla — and there are certainly aspects common to these three buildings. There were, however, differences. The stout walls and evidence of access to upper levels together with what looks something like an angle gate tower/turret at one extremity plus a curious servile "base court" at the other, all suggest that this Enkomi building had defensive properties (v. Enkomi I, pp. 16–34). However it was evidently not entirely of military design (as, e.g. the Nitovikla Fortress). One (the eastern) entrance gave on to what appears an administrative suite, while the other (western) end of the building there was an entrance to what seems a metal working complex. Living accommodation was presumably on the upper floor. 74

administrative & industrial apartments

Perhaps the most notable evidence accruing from these excavations is that of historical development. A building of similar (or extended) lines continued to exist on the emplacement until the town was abandoned, i.e. roughly for 400 years or more from before 1500 BC to ca 1100 BC. However each successive renovation or rebuilding diminished the military aspect of the building. The original character of the building remained recognisable for over 100 years (cf. Enkomi I, pp. 21–34; Fortin,

pp. 212, 215, figs. VII 6 & 7). Thereafter this became past history and its character
134 was transformed into a large and variegated urban style building (cf. Enkomi I, pp. 34 ff.; Fortin, pp. 217–18, figs. VII 8 & 9). *transformed into an urban building*

It is these three excavated buildings which constitute the factual basis for theories concerning (pre-urban) fortification in Cyprus at the middle of the second millenium. Therefore it behoves us next to consider in brief the nature or function ascribed to them. Perhaps the most straightforward case is Nitovikla. It is generally accepted that this constitutes a watchtower stronghold against attack by sea with associated place of refuge to which the surrounding agricultural populace could retire in time of peril (SCE I, p. 373; Cyprus, p. 61). The alternative would be that it was a "foreign castle" where a mainland power kept a foothold in the Island (cf. Problems, pp. 198–99 — later much refuted). The small walled cemetery should be crucial in determining their issue. The (unusual) fact that it is walled in might suggest that those buried there were, in fact, living and dying in hostile territory. On the other hand, neither the type nor the contents of the rock-cut chamber tombs are exceptional (SCE I, pp. 407 ff.). The blockhouse at Enkomi was fitted by its excavator into the overall site development. He considered the evidence of the earlier levels (viz down to the mid 13th century, LC IIB) indicated that the site consisted of several dispersed groups of houses (hamlets) protected/dominated by the blockhouse (or indeed), several such blockhouses) which controlled metal production (Enkomi II, pp. 499 ff.). More controversial is the nature of the fortress blockhouse at Glyka Vrysis in the centre of the Island. The ancilliary circumstances of the excavated building have never been very clear. Gjerstad spoke of the surrounding occupation being too small to constitute a "settlement" large enough to warrant such a building. And thus he reckoned it to be one of a chain of frontier fortresses with some associated garrison dwellings (SPC, p. 37; Fortin, p. 491 gives an area of 704 m^2 for the site although what this exact figure is based on is nowhere stated). However in view of Dikaios' assessment of the rôle of the much larger blockhouse at pre-urban Enkomi, it is difficult to see why the Glyka Vrysis (Sweet Water springs) building should not be broadly similar in function — viz the dominant "hall" of a settlement.

function

NITOVIKLA

ENKOMI

GLYKA VRYSIS

Considering only these three excavated buildings there might appear to be two types of "fortress" — that associated with surrounding habitation (Enkomi and Glyka Vrysis) on the one hand, and the isolated watch tower/*Fluchtburg* on the other. However further information is available from surface investigation (survey work), particularly from the Departmental programme instituted by H. Catling in the fifties and this must also be considered (v. OA 4, 1962, pp. 129–69). Fortin, in his comprehensive survey, lists a dozen or so fortified sites belonging to the historic milieu under discussion which have been identified by archaeological surveys. The

isolated & non isolated

two geographical groups

most significant of these fall into two geographical groups of three or four each: the Ayios Sozomenos Plateau Group (pp. 38–85) and the Kyrenia Pass Group (pp. 108–30). 71 72 69

AYIOS SOZOMENOS *plateau*

The former group are closely adjacent to Nikolidhes *Glyka Vrysis* and their evidence considerably affects its interpretation. Gjerstad noted that fortified sites appeared on the edge of the plateau above Ayios Sozomenos, but did not make very clear their geographical and topological relation to the site he excavated (SPC, pp. 5–6, 37 ff.). This information is now provided by Fortin (pp. 38–85) incorporating recent survey results. Whereas *Glyka Vrysis* site comprises a blockhouse building with associated habitation (of unknown extent) on the plain immediately below the precipitous scarp, the (three) sites ca 40–50 m above on the crest of the scarp are sizeable enclosures of varied/unknown building development. Their nature has been asserted almost entirely from their (relatively inaccessible) position rather than from their composition. And until something of this is uncovered by excavation, all comment is very hypothetical. Unfortunately these places are now in a military area on the line which divides the Island. This is the situation Gjerstad and others (SPC, p. 37, Problems, pp. 11 ff.) envisaged for them in the second millenium BC, but be it noted there is a salient difference. It was thought that then they lay on the central meridian which divided Western Cyprus from Eastern Cyprus. Now they lie on an arbitrary (?) line which divides Northern Cyprus from Southern Cyprus. 65

possible frontier fortresses

At present three sites have been identified within a stretch of ca 3 kms along the scarp. They are all partly or wholly enclosed by walling, which in conjunction with the steep scarp secures their defence. Whether or not by chance they are all of approximately the same area, viz 5–6 hectares! Somewhat isolated at the North (East) is Barsak, 4 kms NE of Ayios Sozomenos village. The other two sites lie very close together ca 2 kms to the S.W. of Ayios Sozomenos village and separated one from another by a wady. 72

The central site is properly Nikolidhes and is immediately above *Glyka Vrysis;* indeed the two may well be associated as upper and lower town. Across to the ravine lies Kafkallia. It was surveyed in connection with work at Dhali (Idalion) 3–4 kms to the South across the plain, accordingly the official name of the site is Dhali *Kafkallia.* Whereas it is stated that at the other two sites there is little evidence of buildings other than the substantial circuit walls, at Kafkallia a thorough surface survey resulted in a publication containing an excellent general plan of the site (Kafkallia Fig. 4). This shows the entire area of ca 5 hectares closely built up, some of the units being very substantial.

These three sites are more or less contemporaneous (MCII-LCI) are grouped closely together in identical situations and are of similar dimensions. Thus archae-

ologically speaking there is every predilection to assign them to the same category. Fortin managed this by considering their location in a naturally defensive position withdrawn from the arable land below and, as he emphasised, without immediate water supply. Therefore he considered them all to be not permanent settlements but emergency places of refuge for the cultivators of the plain. However this analysis is somewhat partial. The Kafkallia site is heavily built over and the source of water for it and Nikolidhes (the Glyka Vrysis) is no more remote than that of many normal settlements.

KAFKALLIA

Swiny's report on the Kafkallia site raises several interesting considerations. First of all there is the general falliability of identifying sites as settlements or fortified enclosures according to surface indication. "At first sight little can be distinguished in the way of architectural relics other than a few limestone blocks standing on edge here and there ..." However on closer inspection ... the whole site proves to be covered with remains of walls ... never protruding more than a few centimetres above the ground" (Kafkallia, p. 25). Indeed the whole question is very reminiscent of the contemporary Syro-Palestinian question of apparently unbuilt up "Fortified (Hyksos *sic*) Camps" v "New (Lower) Towns" which came to a test in the excavations at Hazor (v. ASBP, pp. 46 ff., 157).

a built-up settlement

73 The overall conformation of Kafkallia recalls Nitovikla: two enclosures, one of them with a sizeable square bastion at the angle. But the circumstances are in fact reversed. At Kafkallia the bastion is apparently vacant but the enclosure is covered with building. The detail of the general plan shows that some of the individual building units are of the *Hofhaus* type and suggest comparison with the (MC) house at Kalopsidha. In these circumstances, Swiny is straight forward when he says (p. 26) "It was principally a settlement". This being the case since Kafkallia was a large walled settlement, it is of significance in the vexed question of the urbanisation of the Island.

If Kafkallia were surveyed on the adjacent mainland it would certainly be called an MB town (which, of course, does not necessarily make it one in the peculiar Cypriote conditions). The preliminary report on the American work at Idalion (of which the Kafkallia survey was an off-shoot) states that, at the close of the Bronze Age (i.e. LCIII), there was a shift in settlement and habitation of the Kafkallia site was abandoned in favour of the newly founded town of Idalion (Idalion, p. 2). All this may well be. Idalion came to be the capital of a Cypriote Kingdom. If its origins as a town go back to Late Bronze Age times, it is difficult to see what essential difference in site development would have existed between it and older Kafkallia.

relation with IDALION

KYRENIA PASS
KRINI MERRA

The issue of status appears more clear cut in the group of enclosures flanking the
69 Kyrenia Pass. Only one of these, Krini *Merra*, has received any public notice.

look-out posts

Reference to the others exists to all intents only in survey records. The location of these enclosure sites on rugged crests giving good look out and control over the strategic pass suggests that this was their *raison d'être* rather than that they were basically agricultural settlements. As an example the Krini site is only ca 1.5 hectares in area and is defended by a very massive wall. If it be objected that one does not need to pile up several hundred tons of rock to create a look out, then it can be admitted that the enclosure also served as a refuge stronghold (v. Fortin, pp. 118–25; CAH II 1, p. 168; CAH II 2, p. 197). 70

KOKKINOKREMOS MAA PALAIKASTRO

Whatever be the exact nature of the mid 2nd millenium fortifications discussed above, if we proceed more or less chronologically and at the same time topologically towards urban fortifications, we must consider two recently excavated sites. And these according to the excavator of both, V. Karageorghis, would be formally betwixts and betweens. The sites are Kokkinokremos on highland near Pyla in Eastern Cyprus overlooking Larnaca Bay, and Maa *Palaikastro*, a constricted headland on the West coast of the Island, 11 kms north of New Paphos. V. Karageorghis sees in these sites intrusive fortified bases for Achaean etc. invaders of the mid and late 13th century BC (i.e. LC II B–C times), viz they are habitation sites, but they are also essentially military in scope — they are base camps, *bastides*, etc. However, it is no place here to discuss the validity of this historical interpretation which is based in the main on minutiae of (Mycenaean) ceramic analysis.

habitation sites with military significance

KOKKINOKREMOS *strategic position*

Irrespective of their *raison d'être* the building remains at Kokkinokremos are undoubtedly of some military significance. The area is certainly a strategic one — it is a gate from the Mesaoria on the north of the Island to the S.E. coast. Pyla (Gate) the modern village in the area is (so far as I know) the only bi-communal village to survive the recent division of the Island. Notwithstanding it lies virtually on the border. However, in discussing the nature of the building remains at Kokkinokremos, a most significant fact is not kept in mind. The excavation comprises a very small area near the scarp of a table mountain. The total summit area is ca 600 m × 400 m in extreme dimensions. This is intersected in part by a ravine but the level table is probably ca 8 hectares in extent. According to the survey carried out by the excavator, the entire plateau was inhabited (Kokkinokremos, pp. 4–5). This shows that the settlement was of considerable size. Is it really practical to determine the nature of a settlement which could be equivalent in area to a normal sized bronze age town (ca 4–8 hectares) by a simple excavation in a special (marginal) locality of ca 400 m^2 area? The excavated area may look like barrack quarters; what the whole settlement looked like is another matter (v. Kokkinokremos, pp. 1 ff., fig. 1). Once again a besetting limitation of Cypriote archaeology, *viz* restricted exposure, vitiates proper analysis.

limited area excavated

165 As it is, an area of ca 35 m × 10 m has been cleared, i.e. roughly the size of a small public building (v. Kokkinokremos, pp. 6–20). Thirty odd rooms, mostly small, are set against a continuous boundary wall which is of marginally heavier construction than the others. This wall is referred to as the fortification wall. The term requires qualification since, if the wall were isolated, it would be an extremely frail fortification — indeed it would be structurally instable unless buttressed. However it is certainly possible to see the whole marginal complex, viz the continuous row of chambers ca 5 m deep, as possessing defensive properties (v. Kokkinokremos, pp. 23–24).

peripheral range of building

The excavated remains were certainly planned and constructed as an overall scheme. They are not part of a rural village and some overriding consideration must have prompted this considerable building development on a site where there is no supply of ground water (v. Kokkinokremos, pp. 24–26). It is important to note, however, that although the remains are products of central planning, their construction is entirely in traditional rubble (cf. Kokkinokremos, Plan 1). There is absolutely no evidence of finely dressed (ashlar) masonry as at Enkomi. Although, of course, this may very well exist in the unexcavated central areas of the site (as at Enkomi).

overall planning

rubble masonry construction

Notwithstanding the fact that they have been closely linked historically (v. Kokkinokremos, pp. 29–30), the excavated remains in Maa *Palaikastro* (*Palaecastro*) are of quite different stamp than those at Kokkinokremos. Unfortunately as yet only brief, interim publications are available for Maa. The region forms a salient, constricted promontory with quite precipitous, 15 m high, sea cliffs. It is ca 350 m long and 150 m broad, thus covering an area of ca 5 hectares. The neck where the promontory springs from the mainland is very constricted — i.e. the whole site can be effectively isolated by a wall ca 70 m long. And this was done in a very solid manner.

MAA PALAIKASTRO

headland site

It still remains to be clearly demonstrated what interest these fortifications served: invaders fortified beach head as *per* V. Karageorghis, or a fortified emporium as others have suggested. It should be noted that this heavy land wall does not, in itself, necessarily indicate that Maa was an invaders' beach head. The wall operates to protect the site against sea-born attack just as much as against local aggression, since sea raiders will obviously beach their craft somewhere convenient near by on the coast and approach the city from the rear. In any event, because of the clear chronology of its short period of occupation (ca 1230 BC–1100 BC), i.e. two generations or one lifetime), Maa provides important historical evidence for Cypriote fortification.

possible function

47 The promontory neck was walled across by a 3.50 m broad wall, the upper part of which must have been mud brick but the footings or socle which remains are of Cyclopean stone masonry construction, viz the two faces from large roughly trimmed

Cyclopean fortifications

boulders with a solid rubble core. The land gate itself was of very characteristic form: the overlapping type where one wing of the curtain overruns the other for some distance (here 2.5 m) forming an entrance corridor along the line of the walls (Paphos, p. 110, fig. 98). It is a type known from earliest times, cf Syros in the Cyclades (v. AA, 1972, p. 160, fig. 12; ABSP, p. 192). The land wall at Maa is thus of similar type to the Cyclopean wall at Enkomi which was constructed at about the same time, while a parallel to the gate exists apparently at Lara, a very similar headland site 12 kms to the North but not as yet closely investigated (v. RDAC, 1978, pp. 62 ff., fig. 3). In addition to the land wall, the cliffs were strengthened by sea walls which are little studied. These are in places 4 m broad but the facing is not so massive.

grid planning
ashlar masonry

Although as yet the settlement on the promontory has not been published in details, it appears to have been laid out rationally with a street grid system and certainly incorporated some finely dressed stone masonry in its construction (v. Paphos, pp. 110–11, fig. 98).

ENKOMI

Cyclopean fortifications

At Enkomi in the latter part of the 13th century (LC IIc) what had perhaps been a dispersed collection of dwelling complexes was urbanised and provided with urban fortifications — a massive Cyclopean type wall. Since this enclosed an area of ca 16 hectares, it had a run of more than 1 kilometre (Enkomi I, pp. 66–81, 120, 152; Enkomi II, pp. 512–13, 517; Fortin, pp. 214–23, 249–66). According to archeological evidence this work of urban development was accomplished at speed well within a generation, there the building of the wall must have been a very large scale public work indeed organised in gangs each responsible for individual sectors, which fact doubtless accounts for minor variations in construction. The wall was ca 3 m broad, of mud brick on a massive stone socle. The normal construction of the wall consists of facing of slightly trimmed boulders set up on edge (as with later orthostates) of specimen size 4 m × 2 m × 1 m (i.e. weighing over 10 tons). This constitutes either the external face or both faces. The core or backing to this megalithic facing was more or less solid rubble or rubble in packed earth.

irregular curvilinear curtain

Whatever the merits of construction of this city wall (and they appear considerable) it evidences little in the way of sophisticated design (Enkomi BRC, pp. 2–5, fig. 7). The ordonnance comprises a massive curtain with four (?) main gates together with rectangular face towers. The curtain incorporates no military refinements: indented trace, salients or the like to permit enfilading. It is entirely non-geometric in disposition and suggests if anything a curvilinear background rather than an angular one. To this there is a limited exception. The town site lies directly under a scarp which borders it on the eastern flank. It is presumed (not very convincingly) that this was to operate as concealment from forces approaching by

sea. In any event, in the S.E. quarter where the wall approaches the scarp and presumably mounts on to the crest (RDAC, 1986, pp. 101–02, the trace of the wall is angular and broken by a number (4 or 5) of regular salients (ca 5 m × 2–3 m in projection), apparently designed to provide for special requirements, structural and/or defensive. *short stretch of different design*

The North Gate, the only main gate to be investigated closely, is apparently
163 without guile — a simple hole in the wall! However a large building was set immediately inside this gate so as to baffle direct entry and in practice produce a bent entry design. An associated factor here is that immediately to the East there is a very
75 large rectangular bastion (ca 21 m × 12 m) projecting from the face of the wall. The surviving remains show no communication with the interior of the city. The tower is not bonded into the curtain and incorporates masonry of a different style (ashlar). In these circumstances, although originally presumed to be a gate tower, it has latterly been considered a sanctuary enclosure (RDAC, 1975, pp. 50–53). Both interpretations remain possible. *North gate* *North tower* *possibly a sanctuary*

The large and enduring town of Kition (Roman Citium — presently enmeshed in the urban sprawl of contemporary Larnaka) grew up on an area of physiographically defined firm, rising ground surrounded by lower marshy terrain. It is thus fairly straightforward to trace the line of its city walls (SIMA, 43, pp. 52 ff.). These have an extended circuit of ca 3.5 kms enclosing an area of something like 50–70 hectares! However, in only one limited region has the circuit been closely investigated. This is the Kathari quarter at the northern limits of the city where V. Karageorghis has brought to light a sanctuary complex enduring from the Bronze Age down to Hellenistic times. In this area the structural history of the city walls has been elucidated over a period of ca 3 centuries (thirteenth to tenth centuries BC). The later history is not apparent in these excavations, nor on the other hand is it known what the remaining circuit may have been at this early date. KITION *fortifications* *limited exposure*

The Departmental Excavations in the Sanctuary Area (Area II) have uncovered a
98 76 77 run of 125 m of the LC II–III city wall which incorporates two massive face towers or bastions. This late Bronze Age city wall is similar to that at Enkomi. However according to the excavator, two distinct periods of construction should be recognised. The first city wall (LC IIc, ca mid-thirteenth century BC) was of mud bricks on rubble footings set directly on bed rock. However in considerable measure this entity is an archaeological interpretation of an entity underlying the later Cyclopean city wall, and there is little direct information available concerning it. It is also an archaeological question of some moment whether the two massive bastions originally went with the earlier mud-brick wall or the later Cyclopean wall. Points of stratigraphy suggest the former, the construction of the towers suggest the latter *sanctuary area* *LC II–III city wall*

(Kition, p. 53; Kition Exc. V.1, pp, 33–34). For convenience of exposition, it is preferable to discuss them in connection with the Cyclopean wall.

Cyclopean wall

Somewhere at the end of the thirteenth century (LC III A) the northern limits of Kition were enclosed by a Cyclopean wall of the Enkomi type. The breadth is ca 2.50 m and this comprises more or less massive facing both internally and externally. The external face is the more specifically Cyclopean construction including roughly trimmed boulders of 2–3 m in length. Among these large blocks are included numbers of stone anchors, symbolic votive offerings to the Sanctuary from those in peril on the sea. At one point the internal face is preserved to a height of 1.30 m, above which are the remains of the mud brick superstructure (Kition Exc. V.1, pp. 86–87, Kition, pp. 59).

face towers

The two reasonably preserved face towers (A & B) appear as large solid bastions immediately outside the main temple area of the Sanctuary (v. Kition, figs. 9, 10, 11; Kition Exc. V.1 plans I ff.). Tower A is 18.30 m in length with a projection of 5 m, while Tower B, ca 24 m to the West is 13.50 m in length and also with a projection of 5 m. Nothing is known directly of the superstructure of these towers (except that since they were purposefully robbed out, it must have supplied good building material). What remains *in situ* is the solid masonry substructure which is set down in the shelving slope outside the margin of the higher ground on which the city wall was founded. Since the towers were founded at a lower level than the city wall the stratigraphic relation is not necessarily obvious. The surviving substructure (at least) must have been sunk in wet, marshy ground for a considerable part of the year in antiquity, exactly as now when for most of the year they are awash with rising ground water. On this account it has been suggested recently that this surviving masonry might represent not so much the substructure of fortifications (towers) but that of quays or landing stages (IJNA 12, 1983, pp. 239 ff.). This is theoretically quite possible but the excavators reckon to have laid bare a ring road outside the walls against the outer face of the towers (Kition Exc. V.1, p. 164).

76 77

in marshy ground

The masonry construction of these bastions is of great interest. The facing was of finely dressed stone blocks (ca 60 × 40 × 30 cms) on the three exposed sides. The core construction was rubble. However overlaying the rubble are large gypsum slabs. These apparently formed an overall layer running out into the facing. Unfortunately since there are indications that both facing blocks and rubble were set above the gypsum slabs, the function of the latter is not obvious. Normally this would constitute a paving (Kition Exc. V.1, pp. 35–36).

At the eastern extremity of the excavation area where in the overall sense the city wall returns to the south, there are remains of two other towers (C & D). These are of

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quite different construction and should be associated with an entrance gate, but the remains are not coherent.

later survival

The fortifications as described appear to have survived into Geometric times when there was a large scale collapse of mud brick superstructure. The later structural history of the urban defences of Kition is as yet not well demonstrated. Historical sources indicate that the fortifications remained functional down to the Ptolemaic conquest of the Island, when Ptolemy I is stated to have slighted them (Sima 43, pp. 17).

IDALION

The one site in Cyprus which may illustrate something of the survival of urban fortifications across the ages is Idalion (the modern Dhali) in the central Mesaoria 16 kms south of Nicosia. And here again the interpretation of the fortifications raises the basic question of the nature of Cypriote settlements. At the end of the Bronze Age (LC III, late 13th century) when the great city of Enkomi was built up, a fortified high place was established at Idalion; but it is by no means evident what was its civil status.

LC III origins

topography

Just south of the modern village of Dhali the low plateau land of the central Mesaoria starts to run up into broken outliers at the extreme eastern margin of the Troodos. In this way two fingers of rising land point south to terminate in defined summit areas. This affords a site with room for a spreading lower town immediately south of the modern housing and dominated by two acropoleis which are separated by a valley. These acropoleis effectively control any approach from the south. If the lateral lines of the acropoleis ridges are extended to the North, a rational area can be enclosed extending over ca 25 hectares. This forms the Idalion of Archaic and later times, the capital of one of the Cypriote Kingdoms and a favorite residence of Aphrodite (Aeneid I. 698).

successive excavations

19th century

20th century

A considerable amount of excavation has been carried out in the area over the last 100 years (v. Idalion, pp. XXII–XXX), but little has been published and nothing which serves to draught out the main lines of urban development. The excavations of last century showed that on the summit areas of the two acropoleis were sanctuaries (of the goddess Aphrodite on the eastern one and of Anat-Athena on the western one). While in the valley between them was the Sanctuary of Apollo Reshef. About fifty years later the Swedish Cyprus Expedition made Idalion one of their major undertakings and excavated on Ambelleri, the summit area of the Western Acropolis (SCE II, pp. 460 ff.; SCE IV 1c, pp. 35–37; SCE IV2, pp. 2, 5 ff.). These excavations followed the line of fortifications for 70 m or so and revealed an enclosed sanctuary complex. More to the present issue they indicated that this area was settled in LC III times and occupied thereafter in the succeeding ages down to the middle of the first millenium.

original stronghold & refuge

The SCE report identified the earliest LC III settlement as a fortified stronghold and a refuge defended by a substantial rampart (SCE II, p. 516). However since they were never able to follow out their intention of excavating the lower town, they were in no position to exclude the possibility that a lower town was also developed at an early period and thus the early fortifications on the acropolis might have formed part of an urban system.

Cyclopean wall

In any event the earliest LC III rampart followed the natural contour of the Ambelleri summit, i.e. it is a non-geometric trace. The wall was ca 1.5 m–2.0 m broad, of mud brick superstructure on a substantial socle of random rubble stone masonry (not Cyclopean) with heavy facing blocks and smaller core filling. There were two gates, each one a simple aperture in the wall. (SCE II, p. 516, Plan XVI).

North gate

The excavators reckoned to discern two further LC III building periods during which the ramparts were strengthened and in particular the North Gate became a sophisticated feature. In Period 2 it was converted into an internal passage gate — and, in fact, with the development of buildings just inside it, the plan became a bent entry one (SCE II, p. 518, Plan XVII) something after the style of the North Gate at Enkomi. Then in Period 3 the gate was strengthened by two external bastions and a 21 m tunnel cut out of the rock under the Gate giving a subterranean sally port (SCE II, pp. 522 ff., Plan LXVIII; SCE IV 1c, pp. 36–37, figs. 21, 22; Problems p. 6, figs. 1, 2). 79 82 80 81

sanctuary redeveloped ca 850 BC

According to the stratigraphical analysis of the excavations there was little or no building on the site for most of the succeeding Cypro-Geometric period (SCE II, p. 627). However objects found indicate that some occupation was maintained during that time. Thereafter in Cypro-Geometric III and surviving through Cypro-Archaic until the beginning of the fifth century BC the Sanctuary Area with its heavy fortification was built up again. During this period (ca 850–490 BC) on the grounds of historical probability it was assumed that these acropolis-sanctuary fortifications were incorporated in the circuit of the city walls. Unfortunately here the normally meticulous editing of the SCE reports is deficient and it is nowhere made clear how this was effected. Indeed there are serious discrepancies between the overall site plan showing the lines of the city walls (SCE II Plan IV) and the general area excavation plan (SCE II Plan V). Manifestly the overall disposition of Idalion shows the same formula which obtains at the contemporary town sites of Amathus, Vounous and Soli — a lower town running up to a naturally defended acropolis area occupied by a temple or sanctuary. Does the presidency of the deity mark a connection with (post Mycenaean) Greece or is it a relic of the old sanctuary based society of Cyprus?

general plan unclear

Cypro-Archaic South gate

The fortification wall during archaic times is preserved at the southern extremity of the area. It shows twin angle bastions at the western angle and a gate in the S.W.

curtain which again develops from a simple aperture to a passage gate and latterly into a chamber gate with a central column supporting the roof. What is of the greatest interest is that, whether or not there is a hiatus of a century or so in the building history, the archaic fortifications neither in design nor in construction do not differ in any essential way from the Late Bronze Age system (SCE II, pp. 526, 529, 532; Plans XIX, XX, XXI). The area is considered to have been despoiled when Kition gained mastery over Idalion as a sequel to the Ionian revolt.

American Expedition

Some 40 years after the SCE work at Idalion an American Expedition to Idalion was organised proceeding from familiarity with the Semitic background to the Cypriote Kingdom of Kition and its eventual incorporation of Idalion. This expedition had the avowed aims of introducing into Cypriote archaeology the virtues of multi-disciplinary investigations and sophisticated methodology — all of which aims were clearly set out in the interim report (Idalion, pp. 1–8). Unfortunately the operations were interrupted by the political difficulties of 1974. It is possible that the results of the work carried out prior to this elucidated the abiding question of the urban status of Idalion and with this the nature of the fortifications there. Unfortunately these matters remain unknown since there has been no publication of the substantive excavation results. The references in the Preliminary Report are somewhat confusing. The report speaks of Idalion as an "urban centre" in the Late Bronze Age, LC III, 12th century (Idalion, p. 82). However in the overall review of results it is stated (p xviii) that "Its earliest city wall according to initial indications from the 1973 excavations was built during the 7th or 6th centuries BC. Within this wall was an area of 100 acres (25 hectares) including the acropolis". Whether this implies the redating of the SCE Ambelleri Acropolis wall Periods 1, 2, 3 to Archaic times is not clear.

ashlar masonry

Some remarks are made on the "City Wall" (Idalion, p. 44). They refer to a construction overlying Cypro-Archaic deposits and thus of Cypro-Classical origin. It is faced with small boulders and has a rubble fill, but some dressed masonry is included. However an added note says that in an earlier phase the wall was of "fine sandstone ashlar masonry using gypsum plaster". But it seems best to attend the definitive publication of the work before comment.

PALAIPAPHOS

The most explicit, not to say dramatic, evidence of urban fortification in Cyprus comes from Palaipaphos in Archaic times. This is in considerable measure due to historical accidents. During the disturbance in the Island associated with the Ionian
83 Revolt, the Persians besieged and took Paphos (498 BC) and the siege mound they heaped up against the city wall in the N.E. sector (at Macello Hill) both preserved the structures to some extent, and also attracted the attention of the British Expedition to the area in 1951–52. Since then the area (KA) has been systematically excavated over the years by F. Maier (v. Paphos, pp. 192 ff.).

excavations

Persian siege mound

Leaving aside the highly circumstantial records of the military operations — destruction of extra-mural sanctuary as a source of rubble, construction of siege mound with the spoil, sapping of mound by defenders, weapons (projectiles, arrow

heads, etc) and armour (bronze helmet etc) — the remains reveal many details of fortification (Paphos, figs. 181, 182) both as to design and (more especially) construction. They also give some evidence of historical development.

fortifications ca 750 BC

According to the excavator these fortifications have a history of some 400 years being constructed in the latter part of the 8th century (N.B. not surviving from Bronze Age time as originally assumed, v. AJA 31, 1951, p. 59) and abandoned in the latter part of the 4th century (when New Paphos was founded and fortified, although the details are disputed). Basically the system remained the same across this extended period, consisting of a substantial curtain (up to 6 m breadth) showing within an excavated (more or less straight) run of ca 130 m a rectangular face tower and a massive city gate. The line was established near the northern margin of the plateau over which the site spread, and eventually the scarp was adjusted to create a fosse (ca 14 m broad at the top and ca 9 m broad at the bottom). This gave a massive curtain then a berm of ca 12 m, a scarp and counterscarp and then a gentle glacis of ca 23 m.

curtain

face-tower

gate

scarp fosse

counterscarp

sophisticated construction

Perhaps the most notable feature of these defences is the construction where stone and mud brick are used conjointly in a way which suggests a purposeful understanding of the varying properties in defence of these two building materials. Certainly the overall impression is of "reinforced" construction. The excavators have observed and recorded meticulously this construction; only it should be born in mind that some of the distinctions observed may be of structural rather than of historical significance.

early Archaic system

The excavators account is as follows. The earliest archaic wall was a structure ca 3 m broad based on a rubble stone socle (ca 50 cms high). Thereabove the wall 276
consisted of external faces of mud brick with a core of mixed mud brick and rubble fill. Then on its inner face this wall was strengthened by a substantial accretion, ca 1.20 m in depth. This was based on a socle of heavier, roughly dressed rubble carried up ca 1.50 m, above which the wall which was solid mud brick (Paphos, p. 165, fig. 153). It is by no means apparent that this accretion is not a structural device rather than a second historical period! Next, after two centuries or so (late 6th century) the wall was strengthened by a further accretion face ca 1.50 m deep carried out in stone of similar construction to the socle of the previous facing (presumably its mud brick superstructure was founded at a higher level than is preserved). At this stage the fosse and glacis were installed together with a stone revetment to the outer face of the wall. Also at this period the Gate was remodelled. On historic probabilities this 84
juncture would be immediately antecedent to the Ionian Revolt.

later Archaic system

It is a striking fact that mud brick and stone are also used conjointly in the early (Geometric) city wall at Salamis (Salamine, pp. 147 ff.). And also somewhat similar

examples of this "*opus mixtum*" are known elsewhere (e.g. at Marib in Yemen, ABADY III, p. 198). Perhaps it is possible to rationalise this construction as follows.

Stone is, of course, harder than mud brick and thus offers much greater resistance to demolition by way of cutting out and piercing. If attackers can operate unhindered against a mud brick wall face, they can soon cut away and pierce apertures in and through a wall (with e.g. a spear-headed probe). And this in a way which would not be possible when confronted with massive stone. On the other hand mud brick construction because of its elasticity absorbs shock waves admirably so that the jarring shock of battering rams has much less effect than on a stone structure. In the latter instance, if a ram can pound away (especially at an angle), blocks judder and are started from their beds at a considerable remove from the impact so that a solid wall collapses in a pile of rubble soon enough. Thus it is a view point at least worth consideration that the mixing of the two materials was designed for the properties of each to complement those of the other to maximum advantage: i.e. stone facing and ribbing offered a barrier to easy penetration while the mud brick ground mass damped down the vibration of battery (cf. Lawrence Fort, pp. 213–14).

rationale of mixed construction

After the Ionian Revolt the whole area was cluttered with the remains of the Persian siege-mound and destruction debris and it appears things remained in this condition for a long time — perhaps by Persian edict as a reminder and a discouragement of revolt! Then late in the 4th century BC the debris was cleared up and localised by a revetment wall and the Gate was rebuilt. At this time also part of the
263 inner face of the wall was taken down and rebuilt in heavily bossed rusticated ashlar (or quasi-ashlar) (Paphos, p. 211, fig. 198). Then after 300 BC with the establishment of the fortified city of New Paphos, the fortification of Old Paphos lapsed into desuetude and ruin.

subsequent survival

late Classical

Ptolemaic abandonment

The North East City Gate is a massive structure ca 28 m × 23 m, thus extending
84 85 over 600 m^2. According to the excavators it manifested two significant forms:

(i) the original Early Archaic form.

(ii) the developed late Archaic form.

There were also minor demonumentalising adaptions at its end stage. The original form was of simple design consisting of a gateway between cheek walls at the rear of a broad entrance passage flanked by massive *ressauts* (Paphos, p. 163, fig. 149). This simple form of "Passage Gate" was converted into a bent entry plan in Late Archaic times by throwing a *clavis* barrier across the front of the passage (Paphos, p. 193, fig. 180). This design was retained in the late Classical-Hellenistic refurbishing, the entrance being further narrowed and makeshift guard rooms contrived within the passageway (Paphos, p. 209, fig. 195). The early Archaic Gate design follows in the Mycenaean tradition, cf the defences of Mycenae itself (e.g. the Lion Gate, Lawrence

gate

original passage gate

later bent-entry gate

Fort, p. 7, fig. 2) also the S.W. entrance at Gla (Lawrence Fort, p. 10, fig. 3. The later screened entry design seems to relate somewhat to the *epikampios* idea of Philo I 9, cf. the Gate at Caulonia (Lawrence Fort, pp. 340–41, fig. 78).

Greek connections

On all grounds of historical probability, fine ashlar stone masonry of the type recommended by Aristotle for city walls must have characterised the fortifications of New Paphos erected at the end of the fourth century. However although the line of the city wall can be followed over considerable stretches there is virtually no surviving masonry — only the rock cutting to provide the bedding (*euthynteria*) for the lowest course. The line of the city walls for much of the western and northern limits runs along the crest of rock scarps. These for the most part result from the extensive quarrying necessary to supply blocks for the extensive ashlar monumental construction of the new city. It would be entirely un-Hellenistic for the city walls not to advertise this building distinction (cf. Lawrence Fort, p. 120 n7).

NEW PAPHOS *city wall ca 300 BC*

The total length of the New Paphos circuit was ca 3 kms and the notable feature of its design was regularly spaced towers. There are 20 or so and, if the Antiquities Guide Book plan is to be trusted, they are very imposing Hellenistic round towers (cf. Philo I, 2; Lawrence Fort, p. 386.) set at ca 100 m–200 m intervals. They are of semi-circular projection (three quarter circle at the angles) and are "backless" — "open gorge" is the Mediaeval term (so that they do not serve to protect enemy troops who may gain possession of them). The towers are very sizeable although they can scarcely be as enormous (ca 30 m in diameter, as shown on the Guide Book plan. Although round (and rounded) towers are known from earlier classical times, the form and dimensions of these open gorge towers at New Paphos are very proper to their period ca 320 BC–300 BC (v. Lawrence Fort, pp. 392–93). No details of the New Paphos gates are recorded.

round towers

In its fortifications, as in other aspects of its ancient building, Cyprus demonstrates its surprising individuality. For almost interminable millenia the round house village tradition maintained itself in the Island and during these ages settlements were not strongly fortified. Next for a millenium or more when the ancient Near East developed its urban fortification almost as a principal symbol of social *hubris* — masonry walls with turrets and battlements towering to heaven; artificial earthen slopes like mountains — there was nothing of that sort in Cyprus. Then somewhere in the middle of the second millenium defensive walling appears in the Island. These were walls enclosing settlements, walls enclosing places of refuge, strongholds, observation points, etc. And there were blockhouses or small fortified buildings. However none of these show much in common with the by then age old tradition on the mainland adjacent with its patterned trace curtain and monumental towered gate (ABSP, pp. 178 ff., figs. 85 ff.).

survey of record

differing tradition from mainland

Fortification walls in Cyprus were designed to enclose space in the most convenient way irrespective of form — they followed crests, contours, or the shortest distance between features. On the other hand, the construction of several of these walls shows a definite rapprochment with contemporary fortifications in neighbouring regions. At some sites (e.g. Maa *Palaikastro*, Enkomi, Kition, and Sinda) Cyclopean masonry is employed (at least in the substructure of the walls). This recalls sites in Anatolia (Boğazköy), Greece (Mycenae, Tiryns) and Syria-Palestine (Shechem). There is thus good reason to connect the appearance of Cyclopean masonry in Cyprus with the age of migrations and disturbances in the latter part of the 13th century (cf. Fortin, pp. 540 ff., N.B. p. 533). One specific feature associated with Cypriote fortifications of this age appears to have associations in Anatolia. This is the underground tunnel beneath the City gate to afford a surprise and concealed exit at some little remove (a form of sally port). Cypriote examples are at Idalion and seemingly Enkomi, with famous instances at Boğazköy and Alishar (Fortin, pp. 553, figs. XIV, 8–9; Naumann, pp. 124 ff., figs. 302–08).

47 75 76 78 — *Cyclopean walls*

origins & connections

underground tunnels

80 81 73 — *cf Anatolia*

The evidence suggests that rectangular face towers were fairly standard (Enkomi, Kition, etc). Such towers are not common in the Ancient East Tradition. In their place appears the patterned trace with its salients and recesses. Of this device there is only one example in Cyprus, a limited stretch of the city wall at Enkomi. The Cypriote gate is, in the main, unobtrusive on the exterior and its development in strength is effected by internal elaboration: independent buildings sited just inside the gate to enforce a bent entry (Enkomi) or the aperture gateway is converted into a passage gate (Idalion). The other type of gate received in Cyprus (Maa, Lara, etc) is the overlapping curtain, bent-entry type. This is an obvious device known everywhere from the earliest times. However it is relatively less prominent in the Bronze Age Middle East (v. ABSP, p. 192) than in the Aegaean.

face towers

48

gates

163

47

As in other connections it is disappointing to have no continuity between these first urban fortifications and the fortifications of the later urban centres of Archaic Cyprus. If the SCE stratigraphic analysis of the Ambelleri Acropolis fortifications at Idalion is just, then there is virtually no difference between the fortifications of periods 4, 5, 6 (850 BC–480 BC) and those of periods 1, 2, 3 (1250 BC–1050 BC). Indeed the two successions could well be contemporaneous, and the distinction lie in place not time.

lack of continuity from LB to Archaic
IDALION

Further evidence of fortifications in the earlier part of the first millenium is revealed at Salamis and Paphos. Both witness to the conjoint utilisation of mud brick and rubble stone in city wall construction.

SALAMIS
PAPHOS

Although as yet it has only been sampled, the evidence from Salamis is particularly interesting since it appears to originate in the very earliest period of settlement

SALAMIS

ca 1000 BC

there at the beginning of Cypro-Geometric times (Salamine, pp. 149 ff.). Here it seems a central core of stone masonry (originally with orthostates) was faced by something like a coffered construction of mud brick and earth fill to give a very massive rampart of ca 10 m thickness. This fortification appears to have been maintained in commission down to Classical times.

masonry core with mud brick facing

PALAI-PAPHOS

As opposed to this the fortifications at Old Paphos show the opposite *opus mixtum:* stone facing to mud brick core. A very striking design feature of these fortifications is theNorth City Gate. This in its late Archaic form is well nigh the only developed external type gate preserved in the Island.

masonry facing mud brick core

In all the foregoing the fortifications schemes discussed have proceeded within limits already established during Bronze Age times. The critical development beyond such limits is badly attested. This is the construction of fortification walls in fine ashlar masonry, so characteristic of classical and later Greek fortifications. The American Expedition to Idalion report ashlar faced city walling of Archaic-Classical age and at Old Paphos (Kouklia) the city wall was faced with draughted ashlar masonry (or near ashlar) in the fifth century BC. Ashlar fortification could have existed at Salamis and Kition during the period of Euagoras and the Philhellene successors. During this period both fortifications experienced historic assaults. When Demetrios assaulted Salamis in 306 BC (Hill, p. 168; Lawrence Fort, pp. 60, 61) it appears that a considerable obstacle was the fosse which had to be filled (Lawrence Fort, p. 425). All this had been rehearsed previously at Old Paphos (Kouklia) a hundred years earlier as the remains of the Persian siege mound testify.

use of ashlar

Graeco-Roman times

However the fact is that just as the science of fortification was making greatest progress, Cyprus was more or less removed from its application. The fortification of New Paphos by Nikokles should have constituted a climactic end to the story and it can only be that close study may yet reveal details of the scheme. For the remaining five hundred years covered by this study it is unlikely that any significant public resources were expended on fortifications. From the third century BC onwards Cyprus was a province of an extensive empire — first Ptolemaic and then Roman. The security of Cyprus against foreign aggression in Ptolemaic times was provided by walls of a different type, the wooden walls of the Ptolemaic navy which ruled the Eastern Mediterranean. And in the construction, fitting out and maintenance of this navy, Cyprus, with its timber and metal resources, played a very significant role. During imperial Roman times Cyprus lay well within the *Pax Romana*. It was not a frontier province in any way. During these 500 years, it is certain that far more masonry belonging to city walls was dismantled than was erected. In the circumstances which obtain at this stage only antiquarian and monumental interests

operated to conserve City Walls — they are an impediment to development. Far from protecting anything they need to be protected themselves.

Here it should be noted that considerable detachments of troops were stationed in Cyprus during Ptolemaic times on garrison duty. This however does not mean in any way that they manned fortresses. The Ptolemies used Cyprus as a forward military base in a troubled area exactly as was done in British times . They expected troops stationed in the Island to fight from Cyprus, not to fight in Cyprus. Thus the duties of the Cyprus garrison were in the main potential rather than actual. Probably for the most part it was hard to see what these duties were — a situation much resembling that of British garrisons in the Island during recent times, cf. R. S. Bagenall, The Administration of Ptolemaic Possessions pp. 56–57.

general appraisal

If it is possible to give an overall assessment of an important but badly attested question it is that fortification in Cyprus was never closely bound up with the old tradition of urban fortifications in Bronze Age Syria-Palestine-Mesopotamia. On the other hand there are some distinct connections in detail with a continuum stretching from Anatolia through the Aegaean. The stretch of the Old Paphos fortifications exposed are in general reminiscent of the contemporary Archaic early fortifications of Eleusis (Lawrence Fort, p. 36, fig. 18). However political history inhibited wholesale reception of the developed Greek science of fortifications (e.g. as expressed in Philo) since its apogee was relatively brief, ca 350 BC–150 BC (Lawrence Fort, pp. 421–29), during much of which period Cyprus was not fortified. In this connection NB the complete contrast between Ptolemaic Cyprus and Ptolemaic Cyrenaica (cf. Ptolemais, Apollonia, etc), the latter province requiring protection against a hostile native population.

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d) Temples and Sanctuaries

Historical development of religious building conditioned by social history. During extended millenia of round house

building religion apparently a household institution. Defective archaeological record of pre-urban settlements of EC, MC times. However, models indicate existence of rural sanctuaries during this period. Remains of religious buildings exist from urban times of 15th century BC onwards. List of ca 40 such buildings or building complexes where some architectural evidence recorded.

Primary classification according to (social) structural considerations. The Rural Sanctuary: (a) simple enclosure; (b) with servient tenements; (c) with built shrine. Urbanism and the individual temple unit. Vigorous survival of the Rural Sanctuary until the end of paganism. Formal classification of temple building — the old Mediterranean Temple type of the late Bronze Age; the square or squarish cella with prefixed court of the Iron Age. The exceptional Phoenecian monumental long room temple at Kition. No evidence of adaption of classical Greek peristylar temple in archaic or classical Cyprus. Temples in the classical tradition from Roman Imperial times — e.g. at Kourion, Amathus, Salamis, etc., revealing mixture of elements in line with contemporary Imperial temple building in Greek Orient (Syria, Anatolia). Special circumstances of Sanctuary of Aphrodite at Paphos.

Some prominent individual aspects: altars and offering structures, sacred gardens, association with metal working establishments. Possible correlation of design form and cult form. Overall oriental affinities of Cyprus religious building but with strong individual pattern.

terminology It is impossible to be properly systematic in the use of such terms as temple, sanctuary, shrine, etc. Each one has been used in every possible sense so that the hopelessly mixed frame of reference defeats precision. Nor does etymology afford the slightest clarification (for some general examination of this terminology cf. ABSP pp. 225–26).

sanctuary temple shrine Hereinafter some attempt will be made to have Sanctuary as an all purpose word connoting the overall complex in some part of which sacred rites take place. Temple is understood as a building of some architectural development providing facilities for worship; while shrine may be thought of as including the simplest structure which may serve to harbour the divine presence (i.e. a Godshouse). Where the temple as a place of worship is not an independent structure but occurs within or attached to a commanding non-religious *chapel* structure, it may be termed as a chapel. No attempt is made here to be doctrinaire concerning the two (associated or disassociated) functional aspects of sacred buildings; viz housing the divine presence and housing congregational worship. The above distinctions are of convenience only in the present circumstances and no ultimate significance is claimed for them.

The individual social history of Cyprus markedly conditioned the development of sacred building.

For the lengthy ages of the round house building tradition in Cyprus there is no *Neolithic* indication of a specialised place of worship. In the face of this lack of archaeological evidence it is inevitable to take note of the picture presented by the modern survivals of round house culture. Here religion is typically a family or clan affair on the basis of ancestor intercession and a full time specialised man of religion has the guise of witch-doctor rather than priest. Characteristically he establishes his rapport with the other world in natural settings, (hillsides, caves, groves, etc.) rather than in special buildings (temples).

E.C. The present almost total lack of knowledge concerning the subsequent early rectangular building communities means that direct information is lacking on the origins of the temple building in Cyprus. In its place there exists the indirect information afforded by the

86 87 terra-cotta sanctuary models — principally the famous one from the Vounous cemetery (Cyprus pp. 48–50; Syria XIII 1932 pp. 223 ff. & 345 ff.; Archaeologia 88 1940 pp. 118 ff.). These models attest the existence ca 2000 BC of (presumably rural) sanctuaries in the form of open air enclosures. The Vounous model shows the complete (round) enclosure, its only architectural motif being the high gate, cf. the Gate of Horn, The Sacred Portal (B. Goldman The Sacred Portal 1966). Within are worshippers, sacrificial animals and an enthroned priest, together with divine images (here apparently *Xoana*) set against the wall. Models from Kotchati near Dhali (RDAC 1970 pp. 10–13) reproduce the trinity of *Xoana* idols with bulls' heads which appear in the Vounous model.

models

VOUNOUS

KOTCHATI

NB Now most recently the tradition of these round enclosure sanctuaries has been extended back into the past a further millenium by the surprising discovery at the mid Chalcolithic site of Kissonerga *Mosphilia* of a pottery bowl model set into a pit in the floor of a round house (RDAC 1988 1 pp. 43 ff.). This model "was fashioned to imitate a building with entrance, swivel door, hearth and floor partitions" (p. 44) and it contained a collection of objects including small terra-cotta figurines and stone tools. "It is clear from the parallels among excavated structures that the model is based on contemporary structures" (p. 45). The similarities with the Vounous model are striking. It is therefore normal to conclude that this object is a model of an actual round enclosure shrine. It is however possible to contemplate that the object in itself constitutes the shrine.

chalcolithic model
MOSPHILIA

That the Vounous enclosure is circular is a significant example of religious conservatism since contemporary secular building was rectangular. In any event, it is, in principle, just such an entity which appears on the ground half a millenium or more later at Ayios Jakovos in North Eastern Cyprus as the first recorded example of a religious building in ancient Cyprus. Throughout the subsequent ages down to the end of paganism in the Island, there follows a quite numerous succession of uncovered building remains which have been identified as religious monuments. A considerable number of these have been reckoned rural sanctuaries and were brought to light up to a century or more ago during the first period of Cypriote archaeology. The reason for this strange fact (which contrasts with the otherwise sparse investigation of building remains) is without doubt the quantities of votive statues contained in these buildings — stone or terra-cotta statues, reckoned up in dozens or at times hundreds. Their presence promoted both discovery and interest. Unfortunately the interest resided in the statues rather than their architectural setting which was often described in general terms only. A first hand review of this episode is given by M. Ohnefalsch Richter (v. Kypros pp. 1–28, *et pass*).

AYIOS JAKOVOS

The following table lists those religious buildings where some reasonably defined information is available concerning the design.

SITE	NATURE OF BUILDING	REFERENCE
AYIOS JAKOVOS LC II–III & CG — CA (?)	Simple Rural Sanctuary — round enclosure without associated buildings (LC); simple isolated long room cella, later partitioned (CG-CA) on another summit 100 m away.	SCE I pp. 355–61(LC), 361–370 (CA); IV1c pp. 1–2; IV_2 pp. 2–3; Ionas pp. 20–25; Phlamoudhi pp. 69–70.
AYIA IRINI LC III — CA I–II — C.A.	Rural Sanctuary in close vicinity of small settlement. Enclosure with altar and sacred tree in court and peripheral buildings: servient tenements + possible temple.	SCE III pp. 642–824; $IV1_C$ pp. 2–4; IV_2 pp. 1, 3–4; Ionas pp. 78–103; Phlamoudhi pp. 67–69.
MYRTOU *PIGADHES* LC II–III & CG II–III	Sanctuary with associated settlement. Monumental altar in central court. Surrounding buildings may or may not include temple.	Pigadhes; SCE $IV1_C$ pp. 5–8; Ionas pp. 31–77; Phlamoudhi pp. 81–82.
ATHIENOU *BAMBOULARI* LC I–III & CG III — CA	Courtyard with surrounding workshops & yards for metal working, considered a sanctuary associated with metal working but no cult installations positively identified.	Athienou (Qedem 16); Ionas pp. 26–30; Phlamoudhi pp. 66–67; CP & DP pp. 49–52.
PHLAMOUDHI *VOUNARI* LC I & CA II & CH	Isolated hill top sanctuary consisting of square rubble platform (16 m × 16 m) with walled ambulatory and entrance portal.	Phlamoudhi; Ionas pp. 373–375.
DHALI (IDALION) *AMBELLERI* ACROPOLIS Athena Sanctuary LC III & CG III — CC I N.B. The LC III phase is very questionable. The whole development could be CG — CC.	Urban Sanctuary by city wall. In LC III times sacred character barely attested by finds but here is significant plan of enclosure with double chamber shrine and priests room. In CG & CA times single square cella shrine built against wall with altar in court. Rectangular enclosure wall apparent in CA times.	SCE II pp. 460–641; $IV1_C$ pp. 4–5; IV_2 pp. 2, 5–8; Ionas pp. 343–370; Phlamoudhi pp. 73–74).
LARNACA (KITION) *KATHARI* LC II — CG I & CG II — CC II (Temples 2 & 3, LC II — LC III Temples 1, 4, 5 LC III — CC II)	Urban Sanctuary area immediately inside city wall comprehending (over the ages) 5 temples with adjacent temene and workshop areas, also sacred garden. Temples 2–5 Old Mediterranean form, Temple 1 evolved into monumental long building.	Kition pp. 54–97; Kition Excavations V.1; Ionas pp. 108–171; Phlamoudhi pp. 75–77.

SITE	NATURE OF BUILDING	REFERENCE
ENKOMI — Chapel of Horned God LC III	Urban chapel set up within reconstructed city block building, comprising public cult hall and small bicomeral sacristy/thalamos. Entrance system unclear. Basically of old Mediterranean form. A similar complex adjacent is considered Chapel of the Goddess.	Enkomi I pp. 191–220; II pp. 521 ff., 531 ff. SCE $IV1_C$ p. 9; Ionas pp. 172–227; Phlamoudhi pp. 70–71.
ENKOMI — Temple of the Ingot God. LC III	Urban hall temple with small cubicle in rear angle as sacristy/thalamos. Bent entry from vestibules — additionally several small exedrae. Old Mediterranean form.	Alasia I pp. 151–362; CRAI 1973 pp. 223–246; SCE IV 1c p. 9; Ionas pp. 228–275; Phlamoudhi pp. 71–72; Enkomi BRC pp. 32–37.
ENKOMI — Temple of the Column LC II–III	Not definitively recorded. Apparently a compartmentalised long building with indirect (non-axial) entry and sacristy compartment(s) at rear.	Enkomi BRC pp. 37–39; Alasia 1 p. 570; Ionas p. 289.
ENKOMI — North Gate Temple (?) LC III	Possible city gate sanctuary in form of rectangular tower comprising large court with one end (against city wall) screened off as shrine.	Enkomi I pp. 125–126; RDAC 1975 pp. 50–53; Ionas pp. 286–288.
ENKOMI — Blockhouse Chapel (?) LC I	Possible pre-urban "domestic" chapel in Area III. Fortress *cum* metal working establishment. Small square room with bench and perhaps lustration facilities.	Enkomi I pp. 26–28; II p. 502; Ionas pp. 286–288.
OLD PAPHOS (KOUKLIA) Sanctuary of Aphrodite LC III — Roman	World famed sanctuary with associated settlement — a holy city. Megalithic, monumental version of sacred enclosure with buildings. Original LC sanctuary preserved only in part revealing enclosure and pillared hall, leaving in doubt whether the aniconic block stone was set in court with flimsy shelter or in built shrine. In Roman times sanctuary reformed and greatly extended but on similar design principles.	Paphos pp. 81–102, 272–283; Ionas pp. 310–343; SCE IV_3 pp. 7–8; Le Temple de Paphos, A. Westholm. The Paphian Temple of Aphrodite and its Relation to Oriental Architecture. Acta Arch IV 1933; JHS IX 1888 pp. 193–215.

SITE	NATURE OF BUILDING	REFERENCE
KITION BAMBOULA Sanctuary of Astarte and Melqart CG — CH	Urban Sanctuary area by harbour. Massive temenos wall and enclosure showing maximum building development in Archaic times. Series of contiguous rectangular enclosures north of street. One of which shows two shrines (broad room cellae) and porticos. In classical times this area open with altars and range of service rooms on south along temenos wall.	SCE III pp. 1–75; IV_2 p. 11. Arch in C pp. 219–225; Phlamoudhi p. 78.
ATHIENOU GOLGOI Sanctuary of Apollo CA — CC- CH	Rural Sanctuary. From Cesnola's account, apparently a circular enclosure and 200 m away a monumental columnar hall temple ca 20 m × 10 m (cf. the Phoenecian Temple at Kition).	Cesnola p. 115; Phlamoudhi p. 72; Masson pp. 275–281
POLITIKO TAMASSOS *FRANGISSA* Sanctuary of Apollo-Reshef CA — CC- CH	Rural Sanctuary. Irregular enclosure with many statues in court and apparently a small (apsed?) cella.	Kypros pp. 8–10; Phlamoudhi p. 72; SCE IV_2 p. 9.
KYTHREA VONI Sanctuary of Apollo CA — CC — CH	Rural Sanctuary close to ancient Khytroi (Kythrea). Originally an extended broadroom shrine with columnar portico. Later converted into squarish cella. Associated temenos undefined.	Kypros pp. 2–5; SCE IV_2 p. 10; Phlamoudhi p. 84.
DHALI IDALION Eastern Acropolis Sanctuary of Aphrodite CA — CC — CH	Urban Sanctuary. Enclosure with square cella containing altar. Many pedestals for statuary in court.	Kypros pp. 6–7; SCE IV_2 p. 7; Phlamoudhi p. 74.
DHALI IDALION Vally Sanctuary of Apollo-Reshef CA	Urban Sanctuary. Irregular enclosure with two squarish cella shrines. In the court an altar and bases for many statues.	Kypros pp. 6–7; SCE IV_2 p. 7; Phlamoudhi pp. 74–75.
ATHIENOU AKHNA Sanctuary of Artemis Kybele CA — CC — CH	Rural Sanctuary. Remains of enclosed tenemos area with many statues bases. Outside this area an altar and a small enclosure (for sacred trees?).	Kypros pp. 1–2; SCE IV_2 p. 10; Phlamoudhi pp. 65–66.

SITE	NATURE OF BUILDING	REFERENCE
POLITIKO TAMASSOS Sanctuary of Aphrodite-Kybele CA — CC — CH	Urban Sanctuary associated with metal working. Walled enclosure with shrines and servient buildings. By classical times a developed building complex with (broad room) shrines in traditional style. In Ptolemaic times replanned with Greek style buildings; range of store-rooms, peristylar house, wooden stoa etc.	Arch in C pp. 241–251; SCE IV_2 p. 9.
MENIKO *LITHARKES* Sanctuary of Baal Hamman CA	Rural Sanctuary for metal workers, compact developed building complex. Rectangular enclosure with two shrines (each of square cella and adjoining room), delimited inner and outer courts with altar, hearth and enclosures for sacred trees and priests' dwelling.	Two Cypriote Sanctuaries Rome 1977 Cyprus pp. Phlamoudhi p. 80.
VOUNI — ACROPOLIS Athena Temple CA — CC	Square cella added at rear of walled inner court within overall enclosure, flanking the entrance of which are 3 store-rooms (cf. "treasuries").	SCE III pp. 85–111; IV_2 pp. 15–16; Phlamoudhi pp. 84–85.
VOUNI — MAIN TEMENOS CA — CC	Possible "double" sanctuary with square cellae at opposite ends of two medially adjoining courts. Porches arranged to give broad-front entrance.	SCE III pp. 210; IV_2 pp. 14–15; Phlamoudhi p. 85.
VOUNI — Chapel 113–14 CA — CC	Possible double chapel, 2 adjacent square cellae set in parallel.	SCE III p. 200; IV_2 p. 13.
VOUNI — Cella 101 CA — CC	Simple single chamber square chapel	SCE III p. 199; IV_2 p. 13.
VOUNI — Cella 117 CA — CC	Simple single chamber chapel, slightly enlongated (squarish) cella with "passage" entrance portal.	SCE III p. 200; IV_2 pp. 13–14.
VOUNI — Chapel 132–134 CA — CC	Partitioned long building: indirect entry through vestibule to squarish cella and small cube holy of holies.	SCE III p. 201; IV_2 p. 14.

SITE	NATURE OF BUILDING	REFERENCE
VOUNI — *PARADISOTISSA* Rural Temple CA — CC	Possible rustic version of Greek style temple (in Antis?).	SCE III pp. 292–298; IV_2 pp. 16, 23; Phlamoudhi p. 86.
SOLI — ACROPOLIS Temple CA — CC	Incomplete foundation remains indicating 3 compartments and suggesting long building reconstruction as Greek style temple in antis but not ruling out reconstruction as broad building with triple cellae.	SCE III p. 412; IV_2 p. 12.
SOLI *KHOLADHES* — Extra-Mural Sanctuary of Aphrodite-*Cybele*-Isis ca 250 BC	Extensive and crowded sanctuary complex showing overall development from enclosed courts with irregular buildings to regularly planned buildings with courtyards. Temple A (250 BC) consists of long outer court, broad inner court with squarish cella at rear. Rebuilt as Temples B & C (ca 50 BC) comprising larger outer court giving onto 2 temples each with broad inner court & cella. Temple D double or triple cella at rear of courtyards with semi-monumental twin towered entrance.	SCE III pp. 398–547; IV_3 pp. 2–7; A. Westholm, Temples of Soli, Stockholm 1936.
KOURION — Sanctuary of Apollo Hylates CA — Roman	Increasingly monumentalised version of primitive rural sanctuary enclosure with associated buildings. In Roman times these included treasuries, hostels, baths palaestra, etc. Original Archaic round altar and sacred trees, eventually supplemented by Greek style temple, rebuilt in Roman times as Romano-Oriental podium temple.	SCE IV_3 pp. 9–10; R. Scranton, The Architecture of the Sanctuary of Apollo Hylates at Kourion, Philadelphia 1967 (TAPS 57_2); D. Soren, The Sanctuary of Apollo, Arizona 1987.
NEW PAPHOS — Sanctuary of Apollo Hylates ca 320 BC — Roman	Rural Sanctuary 1.5 kms along Sacred Way from New to Old Paphos. Rock cuttings giving extensive terraces & courts with oracular domed cavern adaped from pre-existent tomb or heroon.	RDAC 1980 pp. 239–251.

SITE	NATURE OF BUILDING	REFERENCE
NEW PAPHOS — Temple of Aphrodite Paphia ca 300 BC (?) —	Rock cut foundations for large temple (in antis?) oriented East on Fabrika Hill near N.E. Gate to Sacred Way for Old Paphos.	RDAC 1985 pp. 286–292.
NEW PAPHOS — Asklepeion ca 100 A.D.	Part of civic complex standing above Agora on slopes of Fanari Hill Acropolis and adjacent to theatre & odeion.	Paphos p. 252 (substantively unpublished).
AMATHUS — Acropolis Temple of Aphrodite 1st Century AD	Greek style temple (in antis?) set on standard krepis.	Arch in C pp. 234–35; Praktika 2 pp. 279–286; RA 1986 pp. 202–203; RDAC 1988_2 pp. 143–147.
SALAMIS — Temple of Zeus (Salaminios) 1st Century AD —	Peristylar Romano-Oriental Temple on podium raised above monumental colonnaded precinct.	Praktika 2 1982 pp. 363 ff.; RDAC 1975 pp. 138–140; JHS XII 1891 pp. 59–121.
KAFIZI — Rural Shrine of the Nymph ca 225–220 BC	Cave of the nymph; natural grotto with flimsy porch (*kalybe*) on isolated hill 8 kms E. of Nicosia.	Studies PD pp. 162–168.

favissae

In addition to those listed sites, there is record of the discovery of a considerable number of "favissae" — the repositories of accumulated votive offerings when these have overrun the humble bounds of the offering place. Essentially this connotes a "pit burial" but on occasions the objects may be laid aside in disused rooms, vaults, etc. Obviously the discovery of a favissa hoard of votives implies the existance of a sanctuary of some sort in the vicinity — either of such a flimsy nature as to have left no residue or else still undiscovered. The following is a list of the better documented favissae:

Kalokhorio *Zithkionas*	— 6th C BC (AA 78 1963 p. 562).
Kakopetria *Ayilidhes*	— 5th C BC (RDAC 1977 pp. 178–201).
Kazaphani	— CH-CA (RDAC 1978 pp. 156–193).
Limmasol *Kommisariato*	— CA II (RDAC 1977 pp. 49–66).
Patriki	— CAI-CAII (RDAC 1971 pp. 27–36).
Pomos	— CA-CC (AA 18 1963 p. 562).
Salamis *Ayios Barnabas*	— CA-CC (Salamine V).

A brief consideration of these building complexes indicates that they fall into well marked categories and, in fact, they may be categorised on two counts: on what may be termed social structure and on architectural form.

As concerns the social functioning, an obvious distinction emerges in the first place, *viz* that between more or less isolated sacred premises outside the confines of settlements and sacred premises within the confines of settlements. Conforming to traditional usage in Cypriote Archaeology, the first group are called Rural Sanctuaries. Depending on the way religious units are assessed, there are probably something like 50 sites or buildings in Cyprus reckoned of a religious nature. Of these, something under a half are rural and something over a half are within settlements — ca 20 rural to 30 of the latter.

rural

urban

This comparative tally is in itself striking. Similar types of religious establishments to these Cypriote Rural Sanctuaries have been recognised in surrounding regions (Palestine, Syria, the Aegaean, Crete etc.). However the number of Rural Sanctuaries in Cyprus raises the inevitable postulate of accidents of discovery. Certainly, as noted above, the collection of votives means the circumstances are recognisable and recorded. Whereas some walls among others within a settlement pass unnoticed. On the other hand this architectural question like many others is bound up in the pervasive issue of the peculiar social development of Cyprus: its apparent retarded and/or limited ubanisation.

Following on this basic social distinction are further questions which perhaps may be best considered as extensions of the structure or function of sanctuaries. And here

it seems a systematic and a chronological account proceed *pari passu*, in that the simplest type appears to be the earliest recorded.

rural sanctuary

The basic sanctuary is the simple *al fresco* enclosure, virtually devoid of any roofed in building development although there may be partitions, corrals etc. The earliest such feature excavated (Ayios Jakovos) is from the LC II–III period, however it would seem that the type had existed in the Island during the preceeding 1000 years because of its graphic representation in terra-cotta models of ca 2000 BC. Whether such entities existed within the confines of EC and MC settlements is not known because of virtually non-existent early settlement archaeology. Proceeding on the evidence available and on natural affinities of the type it may be reckoned a Rural Sanctuary.

AYIOS JAKOVOS

chronological development

If then the complete evidence of rural sanctuaries is considered the chronological succession appears to give a fairly straight forward structure development. This passes from the simple enclosure to the enclosure with servient buildings to the enclosure with such tenements plus a built shrine. Within the latter stage a development in primacy can be seen of the shrine at the expense of the enclosure, i.e. from a shrine within enclosed courts to a shrine with enclosed courts. Examples of these stages are: Ayios Jakovos; Ayia Irini; Meniko *Litharkes* and Soli *Kholades*.

typology

Accepting this lead as a taxonomic starting point, the following classification is readily adduced:

87 89 (1) Simple *al fresco* enclosure Sanctuary which is not built up (cf. Vounous model). This category has some parallel in the sacred grove or high place of other regions (e.g. Palestine, Crete, etc. — v. ABSP pp. 249).

(2) An enclosure where the focus of sanctity (altar, offering places, etc.) is in the open 108 court but the enclosure includes servient buildings (store-rooms, priests' dwellings, etc.). This is the category referred to elsewhere, e.g. in Palestine as the Courtyard Temple (ABSP pp. 244-245). The great LC III sanctuary of Aphrodite at Old 92 Paphos was a monumental masonry version of this generally minor architectural scheme, perhaps as it shades into the following category.

(3) An enclosure containing buildings where the focus of sanctity (holy place) is 116 121 within a building, a cella or shrine or the like. This approaches and includes what is 122 normally understood as a temenos or temenos temple.

urban sanctuaries

If consideration is now shifted to religious premises within settlements, complementary factors appear to assist in classification. The first such religious buildings are from the later thirteenth century BC (from the newly-founded towns of Kition and Enkomi). They are thus almost a millenium younger than the presumed Rural Sanctuary exemplars of the EC terra-cotta models. If the excavators' interpretations are accepted, there is an immediate distinction in their structural organisation. The

KITION ENKOMI

religious buildings at Kition appear to have been set within an enclosure — i.e. at Kition there was an intra mural sanctuary (it was in fact adjacent to the City Wall). On the other hand at Enkomi, various types of religious buildings have been identified, all sharing a common characteristic in that they are not set within an enclosure: e.g. the Temple of the Ingot God is a detached individual building, while the Chapel of the Horned God comprises a suite of rooms within a large secular building. 98 95 96 97

urban temple

Therefore with the urbanisation of the Island very properly appears the self sufficient religious building unit (the temple), the natural urban form of religious building. Thus from urbanised development springs the complementary element, the shrine or temple, which may remain independent or take its place within the sanctuary, whether urban (as at Kition) or rural (as in the notable sanctuaries of Archaic times) — i.e. the new factor complemented and did not inhibit the survival of the old open air rural sanctuary concept.

architectural form

At this stage analysis must be turned towards architectural form. Again in the overall sense this appears to be reasonably clear and straight forward.

GREECE PALESTINE

According to present archaeological evidence the first towns built up in Cyprus during the latter part of the late Bronze Age were provided with temples. And the basic form of these temples is to be seen also in Mycenaean Greece and very notably in Palestine (cf. Tell Qasile v. ABSP figs. 157–160). It is a non-monumental type of (generally) long building comprising a public hall and a small sacristy. Above all, the entrance is indirect or non-axial (cf. ABSP figs. 171–173). In view of its distribution, Old Mediterranean Type is a useful name to retain for the form. 98–104

Old Mediterranean type

square cella

This type of building does not outlast the 2nd millenium and during the next well-attested period of religious building, the mid first millenium of Archaic and Classical times, it is replaced by the detached square or squarish cella sometimes in tandem form, prefixed by a system of courtyards. This is the typical form of the rural sanctuary during the prosperous days of the ancient Cypriote kingdoms. The affinities of this building type are in no way Greek but belong to the neighbouring Semitic world of Syria and Arabia (cf. e.g. Byblos through the ages and contemporary Tell Sukas, v. ABSP figs. 124, 166). What form the urban temple might have taken at this time is not so well attested. It is reasonably clear however (e.g. from Vouni and Idalion) that the same type of plan could subsist in an urban context. In the exceptional case of Kition, the Phoenecian colonial capital, the monumental long building temple, something after the style of the contemporary Temple in Jerusalem, remained in commission until the Ptolemaic conquest. 105 106

BYBLOS TELL SUKAS

VOUNI IDALION

long building

JERUSALEM

KITION

This long-lived sanctuary by the northern city wall at Kition was probably very influential at the minor interior kingdoms of the Island especially where Phoenecian

influence was spreading. It is recorded that about 800 BC a man from Tamassos made his vow to the Goddess of Kition (v. Kition p. 106) and the recently in-
119 120 vestigated Sanctuary of the Goddess at Tamassos appears to have been installed there in an analogous position at a northern salient of the city wall. However from what can be made out on the published plans, the actual shrines at Tamassos are derived from the old Middle East type broad room with a porch. However at the
115 Golgoi Sanctuary (cf. Catullus 36.11–17; 64.24–96) plans from a century ago show there was a columnar hall strongly reminiscent of the Kition temple.

TAMASSOS

ATHIENOU

Perhaps the most notable general comment is again (as is so often the case in Cyprus) a negative one. Among this prolific Sanctuary building of the 6th and 5th centuries, no example has been discovered of anything like a standard Greek temple of the period. Several ragged incomplete plans have been mentioned in this connec-
117 tion (Soli Acropolis, Paradisotissa by Vouni, the later shrine at Ayios Jakovos). It is possible that some or all of these may be (rustic) echos of the Greek form. However nothing has been discovered like a monumental Greek temple, the missionary work of Euagoras or other Hellenising rulers of the fifth century.

SOLI VOUNI
AYIOS JAKOVOS

Although the evidence is not yet full, there can be little doubt that nothing much like a classic Greek temple appeared in the Island until after the Ptolemaic conquest, and it would seem that even then, its incidence was slight. In Egypt the Ptolemeys were respecters and promotors of the indigenous religious development and its architecture. They were Egyptian Pharoahs every bit as much as Macedonian Kings and in the former aspect they patronised Egyptian temple building. It is possible some of this attitude operated in Cyprus. Temples of the classical architecture tradition were built in Cyprus under the prosperous Roman regime of the 1st and 2nd century AD and they are (surprisingly) in line with temple building at the same period in the neighbouring regions of Syria and Anatolia, cf. the type of "Roman Temple in Syria" so well defined by Krenker (Römische Tempel in Syrien). Sparse though the remains are the question requires some survey.

Greek temple

Ptolemaic period

Roman period

Temples of the Roman period in their design and detailing reveal that solutions to monumental sacred building programmes in Cyprus were not simple ready-made ones. They witness to an interplay of several influences and interests ranging from a survival of old Cypriote traditions to the contemporary Roman temple form. There were, of course, other features beside these in issue, viz the classical Greek form, regional Oriental Hellenistic developments and the Romanisation of these developments. Thus the situation in Cyprus was comparable with that obtaining in neighbouring regions, and the situation in these regions was complicated enough.

Although the published evidence is slight, it is probably the Temple of Aphrodite
131 on the Acropolis at Amathus which shows most affinities with a standard Greek

AMATHUS

temple in plan. It is reckoned to be based on a normal three stepped crepis and the design was prostyle with an adyton. However the order was the non-Greek "Nabataean" form of Corinthian as is found at Kourion. An early Augustan date compares well with the use of this style (cf. Praktika 2 pp. 284–285).

KOURION

APOLLO HYLATES SANCTUARY

Archaic temple

At Kourion the Roman temple of Apollo Hylates replaced an earlier monumental temple of late archaic times. Unfortunately, in spite of the close study of the site, virtually nothing has been said about this temple. It appears to have been set on a sort of crepis and there was a good cyma-recta base moulding about the foot of the wall masonry. Factors which suggest Greek influence, but the extent of this is still not made clear. When the temple was rebuilt in early Imperial times it was set on a high podium, a manifestly non-Greek feature. However that this was simply giving effect to the contemporary form of temple in Rome (e.g. The Temple of Castor and Pollux) is by no means evident. The high podium was a feature of the "Roman Temple in Syria". Furthermore the order of the temple was that draught form of the Corinthian called Nabataean. All indications suggest this form was evolved in Alexandria and thus its appearance at Kourion could mark direct Alexandrian influence just as much as community with Nabataean Arabia, which had widespread mercantile interests in the Eastern Mediterranean (Praktika 1 pp. 175–178). More basically still the Roman Temple of Apollo Hylates was built not within the city of Kourion but in a Rural Sanctuary not far from its walls, a long surviving example of the most basic of local Cypriote religious traditions. 128–130

Roman temple

podium

Nabataean capital

SALAMIS

The magnificent Temple of Zeus at Salamis is in all main points complementary to the Temple of Apollo Hylates. It is an urban temple and to all intents a new foundation. Unfortunately, much excavation not withstanding, the temple is not yet definitively published. Some points of interest are clear. 132

There is first the flamboyant installation of the Temple in its urban setting, viz a grandiose temple precinct. This extended area, something like 220 m × 55 m with monumental colonnades was once thought to be a forum, agora or the like, however it is now seen to be the sanctuary area associated with the temple (Praktika 2 1982 pp. 363 ff.). It is possible to think of the relevence of the traditional Cypriote regard for the temenos or sanctuary enclosure. However the form here is unmistakeably that of Romano/Oriental baroque (M. Lyttleton, Baroque Architecture in Classical Antiquity, London 1974), whatever connection that may have had with the great imperial fora at Rome (E. Gjerstad O/Arch 3 1944 pp. 40 ff.). Again (as indicated in preliminary reconstruction sketches) in the detailing of the cella unit with its engaged half columns and its bema adyton, the Temple of Zeus was a Romano-Oriental Baroque creation, cf. Jerash, Baalbek and Ephesos, NB the Temple of Serapis (Roman Architecture in the Greek World pp. 38–49).

baroque style

The date presently advanced for the construction of the Temple of Zeus appears somewhat problematical. Based on archaeological finds, it is stated that the construction was early in the first century BC, i.e. in Late Ptolemaic times and that 100 years later in early Imperial times, the access steps were added. Since all the architectural features of the Baroque building are more referable to the latter date, it is more reasonable to consider the Temple as of the latter period and to allow the earlier construction history to await demonstration. If the Temple of Zeus as currently reconstructed were indeed designed ca 100 BC, then it is in itself an important source for Roman Baroque design.

Finally in marked contrast to this contemporary Romano-Oriental building style at Salamis is the Roman renewal or redevelopment of the great Sanctuary of
92 Aphrodite at Paphos. Although no archaeological record has been identified of the sanctuary building during the first millenium BC, it is obvious that the original late Bronze Age Sanctuary remained functionally operative throughout this age with the provision of such various additional facilities demanded by social changes. In this way the force of tradition at this world religious centre was apparently unshakeable. Thus when in Early Imperial times the Sanctuary of Aphrodite was redeveloped, the precinct was more than tripled in area and the new building employed in parts contemporary expression (e.g. a Doric order as at Kourion). However the design concept was in no way centred about a temple but remained the sacred enclosure with servient tenements — here magnificient stoai. It is the system combined with a certain archaising which provided the image on numerous coins showing the sacred stone with a tripartite structural backdrop.

PAPHOS SANCTUARY OF APHRODITE

traditional form maintained in Roman Age

Consequently on this brief outline of religious building, a few remarks should be make concerning some individual features of local prominence.

installations

In the first place since much of the religious building takes the Sanctuary form where the focus is not an individual building but an altar or the like in an enclosure, considerable information has been recorded concerning these latter features. An altar is no very precise term. It is commonly understood as a raised (> *altare, altus*)table-like structure where it is proper to make offering of vows, sacrifices, gifts etc of all sorts. The process may involve bloodshed and/or burning — hence blood altars, fire altars etc. The Cypriote evidence (from the late Bronze Age religious building) has been very well assembled (J. Webb RDAC 1977 pp. 113–132). She notes the following types:

altars

typology

(a) more or less monumental stone structures of some height associated with the
91 horns of consecration standing self sufficient in an enclosure (cf. the Myrtou-Pigadhes stepped altar — but on the validity of the published reconstruction v. Ionas RDAC 1985 pp. 137–142);

(b) low stone tables or bases (ca 1 m square) = offering tables, either within a temple or axially placed in an inner court;
(c) possible standing stone with hollowed out upper surface = sacrificial block, blood altar;
(d) hearths or fire altars in courtyards and public halls. These are by far the most numerous group. They are properly circular or ovoid in shape and this fact exemplifies their unbroken descent from the neolithic round house hearth/altar — the focus or *Brennpunkt* of the building.

wall benches

Quite other than altars and offering tables are the wall benches which are found in the public halls of (Late Bronze Age) temples e.g. at Kition (v. Kition p. 77 fig. 13). These benches are constant features of the Old Mediterranean Temple type and are well documented in e.g. contemporary Palestine (cf. ABSP figs. 137, 145, 149, 152–160, 165). The function of these benches has never been entirely fathomed. One purpose is likely to have been to act as podia for effigies of adorants — surrogate worshippers (ABSP pp. 241–242).

sacred garden

Another characteristic of Cypriote religous building through the ages is its connection with gardens — "and in the garden stands a tree". This fact is still proclaimed in the village of Hieroskepos situated between Old and New Paphos, and once the site of the sacred cult gardens of Aphrodite (the village is now famous for its manufacture of Turkish Delight). The evidence of plantings constituting such a sacred garden (or grove) have been accurately revealed by the excavations of the Kition (Kathari) Sanctuary standing between Temples 2 and 3 in the earliest stage of the Sanctuary, LC II–III Kition pp. 57 & 54 fig. 9. While plantings to constitute a circular grove remained a feature of the Sanctuary of Apollo Hylates (Woodlander) at Kourion down through Roman times. In the interim numbers of the rural sanctuaries give evidence of enclosures for a sacred tree (or trees), e.g. Ayia Irini, Meniko etc. There are, furthermore, terra-cotta models showing "maids dancing in a ring" about such a sacred tree/ashera/maypole. Much evidence for all this was assembled by Ohnefalsch Richter (v. Kypros pp. 29–221, pl. LXXVI).

KITION — 125

AYIA IRINI MENIKO

metal workshops

Finally deserving of special mention is the decisive association in Cyprus of the sanctuary with metal working establishments. This is known elsewhere e.g. at Hazor and Sarafend in Palestine and Phoenicia (v. ABSP p. 160) but it is ubiquitous in Cyprus, the Island of Copper — cf. e.g. at Kition, Athienou, Meniko etc (CP & DP pass, NB pp. 43–56). That the shrines of the great goddess were at the same time foundries, forges and smithies is obviously reflected in the Homeric mythology of the union of the Cyprian Aphrodite and Hephaistos (cf. Kition pp. 74–76; Acts MEM pp. 105–109).

KITION ATHIENOU MENIKO — 98 171 172

architectural form

And now one obvious general question suggests itself. Several different architectu-

ral forms have been noted, the Old Mediterranean Temple type, the Square Cella, the Romano-Oriental Temple etc. Equally Cyprus because of its situation in history and geography harboured cults of various origins. There were indigenous Cypriote cults going back to the Early Cypriote sanctuary models and plank idols, etc. Then there were Phoenecian cults such as were celebrated in the great Astarte Temple at Kition — e.g. the divine names of Baal, Melkaart, Eshmun, Reshef, Mekal, are recorded. Finally there were Greek cults or at any rate cults of Gods called by Greek names, and very prominent here were Aphrodite and Apollo (v. O. Masson, in Elements Orientaux dans la religion Grecque ancienne, Paris 1960 pp. 129–142). *cults*

In view of all this can any consonance be seen between architectural form and dedication, above all between architectural form and cults of the several ethnic origins mentioned i.e. native Cypriote, Phoenecian and Greek? *correlation*

The material is not yet ready for a definitive study along these lines, but all general indications would be against such correspondance. First of all the distinctions noted in epigraphic records may be basically nominal ones. In any event syncretism is explicitly attested e.g. Apollo-Reshef (Greek-Phoenician), Apollo Alasiotes (Greek-native). Furthermore as a general rule the design of temples seems always to reflect the architectural tastes of the congregation not the nature and origin of the deity. Any god is worshipped in that style of temple which pleases the congregation most. *not evident*

It is difficult to make a positive summing up of religious buildings in Cyprus. In spite of the profuse material brought to light, as always there seems insufficient material. This is due to the fact that what one expects to be there is not revealed. What sort of religious buildings stood within EC-MC settlements, e.g. at Alambra, at Kalopsidha? What sort of temple did Euagoras I build for Salaminian Zeus? This vital information appears missing. But is this pure prejudice? Should not the evidence of the Vounous model and of the cellas and temples at Vouni be accepted as answers to these questions?

If so the overall picture is fairly consistent. Until the foreign impetus towards urbanisation in the 13th century religious building proceeded on native Cypriote traditions — where, by operation of religious conservatism, it went back to the old round house form. In the thirteenth century the newly developed towns were provided with temples based on a type known equally from Palestine to Mycenaean Greece. Whatever the mechanics of survival of this Bronze Age urbanisation into the prosperous town life of archaic times, in this latter period the architectural form dominant was the squarish cella with courtyards. This type has its affinities with the Semitic world of Syria and Lebanon. It is to be thought that the Ptolemies built some Greek style temples in Cyprus, but present day evidence shows only that there was a *general summary*

major temple building programme in Augustan times, and this took an internationalised form similar to the Asiatic mainland where Roman and Oriental Hellenistic traits intermingled.

In short one might say that following on the opening up to the outside world the affinities of Cyprus religious building were in the main with the nearby orient but with a strong individual pattern deriving from its peculiar society. The Cypriote Rural Sanctuary is one of the most striking facts of Cypriote archaeology and there is no reason to argue it out of being one of the most striking facts of ancient Cypriote society. There were such entities on the mainland adjacent; and the sanctuary at Nahariyah (in Northern Palestine) and at Khorrayab (in Southern Lebanon) comprehend the time span of the Cypriote Rural Sanctuary. However, the archaeological record shows these sanctuaries to be unusual on the mainland, whereas their Cypriote counterparts were the mainstream of development.

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e) Palaces

In English usage term has a limited semantic field implying residence of ruling (or allied) family.

In spite of the late survival of kingship in Cyprus, palaces do not figure prominently in archaeological record. Examples from LB Enkomi and Ayios Dhimitrios and from Archaic-Classical Vouni and Old Paphos. The traditional Cypriote π-form schema a basis for design in both ages. Early fifth century palace by city wall at Old Paphos of Mesopotamian plan reflecting prestige of Persian king. No palace buildings of Ptolemaic or Early Roman period but some idea of their form available from other palatial houses of 3rd and 4th centuries AD at New Paphos.

In English usage "Palace" is understood as the (somewhat grand) residence of a ruling family. As such it can (and generally will) house official (administrative, storage, etc.) apartments; however the residential function is definitive. (A palace in English is not a government office block.) Accordingly, in view of the conspicuous survival of the institution of kingship in Cyprus, it might be though that palaces would figure prominently in the archaeological record. However in this respect as in others, the archaeological record in Cyprus is other than expected. The palaces where (according to literary sources) Cyprus kings of Salamis, Kition etc. lived in (oriental) luxury have not yet been revealed. If the very illuminating Departmental Excavations at Kition had come down on a palace quarter rather than on a sanctuary quarter, the circumstances would be quite different.

functional definition

occurrence

In any event an examination of the issue can pass quickly over much (indeed) most of Cypriote archaeology. Social anthropology now recognises that it is possible to have considerable differentiation in non-urban societies, and so theoretically something like a functional palace can exist in such communities. However nothing very convincing in this regard has been unearthed in Cyprus.

In view of its commanding position and greater architectural development (peripheral apartments around the central raised house core) it is possible to regard Structure 14 at Tenta as a chieftain's dwelling; the other alternative would be a religious centre (Tenta p. 81 figs. 32, 57 Pls XXI–XXIV). However all this is based on social theory rather than on architectural remains.

TENTA

In architectural terms a palace must be a substantial public building — this expressed pragmatically means its area should be above 500 m^2, i.e. its dimensions must be something like 30 m × 20 m or more. Defined in this way Cypriote palaces are to be first recognised only in the urban period or the latter stage of the Bronze Age e.g. ca 13th century BC. Clearly there is nothing like the great palace building of

area

Crete or the Middle East; nor even much like the Mycenaean palace at, e.g., Pylos.
schedule The total record is not extended and the following buildings may be taken into account:

ENKOMI Areas III & I
ca. 1550 BC — 1050 BC
Evolution from fortress (Area III) and villas (Area I) into urban administrative H.Q. and city block buildings of palatial development.
Enkomi I & II

AYIOS DHIMITRIOS Building X
ca. 1325 BC — 1225 BC
Urban or proto-urban palace. Storage etc. below and residence on upper floor.
Praktika 2 pp. 113–24; Cyprus CLBA pp. 11–18

VOUNI PALACE
5th century BC
Splendid palace crowning settlement on hill with two main periods of development, the second ca. 450 BC modifying the original old Cypriote II form schema.
Vouni; SCE III pp. 76–339; IV2 pp. 23–29.

OLD PAPHOS (Haji Abdullah)
5th century BC
Palace of Mesopotamian plan by city wall.
RDAC 1985 pp. 106–107;
OA3 1960 pp. 155–175.

If any building complex can be said to illustrate the development of the palace in
ENKOMI AREA III Cyprus it is Area III (by the North Gate) at Enkomi, which is so well excavated and published by Dikaios. This building complex began its existence as a 550 m^2 fortress, 74
standing in isolation at what may have been the northern periphery of a dispersed group of "villas" or hamlets, and ended it as a major public building (1200 m^2) hard inside the Gate against the City Wall, a characteristic siting for such buildings. 135
Throughout its 400 years or more existence it was clearly the seat of a commanding interest in the settlement at Enkomi. If originally it was a blockhouse and latterly a governmental quarter by virtue of its residential accomodation, at certain junctions it must have been a palace, cf. the excavators estimate: "The whole building with its

defined sectors each used for a special purpose and with a central core gives the impression of a large residence where lived a powerful citizen or chief who had in his possession an important copper workshop, producing copper on unprecedented scale" (Enkomi II p. 511).

This referred to the LC II A-B building which succeeded the fortress and Dikaios was at pains to emphasise that the same character adhered during the following stage of the building in LC IIc times, when it was eventually to coalesce with the new
134 city wall. "The . . . general conception of the architectural plan of the building may suggest a Mycenaean chief or an industrialist who installed himself in the northernmost portion of the town where previously buildings housing copper workshops stood" (Enkomi I p. 66). The introduction here of the term "industrialist" introduces the concept of the "Merchant Prince" whose factory can well be thought of as constituting a palace if, by virtue of his activities, he played a commanding role in the settlement's affairs. This is exactly the significance of the Palace in late mediaeval and renaissance Italy. N.B. Dikaios was anxious to characterise rooms and apartments in this LC IIc palace as megarons to emphasise a supposed derivation from Mycenaean mainland palaces, but this is not at all obvious (Enkomi I pp. 48–49).

With this by way of social background, attention may now be turned to the architectural form of the Enkomi buildings. And here since they are in every way complementary, it is best to consider conjointly the buildings of Dikaios' Areas III and I.

At the beginning of the Late Bronze Age (16th–15th centuries) when the original blockhouse was established in Area III, rural looking farm house type buildings were developed in an irregular depression in the bed rock some 100 m to the South.
162 Although constrained by the limits of the siting, it is clear that the design of these buildings was based on the π form principle — i.e. three ranges of rooms embracing *design principle*
on 3 sides an open fronted court. Thus across several centuries of development a compound design emerged in which two π form buildings (North and South) were
25 united into an overall complex again by virtue of the π form principle. This unmistakeably demonstrates the significance this design form enjoyed in Cyprus.

This building is co-aeval with the Palace in Area III and in the latter as well as in
26 the former, the π design has its influence (Enkomi I pp. 40–50, 84–85; Enkomi II B pl. 251). The excavator recognised Area III as a palace complex. Area I is not so simple to characterise. Originally a rural building type, it appeared to have become more urban as the settlement developed in density so that by the middle of the 13th century, both Area III and I were large building complexes of the order of 1000+ m^2. On this reckoning they are public buildings and since (in part) residential they

are akin to palaces. They thus provide valuable evidence of the underlying significance of the π form in the design of major Cypriote secular buildings.

AYIOS DHIMITRIOS

This evidence is corroborated in a striking manner by the newly discovered Building X at Ayios Dhimitrios (Cyprus CLB pp. 11–18). This building is LC IIc, ca. 1325 BC — 1225 BC, and thus exactly at the stage of evolution into urbanism. (The large, 11 hectare site was laid out with a regular street system, but as yet no city wall has been discovered.) The building has a regular, almost square, ground plan covering an area of more than 1000 m^2. This is taken up in considerable measure with large halls or galleries providing for (public) storage. Inscribed clay cylinders suggest administrative functions. Substantial stairs indicate the existence of an upper storey for residential apartments (piano nobile). Again the design is based on the π form. However, here is manifested its inevitable adjustment to urban circumstances. The mouth of the court is narrowed or closed so that the building loses its open fronted rural character and assumes the aspect of a regular city block building. With this conversion of the open fronted court into an entrance hall and/or internal court another interesting planning feature emerges. The provision of direct access to the recesses of the building via long narrow through corridors which leave the medial hall or court as a principal room rather than as circulating space. These long corridors are equally to be seen in the Enkomi Area III and I.

Building X 32

design form

masonry construction

ENKOMI AREA I

The public nature of Building X is manifest from its ashlar masonry construction. At Enkomi this latter feature gives its name "The Ashlar Building" to the LC III successor of the Area I buildings. Here with the regularisation of the street grid the former interrupted frontages were made continuous so that the Ashlar Building became a typical city block structure. However what is its social status? If it is the property of a single family, it is a palace of some sort since it is clearly residential. But was it necessarily a single possession? The possibility exists that the Ashlar Building may be a Bronze Age precursor of the city block tenement houses of imperial Roman times (cf. at Ostia). 136

function

VOUNI

One of the most notable facts of building history in Cyprus is the survival of the π form across the ages to link the one great Palace of the mid first millenium BC, that at Vouni extending over ca. 1 hectare. And presumably the palaces of the other Cypriote kings (e.g. in Salamis and Kition) in archaic times were also designed in this form. In spite of much extraneous *Baugeschichte* (Vouni pp. 155 ff.) Gjerstad was quite correct in his assessment of the overall building type in evidence at Vouni, viz in the original, ca 500 BC, it was a traditional Cyprus form and in the later (ca 450 BC) rearrangement it manifested foreign (Greek) influences (Vouni p. 171). In the original design the core of the building, the principal residential unit is clearly π form, with a broad flight of monumental steps leading up to the open fronted court, now 138 139 140 138

original form

furnished with an (awkardly detailed) peristyle. That complex has been additionally monumentalised by a propylaion in some way perhaps reminiscent of the Gate of all Nations at Persepolis (v. AAAO p. 219, fig. 119). If indeed this was a valid influence, it says much for the ecumenical image of Persian royalty.

141 When in the mid fifth century this entrance was walled up and the propylaion converted into the state apartments, throne room or the like, while the entrance was shifted to a rear angle, then the sense of the long lasting design form was obscured. That much is certain. Whether the new design is directly reproducing Greek forms (the megaron and the non-frontal three quarter approach) is perhaps not quite so obvious as asserted (Vouni pp. 169 ff.), but in principle this seems just. At all events, if there is foreign influence on the building modes of Cyprus in classical times, the very extensive evidence at Vouni suggests that in the main this operated in secular not religious building — since the several palace chapels and shrines continued to be built in the square cella form common in Archaic times.

later form

One striking demonstration of foreign influence in the Palace building of the
141 period is the very exotic complex discovered at the locality Hagi Abdullah on the eastern outskirts of ancient Paphos (RDAC 1985 pp. 106–107; OA III 1960 pp. 155–173). This large building, ca 1000 m^2 extent, was set against the inside of the city wall (a proper place for a ruling residence). It is so entirely Mesopotamian in design that it was originally (almost automatically) considered to be the residence of the Persian commander or military governor after the successful siege in 498 BC. However it has now come to be seen that it is more reasonable to consider it an example of the flattery of imitation during the period when the Great King's prestige was highest in the Island. In this way it is a parallel to the first palace at Vouni.

OLD PAPHOS

Mesopotamian design

It is as evident *a priori* as anything can be in archaeology that the Ptolemaic governors (*strategoi*-junior kings etc.) built their palaces in Cyprus on Hellenistic models (cf. their Macedonian heritage at Pella, Vergina etc.). Religion and life style tend to differ. The Ptolemeys fostered Egyptian type temple building and were worshipped in Egypt as Pharoanic Gods, but they did not live as such, they lived like Greeks. Although the palace quarter of Alexandria is still covered over, it is possible to gain some idea of Ptolemaic gubernatorial palaces from remains in the province of Cyrenaica especially at Tolmeita, ancient Ptolemais (v. Ptolemais City of the Libyan Pentapolis). On the other hand there are bare notices of a palace at Soloi, which should be Hellenistic but is said to evidence similarities with Vouni (v. Arch in C pp. 68–69; BCH XLVIII 1974 pp. 85–87).

Ptolemaic Cyprus

CYRENAICA

SOLOI

However nothing much is served by speculating on the virtually non-existent. At New Paphos (the Ptolemaic and Early Roman Capital of the Island) odd architectural elements have been revealed of Hellenistic residences, but the plans of these

NEW PAPHOS

buildings are hidden by the later Roman monumental constructions overlying them. In the South-West quarter of New Paphos several luxurious villas of the third century and later have been and are being excavated. Of these the Villa of Theseus is most in point here (v. Arch in C pp. 282–286). The Villa of Theseus (so called from its mosaics) was probably the Palace of the Roman Governors of Cyprus from the beginning of the third century AD to the 6th century when the capital was transferred to Salamis. It is one of the largest buildings in the eastern Mediterranean. It extends over almost 1 hectare in area and contained more than 100 apartments at ground floor level, while in addition there was an extensive upper storey. It overlay remains of previous Hellenistic buildings of the same genre (for some note of these now see RDAC 1988_2 pp. 195–203). However it was ca 200 AD that the first construction work began and the building took definitive shape much later — in the fourth century AD.

Roman palace

This great palace was a true Roman building of the Greek East and evidenced no ties with the traditional local building of Cyprus. It is organised about a very large central peristyle and its several wings are clearly differentiated functionally. Although skilfully planned with regularity, there is nothing stereotyped or monotonous about it — varied features being cleverly worked in to the ensemble e.g. atrium, basilical halls, apsidal exedrae, baths, etc. Above all there was a wealth of excellent mosaic floors. All this exactly marks the succeeding stage in the architectural history of the Island after the conclusion of the present study — an age when monumental building belonged to the international style and no longer bore the stamp of the Island's idiosyncratic age-old past.

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f) Public Buildings

Provison of a variety of non-religious public buildings constitutes a transformation in building history. Summary identification of relevent building types. Such buildings unknown in Late Bronze Age urban Cyprus but attested in Ptolemaic times with numerous examples surviving from Roman times. In general, little evidence of their introduction in the days of the autonomous Cypriote kingdoms.

A definite selection manifested in the types of public building prominent in Ptolemaic-Roman Cyprus, which consist of those designed for culture and leisure as against those providing for public affairs. N.B. strange absence of the Triumphal Arch. Brief survey of the occurrence of the following forms: The Agora Complex; Nymphaea; Baths; Theatres; Amphitheatres; Athletic Competition and Training Grounds; Hippodromes.

the city civilised

The provision of separate buildings in a settlement to serve as public amenities for a variety of non-religious activities which are considered to be part of a normal way of life: this is probably a third transformation in the building history of Cyprus of equal moment to the establishment of the round-house settlements in the 8th millenium BC, and the development of the walled, planned city in the 13th century BC. When and how did this occur?

historical development

Initially it must be said that the archaeological evidence is defective. Very little excavation has taken place of the flourishing towns, capitals of the autonomous Cypriote kingdoms of the first millenium BC. Thus it can not be said with any certainty how far pro-Greek rulers of these kingdoms (e.g. Euagoras) may have provided for aspects of the Greek way of life. Perhaps the question may be circumscribed as follows. The evidence at Enkomi shows that the town site was laid out in a rational manner but all the buildings recorded are either residential *cum* administrative *cum* industrial, or religious. No typical form of building associated with any other communal activities (e.g. public assembly, public contests, etc.) has been recognised. On the other hand in the first century AD under Imperial Roman rule a variety of monumental public buildings survive. Additionally there is occasional direct evidence of some such buildings from Ptolemaic times (which is supplemented by the indirect evidence of epigraphy).

Before attempting an analysis of the marked overall contrast between the Cypriote scene of ca 1200 BC and ca 200 BC, it is advisable to make a summary statement of the general background picture — i.e. to provide an outline schedule of those types of "Western" public building which could come in issue at the later age. This list is indeed surprisingly long and varied:

AGORA	An open space in a Greek (or Graeco-Roman) town serving as a market place and general meeting place. It was often surrounded or partly surrounded by porticos, especially in Hellenistic and Roman times.
COLONNADED STREET	A major thoroughfare provided with covered "sidewalks" to maximise the virtues of street life, especially in hot countries. In some ways an extension of the agora.
STOA	A long building fronted by a deep portico used for a variety of public purposes, e.g. temporary shelter, public meetings of all sorts. It constituted an all purpose community hall or "town hall".

BASILICA	A long hall usually rectangular apsidal and often with inner columns affording a meeting place for social and commercial purposes and the hearing of law suits. For the latter purpose there is usually a special structure, the tribune, at one end for the presiding magistrate. The basilica is an indoor doubling of part of the forum/agora developed to suit the form of Roman political life.
BOULETERION	The council chamber — meeting place of the *Boule* or senate.
ECCLESIASTERION	Meeting place of the sovereign assembly of citizens — i.e. the supreme legislative and executive of the city.
TRIUMPHAL ARCH	A specifically Roman monument similar to a free standing arched town gate, but erected in a variety of positions. It served as a vehicule for decorative reliefs and statuary; and it dignified the city by calling attention to some important public event which affected its fortunes.
NYMPHAEUM	Etymologically a shrine of the nymphs but in Roman times a civic embellishment, an ornamental pleasure resort with fountains (cf. our public fountain as enclosed in a pavillion).
BATHS (BALNEAE, THERMAE)	Establishments of varying sizes providing (therapeutic) bathing at graduated temperatures etc. (cf. Turkish Baths). In Greece often associated with Gymnasia, but in Rome the great public baths (Thermae) were centres of public life in themselves, something like modern recreation centres.
PUBLIC LIBRARY	Adopted by the Romans on the instance of the great libraries at Alexandria and other centres of oriental hellenism. Central unit a large squarish or exedral hall with elaborate wall decoration incorporating inbuilt cupboards for storage of scrolls, etc. Sometimes with functional cavity walls to keep "books" dry.
THEATRE	Open air auditorium of approximately semi-circular form for the viewing of dramatic performances partly on a more or less raised stage and partly on a dancing floor below. (An odeion is a smaller roofed version of the theatre.)
AMPHITHEATRE	An oval or elliptical development of the theatre for viewing "blood" sports (gladiatorial combats, wild beast hunts, etc.).
GYMNASIUM	Training centre to produce and maintain *mens sana in corpore sano* including a covered running track and walks set about as far as possible with gardens and groves. It was resorted to for mental as well as physical education.
PALAESTRA	An aspect of the Gymnasium. A defined architectural unit similar in form to a large peristylar house constituting the

wrestling school with the attendant service facilities and club rooms.

STADIUM — A sports ground for the viewing of track and field athletics, principally a foot race/one stade (ca 200 m) long. It takes the form of a long rectangle ca 200 m × 100 m, generally with one semi-circular end.

HIPPODROME, CIRCUS — A race course to permit viewing of both chariot and saddle events with a 2 furlong (i.e. ca 400 m) straight. It takes the form of a very elongated rectangle (i.e. ca twice the length of the stadium) with one semi-circular end.

In assessing the possible application of this picture to Cyprus, the first significant matter is to recognise the basic chronology of the picture. And here it is immediately seen that much of this range is of later Hellenistic-Roman development. The pre-Hellenistic types of building are the Agora, Stoa, Bouleterion, Ecclesiasterion, Theatre, Baths, Gymnasium, Palaestra, Stadium and Hippodrome. As a preliminary consideration the council and assembly chambers are specifically referable to the highly individual political institutions of Greece and there is little to suggest their applicability to the society of the Cypriote kingdoms. Thus in the present connection there is left for consideration the agora, stoa, theatre, baths and "gymnastic" or "agonistic" buildings — and it must be noted that in their earlier (ca pre 400 BC) versions they are all much simpler and less monumental than the forms which later came to be recognised as standard.

classical forms

of simple design

Whatever their degree of monumentability, were any of these architectural forms introduced into Cyprus by pro-Greek rulers of say the fifth century BC? This is an interesting question and it remains an interesting possibility. The Greek language was current in the Island, were concomitant literary interests satisfied by raphsodists reciting Homer or was there a demand for the performance of contemporary Attic drama? The stoa is a highly functional, all purpose building form in place in a religious as well as a civil mileu. Were the chariots and steeds of the archaic burials at Salamis for royal pomp and ceremonial only or did they race? Future excavation may bring positive answers to such questions, but as yet there is no more evidence for the occurrence of the public building types of classical Greece in the Cypriote kingdoms than for the occurrence of the classical Greek peristylar temple.

possible Cypro-classical instances

little evidence

What then was the setting for the few instances of archaic or classical architectural members discovered in Cyprus (e.g. the archaic Ionic Column at Tamassos — Arch in C p. 250, figs. 9 & 10)? The simplest answer is to suggest that these were mainly used in an ornamental sense — e.g. as votive columns.

In short as a matter of common sense based on negative evidence it may be said

that exceptionally some specialised public buildings could have been erected in Cyprus by the native kings, the process of transformation proceeded at a greater or less degree in Ptolemaic times and at the beginning of Imperial Roman rule, Cyprus was provided with such buildings in a fashion comparable to the other provinces of the Empire.

Roman province

Roman types

The next question to emerge is what particular types of public buildings were provided at this time — i.e. what selection was exercised. This is, of course, a question of the greatest interest as bearing on the peculiar development of social life in the Island. Here again the limitation of the archaeological evidence is to be remembered — e.g. the remains of a theatre are much easier to recognise than those of a council house. However taking the evidence as it stands it appears that certain types of public building occur in Roman times while certain other types as yet have not been found. The following is the balance. The more or less monumental agora is known and the stoa and the bath. Also the amphitheatre, the gymnastic complex and possibly the hippodrome; and something like the nymphaea. On the other hand there is little evidence for the basilica, the council or assembly chambers. While the colonnaded street is not much developed and there are no triumphal arches at all. Thus the selection appears to lie in those buildings designed for culture, leisure, pleasure as against those providing for (governmental) business. So far as embellishing the city it seems that the nymphaeum or fountain house was popular but the triumphal arch was not welcomed — a very sensible choice but one not very easy to explain.

selective occurrence

For the occurrence in Cyprus of several of these categories of public building there are matters of interest which are worth individual note.

The Agora Complex

In no connection has current excavation changed the archaeological picture in Cyprus so positively as with "public affairs" buildings, viz the agora and monuments related to it. Until the last few years there were only loosely applied ascriptions at Salamis — e.g. The Stone Forum (associated with the Temple of Zeus) and The Marble Forum (now Gymnasium). Now there are in progress excavations which have defined the form of a monumental agora at Amathus, Paphos and Soloi; have indicated the agora area at Kourion and have redefined the application of the term at Salamis. Unfortunately none of these excavations have been published definitively, indeed most of them remain virtually unpublished.

recent evidence

So far as can be judged from the published records, all these monumentally developed agora complexes are of Roman date. No archaeological evidence has been

of Roman date

adduced of an agora in Ptolemaic times, far less any such entity in the period of the Cypriote kingdoms. In this fashion the agora as spoken of in Cyprus is the later Hellenistic-Roman style agora, characterised by regularly planned colonnades with public buildings disposed in relation to them. N.B. for convenient distinction between earlier and later agora, v. Lawrence GA p. 250 (earlier), pp. 265–268 (later).

At New Paphos virtually no details have been published but the overall lines
56 appear on a general plan (Paphos p. 227, fig. 208) which show a *plateia* 95 m square NEW PAPHOS
surrounded by colonnades. The order was Corinthian with white marble capitals and bases and grey granite monolithic shafts. If the date is early 2nd century AD as suggested (Paphos p. 251; BCH 103 1979 p. 718) then it is a very early appearance of the marble style in Cyprus. Also the grey granite columns are interesting in view of the direct connection between Paphos and Egypt.

Fronting the west colonnade of the agora and cut back into the Fanari (acropolis) hill are two adjoining monuments, an odeion and an Asklepeion. Neither however has been published in any significant way.

At Kourion the position of the Roman Agora has been revealed on the Acropolis KOURION
area just opposite the present entrance to the Antiquities Site. The north (or rather N-W) colonnade has been excavated and is shown to extend for a length of 65 m, and
306 its return at the N-W angle has been defined. The order is Corinthian with white marble capitals and bases, and monolithic blue-greyish marble shafts. All this is the pre-fabricated marble style of the end of the 2nd century AD (Severan) and properly speaking marks the beginning of the subsequent age (Arch in C p. 273). What the circumstances in the area were during the first and second century AD has not yet been ascertained.

Built against the N-E flank of the agora is an interesting monumental complex which from its limestone construction and style is clearly of first century AD origins. This complex includes a basilica like hall with installations for fountains and basins, etc. At some stage much of the building was revetted with marble.

Perhaps the most easily accessible remains today of a monumental Roman agora are those being cleared by the Department of Antiquities at the lower town of Amathus (Paleo Lemessos). They are not as yet published in any detail (v. BCH 111 AMATHUS LOWER TOWN
1987 pp. 691–692, fig. 236). Nonetheless on site an agora complex is clearly to be recognised planned about a rectangular colonnade ca 40 m from East to West. This agora lies under the beetling ridge of Amathus down on the narrow level ground where the former main road passes by the sea. And in ancient times it must have stood beside the harbour basin, its columns looking on the waters like a Claude painting. What is of great significance here is the enormous wealth of limestone architectural fragments from the first and second centuries AD — post classical

Doric, gentle and graceful with Corinthian style cornices, the corona supported on modillions. On the north side appear broad steps up the slope from the sea and here at the limit of the excavation to the west an imposing public fountain complex has been partly revealed.

SOLOI

At Soloi on the north coast there is an elaborate civic centre development. Unfortunately the excavation suffered very specifically in the events of 1974. However it is to be published by Prof. R. Ginouvès, a prime authority on oriental Graeco-Roman architecture. Meanwhile preliminary reports indicate that a colonnaded agora was developed in the central part of the lower town (not a harbour market as at Amathus). What is of the greatest significance at Soloi is that the main East-West thoroughfare leading from the East Gate to the Agora area (and beyond) took the form of a colonnaded street typical of Roman urban development in the orient (Asia, Syria, Libya, etc.). However the notable fact is that this is the only example hitherto encountered in Cyprus (Arch in C, pp. 258–260). Backed against the north flank of the agora where it is retained against the downward slope to the sea, Professor Ginouvès partly cleared another monument expressive of this type of Romano-oriental urban development: a Nymphaeum.

The unusual opulence found at Soloi is partly explained by the fact that it is properly speaking a phenomenon of the succeeding age of ecumenical Roman imperialism. All this work is in the marble style and dates from the very end of the period under review or later — i.e. it is Severan to the third century AD. This situation in a nutshell underlines what may be a characteristic of Cypriote history — the tendency for an established way of life and its modes to persist longer on the Island than in neighbouring lands.

SALAMIS

Both the Department of Antiquities and the French Mission carried out extensive work on the monumental buildings of Graeco-Roman Salamis during the sixties and seventies. This has suggested an overall grid planning development and has revealed

civic centres

several city centres: a notable civic amenities centre at the north-eastern margin of the site comprehending Gymnasium, Theatre, Amphitheatre etc. and the Temple of Zeus complex by the South-West entrance to the city. This latter area appears to have been newly developed at the end of Ptolemaic and (more significantly) the beginning of Roman times (Arch in C p. 206). From the period of the British Excavations a hundred years ago, the lines of this grandiose complex consisting of a

Temple of Zeus complex

podium temple and a vast colonnaded area axially fronting it have been fully known (JHS XII 1891 pp. 67–81). This is in traditional limestone building with an Alexandrian type, traditional Corinthian order: all factors corroborative of an early Roman date.

57

132

The extravagantly monumental piazza (ca 250 m × 60 m) is flanked by colon-

nades and entered by a great propylaion (of composite five arched design and the only thing in Cyprus approaching the Triumphal Arch). This feature has always had a slightly ambivalent reference. On the one hand it was automatically considered to be the agora of Salamis and as such figured in the guide books as "The Stone Forum". On the other hand, since it was well known that the Temple of Zeus had notable rights of sanctuary and this was a feature indubitably designed in conjunction with the Temple, then it could equally be thought of as a Sanctuary Area. This last understanding has been the one principally emphasised by the recent French expedition (v. Praktika 2 pp. 363–368, figs. 1 & 2). In this fashion perhaps the commercial agora of Salamis is still to be uncovered. (N.B. for a possible origin of the Imperial Roman forum type in just such monumental Eastern temple precincts, v. E. Gjerstad, Die Ursprungsgeschichte der Römischen Kaiserfora, O Arch III 1944, pp. 40–72.)

function

In discussing the monumentally designed agora with its colonnade and colonnaded street approach we abut on a closely associated type of building which in some ways is most essentially Greek — the Stoa. The stoa has a very interesting historical development which recently has been very well set out (J. Coulton, The Architectural Development of the Greek Stoa, Oxford 1976).

Stoa

An interesting illustration of the reception of the stoa in Cyprus is provided at Tamassos. The recent German excavations there directed by Professor Buchholz have revealed something of the historical development of the Sanctuary of Aphrodite just within the city walls and close to the famous Royal Tombs. A building complex of Cypro-Classical times was succeeded in the Ptolemaic period by a complex
119 essentially similar in scope and scale. However, whereas in Cypro-Classical times the units of the complex appear to be the simple rectangles of traditional mud brick building (Arch in C p. 248, figs. 7, 8), in Ptolemaic times the units display a considerable diversification of form (Arch in C p. 251, figs. 11, 12). And built hard
120 against the main building, which is in the form of a courtyard house, is a stoa with a wooden portico. This Greek form is obviously apposite to the circumstances and constitutes a rather striking innovation.

TAMASSOS
sanctuary area

COUNCIL CHAMBERS

Although a town council (*Boule*) is attested epigraphically during Hellenistic and Roman times at Cypriote towns (e.g. Kourion – v. Kourion Inscr N°s 32, 34, 86, 92, 111; cf. R.S. Bagenall, The Administration of the Ptolemaic Possessions pp. 58–67), as yet no building identified as a Bouleterion or the like has been excavated on the Island.

KOURION

Nymphaea

The occurrence of the Nymphaea in Cyprus is interesting. The ultimate religious origin of the form (D & S sv Vol VIII p. 129) lay in the grottos held sacred to the nymphs, The "Cave of the Nymph", and this natural feature always remained recognisable, at least in token form, in the Nymphaeum plan. Developing from such shrines of Hellenistic times, the concept of the Nymphaeum proved popular and it took on a variety of modes — a rural monument near a notable source/spring etc.; a private extravagance in a palace or villa etc. Above all it came essentially to be recognised in its Oriental Roman guise as a graceful to ostentatious city embellishment feature. This constituted a public amenity providing just that sort of pleasant rendez-vous and relaxation place we expect from our public fountains (v. S. Walker, Roman Nymphaea in the Greek World, in RAGW pp. 60–71).

nature & function

It is this latter aspect which has rather surprising application in Cyprus. At the three Roman civic centres recently excavated, Amathus, Kourion and Soloi, there is a monumentally planned Nymphaeum (or the like) associated with the agora area. One of the possible functions of a nymphaeum was the public distribution of fresh water (i.e. it would be a public fountain house or *krene*). And Cyprus during much of the year is a hot dusty (sometimes drought stricken) area. The nymphaeum was thus not only a delightful and ornamental feature, it was very useful.

common in Cyprus

Amathus

At Amathus the progress of the excavations has as yet not revealed the architectural form of this type of feature. Only there can be seen in the North-East part of the cutting basins and lionheaded spouts etc., constituting a public fountain complex (BCH 109 1985 pp. 961–962). However at Kourion and Soloi excavations have shown two nymphaea of utterly contrasting form. This distinction in form corresponds to a chronological distinction and also perhaps to a distinction in regional inspiration.

Kourion

The Nymphaeum at the west end of the agora area at Kourion (close to the Hellenistic water reservoir) is a very interesting monument (Arch in C pp. 274–275). At first general viewing it would appear to be the only basilica known in the Island. And to some degree it might be. The building had a long history of usage and reconstruction down into early Christian times. Essentially it was an Augustan foundation, renovated in Trajanic times. In its present state of excavation and preservation it undoubtedly registers as a basilican hall (45 m × 15 m) with an apse at the east end. Here, according to the excavator, originally were water installations partly suppressed in later times. However at the other western end of the building basins and fountains remain visible strung across the rear wall (BCH 111 1987 pp. 692 ff.). The general impression is that of a basilica furnished with amenities of

basilican form

running water. The building is, of course, hard by the agora in a position appropriate to a basilica. Perhaps it is a nice thought to imagine that the ancient Kouriotes combined business with pleasure and discussed their affairs to the back drop of plashing fountains.

design forms

While it is quite possible that the Kourion Nymphaeum may have served as a basilica at some stage or doubled as a basilica and nymphaeum, there is another dimension to the argument. Although the subject has not been widely discussed (but now, v. S. Settis in ANRW 1.4 1973 pp. 661–745) it is possible to see two different strains in the nymphaeum species. The essence of the plan consists in a simulacrum or echo of the grotto of the nymph. This however may take the form of a decorative element in an otherwise straightforward hall plan, or it may substantially form the outline of the plan itself. The latter is the architectural type commonly associated with the concept — the type of the ornate public pavilion in the Roman East. This is sometimes called the U form, although perhaps in view of the association with the theatre it might be better referred to as the theatral or cavea form. This flourished during the 2nd century AD (v. Crema AR pp. 429–433, N.B. the Nymphaea of Jerash and Petra). The other type is the earlier form found in Roman Italy of the late Republic and early Empire, which is essentially the private nymphaeum — a cultured amenity in the great villas of the age. The plan of this is essentially a hall with an exedra/exedrae and often in essence of basilical disposition (v. Crema AR pp. 129 ff., 240 ff.; N.B. the nymphaea at Cicero's villa at Formia, fig. 112 and that at Tivoli, fig. 113). This is without doubt the type of the Kourion Nymphaeum constructed in Augustan times.

SOLOI

Equally the Nymphaeum at Soloi which is from the end of the 2nd century AD or later seems to be exactly the other type, the U form or cavea type as befits its later date. It has an ornate curvilinear baroque plan with much marble ornament (Arch in C p. 260, and private communication of Professor R. Ginouvès) well in line with contemporary monuments on the mainland (Crema AR p. 430, fig. 535) and in Greece (S. Walker p. 63, fig. 20 — at Olympia and Athens).

The presence of these nymphaea hard by the agora at each Roman site which has been excavated seems to show that this type of public building was a norm in Cyprus. Equally the absence of any evidence of a triumphal arch either in this locality (a common one for it) or elsewhere seems to show that the Triumphal Arch was unknown or very rare in Cyprus. Since this is anything but the case in the neighbouring regions of the mainland — Asia, Syria, Arabia, etc. (v. Crema AR pp. 208 ff., 303 ff., 441 ff.) it is a very interesting fact to consider.

Baths

Sufficient material is available to provide an outline of the developments of bath buildings in the Island and a monograph on the subject would be of interest. It is public bathing facilities which are to be discussed here. However later public establishments were influenced in origin by private bathing habits, so some preliminary reference to the latter is in point.

LC period

There are indications of bathrooms or areas specially set off for washing in the urban Cyprus of the Late Bronze Age. These are thought to be recognisable either from the special paving to provide for water run off (lead jointed flush limestone slabbing as at Hala Sultan Tekke — v. Hult Masonry p. 9, fig. 2) and/or from the furnishing (e.g. terra cotta trough or tub as at Myrtou Pigadhes Rm 27; Pigadhes p. 22, fig. 7). The social background to these remains is given in the quite extensive references occurring in Homeric literature. These make mention both of the hospitality-ritual washing of hands and feet and also of total bathing (cf. Balaneutike pp. 157 ff.).

Hala Sultan Tekke

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Myrtou

5th century BC

Vouni

very early hypocaust

Proceeding from this introductory background the next step is in *medias res*. At the early fifth century BC Palace of Vouni occurs what must be one of the oldest hypocausts archaeologically recorded. In the rear East angle of the main palace building Rooms 40–42 are bath rooms (SCE III p. 207). At a somewhat later date (or perhaps better at a later stage of construction) Room 85 was added backing them (pp. 212–213). In any event these three rooms 40, 42, 85 comprised a standard bath unit: 42 was the *caldarium*, 40 the *frigidarium*, and 85 was the *sudatorium* above a firing chamber, the *fornicarium*. The firing chamber was corbel vaulted and ashlar lined flues in the walls conducted the hot air into both the sudatorium and the caldarium (pp. 212–213; pp. 130–131; 140–141, figs. 80–83). The floors of the *frigidarium* and *caldarium* are laid to fall so as to drain off the water to the rear and on the floors are the impressions of basins and troughs.

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Although texts indicate that public baths in Greece were heated and hot water provided from an early period (Balaneutike p. 204) it is only from the beginning of the Christian era that the terminology for under floor heating is found expressed — *to upokausterion tou balaneiou* (pp. 205–206). Nevertheless there is earlier archaeological evidence in Greece for underfloor heating in public baths at e.g. Olympia, Eretria, Syracuse and above all, at Gortys pp. 206–209, figs. 124–126), but all this evidence is fourth century BC or later (pp. 184–186 — Olympia perhaps from mid-fifth century). In this fashion the hypocaust Room 85 at Vouni is of the greatest importance in explaining the genesis of one of the features on which Roman invention most prided itself: underfloor central heating (cf. Lawrence GA pp. 269 ff.).

In passing and by way of contrast to highlight this (dare one say asiatic?) luxury it may be noted that other bathing facilities existed in the service wing. Here rooms 21–23 were bathrooms (SCE III pp. 209–210) with cemented walls and floors, the latter laid to fall (p. 143, fig. 84). They constituted what might be called a wash house where only cold water was provided for washing in basins set on benches.

Recently salvage excavations (BCH 90 1966 pp. 364–365) in the Chrysopolitissa quarter near the northern limits of ancient Larnaka have revealed the succeeding stage in the development of bath building in Cyprus, viz the standard Greek *balaneion* of Hellenistic times. This feature has been superbly documented by R. Ginouvès (v. Balaneutike) and therefore only the briefest reference is necessary here to the Larnaka example. KITION *Hellenistic balaneion*

At Kition remains have been cleared of two round chambers lined with inbuilt "*sitz*" baths. The better preserved chamber is ca 8 m in overall diameter with ca 28
149 peripheral baths, which seems to be something of a standard for a larger public bath, cf. the well-known baths at Oeniadae and at the Piraeus (v. Balaneutike figs. 156, 157).

These sitz baths (*puēloi*) represent the solid masonry equivalent of the older terra-cotta tubs which were convenient to transport according to requirement but were vitiated to some degree by their inherent fragility. They also indicate the surprising change in habits in later classical times when bath by immersion (in the long and deep tub as we know it) lost out in popularity to the bath by affusion, conveniently managed in a seated pasture (Balaneutike pp. 42–44). This, of course, has the considerable advantage of economy in space — and moreover in hygiene! At any rate this model of bath in large measure superseded the "reclining" bath tub in the Hellenistic *balaneia* (the latter being represented as restricted additional facilities alongside the former which are the norm).

Characteristically these sitz baths can be most easily arranged set side by side on a radial pattern around the circumference of a rotunda or tholos. Equally characteristically in public baths, there are two such tholoi, a men's and a women's pavilion (Balaneutike pp. 191–198). All this canon is unmistakeably indicated in the fragmentary remains of the *balaneion* at Kition *Chrysopolitissa*. Another interesting aspect of these remains is their Ptolemaic association, since it is precisely in Ptolemaic Egypt that this type of bathing establishment is best represented (Balaneutike pp. 187 ff.). In conclusion it should be noted that the brief excavation report makes no mention of "central heating devices", although such were known at the time in establishments of this kind. *typical plan*

The Kition *balaneion* apparently remained in use during the entire Ptolemaic period down to Augustan times when it was covered by a mosaic. During this period

of three centuries epigraphic evidence confirms that at least one or more Gymnasia existed at Salamis (Rev Arch 1966 pp. 337–340). The association of the Greek baths with the Gymnasium was of the closest (Balaneutike pp. 124 ff. 225 ff.) thus it is reasonably certain that there were public baths of some sort of Salamis from the third century BC onwards. Thus presumably baths of this type found at Kition *Chrysopolitissa* existed also at Salamis. However the very massive bath buildings cleared at Salamis by the Department of Antiquities (Salamis pp. 185–188) are in type Roman *Balnea* not Greek *balaneia*. These baths formed the complement of a Gymnasium with prominent palaestra during the first and second centuries AD. And in later times they were restored to serve as a civic amenity in themselves when athletics were no longer recognised as becoming the normal citizen. Soundings show that these Roman Baths overlie an earlier structure. Unfortunately their massive remains do not permit determining the plans of the earlier buildings. Should this include a hellenistic Greek *balaneion* the succession of types would be of the greatest interest.

SALAMIS

gymnasium baths

In any event the bath building at Salamis as excavated and recorded although incorporating much later work demonstrates the essential type of the Roman Baths (arranged in Trajanic times). The baths are a sizeable structure ca 60 m × 45 m, perhaps some 2500 m^2 overall. The planning is very compact and the circulation not easily recognisable, e.g. the obvious progression of the Italian type baths from cold to hot rooms. However a concern for axial symmetry is apparent with opposed *frigidaria* and *sudatoria*. Essentially the baths are of the "block plan" type (Pfretzschner GRT pp. 25–28) organised on a rectangular grid basis and they are quite reminiscent of the plan of the Baths of Capito at Miletus, ca 43 AD, with which they are more or less contemporary and allied in function.

The other well preserved bath buildings in Cyprus from the epoch is at the Sanctuary of Apollo Hylates by Kourion (Kourion Sanctuary pp. 57–62, plans VII, VIII; Cyprus pp. 184–185, fig. 135). Again this is of Trajanic construction but has been interfered with little in later times and is well preserved. These baths are much smaller ca 20 m × 15 m, say 300 m^2 or only 1/10th the area of the Salamis baths. They stand detached within some sort of enclosure, but were obviously intended for use in conjunction with the palaestra which lies opposite on the other side of the main entrance way into the Sanctuary.

KOURION

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baths & palaestra

The planning of these baths is somewhat different in concept. Instead of the densely packed bath chambers occupying virtually the entire premises as at Salamis, at Kourion a considerable part of the building is taken up in circulation space. There still remains some uncertainty that additional apartments may have existed on what is now the (south) front of the Kourion baths. However as things stand, entrance is from the south into an extended transverse hall or gallery with a plunge at one end.

This hall gives out onto a further centrally placed square vestibule or the like. From these two units (and even from the transverse hall itself) direct access is possible at will to any bathing compartment.

A strikingly similar (and atypical) circulation scheme exists in the much larger Hadrianic Baths at Cyrene (RAGW p. 57, fig. 19; Crema AR pp. 412–413, fig. 517) emphasising the contacts which always existed between the two former Ptolemaic territories. Should there have been further rooms on the South front of the Kourion Sanctuary Baths then the affinities would have been even closer. It is also a matter of some interest to note that this type of plan occurs in a small group of baths close by on the Anatolian mainland in Rough Cilicia (RAGW p. 64, fig. 16). This region had also been under Ptolemaic control and it is possible that far reaching references on the development of both planning may be at issue here.

CYRENE

CILICIA

Other bath buildings exist in Cyprus. At Salamis 300 m SW of the Gymnasium is a block labelled Roman Baths in the Guide Book. However this is uncleared, unpublished, and now inaccessible. There are also very interesting (private) baths of a later period at Kourion (to the North of the Theatre). These belong to the complex known as the annex of Eustolios and are referred to as The Baths of Eustolios (Kourion Inscr plan 4; Kourion Area pp. 132–139). Their excavated state is that of the 4th century AD and while it is indicated that they overlie earlier Hellenistic-Roman Baths, the plan of these earlier baths is not known.

SALAMIS

KOURION

All the foregoing material describes an unexpectedly full and varied historical development from the highly significant native Cypriote baths at Vouni to the typical Hellenistic *balaneion* at Kition, and on down to the early establishment of the Roman bath form at Salamis, with its interesting connections. N.B. for an interesting (and exceptionally well documented) outline of the general background to this development emphasising the important role of Ptolemaic Egypt now see J. Delaine, Some observations on the Transformation from Greek to Roman Baths ... in Mediterranean Archaeology 2 1989, pp. 111–125.

THEATRES

There is no doubt that the type of public building most notably revealed in Graeco-Roman Cyprus was the theatre. Three very considerable theatres have been fully excavated and a small theatre or odeion has been partly restored, while at present the remains of a fourth and earlier (Hellenistic) theatre are being excavated. All these theatres are intra-mural theatres and all of them very close to the sea. Two of the theatres command classic views out across the sea as a backdrop to action on stage. Nowhere could a sensitive audience have been more moved by a magnificent

prominent in Cyprus

dramatic performance, and at any of these theatres Aeschyles' Persians must have brought the house down under the combined effect of the setting together with the local sympathies and associations.

a coherent group

The theatres of Cyprus form a coherent group and at the same time illustrate a considerable time range of historical development. They are well worth a detailed monograph. Unfortunately virtually nothing is published concerning the two examples at New Paphos; while the theatre at Salamis (now inaccessible) has been described only in a general way. However this description taken in conjunction with the detailed publication of the theatres at Kourion and Soloi is quite sufficient to give a good understanding of the monument in plan.

in Ptolemaic-Roman times

The evidence for theatre building begins with Early-Mid Ptolemaic times and continues down to the end of the period studied (ca Antonine Severan times) and beyond. Until the end of this epoch the theatre in Cyprus seems to have been basically reserved for dramatic performances — or rather no structural modifications were incorporated to adapt them for the exhibition of other spectacles. This development came later (in the third century AD). On the other hand as yet no evidence has been revealed for any sort of theatre in the days of the Cypriote Kingdoms (e.g. 5th–4th centuries BC).

MONUMENT	TYPE	REFERENCE
New Paphos Hellenistic Theatre	Unexcavated Theatre with Greek rock cut koilon.	Praktika 2 p. 234. BCH 112 1988 pp. 836–37
New Paphos Odeion	Small reconstructed but completely unpublished roofed theatre (odeion).	Paphos pp. 251–252.
Kourion Theatre	Succession of theatres beginning with Hellenistic design. Rock cut koilon extended by built up masonry in latest plan.	Kourion Theater.
Salamis Theatre	Very large theatre with Roman style built up masonry cavea but Hellenistic type orchestra and stage.	Salamis pp. 193–196; Cyprus p. 181.
Soloi Theatre	Completely rock cut theatre of single period, late 2nd century.	SCE III pp. 548–582; SCE IV_3 pp. 12–15.

Of the above monuments the state of publication admits the following comparative analysis:

DIMENSION	SALAMIS (1st C AD)	KOURION (Early 2nd C AD)	SOLOI (late 2nd C AD)
1. Seating capacity	15,000	4,300	3,500
2. Rows of seating	50	25	30
3. Overall diameter of cavea	104.5 m	62 m	52 m
4. Diameter of orchestra	24 m	17 m	17 m
5. Depth of stage	5.5 m	ca 4 m	5.6 m
6. Depth of stage/Diameter of orch.	ca 1/5	ca 1/4	ca 1/3
7. Height of stage	2 m	2.6 m	2 m

NEW PAPHOS *Hellenistic theatre*

rock cut

The early establishment of the theatre under Ptolemaic rule is attested at New Paphos (The Hellenistic Theatre on Fabrika Hill). However as yet the dating rests to all intents on palaeographic evidence (Praktika 2 p. 234), since it is only currently (1988) that excavation (by Professor Grim of Trier University) is beginning. The *koilon* (*cavea*) is entirely rock cut and presumably will be shown to extend over more than a semi-circle in the manner of the theatre at Epidauros, etc. Such a design and construction are also attested by the earlier period of the theatre at Kourion (mid 2nd century BC).

This is to say that the traditional style of Greek theatre was established in Cyprus

pre-Roman occurrence

during pre-Roman times. And this is a salient fact for it puts the island into a definite category so far as the later development of theatre design is concerned — the "Eastern" category.

"Eastern" type

Considering first the more obvious question of the development of the *koilon/cavea*

rock cut koilon

In some ways the siting of the theatre on the open rocky slope of a hill side was of the essence of the Greek spirit. And this was maintained in Cyprus until the end. The Paphos Odeion and the later Roman theatre at Soloi were both of this nature. Only the theatre at Salamis was an exception being entirely Roman in construction — the auditorium carried up on masonry vaulting and substructure.

orchestra

Passing now to the pivotal element, the orchestra (the point of origin geometrically as historically) of theatre design. Here the three centre Greek orchestra in excess of a semi-circle survived in Cyprus. In the early Roman theatres at Salamis and Kourion, the *cavea* lost its horns but the orchestra was in excess of a semi-circle — a new combination of the Greek and the Roman tradition. However in the later Roman theatre at Soloi the design became wholly semi-circular for auditorium and orchestra alike. On the other hand the latter theatre remained entirely Greek in siting and construction.

stage building

We now pass to the critical feature of the stage building. Vitruvius (V. 6, 7) makes clear the fundamental difference between the Greek style stage (*logeion*) and the Roman stage (*pulpitum*). The former was raised high up and was very shallow to throw into silhouette the striking "character" of the protagonists. The latter was low and deep to permit naturalistic action and, more important, to be readily visible from the seating for dignitaries which had invaded the orchestra. Following out the generating geometrical construction (inscribed squares in the orchestra circle) given by Vitruvius (v. Bieber p. 127, fig. 45) the depth of the Greek stage could be as little as 1/6th the orchestra diameter, whereas that of the Roman stage approached 1/2 of the orchestra diameter. Vitruvius also specifies the height of the latter to be 5′ and that of the Greek stage to be 10′–12′.

Fortunately the detailed records of the Cyprus theatres permit an assessment of this distinguishing feature. The three excavated theatres cover a wide variation in overall dimensions (Salamis almost twice the size of the other two), yet the stage buildings are curiously standard: ca 2 m high by ca 5 m deep. This demonstrates that whatever the setting out geometry employed, it was considered that a stage of this size was appropriate to dramatic presentation, irrespective of the dimension of the theatre. It also demonstrates that this stage was exactly intermediate in style between the Greek and the Roman type according to their Vitruvian norms: the depth of the stage being 1/3rd to 1/5th of the orchestra diameter and about 7′–9′ high

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intermediate type

— an interesting point. The considerable height of the Cypriote stage reflects the fact that there were no stalls (*bisellia*) established in the orchestra.

Finally there remains the question of the stage setting, the backdrop of the action — the *skene frons*, the architecturally articulated front wall of the scene building. (The original temporary booth, hut, tent = *skene*.) This in turn provides a diagnostic criterium among the later theatres of imperial Roman times. The form developed in Rome, and provided in those parts of the empire where the theatre had no anterior history, features baroque style curvilinear design. On the other hand, the *frontes* in areas which had known the Greek theatre in pre-Roman time retained a rectilinear facade, the niches and columns ornamental only. This form is termed the Eastern (or Asiatic) style of *skene frons* and the Cypriote theatres adhere to it unanimously.

skene frons

rectilinear

The balance of these diagnostic criteria clearly designates the nature of the theatre in Cyprus. Its basic form and construction was the Hellenistic theatre of the third century BC; and it was modified in Roman times only in so far as required to suit
146 practical demands. The Salamis auditorium was a free standing masonry construction; in general the horns of the cavea progressively disappeared but the orchestra continued prominent; the stage compromised and the scene building remained a masonry Hellenistic palace not a concrete, baroque Roman one. All this work was carried out in the traditional Cypriote limestone style until the end of the epoch or the later second century AD. At that time and later in the third century, the Cypriote theatres, like other monumental buildings, were done or redone in marble in accordance with ecumenical trends.

Cyprus theatre maintains Hellenistic tradition

The theatre and the gymnasium are probably the two most Greek of building forms. The archaeological evidence shows both well established in Cyprus during Ptolemaic times and it is impossible to avoid one or two final reflections on the possibility of the theatre's anterior development in the Island.

possible pre-Ptolemaic occurrence

The Greek theatre has a religious origin (as had the classic tragedies performed in
143 it). It emerged as a (circular) dancing floor where sacred dances were performed in honour of the God (Dionysos) at his sanctuary (the threshing floor may be a congener). The development consisted in the addition of facilities for the spectators (the auditorium) and also in providing a backdrop for the performers and to assist in explaining the action as this became more and more narrative. Greek tragedy thus incorporates two constituents — dancing and speech (declamation/dialogue); the former performed by the chorus in the orchestra, the latter by the agonists and eventually on the raised stage.

The beginning was the orchestra and the origins of this dancing floor could be of any age — identifiable instances are known in the 6th century BC. Throughout the fifth century BC can be identified developments in the auditorium — i.e. the seating

arrangements for the spectators, at first temporary, then permanent. Finally although the third element, the skene, began to develop in the latter half of the fourth century, its monumentalisation was essentially a third century phenomenon.

If this outline is held up behind circumstances in Cyprus, it can be seen that so far as concerns the essential point of origin, the circular dancing floor as a venue for ritual dancing, something similar is evident in Cyprus. Indeed if we take the earliest stages of the orchestra at the Sanctuary of Dionysos Eleuthereus in Athens with the associated Old Temple (Bieber p. 55, fig. 224), we find a complex which is strikingly similar to the archaic complex at the Sanctuary of Apollo Hylates at Kourion (RDAC 1982 pp. 144–147). Here the temple is associated with not only a circular altar, but on the other side of the approach way, a circular paving. That this may have been a symbolic grove with a sacred tree or trees does not necessarily debar it from possessing a thymelic character. Indeed such a character is attested by the terra-cottas showing a choral round dance about a sacred tree (Kypros Pl CXXVII 4). Thus it is possible that this feature in the Sanctuary was in some way ancestral to the later Hellenistic theatre in Kourion town.

KOURION SANCTUARY

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In short it would be quite possible that during, say, the fourth century, circular ritual dancing places in Cyprus were provided with temporary seating and booths for the presentation of dramatic performances. There is however not the slightest archaeological evidence for this.

On the other hand, it is only from the third century BC that we can expect developed monumental theatres in Cyprus and that precisely is the archaeological record. And if indeed the Hellenistic theatre at Paphos is from the mid-third century, then there is little cultural lag apparent. Furthermore since Alexandria has been suggested (Bieber p. 119) as a likely origin for the monumental *skene* building (representing the façade of a Hellenistic palace) then any details which may be recovered from this theatre will be of great interest since it is certainly colonial Alexandrian work.

NEW PAPHOS *prompt development*

AMPHITHEATRES

Evidence has been recorded of the existence of two amphitheatres in Cyprus, although neither as yet has been properly excavated. This does not constitute the anomoly once supposed, as it is now evident that contests of gladiators and wild beast hunts etc. were received in the eastern provinces of the Empire and were exhibited either in converted theatres or in amphitheatres constructed for the purpose. A great amount of evidence (epigraphic and graphic) has been collected concerning the popularity of such games in the Greek speaking world (L. Robert, Les

Gladiateurs dans l'Orient Grec, Paris 1940), including some striking evidence at Kourion (RDAC 1971 Pl. XXVII 1, 2; 1987 p. 242). Nonetheless it is significant that the two Cypriote amphitheatres are from the two island capitals, Salamis and Paphos.

SALAMIS

The Salamis amphitheatre is attested epigraphically (v. Salamis p. 196; BCH 86 1962 pp. 403 ff.; 87 1963 p. 381), the inscription indicating both its date (Flavian) and location (between the gymnasium and the theatre). The site was cleared of its
57 overburden of wind blown sand but political disturbance prevented the scheduled excavation. However the perimeter walls stand to a height of 2 m (v. BCH 88 1964 pp. 368–369, fig. 102) and show the amphitheatre to be a sizeable one, something over 100 m on its major axis and thus closely conformable in dimension to the adjacent theatre.

NEW PAPHOS

Less is reported concerning the amphitheatre at Paphos. However its position just inside the city wall overlooking the sea immediately to the west of the harbour is shown on several general plans (cf. Acts COO p. 515, fig. 77). It was apparently
148 incorporated in the mediaeval (Arab?) fortifications about the harbour. Its dimensions are ca 100 m × 80 m, about the same size as the amphitheatre at Salamis and
142 again a reasonably large monument of its class. The Colosseum at Rome, the largest amphitheatre, was ca 188 m × 156 m in overall dimension. Its seating capacity has been estimated at ca 45,000. Thus on a rough and ready estimate the Cypriote amphitheatres may have seated 20,000–30,000. This would be something up to twice the crowd capacity of the theatre at Salamis (15,000). As yet there is no positive evidence of the date of the Paphos amphitheatre but in view of Paphos' capital status there is no reason to think it was later in construction than that at Salamis.

The presence of these two Roman type monuments in Cyprus during the first century AD bespeaks the triumph of professionalism and vulgar ineptitude in an internationalised world — something of which we are only too well aware today.

Athletic Competition & Training Grounds

terminology

It is impossible to be consistent and definitive in the use of the terms Gymnasium, Palaestra and into the bargain, Stadium (v. RE svv). The Greeks and the Romans themselves employed the terms in various senses (cf. the different significances of Gymnasium in modern European usage); so it is best to try to deal with them all together. Etymologically speaking the Palaestra is a place for wrestling, the Gymnasium is a place for naked exercises (preeminently our track and field events) and the Stadium is a running track of one stade (ca 220 yds/200 m or 1 furlong) in length. Undoubtedly Gymnasium can be and is/was used in the broadest institutional sense when dealing with social or cultural history, but this does not necessarily mean that as a matter of architectural design the Gymnasium comprehends the

Palaestra, or stands in the relation of whole to part. Vitruvius as usual (v. XI. 3–4) does nothing to clarify the terminology; he does not employ the term Gymnasium. It should be further noted that since violent physical exercise demands some facilities for subsequent washing (showering), there is a close connection in Greek lands between the development of the Gymnasium and that of public bath buildings. However the bath (in Roman society) came to assume a separate and idiosyncratic identity and is considered apart.

social function

Most of the information regarding the Gymnasium (both architectural and epigraphic) comes from Hellenistic and Roman times, but it is clear that the Gymnasium was an original component of Greek city life, the good life. It was *par excellence* the training ground for that life, providing the necessary facilities for both physical and mental training (cf. the modern significance of Gymnasium as a higher or finishing school for boys). As such the oldest premises (i.e. until ca 400 BC) were essentially open-air "grounds" or "fields" and located for the most part outside the city — cf. the famous training grounds at Athens, the Lyceum and the Academy, sacred groves later to become the "home grounds" of the two philosophical dispositions which still rule the western trained mind — or at least did so until the mid 20th century (E.N. Gardiner, Athletics of the Ancient World, pp. 72 ff.).

developed architectural form palaestra

However, in addition to the outdoor training facilities, associated buildings were necessitated to shelter the attendant activities and services (cf. the changing-rooms, club rooms, offices etc. at our sports grounds). The assemblage of such rooms about a central peristylar court (after the manner of a large peristylar house or palace) assumed a recognisable architectural form constituting the Palaestra, the wrestling school.

Such a building type became a standard feature of most (Hellenistic) cities and perhaps the main up-stage male club of the city (Urbanisme pp. 276 ff.). This defined architectural unit did not, however, comprehend the training track (and jogging or walking field) which was the founding purpose of the Gymnasium. Since a running track has to have a reasonable "straight" (with us, at least 100 m) this was not necessarily easy to fit into a built up city nor on the other hand to bring into planned articulation with the Palaestra unit. In the earlier Gymnasium complexes, e.g. as at Delphi, ca 300 BC (Gardiner fig. 39) the connection between the Palaestra and the exercise track is not close — they are neighbouring and not necessarily contiguous, perhaps separated by a street (Gymnasion p. 399). However in later Hellenistic Gymnasia where the design must be accomodated to a closely built up regular orthogonal town plan, a typical pattern is for the track to abut on an angle of the Palaestra and be set at an angle i.e. it follows the line of the streets or the town wall cf. Priene (Urbanisme p. 278 fig. 61) or Delos (Urbanisme p. 280 fig. 62). These facilities, however, are never referred to as the Gymnasium (or the Gymnasium proper). Vitruvius (v. XI. 3.) specifically tells us that in Greek usage the terms employed were *xystos* (for the covered track) and *paradromides* for the associated walks and gardens. Unfortunately the details of his recommended arrangement are couched in that almost systematic incoherence characteristic of his "precise" expositions (for a rationalisation, v. Gymnasion pl. XLI, figs. 67–68). In any event, he refers to colonnades constituting something like stoas which cover the running track and the "side walks", the ensemble to be set with plantations of trees etc. which latter above all things made the locality a prized one for men of superior understanding, i.e. not those of the market place.

xystos paradromides

Since a running track was thus an essential part of a gymnasium, it may be asked how this track is to be differentiated from a stadium. And of course on occasions the two overlap

and/or coalesce. However the essential differences are obvious. The *xystos* is a training track which may not be of full (Olympic) size (i.e. 1 stade). It is not a place designed for the spectacle of public competition and no elaborate provision of seating is necessary (although some may be provided). It is furthermore a covered track, an all weather facility. The stadium on the other hand is the public sports ground where track and field meets were held. Essentially it had to provide permanent seating for large crowds of spectators together with all the track facilities for proper starting, finishing adjudication ..nd control etc. It certainly was required to constitute the standard foot race distance of one stade (and thus took the overall form of a unit ca 200 m × 100 m or more). The hair-pin bend which we automatically associate with the form was not a functional part of the track, it was rather for the convenience of seating (cf. the theatre) and the earlier stadia were often completely rectangular in outline (v. Gardiner pp. 128 ff.).

Such in outline was the complex of facilties which went closest to the heart of distinguishing the Greek way of life from the barbarian. Very truly it might have been said that Plataea was won in the Gymnasia of Greece. Of all this highly interesting and significant complex of activities and of the premises which housed them, there is no trace preserved whatever in the remains of old autonomous culture of Cyprus. In spite of the prevalence of the Greek language, entailing the knowledge of Homer, and thus of the funeral games of Patroklos, so far as is known, no organised training facilities existed for these exercises. If games took place they did so on an *ad hoc* basis in *ad hoc* circumstances (as in Homer). The institutionalised training facilities developed in the classical Greek city states came to Cyprus only with the Macedonian regime established in Egypt. And thereafter notable traces indicate that such institutions played a prominent part in the social life of Hellenised Cyprus.

appropriate to Cypriote society

The gymnasium was a cultural not a political institution and is thus appropriate to what is known of Cyprus society in Graeco-Roman times — with its concern for historical tradition etc. in lieu of an activist political destiny. The members of the gymnasium (gymnasiasts) constituted exactly that sort of fellowship which gives social position without political offence; while the office of gymnasiarch seems to have ranked as one of the highest dignities or distinctions open to a native Cypriote. Both categories occur very frequently in the epigraphic record, cf. R.S. Bagenall, The Administration of Ptolemaic Possessions pp. 58–67. The inscriptions of Salamis are particularly interesting in this regard.

SALAMIS

A Salamis inscription published in the middle of last century and brought to light again recently was originally restored to indicate that there were three Gymnasia in the town early in the second century BC. This restoration is no longer favored but the inscription certainly testifies to the existence of at least one gymnasium during the reign of Ptolemey IV, Philometor (Les Trois Gymnases de Salamine, Rev Arch 1966, pp. 337–340 — but now see Salamis Inscr. pp. 2–3 for a new reaffirmation of the "three gymnasia"). This however is not the earliest mention of a gymnasium at Salamis. An inscription on the base of a statue of Ptolemey II (285 BC–246 BC)

states that someone honours the king in the Gymnasium (Salamine XIII, Paris 1987, No. 62 p. 32). As Pouilloux remarks this indicates that from the beginning of the Ptolemaic regime this most Greek of institutions was established at Salamis — the question remains was it established before?

At all events the Salamis inscriptions show that the Gymnasium remained an important aspect of the city's social life until the end of the era under study. There are something like 20 extant inscriptions mentioning the gymnasium itself or the gymnasiasts and/for the gymnasiarch, the latest being a dedication to an Antonine emperor, possibly Caracalla (Salamis XIII No. 165). Particularly illustrative is the connection of the notable Servius Sulpicius Pancles Veranianus (and his family) with the Salamis gymnasium. This man during the second half of the first century AD played a considerable role as well in his native town as in the Island at large — and among his many high honours was the office of "perpetual" gymnasiarch and "agonothete". Also it seems he restored statues in the gymnasium (Salamine XIII No. 106; Salamis p. 196; Salamis Inscr pp. 131–153; Cyprus p. 182).

Does all this epigraphic material refer to the now well-known ruins excavated by the Department during the fifties and sixties among the sand hills by the sea at the northern extremity of the town?

a major gymnasium

This complex as flourishing during the first and second centuries AD (the Gymnasium of Sergius Sulpicius) was a major gymnasium on any standards. Although it is difficult to limit the overall extension of a gymnasium because of its episodic planning, yet taking the Palaestra unit only at Salamis, the overall dimensions are something like 75 m × 70 m, while the court is ca 52 m × 40 m. This makes up a palaestra of ca 5000 m^2, a similar area to those at Olympia and Epidauros, with only the Pergamum gymnasium significantly larger with an overall area of ca 6,300 m^2. The proportion of court to total area at Salamis is ca 40% which seems to have been the standard one (Gymnasium pp. 377–379). In addition to this reckoning there was, of course, the bathing establishment to the East which was something in excess of 60 m × 60 m (v. Salamis Inscr. Plan 1). Thus the total building block was of the order of 1 hectare (10,000 m^2). 150

historical development baths

palaestra

This massive unit was selectively restored and rebuilt in later antiquity so that its earlier building history has not been made very explicit (in publication). Soundings show that the bath complex goes back to early Ptolemaic times and could thus equate with the epigraphic references to a Salamis gymnasium in the 3rd and 2nd centuries BC. On the other hand the Palaestra area does not appear to be of similar antiquity. However such evidence is from limited soundings and in effect as little is known of the plan of the Hellenistic complex beneath the later bath buildings as is known of a possible precursor of the palaestra area.

According to the summary description of the Palaestra area (Salamis pp. 167 ff., nb pp. 185–189) its main development was later in the first century (or later), consequent on an original portico of Augustan date fronting the bath building. One
308.3 damaged Nabataean capital was pieced together and set up on the façade of the bath (Praktika 1 pp. 175–178, pl. XXXII). Perhaps this is to be reckoned as part of the Augustan schema. The subsequent development of the Palaestra colonnade (as a Rhodian peristyle "doubled" on the East) may be illustrated *in situ* by remains of a columnar entrance to a room on the south side next to the latrines. Here the base elements of the two columns remain in position and the later arrangements of the fourth century AD (the reused marble columns now characterising the area) were set directly over them. The original order was typically of stuccoed limestone drums or rather *frustra* (e.g. base and part of shaft in one unit). Fluting (or reeding/cannelur-ing) was worked in the stucco (BCH 93 1969 p. 552, figs. 190 A&B, 191).

Towards the end of the excavations at Salamis evidence was brought to light for the other aspect of the Gymnasium — the (covered) training track or xystos (D & S sv p. 1025). Unfortunately records of this appear only in interim notices (BCH 88
57 1964 p. 366, fig. 101) and on block plans of the French excavations (Praktika 2, Callot fig. 7). The *xystos* was set so that it was tangential to the S.E. angle of the Gymnasium Bath Building and took the E-W line of the apparent street grid — running from somewhere near the sea on into the Amphitheatre area. Thus it was set between the theatre to the South and the Baths to the North. It has been traced for ca 90 m; whether its length was originally 1 stade is not known. It was ca 30 m broad overall, with 8 banks of masonry seating built up on the north side only, whereas there was a blank wall on the south side. *xystos*

Whether this feature was exactly the xystos (the training/exercising track of the Gymnasium) or whether it constituted (additionally) the Salamis stadium is not made clear as yet. The quite considerable seating suggests it could have constituted a stadium. And the rather characteristic angled emplacement is reminiscent of other stadiums (e.g. Miletus, v. EAA VII p. 468 fig. 573). It is stated (BCH 88 1964 p. 369) that the construction of the *xystos* is apparently posterior to the (ruin of the) amphi-theatre. If this is so then, of course, the *xystos* was of middle Roman date and it was very secondary to the other remains of the gymnasium.

In addition to Salamis there is also epigraphic record of gymnasiums at other towns in Cyprus, e.g. at Kyrenia and Kition (Gymnasion p. 218). The mention of a gymnasium at Kourion in existence by the first century AD is interesting (v. Gymnasion p. 218) in view of the archaeological remains in that area. KYRENIA KITION

To date no gymnasium building has been revealed by excavations within the city, although such may well exist since the area of intra-mural excavations is not great. KOURION CITY

Kourion Sanctuary

On the other hand notable remains of this nature exist close by outside the city walls. Only 2.5 kms to the west of the town was the beautiful sanctuary of Apollo Hylates, which had a continuous development from archaic times down to the end of antiquity. It was during the Hellenistic period that the deity of the wood was addressed as Apollo. Now rural sanctuaries are a very proper place to celebrate games (cf. Olympia) and the (accomodation, etc.) facilities at the Sanctuary would have made it suitable for that purpose. There is no historical record of such games held at the Sanctuary, however included in its lay-out as the first unit on approach by the road from Kourion town is a palaestra (Kourion Sanctuary pp. 47–55, plan VII). 125
This is of very neat and pleasing design about the same size as the palaestrae at Nemea and Thera (Gymnasion pp. 377–378). It was ca 30 m × 28 m overall with a court of ca 340 m^2 constituting about 43% of the total area which is the norm. In this case the order was the light Doric with Ionic cornices, although here without bases (Kourion Sanctuary p. 53). The date of this building is 1st and 2nd century AD.

stadium

Although there is no evidence of any running track etc. adjacent to the palaestra, a half a kilometre outside the Paphos Gate of the City and lying by the road to the Sanctuary was a full scale stadium 229 m × 24 m to seat ca 6,000 spectators. This stadium was built in the 2nd century AD (Kourion Area p. 76; BCH 88 1964 p. 366; 90–91 1966–1967 pp. 320–332). It is possible that aspects of a gymnasium were developed in the vicinity of this stadium; on the other hand it is possible that this stadium complements the palaestra in the Sanctuary. In any event it is the only full scale stadium so far excavated in Cyprus.

Hippodrome — Circus

Salamis

The interesting topographical plan of the Salamis area (Plan V) given by Munro & Tubbs (JHS XII 1891) marks in the outline of a "race-course" which by its size and shape conforms exactly to the Roman style circus. However it is not known for certain whether this conformity reflects the indications on the ground or the investigators' knowledge of classical antiquities. The site is about 300 m south of the 57.7
Temple of Zeus on the line of the then Famagusta — Karpass road immediately to the north of where it bridged the streams and marsh of the old Pedhiaeos outlet. It can not be far from the line of the modern road and lies immediately east of the archaic-classical cemetery site of Cellarka recently excavated by the Department of Antiquities (Salamis pp. 91–104).

Unfortunately in spite of the clarity with which it is shown on this plan, the lengthy text does not deal with this monument at all. It mentions its existence only to account for the unusual collection of surface remains (marbles and inscriptions) at the site of

Toumpa tou Michaeli which was investigated close by to the East (JHS XII 1891 p. 106). Neither unfortunately do the recent Departmental excavations at Salamis concern themselves with this monument, although they worked so close at hand. However a circus is the largest of all ancient monuments and its 400 m long depression is not easy to mistake or invent. Therefore the evidence of the 1891 plan may be accepted that a hippodrome in the form of a standard Roman circus existed at Salamis (immediately South-West of the City Wall) and probably during the first two centuries AD. This raises some general considerations regarding Cypriote social history which are worth note.

social background

The history of horse-racing is an ancient one of mixed cross currents. Chariot racing (in particular the four horsed chariot, the *quadriga*) was an original component of the heroic Greek games tradition (cf. the funeral games of Patroklos, Illiad 23) and there was a course for such events at Olympia from 680 BC. However although this and other Greek courses provided for the functional requirements of racing (i.e. to give all the competitors an even start and to avoid as far as possible the opportunities for dangerous and unfair practices) no unified monumental design type seems to have been evolved. On the other hand the Romans who had early taken to the sport (on the instances of both Greek and Etruscan examplars) achieved just that in the circus which was estabished in all essentials at the beginning of the Empire (now see on all points, J. Humphrey, Roman Circuses, London 1986).

However the organisation or administration of the sport was on a quite different basis in Rome than in the Greek world. In the Greek world it was one sporting contest like another, the play of individual contenders (albeit, wealthy ones — just as with us). At Rome the sport came to be organised by and through "the factions". These semi-public bodies sustained the expense of the meetings and they entered the contesting chariots under their respective colours. And thus eventually developed the riotous factionalism reminiscent of current games hooliganism. The interplay of the two different types of organisation and the two different types of race-course in the various regions of the classical world is revealing.

First of all the organisation followed political boundaries for most of antiquity. Factional, public organisation did not extend beyond the Western Empire (i.e. that part governed according to Latin forms) until the eastern migration of power in the 4th century AD. In the eastern world the organisation of the sport was in private hands on the model of the old Greek "Crown" Games (Olympic, Nemean etc.) until this time and much later. However on the other hand the monumental race-courses built in parts of the Greek speaking world very early took the form of the Circus (Roman Circuses pp. 438 ff.). The geographical distribution of the "circus" in the East appears to have followed the division between those regions anciently Greek in culture (e.g. Anatolia) and those parts hellenised in the wake of Alexander's conquest (i.e. Syria, Palestine, Egypt, etc.). In these regions while the Greek spirit informed the organisation, the Roman monumental premises were adopted as more highly functional since there were no pre-existing race-courses (Hippodromes).

appropriate in Cyprus

In this fashion one could expect to see the circus type of race-course in Cyprus — since although the Greek language was spoken there from the end of the Bronze Age,

autonomous Cypriote society was not hellenised. This occured with its incorporation in the Ptolemaic Empire. Furthermore this specific connection with the Ptolemaic realm is in itself of great significance, since Alexandria became almost the second home of racing (Roman Circuses p. 539) and there was also a notable hippodrome at Cyrene — anciently a land renowned for its horses.

Alexandrian background

However although it is very true that Cyprus was not a Hellenic society prior to its incorporation in the Ptolemaic Empire, yet it is precisely within close view of the Salamis race-course that in Archaic times occured the notable "Homeric" chariot burials, where the fine animals were tragically sacrificed in the dromoi of the tombs (Salamis pp. 41 ff.). For all these background reasons, it would be a good thing to locate and open up the JHS circus as soon as the site of Salamis again becomes accessible. 200–202

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g) Houses

Uneven archaeological record — preponderance of remains from Neolithic-Chalcolithic periods.

Primary division between round houses, 8th–3rd millenium BC and subsequent rectangular houses. Stability of round house form over vast time span, much of this long after its disappearance on mainland. From late third millenium

rectangular houses of various types similar to those on mainland. Instances at Kaminoudhia, Phaneromeni (agglutinative planning); Alambra (rural Hürdenhaus); Kalopsidha (Hofhaus); Alambra Mouttes (terrace houses). LC houses at Episkopi Bamboula, Kalavassos, Ayios Dhimitrios; possibility of city block urban apartment houses at Enkomi. Partly residential buildings at Pyla Kokkinokremos and Idalion ranged against boundary (fortification?) wall.

Almost complete absence of housing from later periods. Possibility of applying evidence derived from modern traditional village houses.

uneven historical record

In speaking of house forms in Ancient Cyprus, it is once again necessary to mention the currently uneven record of habitation remains. For houses there is a reasonable chain of evidence from earliest Neolithic times down to the end of the Bronze Age (ca 8th millenium down to the end of the second millenium) — and thereafter virtually nothing. Not that the prior evidence is uniformly extensive — this it is only for Neolithic-Chalcolithic times (ca 8th to mid 3rd millenium). The circumstances prompt recourse to traditional modern (vernacular) building, as an aid in interpreting the evidence or in filling the lacunae. Recently much interest has been shown in Cyprus vernacular building (v. listed works of Christodoulou, Sinos, Hadji Michale, Ionas) and it would be of help to apply these results in the interest of recognising ruling house forms through the ages. There are, however, complications. Since the end of antiquity Cyprus is known to have been virtually depopulated and then resettled after a considerable interim. The situation thus differs from e.g. Syria-Palestine where it is evident that the simplest vernacular village houses were in effect following the broad room cabin tradition of Chalcolithic times (ABSP, pp. 28, 284–85).

modern evidence

The following table gives a brief summary of the ancient evidence:

KHIROKITIA *(Aceramic Neolithic)*

Round houses of solid masonry construction. Including larger houses with some circumferential additions, also complexes of e.g. 3 houses articulated by screen walls.

SCE IV 1A, pp. 5–62

Khirokitia; Khirokitia F.R.

KALAVASSOS *TENTA (Aceramic Neolithic)*

Masonry round houses including ruling house with peripheral rooms around core chamber. Floor and (figural) wall painting.

Tenta

SOTIRA *TEPPES (Ceramic Neolithic)*

Round houses (for sleeping?) about larger houses with rounded corners and curved sides (for living and working?). Foreign influence.

SCE IV 1A, pp. 73–105; Sotira

AYIOS EPIKTITOS *VRYSI (Ceramic Neolithic)*
Cramped, deformed Sotira type houses in dug out site by sea.
Vrysi

ERIMI *PAMBOULES (Chalcolithic)*
Simple round houses mainly of lighter construction.
RDAC 1936, pp. 1–81; SCE IV 1A, pp. 113–32

LEMBA *LAKKOUS (Chalcolithic)*
Erimi type round houses with evidence of internal screens and partitions.
RDAC 1979, pp. 69–99; Levant XI, 1979, pp. 9 ff.

SOTIRA *KAMINOUDHIA (Chalcolithic-EB)*
Sub-rectangular houses complexes, agglutinative formation.
Arch in C, pp. 115–24

ALAMBRA *(EC-MC)*
Hürdenhaus and rectangular terrace houses.
SPC, pp. 19–27; Arch in C, pp. 125–41

KALOPSIDHA (MC)
Large rectangular central courtyard house (Hofhaus).
SCE, pp. 27–37; SCE IV 1B, pp. 1–3

EPISKOPI *PHANEROMENI (MC-LC)*
Irregular houses, agglutinative style planning.
SCE, pp. 59–78

EPISKOPI *BAMBOULA (LC I–III)*
Closely built up "town houses" regularly planned on "triple nave" disposition.
Bamboula Architecture, NB pp. 52–59

APLIKI *KARAMALLOS (LC IIc)*
Metal workers establishment — mainly storage and workrooms.
AJ XXXII 1952, pp. 133–67

AYIOS DHIMITRIOS *(LC IIc)*

Small (ca 100 m^2) isolated houses with central court or hall; larger urban style houses with long corridor circulation.

Cyprus CLBA, pp. 12–13; RDAC 1984, pp. 15–18

PYLA *KOKKINOKREMOS (LC IIc)*

Small ∏ form housing units built against boundary wall.

Kokkinokremos, pp. 1–30

ENKOMI *(LC I–LC III)*

Pre-urban II form "villas" develop into large city block "Palazzo"/"Hotel" (Area I). Extensive housing remains but not published in meaningful detail.

Enkomi; Enkomi BRC

DHALI *(Idalion) LC III–Cypro-Classical*

Crowded room complex against "acropolis" wall interpreted as sanctuary area enduring from LC III to ca 500 BC. Part by South Gate residential and official building and may be later than stated.

SCE II, pp. 460–641; IV 1C, pp. 4–5; IV 2, pp. 5–8

OLD PAPHOS *(Kouklia Evreti) 4th century BC*

Possible large official residence with evidence of housing in the vicinity (initial excavations).

RDAC 1985, pp. 113–18

historical summary

A glance at this table shows that there is a primary and a virtually absolute historical division in Cyprus housing between the round house and the subsequent rectangular form. The round house which ruled for virtually 5,000 years (i.e. for ages after it had lost currency elsewhere) was much more constant in its form, there being in fact little formal development across that vast range of time. Houses built on rectangular plans then extend over the remaining three thousand years under study, but during this period there are very great changes in the form and scale of these houses. Something of this contrast may be stated in preliminary terms, as follows.

152–155 20

At the time of the transition from round building (latter third millenium) it seems that sub-rectangular housing was organised in the agglutinative manner — i.e. rooms being added to one another in any and every manner — without any regard for part or whole. The earliest houses which show a recognisable individual formal definition are the Middle Bronze Age houses ca 1800 BC-1600 BC at Alambra and

22 23

159 160

ALAMBRA

Kalopsidha. Both this agglutinative style of planning and the varied individual unit house forms occur contemporaneously in nearby lands. Thus after something approaching three thousand years of isolation from the main stream of house building, Cyprus in the space of next few hundred years re-entered fully into that stream and thenceforward has always remained part of it.

round house

Although the fact does not seem to be remarked on in manuals (cf. e.g. La Maison), within the extended round house continuum of the ancient world stretching from Central Asia to Palestine, by far the fullest and most varied record is manifested in Cyprus — and this by reason of the uncanny duration of the form in the Island. Aurenche in his comprehensive study of ancient house building from the beginning to ca 3500 BC divides the development into 9 periods where in general round house building occupies only the first three periods (until ca 6600 BC), with the earliest examples of rectangular building occuring in period 2. In Cyprus, on the contrary, round house building subsists exclusively throughout the entire time range and a further millenium beyond the terminal limits of Aurenche's study. This manner of house building was brought over by the first immigrants to the Island in the 8th millenium BC and endured until ca 2500 BC (Colonisation and Continuity).

rectangular influence

Within this vast time span, somewhere about the middle (ca 4500 BC) it is obvious that influences were felt from the contemporary rectangular building on the mainland of early chalcolithic times (Aurenche Period 7). It is possible that future excavation will discover fully rectangular houses of this period, similar to those e.g. at Byblos (ABSP, p. 29; Byblos V, p. 170). However, as at present, the record of these influences consists in the deformation of round house building (in the Sotira Ceramic-Neolithic phase) into some buildings with curved sides and rounded angles (cf. buildings at Ramad near Damascus — Maison, pl. 45); a transient phenomenon represented also at the sites of Ayios Epiktitos *Vrysi* and Philia *Drakos A* (Cyprus, pp. 27–30) which was succeeded by a return to uniformly round house design in subsequent times.

BYBLOS
in Sotira phase
156 157
RAMAD
VRYSI
PHILIA
DRAKOS

typological survey
simple unit
complex form

More or less all variations of the round house occur in Cyprus. The formal beginning is the simple monocellular type (when represented in plan only this is sometimes difficult to distinguish from a larger bin or silo since on the smaller examples the internal diameter is less than 3 m and the floor space 6 m–7 m only). Elaboration of this design may be effected internally or externally. Internal compartmentalisation may be effected by either light screens or more solid walling. External elaboration can be arranged by setting additional compartments circumferentially about the central core of a simple round house, or assembling several round house units in juxtaposition (a scheme facilitated on occasions by connecting and/or screen walls, themselves curved). These several manifestations of round house planning are

encountered in Cyprus from the earliest aceramic phase, e.g. at Khirokitia and Tenta. KHIROKITIA TENTA

The following type examples may be instanced. The simple monocellular round house forms the bulk of Dikaios' Class I "Small Tholoi" (v. SCE IV 1A, pp. 5–9, fig. 3). Round houses with internal partitioning take a characteristic form in this early period. The partitions are sturdy masonry structures supporting a croft or shelf, which in the case of the larger houses extends to a sort of gallery covering half the
153 floor space and providing sleeping accomodation (v. Khirokitia, p. 223–24; p. 20, fig. 2A). In the latter ceramic neolithic and chalcolithic houses which are more lightly constructed, internal partitioning was more ramified, and took the form of screens or fences of reeds or brushwood etc. (v. Levant XI 1979, pp. 17, 21).

Two very good examples of circumferential development occur at the earliest
154 period. At Khirokitia Dikaios' Tholos 1A, well known from many reconstruction drawings (ABSP, fig. 203) is half set about with an ambulatory style lean-to. While
272 at Tenta the ruling building (14) of the settlement appears to be completely surrounded by chambered galleries (Arch in C, p. 84, fig. 3).

The association of several round house units is a matter evident both sociologically and architecturally since modern survivals of the round-house culture show that the single round house building does not comprise the entire dwelling of a "family" (D. Frazer, Village Planning in the Primitive World, New York 1968). In general a certain spreading area excavation is necessary to recognise this grouping of round houses, however, the auxilliary enclosure walling of Khirokitia complex XXVII–
6 157 XXIX (Khirokitia, fig. 75, cf. fig. 84) makes the matter apparent.

Two differing social repartitions have been recognised in round house groupings *social function* in Cyprus. In the Khirokitia aceramic phase there is a marked distinction between large and small houses. And it seems the large houses provide for the "sacramental" aspects of life (the "facts" of life — birth, marriage, death); while the small servient houses provide for the workaday activities — provisioning, cooking, etc. On the other hand at Sotira where the pottery industry has developed, the arrangement seems to be rather the converse. There the larger buildings were the cross-breed, curved sided ones and these appeared placed so that they each commanded several smaller circular (or irregular) buildings. In this instance it was thought that the larger buildings housed the significant industrial activities, while the smaller were the individual sleeping pens (Levant XI 1979, pp. 46–83, NB pp. 79–84).

It is not only the plan form of the round house but also its form in elevation which *elevation form* is described by the Cypriote remains. Originally it has been assumed that ancient round houses were corbelled beehive houses in form, like the modern examples in the
152 329 region (e.g. those in North Syria about Hama and Aleppo). Latterly however

evidence accumulates that these ancient round houses might have been tower like with flat mud roofs of the type which has remained standard in middle eastern village building (Khirokitia FR, pp. 26–28; RDAC 1986, p. 19, fig. 2). At Khirokitia the apparently circumstantial evidence of the incurving walls was questioned as deformation due to down slope earth pressure (Khirokitia FR, p. 26). It is probably most reasonable to suppose that the substantially built round houses as at Khirokitia and Tenta appeared in both styles of elevation. Indeed incurving walls could have been capped by a residual flat roof of greater or less extent.

KHIROKITIA

However, in addition to such houses of solid (corbelled?) masonry there is much evidence in Cyprus of lighter structures of wattle and daub, particularly from the ceramic and chalcolithic periods (SCE IV 1A, pp. 73, 113; Levant XI 1979, pp. 15–16; RDAC 1979, p. 87). These may or may not have a rubble masonry footing or upstanding mud brick walls, but almost inevitably the elevation (or the upper part of it) was more or less conical — a wigwam or umbrella like profile fashioned on a frame of inclined posts.

Finally it should be noted that Cyprus brings evidence concerning another endemic feature of the round house. The round house by nature affects a sunken emplacement. Indeed with houses of flimsy construction it is just these scooped out emplacements which provide the archaeological evidence of the vanished structure. In addition to this record, however, Cyprus evidences some more truly subterranean features (SCE IV 1A, pp. 133–35). At the Chalcolithic sites of Kalavassos *Ayious* (Arch in C, pp. 86–87) and Pamboules, both near Tenta, there are numerous dug outs, sunken chambers etc. (in one instance connected by underground galleries). In some instances these may have been dwellings. The only commonly known analogy are the underground dwellings cut in the loess at Beer Sheba — but the parallels are not close (ABSP, p. 31).

sunken emplacement

AYIOUS PAMBOULES

BEER SHEBA

A quite different phenomenon is that at the Sotira type site of Ayios Epiktitos *Vrysi* on a headland, East of Kyrenia. Here it seems an artificial hollow ca 5 m–6 m deep was dug out to accomodate a cramped settlement of ca 15 m × 15 m or more (Vrysi, pp. 8–12). This device, presumably in the interest of camouflage, seems a particularly Cypriote custom.

VRYSI

Presumably somewhere about the middle of the third millenium round and rectangular houses were standing at the same time in the Island (as was the case e.g. three thousand years previously in Palestine). Precise evidence of this state of affairs has not been revealed, but at the site of Kaminoudhia (perhaps from the latter part of the third millenium) can be seen building complexes which show a background in both traditions, being what may be called sub-rectilinear (Arch in C, pp. 115–124). Concomitant with the partly straight, partly curved, walling intersecting at any

transitional period

KAMINOUDHIA

angle is the markedly agglutinative style planning: compartments being added on and joined together without any regard for formal analysis. Only the device of long access corridors makes it possible to pick out various suites of rooms from within the general jumble (Arch in C, pp. 118 ff., figs. 1–3).

Astonishingly reminiscent of the Kaminoudhia planning is that at the nearby site
23 of Episkopi *Phaneromeni* (SCA, pp. 59–78) although there may be something over 500 PHANEROMENI
years separating the two sites since Phaneromeni is ca 16th century BC. The same agglutinative jumble of compartments is seen with just as little regard paid to rectangularity. However, at Phaneromeni overly curved walls are not so apparent. It would be interesting to ascertain the limits geographic and/or chronological of this agglutinative style planning in Cyprus. In principle it seems to be Anatolia and North Syria where the manner is most at home (Maison, p. 290; ABSP, pp. 144, 195, fig. 42).

The earliest known houses which show a recognisable individual definition are the *rectangular house*
Middle Bronze Age houses (i.e. ca 1800–1600 BC) at Alambra and Kalopsidha. In
159A an apparently isolated locality at Alambra, Gjerstad neatly brought to light a rural ALAMBRA
village dwelling (SPC, pp. 19–27) consisting of two approximately equal sized rooms set in the angle of an enclosure. The rooms have each separate entrances from the enclosed courtyard and there is no intercommunication between them. They are arranged in L form, one room as a broad room and the other as a long room. Both are furnished with benches, etc. One room should be the living/sleeping room and the other the work/store room.

This is exactly the form of house which occurred a thousand or more years before in Syria-Palestine in the earliest EB towns and settlements which were developing into towns — as it still subsisted in the contemporary villages of that region since it is in essence the form of housing which survived until yesterday in rural vernacular building as the essential simple village house (Maison Syrienne; JPOS 12, 1932, pp. 223–47, 13, 1933, pp. 1–83; Maison 2, pl. 269B). If Gjerstad's description is circumstantial, then a significantly developed enclosure would make this Alambra house into a *Hürdenhaus* (ABSP, p. 284; MDOG 82, 1950, pp. 19–46).

The picture is extended by another of Gjerstad's early discoveries, the house at KALOPSIDHA
Kalopsidha in the eastern Mesaoria (SPC, pp. 27–37). This sizeable (ca 170 m^2)
160 urban style house is clearly a *Hofhaus* in essence (i.e. a house with periphal rooms set about a central court, and thus suited to a regularly laid out settlement). Gjerstad gave full reign to his comparitive *Baugeschichte* and identified various of the 13 or so rooms as a megaron, an iwan, etc. Be these details as they may, the Kalopsidha house would not be out of place on the mainland from Syria to Mesopotamia.

At the contemporary (17th century BC) fortified enclosure Kafkallia on a scarp KAFKALLIA

several kilometres North of Dhali numbers of vestigial house plans have been recorded at small scale (Kafkallia, fig. 4). Among these are several larger rectangular enclosures (ca 20 m × 20 m). Sufficient detail appears in some instances to indicate that the internal organisation does not conform closely to the peripheral *Hofhaus* development. Perhaps the planning is dictated by considerations other than residential (e.g. security or storage). 164

An interestingly different type of house from the MC period is that at another Alambra locality where a row of terrace houses have been uncovered recently. These are long buildings ca 15 m × 6 m (and thus ca 100 m^2 in area) divided cross wise more or less at the middle with the rear compartment further subdivided. Again it is of interest to note that there are somewhat similar styles of terrace house developments nearby on the contemporary mainland (cf. MB IIc Tell Nagile — ABSP, fig. 231, cf. also RDAC 1985, pp. 37–44). 159B

TELL NAGILE

The next epoch, the Late Cypriote Age (ca 1575 BC-1075 BC), is that from which most information concerning dwellings has been recorded after the great profusion of neolithic round-house sites. The evidence from Episkopi *Bamboula,* the Late Bronze Age predecessor of Kourion extends through most of the period (LC IA — LC IIIA) and has been well presented and summarised (Bamboula Architecture, pp. 52–59).

urbanisation

BAMBOULA

The site is of great importance both for house design in itself and for its relation to settlement planning. No coherent stretch of ashlar masonry has been brought to light at Bamboula to emphasize its urban status; but there was a well laid out street system and during LC II B/C times a rubble city wall was built. Thus from ca 1300 BC Bamboula was a town — although compared with Enkomi and Kition it was perhaps a little rustic. It is difficult to estimate its overall extent, perhaps ca 5 or 6 hectares.

plan form

At all events a very regular type of urban house was in evidence at Bamboula from the earliest building levels (ca 16th century BC). These houses are of rectangular, indeed predominantly, square outline and thus designed to form street terraces in city block building. In size they range from somewhat less than 100 m^2 to somewhat less than 200 m^2 — overall dimensions being e.g. ca 9 m × 9 m, 13 m × 13 m, 15 m × 12 m, etc. The essence of the plan was a longitudinal three aisled division. In general the central aisle is in fact a nave, being wider than the lateral ones (certainly never narrower). This central compartment was in the main probably a courtyard. The three parallel main compartments were then subdivided (generally once) by cross walls to produce 6 compartments in all. Although in some cases there were additional cross walls giving extra compartments, a typical schema for this secondary division is an arrangement of long (front?) and shorter (rear?) rooms of proportional length ca 2:1. In some instances the shorter rear rooms were set over with an upper

tripartite

166

storey of three rooms plus an access balcony. Viewed in this light, the Bamboula "tripartite" house would give an overall impression not unlike some other house formulae — e.g. the so called "four room" house in Palestine (ABSP, pp. 134–36). Somewhat surprisingly the entrance is not very determinate. And there is little positive evidence for the obvious axial entry into the central court. In one example (House I, Area E, fig. 18) there is a side entry. In spite of its general affinities the precise systematisation appears to constitute a local Cypriote design category.

Another interesting and various group of houses has been revealed by the recent excavation of Ayios Dhimitrios (Cyprus CLBA, pp. 11–18). These houses are 13th century BC in date. During this period the large (11 hectare) site was a town or developing into one — the constant orientation betokens some sort of regular street lay out. About ten houses were cleared (on the track of the new Limmasol Highway) in two separated localities. The western group (IV, V, VI, VII) were spread out among vacant lots. They were small (ca 100 m^2 — 120 m^2) houses of ca 5–6 rooms arranged *Hofhaus* fashion about a central courtyard or compartment (Cyprus CLBA, pp. 12–13, fig. 2). One hundred metres to the East were larger town houses continuously built up with regular street frontages (Cyprus CLBA, pp. 12–13, fig. 2). These houses (I, II, III, IX) are considerably larger (ca 200 m^2 — 300 m^2) with 10 or more rooms. In general concept they are not essentially different from the smaller houses. Only as befits the more complex room distribution access and circulation is rather by way of long corridors than by a central court or hall. This conforms to the Cypriote predilection for this form of circulation which is well attested in Building X, the large administrative structure to the North (and also at Enkomi, etc).

AYIOS DHIMITRIOS

The very extensive French Excavations at Enkomi have uncovered much evidence of dwelling houses large and small. However, these appear on small scale site plans and there is as yet no specific publication of them. This situation is illustrated by the well known "Maison des Bronzes" in Insula 8E at the southern margin of the "systematic" excavations. Here in 1934 Schaeffer discovered a group of large bronzes (tables, basins, etc.). A plan was published in Missions (pp. 85–89 & 109, fig. 6) showing a partly ashlar building unit something like 15 m × 15 m divided into two compartments with no communication between them. On the basis of several preliminary reports this "house" was examined in Problems, pp. 8–10 and SCE IV Ic, p. 21. However, the recent authoritative French publication of the site as a whole (Enkomi BRC) speaks (p. 40) of the "construction vaste" and the general plan of the area (p. 2, figs. 1–2) shows nothing in the extended excavation complex moderately agreeing with the earlier unit plan (the precise location is marked MB on a larger version of this general plan — Alasia I, plan IV). In these circumstances profitless discussion is to be avoided. One interesting question which arises from published

ENKOMI

city block apartments

evidence is the possibility that the large city block buildings such as Batiment 18 and the Ashlar Building may have been superior apartment house dwellings — i.e. something after the style of a French "Hotel".

There are other buildings from LC (Urban times) which were at least partly residential in function. Since man generally lived at his work in antiquity, some of these buildings are considered elsewhere — e.g. it is sometimes difficult to distinguish artisans' dwellings and their workshops (cf. Industrial Buildings), and guard houses are dealt with under fortifications. However, in the interest of better defining building form, some of these building complexes may be mentioned here.

Something of the general picture at Bamboula and Ayios Dhimitrios can be recognised in the range of buildings (constituting defences?) along the crest of the

KOKKINOKREMOS

eastern scarp at Pyla *Kokkinokremos* (Kokkinokremos, pp. 1–32). The overall planning of these buildings is very well defined — they are broken up into similar 165 adjacent units delimited by through walls running up to the boundary (fortification) wall (Kokkinokremos, fig. 4, plan 1). Some of these units are more complex than others but two of the units (A & B) appear to include a simple "house" designed on

π form

the plan known at Enkomi Area 1 and Ayios Dhimitrios etc. of ranges of rooms about three sides of a frontal courtyard. Thus the overall disposition is similar to the North Gate Area III at Enkomi although the internal room planning differs.

IDALION

The SCE excavation on the western (Ambelleri) Acropolis of Idalion revealed a tangled succession of buildings which the excavators interpreted as a sanctuary site by a fortification wall, with a history extending from LC III to Cypro-Classical times (ca 500 BC). In spite of the habitually precise recording the reports suggest that at this site the expedition might not have been able to contain their investigations within a conveniently delimited provenance. Both the question of the nature of the remains and of their chronology depend to some degree on the understanding of their relation to the extensive lower town site supposed to be developed in the first millenium BC. In this way the Ambelleri site remains questionable. If the site was an acropolis in Geometric and Archaic times it is hardly likely to have been anything else in Bronze Age times. On the other hand if the remains are of much the same nature throughout their existence, perhaps their time range was more circumscribed. One obvious suggestion is that the entire sequence was first millenium BC (Cypro Archaic?).

At all events in the northern or lower sector of the site a complex of rooms developed just inside the gate (SCE IV 1c, pp. 11–14, fig 7B). This is a typical position for administrative apartments etc. and may be compared with Enkomi Area III (Enkomi I, pp. 15–152). Whether the assemblage is mainly public or private, there is little overall planning sense in them — they are an assemblage of contiguous

squarish rooms. Thus the different planning here as compared with Enkomi or Pyla *Kokkinokremos* (Kokkinokremos, plan 1) raises the possibility that this complex may be one of the rare examples of Archaic secular buildings.

little 1st millenium evidence

It may seem quite incredible to say so, but in fact there is no significant information relating to house building in Cyprus during the entire first millenium down to the end of the period under study. There is virtually no building of any sort recorded during the Geometric period, while during the Cypro-Archaic and Classical periods there is voluminous information concerning rural sanctuaries. However, during this latter prosperous period the few secular remains uncovered are in the nature of palaces or residences — the famous Palace at Vouni, and at Old Paphos, the "*Perserbau*" residence at Hadji Abdullah (RDAC 1985, pp. 106–07). The recently unearthed fragment of a sizeable 4th century building close by at Evreti may be another "residence" (RDAC 1985, pp. 113–117) and in the vicinity are said to be houses. Finally it should be noted that the American Expedition to Idalion in the early 70's uncovered various remains of Classical-Early Roman buildings, some of them houses, but nothing is published in sufficient detail for profitable comment (cf. Idalion, pp. 42 ff., fig. 35; pp. 63 ff., fig. 59; p. 77, fig. 71).

EVRETI

With the end of Cypriote autonomy and the incorporation of the Island in the Ptolemaic and Roman Empires many interesting developments must have taken place in Cypriote house building. The survival of traditional Cypriote forms (in the rural areas), the introduction of, e.g. the Hellenistic peristyle houses (of Delos etc.) and possibly the Roman atrium house (or of forms combining both features): all these matters are to be apprehended — but alas nothing of them has been revealed. The continuation of the Polish Excavations at New Paphos may get at the Hellenistic-Early Roman buildings underlying the great houses, villas, palaces of the 3rd–5th centuries which have been exposed in the South-Western part of the town. Equally further tourist development may result in knocking down much of Kato Paphos village, which untoward event would make the South-Eastern quarter of the ancient town accessible — the area of the poorer private housing (and probably that of the antecedent classical village). Meanwhile it is of course possible to extrapolate backwards from the buildings of later Roman times (ca 3rd–5th centuries AD). But this is a waste of space.

modern vernacular house form

There remains a final question which is of considerable interest. Cypriote vernacular building survived unabridged until the fifties. To what degree can its forms and styles be drawn on to inform the study of ancient house building, *sub specie* traditional rural village houses through the ages? Gjerstad's discovery at Alambra in 1924 of a rural type, two unit
159A dwelling built against an enclosure wall virtually began the archaeological record of ancient Cypriote houses. And it certainly began it at the beginning. The house is from early in the

second millenium and the form is just that basic type of Chalcolithic village house known in Palestine and Syria which continues to appear in early urban style and survives on in non-urban contexts (ABSP, pp. 284–85). Is there evidence for such a story in Cyprus?

Notably this basic type does occur in the broad room, flat roofed house of the lowland and foothill areas (cf. Sinos COO — the broadroom house, fig. 1 and the two unit type roughly 30
corresponding to fig. 2c; cf. also Christodoulos, fig. 50). It is quite possible that this type of vernacular modern house indicates an unbroken line going back to the earliest rectangular village houses in Cyprus, ca 2000 BC. On the other hand, the evidence for modern vernacular building can be followed back only for 400 years at the most. Also Cyprus has been subject to marked cultural vicissitudes since the end of antiquity (some of them quite surprising). There is no doubt that Cypriote vernacular building has been influenced by metropolitan developments. Thus interim examples of this two compartment broad house need to be discovered before the matter can be discussed with much profit. Perhaps the buildings about the LC III
AYIA IRINI Sanctuary at Ayia Irini (especially the cult house) give the best evidence of the survival of the 107
simple Broadhouse type (v. SCE IV 1c, p. 4, fig. 2).

As a postscriptum it should be noted that there is one strange feature of Gjerstad's Alambra house. Gjerstad is positive that the main living room is the long room (SPC, p. 24). In all ancient examples in Palestine and Syria the living room is the broad room — as it is in the modern village houses of the type in Cyprus.

Housing mirrors society — and it is to be regretted that archaeology has not provided a reasonably complete record of housing in ancient Cyprus. On all indications a full record would be a striking and highly individual one.

First there was the preternaturally long survival of the round house in a land in sight of metropolitan cultures where the form had been ousted 3–4,000 years previously. A situation as though the Limpopo was in sight of London at the beginning of last century.

Then it seems followed the rapid assimilation of such of rectangular house forms current on the hitherto disregarded mainland as suited Cypriote village life. There is evidence of two classes of housing. The simple detached type appropriate to semi-rural conditions (cf. Gjerstad's Alambra house) and the more compact house suitable for development in higher density settlements. In this latter class Cypriote invention appeared to work out some recognisably native developments. A popular
π form formula was the π design where an open fronted court was flanked with ranges of 24
rooms on three sides. The open front was narrowed or walled in as an accomodation to urban style conditions and this provided the basic resources for house planning large and small. The smaller houses appeared as close-packed, squarish rooms with a main entrance hall or court. While the larger houses adopted the distinctive device
corridor circulation of long through corridors giving direct circulation into the recesses of the building. 26 32

Unfortunately with the towns of the Late Bronze Age, first hand evidence of housing comes to an end. The Palace at Vouni (500 BC — 450 BC) shows the

continuing mastery of the π form in major building until the end of Cypriote autonomy. Grand houses of later Roman times (200 AD — 400 AD) indicate that the π form must have been superseded as the ruling design formula for luxury housing by international Hellenistic-Roman forms. Poorer and rural housing has not been excavated to attest the continuity of the Cypriote village house.

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h) Store-houses

Significance of bulk store house buildings for interpretion of socio-economic system. Defective and uneven settlement archaeology in Cyprus limits information under this head.

Storage in round house village in earliest times probably in small version of round house form as at Tenta Structure 34. N.B. close association with ruling building 10. Main development of excavated underground storage in artificial caves and cisterns probably from Chalcolithic times. N.B. connection with rock cut tomb and underground dwellings of this period. Standard bell shaped and bottle shaped underground silo or cistern not well represented in Cyprus archaeology. Also little evidence of developed water storage features.

Interesting built public storehouse — administrative centres from beginning of urbanisation in LC IIc times at Maa, Maroni, Ayios Dhimitrios, showing affinities with well known pillared storehouses of Iron Age Palestine.

Standard magazine wing at Vouni Palace in 5th century BC.

With the increasing socio-economic orientation of all human studies, store houses became a highly significant category of ancient building. The realisation that staples could be stored so

social significance

as to be available for future consumption is as basic a factor as controlled production of staples in the origin of sedentary living, while the manner in which this storage is provided for constitutes an estimate of the socio-economic organisation operating. Here, since the subject matter is building, the question of storage is considered directly only in so far as it is expressed in building operations and types. Equally it should be emphasized that the subject concerns not so much day to day storage for household use but long term bulk storage for community needs.

Storage is thus a function of settlement, and settlement archaeology in Cyprus is deficient and very unequal being concentrated in three epochs, the Neolithic-Chalcolithic, the Late Bronze Age and Roman Cyprus. No amount of analysis can make the picture of storage transcend this fact and therefore all questions of the historical development of storage in Cyprus are subsumed under the overriding question of the reasons behind this strange pattern.

round house times

So far as settlement archaeology goes in Cyprus there is no doubt that by far the greatest amount of information is available from the most ancient of all epochs, the Round House culture, ca 7500–2500 BC. In this way Cyprus has something of general interest to contribute to the question of the first origins of storage arrangements. Because of the ubiquitous presence in the Middle East of underground storage, pits or chambers, it has generally been assumed that these represent the most primitive type of all and were characteristic of the first neolithic round house settlements. However, it is doubtful whether the facts (especially in Cyprus) support this view.

small versions of round houses

There is no doubt that in various early Neolithic sites dug out emplacements can be identified as intended for storage purposes, but little evidence is usually available in section, and so often it is not clear to what degree these emplacements were cut down into the soil and to what degree they were built up (ABSP, p. 300). In Cyprus the carefully excavated Neolithic sites such as Khirokitia and Sotira provide quite extensive and reliable evidence both in plan and section. And they appear to show that deeply cut underground storage was not the rule in these early ages. On the contrary, the storage units were likely to have been replicas of the round house unit itself on a smaller scale — which unit was, of course, characteristically sunk to some degree below outside ground level. Indeed before the Round House Culture became so well demonstrated it was once sought to identify all neolithic round buildings as granaries (cf., e.g. those at Orchomenos, v. Greniers de l'Helladique Ancien, BCH LXX 1946, pp. 337–51). Certainly the standard type of store house (for grain = silo, granary) has retained this form until yesterday in most traditional village communities (e.g. granaries can be recognised in the present day in the beehive villages of North Syria by their smaller area and steeper profile, v. ABSP, fig. 23 and cf. fig. 204).

KHIROKITIA

The matter is worth some comment. At Khirokitia Dikaios noted carefully the occurrence of pits etc., some of them lined — these, however, are small features within the tholoi and in fact correspond to kitchen bins etc. not to bulk storage features (Khirokitia, pp. 210, 227).

TENTA

On the other hand structure 34 at Tenta on all accounts is likely to have been a storehouse for perishables requiring protection from damp. With an internal diameter of ca 2 m only, it is too small for a common dwelling house. Moreover a ledge around the bottom of the wall in the inside together with isolated protruding stones (supports) suggest a raised wooden flooring (Tenta, p. 32). Also it would seem to be highly significant that this structure is peripheral to the ruling structure 10. This latter building is so obvious an indication of social distinction within the community that the relationship predicates the storage of the social surplus under the control of a ruler. In which connection the example of modern round house villages is telling for e.g. in Africa the headman's granary is a standard feature (for the integration of silo/storage hut into round house village planning in Africa v. D. Frazer, Village Planning in the Primitive World, pp. 50–51; and for the special headman's granary, pp. 52–53, 56–57).

cf modern instances

Whatever may be the interpretation of storage practices in most ancient neolithic times, there appears to be a change in the Chalcolithic period. Recent excavations particularly at Lemba in the Paphos region have revealed much interesting data on storage arrangements.

Chalcolithic times

Here is to be seen what may be the beginnings of a method of bulk storage which has always remained operative — viz underground storage to profit by the insulating properties of the earth. What is at issue is something which goes beyond the convenience of carving out small receptacles in the ground; it involves excavation of chamber cellars, cisterns, etc., deep into competent strata, thus to a greater or less degree involving rock cutting. It is of the greatest interest to note that this practice emerges in Cyprus during Chalcolithic times thus emphasizing the generic connection with the other forms of excavating, viz rock cut chamber tombs, underground (troglydite) dwellings and mining. Perhaps this raises the question that such development devolves from improved (metal) tools.

deeply excavated underground storage

cf rock cut tombs mining

LEMBA

At Lemba this matter has been given specific attention. A variety of cuttings have been investigated on the outskirts of (especially) Area II, apparently a semi-isolated hamlet of round houses (Lemba I, pp. 107–126). Numbers of these cuttings which are carried down into the soft surface limestone (havara) appear to have been emplacements for storage jars (Lemba I, pp. 127 ff.). However, in one instance (Lemba I, p. 133, fig. 4.3) there was a complex feature consisting of a central access hollow, ca 2 m × 1 m × 1 m, from the sides of which three lateral cupboards had been hollowed out, the entrances to which could be closed by stone slabs.

In addition to the evidence at Lemba, underground features of a different type at two other more or less contemporary Chalcolithic sites may well have functioned (wholly or partly) as storage facilities.

AYIOUS

At Ayious just across the Maroni River to the East from Tenta, there were about 50 sizeable excavations in the marly earth — the larger ca 2 m in diameter and cut down to a depth of ca 2 m below the present surface level. At least some of these features seem originally to have been cut as caves or underground chambers. There is one instances of two "caves" connected by a tunnel ca 8 m long. The residual contents of these hollows do not define their original purpose very clearly, although it is concluded that some of them were residential. It is of course always possible that some of them served for storage — perhaps concealed storage in view of the access by tunnel (Arch in C, pp. 86–87, fig. 4, Pl. II; Praktika 2, pp. 9 ff., fig. 7). The other site where tunnels give access to underground chambers is Philia *Drakos* (BCH 92, 1968, pp. 291–99). These features have been dealt with only in preliminary notices and it is not possible to specify to what degree the concern is with storage — in discussion it has been suggested that it was to some degree. 167

Bronze Age & later periods

None of the above mentioned features seems to constitute exactly the underground storage unit which became standard over a great range of time and area in the Ancient Middle East. This was the excavated chamber (at times sizeable) constricted at the top into a narrow neck and bellied out below to a greater or less degree. It characteristically assumed two forms, the bell shaped and the bottle shaped (ZDPV 82, 1970, pp. 275–78; ABSP, fig. 238). Such features are well attested in chalcolithic times (e.g. in the underground settlement at Beersheba in Palestine (ABSP, fig. 212). Although there is very little evidence of their occurrence in Cyprus, this again is a consequence of the limited settlement excavation in the Island. The flask or bottle shaped form is recorded at Enkomi town (Enkomi IIIB, pl. 294) but not the more significant bell shape; similarly at Kition (v. Kition Exc. V.1, pls. 28, 29).

bell & bottle shaped cellers

ENKOMI KITION

cf tomb development

This is a strange situation. In the first place the bell shaped silo is similar in form to the rock cut "chimney" tomb — i.e. the chamber with a vertical entry "trap" at the peak. This tomb form can be thought of as typologically standing behind the long line of development of the chamber tomb and it certainly occurs in Cyprus during Chalcolithic times, e.g. at Souskiou (Cyprus, pp. 36–37). Equally striking in the present context is the fact that the survival in use of these underground silos into modern times is best recorded in Cyprus where it is reported that they were used by villagers in the Karpass Peninsula to conceal agricultural produce from Turkish tax inspectors during the latter part of last century (Antiquity 30, 1956, p. 223). Thus on both accounts it is difficult to think that such underground silos were rare in Cyprus in antiquity.

Perhaps some explanation of the apparent anomoly is provided by the last mentioned report which may suggest that underlying differences in Cypriote social organisation should always be born in mind. On the mainland these underground silos are found cut into the stratified deposits of tells — the grain was stored within the walled city. In 19th century Cyprus these features were specially noted as "usually dug in the farm land or near the threshing floor" (ZDPV 82, 1970, p. 277). And so typically they may have been in ancient times. This small point is worth mentioning for it may be symptomatic — i.e. even after the development of large towns in the Island, things which were incidents of urban life on the mainland in Cyprus may have taken place in the countryside.

water storage
cisterns

In discussing underground storage it must be appreciated that there is no hard and fast distinction between units designed to store produce (silos, granaries, etc.) and those to store water (cisterns). The latter, of course, must be waterproof, but this is also on occasions a virtue in the former; while waterproofing is sometimes inherent in the impervious strata in which the feature is cut. Thus the presence or absence of plastering is not in itself conclusive evidence of function. It may be that the flask or bottle shaped unit is generally a cistern, although by no means should it be assumed that all cisterns are of this form (cf. ABSP, pp. 300–01).

wells

Perhaps the most effective and hygienic type of water storage is a good well and there is evidence on the mainland of well digging from ca 6th millenium BC (in Mesopotamia — for this and other matters concerning water storage v. the excellent review R. Miller, Water Use in Syria and Palestine in WA 11, 1979, pp. 331–41). However, there is no evidence of any wells in Cyprus during the round house era and every reason to consider that such round house villages were always located near good perennial springs and relied on them entirely for their water supply.

reservoirs

Again on the mainland various quite major waterworks were engineered from earliest Bronze Age times (ca 3000 BC) onward. Large open reservoirs were constructed within the city walls, run off was canalised into subterranean cisterns or reservoirs, shafts and tunnels were dug to ground water within the city limits or leading to such resources beyond the walls (ABSP, p. 166–70). All these developments can be seen to be tied to urbanisation with its need to provide an adequate water supply for a substantial concentrated population —and to secure it in time of hostilities. These basic circumstances do not seem to carry over into Cypriote society.

wells in cities
ENKOMI
KITION

For almost two thousand years settlements in Cyprus continued in the form of agricultural villages which could be located near a water source. Thereafter in LC times there is evidence for well digging within city limits (Enkomi IIIB, pl. 294; Kition Exc. V.1, pls. 21–23, 27, 28 *et pass*) but little else in the way of water supply

cisterns at VOUNI *reservoirs & aqueducts* KOURION SALAMIS

engineering until the middle of the first millenium BC — e.g. the cisterns, both bottle and bell shaped, to store run off from the mountain summit Vouni Palace (SCE III, pp. 163–173; Vouni Palace, p. 147), the reservoirs and underground cisterns coupled with aqueducts at Kourion and Salamis, etc. (cf. J. Last, Kourion — The Ancient Water Supply, PAPS 119, 1975, pp. 39–72). The marked contrast suggests that by and large compared with the mainland Cyprus was a peaceable place and life was not planned with endemic hostilities in view. 62 63

LC period public storage buildings

Whereas urban water storage is primarily a matter of security, bulk storage of produce in a developed economy is perhaps in the first instance a matter of revenue and administration. In this way during LC times evidence of public storage buildings in Cyprus comes to the fore.

MAA

One such building of remarkable interest has been excavated on the fortified promontory of Maa on the Western approaches of Cyprus some kilometres to the North of New Paphos (RDAC 1982, pp. 86–108). The settlement is quite short lived and well dated to ca 1250–1200. A strip down the centre of the promontory has been investigated and this has revealed a series of buildings almost all of which appear to be specialised public buildings of some sort; common housing quarters may or may not exist in the peripheral areas. There is a considerable amount of ashlar masonry construction in these buildings (RDAC 1982, pp. 95 ff.). Thus location, development and chronology concur in showing that the site played a significant role in the foreign exchanges which motivated the sudden urban development of the Island. Unfortunately it is not as yet possible to precise exactly the nature of this role. In this argument the storage building (III) is of great consequence.

Building III is situated in the middle of the peninsula, bordering the arterial street across the other side of which lies a building (II) which might be the ruler's residence. The storehouse is ca 13 m × 14 m and thus just under 200 m^2. The plan is essentially that of the long gallery storage unit. It is possible that originally there were two separate stores alongside each other, between which a connection was opened subsequently. Whether or not this is so, the plan came to be exactly that of the three aisled building so well known in Palestine during the Hebrew monarchy and used variously for stabling animals and for bulk storage (ABSP, pp. 306–08, figs. 244–46). This is held to represent the "*miskenot*" of the bible, the government stores established in various regional centres (I Kings 9.19; II Chron. 8.6, 11.11, 17:12) for receipt of taxes in kind — corn, wine, oil (II Chron. 32, 27–29). 168

long gallery type

cf Hebrew Palestine

In Palestine the breadth of a single unit building is exactly that as at Maa (ca 12 m × 13 m) but the buildings are generally somewhat longer (e.g. ca 20 m). The units tend to proliferate in complexes of 2, 3, 5 set in parallel. The striking feature of these buildings is that the internal divisions marking the aisles are not solid walls but

rows of pillars (prompting the designation *Pfeilerhaus* — ZDPV 93, 1977, pp. 30–45) with the interspaces blocked by low partitions, quite often showing as troughs or mangers.

Now all this planning is present in Building III at Maa with very significant added distinction. Running the length of the two lateral aisles is in each case a long narrow corridor to facilitate the servicing of these compartments. This corridor facility is, of course, a special feature in Cyprus planning during this and other ages (cf. Ayios Dhimitrios Building X and Enkomi Area III). *additional corridors*

Storage buildings of this *Pfeilerhaus* type have a wide distribution on the mainland during Iron Age II times and it is such a practical design that it occurs much later (e.g. in Early Byzantine times in Southern Palestine). As at present however the LB example at Maa is of prime importance in tracing the origins of the type.

Exactly contemporary with Maa (LC IIc) is a major public storage building complex at Maroni near the central south coast of the Island (RDAC 1986, pp. 40–44). In the middle of a spreading coastal plain, now bustling with renascent agriculture, a low knoll marks the presence of two continguous monumental buildings, together with some attached service apartments. The larger building which incorporated much ashlar masonry (in part recently robbed out) is some 30 m × 17 m, i.e. over 500 m^2. Essentially the plan is of 3 long galleries (the N.E. are subdivided into chambers) with service apartments at the rear. The smaller building set alongside to the S.E. is essentially of the same type. These buildings in view of their plan and their isolated position in the middle of fertile, arable land can only be an administrative-storage complex — whether the central public authority which controlled them was secular or religious is not now evident. There is some evidence to show that the site was revived in Archaic times in the guise of a sanctuary and thus it is possible that some religious character had always inhered in it. MARONI 169 170

Of essentially the same nature as the Maroni buildings is Building X in nearby Ayios Dhimitrios 8 kms to the N.E. (RDAC 1983, pp. 18–24; CCLBA, p. 15). This is approximately twice as long (ca 35 m × 30 m) as the Maroni building and does much to explain the purport of the common plan. At Ayios Dhimitrios one of the long galleries is very well preserved with a central row of ashlar monolithic pillars — and in this gallery the rows of storage pithoi could be reconstructed from the *in situ* fragments. Although this Ayios Dhimitrios building is more complex it shows the same general disposition with the service apartments abutted at the rear. AYIOS DHIMITRIOS 133

The sudden appearance of these three substantial buildings, the work of public authorities as evidenced by their partly ashlar construction is striking evidence of the social changes concomitant with urbanisation. Production in the Island was geared

to a centralised system and the social surplus was appropriated and stored by the authorities in important regional centres.

Given this illuminating beginning, it would be of great interest to trace subsequent developments in such buildings. Unfortunately there is virtually no evidence from later periods — even including Roman times when *horrea* were considered basic public utilities.

VOUNI

It is only at Vouni Palace (SCE III, pp. 76–229) there is revealed another example of a more or less standard type of public storage arrangement. The original palace was built early in the 5th century at a new and commanding site on (by) the road from Marion to Soloi — and was obviously designed as a pressure point in the relations between these two kingdoms. Initially it consisted of a monumental resi- 138
dence-reception unit and a service wing to the West. The latter included a range of 4 or 5 store rooms with direct access from the rear, rooms 10–14. These rooms are of normal square proportions, furnished with wall benches and two of them still contain assemblages of storage pithoi (Vouni Palace, pp. 148–49). After a generation or so (it is reckoned) the Palace was greatly extended by a new service compound on

magazine wing

the East. This was in effect a typical palace magazine wing with the characteristic range of long narrow rooms or galleries set side by side (Vouni Palace, pp. 149–50, fig. 2) going back to the Minoan Palaces (Lawrence, GA, figs. 20, 24).

The habitation remains on the slopes below the Palace at Vouni have never been closely investigated. It would be very interesting to correlate these with the enlargement of the Palace, since the new magazine wing of the Palace gives the definite impression of a governmental institution, whereas the original store-rooms to the West could be reckoned as serving the domestic requirement of the more or less isolated royal castle.

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j) Industrial Buildings

Significant application in Cyprus that of metal working. Copper mined and worked from ca 3500 BC onwards. Notable increase in operation during 13th century BC. Evidence of metal workshops at Enkomi, Kition, Athienou. Open yards with solid floors suitable for smelting operations. Connection with temple establishment.

Little evidence in Cyprus of buildings for other basic industries, e.g. potting, oil production, textile production. Apparent temple centred industrial development in LC times.

for metal working

In discussing ancient industrial buildings in Cyprus, it is clear that the principal connection is with metal working. The name of the Island is, on the face of it, the material equivalent of "Copper". And there can be no doubt both from archaeological records and from ancient sources that copper mining and metal production were responsible for whatever international renown Cyprus enjoyed (cf. R.J. Forbes, Studies in Ancient Technology IX, Leiden 1964, pp. 1–122, N.B. pp. 71–75).

Ancient mining engineering is a very technical subject and the evidence of the extraction of copper ore from its lodes is not treated here (cf. Studies in Ancient Technology VII, Leiden 1963). Nor indeed will the various subsequent metallurgical processes be considered *per se*. The concern here is solely with the premises shown to have been associated with these processes. However, even this limited scope, of necessity, involves some reference to the metallurgical background. Unfortunately the archaeology of metal working in Cyprus is bound up with much (controversial) technical analysis (for a comprehensive review, v. Early Metallurgy in Cyprus *pass*) and the barest mention will be made here only of those matters immediately relevant to works premises.

Mining and metal working are, historically, factors connected with the origins of urbanisation, however once the technology had been evolved, its operation was in no way restricted to an urban regime as is evidenced by many examples in the ancient world (e.g. Bronze Age North Western Europe) and in the modern world (e.g. in Africa, south of the Sahara). Given the expertise metal working seems to have accomodated itself to any power base available: tribal, religious, etc.; or indeed to have created one of its own, a sort of clan or brotherhood. Also the striking "transformation" involved in the process has always invested it with a magico-religious aura.

early mining

Although it was once asserted that there was no metallurgical work in Cyprus prior to Roman times (based on the refractory nature of Cypriote copper ore, cf. EMC, p. 111), it is now agreed that copper has been mined and worked in the Island since the date of the first occurrence of copper objects there, ca 3500 BC (EMC, pp. 25 ff., 128 ff., 143 ff.). However, it is in Late Cypriote times (13th century BC) that all the archaeological evidence indicates a great development and floruit of the industry (cf. Athienou, pp. 132–33). It is also in this period that the first archaeological evidence is available of the direct association of metal working with individual buildings — and thus it is possible to discuss the question of workshops. Indeed at this period almost

but main evidence of metal working from urban period

all the excavated sites give evidence of *in situ* metal working (EMC, pp. 105–109). In accordance with this general state of affairs the association of metal working and buildings falls chronologically at the period of the urbanisation of the Island. Thus interesting variations of social background are in issue, *viz* industrial buildings in pre-urban times, industrial buildings in an urban environment, industrial buildings in a non urban environment.

For any consideration of buildings for the industry it is first necessary to appreciate the various processes involved in metal working. These are roughly speaking, as follows:

(1) Extraction of the ore from the mother lode/rock (*mining*).
(2) Separation of the metal from the ore (*crushing, roasting, primary smelting*).
(3) Conversion of the metal into a state of greater purity (*secondary smelting, refining*).
(4) Production of desired objects from raw metal ingots (*casting*, etc.).

Manifestly the first operation can only take place in geologically predetermined locations (which very frequently are remote from settled areas). Otherwise the remaining operations can be carried out anywhere the ore is transported. However, the proportionate bulk of ore to the metal it yields is very great, hence a large economy in transport involved in separating the metal from the ore as near as possible to the mine. In Cyprus accessible ore bearing formations are situated at various parts of the Troodos massif (mainly in the peripheral pillar lava girdle). The Troodos massif, of course, in antiquity as at the present day was the most sparsely settled region of the Island. By pack animal it is distant about 5 days journey to the Eastern seabord. However, in spite of these physical facts it is precisely from the East Coast settlements that the most extensive evidence survives of buildings connected with metallurgy.

copper ore mainly in Troodos region

but extensive metal working on East Coast

This fact is not meant to indicate that in Cyprus no ore was processed in the mining regions. Enormous slag piles bespeak the contrary e.g. at Skouriotissa (Our Lady of the Slag) and Kalavassos. These slag heaps have been closely studied by F.L. Koucky (EMC, pp. 117–41) and H.G. Bachman (EMC, pp. 143–51). Excavation showed that some slag heaps grew up on the actual smelting site (they contain or overlie furnaces themselves built of slag — EMC, p. 120). Thus the process of primary smelting in the mining regions was carried out probably as a rule in the open. Possibly it was a seasonal activity (a form of aestivation).

APLIKI

An interesting demonstration of the existence of settlements of metal workers in the mining regions was provided by the excavations near Apliki, at the place Karamallos (6–7 kms West of Skouriotissa). These revealed village houses of the 13th century (LC IIc) containing mining and metal working tools stored in stone

rooms and discarded in pits (Ant. J. XXXII 1952, pp. 133–67). As yet however no archaeological investigation in mining areas have shown Bronze Age buildings in use as metal workshops.

This is the background to the picture revealed by the extensive excavations at Enkomi and Kition. At both sites there is ubiquitous evidence of metal working from the earliest periods: i.e. predating the construction of the city walls which is taken to indicate their urban development. And at both sites the nature of the metal working evidence has caused surprise and controversy. A great deal of slag is present (including heaps). Short of arguing that the slag was brought in from elsewhere (an unlikely event, but cf. EMC, pp. 101–02), this indicates that smelting was carried out within these built-up settlements. On all assumptions this should have been secondary smelting (or refining) of impure metal. However, chemical analyses indicate that much of this slag comes from primary smelting (EMC, pp. 8 ff., 112). In which event some compelling reason forced the transport of bulky ore supplies (v. EMC, p. 116) three quarters of the breadth of the Island so that it could be processed in the midst of residential areas — this processing, since the ore is a copper sulphide, involving the emission of dense, stifling, sulphurous fumes (EMC, p. 99; cf. Studies in Ancient Technology IX, p. 30).

ENKOMI
KITION

smelting inside urban areas

At Enkomi the widespread excavations have provided an interesting variety of evidence relating to metal working. There is held to be some traces of this from the very beginnings of the settlement in the sixteenth century (Enk & BRC, pp. 30, 68 ff.). However, the striking early evidence is from Dikaios' Area III, the fortress and then public buildings on the northern limits of the settlement. During the 13th century (LC IIc) the whole western unit (ca 15 m × 10 m) was a metal workshop with a large slag dump just outside its western wall. At least this metal workshop was at the down wind, northern extremity of the site. However, in the later part of the 13th century BC, when the Cyclopean city wall was built and the regular grid town plan built up, metal working moved away from this area into the heart of the city. Workshops have been identified in the close vicinity of all the major public buildings so far excavated (v. EMC, p. 156, fig. 1; Alasia I, p. 425, fig. 26). It seems that all metallurgical processes, not only refining and casting but primary smelting as well, were carried out in these workshops and the nuisance from fumes and stench must have been great (EMC, p. 175).

ENKOMI

originally at northern limits

later in city centre

Whether all or any of these premises were designed specifically as workshops is not at all obvious. They can only be recognised as such from the installations and finds. Generally speaking the workshops contain a court or unroofed area where some of the operations were carried out, but this feature is common place. Perhaps one distinguishing attribute has been recognised. This is a hard concrete floor laid to fall

open yards with concrete floors

with drainage into a sump, which should indicate a crushing (and washing) yard for primary smelting (Enk & BRC, p. 68; EMC, p. 162, fig. 3 — *atelier sud*). Thus from the evidence presently available it would seem that at Enkomi metal workshops were set up in or about public buildings civil or religious in whatever premises were available — no specialised design can be recognised in them.

KITION

At Kition the circumstances of the Excavation are different but the overall position is very similar. The Antiquities Department excavated two areas at the northern margin of the settlement and both areas contained metal workshops. So far as metal working premises are concerned the two areas provide rather a contrast, or perhaps a complementary picture.

AREA I

Area I is situated about 20 m inside the line of the city wall at the N.W. angle of the settlement. The excavations were carried out in one modern building plot. They were thus restricted in area, nonetheless they were carried down to reveal the five floors (periods) corresponding to those identified in the major Area II excavations 200 m away to the North East. In the earliest period (Floor IV, 13th century = LC IIc) there is no very convincing evidence of a city wall (in this area).

The building remains of the earliest period are poorly preserved but a sensible plan can be made out consisting of a central unroofed area with small rooms on three sides (Kit Exc. V.I, pp. 6 ff.). The general impression is somewhat like the early 173
pre-urban complexes at Area I of Enkomi. In the central space and two of the peripheral rooms there are installations for metal working — bench, furnaces and much slag. The N.E. room with the plaster floor and two wells contained a partition wall revetted with gypsum slabs. This was a washing area and is congruous in a metal workshop either as a bathroom for sooty furnace men to wash in or as an

domestic industry

installation for washing materials. All this suggests a "hamlet" industry perhaps pre-dating the urban development of the site. Thereafter the area went out of commission for metal working more or less at the period when a very definite workshop area was set up about Temple 1 in the Sanctuary Area.

AREA II

The Kathari Sanctuary Quarter at Kition has been excavated over an area of some 5000 m^2. At the founding LC IIc period of Temples 2 & 3 there is little direct evidence of metal working. However, at Floor III, the period (LC III A) when the monumental temple complex 1 and 2 was developed in ashlar masonry in conjunction with the partly megalithic City Wall, the character of the sanctuary has changed considerably. At this stage quite elaborate workshops were built about the North

temple industry

and West flanks of Temple 1 (Kit Exc. V.1, pp. 77 ff.). The Northern Workshops 98
served for metal processing (smelting and casting); the Western Workshops for various other purposes, doubtless in part subsidiary to the operations in the northern block. Whereas the emplacement of the northern block is confined between the

Temple and the City Wall, the original limits of the Western Workshops have not been traced by excavation. As presently known the Western Workshop building was less coherent and less constant over time than the Northern Workshops and it is the latter which give the clearest indication of a planned Industrial Building (for metal working).

building form

174A The distinguishing feature of the planning may be reckoned several (3) large units (ca 8 m × 10 m) arranged in parallel with subdivisions only in restricted instance. The criterion is supplemented by a heavy impermeable cement floor and indications that one or more of the units is unroofed — all of which is a matter of common sense.

installations

The works installations (benches, furnaces, pits, crucibles, bellows, etc.) leave no doubt as to the designated purposes of the unit. And, in fact, coupled with some

174B expert metallurgical knowledge they make possible a fairly detailed reconstruction of the workshop drill.

These workshops, after remaining in service for some 200 years, were going out of commission during the last period of the Temples, ca end of 11th century (Kit Exc. V.1, p. 163). After this the quarter was entirely abandoned during the 10th and 9th centuries. When the Sanctuary was redeveloped by the Phoenecians in the latter part of the 9th century and the ruins of Temple 1 were converted into a great colonnaded temple, the old industrial area entirely disappeared. However, in this latter age metal working was apparently still a requisite for the functioning of the sanctuary. During Archaic times this was provided for by blocking off part of the old Temple Courtyard (Temenos B) and installing a small workshop in the former entrance porch of the Temple (Kition, figs. 16, 17).

In conclusion it is of some interest to note the contrasting picture presented by the workshops described above and the metal workshops identified at Enkomi. At Kition the positioning of the workshops in relation to the sacred area as a whole indicates that they formed part of the overall planning. This is different from at Enkomi where the workshops in many instances appear to have been installed in pre-existing complexes as the need arose.

ATHIENOU

An interesting analogy to the metal working about the temples at Kition (and Enkomi) has been unearthed recently at Athienou *Golgoi* by Israeli archeologists. This site as excavated extends over about 1000 m^2 on a low natural platform rising about 2 kms above its surroundings. Although in fact the architectural remains are somewhat inchoate, the prolific finds leave little doubt as to the nature of the site.

rural sanctuary with metal industry

There are on the one hand masses of small votive offerings (pottery juglets, etc.) and on the other hand waste products of metal working (slag, etc.). The association would seem to proclaim that Athienou was a sanctuary which operated its own metal

industry where all metallurgical processes were carried out — the principal surviving evidence being of (primary?) smelting. In this way it forms a rural counterpart to the urban sanctuary at Kiton. In this connection its location is of interest. It lies on a direct route from the main mining areas of the Troodos to the East Coast towns (e.g. Kition). Also there are two outlying mines not far away; Troulli 8 kms to the East and Sha 20 kms to the West (Athienou, p. 136).

There was evidence of occupation throughout the Late Bronze Age and the Sanctuary flourished from the 14th century BC onwards (Strata III & II), most of the excavated feature being LC III (12th century BC). The Sanctuary apparently took the form of a large square court walled about with one or more peripheral ranges 171
of rooms. On the East side of the square was a series of installations which can only be an industrial area. At the north-east was a large yard (more than 100 m^2) with a 172
heavy lime plaster floor and elaborate drainage arrangements. This was apparently the smelting area. To the south of this and directly to the east of the sanctuary square were a series of chambers or compartmentalised working areas for various other industrial operations, perhaps including the necessary preliminary roasting of the sulphide ores as suggested by the evidence of extreme heat (Athienou, pp. 132–38).

religious exploitation

The organic association of metal working with religious centres (e.g. at Kition, Athienou, Enkomi) can not but imply that during the Late Bronze Age the metal industry was organised and controlled by religious authorities. In token of this the mythological associations of Aphrodite and Hephaestos are adduced (Kition, pp. 74–76) and much more comparative religious background can be brought to bear. The socio-economic aspects of the whole issue have been considered in a recent monograph which is of interest (A.B. Knapp, Copper Production and Divine Protection, Göteborg 1986).

historical development

In this general connection there is to be mentioned a little discussed point of considerable interest. The evidence for the surprising concentration of metal processing about religious buildings, even in heavily built up area, is from the Late Bronze Age. It may well be asked whether such an uneconomic proceeding endured into subsequent ages. Unfortunately the lack of settlement excavation from later periods means relatively little direct evidence is available. Metal working continued in the Kition Sanctuary during Archaic times (Kition, pp. 113–14). However, based on observations in the mining regions (slag dumps, etc.) the impression exists that the treatment of ores changed to or reverted to the mine head (EMC, p. 380) — i.e.

later smelting at mine head

smelting changed from workshop to plant organisation. Certainly in Ptolemaic times the officer of the crown appointed to control and oversee all metal production in the Island (*epi tōn metallōn*) was of the highest rank, possibly second in seniority to the governor-general (*strategos*).

For industries other than metal working there is little evidence.

potting

Cyprus was notable throughout the ages for the vitality of its pottery industry, yet in spite of this there is virtually no archaeological record of pottery production in the Island (cf. the strange parallel with Anatolia (Syria 49, 1972, pp. 35 ff. at p. 79). Only very recently has a building reckoned to be a pottery been cleared at Toumba tou Skourou in the Western Mesaoria near Morphou. The site was developed at the beginning of the Late Bronze Age and continued in use throughout the epoch. It constituted a salient mound which was largely demolished by bulldozing immediately prior to the excavation. Unfortunately this excavation has only been published as a preliminary brochure (E. Vermuele, Toumba tou Skourou, Harvard 1974). The site is characterised as "a potters' quarter". Mention is made of clay storage, sacks of clay, balls of clay, etc., but nowhere on the published general plan is anything like a kiln apparent. The plan shows a large building unit ca 30 m long divided longitudinally into galleries, but it is not clear to what degree the divisions consist of walls or low partitions or benches (Cyprus, p. 69, fig. 49).

TOUMBA TOU SKOUROU

oil

A basic primary industry in Cyprus is olive culture. However, unlike in neighbouring lands (e.g. Palestine) little has appeared in archaeological reports concerning oil production. Now, most recently, a preliminary survey has been published (RDAC 1988_2, pp. 111–20) which has drawn together and reassessed information (previously unnoticed or disputed) so as to provide an outline of what common sense indicates must have always been a staple industry.

the olive

The existence and consumption of the (wild) olive in Cyprus (RDAC 1988_2, p. 111) is evidenced from earliest Neolithic times (Cape Andreas *Kastros*) down through Chalcolithic times (Lemba, etc.) but the earliest stratified evidence for olive oil extraction is from LC IIc (ca 1300 BC). It is probable that the recent discovery of a large pressing bed (*vourna*) at Maroni *Vournes* dates from this period (RDAC 1986, p. 43) as does Room 27 at the Pigadhes Sanctuary, previously thought to be a bathroom (Pigadhes, p. 22) and now interpreted as an oil plant. However, it is only from Classical times onward that coherent building remains housing oil presses have been revealed. These include the Pasydy site in modern Nicosia town which was seemingly attached to a sanctuary and in operation from ca 500 BC on into Hellenistic time (RDAC 1988_2, pp. 112–13, fig. 7). There is also an olive press from Hellenistic times at Kopetra near Mari with very sophisticated and well preserved fittings (RDAC 1988_2, pp. 113–15, fig. 2). Remains of further premises have been excavated which demonstrate the continuous development of such units on into later Roman and Byzantine times. It is noteworthy that olive oil production seems to have been associated in antiquity with the rural sanctuary (RDAC 1988_2, pp. 113, 15) as in

presses

MARONI PIGADHES

NICOSIA

KOPETRA

rural sanctuary

Christian Cyprus such establishments are to be found in monasteries (RDAC 1988_2, p. 116).

premises *processes* *crushing* *pressing*

Judging by excavated examples the typical oil plant was housed in heavily walled chambers (or enclosures) ca 8–9 m × 4–5 m. Two processes are involved, the preliminary crushing of the olives and then the pressing of the macerated pulp to extract the oil. The crushing process demanded a large circular mortar (diameter ca 1.50 m) of very hard stone (*vourna*) with a device for operating millstones, but it is the press which furnishes the most characteristic remains. These consist essentially of a sizeable flat stone bed obviously of hard dense rock (at Kopetra, calcarenite ca 3.70 m × 1.30 m × 0.30 m). This is suitably channelled to guide the run off into stone vats or other receptacles for the oil. The press was powered by a long wooden beam as a lever run through the wall (or a perforated columnar support = "the tree") at one end, to be drawn down and weighted by heavy stone weights at the other. This is the standard "lever and weight" press well known elsewhere from actual examples in Palestine and representations on Greek vases. In later (Roman) times the press was activated by a screw, either operating on the lever or directly on the press.

pierced monoliths

The weights (in particular) and the bed and vats can survive to evidence the establishment when the walls of the building have disappeared. Another characteristic survival can be the heavy monolith lodging the end of the lever especially in open air presses. In Cyprus these take the form of a very massive standing stone perforated by a large rectangular cutting. They were noticed at the end of the last century when their correct identification was suggested. However, since they are undoubtedly megaliths and often little or no other trace of any installation remains, subsequent speculation has turned to a possible religious significance. Now closer investigation coupled with excavation has verified their true industrial function as "trees"/*arbores* (RDAC 1988_2, pp. 118–19).

textiles KITION

For another basic industrial activity, *viz* the textile industry (weaving, dying), there are only suppositions. Again significantly, these are in connection with the industrial area at Kition Sanctuary (cf. Kit Exc. V.1, p. 33).

temple economy

All these various odd conjectures are subsumed under the concept of temple commerce and industry and a temple generated economy where basic industrial activities connected with temple functioning (and thus supporting the temple's maintenance) were directed by the temple authorities in the temple precinct (cf. R. Stager & S.R. Wolf, Production and Commerce in the Temple Courtyard, BASOR 243, 1981, pp. 95–102). This phenomenon is attested on a large scale in Ancient Mesopotamia as well as in Mediaeval and Modern India, etc. (cf. K-U Golzia, Der Tempel im Alten Mesopotamien und Seine Parallelen in Indien, Leiden 1983).

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k) Tombs

Enormous profusion of tombs of all periods thus only (cursory) treatment of tomb form possible, no discussion of burial practices. Very conservative retention across ages of certain limited types of underground tomb. Apparent overall secular evolutionary development from earth pit grave (Neolithic) via shaft grave cut in rock (Chalcolithic) to rock cut chamber tomb (EB — throughout antiquity down to Christian times).

Neolithic burials within and close about settlements, but from Chalcolithic and Bronze Age times well developed cemeteries in localities removed settlement areas. However, because of limited settlement excavations difficult to be categoric regarding intra-mural burial during Bronze Age (it is common at LC Enkomi).

Rock Cut Chamber Tomb. No overall typological progression of types, once a form introduced it continues to recur. Tomb chamber typically curvilinear and irregular in plan from beginning; rectangular forms appear in LC times, become common in 1st millenium, and predominant in Hellenistic-Roman times for more pretentious tombs. Tombs are cut down into level plateau or driven into side of a scarp affecting form of dromos. Long descending dromoi characteristic of LC and 1st millenium tombs.

Built Tombs. Constitute masonry versions of traditional rock cut chamber tombs and are always set below ground. Known at Enkomi in Late Bronze Age (both tholos like and rectangular tombs in ashlar). Then a long succession of sometimes very monumental built tombs from Archaic to Roman times. N.B. Archaic Royal Tombs at Tamassos and Salamis. Evolution of special type of built tomb at Amathus from dug shaft graves with slab roofs. No clear continuity in general of form but later tombs seem to follow in Bronze Age tradition. Emergence of regular masonry vaults and domes in Roman times.

Shaft graves, etc. Poor shaft and pit burials from earliest Bronze Age times (as survival from Neolithic and Chalcolithic tradition). Sudden predominance of such burials in LC III times. Monumental form of roofed shaft grave at Amathus in Geometric Age. Occurrence of standard Hellenistic cist grave during Ptolemaic times, known in Cyprus as mnēma grave.

Foreign tomb types. Some tumuli, NB archaic-classic examples at Salamis. The Peristyle House tomb of Alexandria established at New Paphos, the capital of the Island during Ptolemaic times.

In discussing forms of sepulture in Cyprus an introductory statement is required which is clean contrary to that prefixed to discussions of some other building forms. There it was necessary to remark on the paucity of the remains. Here it is the unimaginable profusion of evidence which inhibits a brief survey. Robbing tombs and excavating tombs have been literally a staple industry in Cyprus for well over a century. At the beginning of this epoch archaeological pioneers (e.g. Cesnola) spoke of themselves opening tombs by the thousands (e.g. 15,000 at Idalion, 5,000 about Larnaka). From personal recollection forty years ago it was possible to keep a reckoning of tombs being opened by hundreds. Presently the wildfire spread of building across the countryside means continually encountering tombs through foundation digging and their consequent excavation in large numbers by way of salvage operations. The Antiquities Department now maintains an official register of tombs arranged according to town and village centres. In many instances the numbering under a particular

very profuse evidence

centre reaches high into the hundreds. Much of this work stretching well back into last century is recorded to some degree. Some of it has been published. Other records are accessible in the Antiquities Department. Generally be it noted, the main interest has been in the objects recorded. However, even for the narrow study of tomb design and construction, there is abundant material for a whole series of dissertations — and these are urgently required.

So much by way of introduction to indicate the necessary limited scope of the following remarks. Nothing like a coherent survey of funerary practices is intended. The subject matter is the form of tombs and only in so far as this constitutes recognisable, significant design. And even in this restricted aim no fully comprehensive treatment can be attempted.

restricted variety of burial forms

Perhaps it is possible to characterise the subject matter by a preliminary negation which in itself is rather notable. Entombment in Cyprus, perhaps more than anything else demonstrates the extreme conservation of its insular ways. A number of methods of burial which were current at different periods in neighbouring areas were never adopted in the Island (or at least there is no record of them). In ancient days, e.g. there were no megalithic type (i.e. Dolmen, etc.) tombs; nor were there ossuaries in the form of hut urns — both of which are so conspicuous in neighbouring Palestine and Syria. On the other hand in latter days there were no tower tombs to dominate the landscape, nor were there monumental architectural façades cut into the salient cliff faces. Equally there were few, if any, elegant, ornamental little edifices lining approach roads to towns, and there were no catacombs spreading extensively underground. In Cyprus from first to last the living Cypriote wished to bury his dead out of his sight *below* the ground, and to do this as far as possible in something like a small cave cut in the soft rock. And it was the coming of Christianity which ended this rule. 209

almost entirely underground

possible historical development

Furthermore it may be possible to suggest an overall outline of development within this delimited field — a development which can be regarded in some measure as typological.

Gjerstad addressed himself precisely to this question in his pioneering Studies in Prehistoric Cyprus (pp. 48–87) and it is interesting to refer to this work with the benefit of hindsight. Gjerstad's work was nothing if not thorough. He analysed the form of every excavated tomb for which he could find some intelligible notice at that time (1924) occurring within the period considered (ECI-LC III, for him ca 3000 BC-1000 BC). There were something under 200 items and he appended them individually in a table showing date, dimensions and design. From this he was able to infer a sensible typology evidencing both medium (earth dug, rock cut, masonry built) and form (pit, shaft, chamber). These overall categories remain useful for

discussion to the present day, but first it is interesting to consider Gjerstad's own assessment of the chronological implication of this classification.

In effect he regarded this as virtually nil (pp. 56, 72). He considered that the evidence did not reveal that the logical series represented "a genetical development". There was the truism that no chamber tombs were dug in earth and the relative truism that built tombs all occur in the latest (LC) period. However, his evidence did not permit him to make the obvious general deduction that tombs dug in earth (pits) preceeded rock cut tombs which should have developed from shaft (or well tombs) into chamber tombs. He acknowledged that earlier theories of the precedence of earth tombs were not supported. "There is no evidence that in the Bronze Age the earth tombs are earlier than the rock tombs, though it might well be possible that the earth tombs represent a previous stage in the development but this cannot be proved as no Stone Age tombs have been found thus far" (SPC, p. 50). Again "The chronological priority of the less developed types can not yet be ascertained; the well shaped tombs appear as early as the pit tombs. Besides we have records of chamber tombs — a still more advanced type — before both pit and well tombs. Richer material and further researches will doubtless clear up the question" (SPC, p. 56).

In all this Gjerstad spoke with prescience and future discoveries wonderfully supported the application of his logical analysis against his own judgement of it. The mode of burial during the enormously protracted Stone Age (ca 7500 BC-3500 BC) is now shown to be exactly pit tombs dug in earth (SCE IV 1A, pp. 177–91), while during the Chalcolithic period (ca 3500 BC-2500 BC) tombs appear cut down into the rock originally in the shaft or well form (Lemba, pp. 241–42). Thus at present it is reasonably possible to affirm an overall chronological development in line with the logical development from earthern pit tombs via shaft/well tombs to rock cut chamber tombs and thence to built tombs. For in Cyprus the salient fact of the matter is that built tombs are all sunk underground and thus as Gjerstad observed (p. 72) "a built tomb is nothing (*in form*) but a cave tomb (*chamber tomb*) lined with masonry".

Neolithic earthern pit tombs

When the Round House culture was established in Cyprus during the 8th millenium BC it comprehended the funerary practice of primary inhumation in constricted earth pits under and close about the individual round houses (for the earlier periods down to the beginning of the Bronze Age v. M.K. Toumazou, Aspects of Burial Practices in Early Prehistoric Cypriote Sites, Bryn Mawr (Thesis) 1987). What is to be noted is that as the round house itself survived through the millenia in Cyprus (in contradistinction to development on the mainland) so in principle the burial practice survived with it. Also it is of importance to note that Round House burial practice in

graves in and about houses

primary inhumation

Cyprus was not identical with that on the mainland. Burials were as a rule primary individual inhumations. There was no systematic disjointing, decomposition, mutilation of corpses in the interests of e.g. a skull cult involving to some degree secondary burial. Minor adjustments witness to an "exaltation of the head" but there is only one instance known of detachment of the skull less mandible — at Khirokitia (Stanley Price, Levant IX, 1977, pp. 81–82; Khirokitia, p. 96; Cyprus, pp. 23–25; Toumazou, pp. 210–11 — but now see recent evidence from Lemba of a skull cult in children's graves involving possible secondary burial, Lemba, p. 243). This concentration on straightforward primary inhumation established at this earliest age remained characteristic of Cyprus throughout history (RDAC 1973, pp. 116–66, NB p. 165) and was a basic fact in the overall uniformity of tomb forms in the Island and of the absence of deviants (e.g. house ossuaries, etc.).

remained standard in later times

From the standard house burial pit grave two developments evolve during the Round House cultural era — developments which move in the direction of later Cypriote burial practice. Firstly the location of the graves. Already in the pottery-

SOTIRA

Neolithic Sotira phase the graves are dissociated from the individual houses to be

seperate grave areas

grouped all together a certain distance away from the built-up area in what can only 43B be described as a cemetery area (SCE 1A, p. 82; Cyprus, p. 30). This is a striking innovation parallel with the manifest traces of rectangular design seen in the larger houses. It indicates a shift from family to hamlet (cf. Toumazou, pp. 214–15), as the primary (religious) unit. Although this change was by no means absolute and in later Chalcolithic sites burials in and about houses reappear (together with the standard round house), nevertheless it seems the innovation never disappeared entirely — i.e. intra-habitation burials were of children, while adults were buried in special terrain outside (Lemba, p. 241; Cyprus, p. 34; cf. Toumazou, p. 219).

hollowing out soft havara rock

Secondly the form of the grave evolved. During Chalcolithic times it seems the advantages began to be appreciated of exploiting the soft limestone formation (*havara*) — and this in a variety of ways. One of them was to hollow out cavities in it 176 for burials. The advantage here over the earth pit is that the hole in the rock can be sealed by capstones or the like to remain empty. The development is thus concom-

LEMBA

itant with (at least the possibility of) multiple successive burials. At Lemba the differential was valued and where necessary they dug down through overlying earth to get down to the *havara* and hollow out a grave which was sealed above (Lemba, pp. 176 241, 244; figs. 41, 43).

constricted entrance

Now in the interests of easy closure of the tomb the inevitable development is to constrict the entrance to a port and so hollow the rock that the cavity bellies out below — thus from a vertical (well like) shaft the form passes to a bottle or bell shape.

SOUSKIOU

This is the form of the Chalcolithic graves at Souskiou *Vathyrkakas*, 2 kms N.E. of 176

Old Paphos. These graves constitute a cemetery area (or three cemetery areas) and are thus in every way transitional between the Neolithic earthern pit tombs and the Bronze Age rock cut chamber tombs (Paphos, pp. 24–34, fig. 1; Cyprus, pp. 35–36). *cemetery*

Depending on the constriction of the entrance a useful name descriptive of these forms is "chimney tomb" (SCE IV 1A, p. 222). Next to facilitate descent into the tomb instead of having the entrance port at top centre of the cavern, it can be driven in somewhat obliquely to provide an entrance high up on the shoulder at one side, so that it is possible to scramble or slide down the side of the tomb. In section this looks more or less like a prolapsed "chimney tomb". Perhaps "canted beehive" gives the idea. This form verges on or already is a standard chamber tomb. The stage is illustrated at the cemetery of the Philia Culture settlement at Khaminoudhia (v. Arch in C, pp. 122–23). And as the entrance is cut down somewhat deeper so that the
176 profile is stepped on one side to constitute a distinct dromos while the roof reaches more or less across the chamber then the most elemental typological form of chamber tomb is achieved, one which is found in use throughout the history of the form (SPC, p. 72; cf. Toumazou, fig. 49). It is worth recapitulating that the succession of forms logical in the abstract is reproduced in historical fact in the graves found at Chalcolithic Lemba Settlement, at the Chalcolithic cemeteries of Souskiou and finally and most conclusively at the Philia culture cemetery of Khaminoudhia (for a convenient conspectus of the development, cf. Toumazou, fig. 19). N.B. In outlining this evolution the terms shaft grave and tholos tomb have been sometimes used (e.g. in SPC). This is unfortunate. They are adequately descriptive but should be avoided here since they already have recognised connotations which are quite other — e.g. the shaft tombs and tholoi at Mycenae, or also as in the distinction between different types of dromos.

chimney tomb

typological development into chamber tomb

LEMBA SOUSKIOU KAMINOUDHIA

The foregoing account tends to show a good (typological) evolutionary origin of the rock cut chamber tomb in Cyprus from earlier aboriginal tomb forms. This is of interest for it provides for the appearance of one prime characteristic of Bronze Age Cyprus without any necessary supervening foreign influence. This, of course, is not meant to imply that the new culture as a whole is divorced from foreign antecedents. Nor does it pretend to mean that the rock cut chamber tomb was wholly independent in its origins. This type of tomb had ruled as the standard form of entombment in e.g. Palestine, where it is very well documented, for something like 1,000 years before its emergence to prominence in Cyprus. During this lengthy period Cypriote conservatism (isolationism) avoided the form. When finally it was adopted in the latter part of the third millenium, Cypriote conservatism clung to it until the end of antiquity.

local origin and development

There has been little systematic study of the formal aspect of rock-cut chamber tombs — notwithstanding the enormous amount of material available. As in other

instances the Swedish Cyprus Expedition still provides the only general survey of the subject and spread throughout the various parts of Volume IV can be found an outline summary of the main forms. The reason for this neglect (as, e.g. compared with various types of pottery) is clear. Generally speaking, even if looted, sufficient finds are made in and about rock-cut tombs to identify the origin of the tomb in terms of what is known about this material. It is very rare that the reverse process has been invoked. Logically tomb forms should (or could) serve as indicators of period and/or ethnic or regional connections. In certain instances such links have been made but these remain isolated occasions. Manifestly it is quite impossible to deal substantively with this vast field here, but it is possible to make a few general observations which may be useful for future work along these lines.

Having used typological analysis to sustain "genetic relations" in the origin of the rock-cut chamber tomb it is now necessary to disclaim its programatic application in tracing the details of subsequent developments of the form. This is very varied and is anything but an ordered succession of types. One preliminary observation may be of general significance. The first appearance of a certain type may have some meaning; thereafter its occurrence may mean little (for purposes of chronology). Once a type is accepted it may be found at any subsequent period.

survival of types

To begin with the most general consideration of forms. In hollowing out a cave in rock (i.e. working from the inside) the natural form produced is the round or, at least, curvilinear one. And throughout the Bronze Age the rock cut chamber tomb in Cyprus remained characteristically curvilinear and irregular in shape and it is only well on in LC times (LC II) that some odd rectangular looking examples are found (cf. SCE IV 1C, p. 41, fig. 26, N° 5, p. 49, fig. 27, N° 7). Rectangular tombs of different types became common in Geometric and Archaic times (cf. SCE IV 2, figs. 8, 10) but it is not until Hellenistic and Roman times that regularly cut, rectangular forms became predominant among the larger monumental tombs (cf. SCE IV 3, figs. 16–18). Nonetheless the old irregular rounded forms still survive for less pretentious tombs. All this may suggest that the Cypriote rock-cut tombs evolved within the local round building tradition and that the later rectangular forms are the result of foreign influences.

round forms 177 180 181

rectangular forms 184

However, in connection with this question of round or rectangular form, it should be noted clearly that this refers to the chamber (*spilion*). Very frequently from earliest times the dromos is rectangular (or more or less square) in plan. This suggests that the main determinant of form is the natural process of hollowing out a chamber in rock from the inside which, as previously pointed out, expresses itself in a more or less curvilinear form, the only necessarily plane surface being the floor. On the other hand where the cutting can be controlled from the exterior by setting out lines on a

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plane surface (as in the plan of the dromos) then the design is frequently rectangular from the very beginning — as at Vounous (SCE IV 1A, p. 217, fig. 88, 1 & 2).

Another basic formal categorisation can be brought into issue with the chamber tomb. Where the tomb is rectangular (or indeed even though curvilinear if it be of regular form and good sized) then the chamber tends to be of broad disposition with its principal axis across the line of entry, i.e. it is broad room in style. This seems to be a rule for tombs during the long ages of autonomous Cypriote development but in Hellenistic-Roman times (or to some degree in Cypro-Classic times) it no longer applies. *broad disposition*

These various general considerations can be brought to bear in a particular vexing instance.

In the fifties J. Stewart reported that quite large monumental looking tombs discovered at Vasilia in the North of Cyprus near Lapithos contained Philia culture pottery (i.e. transitional Chalcolithic or Early Bronze Age), and thus were seemingly of 3rd millenium date. These tombs have never been definitively published but drawings appear in SCE IV 1A (p. 218, fig. 86, 1) showing a complex of two rectangular tombs opening from a single forked dromos. The chambers are outsize, well over head height and something like 4 m × 4 m in plan. On the axis at the rear of the tombs is an internal buttress reserved in the rock which gives the plan a bilobate form. Now there is nothing at all like these tombs in Cyprus at the period proposed, neither for design nor dimension. However, there are many parallels elsewhere (e.g. in Palestine and Crete) but all from the MB age or later (cf. ABSP, figs. 270, 271). Therefore in spite of the finds, the tomb would appear to be an intrusive form several hundred years later in date (i.e. MC at the earliest). VASILIA

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After the basic form in plan it is proper to consider the basic form in elevation of the chamber tomb. According to the evidence of the original evolution of the chamber in Chalcolithic times, theoretically the tomb entered from high up in the shoulder should be earlier than the tomb entered from near the floor of the chamber. Existing records do not substantiate this, although it may be the case. Simple tombs with vestigial dromos high up do occur, e.g. in MC (cf. SCE IV 1B, fig. 6, N° 2) and LC tombs (cf. SCE IV 1C, figs. 26, N° 1, 27, N° 3) but there are no particularly early examples (as J. Stewart noted, SCE IV 1A, p. 222). The early Cypriote tombs at Vounous and Lapithos already show the dromos cut fairly well down (although N.B. EC III Lapithos Tomb 301, SCE IV 1A, p. 221). *elevation* *high entrance* *low entrance*

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More distinctive is the form of the dromos. In order to afford a descent to the underground cave the dromos can take two forms a (more or less descending) passage or a vertical shaft. This is such a clear cut dichotemy that we might speak of "passage graves" and "shaft graves" (remembering again these terms both have *types of dromos*

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other references). Little of analytical importance is to be derived however from this salient distinction since it appears to have been based on terrain. The rock-cut chamber tomb has typically two habitats. It can be cut down from above into a rock plateau or it can be driven in from the side of a rocky outcrop — the second often being preferable from the point of economy of cutting. These two habitats produce naturally the two different types of approach. (Of course it may well be that one group of people or one period prefers to cut the tomb in one terrain or the other — but in general this is not so.) In fact there are very few examples of the constricted vertical shaft type dromos in Cyprus. Typically the Cypriote dromos is a nondescript betwixt and between, something like a bath tub in form. However, a long narrow descending (stepped) dromos is definitely a later feature in Cyprus, from LC III or the Iron Age. And once again this form seems to be of foreign (Helladic) origin (cf. Cyprus, p. 112; V. Karageorghis, Alaas, Nicosia 1975, pp. 25 ff.; Aegaeum I, 1987, pp. 227–34).

bath tub form

long corridor

ALAAS

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Another factor connected with the form of rock-cut tombs is the question of multiple chambers. There are two applications: several chambers opening from the same dromos or a succession of chambers opening one from the other. The former appears to be a common device in the traditional Cypriote rock cut chamber tomb from earliest times. Indeed it appears typical of the earliest period (EC I–III and MC I) at Vounous and Lapithos (v. SCE IV 1A, figs. 88, 89; SCE IV 1B, fig. 4, N°'s 1, 2, 3). Thereafter it is rare and is replaced in the later ages (viz Cypro Classical, Hellenistic and Roman) by the latter device of successive chambers (SCE IV 2, fig. 16; SCE IV 3, figs. 16, 17, 20).

multiple chambers

from one dromos

VOUNOUS LAPITHOS

successive chambers

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In part overlapping with the previous question is a consideration of great importance in tomb design: furnishings and installations in the chamber(s) to facilitate deposition both of mortal remains and of grave goods. These can take a variety of forms, e.g. larger or smaller niches, exedrae, etc. cut in the sides of the tomb chamber (both at ground level or higher up the walls); also raised benches along the walls or sunken cists in the floor of the chamber, etc. These various devices do not occur in the oldest tombs of EC times, their place perhaps is taken by secondary chambers and or niches opening from the sides of the dromos (SCE IV 1A, fig. 89, pp. 217 ff.). However, wall alcoves and niches (loculi) appear in MC tombs (SCE IV 1B, figs. 4–6), while cists cut down into the floor appear in LC tombs (SCE IV 1C, pp. 45, fig. 25, N° 6&7; p. 47, fig. 26, N° 40). In later times (Cypro-Classical or Hellenistic-Roman) these features became formalised and regularised in harmony with the tomb design as a whole. In this way Cypriote rock-cut tombs evolve into standard styles of Hellenistic-Roman loculus tombs, e.g. the arcosolium tomb where the arch-headed loculi are ranged along the sides of the chamber (SCE IV 3, fig. 18, N° 7, 8) and the

funerary installations

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evolution into Graeco-Roman loculus tombs

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194 *kok/kokhim* tomb where the long narrow loculi are set deep into the rock side by side perpendicular to the wall face (SCE IV 3, figs. 16–18). The latter system is more common than the former but good examples of arcosolium tombs have been found recently at New Paphos (RDAC 1982, pp. 202–06).

It is reasonable to see in this overall secular development the ever greater emphasis on multiple burial and continued reuse of the tomb, i.e. its transformation in concept from a private dwelling house forever into a funerary apartment house or lodging. This in turn reflects the increasing urbanisation of society and ever rising population levels.

to facilitate multiple burials

Having given some indication of basic developments in the form of the rock cut tomb over the ages, it is now necessary to make an appraisal of its location *vis-à-vis* settlements. This is perhaps not as obvious a matter as is generally supposed. It is assumed that the origins of the rock cut chamber tomb coincided with and was linked to the organisation of cemeteries in areas distinctly removed from the settlement. Thus in contradiction to the circumstances operating in the pit burials of previous times, burial becomes positively and distinctly extra-mural (SPC, pp. 48–51).

relation of cemetery & settlement

There seems to be no doubt that the collection of rock cut tombs at e.g. Souskiou does initiate a new mode in burial pattern. However, it is important to realise the diverse nature of the evidence which is held to distinguish the location of burials in Neolithic from that of Bronze Age times. In Neolithic (and Chalcolithic) times the settlements have been excavated and it has been demonstrated that burials were made under and about the houses. With respect to the postulated rule of extra-mural burial in the later Bronze Age times the situation is quite other. The evidence at large from EC I to LC III is not that there were no tombs within the settlement areas, but that there was no settlement within the burial areas, since to all intents it is only cemeteries which have been excavated during these periods. And this proposition can not be applied *e converso*, i.e. that there were no houses within the tomb area, does not imply that there were no tombs in the housing areas. There may well have been, we must excavate the settlements before the rule can be stated with confidence.

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At all events at the next period, when reasonably extensive knowledge of a settlement area is available, the situation is not that of mandatory extra-mural burial. The question is further complicated in that the semantic content of the term "settlement" changes markedly during the period concerned. According to all ideas down to some stage in LC times (ca mid-thirteenth century) settlements consisted of unwalled villages and hamlets. Thereafter a belated urbanisation of the land ensued and large walled cities were quickly built up in the space of one or two generations.

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Certainly at Enkomi, the one town site excavated in area, the archaeological evidence is definitely not of exclusive extra-mural burial. Within the limited area

ENKOMI

examined of the older pre-urban settlement (16th–14th centuries) rock cut chamber tombs appear to have been located immediately about the periphery of the small 162
isolated built-up areas (hamlets). During the urban stage (13th–11th centuries) the large town of Enkomi contained within its walls many burials, both in rock cut chamber tombs and otherwise (Enkomi I, pp. 333–438; Enkomi BRC, pp. 40–50). Although this, of course, in no way infers that burials were not at the same time made in extra-mural cemeteries.

LC intra-mural burials

The meaning of the Enkomi evidence has not been integrated fully into the overall historical pattern of burial in the Island — e.g. no authoritative pronouncement has been made whether it be of local significance only or constitutes a general rule.

During the subsequent historical periods of the first millenium BC, the situation is less well documented, again because of paucity of excavation in settlement areas. The wealthy tombs of Geometric and (notably) Archaic times are well known, but it is not so well known that there are virtually no direct checks available as to whether the custom of intra-mural burial as at Enkomi survived or disappeared. Excavations in Hellenistic-Roman towns (e.g. Salamis, Kition, New Paphos) appear to indicate that when Cyprus lost its autonomy and was integrated into the Graeco-Roman world then the common rule of that world prevailed and intra-mural burial was not acceptable (although NB the special position of the heroon e.g. at Kourion v. Kourion Area, p. 139; RDAC 1978, pp. 254–65).

in Graeco-Roman Cyprus extra-mural burial

The question of intra and extra-mural burial introduces for discussion types of burial other than the rock cut chamber tomb, since these other types figure in the intra-mural burials at Enkomi during LC times. First among these, and by far the most important, is the Built Tomb. As previously stated, according to all evidence, this remains from first to last an underground feature, one designed as a rock cut chamber but constructed in masonry so as to be independent of the restriction on siting entailed by the necessary presence of suitable formations of bed rock demanded by rock cutting (v. in general A. Westholm, Built Tomb in Cyprus O, Arch II, 195
1941, pp. 29–58).

built tombs

Two distinct types of built tomb have been revealed, those of round and those of rectangular design corresponding somewhat to the two design styles in rock cut tombs. Both types occur only from the Late Bronze Age onwards: the round form apparently during the early part of the Late Bronze Age (from EC I, ca 1550–1500 BC) thus in pre-urban times, while the rectangular forms are from later LC II onward and thus occur in Urban times. All the Bronze Age evidence so far is from Enkomi. The round tombs are modest in dimension and construction and are rare while the rectangular tombs which are the rule are in general larger and more monumental than their rock cut counterparts.

round & rectangular forms

LC evidence at ENKOMI

tholos tomb

To proceed in chronological order, the round form is discussed first. This type of Cypriote built tomb has been called a tholos and the term is acceptable. Only it is to be understood that the term does not prejudge the issue of origins, i.e. it does not necessarily infer that the Cypriote tombs are derived from e.g. Mycenaean tholoi.

ENKOMI

The Cypriote tholos tomb is as at present limited in occurrence to three examples from LC I–II (pre-urban) Enkomi. The first was discovered by the SCE (SCE I, pp. 570 ff., N° 21, fig. 213; cf. Built Tombs, p. 43, N° 33, fig. 15) while 35 years later (1963–65) two other tombs were excavated by the French mission within a few metres of each other in the region SE, south of the Sanctuary of the God on the Ingot (Alasia I, pp. 51–122; Acts MEM, pp. 248–53). Although there are differences of detail in design and construction, the three examples certainly constitute a type (O. Pelon, Tholos Tumuli, pp. 427–432, Pls. CXXXVII, CXXXVIII).

They share the following features. Access is by way of a conventional (pit) dromos, rock cut in SCE Tomb 21. The chamber, irregular and more or less curvilinear in plan (ca 6–7 m^2, i.e. 2–3 m × 2–3 m), is built up by way of masonry corbelling to be slabbed over at the peak (ca 2 m high). The peak of the structure probably stood somewhat (ca 1 m) above contemporary ground level and may have been covered with a small mound of earth. The French tombs (and presumably the Swedish Tomb) were built in yards among or adjacent to houses and eventually came to be enclosed in settlement building — they were thus more or less intra-mural tombs.

intra-mural

design

Some individual points of interest may be mentioned. The ground plans are irregular and it seems incidental; the Swedish Tomb roughly circular, the larger French Tomb (1336) something like oval with the dromos at one end, while the smaller French Tomb is squarish with rounded angles — the same range as found in contemporary rock cut chamber tombs. The corbelled masonry construction is varied in detail. Swedish Tomb 21 is out of random rubble with something like 10 superposed stones from floor to peak. They are laid dry-jointed with, as far as can be seen, horizontal bedding.

construction

French Tomb 1336 is markedly different. The material is coursed brick with mortar on a stone socle. The bricks are stated to be burnt bricks and are trapezoidal in form and wedge shaped in section so that they can be laid on inclined beds with radial jointing to function in some degree as the voussons of a true dome, although the courses are corbelled out and the projections remain apparent. There is also a considerable amount of external walling and packing about the haunches of the structure to buttress it and contain its thrust.

This construction is, of course, reminiscent of the ancient neolithic round houses at Khirokitia, and this fact has been noticed (Alasia I, pp. 120–21) with the inevitable question as to whether this aboriginal building tradition could have

survived across the ages. It is also possible to question whether the bricks were indeed purpose-made kiln-fired bricks (very rare in Cyprus), or whether they were not in fact mud bricks burnt by funerary fires (the "fire of death") lit within the tomb. All told the non-monumental nature and form of these tombs suggests a translation into another medium of the standard Cypriote simple rock cut chamber tomb rather than any close dependence on external models. However, of course, possible external influences exist. Ruling out the much more monumental Helladic tholoi, there were various types of domical built tomb on the adjacent mainland e.g. in MB times (Acts MEM, pp. 250–51; ABSP, figs. 274, 365).

Although the numbers of rectangular built tombs are infinitesimal compared with the untold thousands of rock cut tombs, they nonetheless constitute a significant class of monuments occupying an extended time range (Late Bronze Age — Roman) yet nonetheless preserving a certain family likeness throughout. Westholm listed ca 40 reasonably recorded examples in 1941 and additional examples have been discovered more recently by the Department of Antiquities in various places, notably at Salamis. Probably something like 60 could now be listed.

rectangular built tombs
ENKOMI

A number of rectangular built tombs from the 13th century BC (LC II) have been discovered at Enkomi. The British Excavations at the end of last century cleared five 239
of which they illustrated one (Tomb 66, Exc. in C, p. 6, fig. 5). This tomb was rediscovered by the French Expedition in recent years (Enk & BRC, p. 24, fig. 4) and manuscript records of others remain available in the British Museum so that they have been noted in secondary studies (SPC, p. 67; Built Tombs, pp. 42–43, N°'s 28–32; Hult Ashlar, p. 8). Furthermore in addition to locating the British Tomb 66, the French Expedition discovered two more built tombs (N° 1409 & 1394) in the 239
close vicinity (Insula 4E — Enk & BRC, pp. 24–26, fig. 4). The precise location of the other British Tombs remains unknown.

As far as can be made out, these built tombs form a coherent group with a dromos (?) leading down into a single squarish chamber (ca 2 m+ × 2 m). The masonry was 195
of Bronze Age ashlar type. The precise date of the tombs is thus a matter of some interest as it bears closely on the question of the introduction of the technique of ashlar masonry, and also on the urban status of the site as it is rather difficult to think of such monuments in a pre-urban setting (although cf. megalithic tombs). These
RAS SHAMRA Enkomi tombs are reminiscent of the early "Pre-Mycenaean" built tombs at Ras Shamra (cf. Ugaritica, p. 91, fig. 75; ABSP, p. 331, fig. 274). Whether the Ras Shamra connection puts the occurrence of the built tombs at Enkomi into a special case, or whether they will be found to occur at e.g. Kition etc. is an interesting matter.

According to present evidence the next occurrence of built tombs in Cyprus is at

the rather unlikely site of Amathus where a distinct line of development can be seen. Both archaeological and literary evidence support the foundation of the site in earliest Geometric times, it seems by autochthonous Cypriote elements attempting to maintain their way of life in the face of immigration. Yet an altogether novel type of grave is manifested from the very beginning of the settlement. This is a type of shaft grave where long shafts, constricted in breadth to permit slab roofing, are sunk deep into the rock. In addition to the massive slab roofing, roughly squared masonry is introduced from time to time to revet the long sides of the shaft and/or to construct a portal (Built Tombs, pp. 32–33 ff.; SCE II, pp. 1 ff.). In this fashion the obvious development is made in Archaic times of a completely masonry built tomb set down into the rock shaft (SCE II, p. 140). The derivation and connection remains quite clear in form and construction. The design of the original shaft grave is maintained consisting of dromos and chamber, both out of long narrow shafts, giving generally
187 an L form (entrance at end of long side of chamber, i.e. bent axis) or T form (entrance at middle of long side, i.e. broad room). Equally the masonry construction remains only partly or crudely dressed. These characteristics possibly separate the Amathus type built tomb (whatever may be their ultimate origin) from the general development of the type, although built tombs something like them may be found elsewhere at later dates.

AMATHUS

I[st] millenium

local evolution

Certainly in Archaic times built tombs of various degrees of monumentality are found at many sites in Cyprus: e.g. Kition, Pyla, Xylotymbou, Salamis, Trachonas,
195 Idalion, Tamassos, etc. (cf. the list in Built Tombs, pp. 32 ff.). Now the regional grouping here is striking — it is the East Coast plus the inland extension of the influence of Kition to Idalion and Tamassos. This inevitably has elicited the suggestion of influence from the adjacent mainland, although there are no very striking antecedents of Iron Age date in the Syro-Palestinian area (Built Tombs, pp. 55–58, fig. 21).

regional distribution

centred on East Coast

On the other hand very distinct resemblances can be seen between some archaic built tombs in Cyprus and contemporary tombs of Western Anatolia (Lydia and Phrygia). These resemblances, however, are of developments in detailing rather than of the form itself (v. Tomb Architecture, pp. 365 ff.). Thus while the floruit of the built tomb in Cyprus is from Archaic times, the negative evidence favors the continuation of the Late Bronze Age tradition (at Enkomi) as much as any other interpretation (SCE IV 2, p. 454).

Anatolian connections

Thus, so far as is apparent, the Cypriote built tomb of Archaic times is only an extension of the LC II tombs at Enkomi. The less monumental Archaic tombs are little different, if at all, with a small single chamber and nondescript dromos (cf. the tombs at Patriki, RDAC 1972, pp. 161–79). However, numbers of archaic tombs are

monumental in form construction and even ornament. The design often is bi-cameral, an ante-chamber and a burial chamber; or multi-cameral, a burial chamber with two side chambers or even an ante-chamber, side chambers and burial chamber. 195 199 202

ashlar masonry construction

The masonry is fine ashlar in style, but be it noted, it is generally ashlar facing (bastard ashlar) to a rubble fill and packing between the facing and the confines of the rock emplacement, and not solid load bearing ashlar. The most notable feature of construction is the roofing which in general employs three structural devices; flat slab roofing, corbel vaulting (or part corbelling and slabbing at the crown) and the triangular vault of straddling slabs (for a convenient illustration of these various roofing forms v. Built Tombs, fig. 20). 252 253 195

roofing

ornament

In general the Archaic Built Tomb was a soberly designed monument of grave simplicity. However, there are some interesting examples of ornamental tombs, notably Royal Tombs at Tamassos and Salamis. The famous tombs at Tamassos incorporated varied ornament of different origins — the proto-aeolic piers and balustraded window motif from Phoenecia-Palestine; and more importantly the skeuomorphic wooden architecture motifs, dentils, split log ceiling, etc. (v. Tomb Architecture, pp. 365–67). Different in style are the monumental tombs at Salamis. The emphasis here may be said to shift to the dromos which is very long and splays out into a broad propylaion in front of the crypt-like tomb chamber. The propylaion generally manifests a heavy, beetling cavetto cornice (v. Salamis, figs. 2, 3, 9, 12, etc.). 283 199 319 200–204

royal tombs TAMASSOS

SALAMIS

associated monument

This is perhaps the juncture to mention an issue which is uncertain but of importance for the built tomb, and also in its own right. Was the presence of a built tomb signalled by some above ground "sign" — *a sēma*, a conventional sepulchral monument? One typical built tomb at Salamis (N° 3) was contained below a first rate tumulus (ca 60 m in diameter × 15 m high). It is unlikely that other such tumuli have been eroded away completely. On the other hand it would appear that the roofing blocks of neighbouring tombs protruded slightly above ground level. Ussishkin suggested that the original archaic design of the Ayia Katerina tomb included a masonry *sēma*, possibly a pyramid standing over the unworked roofing slabs (PEQ 1971, pp. 93–102). The excavator Karageorghis considers the "sign" was an earth mound and conducted soundings to refute Ussishkin's proposal (Exc. NS II, pp. 8–10). 209 205

Finally an atypical instance of tomb decoration may be mentioned — a painted tomb. Salamis Tomb 80 is of late Archaic date (ca 550 BC-525 BC) which was the period of Egyptian hegemony. The interior surfaces of the chamber (walls and vaulted ceiling alike) are painted with an overall pattern of lotus flowers surmounted

by a network of rosettes (Salamis, pp. 98–99, fig. 57; Exc. NS III, pp. 123–24, fig. XVIII, Pl. 1).

unbroken development into Graeco-Roman times

The continued development of built tombs in Cyprus during the Classical Hellenistic and Roman periods is straightforward. Indeed on occasions there is dispute as to whether a tomb is Roman or of Archaic date reused in Roman times. Perhaps the clearest evidence of later date resides in the detailing, particularly in the roofing, where barrel vaulting comes into evidence. This may be constituted by either true
342 structural vaulting, e.g. the built tombs recently discovered at Idalion (BCH 96, 1972, p. 1028, fig. 35, 36, 37) or, even more revealing, by roofing with this aspect but formed on another system, i.e. hollowed out monoliths, etc. (e.g. Phaneromeni
210 Tomb — Kition, pp. 142 ff., fig. 20) or contoured corbelling (e.g. Evangelis Tomb — Kition, p. 149, fig. 26).

Very striking is Cobham's tomb at Larnaka where the main chamber has a true
211 masonry vault, whereas the flat roof of the antechamber shows a soffite ornamentally worked into a coffered ceiling (Kition, pp. 149–52, fig. 27).

NEW PAPHOS *built arcosolium tomb with true dome*

Finally in connection with structural developments, mention is made of a Roman tomb recently excavated at New Paphos. This is a built tomb of the arcosolium form where the burial niches are true masonry vaults and the roof of the chamber a true
343 masonry dome, thus constituting an early example of such stereotomy (RDAC 1982, pp. 202–06).

Built tombs in Cyprus on first consideration seem to provide a welcome supplement to the building history of the Island in bridging over the lacunae in the excavation of settlements. In fact, however, they fall short of doing this effectively and the uncertainties of continuity remain. On the face of it many of the minor tombs of the first millenium are similar in type to those at Enkomi of the thirteenth century BC. Nonetheless centuries separate the two groups, and the intervening constructions (at Amathus) appear a special case. The Anatolian influences (mediated *per* East Greek culture) observed by Karageorghis are valid for detailing. That they sustain the introduction of the form at this time is most difficult to accept. However, the question still remains open (cf. Exc. NS I, pp. 122–24).

simple graves

Discussion of developments in both the rock cut chamber tombs and the built tombs have revealed that burial in more or less simple vertically dug/cut graves was practised in Cyprus on occasions throughout antiquity. However, after Chalcolithic times until the advent of Christianity it was never the rule — with apparently one surprising exception. In most instances this is a matter devoid of building interest but a brief outline is necessary for the sake of uniformity of treatment (v. in general Aegaeum I, 1987, pp. 220–34). A few examples of what have been interpreted as pure

survivals of Chalcolithic graves have been noted (e.g. at Ayia Paraskeve) in EC or MC I times (v. SCE IV 1A, p. 222; Kypros, pl. CL XVIII 2). There is also e.g. a shallow rectangular grave at Nitovikla (Tomb 3) from MC to LC times (SCE I, pp. 414–15, fig. 159: 9, 10; Problems, pp. 25 ff.). However, after these few insignificant instances throughout the centuries, the simple vertically sunk grave suddenly came to prominence in the 12th century (LC III); that is after a millenium and a half of abeyance.

prominent in 12th C BC

Sjoquist considered this surprising feature closely and noted that although there were one or two possible isolated examples in LC I and LC II tombs, this type of grave became the rule in LC III and this marked a very salient eruption in an otherwise age-long dominance of the chamber tomb. "The old custom of burying the dead in chamber tombs is abandoned for the time being but we meet it again during the Iron Age" (Problems, p. 26).

More recently the significance of the matter has been perceived and it has been re-examined from the point of view of burial customs (K. Niklasson, Late Cypriote III Shaft Graves, Aegaeum I, 1987, pp. 219–25). Here (p. 220) it is noted that something like 50 such graves have been excavated, 20 odd each from Enkomi and Kouklia *Kaminia* with odd ones from other sites such as Kition, Kourion, etc. Also it is opined (p. 201) that most of these graves were dug within settlement areas and not in cemeteries situated at some distance from the settlement. Some of the graves were in courtyards and at Enkomi there was a distinct practice of digging down into mounds of earth or spoil heaps above earlier chamber tombs (SCE I, pp. 498, 510, 528, figs. 194: 2, 195: 7, 201: 6).

ENKOMI
KOUKLIA

In fact the Bronze Age "shaft" graves which have been considered here are not a very uniform category. They are classified on the negative characteristic of not constituting roofed over chambers. Some of the random earlier examples are formless curvilinear depression (in the rock) and in some cases may be the severely eroded remains of chamber tombs. Clearly the essential forms constituting the significant LC III group is the rectangular individual grave (shaft grave is not an ideal term since it connotes a significant extension in depth which is not the essence of the form). In some instances the grave is lined with masonry, stone (at Enkomi, Aegaeum I, 1987, p. 222, N° 20) or even brick (at Kition, Aegaeum I, 1987, pp. 219–22). However, what is probably the basic determinant is that as a rule these graves are not covered over, they are earth hollowed graves (not tombs). And this distinguishes them from the more imposing types of the Iron Age which very properly can be called shaft graves.

shaft graves

AMATHUS
Iron age

These latter shaft graves occur at Amathus throughout the Cypro-Geometric period where as previously discussed they represent formative stages in the devel-

opment of the monumental chamber tomb of Archaic times at that site. The tombs stand at the beginning of the settlement at the site and are a great singularity. Their origin and antecedents have never been closely discussed. In some ways it is difficult not to think that they are not evolved from rock cut chamber tombs for structural reasons, i.e. easier rock cutting (cf. the possibility of quarrying blocks for use in building).

The tombs are formed by driving shafts down from the surface of the rock to constitute both the dromos and the chamber (which is roofed by slabs). These tombs are sizeable and some of them quite monumental — the shafts in all cases being elongated (ca 4 m–6 m) since the breadth is kept minimal (ca 2 m) by the requirements of roofing, while the height usually affords convenient headroom (ca 2 m+). Generally the burial chamber is at right angles to the dromos which may enter either
187.3 187.4 at one end (L form) or in the middle of the long side (T form). The simpler type
187.2 where the dromos is on the long axis of the tomb (I form) resembles the plan of some LC III B — Iron I rock cut tombs (cf. Mycenaean type). As has been noted, various built up masonry elements are incorporated within the tombs additional to the slab roofing — i.e. the stomion may take the form of a monumental built portal and some of the rock wall faces may be revetted with partly dressed masonry. These tombs have been well discussed (v. Built Tombs, pp. 31–35; SCE IV 2, pp. 32–39).

Apart from these highly idiosyncratic shaft graves at Amathus, some rare examples of small vertically cut simple graves continue to occur in the first millenium, e.g. classical period rudimentary graves at Marion and Vouni (cf. SCE IV 2, p. 42, figs. 14: 1.2). These in turn merge with or merge into the standard Hellenistic grave form found in many areas of the East Mediterranean generally known as the cist grave (Greek Burial Customs, pp. 786 ff.; cf. in Cyrenaica, PEQ 1963, pp. 56 ff., fig. 13). In Cyprus this is referred to as the *mnēma* grave (SCE IV 3, pp. 32–33, 50–51, fig. 20: 13). This comprises regularly cut rectangular cist sunk down into the rock of a size sufficient to take a burial and roofed over by several large slabs. It may be thought of as the underground equivalent of a sarcophagus and is a modest yet dignified form of interment. It is, of course, fully in line with the Cypriote preference for underground burial. This type of cist can also occur as a secondary installation within chamber tombs. N.B. There are also a legion of simple inhumations above the tombs at Cellarka, the rock cut cemetery of Archaic Salamis, which are probably of fallen soldiers in the Battle for Salamis between Demetrios and Ptolemy in 306 BC (Salamis, p. 150).

Hellenistic cist graves

Now some mention is to be made of tomb types which have a foreign origin.

It has been remarked that Cypriotes traditionally favored burial underground out of sight; of course for organisation purposes some visible indication was required of

funerary mounds

the location of rock cut tombs (which apparently took the form of "headstones" and or a small mound of earth — cf. SCE IV 2, p. 30). However, apart from this practical matter, there occur as notable exceptions a small number of reasonably monumental tumuli. These are of foreign inspiration and they are virtually all located in the same region — along the North East coast of the Island, on the shores of the Karpass and by Salamis. Nonetheless it is difficult to see any uniform explanation of the fact, since they range from MC times to Archaic and later.

PALEOS-KOUTELLA

The first in time are the MC tumuli at Paleoskoutella excavated by the SCE in the region of Galinoporni (SCE I, pp. 416 ff.; SCE IV 1B, p. 10). There are seven tumuli, some quite sizeable (ca 20 m in diameter). Four tumuli surmount rock cut chamber tombs of a characteristic bilobate form which occur in several regions outside the Island (e.g. in Palestine, v. ABSP, pp. 325, 332, figs. 270, 271). Additionally three tumuli stand above various rock cut pits and shafts which appear to constitute a (funerary) cult place — in a manner somewhat reminiscent of the Palestinian Bamah (ABSP, pp. 249, 320, fig. 260). 182.3 183 182.3 183

TRACHONAS

KOUNTOURA TRACHONEA

In the same vicinity are two other burial places differing in age and form but both manifesting tumuli. At Trachonas an Archaic I built tomb was cleared by the SCE in 1928. This is a large tomb built in a quarried out emplacement ca 16 m × 11 m × 6 m, using the rock spoil for masonry; it is also distinguised by two dancing (apotropaic) figures carved in relief on the façade. Above it was heaped a considerable tumulus (SCE I, pp. 461 ff., fig. 182). Nearby at Kountoura Trachonea was a cemetery of Classic-Hellenistic times (coin of Ptolemy II), where 8 other tombs were covered by mounds of earth retained by stone orthostates (SCE I, pp. 439–60). It seems difficult to believe that it is simply better survival inherent in the very remote area which accounts for this concentration of tumuli or the like, but the question is not well defined, far less settled. 189

SALAMIS tumuli

It is a different matter with the two very monumental tumuli (ca 50 m–60 m in diameter) dominating the Elysian fields to the West of Ancient Salamis (v. Salamis, fig. 1). Both these tumuli of historic times would seem to owe their existence to programatic Hellenism in the Homeric image. Although both had been repeatedly tunneled and dug into, they were thoroughly investigated by the Department of Antiquities with great success during their work at Salamis in the sixties (v. Salamis *pass;* Exc. NS I, pp. 25 ff.; III, pp. 128 ff.). The one tumulus (Salamis Tomb 3) lies close to the South of the Ayia Katerina monument (The Prison of St. Catherine) while the other (Tumulus 77) is a mile or so to the South on the South East outskirts of Enkomi village standing above the old bed of the Pedhiaeos River. 197–204 206 207

The former tumulus was originally ca 15 m high and its crown was formed out of a large mud brick beehive construction which may have been (partly) visible. It 205

surmounted a built "Royal Tomb" (3) of Cypro-Archaic date, ca 600 BC (Salamis, pp. 67 ff.; Exc. NS I, pp. 25 ff, Pl. XIX, N.B. figs. VII, VIII, XII). The latter tumulus is of basically similar construction but does not cover a built tomb. In place of this was found a highly singular mud brick crepis-like structure (17 m × 11.50 m × 1 m) in the centre of which was a circular pyre containing not human cremations but the burnt remains of life size and life like clay effigies (Salamis, pp. 151 ff.; Exc. NS III, pp. 128 ff.). It is also possible that the crepis was rigged up with a wooden pavilion framework simulating a temple or the like (D.L. Cheal, Early Hellenistic Architecture in Cyprus, pp. 1–42, figs. 2 & 3). The objects and the sculptural style date this monument to the end of the 4th century BC, and it is opined that it represents the cenotaph of Nicocreon, last king of Salamis, who was consumed with his family in the holocaust of his Palace in 311 BC; a royal suicide rather than a Ptolemaic captive. In this "I tell the tale I heard told" in Cypriote archaeology — cf. *per contra* R.S. Bagenall, The Administration of Ptolemaic possessions pp. 39–40.

Royal Tomb 3

206

207

Nicocreon's cenotaph?

39–40

The constructional details of the tumuli have been commented on in the light of their derivation from the famous tumuli of Anatolia (cf. Tomb Architecture of Anatolia and Cyprus, pp. 362–65; D.L.Cheal, Early Hellenistic Architecture in Cyprus, pp. 20–42).

There is one other notable tumulus in Cyprus and that isolated in another region of the Island. It was excavated by the SCE (Tomb 26) at the cemetery of Amathus (by Limmasol) where it stood at some remove from the rock cut and built chamber tombs (SCE II, pp. 136 ff., fig. 18; SCE IV 3, pp. 24, 33, 52). Here the foreign origin was manifest since it surmounted a circular shaft with a stone urn containing the ashes of a cremation of Hellenistic date — doubtless of an important Ptolemaic official from Alexandria.

AMATHUS

The question of the tumulus in Cyprus as a whole is not well studied. The matter is perhaps clearer at the extremes. There were certainly a few tumulus tombs — i.e. burial places arranged beneath or within salient conical mounds of earth and stones (e.g. the two at Enkomi). On the other hand there were chamber tombs the presence of which was marked by a (small) mound of earth on some occasions perhaps revetted by stone. Finally it is possible that the refilling of the dromos of the standard rock cut chamber tomb more or less always effected a small hummock to indicate the tomb's presence. The first group constitute tumuli proper where comparisons are possible with Asia Minor, etc. The latter phenomenon has nothing to do with the case. However, it is probably a difficult matter to draw the line within the middle group. Many rock cut tombs may have been covered by small mounds (cf. the Iron Age tombs at Lapithos noted by Gjerstad, SCE IV 2, p. 30); while it is quite possible that most built tombs involved some sort of superficial construction or enclosure (cf.

SCE IV 2, p. 42; RDAC 1964, p. 30). The difference here between normal local practice and something of the order of a tumulus may have been one of degree rather than kind. For a good review of the question, v. D.L. Cheal, Early Hellenistic Architecture in Cyprus, pp. 20–42.

NEW PAPHOS

Tombs of the Kings

A very distinctive foreign type of monumental rock cut tombs occurs in the old quarries stretching along the coast 1 km to the North of New Paphos. These have long been known and referred to as the Tombs of the Kings. They are in fact tombs of resident Ptolemaic governmental officials when Paphos was the capital of the Island and they date from the 3rd century BC. They are now being investigated in detail but have not as yet been published in detail. The principle form is that modelled on the peristyle house in a fashion identical with the well known necropoleis at Alexandria, cf. Mustafa Pasha (A. Adriani, Le Necropole de Mustafa Pasha, Annuaire 1933–34, 1934–35; cf. Lawrence, GA, pl. 137). In this type of tomb a rock cut peristyle (of the Doric order) is contrived around the base of the rock walls of an old quarry. Access is given by a descending stepped corridor and burial chambers are then cut into the rock behind the *ptera* (v. Archaeologia 66, 1915, pp. 168–69, figs. 7, 8; Lawrence, GA, p. 249, pl. 143). 213 302

peristyle tombs in old quarries as at Alexandria

In addition to these imposing monuments there are cut rock chamber tombs and many cist graves or *mnēma* tombs (Arch in C, pp. 203 ff., figs. 1–4).

PHLAMOUDHI

A somewhat similar rock cut peristyle tomb to those at Paphos is found isolated on the North coast of the Island near Phlamoudhi (Devia Kypria, pp. 99–101).

cliff face tombs

It is possible that something resembling another standard type of Eastern Hellenistic tomb is found in the remote North-Eastern area of the Karpass. This is the rupestrian chamber tomb with an architectural façade cut into a salient cliff face (as, e.g., at Nabatean Petra). Hogarth reported large chambers of this nature near Galinoporni and gives plans (Devia Kypria, pp. 72 ff.) but there are no elevations of the façades.

GALINOPORNI

It would be fitting to conclude this brief analysis of Cypriote tombs by giving an outline historical synthesis, but the mass of material is prohibitive. The SCE IV volumes provide this in a very compressed form valid to their publication dates. A full generation of tomb excavation has supervened since that time — with very unequal publication of the results. Some cemeteries have been made the subjects of comprehensive and exhaustive monographs (e.g. Alaas, Skales, Kaloriziki, Ktima, etc.), on the other hand only preliminary notices have as yet appeared of some tomb excavations of the utmost importance (N.B. especially Amathus, New Paphos). In these circumstances the most realistic measure is to give the following select list arranged chronologically of important cemeteries which have been reasonably extensively excavated and properly published. The hundreds of tombs covered by these works fully illustrate the various ramifications of the development of tombs in Cyprus.

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E.J. Stewart,	Vounous 1937–38, Lund 1950	EC
E. Sjoquist,	Lapithos *Vrysi tou Barba*, SCE I, pp. 33–162	EC-MC II
E. Herscher,	The Bronze Age Cemetery at Lapithos Vrysi tou Barba Cyprus, Results of the University of Pennsylvania Museum Excavation 1931, Philadelphia (Thesis) 1978	
I.A. Todd,	The Bronze Age Cemetery in Kalavassos Village (SIMA LXXX 1:1), Göteburg 1986	MC I-MC III
E. Sjoquist,	Paleoskoutella, SCE I, pp. 416–38	MC II
J.B. Hennessy,	Stephania, A Cemetery in Cyprus, London 1963	MC III-LC I
E. Sjoquist,	Enkomi, SCE I, pp. 467–575	MC III-LC III
P. Dikaios,	Enkomi I, pp. 333–438, Mainz 1969	MC III-LC III
C.F.A. Schaeffer,	Enkomi-Alasia, Paris 1952	MC III-LC III
J.L. Benson,	The Necropolis of Kaloriziki (SIMA XXXVI), Göteburg 1973	LC III B-Geometric
V. Karageorghis,	Alaas, A Protogeometric Necropolis in Cyprus, Nicosia 1975	Proto-Geometric
V. Karageorghis,	Palaepaphos-Skales, An Iron Age Cemetery in Cyprus, Konstanz 1983	CG I
E. Gjerstad,	Lapithos *Kastros*, SCE I, pp. 172–265	Geometric
A. Westholm	Amathus, SCE II, pp. 1–141	Geometric-Roman
J. Deshayes,	La Necropole de Ktima, Paris 1967	CG II-Early Hellenistic
V. Karageorghis,	Excavations in the Necropolis of Salamis I–IV, Nicosia 1967–78	Geometric-Roman mainly Archaic
E. Gjerstad,	Marion, SCE II, pp. 181–459	Geometric-Hellenistic
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2. CONSTRUCTION

a) Structures

Early round house building of varied structure: light wooden framed pavilions and load bearing masonry, the latter carried out in both (corbelled) beehive form and also with flat mud roofing. Succeeded by simple trabeated structure with load bearing walls and where necessary point supports.

Some survival of arcuated forms evidenced in e.g. built tombs, but in general arcuated structure re-introduced in Roman times, effected in cut stone masonry and not visually prominent.

The secular overall development in Cyprus of building structures is standard for the region.

Neolithic structural innovations

In this connection (as in others) it is possible to see early Neolithic man as a bold practical innovator. Unhampered by doctrine he turned his hand to whatever came into his head. In this way most of the fundamental principles of structures were broached in the earliest Round House building. However, much of this building lore was brought over from Syria or however much was evolved in Cyprus, a mastery of its potentialities shows in almost the earliest records (i.e. ca 7000 BC). Such buildings it seems were raised up on every possible structural system: both as load

bearing and as framed structures. Equally space was enclosed by arcuated and by trabeated forms of construction.

varied materials

Since the different materials associated with the differing structure vary greatly in their durability, the archaeological remains do not readily demonstrate these matters. However, closer investigation shows that at all periods, particularly at the earliest stage of settlement on a new site, the round house was built up out of a framework of wooden poles clad in wattle and daub or the like just as readily as out of load bearing masonry (RDAC 1936 p. 23). Certainly this particular type structure is still freely constructed (e.g. in Africa) tying the frame members together — nails are quite unnecessary and indeed weaken the structure. The natural form taken in elevation of such a structure is with a conical or umbrella type roof (cf. Village Planning *pass*).

round houses wattle & daub

153 On the other hand, the form taken in elevation by the round house built out of solid load bearing masonry has recently been disputed. Finds of lumps of flat mud roofing have led current excavators at Khirokitia and Tenta to revise the accepted notion of the beehive form and suggest a sort of pill box form to accommodate the flat mud roof on poles and battens. Thus it seems that in some instances at least the round house was a trabeated construction (RDAC 1986, p. 9). However, the mass of intrinsic evidence, to say nothing of the testimony of latter day survivals, infers the recognised beehive form. A further question is in point here. The cupola of a modern mud brick round house is formed by corbelling, but some of the surviving remains of ancient round houses in Cyprus (e.g. at Khirokitia) appear to show the mud brick set 339 radially on inclined beds, thus more or less approximating voussons of true domical construction (cf. BSA 76, 1981, pp. 128–30). While it is unlikely that shuttering was used, it is quite possible that glutinous mud mortar could hold several courses of bricks in position to permit the construction being carried up without shuttering.

Masonry roof form

flat

beehive corbelled

domed

This matter has more than an intrinsic interest since it could stand behind the entire question of the later evolution of arcuated construction (Praktika 2, pp. 43–49).

rectangular building simple

At all events by the end of the third millenium BC it seems that the round house style of building was no longer operative as a norm and had been supplanted by a simple rectangular building style of load bearing rubble and mud brick masonry 328 329 with flat mud roofs supported on wooden poles. This basic, trabeated building form 330 331 survived until recent times for village housing and was structurally sufficient to produce quite monumental urban buildings in the Late Bronze Age (e.g. Temple 1 at 139 140 Kition) and later in the first millenium (e.g. the Palace at Vouni).

monumental

later arcuated forms

The question now left outstanding is the introduction and development of alternative structural forms for special circumstances. In discussing this matter, it is best to set out as follows a summary schedule of possible instances of such structural forms:

(I). LC II "tholos" type tombs at Enkomi

tombs

The construction of these tombs possibly derived in some measure from surviving traces of the Neolithic Round House tradition. However, the tombs have contemporary parallels both in the Mycenaean tholoi and in Middle Eastern tombs, e.g. as at Megiddo (Acts MEM, pp. 245–53). 196

(II). Later Built Tombs

The considerable profusion of built chamber tombs in Cyprus extending down through the centuries of the first millenium BC provide the best evidence for arcuated construction (Built Tombs Op Arch II, 1941, pp. 29 ff.). Underground work was always regarded as a proper occasion for utilitarian construction like vaulting and there are some early examples of this in the classical world. Yet so far as can be seen none of the built tombs of Geometric, Archaic and Classical Cyprus shows true arcuated roofing construction. The type of roofing varies considerably and in general is other than flat slabbing. A gabled roofing is common, constructed either by corbelling and trimming (e.g. Xylotymbou Tombs — Built Tombs, p. 42, fig. 20, N°'s 26, 27) or by slabs inclined together at the peak (e.g. the Tamassos Tombs — Built Tombs, pp. 36, 37, N°'s 17–18). There is also a truncated gable form slabbed over when the span has been suitably diminished (e.g. Amathus Tombs — Built Tombs, p. 32, fig. 20, N° 19). N.B. The soffit of the inclined slabs may be hollowed out to give a vaulted profile (e.g. The Pyla Tomb — RDAC 2, 1935, pp. 9 ff.; O Arch II, 1941, pp. 41, 42, fig. 20, N° 25). 195 195 199 195 325

However, after the Island became part of the Hellenistic World, the more monumental built tombs were provided with true masonry vaulting (e.g. Cobham's Tomb at Larnaka — Built Tombs, p. 41, fig. 20, N° 25; the Idalian Tomb — BCH 96, 1972, p. 1028, figs. 36, 37). And in Roman times (2nd century AD) there were even some extremely early examples of true masonry domes (e.g. Arcosolium Tombs in New Paphos — RDAC 1982, pp. 202–06; BCN 1988, p. 794, fig. 89). 211 212

(III). The "Persian" Residence at Old Paphos

palaces

The long narrow rooms of this building of Mesopotamian design may have been roofed with brick vaults. If so this was clearly an imported structural form (OA III, 1960, pp. 155 ff.). However, the discovery of Corinthian roofing tiles shows that the building was at least partly with pitched roofing (OA III, 1960, p. 172). 141

(IV). Roman Baths and Theatres

public buildings

The cavea of the Salamis theatre was entirely built up, the inner part on solid masonry and the outer part beyond the diazoma on vaulted substructures (Salamis, 146

p. 194), while in the later Roman period the extension of the rock cut cavea of the Kourion theatre was carried on structural vaulting (Kourion Theatre, p. 45, fig. 6). In both these instances so far as is known the mode was solid cut stone masonry.

The Salamis gymnasium was a long lived building and structural details of the earlier periods are not necessarily clear. However, it seems that in the Trajanic-Hadrianic rebuilding, the roofing of the caldarium and the central sudatorium was in dressed stone masonry barrel vaulting (Salamis, p. 187).

A review of these instances suggests that although the matter is by no means completely settled, it is most probable that arcuated structure returned to Cyprus as foreign inspired work and that its main application was in underground work and substructures. Externally exposed forms must have been rare. The non-occurrence of triumphal arches is an interesting point in this connection. Most significantly the arcuated form was constructed out of cut stone masonry as is the norm for the Hellenistic world. Little evidence is available of Roman concrete vaulting.

foreign inspiration

in cut stone

In any event arcuated building did not become standard in monumental building until later (Byzantine) times. And it has never been truly part of traditional domestic construction in the Island. Here vaults and domes are unknown. Arches and arcades to increase the depth of rooms exist in modern traditional building, but they are clearly derived from monumental, mediaeval (Frankish) exemplars (v. Maison Rurale, N.B. pp. 151–53).

outside vernacular tradition

b) Materials

(i) STONE

Geology of Cyprus building stone. Traditional vernacular terminology of building stone — its equation with lithology and petrology. Field stone. Rubble building. Quarry stone. Quarrying practice in Cyprus. Type of stone quarried in ancient times. Example at LC Kition — outcrops and quarries in vicinity of Kition. Stone dressing. Tools used. Evidence from archaeological finds. Evidence from tooling marks on stone both in wall masonry and in free masonry (ornamental stone cutting). Survey of historical development of fine stone dressing — record uneven and discontinuous. First general occurrence ca 1250–1200 BC and of astonishingly brief duration. Kathari Sanctuary at Kition now provides fullest accessible evidence. Two basic characteristics: fine dressing limited to that necessary to give appearance of close jointing, marginal draughting schema for facing. Ordonnance of plinth and orthostates. Bronze Age masonry at other sites and variant forms. Archaic-Classical monumental masonry. Examples at Vouni and Old Paphos (Kouklia), maintaining the Bronze Age traditions. Fine dressing only skin deep. Marginal draughting present at Paphos but not at Vouni. Changed tradition Graeco Roman times but surviving evidence at present entirely Roman. Ashlar blocks no longer facing to rubble fill and backing but walls substantially of fitted blocks throughout, although some uncut stone appears in interstices as packing. Marginal draughting no longer displayed on faces. Chisel and punch commonly used in dressing.

The petrology of building stone in Cyprus is essentially similar to that of surrounding regions on the mainland, viz South West Anatolia and Syria-Palestine. There are

sediments — marls, limestones, etc., of one form and another — and in addition there is a considerable presence of (mainly basic) igneous rocks. However, in Cyprus these igneous rocks are not only extrusive lava flows, but also include outcrops of hypabyssal and plutonic origin. Over the long building history of the Island field stone rubble construction has exploited both igneous and sedimentary rocks but quarrying for dressed stone building has been confined to the sedimentary formations.

So far as can be assessed at present, quarrying was not developed in Cyprus until the latter part of the second millenium BC. Thus in ancient Cyprus building in finely dressed stone has a history of only one and a half millenia as compared with something approaching seven or eight millenia of field stone rubble building. In either instance the geology of Cyprus is such that no locality lies very far removed from a supply of building stone of one sort or another — not even localities within the reaches of the Mesaoria, the central earthy plain (in part alluvial).

Types of Building Stone — Lithology and Petrology

varied lithology

The lithology of Cyprus is (for a small island) extremely varied (v. in general Bellamy & Jukes Browne, The Geology of Cyprus). This variety, however, is 6
essentially an expression of the igneous massif of the Troodos (v. R.A.M. Wilson, The Geology of the Xeros and Troodos Area. Geological Survey Department, Memoir N° 1) and is of significance for mining rather than building (cf. L.M. Bear, The Mineral Resources of Cyprus. Geological Survey Department Bulletin N° 1). Outside this ambit the sedimentary rocks of the Island are fairly uniform consisting in the main of limestones both of secondary and tertiary-quarternary age. The tertiary-quarternary limestones are often sandy and merge in nature with calcareous sandstones and both terms are in common use to describe such building stone. There are also conglomerates of a similar epoch.

secondary limestone

There are now to be mentioned two quite important lithological phenomena devolving from the Cyprus climate. Cyprus is an area enjoying a short rainy winter and a long dry summer with very high temperatures. And these conditions promote to a high degree formation of secondary limestone. Here precipitation percolates down through superficial layers of the earth into limestone series and in so doing dissolves and leaches out calcium carbonate from the rock. In the long hot summer this ground water then rises to the surface by capillary action bringing with it its contents of lime held in solution. Here the water is evaporated by insolation and the dissolved lime is redeposited. This cycle considerably modifies the nature of the upper limits of limestone and is a fact of importance as concerning building material.

(N.B. This generally accepted outline statement has been considerably refined and modified in detail recently by T. Pantazis, A Study of the Secondary Limestones (Havara and Kafkalla), cf. Cyprus. Geographical Chronicles II4, 1973.)

gypsum

Again special conditions of sedimentation (deposition in natural salt pans — shallow lagoons under a boiling sun) made Cyprus one of the notable sources of gypsum in the ancient world. And these gypsum deposits have been exploited for specialised building stone.

traditional terminology

Seen against this background, the traditional modern Cypriote categories of building stone afford a convenient framework for relating the types of stone found in ancient Cypriote building (cf. I. Ionas, La Maison Rurale de Chypre, pp. 136 ff.). The categories once known to all Cypriote quarrymen and builders are:

Sideropetra = iron stone
Pouropetra = "poros" stone
Asvestopetra = unslaked, i.e. unextinguished, (lime) stone
Marmora = gypsum

In addition there are the more widely known categories:

Kafkalla = crusts, hard surface rock
Havara = crumbly denatured sub surface limestone

These terms do not equate with specific lithological formations, nor are they susceptible to exact petrological definition. However, they serve to typify broad distinctions and moreover they serve to indicate the limitations of building stone available in Cyprus — e.g. the notable absence of granite and marble.

granite

The varied lithology of the Troodos igneous massif is mainly basic rock (e.g. basalt, dolerite, andesite, etc.) and there are no granite outcrops (v. Geology of Xeros and Troodos Area, pp. 76–129). In Roman times Cyprus, like other provinces, was provided with occasional display building complexes featuring granite columns — e.g. the agora at New Paphos and the so called granite forum at Salamis. However, these columns were brought from Egypt.

marble

There is something approaching marble occurring in Cyprus — e.g. in the Kyrenia ranges and at the extremity of the Akamas peninsula (metamorphosed passages of limestone of the Hilarion and Mammonia formations). However, so far as is known this was never exploited for building in antiquity. When at the end of the period under study (latter second century AD) imperial Roman building programmes furnished Cyprus with marble columns and halls, the marble elements were imported pre-fabricated from renowned centres of production in islands and on

the mainland not far to the North. In Cypriote traditional usage *marmora* stands for gypsum slabs not marble.

Thus it seems in general that these traditional Cypriote terms can be employed meaningfully with respect to varieties of building stone used from the earliest times (Aceramic Neolithic) down to the latest (Graeco-Roman) and can be applied to field stone rubble material as well as quarried stone. Roughly speaking the correspondence of the traditional terms with modern geological analysis is as follows:

SIDEROPETRA	Basic igneous rocks of the Troodos igneous complex, e.g. Basalt, Dolerite, Andesite, etc. There are also igneous rocks in the Mammonia igneous complex outcropping near Ktima in the Paphos District and there are some restricted igneous outcrops in the Kyrenia range.
POUROPETRA	Sandy limestones or calcareous standstones of the Mesaoria group, principally the Athalassa and Nicosia formations of late Tertiary origin (Miocene — Pliocene). These are brownish, medium to coarse grained stone reasonably hard yet easily worked. Overall they are the most common source of building stone in Cyprus.
ASVESTOPETRA	Compact limestone of various formations e.g. Hilarion limestone, Koronia-Pachna formations, etc., of Cretaceous to Miocene date. It is also possible that the term refers to some limestones of secondary formation which have been enriched in lime (cf. the Palestinian Nari).
MARMARA	Laminated gypsum of the Pakhna formation (middle Miocene).
KAFKALLA	Conglomerates, indurated secondary limestones, etc. (duricrust) of Quaternary or recent date.
HAVARA	Secondary limestones either soft and friable with lime content leached out by capillary action or also lime enriched by deposition (cf. Palestinian *Nari* and *Asvestopetra*).

Field Stone

Cyprus is one of the localities in the world where some of the earliest substantial building in rubble field stone can be seen. The most obvious of the above categories is *Sideropetra* — iron stone, i.e. stone, dark and hard as iron. This is the dark coloured

igneous rock

basic igneous rock of one type or another from the Troodos massif. The massif

comprehends plutonic, hypabyssal (intrusive) and lava flow (extrusive) rocks. None of these formations have been quarried (they have been extensively mined from Chalcolithic times!). However, the area has been deeply dissected by mountain torrents and such stone has always been widely and freely available as outwash
223 (*Gerölle*). It has been gathered generally as rounded stones and boulders and used, *boulders*
272 273 more or less as found in rubble walling. As such it can be seen from the earliest round houses at Khirokitia (v. Fouilles Récentes, p. 23) down to vernacular modern KHIROKITIA building (especially in the Troodos region). It is never finely dressed. It is used in random rubble walling set in thick beds of mud mortar just as are similar field stones of sedimentary origin (Kafkalla, etc. — v. Fouilles Récentes, p. 23). However, often such irregular material is combined with other stone which is of different shape to provide better bonding and bedding.

In various places (e.g. in the southern region about Lefkara) outcrops of thinly bedded sediments occur so that the stone weathers into flat slabs and this process can *sedimentary slabs*
221 222 be aided or simulated by levering away fragments from the scaling surface. The bed joints of these units are perfectly flat by nature and thus these units can be set dry stone if desired as coursed or pseudo-coursed masonry. Equally it is possible to use them in conjunction with other larger and irregular units as has been mentioned above. Here, they can be set in the interstices of such units and can be built up quite *set in combination* accurately to almost any course height desired. Equally they can be set on the top of other irregular blocks to level up the course height. This type of masonry is (or was) very common and highly characteristic of a number of regional areas in the vernacular building of modern Cyprus (cf. Maison Rurale, pp. 136–37). It was also known in antiquity and thus the modern vernacular evidence is material in filling out our knowledge of the past.

It is of interest to consider the degree to which simple gathering of field stone was supplemented by the prizing and levering of fragments from surface outcrops which tended to exfoliate. This in effect is a rudimentary form of quarrying and most likely it was resorted to wherever practical from an early age. A general purpose tool well suited for work of this nature would be the type of single headed pick discussed and *use of pick* illustrated by H. Catling in Cypriote Bronze Work (p. 82, fig. 7, pl. 4). He says "Perhaps they were used as picks either on the farm or in the quarry" and this seems perfectly correct. In fact they were doubtless used both on the farm and in the quarry since in the present connection the two are more or less the same place. The cultivator of rocky stone encumbered fields is required to pick out and clear away much rubble to prepare his fields for cultivation and the rubble stone so won constitutes building material — cf. the *pics du rachalan* (poor cultivator of stony

garrigue land in the Midi) which are still used in just those circumstances (v. J.C. Bessac, JRA 1, 1988, p. 65, fig. 3).

Connected in some measure with this subject is the question of megalithic building since, in addition to transporting these great stones, megalithic builders may have needed on occasions to detach them. However, in Cyprus it is a notable fact (and one which has never received its due comment) that there is no megalithic construction whatsoever. In spite of its prevalence in Syria and in Palestine and e.g. on the islands of the Western Mediterranean. Finally an additional general source of supply of building rubble should not be overlooked, as it was probably an important one. This was the re-use of stone from older collapsed or demolished buildings. This process has been documented very exactly in the Chalcolithic round house building of the Paphos area (as in LC III houses at Bamboula, cf. Bamboula, p. 55) and it has a bearing on the vexed question of why there is no tell development in Cyprus.

havara

Perhaps also it is convenient to mention here a ubiquitous source of building material which runs across several categories and has various applications. Havara, the soft secondary limestone, is at times so friable that it can be dug away or out almost as earth or clay. Perhaps this process can be thought of as a marginal form of quarrying (the Arabic root *h w r* denotes "to quarry"). Havara is most often crushed to make plaster etc. and will be further considered in that connection. It was certainly exploited from the earliest times and pits for mining havara have been identified at early round house settlements (e.g. at Lemba, cf. RDAC 1983, pp. 29 ff.).

Quarry Stone

In Cyprus the evidence for quarrying comes by inference from the introduction of building in finely dressed stone masonry, since there has been no archaeological investigation of quarries which serves to establish the earliest period of exploitation. First it may be remarked that there is no *a priori* link between quarrying and stone dressing. Theoretically field stone could be finely dressed, while quarried blocks can be set undressed. However, in fact, the two

simple tools

processes appear historically linked. Also it should be noted that neither process demands sophisticated tools or technology. In the ultimate instance not even metal tools are absolutely essential. It is possible to quarry out and to dress stone with (hard) stone implements — and historically speaking much was done in this way at the beginning of Pharoanic times in Egypt. What is required for quarrying and stone dressing is a social surplus to provide for the

social organisation

abundant specialised labour required together with the necessary administrative competence to organise these activities which of course include formidable problems of heavy transport. In this way, quarrying and stone dressing have generally been taken as a concomitant of urban development and this seems to have been the picture in Cyprus.

228 229 Some isolated erratic instances of dressed stone blocks in special positions, i.e. at angles or in gates, are recorded e.g. at Nitovikla at a period earlier than the 13th century. However, it should be noted that the original dating of Nitovikla to transitional MC — LC times can be questioned. In any event the systematic use of 230 ff finely dressed quarry stone is first demonstrated at sites such as Maroni, Ayios Dhimitrios, Maa, Hala Sultan Tekke and above all at Enkomi and Kition at a time in the middle or end of the 13th century BC (v. in general Bronze Age Ashlar Masonry, pp. 3–18). Taking Enkomi and Kition as examplars, there is no doubt that at this time they were towns, cf. the size of the settlement, its rational organisation, and fortification together with the obvious public buildings. The other sites also find their functional explanation in connection with urban development.

dressed stone
isolated blocks
NITOVIKLA

general use
ENKOMI
KITION

The technique of hand quarrying and the tools required are of the simplest. The quarryman disposes essentially of a pick, a lever, together with wedges and thin plates (feathers) to go 214 with them, and a hammer. The procedure is to lay bare a face of suitable stone and mark out the dimensions of the block desired. As necessary, stone is cut away to give access to the block on two sides. (Once one block has been removed, it provides the necessary access to the next.) Then narrow channels (e.g. sufficient for the quarrymen to stand with one foot in them) are cut around the other two sides of the block to the required depth (governed in part by the presence of a good cleavage plane). At this level notches are cut under the block from the open side(s) and wedges ("gads") inserted and packed out with feathers. These wedges are struck in turn with the hammer and the block splits away (at its bedding) to be levered free.

quarrying procedure

214 Depending on the situation of the desired rock, the work may proceed from the surface downwards (open quarry/open cut quarry) or by tunneling and cutting out subterranean 215 caverns and galleries (underground quarry). In the latter event it is normal (bedding permitting) to work up against a vertical quarry face so that the block to be detached is extended in the vertical plane rather than horizontally as in open cut quarrying.

open underground

In Cyprus quarrying continued essentially along these lines from its introduction in the 13th century BC to within living memory, the only change being the substitution of iron tools for bronze (cf. the LC III bronze picks and wedges, v. Cypriote Bronzes, p. 82, pl. 7 & p. 96, pl. 9e). It is only in recent years that mechanised quarrying with explosives and powered drills and saws etc. has superseded this basic procedure (cf. The Mineral Resources of Cyprus, p. 140, pl. VII).

Cypriote evidence

Ancient quarries hitherto have been little studied in Cyprus and virtually nothing has been published identifying their period of use whether assessed from finds or techniques. For this subject in general, v. J.C. Bessac, La Prospection Archaeologique des Carrières and N.B. C. Xenophontos, Kition Building Stone and its Sources locates quarries reasonably situated to produce the stone used at Kition but disclaims any ability to identify them as of LC date. Unfortunately now through the

divided state of the Island and the enormous spread of urban building much of the evidence is no longer available.

Some quite general but nonetheless interesting observations are made by Jeffery (Archaeologia 66, 1915, pp. 159–62) at a time when quarrying by traditional methods was still widespread in the Island. In part it is not clear whether he is referring specifically to ancient or recent quarries. He refers to both open cut and underground quarrying saying that the modern "are more underground" (p. 61). However, it is clear that he considers some of the underground quarries to be ancient — "tunneling beneath the upper crust produces vast caverns and the curious arched entrances common in the Cyprus quarries" (p. 160). A well known locale of this nature were the extensive caverns a short walk to the south of Nicosia at Ayia Paraskeve. These were commonly visited at the middle of the century but now have been sealed off beneath the urban building development. Or indeed the caverns are broken into and used as excavated foundations for high rise blocks.

quarries & tombs

Jefferey's remarks draw attention to the close connections existing between quarrying and the rock cut tomb. This is a matter of general application, but is especially significant in Cyprus because of the enormous proliferation of rock cut tombs. Considering the more developed large tombs of Graeco-Roman Cyprus, the *desideratum* for both tombs and quarries is the same, *viz* an outcrop of strong coherent rock which is readily workable. There are two applications. Tombs may be cut in disused quarry faces. This is a practice so well known in Alexandria and in the Ptolemaic Cyrenaica and is reproduced at The Tombs of the Kings by New Paphos. The alternative circumstance has been little noted. It may be wondered to what degree the larger rock cut chamber tombs were fashioned by quarrying out blocks rather than by simply cutting to waste. Quarrying out tomb chambers was certainly the practice at the monumental Nabataean tombs of Medain Saleh.

213 302 323

ALEXANDRIA
NEW PAPHOS
MEDAIN SALEH

building stone of locality

So far as can be seen, there is no historical development in the use of Cypriote building stone. At all periods, builders quarried stone conveniently available in the locality. The LC III fine stone masonry at Ayios Dhimitrios was probably won from the near by Tokhni Quarries which still provide good building stone, limestone of the Pakhna formation (Excavator's verbal statement); the Archaic Palace at Vouni was constructed from limestone (of the Mesaoria group) won on the site itself and from the near by locality of Paradisotissa (SCE III, p. 111); while the Roman sanctuary buildings of Apollo Hylates by Kourion are stated to be from a soft friable limestone quarried in the neighbourhood (Kourion Sanctuary, p. 4). Coupled with this is the idea that perhaps limited quantities of stone for special purposes were transported a certain distance (cf. e.g. stone for columns and mouldings at Kourion Sanctuary (p. 4) or gypsum for flooring).

AYIOS DHIMITRIOS
VOUNI
KOURION

Roman imports of fine stone

In Roman times marble and granite were imported (e.g. from the Greek Islands, from Egypt, etc.) by the Imperial authorities thus demonstrating the capacity to deal with problems of transport on a large scale. However, this capacity is not seen to have made available a wider ranging choice of building stone within the Island. Unfortunately this matter has not been specifically studied and virtually no investigations have been made to identify the period of exploitation of ancient quarries. It is a useful subject for future research.

specimen study KITION

One ancient site where the building stone has been closely identified is Kition (v. C. Xenophontos, Kition Building Stone and its Sources, Appendix VIII, Kition Exc. V.1). According to these findings a rational distribution of different types of stone can be recognised in the LC buildings. For utilitarian purposes (blocks in the towers of the City Wall, etc.) Pouropetra (Nicosia and Athalassa formations) was used. The ordonnance of the fine ashlar in the temples was made up of two other types of stone. The plinth or levelling course (euthynteria) was out of conglomerate while the large and prestigious orthostates are of Koronia Limestone (of Miocene date). There are moreover slabs of gypsum (somewhat unaccountably) set as raft or through courses in the masonry of the city wall towers.

Outcrops of these various types of stone can be found in the environs of Kition, some of them exploited by quarries new and old (however, in no case has a specific quarry which supplied Kition blocks been identified). Both sandy limestone and gypsum outcrops lie within 5–10 kms, the former notably at Voroklini, where mechanised modern quarries are in operation (v. Mineral Resources, p. 140, pl. VII) and where the poet Rimbaud worked as an overseer during his Cypriote interlude. Koronia limestones are further away, ca 30 kms, in the Cape Pyla Region but there are outcrops virtually at the water's edge, so the large blocks for the orthostates would have been transported by sea. There are outcrops of conglomerates near at hand on the coast, but the knoll which constitutes Kition site is in part capped by conglomerate — kafkalla, thus the source for this type of rock may have been immediately adjacent.

VOROKLINI

In view of the above catalogue applying to the 13th–12th century BC the publication of the Phoenecian and later building at Kition must be eagerly attended. It will be of great interest to see if different stone were quarried there then than that in the Bronze Age building. As it is, a casual inspection of the site reveals little fine masonry which can be unequivocally associated *de novo* with first millenium building.

stone dressing

Stone dressing in Cyprus has an interesting history — at present unstudied. It would make a rewarding subject for investigation.

tools

The basic types of masons tools have remained constant from ancient times until the present

day (v. J.C. Bessac, L'outillage traditionel du tailleur de pierre, Paris 1987). There are basically two types of tools: percussion and non percussion, and of the former there are two distinct sub-groups (depending on the method of applying the percussion). These may be called respectively the striking and the struck. All this is self explanatory if some of the tools are enumerated. 216–220

Striking Percussion Tools	:	hammer, pick, axe, adze, etc.
Struck Percussion Tools	:	chisel, punch (point), etc.
Non-Percussion Tools	:	saw, drill, rasp, polisher, etc.

Obviously it is the percussion tools which are the basic ones, and these may be discussed in a little more detail. Stone may be broken and broken away by hammering with different shaped hammers, and more can be done by this tool than is obvious because of the tendency of stone to "spall" (or flake) away when the surface is struck at right angles. However, stone may be detached with more precision by an edge or a point, both of which may be either a head attached to a shaft (striking tool) or constitute a tool in itself (a struck tool) to be driven by blows of another instrument (a mallet). The striking tools are very often double headed combining e.g. a hammer and a pick, a pick and an axe, an axe and an adze, etc. In either case (striking or struck) the cutting edge (or face) may be smooth or serrated (toothed, combed, etc.).

In accordance with the above analysis, a specimen range of tools may be indicated as follows (for each tool type there are, of course, specialised forms): pick, punch (point or broach); chisel, axe or adze; toothed (or combed) axe or adze, toothed (or claw) chisel, etc., etc. Thus it can be seen that virtually each type of cutting action can be produced by both a striking percussion tool or by a struck percussion tool. Although in general it is possible to say that the more delicate control can be exercised with the struck tools, nonetheless finely dressed surfaces and even ornament can be effected with striking tools (cf. Archaeologia 66, 1915, p. 163; Maison Rurale, p. 140). 220

Virtually all the different classes of masons' tools have been known from very early times (e.g. in Old Kingdom Egypt). However, certain classes of tools have been more widely used in different ages and places. Therefore identifying the masons' tools used has been considered a means of showing very basic cultural connections, influences and affinities (v. C. Nylander, Ionians in Pasargadae). In broad general the tendency is to see schools of masons who use predominantly the striking percussion tools (pick, axe, adze) and those who favour the struck tools (point, chisel, etc.). At times this analysis has gone to extremes of diffusionism and has seen stone masonry the world over as a product of two or three original foci of development (cf. H. Kalayan, History of Architecture through the Tools Used).

Cypriote tradition

classical influence

The first person to consider professionally the question of stone dressing methods in Cyprus was the architect Jeffery. He noted that the traditional village masons in Cyprus at the time of the British lease did not make use of the chisel but carried out all work by a combination of the pick and axe or adze, the Kouspos (Kuspi) which he recognised as the equivalent of the Roman *ascicularius*. This fact he projected back into the past and opined that it was classical influence which brought the chisel and punch (struck tools) into the Island and that before and after this the Island adhered 217

to the Levantine school of striking tools (Archaeologia 66, 1915, pp. 169). In his time there was very little ancient (i.e. pre Graeco-Roman) fine stone masonry to be seen. Thus while Jeffery was quite correct in his idea that the influence of the Greek masonry tradition brought the chisel and punch to be standard tools in Cyprus, it is by no means a corollary that such tools were unknown or unused in earlier times.

surviving ancient tools

Before endeavouring to pronounce judgement based on secondary evidence it is well to enquire as to possible first hand evidence — i.e. the survival of actual tools themselves. Here it should be noted again that metal tools are not obligatory — hard stone is harder than much metal. And there is no doubt that hammers, axes, adzes and even chisels of hard stone were used for fine stone dressing, particularly in dressing hard (igneous) stone. Such tools are known, principally from (Old Kingdom) Egypt but have also been identified in the ancient Middle East (Outillage, pp. 92, 137, 178 *et pass*). No stone tool has been identified in Cyprus as specifically for use in stone dressing. However, it is most likely that stone hammers (and choppers) were used in cutting away Huwar, the (often soft) secondary limestone (cf. Archaeologia 66, 1915, p. 159 "a celt ... driven with possibly a heavy stone").

stone tools

bronze tools

In any event in Cyprus, since the period at issue is the end of the Bronze Age and the stone is relatively soft, the concern here is with metal tools. Elsewhere (e.g. in Egypt, v. Clarke and Engelbach, p. 224, figs. 263–67) complete masons tool kits have been recovered. While nothing like this is available in Cyprus, at least some individual tools have been found which may have been used for stone dressing. For the Bronze Age all the possible material is conveniently available for reference in
218 Catling's Cypriote Bronze Work, Oxford 1964. Catling notes (p. 108) "There was a fairly rich selection of tools for working in wood", e.g. axes, wedges and sledge hammers, adzes, saws, hammers, punches, chisels, etc. And he adds "some of these tools ... may also have been used by stone masons for the dressing of the ashlar blocks which have been found at Enkomi, etc.". It is difficult to judge the potentialities of a tool without handling it, but some of the tools illustrated are just as likely to have been mason's tools as carpenter's tools. Picks and wedges (p. 82, pl. 7 & p. 96, pl. 9e) have already been mentioned in connection with quarrying. Wedges ("gads") are, of course, equally used in the same way by the mason for coping stone (i.e. reducing a large block to small size). Of the tools mentioned by Catling, the axe-hammers, adze-hammers etc. are particularly likely to have been used for stone dressing (cf. the resemblance to the traditional mason's "kouspi"). The chisels are less convincing, however, cf. fig. 10 (N.B. the socketed examples, p. 98). The saws illustrated (fig. 9, pl. 9) appear somewhat flimsy, but most saws are and moreover an abrasive powder can be used to supplement their cutting action. Thus the bronze tools from Cyprus infer that in the later Bronze Age masons could have employed

both struck and striking percussion tools and also the saw in dressing the fine stone masonry which characterises this period.

iron tools

Unfortunately there is no publication (nor exhibition) of tools from later periods. However, essentially the same sort of axe-adze continued to be used in Cyprus throughout the first millenium. This is well attested by a number of such (iron) tools recovered from graves — cf. CG III-CAI graves at Amathus (BCH 108, 1984, p. 913, fig. 63) and Maroni (BCH 96, 1972, p. 1019, fig. 21) and also a Hellenistic grave at Marion (BCH 108, 1984, pp. 910–11, fig. 56). There is no specific evidence that these tools were masons tools but they certainly could have been used for dressing stone (particularly the softer limestones).

tooling marks

With the background of mason's tools possibly available in ancient Cyprus, attention is now turned to the evidence of dressing revealed on surviving blocks of fine stone masonry. Here as a preliminary it is helpful to notice a distinction between common "wall" masonry and free masonry — the former carried out under simple mechanical rule, the latter requiring inventive understanding in more or less free hand ornamental work. (Our term of free masonry goes back to the bands of skilled masons who executed Gothic tracery. And the craft and guild mysteries of this higher branch of the profession has served as a supposed vehicle for the imagery and organisation of the masonic lodges.)

All the tools previously mentioned have characteristic traces of their action on the stone surface, "the tooling". The various toolings are nowhere nearly so clearly differentiated the one from the other as some archaeologists would like to make out, but cf. e.g. the pock marks and broken furrows of the point; the close hatching of the chisel; and the arc-like striations of the axe. Moreover in some measure the mode or style of dressing the surface and the tools used are interrelated, therefore these two questions are best dealt with concurrently. 216 219, 220

on ashlar masonry

ENKOMI

VOUNI

SALAMIS

The finely dressed stone masonry of the Late Bronze Age in Cyprus has been well documented and analysed by G. Hult in 1983 (Bronze Age Masonry, Sima LXVI). Some of this material (viz at Enkomi) is now inaccessible, but since the time of publication further material has come to light at Ayios Dhimitrios, Maroni, etc.). The next juncture where fine stone masonry has been found in Cyprus is in Cypro-Archaic times. The published record of this remains substantially the account of the Palace at Vouni (SCE III, pp. 76–339, IV2, pp. 23–29) and, less significantly, the various built tombs of the period (Westholm, Built Tombs, *pass*). The latter aspect has been much augmented by the prolific work of the Department of Antiquities at the cemeteries of Salamis (Salamis Necropolis). Although no salient monumental masonry is associated with the Cypro-Classical centuries there is reasonable survival from this time. The latter periods at Vouni are ca 450 BC in date and recent work has

exposed some remains of the fourth century at Old Paphos (RDAC 1985, pp. 113 ff., Paphos, pp. 211 ff.). Also some built tombs are from this period. What is lacking is a satisfactory record of Hellenistic (Ptolemaic) masonry. In fact the fine stone masonry of the Graeco-Roman period is almost entirely Roman in date (from the first two centuries AD). The detailed public record of this is basically the specialist architectural reports of the Philadelphia Expedition to Kourion dealing with the Theatre (R. Stillwell, Kourion Theatre) and the Sanctuary of Apollo Hylates (R. Scranton, Kourion Sanctuary). The Department of Antiquity work on the city area of Salamis has not been published in detail and is now inaccessible. Also a considerable amount of masonry can be seen now at the lower city of Amathus, the western part of Kourion, and at New Paphos but none of this masonry has been published in detail.

OLD PAPHOS
AMATHUS
NEW PAPHOS

In addition to all this material, evidence of fine stone dressing is provided by the (wealth of) monumental sculpture, together with varied vehicles for epigraphy dating from archaic times onwards; all of which can be seen together at the Cyprus Museum.

on sculpture

Considering this record in sum, it may be said that enough fine stone masonry subsists to provide a synopsis of its development from the 13th century BC onwards but it can not be minimised that there is indeed a lacuna for several centuries at the beginning of the first millenium between the LC III masonry and the Cypro-Archaic masonry.

It has been mentioned that (exceptionally) sizeable, squared masonry blocks occur in buildings considered to be more or less from the beginning of late Cypriote times (i.e. 17th-15th centuries BC). The blocks occur in the nature of specialised features at significant positions of display and/or structure — e.g. gates. Virtually the sole site at issue here is Nitovikla, a fortress on the north-eastern coast looking across to Syria (Ugarit). Much has been written about the origin and role of this fortress on broad historical lines, cf. SCE I, pp. 370–407; SPC, p. 313; Problems, pp. 198–99; Fortin, pp. 152–82). However, there is now a tendency to question the early date of the fortress itself or the dressed stone masonry incorporated in it (Ashlar, p. 15, 68).

LC ashlar

NITOVIKLA

Certainly for sites where finely dressed masonry form significant passages of construction, the presently accepted date centres about 1200 BC — i.e. at the transition of LCII-LCIII. Again this period has been subjected to the most detailed historical speculations involving contradictory interpretation of the ethnic origin of the buildings incorporating this finely dressed masonry. However, the one clear fact merging from all this is the surprisingly short lapse of time during which such masonry was fashioned — viz ca 100 years at most or two to three generations.

Thereafter although there may be evidence that the masonry remained in commission or blocks were re-used in some manner, there is (so far as I am aware) no direct evidence that such blocks were newly quarried and dressed. And that remained the case for several centuries at the very least. This is an astonishing fact which never seems to have been adequately considered.

KITION

Although apparently not the earliest in date (both the South West sites Maroni and Ayios Dhimitrios are reckoned LC IIc = ca 1250 BC) the site providing the most (accessible) evidence is the Kathari Sanctuary at Kition. Here the bulk of the fine stone masonry is dated in the years following 1200 BC (Kition Exc. V.1, p. 272). It may be taken as paradigmatic of finely dressed stone masonry in Late Bronze Age Cyprus.

finely dressed only at face

The dressing of this masonry is defined by two basic characteristics. In the first place the blocks are not truly squared up and finely dressed on all surfaces. The face is truly cut but the bed joints and the rising joints are orthogonally wrought only to the extent necessary to provide for bedding the block and to give the superficial appearance of fine (indeed hairline) jointing. That is to say the appearance of finely jointed orthogonal masonry is only skin deep. The individual block was not a regular parallelopiped, but was orthogonal only to a limited degree at the front and left irregular and rough at the rear. In this fashion Cypriote masonry of the Late Bronze Age belonged to the Western Asiatic Tradition (Palestine, Syria, Anatolia) and differed both from the old Pharaonic Egyptian style masonry and from classical Greek masonry. Furthermore according to modern trade terminology, it is not exactly correct to style the Cypriote masonry Ashlar, since Ashlar denotes regular orthogonally cut blocks which can be set more or less finely jointed throughout. However, in the existing convention this type of masonry will be referred to as Ashlar.

231, 235 242*ff*

marginal draughting

The second characteristic is the more noticeable one since it meets the eye prominently. The faces of these blocks are not dressed to a uniform plane, but the definitive dressing is restricted to a more or less narrow band at the circumference of the block while the residue (the panel) less finely dressed protrudes to a greater or less degree — i.e. the blocks are marginally draughted (on three or four margins). This device, which by subsequent aesthetic conditioning has come to be taken as ornamental, is in fact of contrary significance. It is a "structural" device left exposed. To dress a stone surface true (i.e. into the one plane and out of "twist") it is in all cases first necessary to establish the margins and thus the four corners in one and the same plane. Until this is first done it is useless to proceed with the fine dressing of the remainder, and once this is done it is a simple matter (i.e. for an apprentice) to dress away the remainder. Moreover a block can be set truly, i.e. its face correctly aligned

240–245

with its neighbours, so long as the margins are draughted truly — the central panel can be dressed away wholly or in part, before or after setting as desired. If there is any aesthetics involved in this, then it is the aesthetics of economy (which indeed is a basic principle of all art forms).

Manifestly within the limits of the definition, marginally draughted masonry may vary greatly in aspect. The marginal draughts may be confined or spreading and the central panel may be left crude and quarry faced or itself be dressed back to varying degrees and with varying degrees of finesse.

orthostate plinth

241 The LC III masonry at Kition consists for the most part of an ordonnance of orthostates (tall, upright slabs) set on a low tabular like plinth course. And the detail of the marginal draughting varies between these two elements.

plinth blocks

242a, 245 The plinth blocks are set at the external ground line so that generally only the upper part of the block is visible. In this fashion, very properly, they seem to have been regarded as transitional in character between foundations and upstanding masonry. In general the margins are somewhat broader and the central panel (generally referred to as the "boss") is more protrusive and there is a striking additional feature in that a small cuboid lug is left projecting from the middle of the face. This both marks the original quarry surface of the block (thus providing a record of the amount of rock dressed away) and also acts as an attachment for ropes etc. to facilitate handling (lifting "lug", "*tenon de bardage*" — cf. Dictionnaire, p. 31, fig. 52). Where the lower part of the block was not visible, the appearance of fine jointing at the lower bed joint was not required and thus the lower marginal draught was omitted.

orthostates

242b, 243, 244 The orthostates on the other hand give an impression of overall finer dressing. The marginal draughts are in general narrower and very precisely defined. While the central panel is itself quite finely dressed and protrudes but little. Indeed often it is but a "ghost" and can only be distinguished by a difference in finish. (Surprisingly this "finish" has often been given by polishing or grinding with a grindstone so that the prior tooling marks have been largely smoothed out.)

tools used

Despite these differences, nonetheless, the overall aspect of the dressing of the Kition blocks conforms to a type of defined draughts and smooth panels as opposed to spreading irregular draughts and crudely shaped to quarry faced bases. This in itself gives an indication of the tools used. The Kition draughts were certainly chiselled and the remainder of the dressing was carried out by axe-adze (*kouspi*) in contrast to the hammer dressing of the rugged based type of masonry (e.g. as at Ugarit, cf. ABSP, fig. 315). Indeed on occasions the margins of the orthostates are so restricted and rectilinear as to raise a suspicion that they were marked out by a saw cut and then chiselled away. This is difficult to demonstrate conclusively but it

remains a reasonable possibility. There is some further indication of the tools used at Kition. The only work approaching ornamental "free masonry" at Kition are the stepped capitals which incorporate a cavetto moulding — and these cavetti were worked with a chisel as can be seen by the tooling. The excavator Karageorghis has intimated that traces of the claw chisel have been recognised on occasions. This may be so but they are not evident on casual inspection of the site.

All told the ordonnance of plinth and orthostates at Kathari Sanctuary is about as sophisticated stone dressing as can be found in Western Asia during the Bronze Age.

in situ dressing

One additional question remains to be discussed. Were the bosses dressed back (away) before setting the blocks or *in situ?* It is impossible to be sure. The general "feel" suggests that there were finely dressed on the bench prior to setting.

other LC sites

Before proceeding with the historical development of stone dressing, some attention must be given to the fine stone masonry at other Bronze Age sites. This can be done in terms of the two characteristics set out for Kition. So far as is known, all Bronze Age wall masonry is in essence facing and is not dressed orthogonally throughout. It is possible to reckon as a partial exception of this statement blocks making up pillars. Dressed stone pillars of square or rectangular section are reasonably common. These may be virtual monoliths (e.g. at Ayios Dhimitrios or Kouklia) 277, 9
or may be built up both in elevation and section (as at Enkomi). The blocks constituting these pillars are set solid and truly dressed in their entirety — they are not facing to a fill. Bronze Age pillars are solid ashlar masonry.

Passing on to the facing it is important to notice that not all Bronze Age Ashlar exhibits marginal draughting. It has been noted that at Kition this is more pronounced on the plinth blocks than on the orthostates and it may be that the exposure of incompletely dressed blocks was sensibly connected with the appearance of strength proper to foundations. In any event at other sites (e.g. Hala Sultan Tekke, 233–3
Maroni, etc.) ashlar masonry occurs with the face uniformly dressed. Again whether 230
the faces of these blocks received their final dressing before setting, or *in situ* is not necessarily evident. At Enkomi the make up for the floor of certain rooms was composed of mason's waste (Ashlar, p. 4) and this would be consistent with *in situ* dressing of the blocks (although of course the material could be brought in from a near-by mason's yard (cf. ABSP, p. 347).

If the fine masonry of the Great Phoenecian Temple of Astarte at Kition is virtually a reuse of Bronze Age material as is now stated in the definitive publication (v. Kition Exc. V_1 *pass*), then it is not until the middle of the first millenium that any masonry is found comparable with that of the Late Bronze Age. However, from this period (ca 500 BC) at two sites in the West of the Island a large body of fine stone masonry has been revealed and published. At both these sites the buildings have

Archaic – classical stone dressing

been interpreted as historically connected with the events of the uprising against Persian domination and its reduction by Persian arms and diplomacy. This is plausible since very often hostilities prompt a flow of wealth and a consequent building boom.

There is a great deal more masonry at Vouni than at Kouklia but the two sites offer interesting complementary data concerning dressing during Late Archaic and Classical times. In neither case are the blocks dressed true on all surfaces to be set as solid ashlar (as in the contemporary walls of Greece). The Bronze Age tradition of Western Asia is still followed and the blocks are left "rough backed" to be set as facing to rubble and fill. It is the facing which differs. At Vouni there is no evidence of marginal draughting. Although the superstructure of walls was largely mud brick the substructure was not of the plinth and orthostate model. The masonry was carried up a number of courses (of various patterns) and in some exceptional instances it was carried up to roof level. The block faces were uniformly finely dressed to a plane surface whatever their position in the walling. Since the site is now inaccessible, it is not possible to specify the tools used.

not solid ashlar

VOUNI

fair faced coursed masonry

As opposed to this, various campaigns at Old Pahos (Kouklia) during the last 40 years have revealed passages of dressed stone masonry which show the characteristic of marginal draughting in one form or another. The distinction is an interesting one and reveals a need of further comparative material. There is a considerable amount of fine stone masonry of this period incorporated in monumental built tombs — but
252 in only one instance Tomb 3 at Salamis (Salamis Necropolis I, pp. 26–27, pls. XIII–XV) has marginal draughting been noted. This was so unusual as to evoke the suggestion of reused Bronze Age slabs (Ashlar, p. 82). In fact its appearance suggests *in situ* dressing (*v. infra*).

KOUKLIA

marginal draughting

The major example of draughted masonry at Kouklia occurs in a building comparable with the Vouni Palace. This is the Palace or residence by the city wall at Haji Abdullah considered to be from the period immediately after the Ionic Revolt (i.e. ca 480 BC). Considerable stretches of walling are preserved showing a construc-
260 tion similar to many Vouni walls — i.e. rubble core or fill with faces of ashlar blocks (here preserved to two courses in height). The blocks do not belong to the orthostate class but they are draughted on 2, 3, or 4 margins in essentially the same fashion as at
261 Kition. The margins are narrow and the panel dressed back. However, additional details of the masonry dressing are evident here. Numbers of these blocks exhibit the incipient work of dressing away the central panels. The standard practice in this is first to break up the expanse into smaller islands by cutting furrows through the
262 panel. The remaining stone can then be dressed away by apprentices. Several of the Haji Abdullah blocks have been left in this state. Since this is the procedure known to

Haji Abdullah palace

in situ dressing

be produced in the *in situ* dressing of masonry, then it suggests that further dressing of marginally draughted blocks at Kouklia was (or was intended to be) carried out *in situ* (v. Paphos, pp. 206–08; Alt Paphos, p. 19, pl. 8, fig. 4).

city wall

The other examples of ashlar masonry at Kouklia of this era are of interest in view of their date — they are apparently of the 4th century BC for which very little other evidence exists. The city wall was exposed in a narrow trench on the Marcello hill. This revealed a new structure replacing the archaic city wall which had stood the Persian siege. The construction was faced with heavy ashlar blocks (course height 263
50+ cms, i.e. 1 cubit) standing on a low protruding plinth course. Both plinth and wall blocks were marginally draughted but in an entirely different manner than at Haji Abdullah. As befits their function, they were in the rugged style — the draughts

rugged bossing

are spreading and irregular giving into massive bosses (v. Paphos, pp. 211–12, fig. 198). On the other hand a "mansion" at the Evreti site which in design is a later

Evreti mansion

counterpart of the Haji Abdullah palace shows a much more attenuated use of "ashlar" than its predecessor. Although there was an internal columnar court with finely turned monumental Asiatic bases, the wall masonry was almost entirely squared rubble with a few ashlar blocks (showing traces of marginal draughting) as

coigning

coigning or in other significant positions (RDAC 1985, p. 116, pl. XV).

From this somewhat minor and varied recital there emerges one main *negative* fact. During the high watermark of Ashlar Greek walling (fifth and fourth centuries BC) at a time when Cyprus was thrown into close cultural and political contact with

no classical Greek masonry

Greece nothing like the splendid "harmonically" jointed solid masonry of Greece is found on the Island. During this period Cyprus maintained the old Western Asiatic tradition of "ashlar" masonry, however its survival or revival is to be explained.

Graeco-Roman period

This state of affairs no longer obtained in Graeco-Roman times, however it is an unfortunate fact that the evidence demonstrating the change is entirely from the Roman period of the first and second centuries AD — there simply are no monumental remains of Ptolemaic building presently revealed. (However, such evidence is probably forthcoming in the near future from deeper excavations under the

Roman masonry dressed stone no concrete

Roman palaces and mansions of New Paphos.) The extensive monumental masonry remains of Roman times show that in Cyprus as in other Roman provinces of the eastern (Greek) part of the Empire (e.g. Syria, Cyrenaica) building construction was in the tradition of finely dressed masonry and Roman concrete construction never gained any place (cf. Ptolemais City of the Libyan Pentapolis, p. 216). Nevertheless it can not be said that the monumental construction of Roman Cyprus was in accordance with the standards of classical Greek Ashlar. Massive walls are not

solid massive construction

completely solid with close fitting meticulously dressed blocks throughout, but in many instances where the construction is visible (e.g. at Kourion and Paphos) the

267, 268 ashlar masonry is not mere facing as in the Bronze Age tradition. Blocks are fully squared up and set together carefully throughout the thickness of the wall although some fragments and irregular stone may be used to pack out interior spaces. *but not closely jointed through out*

An even more striking departure from the old Bronze Age tradition is that in Roman masonry marginally draughted faces are virtually non existent. And this in spite of the fact that it is an extremely popular (even standard) ornamental device in contemporary Pompeian representations of masonry. These wall paintings show in realistic detail not only marginally draughted blocks with bases, but often the residual lifting lugs (v. G.R.H. Wright, Praktika 1, pl. XXXVI). *no marginal draughting*

Another difference is that in Roman masonry there is much evidence of the use of "struck" percussion tools, i.e. chisel, punch, etc. And it is probably fair to estimate that for monumental masonry these tools were now the standard ones, while the axe-adze "*kouspi*" type tools were used for rougher work. In this connection interesting information is preserved on ornamental stone work, both architectural and non architectural. This in fact allows us to see the (increasing) use of these tools from Archaic-Classical times onward. *tools*

The Cyprus Museum has a fine collection of Cypriote sculpture (mainly derived from sanctuaries excavated in the last century). In addition there are collections of inscribed stelai and other examples of epigraphy. All this offers a convenient opportunity to check the means and manner of stone dressing (particularly by inspection of the rear and other places left roughly dressed). The earlier archaic statues in the Egyptianising style are very often given a "*sfumato*" finish by fine grinding and polishing, and thus the prior tooling is lost. However, from ca 500 BC statues evidencing Archaic Greek influence reveal marks of punch and chisel dressing — and evidence also of the claw or toothed chisel. Thereafter although the use of the *kouspi* for roughing out remains apparent, the chisel and punch became more standard. It is also an interesting fact to observe that traces of the toothed chisel are more frequent on marble sculpture than on limestone. *tooling on sculpture*

Fine stone masonry has an interesting development in Cyprus over something like 1500 years. Although there are puzzling lacunae in this record, the general conclusion would seem to be that the old Western Asiatic tradition survived on through the ages (like most aspects of Cypriote culture) until supplanted in primacy by foreign control in Graeco-Roman times, although the present evidence for this is largely Roman in date. *historical resumé*

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(ii) EARTH/CLAY

Material of the same order of importance as stone. Property of plasticity. Effects of firing. Sun dried earth used as load bearing material, as mortar and as plaster. Load bearing material both modelled and moulded, either en masse (puddled mud, terre pisée) or as bricks. Mud mortar in common use throughout ages for bedding rubble stone as well as for bricks. Mud plaster likewise common on faces of rubble walling. Burnt brick never used in ancient Cyprus, but terra cotta roofing tiles known from Archaic-Classical times (6th–5th centuries BC) onwards.

Cyprus is a place like the neighbouring regions of the Levant where earth and clay are employed for building no less than is stone. The material is not overwhelmingly dominant (as in Mesopotamia) nor is it of minor significance.

technical properties

The virtue of earth for building is its plasticity. This arises from the fine laminated particles (crystals) which constitute the mineral content of some earth. These slide over one another readily when the earth is sufficiently moist so that the mass assumes the form conveyed to it by pressure or confinement (i.e. by modelling or moulding). It retains the form when wet by its property of cohesion and when dry the laminae interlock endowing the shaped mass with sufficient rigidity and compressive strength (about that of softer limestones) to serve as a material of construction for all normal purposes if put in compression (it has negligible strength in tension).

If the mass is subsequently moistened sufficiently, it will lose its rigidity and regain its plasticity (with sad consequences for the structure). However, if the mass is fired at a temperature of ca 700°–900° C, the laminae fuse together and the mass becomes permanently rigid. The material (terra-cotta, burnt brick) is then weather-proof and virtually fire proof and has a much increased (ca 500%) strength in compression. The most plastic earths are clay but many other earths, muds, marls etc. are plastic enough to be used as building material.

functions

Sun dried plastic earth (as opposed to such material which has been burned or baked) is used in building for three different purposes: (a) as a load bearing structure, (b) as mortar, (c) as a plaster.

load bearing structure

In considering its function as a load bearing material of construction, words are saved if the logical categories are set out systematically prior to an attempted historical survey. Plastic earth/clay/mud may be shaped by either moulding or modelling. Again by whichever process it is shaped, the product may be either a small component unit (brick) to be assembled into a structure or it may be a structure in itself, e.g. a wall or part thereof (*terre pisée*). In this fashion the following paradigm is given:

(i) Hand modelled earthern structure (puddled mud). This is known variously as "*tauf*", "*kahgall*" etc. and is logically the most primitive form of construction. It is known from earliest neolithic times and is still practised (or was until the last generation) in places like Arabia, Africa, etc., etc. Here skyscrapers with massive walls are fashioned entirely by hand without tools of any sort. Compressed handfuls of earth are thrown and forced into a compact mass with the addition of further earth to fill out and unite the mass into the required form. In this fashion the same material is both brick and mortar (cf. Dictionnaire, pp. 30–31, 119; ABSP, p. 349; MDOG 115, 1983, pp. 9–14).

(ii) Form moulded earth structure. This is the true *terre pisée*. Suitable earth is packed and pressed into required volumes confined by "forms" (wooden planks, etc.). This is the direct ancestor of concrete construction and is perhaps the most technically developed form of earth construction (Dictionnaire, pp. 121, 138; ABSP, pp. 360–61).

(iii) Hand modelled mud bricks. Here plastic earth of suitable constituency is hand pressed into appropriately shaped and sized units which are allowed to dry in the sun until they are coherent and self supporting so that they can be set together with the aid of mortar into a structure. The precise forms of the units vary; being usually part rectilinear and part curvilinear — e.g. cigar-shaped, bun-shaped, loaf-shaped, etc. A distinguishing mark of these bricks is that they are unlikely to be all identical in form (Dictionnaire, p. 40; ABSP, p. 350).

(iv) Form moulded mud brick. Here plastic earth of a suitable constituency is packed into a mould of the required form (e.g. square or rectangular in section) which is open at top and bottom and rests upon the ground. When the mould has been filled and the earth smoothed off at the top, the mould is lifted away and the moulded brick left to dry in the sun until it is coherent and self supporting so that it can be set with mortar into a structure. Such form moulded bricks are more or less identical one with the other (Dictionnaire, pp. 40–42; ABSP, pp. 351 ff.).

As a postscript to this clear categorisation, it should be noted that in practice the division is not so obvious as it might be thought. Hand modelled earthen structure (puddled mud) and structures of hand modelled mud brick when represented by vestigial remains are sometimes difficult to distinguish. The former is built up originally out of hand formed lumps of earth which are little different from hand modelled mud bricks. The difference of course being that they are put in place while still plastic and not after drying into rigid form like the latter. Thus when excavators speak of mixed mud brick and terre pisée construction it is well possible that they are dealing with hand modelled mud (puddled mud) construction.

historical development

At all events judging from the cursory and very incomplete references in excavation reports, it would seem that in Cyprus the historical development of plastic earth as a load bearing material began with puddled mud and (then?) hand modelled mud brick and that form moulded mud bricks were not introduced until a later age. While there is virtually no evidence at all for true shuttered terre pisée construction at any period.

round house building

All the excavation reports of Neolithic round house sites speak of the structure of substantial tholoi as being composed of stone, pisée and mud brick in varying proportions and combinations (cf. Khirokitia). Although the distinction is rarely or never adverted to, it may be taken that the "pisée" is not true pisée but modelled (or puddled) mud. On the face of it, it is highly unlikely that neolithic man would embrace the complicated carpentry necessary for the cylindrical shuttering of round house walls (far less for the domical form of the tholos roofing). Moreover the matter is put beyond reasonable doubt by recent excavations within the same cultural continuum in neighbouring Middle Eastern regions. With due consciousness of the distinction between the two types of mud constructions, it has been found that virtually all the earlier neolithic (PPNA) construction is puddled mud and there seems to be a consonance between round house design and puddled mud construction. The detailed findings in this connection (and in the following related matters) are admirably set out and summarised by Aurenche in Maison Orientale (Vol. I, pp. 54 ff., Vol. III, Carte 5).

puddled mud

Subsequent to the Neolithic and Chalcolithic periods, it can be said that there is

very little mention of mud construction in ancient Cypriote building — nor is it a common feature of traditional village building in modern times.

mud brick

A different story attaches to mud brick in Ancient Cypriote building. Here again in the light of both the sparse reference in Cyprus and the more voluminous finding at comparable sites in the Middle East, it may be said that the mud bricks used in Cypriote round house building were as a rule hand modelled and not moulded bricks. It is possible that on occasions moulded bricks were used but this would be exceptional. Moreover excavation reports are not necessarily conclusive in this distinction. It is possible to fashion quite regular looking bricks by hand and particularly when seen only in two dimensions (in plan or section) they may look orthogonal, resembling moulding bricks. It requires complete excavation and study of individual bricks to determine the difference.

hand modelled

KHIRIKOTIA

Direct evidence of the character of mud bricks is available at Khirokitia both from Dikaios' excavations and more recent ones. Aurenche (Maison Orientale III, Table 3) accepts Dikaios' description (Khirokitia, p. 141) as determining the bricks to be hand modelled. And as such it fits in with the general picture (Maison Orientale III, Carte 6). Fortunately two reasonably explicit drawings clearly delineate modelled
274 bricks. A section of a wall at Khirokitia cut by Le Brun shows what are called loaf-shaped mud bricks (Fouilles Récentes, Pl. IV5). Equally explicit is a plan with
273 discrete long ovoid mud bricks set in a mortar ground mass (RDAC 1973, p. 5, fig. 3). The latter drawing is of some wider interest. The mud bricks are set against a stone wall, and the resemblance in shape between the modelled bricks and the stones is noticeable. This may be more or less in the nature of things, but it probably offers some corroboration of the general theory that the first hand modelled mud bricks were *ersatz* field stones (cf. ABSP, p. 350).

hand moulded

The introduction of form moulding to produce mud bricks is a very basic manufacturing device which has survived in vigor until the present day. The advantage of complete regularity and interchangeability of units in construction were apparent and this exercised an influence beyond the material of its invention. If at first hand modelled bricks were in fact *ersatz* field stones, it must be said that one line of development of ashlar stone masonry was in effect to become *ersatz* bricks.

According to recent archaeological reports the device came into use at various places in later Neolithic and Chalcolithic times, being clearly associated with the introduction of rectangular building. However, it may be wondered whether some of the very early examples, e.g. at Ramad in South Syria (Period II, ca 7th millenium BC) are in fact correctly identified. Certainly the predominantly rectangular building of Anatolia is reckoned to be out of form moulded bricks from ca 6th millenium BC (e.g. at Chatal Hüyük). On the other hand a logical latest terminus for the

introduction of the form moulded bricks is with urban civilisation considered to mark the Early Bronze Age — e.g. ca 3000 BC in Middle East areas.

When were form moulded bricks introduced into Cyprus? The question has never been addressed and no direct testimony is published. Logically it might be associated either with the introduction of rectangular building or with urban development — i.e. either towards the end of the third millenium or 1000 years later. The mud bricks from LC II–III (urban) sites are certainly form moulded (e.g. at Maroni, v. RDAC 1986, p. 42, fig. 2) and it has always been assumed that mud bricks at earlier sites (e.g. at Alambra, Kalopsidha, etc.) were form moulded bricks. However, there is little positive demonstration of this fact. In these circumstances a further logical consideration may be mentioned. One spur to the introduction of form moulded bricks is the enormous quantities required for the construction of heavy city walls. This may have been the ratio of general appearance in Palestine ca 3000 BC — and since defensive city walls are not recognisable features in Cyprus until ca 1250 BC, it is *à priori* possible that the form moulded bricks did not come into general use in Cyprus until this very late period. Cyprus in so many ways is notable for lagging a full age behind neighbouring lands.

LCII–III MARONI ALAMBRA

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At all events whenever introduced form moulded mud bricks became a standard material of construction in Cyprus and have remained so without any material change until within living memory. However, during the last generation they have been completely ousted even in the remotest villages by concrete or concrete block construction. Nonetheless so little detailed information has been recorded concerning mud bricks through the ages of ancient building in Cyprus that it is impossible to trace any outline historical development, and the following notes are general ones.

form square & rectangular

Both square and rectangular bricks were known with the rectangular type being more common (although on the whole of squat rather than elongated proportions). To promote reasonable bonding half bricks were used where necessary with both the square and rectangular types. The thickness of the brick was within the normal range, but again speaking generally, they inclined to be thick rather than thin. As a sample only it is possible to compare brick dimensions from Archaic-Classical buildings (at Idalion and Vouni) with those from Late Bronze Age buildings recently excavated at Maroni and Bamboula by Episcopi.

dimensions MARONI BAMBOULA

The LC bricks appear to reflect a unit of mensuration, the foot (either short or long, i.e. ca 33 cms or ca 30 cms). Maroni bricks (v. RDAC 1986 p. 42, fig. 2) are 66 cms × 50 cms × 16 cms (with half bricks of 33 cms × 50 cms × 16 cms). Bamboula bricks (v. Bamboula, p. 55) were noted as 63 cms × 33 cms × 12 cms and also 60 cms × 40 cms × 12 cms (thus reflecting some concern for a proportion of 3:2). This unit of measure does not seem to have been operating with the later bricks. At

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Idalion (v. SCE II, pp. 487–88) rectangular bricks from two contexts were noted, one for use in "house walls" ca 57 cms × 47 cms × 13 cms, and then another group of bricks which could be bonded together to give more massive walling. These latter came in three formats: 52 cms × 43 cms × 11 cms; 43 cms × 32 cms × 11 cms; 42 cms × 22 cms × 11 cms — and it can readily be seen that they can be set together in different arrangements of lengths and breadths to provide excellent bonding in walls of multiple brick thickness. There is also some apparent concern for overall proportion (taking mortar joints into consideration — e.g. 4:3:1 or 4:2:1). At Vouni, on the other hand, there were both square and rectangular bricks; the dimensions being 48 cms × 22.5 cms × 16 cms and 46 cms × 46 cms × 14 cms. These bricks could also be set together in the same wall to give a good bond. In this case (N.B. the differing thickness) the square and the rectangular bricks would figure in separate courses. It may be possible to see some recognisable unit of measure in these dimensions (long or short cubit?) but this is certainly not evident. Rather the dimensions appear to be dictated by the overall necessity of securing a bond within a wall of a certain predetermined breadth, e.g. ca 95 cms (SCE III, pp. 143–44). Moreover little concern appears for overall proportions in the bricks. IDALION

Finally a comment of considerable negative interest is necessary (as so often in Cyprus). Both in Greece (also Crete) and in neighbouring Asia Minor Roman style fired brick work became common in the first and second centuries AD not only as facing to concrete but also in various ways as solid brick construction (v. H. Dodge, in RAGW, pp. 106–16; R. Ginouves, Le Theatron . . . d'Argos, Paris 1972, pp. 17–45; F. Saunders, Roman Crete, Warminster 1982, pp. 57–88). However, as yet nothing of this sort has come to light in Cyprus, nor so far as can be seen was the traditional format of mud bricks there affected in any way by the slender format of the Roman baked brick. Rather the old style of mud bricks continued on unchanged into traditional modern building where their format was usually ca 1′6″ × 1′ or ca 45 cms × 30 cms. *no baked brick*

Mud bricks must be fixed in a structure with a plentiful application of adhesive mortar in both bed and rising joints. Since mortar should not be too strong (stiff) or too weak, the best mortar for mud bricks is mud mortar of a composition similar to bricks. This is applied in beds normally something like one centimetre thick (although on occasions much thicker). Thus the tell tale sign of a mud brick wall in excavations is usually a reticulate pattern of fine lines of slightly different (lighter) colour standing out from a uniform earthern ground mass — i.e. in excavation one recognises the mud mortar before the mud bricks. *mud mortar*

There is little distinction in the use of mud mortar in ancient building in Cyprus and there are only some generalities to be noted.

First although mud mortar (of whatever precise composition) is the invariable mortar used in mud brick construction, it is in no way restricted to mud brick construction and is used equally for bedding rubble stone masonry. As a general rule however it is not employed in the ashlar masonry of LC II–III times and later. That is to say it is not employed where the jointing is fine — it may appear in the rubble backing and fill behind the facing of such a wall. Here it should be mentioned that the normal type of random rubble construction out of field stones which are in some measure rounded water born stones (*Gerölle*) stands or falls to a large extent on the quality of the bedding of mud mortar into which the stones are slopped. If this crumbles away easily there is no bond between the stones and they will collapse. Thus mud mortar must possess qualities of cohesion.

Cyprus is a place where there are large and accessible supplies of lime and gypsum rock and it is to be observed here that often mud mortar contains a mixture of crushed or pulverised rock of these types to increase its cohesiveness. And in this case the mortar stands out as of lighter colour than the mud brick mass.

burnt brick in the Eastern Empire

So far as present evidence goes burnt brick was never a material of construction used in ancient Cyprus. It was unknown in the old native Cypriote building tradition and it never appeared in the Island during Roman times — neither in the form of brick facing of one sort or another to concrete nor as more or less solid brick construction. Both these types of construction were known in adjacent regions to Cyprus from quite an early date during Roman times. The former is one of the standard manner of Roman building construction and the latter seems to have been something of a local evolution or adoption which of course developed strongly into a standard form of construction in the Byzantine world (including Cyprus). There is brick facing to concrete in Greece and Crete and also Cilicia during the first and second centuries AD and construction entirely brick or in bands of brickwork alternating with stone masonry is common in Greece and Asia Minor from the second century AD onwards (cf. in general J.B. Ward Perkins, Notes on the Structure and Building Methods of early Byzantine Architecture, D. Talbot Rice, The Great Palace of the Byzantine Emperors, Edinburg 1958, also most recently, H. Dodge, Brick Construction in Roman Greece and Asia Minor in RAGW, pp. 106–16). However, as stated no instances of such construction have been reported in Cyprus. And the absence seems to be corroborated by the fact that burnt brick has never figured in traditional modern building. Such instances of it as may be seen in the Island today were products of British times when it was sometimes used (e.g. in the rainy areas of the Troodos). N.B. Recently there has been a specific mention of

ENKOMI

burnt brick in Late Bronze Age construction. A built tholos tomb at Enkomi, French Tomb 1336, is stated to include "9 courses of furnace fired brick" (W. Johnstone in

burning in tomb

Alasia 1, p. 53, fig. 1; cf. Acts MEM, pp. 245 ff., fig. 2). However, it is inherently far more likely that these were mud bricks subsequently affected by sepulchral fires lit within the tomb (for fumigation, dessication, etc.).

roofing tiles

However, fired clay was known as a building material in ancient Cyprus in the form of roofing tiles. This occurrence of terra cotta roofing tiles in Cyprus is an interesting feature and one of the rare occasions where Cyprus construction shows a development independent of its context in the Middle East. In those regions pitched tiled roofs are evidence of Graeco-Roman building construction. Manifestly in Cyprus during Graeco-Roman times terra cotta roofing tiles were a commonplace
333–336 and they have been recovered in great quantity at e.g. Kourion Sanctuary (v. pp. 5–6). However, they have an anterior history in the Island.

In this connection there is first to be mentioned a somewhat mysterious entity from a very early date (viz transitional EC–MC times, ca 2000 BC onwards). At both Alambra (SPC p. 21) and Kalopsidha (SPC, p. 29) Gjerstad noted what he termed "plates of baked clay with a raised edge" to which he unhesitatingly stated to be "placed at the edge of the roof ... to avoid drip from the eaves" — i.e. they were primitive gutter tiles. All this is extremely interesting but very doubtful. It may be that this function was suggested by Gjerstad's workmen for in traditional modern roofing quite often something like an upstand is fashioned at the eaves in the form of a curb revetted with small stones. However, in the sixty odd years since Gjerstad's day, no one has recognised anything like these "gutter tiles", nor even commented on them. It is far more likely that such terra cotta fragments belonged to vessels of some sort — plates indeed.

legendry invention in Paphos

Passing on to roofing tiles proper, there is the astonishing Greek legend or tradition that these were a Cypriote invention attributed to King Kinyras of Paphos himself (Pliny Natural History VII 56, 195). Is this a way of saying that they were thought to be a foreign (viz Phoenecian) invention? An equally inapt attribution since roofing tiles were well known in Bronze Age Greece long before any Phoenecian influence appeared there — and they were never used in Phoenecia (for a good recent survey of roofing tiles v. OA XVII: 15, 1988, pp. 203–216). However, irrespective of

used during Cypro-Archaic

this legend, roofing tiles (both pantiles and cover tiles) have been found in Cyprus during Archaic-Classical times, thus prior to the introduction of Greek construction under the Ptolemies. They were noted at e.g. Idalion (v. SCE II, pp. 490, 530–32)
332 and in the Palace by the City Wall (Haji Abdullah) at Old Paphos (v. OA III, 1960, pp. 172–73). A covering date for both these sites would be 6th–5th centuries BC and the tiles at both sites are of the Corinthian (i.e. angular) type. This is certainly the

Corinthian form Roman period

type found in such profusion from a later (Roman) age at the Kourion Sanctuary (v.

KOURION SANCTUARY

pp. 5–6). Here the tiles have been studied recently (v. J. Huffstot in Apollo Sanctuary, pp. 263–99) and something like a development (or retrogression) can be recognised in detailing after a manner known elsewhere. There is furthermore the interesting fact that the pantiles with good Corinthian detailing seem to have been adopted for use in an unsound manner as though the principles of proper overlap to 336
ensure correct "weathering" were not understood (v. *infra* under Roofing).

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(iii) WOOD

Cyprus renowned as heavily wooded land. Archaeological evidence demonstrates use of wood as a building material throughout ancient times on a moderate scale resembling that in Palestine and Syria. Little physical analysis of remains of ancient building timber. Types of timber available in the Island most suitable for building construction: pine, cypress, cedar, oak, pistachio.

heavily wooded country

Cyprus was renowned in antiquity for being a heavily wooded land — as a token of this renown is the well known remark (2nd century BC) of Eratosthenes *per Strabo* that land was to be had in Cyprus for the clearance of it (Strabo 14.684.6.5; Greek Sources II, p. 352, N° 163). Certainly parts of the country e.g. the Troodos mountains are now well wooded demonstrating that this is their natural reversionary condition. As is well known one of the most immediately apparent benefits of British rule in Cyprus was the establishment of a good forestry department which soon reversed the impoverishment of the forests brought about under the long drawn out Turkish régime (cf. RDAC 1987, p. 217, n69).

significant use in building

Equally the use of wood on a significant scale in ancient Cypriote building has been demonstrated or suggested by varied archaeological evidence. The general situation would appear to have resembled that obtaining in neighbouring Anatolia and Syria-Palestine — i.e. wood is an important adjunct material but was probably not used to the extent known in some areas with endemic half timbering or wood

reinforcing. However, the aetiological statement has been made that a thorough going wood architecture prevailed in Cyprus with the idea that this goes some way to account for the absence of tell formation in the Island.

historical survey

In fact the attestations of the use of wood in ancient Cyprus are more or less the expected ones. In Round House building a fair amount of construction was certainly flimsy wattle and daub pavilions (as evidenced by organic material residue and post perforations in the upper beds of mud bricks). There is also the traditional flat mud roofing on poles and battens. And what places Cyprus with Syria-Palestine is the common occurrence of wooden post supports — these are often attested by flat (field) stone bases. With the more monumental building of the end of the Bronze Age an ordonance has been postulated of half timbered mud brick superstructure on ashlar socles. The evidence here consists of mortices etc. in the upper beds of the ashlar blocks forming the socle (Kit Exc. V.1, pp. 172 ff, figs 1–10). Also of interest here is the suggested reconstruction of the substantial Cypriote "order" at Kition as composed of compsite wooden shafts building up of assembled sections of heavy scantlings (Kit Exc. V.1, p. 229). In later (Graeco-Roman) times there are unmistakeably traces of wooden lintels and door frames (e.g. at Vouni, cf. SCE III, p. 146). At all periods, of course, the leaves of doors and e.g. city gates would have been of wood.

247, 248
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few surviving samples identified

Unfortunately there is very little in the way of physical identification of actual remains of timber used in ancient Cypriote building (an exception was at the LC III site Apliki — v. AJ XXXII 1952, pp. 133–67). Accordingly at this stage so far as possible species of timber employed are concerned, the most useful procedure is to set out the species presently growing in Cyprus with such sparse comment as is available relating to their occurrence and use in antiquity. The present day regional distribution of timber in the Island (for a good summary treatment, v. R.S. Merrilees, Introduction to the Bronze Age Archaeology of Cyprus, Göteborg 1978, pp. 5–8, also Handbook pp. 190–96) is of little significance, but virtually all types of building timber are now confined to the upland regions (i.e. hill zone and mountain zone). The only exceptions to this are the (imported) date palm (*Phoenecia dactylifera*) and juniper (*juniperus phoenecia*) but the trees are intrinsically not of great significance for building. The date palm gives long roofing poles but these are not strong (being "heartless").

available species

The types of timber available in Ancient Cyprus most suitable for building construction are: Pines, Cypress, Cedar, Oak, Pistachio, Terebrinth, with the possible use of the date palm, olive, fig and perhaps, carob. The wood from several of these trees can be used for most general building purposes — some special considerations are specifically noted:

Troodos Pine (*pinus negra var pallasiana*) — very durable wood, grows only on the highest summits of the Troodos; was identified at Apliki.

Aleppo Pine (pinus halipensis, *pinus brutia*) — fast growing but durable wood (main timber for modern traditional building); identified at Apliki.

Cypress (*cypressis sempervirens*) — identified at Kalopsidha (MC); said to give good boarding.

Cedar (*cedrus libani*) — not identified so far; mentioned in many classical sources; it is the luxury building timber par excellence giving fine beams and pillars as well as panelling.

Golden Oak (*quercus alnifolia*) — identified in Vounous (EC) tomb.

Pistachio (*pistacia atlantica*) — identified at Kalopsidha.

Terebrinth (*pastacia terebrinthia*) — not identified.

Olive (*oliva europaea*) — mentioned in many ancient sources — very strong wood used for pillars but does not give long timbers.

Fig (*ficus ficus*) — mentioned in ancient sources; its wood was reckoned not very durable.

N.B. A great quantity of timber has been preserved in ancient mine workings as framing, lagging, etc. Much information is given regarding this in SCE III, Appendix V, Antiquities in The Mines of Cyprus, pp. 650 ff. The most common wood was reckoned pine (probably Aleppo Pine), then plane (Eastern Plane, *platanus orientalis*) with a few pieces of alder (*alnus orientalis*) and oak (probably Dwarf Oak, *quercus alnifolia*). However, this material (mainly of Roman date?) is beyond the scope of the present study.

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(iv) LIME AND GYPSUM

Endemic confusions between the two materials, but latterly both shown to stand at beginning of main industrial technology. Both substances come into account as natural rocks, as crushed rock and as burnt products with useful properties in building. Chemical tests necessary to distinguish between the two substances and micro structure alone distinguishes natural substance from manufactured product.

Occurrence and use of lime in Cyprus. Probable use of crushed limestone and of burnt lime from earliest Neolithic times.

Occurrence and use of gypsum in Cyprus. Little evidence of it in any form before LC times. Gypsum plaster appears

with first monumental masonry in 13th century BC. Use of gypsum as cement in fine stone masonry of Archaic and Classical times. Stucco (gypsum plaster) common in architectural ornament of Late Ptolemaic — Early Roman times.

These two materials have been the source of evident confusion in archaeological reports. Moreover latterly they have been shown to be of great importance in the very earliest development of building technology (v. JFA 2, 1975, pp. 133 ff.; 15, 1988, pp. 219 ff.). Therefore an attempt is made to treat them together in an effort to correct misconceptions. However, it must be stated plainly that much of this treatment is *à priori* since the now evident unreliability of most previous archaeological reporting makes *à posteriori* analysis of these references a waste of time.

inadequate definition

In the pragmatic fashion of older Middle East arachaeology, the terms limestone and gypsum (sometimes with the term plaster attached) were used to describe dense, compact, even textured, fine grained substances, light coloured and not over hard. Such substances can originate in several different ways (natural and artificial) and they can be employed in building for several different purposes. Unfortunately common English vocabulary is very defective in this connection. The terms lime and gypsum relate essentially to the chemical composition of substances — lime referring to a substance which is predominantly Calcium Carbonate ($CaCo_3$) and gypsum referring to a substance which is predominantly Calcium Sulphate ($CaSo_4$).

basic chemistry

Both substances occur naturally as rocks. In the former instance, English has the word limestone, whereas in the latter instance, the word gypsum indicates the natural rocks equally as any preparation derived from it. These rocks may be crushed or pulverised to yield a powder which can be mixed with water (and other substances) to give a paste with useful properties for building. The only English terms available here are crushed/powdered limestone or crushed/powdered gypsum. Finally and most significantly, the limestone or rock gypsum can be burnt so that its chemical composition is altered. Some elements are driven off and a powder of altered chemical composition remains. This powder is mixed with water to form a paste which is easily worked and can be both modelled and moulded. It sets more or less strongly on exposure to the air with excellent properties of cohesion and adhesion and resumes exactly the same chemical composition as in its original natural occurrence. The English word generally applied to these substances is plaster (lime plaster, gypsum plaster) but this is unsatisfactory since plaster in its normal English sense connotes something applied to a surface as facing (*enduit* in French, not *plâtre*). Both burnt lime and gypsum preparations can be, and are, used in building in this fashion, but equally they can be used for other purposes, e.g. as mortar or cement — and no one would want to say plaster mortar. In short, any references to lime and gypsum are beset by considerable lexical difficulties.

natural rock

crushed rock

edemic confusion

In archaeological reporting the confusion is two fold: in the distinction of one material from the other and in the distinction in each case of the material as occurring naturally and as prepared by industrial technology (cf. Pliny, H.N. 36.18). The former question can be resolved by simple chemical tests in any laboratory but the latter question can not. This distinction is evident only in the micro-structure of the material and can be distinguished only by the scanning electronic microscope.

In fact the vast majority of previous archaeological references to the materials are based only on sensory perception unsupported by laboratory tests of any sort. It may be possible eventually to establish some sensory criterion to mark the distinction alluded to, but as yet none are known. Furthermore even the terminological distinctions (such as they are) were often little understood by archaeologists — i.e. a plaster-like substance was stated to be lime or gypsum indiscriminantly, sometimes the same example being described as lime plaster on one page and gypsum plaster on another. In this connection there is the further complication of confusion between

lexical problems

several languages since *plâtre* in French means properly gypsum plaster (i.e. Plaster of Paris). Thus English "plaster" which may well be lime plaster can get into French as "*plâtre* = gypsum plaster, and French *plâtre* can be understood in English as lime (plaster).

As to the distinction between the naturally occurring substance and the substance as reconstituted by technological intervention, this understanding tended to be a matter for builders not archaeologists. And well it might be. The same English word could denote both substances and moreover the chemical composition of both is identical. Yet the difference between the two is great, being comparable with that between mudbrick and burnt brick.

Until the last years and the application of higher technology to archaeology, if the above questions were given serious consideration, this tended to be governed by some general ideas or assumptions which are now known to be invalid. These centred about two physical facts. There is a very salient difference between the manufacturing process for lime and for gypsum. Preparation of lime requires a vastly higher firing temperature (viz 5 to 6 times higher) than that for gypsum. While on the other hand prepared gypsum is much more (viz 100 times more) soluble in water

outmoded thesis

than prepared lime. Thus prepared lime is much more water resistant and gypsum is not very durable outdoors except in a fairly dry climate. On the basis of these facts, it was inferred (reasonably enough) that all occurrences of plaster like substances in

gypsum in ancient Middle East

the dry lands of the ancient Middle East were gypsum, and that burnt lime was a

lime in classical Europe

product of the higher (?) technology of (Graeco) Roman times, stimulated by the necessity of providing a water resistant substance for the relatively wet European climate (A. Lucas, Ancient Egyptian Materials, p. 75). This rational thesis in its turn

operated to influence the archaeological identification of materials and knowledgeable archaeologists tended on this account to refer to plaster in the Ancient Middle East as gypsum (cf. in Palestine, ABSP, p. 374).

There are two defects in this understanding. First of all the manufacturing of pottery requires as high temperatures as those for lime burning and pottery was certainly manufactured from very early Neolithic times (ca 7th millenium BC) all over the ancient Middle East. While on the other hand, although the thesis may be appropriate to say Upper Egypt, many parts of the Middle East (including parts of Cyprus) are seasonally just as wet as some European provinces of the Roman Empire.

An alternative explanation for what appeared improbable technology lay in the understanding that plaster like substances could be contrived out of pounded and crushed rock — particularly the friable secondary limestone (*huwwar/havara*). And this possibility was averted to from time to time (cf. ABSP, pp. 371–72, cf. Megiddo I, p. 17).

recent scientific analysis

Now most recently detailed scientific investigations have rendered all such speculations obsolete. Man possessed the knowledge that limestone and rock gypsum could be burnt to yield a very useful material from the dawn of his sedentary life (e.g. in Natufian Palestine). And this knowledge was exploited in a large scale industry early in Pre-pottery Neolithic Times (cf. The Beginnings of Pyro-Technology, JFA 2, 1975, pp. 133–50; 15, 1988, pp. 219–44). The development of this highly significant building materials industry was thus sufficiently early that it would have been brought to Cyprus with them by the first colonists from Syria, ca 8th–7th millenium BC. Lime appears to have been the preferred material in the Levant and Anatolia (wetter climate?). Geographically Cyprus was thus in an interesting case, it was located in the lime region yet it contained most notable deposits of gypsum.

neolithic industry

arrived with first colonists

Consequent on this preliminary clarification, brief separate accounts may be given for the use of lime and the use of gypsum in Cyprus.

Lime

lithology

The sedimentary rocks of Cyprus are in large measure limestones (often sandy limestones) ranging from secondary to recent in age.

limestone chemistry

manufacture

Limestones are sedimentary rocks which by definition contain not less than 50% calcium carbonate ($CaCo_3$). Such rocks when burned (calcined) at high temperature (ca 800°–900° C) yields a powdered form of lime (CaO, calcium oxide) as a residue after carbon dioxide (CO_2) is driven off as a gas. This substance is known as quick lime since it is chemically active, i.e. still alive. By adding this material to water (not

vice versa) in the weight ration of ca 3:1, it becomes "slaked" and the resultant paste or putty ($Ca(OH)_2$) has adhesive and plastic properties which make it suitable for use as a mortar or plaster (or rather as the principal base in the preparation of such commodities, e.g. 1 part lime and 2 parts sand makes the common lime mortar). Slaked lime can be stored for a limited time before use, but after drying out thoroughly through standing in air, it reassumes by reaction with the atmosphere its original constitution of calcium carbonate ($Ca\ O_3$). Hence arise the difficulties of differentiation between burnt and unburnt lime, crushed or pulverised limestone which possesses less marked but analogous properties to burnt lime and thus can be used also as a building material.

use in traditional building

In traditional modern Cypriote building both preparations — crushed limestone and burnt lime — are used. Burnt lime, or true lime, is specifically referred to as *asvestes* (i.e. the unextinguished or unslaked). The traditional centres of lime burning in modern times were in the Kyrenia Range foothills, e.g. near Dhikomo and Kythrea. Burnt lime is used mainly for whitewashing (mud brick) walls (Maison Rurale, p. 143). Crushed limestone is employed as a general purpose material — e.g. in surfacing floors and roofs, etc. Since this latter material is obtained exclusively from the soft secondary limestone formation called *havara*, the crushed product is likewise referred to by the same name, havara (there is no special term equivalent to the Arabic *gir*).

Since both burnt lime and crushed limestone are known in traditional modern building in Cyprus and both were likewise generally known at the time of the first colonisation of Cyprus, the antiquity and duration of their use is of immediate interest. Unfortunately this is a question which can not be properly resolved at the moment. Virtually no chemical tests have been published and, in their absence, description of materials as e.g. "lime plaster" are not definitive. It is thus useless to make lists or statistics of these references. However, as a compromise, notice is taken here of some references which may be reasonably circumstantial. Evidence regarding the introduction into Cyprus of "lime plaster" with the first Neolithic colonists is strangely divided. In his exhaustive publication of the excavations at Khirokitia, Dikaios makes virtually no mention of lime or plaster floors and speaks instead of earth, pisée, etc. (v. Khirokitia, pp. 202, 03; SCE IV 1A, p. 7). Since the plaster floor is perhaps the most substantial structural feature of neolithic houses, he could hardly have avoided some mention of it had it occurred, whatever terms he used. Yet Le Brun reporting on his recent continuation of the excavations at Khirokitia states categorically "Les sols, à l'intérieur des constructions, sont couverts d'un ou de plusieurs couches d'un enduit de couleur blanchâtre ou plus rarement beige ou brun claire" (Fouilles Récentes, p. 28) and "La face intérieure des murs est couverte d'un

in Neolithic round house

plaster floors

KHIROKITIA

enduit analogue au revêtement des sols, dont il est en fait la continuation" (p. 26). The material is stated to be similar to that used in the mud bricks of the walls and a physical analysis of this material (pp. 31–32) shows it to be a very calcareous marl — decomposed limestone. N.B. This, in fact, may be what Dikaios is describing when he speaks of "yellowish pisée" (sometimes painted).

TENTA

On the other hand, at Tenta which is nearby and contemporaneous, I. Todd has much to say (Tenta, p. 45) seemingly to the contrary effect: "... floors of dwellings were usually plastered ... sometimes finely rendered and painted ... The most impressive plastered floors are red painted floors ... of a fine hard (probably lime) plaster". All this would certainly suggest true burnt lime plaster but "although numerous samples were submitted for physical analysis the results were not available for publication".

chalcolithic LEMBA

The next epoch for which some significant information is available on this subject is the Chalcolithic period. The recent excavations at Lemba have been very closely observed and the final report refers to floors of three different compositions: mud floors, plastered floors and havara floors (cf. Lemba, pp. 108, 191). This certainly suggests that the excavators believed they could differentiate between burnt lime plaster and crushed limestone (havara) as a material. However, there is no physical analysis to support this. Dikaios also mentions a "ground limestone floor" (i.e. crushed limestone or havara) at Erimi (SCE IV 1A, p. 116) in Chalcolithic times contemporary with Lemba. It was at this period that havara digging, e.g. for storage pits and tombs became a feature of Cypriote life which it has remained ever since.

EREMI

later periods

For later periods the most generally useful observations are those of the S.C.E. per Gjerstad. Beginning with his preliminary survey work in 1924 (SPC) and ending with his publication of the Geometric to Classical Periods in SCE IV 2, Gjerstad described floors extending from EC — MC times (Alambra house, etc.) onwards.

SCE terminology

For this purpose he evolved a consistent terminology which differentiated between lime concrete (or lime cement) and havara (cf. e.g. SPC, pp. 21, 41, 45, etc.; SCE IV2, pp. 23–24, etc.) which again suggests that he thought he could distinguish burnt lime plaster from crushed limestone preparation.

Graeco-Roman times

In Graeco-Roman times plaster both utilitarian (e.g. hydraulic plaster) and decorative (i.e. stucco) was a common feature of building. Again no conveniently accessible chemical analyses are available but at this period it is axiomatic that burnt lime plaster and mortar would be in use.

All these observations are of appearances only and categoric statements await systematic physical analysis. However, appearances suggest that lime was used as a building material in Cyprus both in the form of burnt lime (*asvestes*) and as crushed limestone (havara) from the first beginnings of building in early Neolithic times.

Gypsum

plentiful supply

The archaeological record of gypsum in Cyprus is of some general significance for two reasons. Firstly Cyprus was noted in later antiquity as a prominent source of supply of gypsum (v. ABSP, p. 374) and to this day gypsum and gypsum products form a significant export item (v. L.M. Bear, Gypsum in Geological Survey of Cyprus, Bulletin N° 1, pp. 146–55). Secondly there are interesting Greek texts concerning the use of gypsum products in ancient Cypriote building.

rock gypsum

Gypsum, > Greek *gypsos* = (originally) chalk is used both for the common mineral calcium sulphate ($Ca\ So_4\ H_2O$) which in various developments constitutes rocks such as (true) alabaster, selenite, gypsite, satin spar, etc.; and also for certain materials used in building manufactured from these rocks (e.g. Keene's cement).

manu-facture

These products may devolve from simply crushing the rock gypsum, or, more commonly from (crushing and) burning the natural material. This latter operation is a simpler operation than calcining lime since it requires a temperature of no more than 100° C–200° C (usually ca 130° C) which can be produced in any open camp fire of the order for boiling water (instead of requiring the kiln contrivance for calcining lime). Equally the preparation for use of the burnt powder is simple. If water is added to the powder, a workable paste forms immediately (unlike the controlled slaking process necessary for lime).

If rock gypsum is burnt at a temperature of ca 130° C, then three quarters of its water of crystallisation is driven off from the calcium sulphate dihydrate ($Ca\ SO_4\ 2H_2O$) to give the powdered hemihydrate $2\ Ca\ So_4\ H_2O$ (gypsum plaster or Plaster of Paris). The latter when mixed with water reacts in a simple manner to reform the original dihydrate ($Ca\ So_4\ 2H_2O$). There is thus no chemical distinction between the composition of natural rock gypsum and burnt gypsum plaster and the two substances can not be distinguished by chemical analysis. The microstructure, however, is much changed in the rehydration. In place of the tessera like appearance of natural rock gypsum, the microstructure of rehydrated gypsum plaster consists of a tangle of well formed, needle like crystals; the interlocking of which gives the new material its resistance to deformation (v. JFA 2, 1975, pp. 134–35, figs. 1–3) — cf. the parallel of burnt brick.

Rehydrated gypsum (plaster) is much used for artistic and industrial moulding as well as in building. The mixture can be poured into a mould there to set quickly into a hard white solid mass (of interlocking crystals). On the other hand, if the material is mixed with some other substances, earth sand etc., a mixture can be obtained with plastic and adhesive properties suitable for use as mortar or plaster in building.

Deposits of gypsum are widespread in Cyprus, occurring as selenite, alabaster,

lithology

massive rock gypsum and in a peculiar laminated formation known locally as "marmara". All these deposits constitute an evaporite facies of the Upper Pachna formation (marls, chalks and broken limestones) of Middle Miocene Age. The scattered outcrops of such rocks form a girdle around the Troodos massif, and the southern half of a girdle about the Kyrenia Range. The most notable deposits are at Boughaz, south of the Kyrenia Range at the root of the Karpass, and at Kalavassos near the central part of the South Coast of the Island. Both these deposits have been exploited industrially on a reasonably large scale in modern times. Other deposits quarried in modern times are by the South Coast in the area between Limmasol and Ancient Amathus (Ayios Athanasios, Yermosia, etc.); in the vicinity of Dhali (Kotchati, Lourounja); and by Myrtou.

At the latter two areas there are outcrops of "marmara" which are quarried for use as special purpose building stone, while at all areas the rock is crushed and calcined. The "raw gypsum" so produced is used as a retarder to slow the setting of Portland Cement, while calcined gypsum is used as gypsum plaster. Speaking generally, gypsum products were not greatly used in the traditional building of Cyprus in modern times. While rock gypsum in the form of marmara slabs was in common use (cf. Maison Rurale, p. 141), mortar and plaster was in general mud and limey composition not gypsum (cf. Maison Rurale, pp. 135 ff., N.B. pp. 141–42).

Exactly the same reservations as expressed for lime hold good in any attempt to trace the archaeological record of the use of gypsum in ancient Cypriote building. In the absence of chemical tests a field archaeologist's description can not be relied on and statistics drawn from these might well compound the confusion. However, a brief general survey of the subject is given based on discriminating assessment of the validity of such references.

earliest reported use

First of all, it seems that there is no convincing reference to gypsum of any sort in building until LC times. It is possible that marmara fragments may have been used for flooring in earlier building and may be subsequently noticed, but as yet there are no such reports. And for whatever it may be worth, there has been absolutely no suggestion that any plaster or mortar of earlier times is gypsum based — all ascriptions have been mud havara or (burnt) lime. This is a matter of some interest. It is now known that gypsum burning was understood and practised from early neolithic times parallel with that of lime — and was well established in Mesopotamia and Egypt (cf. Maison Orientale I, pp. 23 ff., plans 1 & 2, Table I; JFA 15, 1988, p. 227, Table I, p. 236, p. 237, fig. 14). Yet in spite of its profuse supplies of gypsum, Cyprus, it seems, followed the lime using practice of neighbouring Palestine and Syria.

In fact the first notices of gypsum as a building material seem to be closely

LC ashlar

associated with the introduction of the monumental stone masonry in LC II–III times (13th century BC). At this period the use of both rock gypsum slabs (marmara) are recorded at e.g. Ayios Dhimitrios (RDAC 1983, p. 97) and Kition (Kition Exc. V.1, pp. 9, 35–36); while examples of (burnt) gypsum plaster are recorded at e.g. Pigadhes (Pigadhes p. 9) and Kition (Kition Exc. V.1, pp. 32, 83, 152, etc. . . .). All this notwithstanding there is little to indicate the use of gypsum for mortar in the ashlar masonry of the period (cf. Hult Ashlar, p. 16); and Callot in his analysis of building construction at Kition pointedly remarks that it is difficult to examine the constitution of the inner filling of Bronze Age ashlar walls but it appears that they were of rubble set in ordinary mud mortar (Kition Exc. V.1, p. 170). If this indeed is the general picture, again it is of interest since gypsum based mortar in later times has always been favoured for fine stone masonry (cf. Warland, Modern Practical Masonry, p. 95).

AYIOS DHIMITRIOS
KITION
PIGADHES
as plaster not mortar

gypsum mortar in Archaic ashlar

Again for what it is worth, the first notice of gypsum as a cementitious mortar appears in the monumental masonry of Archaic-Classical times. Here Gjerstad, in particular, was very specific in distinguishing between lime plaster on floors and walls and gypsum mortar in walls at e.g. Vouni. Whereas he speaks e.g. of the lime concrete floors (SCE IV2, p. 13), he states e.g. that "The Ashlar masonry is partly constructed . . . with the blocks set in gypsum mortar in which the rubble too is embedded" (SCE II, pp. 85 ff.; SCE IV2, p. 15). Equally in the recent excavations of the Haji Abdullah Palace at Kouklia it was observed that "Die Mauerkern ist stellenweise mit Gipsmörtel verstärkt" (AA 1986, p. 157). However, that supposed gypsum cementitious mortar even if correctly identified was necessarily burnt gypsum may not be self evident. Most recently the final publication of the American Expedition to Idalion gives a table (p. 8) listing types of cement mortar which is based on laboratory tests. This refers to the period ca 500 BC and speaks of coarse crushed gypsum mortar, very coarse crushed gypsum mortar, very fine crushed gypsum mortar. Since it also specifies true concrete (!) one of the components of which (not gypsum) is stated to be burnt, then presumably raw gypsum is intended here not burnt gypsum.

VOUNI

KOUKLIA

IDALION

general significance

Vitruvius II 8

The use of (burnt) gypsum as a cementitious agent to bind together the rubble and aggregate filling of fair faced stone masonry walls in Cyprus ca 500 BC is a matter of very great importance for the history of ancient building in general. Since to the degree that the gypsum cements this fill together into a concrete core, then such a construction can be seen to stand as a precursor of Roman concrete within the terms of Vitruvius' well known discussion (II8) of "the concrete (walling) of the Greeks" (*Graecorum structura* and *emplekton*) which in turn has been frequently reviewed (v. latterly ABADY IV, 1987, pp. 79–86).

In this connection there survives the crucial text of Theophrastos *peri ton lithon* 64–66 which is worth while giving in extended translation: *Theophrastos*

"Gypsum is both plentiful and evident in Cyprus ... The natural properties of gypsum are distinctive. It is more like stone than like earth. Rock gypsum resembles alabaster. However, it is not quarried in large blocks but is rather dug away piecemeal (*like earth*). It becomes very adhesive and very hot when it is wetted, for those who want this stone (*product*) for (*cement in*) their building pour water on it, as also if they want to use it to cement anything else together in the same manner. Masons pour water onto the material, stirring it with a stick, for they can not do so by hand because of the great heat generated. (*N.B. This shows clearly that Theophrastos is here referring to the slaking of quick lime, not gypsum as he makes out.*) They carry out the wetting process at the time when they need to use the product, for if they were to do this some time previously, it would set hard very quickly and not be workable. It is of amazing strength. For whenever stones (i.e. blocks of a structure) are broken apart and removed, the gypsum (*cement*) does not become loose (*and crumble away*) but remains stuck hard onto the dismantled blocks. This gypsum (*cement mortar*) can be removed over and again, burnt and reused. And all this is especially the case in and about Cyprus and Phoenecia".

(Theophrastos *Peri ton Lithon* 64–66)

These remarks are very instructive (in a negative sense) since they show that Theophrastos was not in any way clear concerning his subject matter, and he made exactly the same confusions as occur in modern archaeological literature. Firstly he confused lime and gypsum — no heat is generated when burnt gypsum (hemihydrate) is mixed with water as is the case with quick lime. And secondly, he uses gypsum indiscriminately in two senses — as natural rock gypsum and as the cement (mortar, plaster) made by burning it and mixing the powder with water. *confusion in text*

However, what this passage does indicate very clearly is that already in early Hellenistic times, a sort of gypsum preparation was used in mortar or cement in masonry so that one of the meanings gypsum came to assume in Greek was "cement" (cf. Philo, Belophoecia 79.5; Diodoros 2.10; Arrian Anabasis 2, 21.4). Furthermore this product was reckoned to be of amazing strength — i.e. the stone would break sooner than the cement would break or break away from the stone, which is the essential characteristic of concrete. Thus since archaeological evidence shows that fine stone masonry in Cyprus at the time was not uniformly solid throughout, but consisted of a facing of cut blocks with an internal groundmass of cemented stones and aggregate, then the asserted strength of this gypsum cement means that in effect *gypsum cement*

in concrete construction

such walls are a type of concrete construction — precisely the *graecorum structura* of Vitruvius II.8 as was perceived by Gjerstad (SCE IV2, p. 229).

The subsequent usage of gypsum in Cyprus during Graeco-Roman times is a matter which is more or less obvious but can not be examined circumstantially because of the absence of chemical tests. During later Ptolemaic and early Roman times the majority of the architectural ornament given to local limestone building was detailed in or embellished with stucco (cf. e.g. RDAC 2, 1988, pp. 219–28). Stucco is by implicit understanding a gypsum plaster and it is to be presumed that Cypriote stucco was gypsum based, but there is no published demonstration of this fact.

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(v) MINOR MATERIALS

Little evidence of sumptuary material in Ancient Cypriote building. Possible use of lead in securing dowels etc. between ashlar masonry socle and timber framing of superstructure in Bronze Age masonry. Lead cramps in Hellenistic engineering of heavy masonry harbour installations at New Paphos and Ayios Philon. Bronze hinges on archaic period wooden doors at Idalion. Iron (?) door and window fittings in Sanctuary of Apollo Hylates by Kourion. Also much window glass in baths there.

absence of luxury materials

Minor materials of construction comprehend chiefly luxury or expensive materials — e.g. metals, ivory, etc. Yet in spite of the reputation Cyprus enjoyed (at least in classical times) for oriental luxury living, there is a very noticeable absence of any such materials in its building remains. Particularly is this so with metals when it is considered that the metal industry almost defined the Island in general understanding. Admittedly metals are scrapped and melted down for reuse, but so far no sort of metal ornament, plating, etc., has been reported. Also wherever the Kingdom of Alasia was and wherever it got the ivory from which it sent to Egypt, there is nothing which looks like ivory panelling from ancient building in Cyprus. Was fabled Cypriote luxury expressed mainly in objects (e.g. the great bronze cauldrons and ivory thrones from Archaic Salamis) or is it the old question of tomb archaeology and site archaeology again?

One common use of metal in ancient building construction was for cramps and

dowels to fix fine stone masonry (ashlar). The record in Cyprus appears that as a rule metal cramps were not used in the Bronze Age ashlar masonry tradition. They only appeared in Graeco-Roman times and then not as part of regular masonry practice but in what might be called engineering (*Tiefbau*) where special stresses were involved — e.g. above all in moles and breakwaters.

metal cramps unusual

The published evidence for Bronze Age masonry practice is mainly that from the Kition Sanctuary. Here according to the architectural analysis (Kition Exc. V_1, pp 165 ff.) no metal cramps were discovered but there was considerable evidence of (square) cuttings in the upper beds of orthostates (v. Kition Exc. V_1, p. 209, fig. 9) which was once interpreted as recessing for (metal) dowels securing an upper course of stone masonry. However, in a later sweeping revision of the construction so that it is now seen as half timber mud brick on an ashlar socle these recesses are shown to be for pegs to secure the stringer beams and posts of the timber frame (Kition Exc. V_1, pp. 172, 299, fig. 10). Such pegs or dowels must have been of wood and thus have not survived; however, unexpectedly, there is surviving evidence of lead sprigs or wedges
247B to make fast the wooden dowels (Kition Exc. V_1, p. 207, figs. 6, 7). The sizeable element, ca 10 cms × 8 cms, appears to have been hammered and punched in, although prior attachment to the wood is mentioned in the text (Kition Exc. V.1, p. 173).

LC ashlar
KITION

wooden pegs securing timber frame to orthostats

There are orthostates showing the characteristic lodgements for swallow-tailed (metal) cramps. However, these are interpreted as designed to take the tenons anchoring the timber frame cross struts into the stone (v. Kition Exc. V.1, p. 210, fig. 11; p. 225, fig. 44). It must be reported that no metal cramps to fit such cuttings have been discovered (cf. Hult Ashlar, p. 16). N.B. Similar cuttings have been noticed on ashlar blocks from Ras Shamra (on some instances connecting stone to stone which have been seen as cramp emplacements) (v. ABSP, p. 378). However, no such metal cramps have been discovered and the cuttings would have housed wooden tenons and/or cramps (Hult, Ashlar, p. 31); although the use of lead also remains a possibility since lead ingots were discovered on the site (cf. Hult, Ashlar, p. 23).

cramp holes for tenons of wooden frame

In fact, lead is the one metal convincingly attested as a building material during LC times. What must be a bathroom at Hala Sultan Tekke, Area 8, was provided with a floor and dado of close fitting rectangular slabs and their jointing is sealed with lead, obviously run in molten (Hult, Ashlar, pp. 9, 16, 109, fig. 2; HST 4, 1978, p. 81). In other regions bitumen might have been used in these circumstances.

lead
HALA SULTAN TEKKE
sealing jointing of slabs

It seems the only ocular evidence of metal cramps in Cyprus relates to the Hellenistic harbour installations at New Paphos and Ayios Philon. At both sites the cut stone facing to the moles and breakwaters was cramped together. Hogarth who visited both sites towards the end of last century mentions the cramp emplacements

for cramps in hellenistic moles

NEW PAPHOS with interest in Devia Cypria (New Paphos, p. 9; Ayios Philon, p. 90, with a drawing). However, at the latter site the immediately preceeding visitor, Sakellarios, actually saw the metal cramps *in situ*. His specific observations are worth quoting for their generic significance: 265

> "Although the harbour is small, considerable remains of its mole still survive joined to one another with metal cramps. Unfortunately the fishermen who land here remove the lead for fishing purposes, so that what is left will soon disappear."
>
> (Ta Kypraika, Athens 1890, recited in RDAC 1980, p. 152)

Thus the only metal fixings actually noted in Cyprus are lead not bronze as might be thought.

door fittings pivot shoe The other common application of metals in building is as (e.g. door) fittings. Here again the record in Cyprus is minimal. The most striking survival is a bronze pivot

AMATHUS shoe for a stone door to an archaic tomb in Amathus which is now to be seen at the Limmasol District Museum. (A smaller and simpler tomb door from Salamis without the metal shoeing is illustrated in Sal Nec II, p. 40, fig. 1.) For the general background to this type of bronze shoe now see Tel Aviv 15–16, 1988–89, pp. 197–205, where an Egyptian ancestry is proposed. 320

IDALION hinges Some very unusual metal fittings were discovered by the SCE at the Western (Ambelleri) Acropolis at Idalion which date from later Archaic times, ca 500 BC (v. SCE IV 2, p. 6). These are ornamental bronze hinges ca 7 cms long (SCE II, pp. 540–41, n°s 292, 301, 325, pl. CLXXVII). They come from near one of the entrances to the Acropolis Sanctuary and are stated by the excavators to be from a supposed wooden door opening on the inner Sanctuary (SCE II, p. 490). They are certainly hinges, whether or not from a door, and if from a door as stated, they must be some of the earliest door hinges known.

KOURION *window grilles* Indirect evidence for metal fittings of another sort comes from the Sanctuary of Apollo Hylates by Kourion in early Roman times. They are dressed stone windows in the East Complex with "sockets cut into the sills, lintels and jambs for the reception of bars of a heavy grille" (Kourion Sanctuary, p. 15 & figs. 11, 12). These 327 grilles were presumably of iron and actual iron window grilles have been discovered

NEW PAPHOS KOURION *door bolts* from a late Roman date (e.g. at New Paphos). Equally the well preserved dressed stone door frames at the Kourion Sanctuary show recesses in the sills to take (iron) pins or bolts shot downwards to secure the leaves shut (Kourion Sanctuary e.g. p. 16, 321 fig. 10).

glass window panes At the Sanctuary of Apollo Hylates, there also survives in quantity another minor material of construction — this time a rather récherché one for the early Roman period, viz glass. The Baths complex by the Kourion Gate appears to be entered

through a cross hall (2) which gives onto a central square room (5) fronting the heated apartments. In this room were a profusion of fragments of glass window panes. It is presumed that these formed a window between Room (5) and the Sudatorium behind it, so that the sudatorium could borrow light from the front of the building and at the same time retain its heated air (v. Kourion Sanctuary, p. 59, plans I & VIII).

The baths are probably Trajanic in date and glass begins to appear in building during the first century AD — there are panes of glass in bronze framing from Pompeii and many Roman villas at this time. There is much Roman glassware in Cyprus (cf. O. Vessberg, Roman Glass in Cyprus, O Arch VII, 1952, pp. 109 ff.) and Ohnefalsch Richter reported a glass furnace at Tamassos (v. O Arch VII, 1952, p. 110). Thus it would be interesting to know more about this window glass at the Kourion Baths in the light of its possible local manufacture.

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G. Hult, Bronze Age Ashlar Masonry (SIMA LXVI), Göteborg 1983.
R. Scranton, The Architecture of the Sanctuary of Apollo Hylates at Kourion (TAPS 57 2, 1967), Philadelphia 1967.
R. MacGrath & A.C. Frost, Glass in Architecture and Decoration, London 1937.

c) Forms

(i) FOUNDATIONS

Absence of tell formation results in fewer walls founded on made-up ground. In general strong and stable natural foundations. Domestic building from neolithic times onward with slight rubble footings as a DPC and to resist wear and tear, no concern for spreading load.

With more massive walls (e.g. city walls) and monumental ashlar construction of 13th century BC concern for taking foundations down to bed rock. System of orthostates, ashlar plinth and solid rubble foundations. Archaic ashlar (at Vouni) founded on bed rock often left as an upstand with cut down floor. In Graeco-Roman times influence of classical masonry seen in use of squared masonry foundations and rock cutting to key foundations into bed rock.

natural foundations

Little specific note has been taken of foundation structure in Cyprus, not even in the SCE reports. However there are certain matters of interest to remark on. First of all, because of the absence of tell formation, a much greater proportion of ancient building is founded on virgin soil than in neighbouring areas — or to put it more significantly, a far less proportion is founded on made up ground. There is thus little trace in Cypriote archaeology of those measures of soil stabilisation which begin to be recognisable on the neighbouring mainland, viz the stabilising of "make up" by alternate layers of soil and *huwwar* (*havara*), further consolidated chemically by ashes

excellent

(cf. ABSP p. 381). On the contrary the natural foundations in Cyprus are excellent, consisting in the main of extensive outcrops of sedimentary rock or of dry compact soils. (Extensive tests for compressive strength of formations in the Nicosia area, i.e. sandy limestone, havara, marl, give a range of ca 15 kg/cm^2–40 kgs/cm^2.) This is, of course, far in excess of any building loads in antiquity, the normal traditional domestic building involving a miniscule load of only a fraction of 1 kg/cm^2. In this fashion no endemic problem of natural foundations exists, e.g. that of plastic formations — as with the alluvial soil in Egypt.

round house foundations

plaster floor

The survival over extended areas of round house building in Cyprus means a lengthy initial constant in foundation structure. The essence of neolithic house building on the adjacent mainland is perhaps the very solid plaster floor which appears as the primary installation with the remainder of the building rather in the nature of a shelter over and around this feature (cf. ABSP figs. 283 ff., 338). In this way the foundations tend to be an extended raft foundation for the sunken floor rather than wall foundations. For whatever reason there is little evidence of this

rubble footings

development in Cyprus. Round house building in Cyprus shows in general the footings or lower parts of walls in rubble. The function is not related at all to spreading the load of the structure but they are intended to provide a base to the masonry walling which will minimise rising damp (i.e. act as a DPC) and also which will resist wear and tear concentrated at ground level. 272, 333

The same considerations continue in the succeeding age of rectangular village style building. Some notices are available of such building at e.g. Kaminoudhia (Arch in C pp. 15–24), Phaneromeni (SCA pp. 60 ff.), Alambra, Kalopsidha, Nikolidhes (SPC *pass*). In general these buildings are founded on natural soil, quite often directly on outcropping bed rock (cf. RDAC 1983 pp. 80 ff.). Reports all speak of rubble construction with more sizeable fragments forming the faces and the core filled with small stones and pebbles etc. while larger units are placed at critical positions, e.g. coigns and jambs (cf. SPC pp. 19 ff., 27 ff., 37 ff.). It is symptomatic that the reports are inconsistent in their designation of these remains sometimes referring to them as foundations and sometimes as socles or the lower part of walls. Such imprecision is reasonable enough and does not amount to confusion. It is, in fact, very difficult to define the term foundation in the abstract. These structures are foundations in as much as they are set on the natural foundations, but they are also part of the upstanding masonry, since in some cases they are preserved to a considerable height (e.g. more than a metre) without evidencing any change in character. There above the superstructure of the wall is carried up in a differing construction, be it in another material (e.g. mud brick) or in rubble of a different character. However there is little evidence of any change in character at or just above ground

level, e.g. an increase in breadth (which is quite superfluous since there is no question of spreading the load to bring it within the bearing capacity of the natural foundations). This essential construction persisted in traditional Cypriote village
30 building down to the middle of the present century and many excellent illustrations may be seen in I. Ionas La Maison Rurale.

Walling of a different character from domestic village building occurs in the fortification walls of the Late Bronze Age, e.g. the Cyclopean city wall at Enkomi (mid 13th century BC). Here a concern begins to be manifested for founding structures on bed rock if reasonably practical (Enkomi I p. 69). Equally with the earliest appearance at more or less the same time of monumental dressed stone (ashlar) construction the same concern was apparent — e.g. at Maroni with the ashlar administrative building. Here care was taken to clear out old tombs lying in the course of an ashlar wall so that firm rubble foundations could be taken down to bed rock (v. RDAC 1986 pp. 42–43).

monumental building ENKOMI *on bed rock*

MARONI

Certainly a very well developed system of foundation is recorded for the temples at the Kition Sanctuary. Here the principal walls include a massive stone socle faced with ashlar orthostates. Manifestly the stability of these large upright slabs necessitated true bedding. This was provided by setting them on recumbent ashlar slabs which projected to form a plinth course at ground level. In some few instances (cf., e.g. Kition Exc V.1 p. 206, fig. 2) the plinth course was set directly on the rock but
241, 245 generally the plinth was set on foundations of heavy rubble ca 1 m or more in depth (cf. Kition Exc V.1 figs. 3, 21, 38, 49, 53 etc. etc.).

KITION

At Enkomi a somewhat similar ordonnance of ashlar wall construction consisting
238 of a plinth course surmounted by a massive block on which are set two orthostate facing slabs or alternatively orthostates set directly in the plinth. The plinth course was bedded in some instances directly on rock but on other occasions on substantial rubble foundations. Furthermore at Enkomi an additional factor is present. There has been continuous habitation at the site for two centuries or more prior to the monumental urban building of the 13th century BC. In this way some of the ashlar walls are founded on the remains of older rubble walls. A good synopsis of these various arrangements is given by Hult (v. Ashlar p. 5).

ENKOMI

The walling (much of it ashlar) of the Palace at Vouni (ca 500 BC-450 BC) supplies the only extensive illustration of foundation practice in Archaic-Classical times. However it may be questioned to what degree it is typical. The palace being built on virgin ground at the summit of a rocky height, bed rock is everywhere at or near surface level — and in general walls were founded on the rock. So far as the ashlar walls are concerned, little evidence can be seen of any changing construction
258, 259 at the base — e.g. a plinth course. If the numerous elevations ("façades") are to be

VOUNI

bed rock trimmed

trusted, sometimes the sloping rock was cut into level steps to take horizontally coursed wall blocks (cf. e.g. SCE III Plan XX2) but more often the blocks were trimmed to accomodate them to irregular rock surface (cf. e.g. SCE III Plans XXI, XXII etc.). This does not necessarily mean, as might be thought, that a considerable amount of dressed stone was set below floor level. It seems that often the irregular rock surface in the interior of rooms was quarried away to provide a level floor (with or without subsequent surfacing) and thus the wall footings rested on an unpstand of bed rock rising above the wall level (cf. SCE III pp. 147–149, figs. 61–64 etc.).

upstand

Graeco-Roman foundations

It is not very circumstantial to talk in general terms about foundations in Graeco-Roman times since so little has been recorded of this period. However perhaps it is possible to recognise the influence of classical masonry practices in the more monumental construction of the era. It is doubtful that before Graeco-Roman times there was much accurately dressed squared masonry used below ground level as foundations. This is probably the distinctive development of Graeco-Roman practice. The buildings of the Sanctuary of Apollo Hylates which are of varying degrees of monumentality have been closely studied. Thus the report of their foundations gives something of an overall synopsis of practice in Graeco-Roman Cyprus. It is stated that in general foundations were bedded on solid rock and the rock was cut to take the ashlar blocks, although on occasions the blocks could be trimmed or the level of rock made up with rubble packing (Kourion Sanctuary p. 4).

squared blocks

KOURION SANCTUARY

A good illustration of keying squared masonry foundations into bed rock is provided by the chanelling along the rock cliff margin at New Paphos to take the foundations of the City Wall. This is work of the end of the 4th century BC (BCH 1985 pp. 945–947). On the other hand squared masonry in foundations has been noted for the Temple of Zeus at Salamis. The temple is built on a podium ca 2 m high set on a three stepped crepis. The cella walls are carried on foundations extended down through the depth of the podium with the intervening spaces rubble filled. These foundations although buried in fill are specifically stated to be of the same character as the visible upstanding masonry (RDAC 1975 p. 125).

SALAMIS *podium*

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G.R.H. Wright, Foundations in ABSP pp. 380–391.

(ii) WALLS

A. Function: *1) Barrier Walls, 2) Terrace Walls, 3) Walls of Buildings.*

B. Structure: *1) Stone — a) rubble masonry, b) Ashlar masonry, c) mixed stone masonry, 2) Concrete, 3) Earth (Mud Brick), 4) Wood.*

C. Aspect: *1) Horizontal Articulation, 2) Vertical Articulation.*
D. Finishing: *plastering and painting.*
E. Chronology.

The Swedish Cyprus Expedition was meticulous in describing the nature of the walls excavated and this practice has been resumed by recent expeditions (particularly those concerned with the Neolithic-Chalcolithic periods). There is thus a considerable amount of information available on types of walling. Types of walling in Cyprus are (relatively speaking) somewhat restricted functionally but show a great variety in their structure and composition. In view of this latter fact, they can serve on occasions as valid chronological indicators.

A. Function

In Ancient Cyprus as elsewhere there are three different functional types of walling — viz. barrier or enclosure walls (cf. military engineering), terrace or retaining walls (cf. civil engineering) and walls of buildings (cf. building construction).

1. Barrier Walls

little evident

These are not highly developed in Cyprus and this constitutes one of those salient differences which exist between Ancient Cypriote building and that of regions closely adjacent (e.g. Syria — Palestine). Nonetheless recent investigation has revealed a number of such walls and the combined evidence appears to indicate an episodic succession clustering at the Pre-pottery Neolithic, Late Cypriote and Cypro-Archaic periods.

round house settlement

KHIROKITIA

It is now clear that in earliest times the round house settlements were in general provided with a barrier or enclosure wall, more likely as a delimitation of the "sacred" area where the peace of man/god prevailed (should prevail) rather than as a military defence. This factor has been clarified to a degree because of the investigation necessary to resolve the puzzling circumstances at Khirokitia. Here a substantial line of masonry was revealed and the excavations developed about it demonstrating that it was flanked by houses on either side. Accordingly Dikaios concluded it was an arterial highway through the site (Khirokitia pp. 186–195). However subsequent researches by Le Brun (Khirokitia FR pp. 1–21) confirmed its obvious explanation as a barrier wall, since it effectively separates the knoll, otherwise enclosed by a bow in the Maroni River, from the open country to the West. This

was made evident strategraphically since the housing outside the wall was shown to be later than that inside — i.e. in time practical convenience overrode religious concept. This original barrier wall at Khirokitia site was built of substantial river boulders (presumably with a mud brick superstructure) to a general breadth of ca 2.5 m and was preserved in places to a height of 2.6 m or more (Khirokitia pp. 186–195, fig. 100).

TENTA

At the nearby and contemporary site of Kalavassos *Tenta* the original settlement on high ground was apparently surrounded by a somewhat slighter wall of the same general nature (Structure 1). It was built of rubble (again presumably with a mud brick superstructure) its breadth being ca 1 m and it was preserved to a height of over 1 m. Again in time the settlement overran this boundary (Tenta p. 53).

chalcolithic

Such evidence as there is suggests the eventual decline of this concept and certainly from recent excavation in the Paphos area it appears that during Chalcolithic times settlement in a particular locality was dispersed widely (and wandered about) without the need of any symbolic girdle and (with less supporting evidence) it

EC-MC settlements

appears that this remained the case in the EC-MC (agricultural village?) settlements.

MC-LC fortresses

Then about the middle of the second millenium, barrier and enclosure walls of a new style appeared — constituting routine examples of military engineering. According to (by no means generally) accepted chronology the first such walls are associated with fortresses/fortified places or stations rather than with towns. How-

urban fortifications

ever when large towns suddenly appeared by the Cypriote seabord (e.g. Enkomi, Kition) they were protected by walls of the same type. Although some of the walling within this continuum is varied and nondescript (rubble), as a whole it is characterised by a new and unmistakeable category — Cyclopean masonry. This term may be

cyclopean masonry

used in Cyprus in a broad generic sense to mean no more than heavy walling the 75
socle of which at least was built up in part out of massive roughly trimmed boulders up to say 2–3 m long and standing up to 1 m high.

Based on their excavations of what they termed fortresses; the SCE singled out for notice the appearance of the Cyclopean masonry at the beginning of the LC period

NITOVIKLA

considering it to characterise the construction at Nitovikla, Nikolidhes etc. (cf. Problems pp. 139 ff.). Since then a number of other fortresses, observation posts, refugee strongholds, etc. have been noticed particularly on the crests of the Kyrenia Range — e.g. Krini *Merra* near the Kyrenia Pass and other sites to the East near Kanakarea church (Lythrangomi). None of these have been properly published but useful notice of them is to be found in Fortin (e.g. pp. 118 ff., 147 ff.). In some instances there is mention of very heavy roughly trimmed blocks constituting Cyclopean style masonry. Again these sites are dated approximately at the beginning of

the LC era. There is thus no doubt as to the salient introduction of this type of masonry, there is however some doubt as to the date of its appearance.

The fortress/fortified station at Nitovikla (near the village of Korovia overlooking the South coast of the Karpass) has been fully published by the SCE (I pp. 371–415).
228 With respect to the North Wall of the fortress-keep it mentions "... rows of huge Cyclopean blocks forming the main exterior façade" (p. 375). The date advanced is 16th century BC (pp. 394, 407); however for several reasons, not least the incorporation of sporadic elements of marginally draughted ashlar type masonry (e.g. in this north wall itself), it is now seriously questioned whether this date should not be reckoned considerably later.

In any event it is the 13th century BC which witnesses the full deployment of Cyclopean masonry in urban fortification (at Enkomi and Kition) and sites associated with this development (e.g. Lara and Maa). The latter sites have been in-
47 terpreted as beach heads for (Aegaean/Achaean) invaders and both are protected with land walls of Cyclopean masonry. At Lara there are "... huge unwieldy blocks LARA of local calcareous sandstone with a wide space in between them filled with smaller stones" (RDAC 1978 p. 65, pl. VII 1 & 2). At Maa the land wall "... is 3.50 m thick MAA and consists of 2 parallel rows of large blocks (1.00 m–2.50 m long × 0.60 m broad × 1.30 m–2.00 m high as reported in Enkomi II pp. 909–911). The core was filled with rubble. The superstructure must have been of mud brick. This type of wall is known as Cyclopean ... and is also a feature of Enkomi, Kition and Sinda" (Paphos p. 10). The proposed date is ca 1230 BC.

Certainly the type of these Cyclopean walls is that at Enkomi, well investigated ENKOMI
75 and reported by Dikaios. It is described as being built of large blocks (ca 2.00 m–2.30 m long) set along either or both faces or comprising the entire breadth — the interstices being filled with smaller stones and the (partly surviving) superstructure built of mud brick (Enkomi II pp. 512–513, 517). The similar construction of the
76, 77 city walls at Kition is now reported in detail (Kition Exc. V.1 pp. 86–87) while there KITION
78 is notice of the walls at Sinda (OA VI 1965 p. 104, fig. 4). All these walls are of roughly the same date, 13th century BC, and for long there has been discussion as to their ultimate origins (cf. Problems pp. 139 ff.; Catling Cypriote Bronze Work p. 39, etc.). Whatever its origin this distinctive type of masonry was of limited time span in Cyprus as elsewhere. Its usage did not survive into the first millenium — and the classical Greeks thought it not human in scale. They ascribed it to the legendary Cyclops and the name has stuck.

When enclosure walls are next manifest, set about the fortified capitals of the old Cypriote Kingdoms in the mid first millenium BC, the walling includes a characteristic construction of a different nature. Again it is anything but banal being *opus*

mixtum, a sophisticated combination of earth and stone. The recent German Excavations at Kouklia have exposed this construction in great detail. It consists of a rubble socle above which the superstructure rises with mud brick facing and an inner fill of mixed rubble and mud brick. The interior face then shows two additional (1.50 m) skins of mud brick on stone socle; while the outer face shows a stone revetment. The report interprets these accretion faces as successive periodic additions, but it is by no means certain that (in part at least) they do not form part of the original system (Paphos p. 165, fig. 152). Likewise at Salamis the southern ramparts of the archaic city have been cleared to reveal a corresponding mixture of earth and stone construction. The details are not yet made clear but there were apparently successive horizontal layers of rammed *terre pisée* and rubble. Also at some stage it appears that the structure was reinforced further by cutting in from the faces a succession of keyings to give a sort of cloisonné system (Salamine pp. 147 ff.). These barrier walls at Old Paphos and Salamis comprehend the archaic period and their complex construction reflects considerable knowledge of and concern for military engineering.

ashlar faced barrier walls

The appearance in Cyprus of the fine ashlar faced city wall which is one of the badges of the classical Greek city remained little demonstrated — as does the other emblem, the peristylar temple.

IDALION

The American excavations at Idalion report ashlar faced city walls in the Archaic-Classical period. The facing illustrated marginally constitutes ashlar in the Cypriote sense of regularly squared and coursed stone masonry but it is certainly not the hair line jointed solid masonry of true Greek ashlar. Even the external joints show thick mortar beds (v. Idalion OIC pp. 13 ff., pls. 8–11). Perhaps the nearest approach to

OLD PAPHOS

fine faced city walling is at Old Paphos in the region of the gate invested by the Persians at the time of the Ionian revolt. A century and a half later (ca 350 BC) the area was cleared up and the wall restored. Its facing showed two courses of heavily 263
bossed (smallish) ashlar blocks on a plinth, above which were (it is said) several courses of smaller blocks surmounted by mud brick. The surviving masonry is presentable but it is doubtful that it would have come up to Aristotle's expectations (Politeia VII.10,8). At New Paphos the newly founded city was strongly fortified by either or both the last native Cypriote king and the first Ptolemy. It appears likely that these walls were of dressed stone masonry since the bed rock was carefully cut and levelled to provide a euthynteria. However the blocks have been entirely removed so their exact character remains questionable (cf. Paphos pp. 231 ff.).

Ptolemaic & Roman Cyprus

Thereafter, with the secure establishment of the Ptolemaic regime, urban defences fell into desuetude and were not revived until late antiquity.

2. Terrace Walls

not prominent

Functionally speaking perhaps the most noticeable difference between walling in Cyprus and nearby regions is the virtual absence of massive retaining walls — very often an expression of earth engineering. The habit of settlement did not result in tell formation and thus gave no occasion for the massive enclosure walls, which whatever their original purpose eventually function as the vital retaining walls to provide the necessary stabilisation of the piled up débris of the ages. Equally, on the rural scene, the intensive terracing so characteristic of other areas, e.g. Lebanon, Palestine and South Arabia, is not very evident. This terracing has its origin well back in antiquity. There are agricultural terraces in Cyprus and observations have indicated that the practice was known in LB times (OA IV 1962 p. 165). However nothing like the widespread pattern of other regions is visible in Cyprus. N.B. It is possible that closer survey in Cyprus would reveal more terracing than is immediately apparent because of a difference in system. In place of the narrow horizontal terraces and high retaining walls of other regions, the Cypriote system may have been much broader sloping terraces with low curb walls. As yet however the phenomenon has been little investigated and the original date of any such terracing is little known.

urban
rural

agricultural terracing

Cypro-Archaic citadel walls

The one juncture where retaining walls may have been a feature of Cypriote building could have been associated with the capital cities of the old Cypriote Kingdoms in Cypro-Archaic and classical times. Here a characteristic pattern of urban development is recognisable with a temple crowned height and an upper palace quarter beneath which spread out a lower city. The formula is evident at e.g. Amathus, Idalion, Vouni, Soli and almost inevitably in these circumstances the "citadel wall" must function as a retaining wall. Something of this has been revealed in the recent excavation at Idalion (v. Idalion OIC pp. 13 ff.).

IDALION

harbours

KARPASIA
PAPHOS
moles & break waters

cramping

Another connection required the engineering of strong walls to take lateral thrust — here the live load of the waves. Although the subject has been as yet little studied, Cyprus during Ptolemaic and Roman times was well known for its harbours (*insula portuosa*, Ammianus Marcellinus XIV.8.14). At Ayios Philon (Karpasia), New Paphos, Amathus, the masonry of these harbour works (moles and breakwaters) has been recognised. And it is interesting to observe that metal cramping of heavy facing
265 blocks was noted at both Ayios Philon (RDAC 1980 pp. 154–156) and New Paphos (RDAC 1974 p. 174) as a measure to secure the blocks from displacement by wave action.

3. Walls of Buildings

The function of walls in a building is various: to support the roof, to keep out the weather, to provide privacy, etc. — all perhaps subsumed in the classification of load bearing and screen walls.

framed & load bearing construction

The evidence shows that the very earliest neolithic buildings were fashioned both from wooden frames and cladding, and out of load bearing mud and rubble. However solid load bearing masonry soon became the norm of wall construction. Only in the monumental building of the 13th century BC it is possible that raised above an ashlar socle the upstanding walls were of a sort of half timbered frame construction (cf. Kition Exc. V.1 pp. 165 ff.) — although this in no way meant the greater opening up of the wall by windows, etc. Also from the same period onwards it seems that Cyprus made considerable use of columnar supports in monumental building, but again so far as is known this did not tend to free the wall from its load bearing function.

157 224–23 246–25

screen walls

The one connection where screen walling may have played its part is likely to have been the Cypriote rural sanctuary which must have remained always a largely open air complex requiring certain areas to be screened off for reasons of privacy/sanctity — e.g. about sacred trees etc. (cf. Vounous Model, Ayia Irini, Meniko, etc., etc.).

AYIA IRINI

B. Structure

A consideration of the structure of walls can be set out most readily according to the materials employed, i.e. stone, brick, etc.; Cyprus being a region where brick and stone masonry were more or less equally evident.

1. Stone

no megalithic walling

It is interesting to note a complete absence of the megalithic style of building in Cyprus in spite of its common occurrence both in the neighbouring Syrian mainland and also in other (western) Mediterranean Islands — e.g. Malta. Otherwise walls were constructed in a variety of fashions from rubble and from dressed stone with an overall chronological distinction in that dressed stone was not used in Cypriote building until the second half of the second millenium BC.

a) Rubble Masonry

field stone

Walls were constructed wholly or in part out of unshaped (or roughly shaped) field

stones from the first settlement in Cyprus and this type of walling continued to be the one most commonly employed in the Island until the present generation when it has been superseded by concrete and concrete block construction.

The characteristics of basic rubble masonry walling in Cyprus are manifested with the first round house building at Khirokitia and Tenta. This might be characterised as random rubble with liberal mud mortar, generally set with more carefully constructed faces and a medial filling. Blocks are not trimmed but are chosen for flattish surfaces to give some bedding (Tenta p. 37; Khirokitia FR p. 23) — for sections of Khirokitia walling showing these basic features, i.e. boulder like stones with some flattened sides, no coursing but more carefully constructed faces v. Khirokitia figs. 102, 103. Such masonry is dependent for its strength on the mortar retaining its cementitious properties. If the mortar becomes dessicated and crumbles away there is likelihood of collapse. A more stable random rubble is secured by the practice of "chinking", i.e. packing out the interstices of the irregular jointing by small chips and flakes of stone — i.e. reducing the mortar component. And this practice was evident from the same early period (Khirokitia FR p. 23).

KHIRIKOTIA TENTA

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mortar bond

chinking

N.B. on the same analysis a superior rubble construction is obtained by employing not the more or less rounded boulders (river outwash, etc.) which are easy to find and to handle, but special flat tabular like, angular stones which sometimes come to hand by the exfoliation of surface laminae. This can give something approaching truly bedded and coursed rubble which needs a minimum of mortar and even can be set dry stone. Masonry of this type while known in Cyprus (cf. Structure 2, Tenta p. 34) was never widespread. Seemingly there was a regional distribution in the Southern part of the Island (from Amathus to Kourion), formations of chert sometimes providing a good source. One quite sophisticated variant of this masonry is to set the thin stones on edge inclined alternately in one direction and then in the opposite direction in successive courses (Herring Bone Masonry). Although this sytem is an ancient one known from Chalcolithic times onward in the Near East (cf. the Plano-Convex bricks of Mesopotamia), the only example recorded in Cyprus appears much later, e.g. at Vouni (SCE III p. 136 Wall Type 10, where interestingly enough it is said to be dry stone).

221, 222

angular

dry stone

southern region

221, 222

herring bone style

VOUNI

Beyond this, improvements in rubble masonry construction are for the most part the result of incorporating practices derived from dressed stone masonry, i.e. partly shaping the blocks to secure some uniformity and setting these units in a more regular fashion. This process may be partial or complete, resulting in all stages of improvement up to coursed squared rubble which differs from finely dressed stone masonry in degree only not in kind. Equally with this improved stone, the quality of mortar may be bettered. In place of mud mortar a more cementitious type of mortar

improved rubble

partly dressed

cementitious mortar

may be used, e.g. based on lime or gypsum, again a feature fairly closely linked with dressed stone masonry. In view of all this it is not surprising that more sophisticated rubble construction in Cyprus appears to begin in the latter part of the second millenium BC and witnesses some contact with dressed stone masonry. At the

NITOVIKLA

fortified site of Nitovikla on the East Coast of the Island, rubble walling incorporates individual instances of marginally draughted "ashlar" blocks in critical position (e.g. for coigning and jambs). The date of this construction appeared to be MC III — LC I (16th century) to the excavators but could be ca 1500 BC or some time later (SCE I pp. 375, 378, 407). 228, 22

N.B. It was exactly at this period that Cyclopean masonry appeared in Cyprus, as is described in the proceeding section. The ultimate connection between Cyclopean masonry and finely dressed masonry is an interesting question, as yet largely unexplored.

The best evidence for varied and improved rubble walling comes from the first millenium when a considerable amount of masonry was excavated and carefully

IDALION

described by (notably) the SCE. At Idalion, in particular during Archaic-Classical times, such masonry is well illustrated, ranging from random rubble to more or less coursed rubble to coursed squared rubble more or less verging on to finely dressed stone masonry (cf. SCE II pls. XIII ff.). At some sites (e.g. Vouni) rubble masonry of this type occurs in conjunction with ashlar masonry and some walls are of mixed ashlar and rubble (cf. Corolla Arch pp. 145–146). Notice of this development is given under Ashlar Walling.

For illustration of the survival of rubble building in rural contexts through the classical period and on down into Graeco-Roman times cf. the walls at the rural

MENIKO

sanctauries e.g. at Meniko, Archaic-Classical (Two Cypriote Sanctuaries p. 12) and 227

CHOLADES

at the Cholades Sanctuary at Soli, Ptolemaic Roman (SCE III pp. 416 ff.). The 121, 122 description of the masonry at the latter site is interesting. "All the walls within the area excavated are constructed of rubble most of which was taken from the river bed below the site. Some of the blocks have been roughly cut to fit into the wall . . . In the

re-used ashlar blocks

walls a great many ashlar blocks were found but they are all to be explained as coming from other buildings and reused here" (SCE III p. 416). Equally the mortar used is stated to be gypsum or of various cementitious compositions similar to that used for concrete (SCE III pp. 416, 418). Additionally at Soli there are all rubble

pier & panel construction

examples of *opus africanum* (or perhaps more descriptively *opus punicum*) a pier and panel walling where the regularly spaced piers are of solid rubble closely set with good cementitious mortar and the infill panelling is of lighter random rubble with inferior mortaring (SCE III p. 418).

b) Ashlar Masonry

East Mediterranean koine

The widespread occurrence of firmly dressed masonry in the Levant and Eastern Mediterranean regions during the Later Bronze Age has received careful consideration in recent years (cf. Hult Ashlar). Within the broad stylistic *koine* the masonry in Cyprus is as important as any other. Equally, so far as the history of ancient building in Cyprus is concerned, this finely dressed stone masonry is of great significance since it provides one striking indication of apparent continuity between the material remains of the urban civilisation of the Late Bronze Age and those of the Cypriote Kingdoms of the first Millenium BC.

isolated blocks NITOVIKLA

The history of this important feature may be outlined as follows. Isolated blocks of dressed masonry are found in rubble walls at one or two sites, notably the fortress of Nitovikla in the earlier part of the LC age, although the original dating of LC I, ca 1500 BC, is now seriously questioned (Hult Ashlar p. 15, fig. 14; SCE I pp. 375, 378, figs. 148, 149). In any event it was not until the latter part of the LC age (LC II–III) that entire walls were systematically constructed of dressed stone masonry. During the middle of the 13th century at two neighbouring sites in Southern Cyprus, Ayios Dhimitrios (Hult Ashlar p. 10; RDAC 1984 pp. 18 ff.) and Maroni Vournes (Hult Ashlar p. 14; RDAC 1986 pp. 42–43), some of the walls are built in this way. While towards the end of the 13th century at the two major sites of Enkomi (Hult Ashlar pp. 3 ff.) and Kition (Hult Ashlar pp. 10 ff.; Kition Exc. V.1 pp. 165 ff.) large buildings are built in considerable part from dressed stone.

systematic use AYIOS DHIMITRIOS MARONI ENKOMI KITION

231–233 230 237–239 241*ff*

brief floruit

Very surprisingly this developed cut stone industry appeared to survive for the shortest period imaginable — no more than one or two generations (ca half a century). In the aftermath it is difficult to trace the earliest stages of its renewal.

possible survival KITION

Much dressed stone masonry appears in the first Phoenecian Temple at Kition which is dated ca 850–800 BC (Kition pp. 96–100), however, according to the latest views, it would seem that almost all this masonry was reused Bronze Age blocks. It is not until the Archaic period and continuing into the Classical period that profuse remains of fine stone masonry are next evident — notably in the West of the Island at the Palace of Vouni (SCE III pp. 76–339) and at the Palace at Old Paphos (Paphos pp. 207–208, fig. 193). Such masonry also occurs in various monumental built tombs located throughout the Island, e.g. Salamis, Pyla, Larnaka, Idalion, Amathus etc. (v. Westholm Built Tombs).

VOUNI PAPHOS

254–259 261–262 197–204 251–253

Graeco-Roman masonry

Apparently this masonry style was superseded only in Graeco-Roman times by another manner of dressed stone construction. Most of the evidence for this latter type of masonry construction comes from the early Roman period but it seems the

construction like other features (e.g. architectural ornament) carries on the Hellenistic mode of Ptolemaic times. At all events there is an almost complete absence in Cyprus of characteristically Roman (in the narrower sense) building construction (i.e. concrete masonry).

ashlar

The type of dressing stone masonry found in Cyprus for something like a millenium, i.e. ca 1300 BC-300 BC, is now universally referred to as ashlar — cf. the excellent work of G. Hult, Bronze Age Ashlar Masonry in the Eastern Mediterranean, Göteborg 1983. However according to strict technical definition, this is inexact terminology. The essential quality of ashlar masonry is the exactitude of dressing on all faces to ensure uniform closeness of jointing throughout, which in turn gives ashlar masonry construction its superior distinction, viz. its solidity. For fine ashlar masonry the permissable thickness of jointing is 3 mm; and this obtains throughout the wall, in the core as at the face (cf. Sharma & Kaul, Building Construction pp. 122–123). In short a true ashlar wall is solid ashlar throughout and if there is an ashlar facing to a less solidly built wall then properly speaking this should be called bastard ashlar. Here it might be noticed that in contemporary building the use of ashlar is restricted almost entirely to bastard ashlar, i.e. ashlar revetment to concrete construction. Equally it should be observed that the most renowned body of masonry conforming to the strict definition of ashlar is the marble masonry of classical Greece.

uniform close jointing

ashlar facing

Cypriote school

The above remarks concerning ashlar form a useful background against which to set the formal characteristics of Cypriote "ashlar masonry". These are:

1. It is in general regularly coursed orthogonal masonry — i.e. bed joints are continuous and horizontal and rising joints are perpendicular to the beds.
2. It is facing in one form or another and not solid construction throughout the thickness of the wall.
3. It is finely jointed only at the face — the rising joints may splay apart to the interior (i.e. are not cut perpendicularly to the face) and the block is rough backed.
4. The bed joints do not incorporate *anathyrosis*.
5. As a general rule no (metal) cramps are used to fix block to block.
6. The material is limestone or the like, not marble.

distinct from Egyptian & classical Greek

The first characteristic serves to associate the aspect of the masonry with ashlar masonry and distinguish it from e.g. Pharaonic Egyptian masonry in appearance. The next two characteristics serve to distinguish the style from ashlar *strictu sensu*, and the latter three characteristics further separate it from the superb marble ashlar masonry of classical Greece. All the characteristics apply equally to both the Bronze Age ashlar and that from Archaic or later times — i.e. to both second millenium and first millenium masonry. However although the general tradition of the masonry

remains the same throughout, the structure of the walling shows differences between the two epochs.

233, 234 Although this is not always the case (cf. at Hala Sultan Tekke v. Praktika 2 p. 183–184, figs. 3–4), the best preserved Bronze Age masonry (e.g. at the Kathari 246*ff* Sanctuary, Kition, or at Enkomi) is orthostate socle construction, above which the wall was carried up in another material (mud brick). On the other hand Archaic walls, although sometimes provided with an orthostate course, are carried up (at 256–259 least to a substantial height) in regularly coursed stone masonry. Moreover the coursed masonry is strongly patterned horizontally and vertically to give an in- 258 terwoven aspect which indicates an interwoven construction of stone block and filling (v. SCE III pp. 111 ff., figs. XVI–XXIII; Corolla Arch p. 146. For the detailed patterns involved and their relation to such masonry in Phoenecia and elsewhere now see BASOR 267 1987 pp. 21 ff.).

LC orthostate socle

Cypro Archaic regular coursing

facing & fill

The second development in archaic walling concerns the nature of this internal filling composed of larger and smaller stone fragments with a cementitious mortar. The Swedish excavators noted the mortar as gypsum or lime based and they also noted concrete like preparations of the same composition used for surfacing floors etc. (SCE III pp. 124, 151; Corolla Arch pp. 145–146). Furthermore more recently investigations based on chemical analysis have shown that Cypriote marls when calcined produced a kind of Portland cement (Idalion OIC pp. 10 ff.). Thus it seems fair to say that since the filling in Archaic walls constitutes concrete (*structura*) and since the stone facing is set in interwoven patterns then these Archaic Cypriote walls equate with the highly praised *Graecorum structura* (cf. Vitruvius II 8) *sub specie* emplecton (cf. ABADY IV 1987 pp. 79–96).

cement mortar

Vitruvius Greek concrete

Less has been accurately reported concerning dressed stone walling in Graeco-Roman times and with so much of this type of construction (e.g. at Soli and Salamis) presently inaccessible it is impossible to give a satisfactory survey here. However from available observations it is possible to suggest two general characteristics:

Graeco-Roman masonry

1. No examples of high quality solid ashlar marble masonry walling in the classical Greek manner have been revealed.
2. The ashlar faced, cemented rubble filled walling of archaic times is less evident. In its place appears a more uniform ashlar limestone construction. This is accurately cut and the jointing close at the wall face. It is however not hair line jointed dry stone masonry, but set with a cement mortar and without cramping. There is little evidence of the patterned bonding (pseudo-isodomic, intertwined) aspect. In massive walls the rising joints are not cut true throughout but open somewhat to the interior. The salient difference from the typical masonry of preceeding ages is that in place of the cemented rubble (concrete) fill, the interior of more massive

walls is built up with substantial masonry blocks dressed to size but not as finely dressed as the facing blocks. Good examples of this construction can be seen at
KOURION Kourion town and Sanctuary (v. Kourion Sanctuary *pass*; Arch in C pp. 269 ff. at pp. 274–275). It is to be considered whether such masonry comes within the terms of Vitruvius II 8. 267, 268

c) Mixed Stone Masonry

In many ways masonry of mixed character is very typical of Cyprus. There are a wide variety of examples. In the first place the vast majority of walling whatever the
stone & mud brick nature of its socle, plinth or substructure was carried up in mud brick. This practice was fully evident from the beginning round house building at Khirokitia (v. Khirokitia figs. 102, 103). While if the reconstructions are sound a monumental use of mud brick and stone, this time including timber framing, was evolved in LC building — the half timbered superstructure on ashlar faced stone socle seen at the Kathari
KITION Sanctuary Temples (v. Kition Exc. V.1 pp. 165 ff.). Beyond this there is the true *opus mixtum* where rubble and mud brick are mixed together in the same structural register which rather surprisingly has been demonstrated in Iron Age city walls at
PAPHOS Paphos (Paphos p. 165) and
SALAMIS Salamis (Salamine pp. 147 ff.). Something of this readiness was occasionally apparent in round house building. 246*ff*, 83, 272–274

A more localised question is the conjoint use of dressed stone and rubble in
ashlar & rubble walling. There are two applications which may be termed respectively extrinsic and intrinsic, i.e. a mixing of walls of different materials within the same building and a mixing of different materials within the same wall.

The introduction of ashlar masonry to Cyprus during LC times was according to all available evidence a piecemeal and gradual one. In the earlier part of the epoch isolated ashlar elements were incorporated into rubble walls at positions susceptible to collapse, e.g. coigns and jambs (cf. Nitovikla SCE 1 pp. 375, 378). Later (13th century BC) when entire walls were built of ashlar, e.g. at Ayios Dhimitrios (RDAC 1984 pp. 18 ff.) and Maroni (RDAC 1986 pp. 42–43) it was in general only major façade walls (either external or internal onto a court) which received this treatment — and this continued to be more or less the case even when ashlar walling was on a more extended scale at e.g. Kition (Kition Exc. V.1 pp. 167 ff.) and Enkomi. This display factor in turn could involve only one face of the wall being constructed in ashlar (orthostates) and the other in a less pretentious manner e.g. rubble (cf. Kition Exc. V.1 pp. 212, 227, 228, 234, etc.). 237, 241

This overall manner of employing ashlar walling in conjunction with rubble walling remained entirely characteristic of monumental masonry in the archaic

period e.g. notably at Vouni (cf. SCE III pp. 112 ff., IV.2 pp. 23–24). Indeed it is one of the strongest indicia of the unbroken continuity in the masonry tradition from second millenium (LC) into the first (CA - CC) in spite of the difficulty in identifying actual examples from the "Dark Ages" (CG). N.B. Because of the extensive and closely reported remains, it is of interest to make a passing comment on the distribution of the various types of walling (ashlar and rubble) at Vouni. This is not along very obvious lines — either functional or chronological. The (residential) core of the first palace was largely of rubble, but some ashlar walling is included. The best developed ashlar construction is in the slightly later magazine wing, so there is no distinction based on "nobility" of function. It seems that all types of walling were as readily practised at all periods and were adapted according to *ad hoc* considerations of economy or availability of material — i.e. the reason for the later prominence of ashlar perhaps being that the initial work was hurried on before there was time to establish the necessary supply of quarried stone.

VOUNI

Equally it is perhaps some indication of the advent of a new masonry tradition that in Graeco-Roman times this pragmatic mixing of ashlar and rubble walling is less pronounced. It certainly does not disappear — a good instance of the continuance of the old feeling can be seen in the mixing of both types of masonry at the Kourion Sanctuary (v. Kourion Sanctuary pp. 4–5 *et pass*). However it may be that in Graeco-Roman times the different constructions tend to be more segregated into respective areas rather than to interpenetrate as formerly.

However, in contrast to this overall tendency, Cypriote building in Graeco-Roman times evidences two quite sophisticated forms of mixed dressed and rubble stone masonry.

Graeco-Roman

266 At Ayios Philon, the ancient sea port of Karpasia on the North Eastern shore of the Island, and at Ayia Irini near Cape Kormakiti at the North Western extremity of the Island, examples survive of a widespread type of construction (Arch in C pp. 68–69). Here the rubble is compartmentalised in one way or another. The detailing is varied but ideally it is an expression in stone of the basic system of framed construction. Although the idea is such a basic one, it seems possible to isolate a particular historical tradition comprehending the Cypriote instances (N.B. for a recent analysis of the varied detailing and the possible relationship and independence of different forms now see BASOR 267 1987 pp. 21 ff. at pp. 27–31, 35, 37, 39).

AYIOS PHILON
AYIA IRINI

framed construction

The tradition seems to be first attested in the Early Iron Age building of Syria-Palestine (end of 2nd millenium BC) and continues on through Israelite times (ABSP pp. 407–408; Qedem 11 p. 63, fig. 70; Eretz Israel 15 1981 pp. 70–77). It is generally assumed that the true home is Phoenecian building since the most striking survivals are seen in the building remains of the Phoenecian colonies in Africa —

Syro-Phoenecian background

hence the mode is sometimes known as *Opus Africanum* (Eretz Israel 15 1981 pp. 70 ff., N.B. p. 72). However it is by no means restricted to a Phoenician context. It formed part of the Alexandrian building heritage and good examples can be seen in Cyrenaica, e.g. at Tolmeita (v. Ptolemais pp. 216–217). Something like it was also noted by Delbrueck in the Hellenistic building of southern Italy (v. Hellenistische Bauten in Latium II pp. 88, 89). This is certainly the general school to which the Cypriote instances are related — i.e. they are examples of an old Syrian mode of building and this gives rise to an interesting observation. There is no *à priori* reason why this mode could not have been introduced into Cyprus a thousand years earlier but there is no evidence of it at that time. (Of course there are very little building remains of any sort from this period!) In any event it is symptomatic that an international mode of building of long standing was introduced into the Island only in Graeco-Roman times when the old particularism was breached.

The better preserved remains are at Ayios Philon (v. RDAC 1980 pp. 161–162). According to the excavator the detailing of the system here took the form of a 266
thorough going coffer-construction with long dressed stone blocks arranged as angle piers and face piers at intervals of 80 cm run, but also such blocks were set horizontally as a foundation course and at intervals as successive string courses. This elaborate form is known elsewhere. It may be reckoned a development of the *a telaio* mode, i.e. piers of ashlar blocks set on end (BASOR 267 1987 pp. 35, 37–38); for the fully coffered style cf. the late antique "villes mortes" of North Syria. At Ayia Irini (Studi Cyprioti I Rome 1971 pp. 63 ff.) the remains are more vestigal and the presence of numerous blocked doorways has to be taken into account (cf. pp. 80–81, figs. 22–23).

KOURION SANCTUARY

A different form of mixed rubble and dressed stone masonry occurs in certain walls at the Sanctuary of Apollo Hylates by Kourion. And this demonstrates a pleasing inventiveness combining the use of a traditional material with new monumental elements. The façade of the Trajanic hostel building (South Building, v. Kourion Sanctuary pp. 47 ff.) comports a handsome aspect of large ashlar framed doors and 269
windows with ornamental mouldings. Similar feature also occurs on the court façades of the South East Building (v. pp. 26 ff.). In both instances the walling 270
between the ashlar framing is from flat angular rubble fragments which can be prized away from the local thin bedded strata. This constitutes a sort of coursed (naturally squared) rubble. Although to all intents and purposes undressed, these fragments are so regular that the excavators were able to rebuild exactly the fallen walls repositioning each stone correctly (p. 32). This walling was heavily plastered and thus was a very functional and quite "modern" construction (cf. figs. 23, 43–44).

2. Concrete

Roman concrete

Formerly it was taken for granted that Roman concrete construction was foreign to the Hellenised eastern provinces which maintained their dressed stone masonry tradition (cf. Ptolemais p. 216). More recent discoveries and detailed researches have shown this view to be simplistic. Extensive use of *opus reticulatum* concrete walling has been revealed in the palace buildings at Herodian Jericho in Palestine (v. E. Netzer IEJ 25 1975 pp. 89–100). On the other hand in the neighbouring provinces of Asia Minor there are many variant types of walling based on the use of a cementitious mortar of some sort to produce mortared rubble which more or less stands as concrete. However the homogenous solidity of the mass was doubted and facing of whatever description always served to stabilise possible thrust from the core (cf. M. Waelkens in RAGW pp. 94 ff., N.B. p. 101). In view of such developments what then was the position of Cyprus within this context?

occurs in Eastern provinces

JERICHO

CYPRUS

opus incertum

CILICIA

The situation regarding use of Roman concrete in Cyprus appears to be straight forward. The only known mention of such walling is at Kourion city. Here Stillwell (the most reliable authority imaginable) reported the occurrence of *opus incertum* in minor work at the theatre (cf. Kourion Theatre pp. 44, 54). The period would be early Roman (Augustan or the like) and it is interesting to note that it is *opus incertum* which is also specified for concrete type construction in neighbouring Cilicia at this period (v. RAGW pp. 99, 101). However the fact is that Stillwell's reports refer to the most restricted passages in engineering type work (retaining wall etc.). And whatever their credibility they are not to be seen today (1989) having disappeared in the mise-en valeur operations necessary to convert the remains for modern use as a theatre (current production, Taming of the Shrew).

Greek concrete

Thus according to all accounts it is not Roman concrete but Greek concrete (*Graecorum Structura*) which is to be looked for as an issue in Cypriote building. That walling as at Vouni where the patterned ashlar facing is arranged to compartmentalise the core filling into coffers or the like was more or less the type Vitruvius was concerned to praise (II 8) could hardly be overlooked. And Gjerstad in particular adverted to the question on several occasions (cf. Cor Arch pp. 154 ff.). It is however impossible to be definitive in writing about this question because of the unsystematic nature of Vitruvius' remarks (cf. ABADY IV 1987 pp. 79 ff.). Recent physical analysis of the cementitious mortar employed in Cyprus (e.g. Idalion OIC pp. 10 ff.) can only emphasize the definition as concrete of the core filling of this walling.

Nonetheless whatever the true nature of this construction (it is the "*Dubbash*" of modern village construction in the Middle East) and whatever its relation to the Greek concrete of Vitruvius, it is important to realise the fundamental differences

between this type and Roman concrete construction. The Vouni construction and that described by Vitruvius both proceed from the elemental unit of a (heavy) masonry wall and it is the assemblage of these walls which constitute the building plan. In Roman concrete poured between shuttering the elemental planning unit is the enclosed space and the concrete is simply the tegument thrown round this primary spatial unit. This fundamental difference in outlook is of the greatest significance in design and makes an epochal historical charge. On this analysis the question of *Graecorum structura* is a backward looking question, it is of interest for its origins rather than its future development — and that is precisely how Vitruvius presented it for consideration.

3. Earth (Mud Brick)

absence of burnt brick & terre pisée

There is no burnt brick walling as yet reported in Ancient Cypriote building notwithstanding considerable use of the material during Roman times in neighbouring provinces. Also no examples have been reported of true terre pisée walls compacted between forms. It is thus possible to give an overall historical outline of walls of earth structure in terms of puddled mud walls, hand modelled mud brick walls and form moulded mud brick walls.

puddled mud hand modelled mud brick

form moulded mud brick

This basic feature of construction offers direct testimony of its own to the peculiar circumstances of Cypriote building. According to present indications it would seem that for five thousand years or the like (i.e. for half or more of the total duration) earth walling in Cyprus was carried out in puddled mud or in hand modelled mud brick (or a mixture of the two). This is in notable contrast to the facts on the mainland adjacent where form moulded bricks were known from an early age (e.g. early Chalcolithic times). However in Cyprus the first evidence of substantial carefully constructed mud brick walls is from the urbanising period of the 13th century. It is only from this period onwards that it is possible to say anything in detail about mud brick walls, and even then very little of significance has been recorded.

bonding

MAA
SALAMIS

It is probably a fair generalisation to say that, whenever practical, bricks were set in simple stretcher bond. This has been noted in the LC III brickwork at Maa (Maa p. 94; pls. XXIV: 3, XVIII: 2, etc.). Well preserved examples from later times can be seen in the carefully excavated and recorded tombs at Salamis (cf. e.g.; Tomb 3, ca 400 BC, Salamis Nec. I pp. 75 ff., plan XV).

So far as more complex bonding is concerned the tenor of remarks is that some care was taken in this construction but little in the way of developed pattern is preserved (or recorded). One well preserved example of pattern bonding is a 13th century LC II wall at Maroni. This is an entirely rational bond and shows that the principles of

MARONI

bonding were understood from earliest times. The bricks were very large *bipedeles*
275 (66 cm × 50 cm × 16 cm = 4 : 3 : 1) and half bricks (33 cm × 50 cm × 16 cm = 2 : 3 : 1). The perfectly regular bond is in fact that of a two brick thickness wall (ca 132 cms = 4′) in header bond. However in familiar terms the system is that of a two brick thickness wall in English bond with half bricks as stretchers and the bipedeles equivalent to two headers (RDAC 1987 p. 84, fig. 2). N.B. A possible question of some interest arises in connection with very large mud bricks. The Maroni bipedeles are about the largest size mud bricks reasonably practical to handle. Yet bricks of larger size are known. In other regions, e.g. Syria-Palestine, these are generally found in public building, e.g. city walls (cf. at Jericho, Megiddo, etc., ABSP p. 355). There is, of course, in any event a general tradition throughout antiquity that bricks in public buildings are of larger format than those in domestic building, cf. Vitruvius II 8, 9–10 (the *pentadoron*, 5 palms, as opposed to the *tetradoron*, 4 palms). At LC III Maa (ca 1200 BC) some bricks ca 73 cms × 45 cms × 19 cms have been noted (Maa p. 94). These, in fact, are of similar size to bricks from Jericho (ABSP p. 355). However the size has led the excavators to speculate that they were formed *in situ* on the wall and thus constituted *pro tanto* examples of terre pisée construction which is otherwise unmentioned in Cyprus.

IDALION

In some ways a contrasting approach to bonding is evident at Idalion in Archaic period walls. Here although the actual bonding was not preserved, the intention could be divined from the brick sizes. Surprisingly bricks of three different formats were in evidence, the dimensions so arranged that they could be combined with each other in several ways within walls of multiple breadth thickness. The obvious approach here is the avoidance of the necessity for adhering to a regular system in order to obtain a good bond. With bricks of these three formats, in almost any circumstances the choice of one or other brick will give a proper bond (SCE III pp. 476–488).

timber reinforcing

There is some indirect evidence that timber reinforcing was used on occasion. A thorough going half timbered system has been proposed for the superstructure of the monumental walls of the temples in the Kition Sanctuary (13th–12th century BC). However this is entirely induced from cuttings in the upper beds of the orthostate socles (Kition Exc. V.1, pp. 172 ff.). On the other hand in the domestic construction at Bamboula by Kourion of the same period the presence of posts as vertical reinforcing in the mud brick can be recognised from post holes in the rubble foundations (Bamboula p. 55).

There is in fact very little information available as yet concerning mud brick walling in Ancient Cyprus.

4. Wood

The absence of accumulated habitation remains in Cyprus has led to various suggestions that much of the ancient building was in wood which decayed without residue. The latter part of this thesis is circumstantial enough. Unlike the situation in Egypt and elsewhere, virtually no remains of ancient wood survive in Cyprus — certainly no remains of wood walling.

auxilliary material

Obviously wood was used as an auxiliary material in various manners, at various times in building walls, e.g. the timber reinforcing and framing discussed in connection with mud brick walling. Equally there is no doubt that at the very beginnings of settlement (e.g. at Khirokitia, Sotira, Erimi, etc.) bough shelters, wattle and daub huts etc. were normal — and always remained so for light temporary booths (shepherds' cabins, etc.). However what is at issue here is something other, viz. solid walls of substantial wooden fabric.

principle material

TAMASSOS

The image of one type of such construction is well and truly provided by the Royal Tomb chambers at Tamassos (ca 600 BC) which are clearly skeuomorphic versions in stone of original "log cabins" (v. AA 1973 pp. 322 ff.; 1974 pp. 589 ff.). Here both roofing and walls are represented as out of entire log sections (or split/halved logs). The question, of course, is do they represent original Cypriote wooden construction? And on balance of probabilities the answer should be no. These tombs are shown to be closely modelled on contemporary rock cut tombs in neighbouring Anatolia (Lycia) which are well known for their virtuoso display of detailing based on carpentry construction (v. V. Karageorghis Tomb Architecture of Anatolia and Cyprus pp. 361–368). Thus, while there can be no doubt that the Tamassos Tombs represent wooden walling, the original wooden buildings are more likely to be found in Anatolia than in Cyprus.

imitation log cabin

199, 319

weather board

Probably the specific type of wooden walling which is implicitly in mind when suggestions are made of wooden architecture is weatherboarding, clapboard construction of some sort. There is nothing inherently improbable about such construction in ancient Cyprus but it must be repeated that no material remains of it have survived. The SCE members identified wooden walls at e.g. Idalion (SCE II pp. 467, 488) and Vouni, both in the Temple of Athena (SCE III p. 91, fig. 47, Plan VIII) and an outbuilding of the Palace (SCE III p. 150, fig. 119). However in all instances the identification was based on secondary evidence, i.e. impressions left by the fugitive wooden material in other more permanent substances. Thus it is something less than certain and there is, furthermore, very considerable doubt as to the exact form of the supposed wooden walls since the terminology of the report is very vague and uncertain. Finally it should be observed that, if the SCE identifications of

IDALION
VOUNI

wooden remains are to be taken on trust, they clearly demonstrate one thing — wooden walls were very unusual.

C. Aspect

It is not generally realised that a wall is not simply a utilitarian device to enclose space or support a roof, but is (or can be) itself a prime expression of the builders' art. This distinction is not something extraneous e.g. an added decorative element, but is an expression of the wall masonry in its totality. All this is well conveyed by a remark by Louis XIV, "The noblest wall in my Kingdom" he said of a then surviving Roman wall in the South of France. In so far as a certain monumentality of design is in issue, it is possible to discuss the matter in some detail via the articulation of the wall face — both horizontal and vertical.

1. Horizontal Articulation

To break up the run of a long wall by pilasters, piers, buttresses, salients etc. is a very
19 effective device where form echoes function. It invests the wall with strength of aspect, which is heightened by the interesting patterns of light and shade engendered. These considerations have been formalised into standard systems at various times and places so as to constitute perhaps the most striking and idiosyncratic characteristic of a building school — e.g. the "niched façade" of Mesopotamia religious building and of early Egyptian funerary building; also the "broken trace" of patterned salients and recesses in the city walls of Middle Bronze Age Syria and Palestine (cf. ABSP pp. 419–420). *niched façade*

Of this understanding there is virtually no trace in Cyprus. Neither the walls of buildings nor enclosure walls demonstrate any of these devices as a regular system and any possible occurrences are atypical and episodic — e.g. one limited stretch of
48 the LC IIc City Wall at Enkomi shows a succession of salients and recesses (Enkomi
32 BRC pp. 3–4, fig. 1) and the main façade of Building X at Ayios Dhimitrios has the central portion set back slightly after the manner of Cretan design (RDAC 1984 pp. 19–20, fig. 3). Also it may be wondered if on occasion something of these concerns came out in the pier and panel (*opus africanum* construction, examples of which have
268 been recognised at Ayios Philon and Ayia Irini in Hellenistic times (Arch in C pp. 68–69, RDAC 1980 pp. 161–162). However it is quite likely that superficial distinction was lost in the plastering. *not evident*

2. Vertical Articulation

Perhaps more basic is the articulation of a wall in the vertical sense. For a wall to stand firmly upright, it should be seen to have a (projecting) footing, a socle or plinth, a face and, where relevant, a crown. In this way it manifests itself as entire and complete. Some concern for these matters is apparent in Cyprus, most significantly in the finely dressed (ashlar) masonry walling of the Later Bronze Age. In particular the temple walls of the Kathari Sanctuary in Kition reveal a developed system where details are not random but subordinate to an overall rationale. Unfortunately the direct evidence is limited to the lowest parts of the walling.

LC ashlar
KITION

241*ff*

The projecting footing of the wall is expressed in marginally draughted blocks with a rugged boss, generally showing a projecting lug. All this emphasizes its function as a transitional element between the natural emplacement and the built up structure. In strict theory these footing blocks should be set as headers since their function is to act across the line of the wall. In fact they assume something of this aspect since they are shorter in run than the orthostates of the superior course.

plinth

Above this footing is the wall socle — the part of the wall which must be of the solidest construction to take the accumulated structural load and also to withstand the battery of external shocks, wear and tear, etc., operating at ground level. This was expressed very effectively by the orthostate course: blocks standing over 1 m high and with a length of anything up to 3 m. These blocks are, of course, facing slabs but the aspect is that of massive solid stone (except for the give-away at the angles) strong enough to withstand all forces. The faces are finely dressed with just sufficient evidence of marginal draughting to articulate the masonry into immediately recognisable massive units.

Above this socle the main wall face rose (according to the reconstruction) as plastered mud brick. This plain expanse would have formed an ideal foil to the differentiated feature below. Unfortunately there is absolutely no evidence for any crowning devices — cornices, crow-stepping, etc. (cf. Kit Exc. V.$_1$ pp. 167 ff., figs. 1 ff.).

orthostate

There can be no doubt that such a wall is very effectively articulated in the vertical sense and accordingly it is more to be wondered at that such monumental walling appears to have had the most limited chronological endurance — perhaps a century at the most, ca 1200 BC).

When remains of finely dressed stone walling are next in evidence at the middle of the first millenium BC, although the general tradition of stone masonry appears to be one and the same as in LC times, yet this well marked rational ordonance of projecting footing, orthostate socle and plain rising wall face is no longer a ruling

archaic-classical

256 system. On occasion walls are provided with orthostate bases but this is by no means a general rule. In place of this a standard aspectual feature of the masonry of this 258 period is its pattern bonding involving very often the use of string courses (pseudo-isodomic masonry) as can be well seen at Vouni (SCE III pp. 111 ff., figs. XVI-XXIII). This is without doubt a striking visual device to break up the expanse of the wall face (to give it texture). And altogether apart from its functional origins it has remained part of the heritage of classical masonry down to the present day. However caution is necessary in recognising any aspectual rationale in this Cypriote archaic masonry since it is quite possible that in the main it was plastered. Certainly it appears to be the type of masonry which in later days Vitruvius referred to as Emplecton (intertwined, plaited together) but whether this name originally derived from its aspect or its structure is not certain (ABADY IV 1987 pp. 79 ff.).

pattern bonding

VOUNI

emplecton

Finally it may be noted that during Graeco Roman times the taste came in for articulating wall faces by way of added decorative feature, i.e. mouldings. The 315 modillion cornice became a standard feature of this period, expressed in the main not 321 in entablures but over features on walls like niches, doors, windows, etc. (cf. the abundant remains as yet unpublished at Amathus lower city).

mouldings

Outside these special developments in monumental masonry Cypriote walling is little concerned with aspect. A distinction between socle and wall face expressed in material (e.g. stone and mud brick or in finish (e.g. rubble and dressed stone) is a common place in every day and age. Some other devices common elsewhere are absent in Cyprus — e.g. batter as a means of emphasizing massive construction.

D. Finishing

There can be little doubt that the great majority of walls built in Ancient Cyprus were finished by plastering the faces in some manner — but this does not mean that the prime intention here was to improve the aspect of the wall. For much walling the plaster constituted a very necessary protection against weathering and also for mud brick walling it provided an added structural stiffening (ABSP p. 360). However, as with most familiar aspects, its aspect came to be valued as a thing agreeable in itself. Exactly the same sort of considerations operate with paint in modern times. It is applied to e.g. wood and metal surfaces as a preservative and has come to be valued and disposed as decoration. Lack of understanding of this double rationale can lead to somewhat bizarre uses of paint in outlandish places — e.g. it can be applied entirely as a preservative without any regard for its decorative aspect (viz. colour); and even more endemically it is applied to surfaces which stand in no need of preservation (e.g. stone) on account of its familiarity as (supposed) decoration.

plastering

round house

In the original Cypriote round house building tradition mud plastering was an integral part of the walling whether of wattle and daub or of masonry construction. In the latter event the mud coating of the walls formed part of the puddled mud structural process and in so far as the walling was of hand modelled mud bricks, they were of rounded contours and needed to be set in and covered by much mud. However, over and above these structural considerations, the reports note that plastering is more emphatic on the internal wall faces. And on all counts round house dwellers valued the overall continuous contour (wall, floor and ceiling run together) afforded by plastering. As an extension of this concern there was a well developed idea of wall painting. This took two forms: body colouring and graphic design. At both Khirokitia (Khirokitia p. 201) and Tenta (Tenta p. 47) evidence was noted that the internal plastering had received an overall red coating. While at Tenta (Structure 11) the remains were discovered (and removed to the Cyprus Museum) of one of the oldest known (ca 7000 BC) paintings applied to the wall of a built structure. This took the form of certainly one (and probably two) human figures, blocked in in red paint on a creamy earth plaster (Tenta pp. 46 ff., fig. 39; Antiquity 55 1981 pp. 47–51). Subsequently in renewed excavations at Khirokitia evidence of painting in a similar manner was found but too poorly preserved for the subject to be identified (Khirokitia FR p. 26).

painting
KHIROKITIA
TENTA

EC-MC village

During the succeeding era of village style rectangular building there is evidence of mud plastering to mud brick walls as is indeed universal, e.g. at Kalopsidha (v. SPC p. 29). However there are also reports of lime wall plaster, e.g. at Kaminoudhia (Arch in C p. 119) while at Gjerstad's Alambra house it is possible that the lime may be burnt ("The inside of the walls was covered with a cement of lime and fine grained gravel . . ." — SPC p. 21). However in general the building remains from settlements of this epoch are very meagre and it is not surprising that nothing like painted wall plastering has been found.

ALAMBRA

LC urban building

On the other hand it is perhaps a matter for comment that so far little trace of mural decoration has been reported from the monumental urban building of LC times (13th–12th century BC). Considerable evidence survives of wall plastering from this period. And recently this has been discussed in some detail at Maa Excavations. Here the whitish plaster has been identified as powdered havara, i.e. crushed limestone. The possibility was mentioned that the plaster had been scored to similate false masonry painting, but the matter was uncertain. Apparently the plaster was applied equally to rubble socle and mud brick superstructure (Maa pp. 95 ff.).

MAA

As opposed to this, the situation is generally presumed to be different with finely dressed ashlar masonry. O. Callot in his architectural restoration of the Kition

KITION

Temples specifically restricts wall plaster to the supposed half timber superstructure (Kition Exc. V.1 p. 174) and in his reconstructed drawings (cf. figs. 8, 11, 14, etc.) he shows the ashlar masonry unplastered. However this position can not be regarded as categoric, and it seems that on occasion (cf. Wall 9 Ashlar Building at Enkomi) ashlar masonry was plastered (cf. Ashlar pp. 4, 80; Enkomi I p. 180). Whatever the situation regarding plastering at Kition there is little evidence as yet of painted decoration to the walls of these impressive monumental LC buildings — and certain no *in situ* evidence. Only in the tri-apsidal eastern end of Temple 4 it was noted that many fragments of plaster, including some with traces of red and purple colouring, were recovered from the débris (Kition Exc. V.1 p. 109). This is perhaps surprising considering the striking wall painting to be seen in neighbouring areas at this time.

painting

Coherent examples of wall painting in Cyprus are not recorded until more than five hundred years later — when they are found in Late Archaic times and thereafter occur throughout later antiquity, by which time burnt lime and gypsum wall plaster are a commonplace. Remains survive from both tombs and dwellings. The earliest Cypriote wall painting known is the most extensive and well preserved of all. It covers the walls and vaulted roof of built tomb 80 in the Necropolis of Salamis. The tomb is late Archaic (6th century BC) in date and the painting is emphatically an Egyptian painting. It is painted not on plaster grounds but directly on the stone and it represents the starry vault of heaven arched over Nilotic brakes of papyrus and lotus flowers (Salamis Nec. III pp. 123–127; Pl. I). This painting forms one of the most striking witnesses to the brief Saite domination of the Island during the middle years of the 6th century.

Archaic-Classical

SALAMIS
Egyptian style tomb painting

A generation or two later (ca 500 BC) there are remains of wall paintings from the land of the living. Gypsum wall plaster found on the Western Acropolis at Idalion is painted a red or brown body colour (BCH 105 1981 p. 996). While fallen fragments of painted gypsum plaster have been recovered from the Sanctuary of Aphrodite-Astarte at Tamassos. Numbers of these fragments came from door and window frames and show a 5 cm broad vertical band of paint bordered by fine lines all in red — a familiar mode of pot painting (BCH 103 1979 p. 707). Other fragments of moulded and painted lime plaster have been discovered from the succeeding (4th–3rd) centuries. These come from the Hellenistic palace at Soloi. They are said to be reminiscent of Alexandrian work, but no details are available (BCH 99 1975 p. 846). Also in the next centuries much (fallen) painted plaster is reported from the Cholades Sanctuary at Soloi (SCE III pp. 419–420; Soli pp. 24–25). Some *in situ* remains indicate that the decoration consisted of ruled lines forming large squares.

IDALION

TAMASSOS

SOLOI

More extensive examples of *in situ* painted wall plaster have been brought to light recently in renewed clearances of tombs at New Paphos from later Ptolemaic and

Graeco-Roman

NEW PAPHOS tombs

EarlyRoman times when the town was the capital of the Island (Arch in C p. 67; BCH 104 1980 p. 794, fig. 89). This painting is not in the figural styles of the Alexandrian tombs (cf. B. Browne Ptolemaic Paintings ... and the Alexandrian Style USA 1957; La Maison Privée pp. 44–52) but belongs to the widespread "structural styles" (which may be divided into the "Masonry Style" and the "Architectural Style") of which the first two Pompeian styles are exemplars. A painting of similar mode (allied to the Pompeian second style) has also been found on

palace

a plastered block from beneath the Roman floors of the Villa of Theseus (BCH 103 1979 p. 714 fig. 88). Further to this, extensive painted plaster has been reported on the lower courses of late Hellenistic walls preserved below the villa, but the style is not specified (Arch in C pp. 281–282).

stone veneering

In conclusion an alternative wall finishing to plaster must be mentioned — veneering. In Cyprus no traces remain of wood panelling (such as is spoken of in Solomon's Temple). However one striking example is preserved of stone veneering.

HALA SULTAN TEKKE *LC*

This is in the LC "bathroom" at Hala Sultan Tekke where the walls were revetted with fine slabs (ca 3–5 cms thick). These are of limestone not gypsum as might be expected on all analogies (v. Ashlar p. 80). At a later age there are dowel holes in

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Roman

Roman wall masonry in Cyprus which suggest marble revetting, but the likelihood is that such a practice is of 3rd century or later date and connected with the general use of marble elements in building.

E. Chronology

To determine the date of ancient remains in Cyprus by the nature of walling is not a very likely prospect; highly diagnostic pottery is of such prolific occurrence. Nonetheless already considerable chronological indicia are evident in wall construction.

neolithic – cholcolithic

Manifestly curvilinear walling indicates a mid third millenium date or earlier; and it is likely that a structure of hand modelled mud brick (and/or puddled mud) says the same thing. N.B. Little distinction can be seen within this period of ca 5000 years! Whether form moulded bricks were introduced concomitantly with rectilinear walling is not yet certain. Virtually nothing can be said of the date of rubble walling, except that patently regular construction, i.e. course (squared) rubble is likely to reflect the influence of dressed stone masonry.

LC III

Finally dressed stone masonry in isolated units indicates a Late Cypriote date, and as general wall construction it is ca 1250 BC and later. Such masonry is not close jointed throughout the thickness of the wall but is more or less a facing to a rubble core. The other notable characteristic is that very often the face visibly manifests the technics of its dressing — i.e. the preliminary marginal draughts remain expressed

distinct from the central panel which is left less finely dressed. Such masonry appears at Kition and elsewhere in a regular orthostate construction set on a projecting footing. Accepting the chronology of Kition Excavations V.1, then the highly distinct style of Bronze Age Ashlar masonry is closely dated in Cyprus to the period of 1250 BC–1200 BC and very little later.

Unfortunately for whatever reason, no chronological indication is afforded for the ensuing half millenium or so and the next period when a distinctive style of walling is manifest is in the middle of the first millenium BC. In late Archaic and Classical times, the same basic style of masonry appears in walling of a somewhat different construction. Here the facing blocks which do not necessarily manifest marginal draughting are set as pattern bonded coursed masonry, frequently involving the appearance of string courses. This devolves from arrangements to compartimentalise the core fill which employs a highly cementitious mortar so that the walling may be regarded as a form of concrete, cf. the *Graecorum structura* of Vitruvius II 8.

Archaic-Classical

In Graeco-Roman times as a norm this strongly marked pattern bonding disappeared while the concrete like core fill gave place to roughly cut stone. All these successive developments were in limestone and there are no recorded instances of true classical Greek ashlar in marble, set dry stone, cramped together and finely jointed throughout the thickness of the wall.

Graeco-Roman

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(iii) POINT SUPPORTS

Wide variety of capitals of different regional origins affording good illustration of foreign connections.

The Cypriote Stepped Capital — in use with first finely dressed stone masonry at end of 13th century BC at Kition, Enkomi, Paphos etc. Designed for (mainly wooden?) pillars of rectangular section.

The Proto-Aeolic/Timorah Capital — first attested in Cyprus ca 600 BC but closely follows type seen in Palestine 300 years earlier. Simple form an angular capital for use on pilasters and piers. A complex form with added upper register attested for stelai etc.

The Hathor Headed Capital — Egyptian form received in Cyprus and invested with significance for cult of Great Goddess. Massive bifacial capitals used on free standing columns ca 550 BC–450 BC and thus the earliest attested type of column capital used in Cyprus.

The Ionic Capital — Apparent occurrence in Cyprus from late Archaic times (for votive columns?) onwards and capitals always maintained something of a tall massive form with substantial echinus. N.B. Asiatic type base with earlier capitals.

The Animal Protome Capital — Monumental marble capital from Salamis apparently for votive column. In form of winged bull in Achaemenid tradition but clearly allied with early Hellenistic versions, e.g. in Delos.

The Doric Capital — No evidence of archaic capital and all subsisting capitals seem Ptolemaic or later. Noticeable presence in and around Kourion. A post-classical angular style prominent with parallels in Alexandria and Cyrenaica, etc.

The Corinthian Capital — noticeable in Paphos area. Limestone capitals of heterodox design very closely connected with capitals in Alexandria and Cyrenaica occur in period immediately before and after Roman rule. Orthodox Vitruvian design only apparent later with import of prefabricated marble elements.

The Nabataean Capital — numbers of these capitals show the form endemic in Cyprus ca 1st century AD. Minor differences in detailing from form at Petra, etc. Presence suggests the spread of stylistic fashion (cf. Pompeian wall decoration) established in Alexandria, not specific derivation from Nabataean lands.

During the course of its long building history a considerable diversity of points supports (pillars, piers, posts, columns) were employed in Cyprus building. Both in themselves and in their chronological succession, they are of much interest and require more detailed investigation than the outline survey given here. As in many other aspects of building, although the duration is long, the variety and the incident is restricted to the latter stages.

historical survey

In round house building as well as in the later village style building wooden posts were a common feature, their presence being recognised in the main from their emplacement on flat field stones (v. Sotira p. 149 for discussion of cupstones and postholes). Their incidence in general is that found in the neighbouring region of the Levant (cf. e.g. ABSP pp. 427 f.). The only thing of note here is the recent demonstration that a considerable amount of round house building was roofed in various manners with the aid of such post supports (cf. Tenta p. 44; Lemba pp. 36 ff.).

round house building

monumental building

However it is only with the monumental building of urban Cyprus in the 12th century BC that such supports begin to constitute a distinct "style". The principal expression of this style is of course the capital — and over the succeeding millenium a surprising variety of capitals have been found in Cyprus. This variety reflects as well as anything the position the Island occupies as a meeting ground of East and West for in addition to the original apparently native Cypriote form of capital, there are types

varied succession of styles

which derive from the Levant, from Egypt, from Iran, and, of course, from classical Greece.

Stated thus it would seem immediately that there is a much greater variety of capitals in Cyprus than there are buildings to go with them. And this is quite true since it is very difficult to demonstrate that half of these capital types were used structurally. All the present evidence is that they were ornamental features associated with votive columns, stelai, etc. However, on the other hand, it is precisely the period when such capitals are found as ornamental features that there is a lack of archaeological evidence of building in Cyprus, so the question of the structural use of such capital types remains open.

non structural columns

As a preliminary synopsis, the capital forms to be considered may be listed as follows:

The Cypriote Stepped Capital (of the Late Bronze Age)
The Aeolic (or the Timorah) Capital
The Hathor Headed Capital
The Animal Protome Capital
The Doric Capital
The Ionic Capital
The Corinthian Capital
The Nabataean Capital

The Cypriote Stepped Capital and its Order

Concomitant with the first evidence of finely dressed stone masonry in Cyprus (ca 1250–1200 BC) a series of moulded blocks were found which must have been designed for use in connection with supports or standards of some type or another. Attention was first drawn to this matter by V. Karageorghis assembling examples from Myrtou-*Pigadhes*, Enkomi and Kition (AAA IV 1971 pp. 101–107). Since that time further examples have been reported at Kouklia (RDAC 1974 p. 137, BCH 98 1974 p. 874) and variants at Hala Sultan Tekke (Praktika 2 pp. 185–190). The standard design evidenced consists of a bold square (or nearly square) block cut to show three receeding stepped fasciae and beneath them a cavetto moulding, the total height of the block being something like the breadth at the neck which is something like half the breadth of the upper bed. The variant blocks from Hala Sultan Tekke, although manifestly of the same general disposition, differed consistently in some details. These blocks were rectangular and cut with a heavy plinth succeeded by three (slight) receeding fasciae without any cavetto.

finely dressed blocks with simple mouldings

Enkomi
Kition
Old Paphos
Hala Sultan Tekke

37.1
278, 279
281

V. Karageorghis showed that the standard blocks were designed as capitals for

capitals

pillars of squarish section. While the Hala Sultan Tekke blocks can be identified as bases. Here the cavetto (typically a crowning moulding) is absent. Moreover the *bases* heavy plinth is finely dressed only for half its vertical register – i.e. the roughly dressed lower part was to be set into the ground and remain invisible below floor level. Finally two of the blocks have a rectangular socket cut in their upper bed which must have been intended to lodge an upstanding object — according to appearances, a shaft. It is therefore very reasonable to suppose that in the dressed stone building of *shafts* LC II–III (ca 1200 BC) shafts of squarish section were crowned with capitals and supported on bases of moulded stone. The question is "what sort of shaft"? And the answer is most likely to be "all sorts of shafts".

cult objects HALA SULTAN TEKKE MYRTOU *shafts rectangular*

As a preliminary observation it is possible to circumscribe the ambit of the moulded bases from Hala Sultan Tekke. These are distinctly smaller scale objects than the stepped capitals and are thus likely to have been bases for cult objects, xoana, standards, stelai, etc., perhaps in connection with an altar like that at the Myrtou Sanctuary (v. Pigadhes pp. 12–18). In this event the multiple stepped form would manifest the symbolism of the world mountain (i.e. be a token ziggurat).

Some very substantial shafts are preserved *in situ*. These are monolithic dressed stone pillars of rectangular section and are distinctly massive. They occur in public building both secular and sacred. The very massive stone pillars of the Sanctuary of 92
OLD PAPHOS Aphrodite at Old Paphos have long been known and the current work there of the German Expedition directed by F. Maier has shown conclusively that these are LC III in origin and belong to the first sanctuary (Paphos pp. 99–100).

AYIOS DHIMITRIOS

Equally the recent work of the American Expedition at Ayios Dhimitrios directed by A. South has revealed a central row of finely dressed pillars supporting the roof of a long public storage gallery (or pithos hall) in a central administrative building 277
(Building X). These pillars are 0.56 m × 0.34 m (one is preserved incomplete to a height of 1.56 m) and they stand on conformable rectangular bases 0.80 m × 0.43 m.

capitals

No trace of any capital block has been found at Ayios Dhimitrios, but three or four large stepped capitals (together with several fragments) have been brought to light
OLD PAPHOS at Kouklia (Paphos pp. 99–100; BCH 98 1974 p. 874, 103 1978 p. 701; AA 1986 p. 182, fig. 62). These capitals, are large (ca 1.00 m–1.30 m square at neck), large enough perhaps to belong to the structural pillars *in situ*, but the excavator at times has described them as votive capitals (e.g. RDAC 1979 pl. XVI3). It is possible that such capitals crowned the pillars of the Bronze Age Sanctuary but this has not been asserted in reports and the published reconstructed view of the Sanctuary (Paphos p. 97, figs. 81, 82) does not show any sort of capping to the pillars. They are left stark and bare which gives them a powerful, severe expression (something like the Granite Temple of Khefren at Gizeh) which is entirely fitting for their sacred role.

KITION *LC iii*

At the Kathari Sanctuary, Kition, on the other hand, the excavations have assembled considerable evidence of the pillared order of the Late Bronze Age Temples 1 and 2 (both internal and external). This shows that squarish pillars were
279, 280 set on heavy slab bases slightly under 1 m square (e.g. ca 1.00 × 0.90 m; 0.90 × 0.80 m), the blocks ca 30 cms deep standing only slightly above ground level. These bases were cut with a central socket (e.g. ca 28 × 16 cms, 31 × 18 cms and ca 13–13 cms deep. Such stone bases accord in dimension and workmanship with the stepped capitals mentioned initially which are ca 1.25–1.50 m at the upper bed and 65 cms–75 cms at the neck. These structural units require pillars of approximately square section, ca 70 cms × 70 cms and ca 5 m high. Whether such a pillar be imagined as monolithic or not, no stone fragments according with these dimensions were discovered (v. Kition Exc. V.1 *pass*). Moreover the socket in the base is much more appropriate to a wooden shaft and taking into consideration the wooden frame construction indicated for the superstructure of the walls, the pillars at Kathari, both
278, 279 internal and external, have been restored as composite wooden members built up out of four sections of timber cramped together. Since Cyprus was famous for its supplies of timber (including cedar) this idea is reasonable enough.

slab bases

socketed

stepped capitals

composite wooden shafts

Such is the order proposed for the monumental LC III temples complex at Kathari of ca 1200 BC. No additional components of the order (either stone or wood) have been discovered and accordingly the many reconstruction detail drawings show no further elaboration. From the general evidence of the period, the only additional elements which might be conjectured are possibly a cavetto cornice and horns as finials but there is no subsisting evidence for them.

Finally it should be noted that this is the Late Bronze Age order. However, the temple complex was rebuilt in an even more monumental form by the Phoenecian rulers in the 9th century BC. Although this epoch has not as yet been published in detail, it is indicated that the same type of stone capitals and bases were reused in the Phoenecian temples. At least there is no suggestion of any specific variation in style. (N.B. Interim publication indicates that the bases for the Phoenecian Temple at the same period were larger and without sockets, hence presumably for stone pillars, whether monolithic or built up — v. Kition p. 108.)

Phoenecian

presumptive stone pillars

As a corollary to this it is well at this juncture to make an obvious comment. All these supports either directly attested or inferred from capitals and bases were quadrangular in section. No one in Cyprus it seems during the Late Bronze Age was anxious to dress stone (or wood) into shafts or circular section, notwithstanding that such a thing was common enough in the contemporary world (e.g. in Egypt, Crete, Syria-Palestine, etc.). Moreover in the storage gallery at Ayios Dhimitrios there are
232 to be seen a number of tabular discs or small drums — but these it seems are stands

no columns

for pithoi (BCH 112 1988 p. 825, figs. 63, 64). The first column is not attested in Cyprus until a much later date (ca 6th century BC) and then it is presumed that different capitals were in use — cf. Idalion Acropolis Gate (SCE II p. 491, fig. 234). There is nonetheless some slight evidence for the survival of the stepped capital as an ornament form. In the Limmasol District Museum can be seen a small version of the stepped capital (ca 50 cms at abacus) which should be from some ornamental stele or 282
the like. No information is given as to the date but it is likely to be Graeco-Roman. In this vein, as a further aside, it may be observed that the lines of the Bronze Age stepped capital remained the basis for classical pilaster and anta capitals, i.e. for capitals to angular shafts.

The Proto Aeolic / Timorah Capital and its Order

In historical terms the style to succeed the Late Bronze Age Stepped capital must have been the Proto-Aeolic or Timorah (Palm) capital. The history of the succession is however almost entirely a matter of inference since examples of these capitals have occurred in Cyprus as individual finds and their structural context (and above all its earliest chronology) are to be derived mainly from their appearance in regions

restricted structural use

outside the Island. In fact as existing evidence goes, the category is not a very cogent one for ancient building in Cyprus since the majority of the Cypriote examples are marginal to the subject of structural supports.

two types

The situation is as follows. Some few capital blocks are recorded which conform closely to the type of Proto-Aeolic capital as known in Palestine while numerous other capitals occur of local type which incorporate this exact format as a base element but sprout an additional upper register or ornament. These two types have

simple

been referred to respectively as the Simple and the Complex form. While the simple 38
form is a structural member in Palestine and there is no reason to suppose it was not

complex

so used in Cyprus — the surviving evidence for this is not great. As to the complex form, all the surviving evidence shows that these capitals were not structural features but appeared as ornamental finials to votive stelai etc. However it is not intrinsically impossible that these capitals on occasions were used as structural members.

background

Initially it is necessary to define the Cypriote capital so as to place them within their broader ambit. The arboreal background to the voluted capitals in classical architecture has long been apparent and with it their ultimate association with that most powerful symbol, the Tree of Life (cf. W. Andrae, Die Ionische Säule Bauform oder Symbol, Berlin 1933). In this connection it was perceived that there existed a type of capital resembling the Ionic form but with volutes sprouting from diagonally rising bearers rather than from the horizontal as in the Ionic form. This was referred

Aeolic or Proto-Ionic capital for columns

to as the Aeolic Capital or Proto Ionic Capital. In fact its date was in general that of the earliest Ionic Capitals but not noticeably earlier (v. in general, P.P. Betancourt, The Aeolic Style in Architecture, Princeton 1977). However this type of capital with diagonal rising volutes was seen to extend (both in time and place) beyond the Aeolian region of Archaic and Early Classical times — e.g. there were capitals based on this design from Etruria (A. Ciasca, Il Capitello detto Eolico in Etruria, Florence 1952) and above all from Palestine, where it is now referred to as the Proto-Aeolic or Timorah = (date) palm capital. With this latter group the Cypriote capitals of Simple form are in close communion.

Proto-aeolic or Timorah capital

The Proto-Aeolic or Timorah capital has been exhaustively treated in a monograph centred on its occurrence in Israel (v. Y. Shiloh The Aeolic Capital and Israelite Ashlar Masonry Qedem 11 Jerusalem 1979) and where possible the categories and terminology of this study are retained here. The Proto-Aeolic capital is a member designed to cap a rectangular masonry pillar either free standing or engaged — i.e. it is a pillar or pilaster capital, not a column capital. It is cut from a single block of fairly standard dimensions ca 100 cms × 50 cms × 50 cms or in effect 2 cubits × 1 cubit × 1 cubit. Structurally the capital consists of two members, the ornamental body and a plain flat abacus — although on occasion this latter is lacking. The base of the capital is usually about the same breadth as the capital height (i.e. ca 50 cms or 1 cubit) and thus the breadth of the member capped was usually somewhere about 50 cms. Further distinctions within this quite standardised unit depend on (slight) variations in the carved ornament.

for pillars or pilasters

design

The ornament of the capital comprises essentially two major elements, lateral volutes and a central triangle (a stylised bract) but additional secondary items may appear, principally vestigial foliage above and below the volutes. The relative disposition of the two major elements of decoration affords the basis for a stylistic distinction in these capitals. There are clearly two main schemata in the design: the one where the volutes emerge from behind the complete central triangle and the other where the central triangle rises partially obscured from behind the complete volute stems which spring up from the base of the capital. It is perhaps also possible to continue this analysis and formulate a third type where the lines of the volute stems in some measure merge with the central triangle in such a fashion that one volute crosses over the other to form the triangle. Finally some capitals of the first type exist with additional detailing in the ornamental schema, e.g. the central triangle is bordered by 3 fasciae rather than one; and although the distinction is a secondary one, they seem to constitute a group in themselves.

types

The typology of this material has been considered most recently by Wesenberg (Kapitelle und Basen pp. 63–68) and Shiloh (pp. 17 ff. NB, p. 18, fig. 11 for

illustrations). The first form (Shiloh A) is by far the most common and from the well known site where it occurs has been termed (by Wesenberg) the Megiddo Type. It is also found at Samaria. The second type (Shiloh B) appears restricted to one site only and from its occurrence there has been termed (by Wesenberg) the Hazor Type. The third mentioned type (Shiloh C) was also found at Megiddo. Capitals of the fourth mentioned group (Shiloh E) came from several sites, principally Ramet Rahel, near Bethelem, and they may be called the Ramet Rahel type. (Shiloh's class B can be reconstructed by the addition of a lower block to make up a class A capital — v. Wesenberg fig. 170, ABSP pp. 432–433.)

Megiddo Type

Hazor Type

Rahmat Rahel Types

These Proto-Aeolic capitals have never been found in a coherent architectural complex and there is virtually no direct evidence to indicate their original emplacement. Suppositions on this score are derived almost entirely from the intrinsic evidence of the details of the cutting of the blocks themselves. The material aspects of this show two varieties, one of which can be further distinguished.

emplacement

1. Capital blocks dressed on both faces (very few).
2. Capital blocks dressed on one face with
(a) ends completely dressed from front to rear
(b) ends dressed only part way from front to rear.

The most probable interpretation of this evidence is that these capitals were set in monumental portals, the majority capping engaged pillars or pilasters in the jambs and the occasional bifacial capitals set on medial pillars in grander portals (Shiloh pp. 21–25).

in portals

So far as the date of the capitals is concerned, the majority are reckoned to be from the ninth and eighth centuries but the Ramet Rahel examples appear to have continued in use down to ca 600 BC (cf. Shiloh pp. 20–21, Table 3). As yet no chronological succession has been posited for the typological classification.

chronology

The Cypriote capitals can be set very squarely against the foregoing summary. A considerable number of examples have been published. Shiloh (p. 37, Table 4) lists about 30, but there are others and new examples come to hand continually. The majority of these capitals are of the complex type (v. Shiloh, figs. 51–53, pl. 17) which account perhaps for two-thirds to three-quarters of the total number recorded. It would be sensible enough to put down this Cypriote complex type as an independent development from the wide proliferation of iconographical motifs pertaining to the sacred tree. However the fact is that the lower part of the capital which forms a complete unit in itself is an exact reproduction of the Proto Aeolic capital, Ramet Rahel type; and therefore it is difficult to disassociate the two Cypriote groups.

occurence in Cyprus

Complex type

Nonetheless for a study of building, it is the Simple Type which is significant (v. Shiloh; figs. 53–56, pl. 17). Examples of this form are limited to about 8–10 or so; that

Simple type

is to say structural examples, for a number of smaller votive capitals of this form have been recorded from the siege ramp at Old Paphos (v. AA 1966, p. 674, fig. 4). The
283 best known capitals are those ornamenting the Royal Tombs at Tamassos (ca 600 TAMASSOS
BC v. Shiloh figs. 56, pl. 18) but there are remains of a pair of capitals reused in the
284.2 masonry of the dromos of Tomb 21 in the Cellarka cemetery at Salamis (v. Shiloh, SALAMIS
fig. 55, pl. 17). And there are also a pair of capitals found last century at Trapeza near TRAPEZA
284.1 Famagusta and now in the Louvre (v. Shiloh, fig. 54; P & C III fig. 51). The design of these capitals is predominantly that of Shiloh C (found at Megiddo). This accounts for one tomb at Tamassos and the Salamis and Trapeza capitals, hence perhaps it can be called the Cypriote design. The capitals in the larger Tamassos Royal Tomb
283 are of the Ramat Rahel type (v. Shiloh, fig. 56 1) as are virtually all the lower elements of the Complex Group capitals (v. Shiloh, figs. 51–53, pl. 17 1). Here also should be mentioned a capital recorded last century about which little is known (Kypros Pl CLXIII 9, after earlier drawings — and stated to be probably from the
284.3 Apollo-Reshef Sanctuary at Idalion). It is highly idiosyncratic. It is a sort of double (breadth) capital so that the breadth at base is little different from total breadth across the volutes. In this fashion the general proportions and aspect are those of a flattened late Hellenistic Ionic Capital and two triangles side by side are necessary to take up the medial field. The volutes have a distinct Ionic cast of expression and perhaps the capital may be regarded as a "sport", a late hybrid Ionic/Proto-Aeolic type. Also in some ways the setting of the volutes is reminiscent of the capitals from Mudeibi'a in Moab (Transjordan) recently published in greater detail (cf. ADAJ XXVI 1982 pp. 395–401).

The functional positioning of these capitals in Cyprus is not fully demonstrated. *emplacement*
The primary evidence comes from the Tamassos Royal Tombs, however although TAMASSOS
these capitals are *in situ*, it is qualified evidence on several counts. Firstly the type of monument is a special one and it is quite possible to argue that it can not be held to indicate the general practice in normal building construction. However for what it implies both the preserved tombs manifest the Proto-Aeolic capitals in the same
199, 283 position — on the reveals of the entrance doorway. The construction is as follows. The tombs are built of ashlar masonry in the form of self-supporting revetting to the face of excavated bed rock with some packing. The reveals in question are orthostates, here facing slabs to heavier masonry. The Proto-Aeolic capitals and the pilasters they crown appear carried in high relief on these facing slabs. That is to say the capitals are not separate blocks but are carved ornament on a masonry unit which itself is a revetting rather than a load bearing element. However these versions in relief of capitals and pilasters appear in exactly their proper position according to the accepted evidence in Palestine. There is also now some corroboration from

AMATHUS *model shrine*

Cyprus itself of the actuality of this positioning. A model shrine from Amathus of the same date as the Tamassos tombs has been published recently (v. AJA 75, 1971 pp. 427–428). This shows similar Proto-Aeolic pilaster capitals in a similar position in the entrance way which would indicate that the Tamassos tombs reflect general building practice of the age.

Also to be mentioned is an untoward peculiarity identically evident in both tombs. The representations of capitals are incomplete, the rear volute is sliced off. This had led to the postulate that the slabs are reused and have been cut down in breadth, but this is by no means necessary. If it is so it would at least double the quantum of evidence available which is asserted here.

SALAMIS TRAPEZA

No evidence whatever is available concerning the original positioning of the capitals found at Salamis and at Trapeza. To some degree it is significant that they have been found in pairs. On the other hand the capitals from Trapeza at least are said to have been worked on both faces, hence they capped free standing pillars. All that can be said from the total evidence available is that there is nothing against the idea that the Proto-Aeolic capital was used structurally in Cyprus for monumental portals in the same way as has been proposed for its use in Palestine.

in portals

chronology 6th century BC

As to the date of this use of Proto-Aeolic capitals in Cyprus, all that can be said is that it encompasses the sixth century BC. The Tamassos capitals were in use ca 600 BC and the Salamis capitals had gone out of use by ca 500 BC (Salamis Nec. II pp. 43–46).

general review

angular form

The sparse record of the Proto-Aeolic capital in Cyprus is, as so often, *sui generis*. The occurrence is later and it stands between the Middle Eastern and the Mediterranean World. The Proto-Aeolic capital in Cyprus is definitely of the Palestinian (Timorah) form and not allied with the Aeolic capital of the Greek World. It is an angular form and has nothing to do with columns. On the other hand, the date of the Aeolic Capital is sixth-fifth centuries and all the evidence suggests that the Cypriote capitals were more or less of this date. There is thus a strange correlation. Their form is that of the Palestinian capital, but their date is that of the Aeolic capital. Either earlier examples remain to be discovered in Cyprus or else the Timorah capital continued in use in Phoenecia until the latter date. This in fact is the argument advanced to account for the odd survival of the Timorah Capital at Ramat Rahel until ca 600 BC. And in this connection it is of interest to note that the Cypriote design resembles in details that of the Ramet Rahel capitals.

historical development

In any event, whatever the precise extent of their chronology, the Proto-Aeolic Capitals must have occupied a critical stage in the evolution of Cypriote monumental building. At their earliest date they should have overlapped with the continued use of the Bronze Age pillar capital (the Stepped Capital). And their individual

characteristic, the strangely stepped abacus, suggests this. While at their latest date they could have subsisted with column capitals — the Hathor Head Capital, the archaic Ionic Capital, etc. Thus they must have been in use when Cyprus monumental building changed from the old pillar style to the columnar style.

There are in fact two well known buildings which bring these questions into focus: the Great Phoenecian Temple of Astarte in the Kathari Sanctuary at Kition and the Pillared Hall in the Sanctuary at Golgoi (v. Phlamoudhi fig. 13). There may well have been a measure of association between these temples and conjointly they span those centuries ascribed to the Proto-Aeolic Capital (9th–6th). The preliminary plans (cf. Kition p. 139, fig. 19) show the Kathari temple (8th–7th centuries) with massive squarish pillars (built up of stone) standing on flat stone slab bases. How were these pillars capped? Equally the schematic plan of the Golgoi Sanctuary shows
115 three rows of supports; although no details are preserved evidencing their nature beyond the indication of square slab bases. Again, whatever the nature of these supports, how were they capped? Somewhere within this ambit the Proto-Aeolic Capital could have superseded the Bronze Age stepped capital or coexisted with it. If the Proto-Aeolic Capital were used in Cyprus for capping free standing pillars in the body of a building, then this could show Cyprus again in its intermediary role.

KITION
GOLGOI

These remarks on the Proto-Aeolic Capital are now concluded with the briefest of reference to the Complex Capital (cf. Shiloh p. 39) which *qua* object is of much greater note than the Simple form discussed above. However until it can be demonstrated that capitals of this Complex form were used structurally it is not in place here to discuss them at length. The majority were used as finials to votive stelai (in sanctuaries). What they reveal is again the survival of things in Cyprus. The lower element of the capital is the Palestinian Timorah capital of the 9th–8th centuries with its stepped abacus (after the Bronze Age capital form). While the upper element is very variegated in detail going back to the enormously diversified iconography of the sacred tree in the Bronze Age Middle East (cf. Shiloh pp. 26–38). For some recent conspectus of this material as known in Bronze Age Cyprus, v. C. Kepinski, L'Arbre Stylisé en Asie Occidental au 2ème Millenaire av. J.C., Paris 1982, N.B. pp. 110–112; M. Meekers, The Sacred Tree on Cypriote Cylinder Seals, RDAC 1987 pp. 67–76;
286, 287.4 N.B. classes 2, 3, 4). However, on occasion, classical elements are introduced into this traditional material (cf. the stele capital from Athienou, P & C III fig. 152).
287.3 There is also an example which incorporates a Hathor Head as a central emblem making a link with this type of capital (v. Kypros p. 188, fig. 161 — probably from the
285 Astarte Sanctuary at Idalion). It is thus clear that the Complex Capital form remains in use well into Cypro Classical times (i.e. 5th century BC). In lieu of further

complex form

design

comment, a number of these capitals are illustrated in the hope that this will invite a proper study of the form.

the order TAMASSOS

Finally there is the question of any ornamental elements constituting an order accompanying the Proto-Aeolic capital. Again the only evidence is provided by the Tamassos tombs. The principal tomb shows a heavy row of dentils running above the entrance way featuring the capitals. This is undoubtedly a skeuomorphic version of the wooden construction imitated by the stone tomb. This is to be seen most characteristically in the rock cut Lycian tombs held to be direct influences on the Tamassos tombs (v. V. Karageorghis in Proceedings of the 10th International Congress of Classical Archaeology Vol I p. 365–366). Whether this can be said to have much actuality in normal building construction of the time is problematic. However the idea has been taken up in the reconstruction of the model shrine from Amathus (v. AJA 75 1971 pp. 427–428, figs. 8, 9 & pl. 91 2). In archaic built tombs at Salamis a cavetto appears (cf. the Prison of St Catherine), but there is no direct association surviving of this and the Proto-Aeolic Capital. 199, 283

THE HATHOR HEADED CAPITAL

unexpected popularity

One of the unexpected features of ancient Cypriote building (if anything is to be unexpected in Cyprus) must surely be the apparent popularity of the Egyptian Hathor Headed Capital at some time about the middle of the first millenium BC. The Egyptian original which enjoyed a lasting vogue for ca two millenia (from Middle Kingdom times down to the end of the Ptolemaic period) often provides acknowledged master-pieces of sculpture (for the Egyptian background, v. Berytus XVI 1966 pp. 71–73; Jequier, Eléments de l'Architecture Egyptienne pp. 184–193; Van Merklin, Antike Figuralkapitelle pp. 5–13). On occasion the grave transcendent gaze of the Goddess can be almost annihilating (cf. Berytus XVI 1966 pl. XV). The

different detail

Cypriote examples in their way are also very fine work but the characterisation is quite different (cf. Berytus XVI 1966 pl. XVI). This general difference can be reinforced by detailed observations to show that the Goddess headed capital was full of (new) meaning for people in Cyprus (cf. in general Berytus XVI 1966 pp.

local imagery

174–175). Clearly they made it into an image of their own Great Goddess, suppressing inconsistent details — e.g. the cow's ears (v. BCH 112 1988, p. 862).

chronology

There is no evidence of the Hathor Headed Capital in Cyprus demonstrably earlier than the short period of Saite rule in the middle of the sixth century BC, but it is clear that the form, whenever introduced, was in no way tied to an Egyptian political presence in the Island. Its whole-hearted reception is apparent in the way as a motif, it was worked into the other capital type current at the time — the

Proto-Aeolic Capital (where interestingly it seems cows' ears were tolerated, cf. Van Merklin figs. 78–80, 85); equally by its continued use e.g. at Vouni (v. Van Merklin p. 11), for a century or more after the end of Egyptian rule. Also to be noted is the strong infusion of classical detail in some of the capitals, e.g. the Amathus capital (BCH 109 1985, p. 659, figs. 1, 16).

basic form

The form of the Cypriote Hathor Headed Capital is taken from the bifacial Egyptian type, i.e. pre-Ptolemaic examples (which latter are often quadrifrons). There is, however, one salient difference. In the Cypriote examples, the Hathor Headed form rests on a floral (open lotiform, iris, etc.) member which is unknown in the structural Egyptian examples, but is very well known indeed in Egyptian architectural décor, both sculpted and painted. There it proliferates in conjunction with "Aeolic" forms (v. for convenience, van Merklin pl. 10 and *in extenso*, L. Burchardt, Die Aegyptische Pflanzensäule, Berlin 1897). Thus the background of the Cypriote Hathor Headed Capital is the same Egypto-Levantine *Kleinkunst koine* as that of the Proto Aeolic Capital.

background

function structural

However the Cypriote Hathor Headed Capital is not essentially (nor even principally) a non-architectural form. According to all appearances, it must have been used together with the Proto-Aeolic Capital to crown monumental stone supports; and specifically (perhaps together with the earliest Ionic Capitals) it was used to crown the first stone columns in Cyprus. One substantial Hathor Head from Golgoi (Van Merklin p. 21, fig. 86) is clearly part of a stele, but this is manifestly different from the normal examples. These massive bifacial capitals over 1 m in height have
289 been found at a number of Cypriote sites, e.g. Kition (Van Mercklin pp. 20–21, figs. 81, 84); Amathus (Van Merklin p. 20, fig. 83; BCH 109 1985 p. 659, figs. 1, 16; BCH 112 1988 p. 862); Vouni (Van Merklin p. 21, fig. 87; SCE III pp. 154–155, 238). Clearly the Hathor Headed Capital was used at Vouni for capping structural columns in the peristyle of the Palace court, ca 450 BC. However this does not necessarily mean that all such capitals were used on structural columns. The most
288 recently discovered capital at Amathus is from the Sanctuary Area (BCH 1988 p. 863, figs. 14–17). While it is likely enough that this again was used on a structural column, it is also possible that the column may have been a cult symbol since Hathor was the Lady of the Sacred Tree (of Life), the Egyptian Asherah. In any event the Hathor Headed Capital seems to be the earliest attested capital type in Cyprus used on free standing columns.

VOUNI

AMATHUS

association with facetted column

IDALION

N.B. A certain ammount of evidence has come to hand concerning a form of column which may be of some relevance here. The column fragment from the acropolis gate at Idalion (SCE II p. 523, fig. 234; IV_2 p. 6) is a facetted column. Recently a facetted shaft fragment on a torus base was discovered at Amathus (Acts

AMATHUS KOUKLIA

COO pp. 378–380) and another at Kition (Acts COO p. 382). Furthermore a number of votive colonettes were recovered from the siege mound at Kouklia (RDAC 1973 p. 186, pl. XVII; RDAC 1974 pp. 144–146). A focal date for all these fragments is late Archaic, *viz.* ca 500 BC. Now the background to this type of shaft is clearly Egyptian as has been recognised (SCE IV_2 p. 6). Indeed one of the votive colonettes has an Egyptian palmiform capital (RDAC 1974 p. 145, pl. XXI.5). Thus at the time the Hathor Head capital appeared in Cyprus the Egyptian facetted column shaft was also known there — and it is theoretically possible that when such capitals were used structurally the supporting shaft could have been of the facetted form.

THE IONIC ORDER

Of recent years a number of Ionic Capitals of various sorts have been located or relocated and some notice of them published (v. e.g. RDAC 1984 pp. 209–213; Paphos p. 223, fig. 204; Arch in C p. 250, fig. 19). This changes the rather surprising impression formerly manifested that Cyprus was largely avoided by the Ionic order. Although the capitals have not been described or illustrated in sufficient detail to permit close analysis, it would seem that they range in time from Late Archaic (cf. the Kition Bamboula capital) to Late Hellenistic-Early Roman (capitals from New Paphos) — i.e. say late 6th to late 1st century BC. A half a dozen or so capitals spread over almost as many centuries is hardly sufficient to provide any true overall picture but it is interesting nonetheless to see if any basic typology of the Ionic Order in Cyprus is demonstrated. And indeed perhaps at the risk of over simplification, it is possible to suggest certain prevailing characteristics.

291–294

extended time range

Again as so often in Cyprus the immediate impression is best stated in a negative. None of these capitals conform to the low, flattened type with widely spaced small volutes which in its latest Hellenistic development is very common and affords a somewhat (mean) domestic impression (cf. Lawrence GA pp. 201, 224, 272; Ptolemais p. 223, fig. 46). On the contrary virtually all the capitals appear to go back to the other main tradition, viz capitals with more or less large closely spaced volutes. The statistics of this feature are set out in D. Theodorescu, Le Chapiteau Ionique (v. p. 49, pl. 2). The most distinct ratio is $\frac{\textit{breadth of volute}}{\textit{total breadth of capital}}$, the small volute capitals having a ratio of 0.24 and the very large volute capitals having a ratio of ca 0.41. The Cyprus examples fall typically in the upper medium to large forms with ratios ranging somewhere between 0.32 to 0.37.

design type not flattened

but massive

volutes

Another design proportion which is clearly evident in any illustration is the

height of the capital. And here again a prevailing trend can be recognised running through the few Cypriote Ionic capitals. None of them belong to the slight flat bodied type where in its degenerate late Hellenistic form the echinus appears as a rather minor decorated moulding. On the contrary almost all the Cypriote capitals in their various ways (even including the late Hellenistic ones) are more or less tall and massive bodied, devolving from a substantial echinus and canalis. The statistical expression of the factor is given in Chapiteau Ionique (p. 15, tab. 3) as $\frac{\text{breadth of capital}}{\text{height of capital (not including abacus)}}$. The values range from the slight, flattened capitals = 5.8, through medium capitals = 4.5 — 3.16 to the tall upright capitals = 2.6. All the Cyprus examples are in the maximum height category and two at 2.3 run beyond the maximum ratio given by Theodorescu. *pronounced height*

The combination of these characteristics viz. large volutes but tall capitals has the rather unusual consequence that the volutes (large though they be) do not droop down to hang below the body of the capital but in general terminate more or less flush with or only a little below the bed of the capital to provide a compact, vibrant contour. There are surpisingly few illustrated capitals which manifest this form, the best known being some Siciliote capitals (e.g. from Gela and Selinonte — v. Chapiteau Ionique p. 131, pls. 1 & 2).

Before continuing with some more detailed observations, it is better to mention the capitals which do not come entirely within the above style. They are principally two. *different types*

TAMASSOS

A limestone capital from the Tamassos Aphrodite-Cybele Sanctuary built into the
293 foundations of the Hellenistic Temple (v. Arch in C p. 250, fig. 9) and the fine Classical Capital from the Arkalou site at Kouklia and now well displayed in the site museum (v. Paphos p. 223, fig. 204). Both these capitals have volutes of middle size
294 but the configuration and amplitude of the body is restricted to a less excessive height so that the medium-large volutes droop down below the level of the capital bed in a more normal degree. N.B. The Tamassos capital is itself a design curiosity. Its overall aspect viz. long volutes overhanging a slim shaft, and no abacus, is archaic, but the perfectly straight canalis is a Hellenistic feature. The preliminary report puts this capital prior to the Ionian revolt, i.e. ca 500 BC (Arch in C p. 247). At least three other unpublished Ionic capitals are reported from Tamassos and a forthcoming study of them has been announced. Now see AA 1987 pp. 196 ff.

KOUKLIA

TAMASSOS

The two recently published/republished Ionic capitals from Kition are of interest in establishing the Cypriote tradition of tall, compact capitals with large, close set volutes (v. RDAC 1984 pp. 209–213).

KITION

The first capital is of gypsum and is the surviving representative of several said to

have been found on "the acropolis" (i.e. Bamboula site) in 1879 and noted at the time by Perrot and Chipiez and Ohnefalsch Richter. The latter with his interest in 291
the sacred tree considered that these capitals were for free standing columns of the Jachin and Boaz type — which may or may not be so. Certainly the capital is only marginally Ionic in design, and it is difficult to say whether this design represents horizontal volutes with sagging canalis or in fact derives from the Aeolic tradition of vertical, rising volutes. In any event there is no defined ornamented echinus so it is not unreasonable to regard the capital as sharing in both Aeolic and Ionic tradition (v. RDAC 1984 p. 212) which of course would be appropriate to its suggested symbolic function. Unfortunately the original upper bed is not preserved, so it is not possible to adduce evidence from cuttings as to whether the capital was a structural member or not. Also the question remains open as to whether there was no substantive abacus (according to a common archaic Ionic manner) or whether a substantial abacus has been lost by fissuring. The latter eventuality would conform to a Cypriote tradition perhaps going back to the LC stepped capital. There is no reason why this Bamboula capital should not be from the 6th century BC and perhaps it could be reckoned a catalyst in the development of Cypriote Ionic (However cf. the votive capital from Selinunte, Chapiteau Ionique N° 80 and the possibility of later archaising, pl. 2 & pp. 90, 130, 131).

for votive columns

The other capital from Kition is of limestone and it is probably for a votive column. Although the general scale, proportions and design characteristics resemble 292
the Bamboula capital, the details of the design are quite different since this capital is entirely Ionic in concept. It is a tall capital with a very deep sagging canalis (and deep echinus) of squarish plan with close set volutes drooping little below the capital bed and overhanging the side of the column shaft relatively little. This in effect is the outline picture which subsists in Cyprus through subsequent centuries. The date of this capital can not be assessed accurately — (it is probably 5th century) but its importance clearly lies in its community with the Bamboula capital on the one hand and with the later, New Paphos capitals on the other.

NEW PAPHOS *in museum*

These latter capitals must cover (at least) the centuries of Hellenistic and Early Roman rule. Particularly interesting is the finely detailed capital now in the grounds of the district museum at Ktima. This was discovered at New Paphos. Although 295.1
details vary, the schema of this capital is virtually identical with the above mentioned capital from Kition. The volutes of the Ktima capital appear if anything even larger and more closely spaced. While the capital is a very tall one indeed — it is taller in proportion to its breadth than the maximum ratio figuring in Chapiteau Ionique; and it has the same massive abacus surmounted by a plinth. An interesting expression of the tall, laterally confined proportions is that the sagging canalis and

the echinus equally divide the capital height at the centre line. In this way the echinus is too tall for the three egg and dart elements to occupy its full height (an inbuilt design problem for the tall capitals, cf. Chapiteau Ionique pp. 118, 124) and they descend only half way down the echinus. This is an unusual solution, generally if the echinus is subdivided into superposed registers the lower is ornamented and the upper left blank. Capitals something after the general manner of the Ktima capital occur on the Nereid monument at Xanthos (ca 400 BC) and whatever the date of the Ktima capital, it is certainly of classical workmanship.

296 However it is the several later capitals from the New Paphos area (BCH 112 1988 p. 837, figs. 74, 75). which in their way most attest a prevalent type of Ionic capital in Cyprus. With ornamental detail applied in stucco over roughed out grounds and the capital carved in the same block as the upper part of the shaft, these capitals are clearly late Hellenistic-Roman in date (for these features on Ionic capitals of this date in the associated region of Cyrenaica v. Ptolemais pp. 217 ff., N.B. p. 233 "... la decorazione ... era plasmata a stucco"). At this time the Ionic capital becomes more or less standardised in a low horizontal format with (often entirely insigificant) diminutive echinus and volutes (cf. in general, Robertson GRA p. 157; Chapiteau Ionique p. 199; and, for Cyrenaica, Apollonia pp. 197–198, 216). This in effect is the type accepted by Vitruvius (3.V.5–8) from Hermogenes (v. W. Hoepfner AM 1968 pp. 221–224, Robertson GRA p. 157). Yet these are not in any way the proportions and the aspect of the New Paphos capitals which still contrive to echo the old compact large volute tradition. It is interesting. Although extraneous speculation is not in point here, it may be surmised that this standard (flattened and horizontal) type of later Ionic capital came to Cyprus (if at all) with the internationalised building of the later Roman Empire (i. . ca 200 AD) in much the same way as the mass produced "orthodox" Corinthian capitals in white marble.

from Polish excavations stucco ornament

late Hellenistic

The few items of information in the above record suggest something like the following tentative overview. The Ionic capital was introduced into Cyprus in ca the late 6th century BC probably for votive columns (cf. a roughly contemporary votive (lion) colonette from Golgoi, which shows just such an outline Ionic capital as the gypsum capital from Bamboula — BCH 96 1972 pp. 1038–1039, fig. 55). This deep 291 bodied, close set type was probably derived from Asia Minor and the Aegaean (Chapiteau Ionique pp. 69 ff.) and it is just possible there may have been some cross fertilisation with the Cypriote Aeolic capital. Apart from two more classic looking 293, 294 capitals probably of 5th–4th century date (Tamassos and Kouklia), the original 37.5, 295 basic type seemed to continue to exercise a controlling influence in the later versions of Ionic in the Island. Thus even when the order came to be used structurally in

general, resumé

Graeco-Roman times, it did not assume the standard flattened, horizontal form of the age (another example of Cypriote conservatism and particularism). 296

There is perhaps an additional observation to be made here. Although so little is preserved, it may nevertheless be that the clearest chronological criterion for the Ionic manner in Cyprus is in the form of the base. This may be found to mark out major periods: the independent Cypriote kingdoms use of Archaic-Classical Ionic; the Ptolemaic-Early Roman use of late Hellenistic Ionic; and the later Roman ecumenical use of Ionic. There are two Ionic bases to be seen at Old Paphos. They are not later than the 4th century at the latest and both are Asiatic — or perhaps better, non-Attic. The base recently uncovered in the Classical House at Evreti (v. AA 1986 pp. 177 figs. 54, 55) is a simple torus on a plinth. This is the old type of stone base used with the wooden columns of Syro-Hittite building (cf. Nauman[2] pp. 136–137, figs. 143–144) and which remained the standard form of base in (domestic) Achaemenid Architecture (cf. Nylander pp. 103 ff., figs. 35, 36). And it is the type of base which has been supplied by the excavator in his reconstructed drawing of the Ionic capital from the Sanctuary at Tamassos, apparently without reference to the Evreti Base (v. Arch in C p. 250, fig. 9). On the other hand the base with the fine classical capital from the Arkalou site now exhibited in the Kouklia Museum (v. Paphos p. 223, fig. 204) is an excellent canonical Asiatic base i.e. characterised by horizontal fluting of the Scotia block (cf. Nylander p. 108, fig. 37).

bases

OLD PAPHOS

293

294

With this form may be contrasted the typical late Hellenistic Ionic bases which were cut in the same block as the lower part of the shaft in a manner familiar from the many well preserved examples in Ptolemaic Cyrenaica (cf. Ptolemais fig. 46; Apollonia p. 190, fig. 5 & 6). Here the base was of the Attic type (it was, of course, used equally for Corinthian and Ionic capitals). Such a base can be seen with the recently discovered Ionic capitals of the first century BC underlying the Roman House of Theseus at New Paphos (v. BCH 112 1988 p. 837, figs. 74, 75; RDAC 1988$_2$ p. 199). Finally separate white marble bases are the work of the later Roman Age (ca 200 AD). They are, of course, used almost invariably with Orthodox Corinthian capitals but it is possible that some (Vitruvian style) Ionic capitals were also employed at this period.

NEW PAPHOS

THE ANIMAL PROTOME CAPITAL

It is appropriate after the Ionic column to discuss one of the Cypriote excellences of classical sculpture. This is the winged bull protome capital from Salamis discovered at the end of last century and since then exhibited in the British Museum (v. JHS 12 1891 pp. 133–135, fig. 4; V. Karageorghis Sculptures from Salamis II pp. 24–25, pl. 297

winged bull capital
SALAMIS

XIX, figs. 7–8; Salamine pp. 257–274). The capital (2.36 m × 0.96 m) is in white marble and crowned a votive column in the old tradition of the Naxian Sphinx column at Delphi. Although the animal protome schema is certainly of Achaemenid inspiration (v. Berytus XVI 1966 p. 77, fig. XVII and cf. the nearby remains of a bulls head capital in Sidon — v. ABSP fig. 337) the unusual configuration of the lowered heads intends to echo the Ionic Capital form (very proper for a votive capital). Moreover the anguilliped caryatid is an entirely classic motif, while her kalathos and scrollery are common devices on other Greek figural capitals; and the modelling is fine work suggesting an early Hellenistic manner. The attitude of the bulls head is similar to the bull protome of the Neorion at Delos ca 300 BC–280 BC (cf. Salamine pp. 246–247) but also of the first century AD composite Ionic-bulls head capital at Ephesos (Salamine p. 271, fig. 16).

for votive column

achaemened background

Ionic influence

chronology

The Salamis capital is a notable piece of architectural sculpture and is the work of a Greek sculptor on imported stone. It should be (early) Hellenistic, but a Julio-Claudian (Augustan) date is not impossible. Apparently it had an eventful end. The block was discovered set up for reworking and had been in part recut and dressed away to prepare it for reuse in a Byzantine church, but this project was interrupted (apparently by Arab raids) and was abandoned.

The Doric Order

general background

The development of the Doric Capital (cf. W. Willberg JöAI XIX–XX 1919 pp. 167–181) is an enormous subject to resume in miniscule as a background to the (restricted) occurrence of such capitals in Cyprus. However perhaps it is possible to recognise three or four main stages in this development. "First the formative and truly archaic capitals, wide spreading with bulging echinus (and varied detailing, e.g. at the neck). Then somewhere in late archaic times (ca 500 BC) an 'attic' form emerges to become classic where the echinus is taut and steep, while all details are standardised. Eventually when in the Hellenistic Age the echinus acquires a straight profile and the capital as a whole loses its 'presence', recognisable processes of development are at an end and capitals are distinguished rather by a variety in (more rudimentary) 'detailing' " (Apollonia p. 66). A further stage, or perhaps a rider to this, may be added by characterising many Doric capitals of later Hellenistic and Roman times as non-monumental or "Domestic Doric" (cf. Ptolemais p. 158). These capitals have become so slight in both height and breadth (projection) as to resemble crown mouldings on the column — the echinus certainly ceases to appear as the primary element characterising a member and becomes a rudimentary (chamfer) moulding (cf. Lawrence GA p. 103). This is presumably part of the circumstances prompting Vitruvius' characterisation of Doric as unsuitable for temples (IV 3.7 — cf. JHS 83 1963 pp. 133–145), an opinion entirely consonant with ancient remains of the age where Doric appears almost entirely on secular buildings.

If some such outline is accepted for the development of the Doric Capital extending

occurence in Cyprus

over a period from the later 7th century BC onward, then the record in Cyprus seems quite well defined. Surprisingly or not there are no examples of the true Archaic Doric Capital (the horizontally spreading basin-like member) and it is difficult to substantiate any examples of the classic capital (the Parthenon style capital and its relatives of the fifth and fourth centuries BC). All the Doric capitals which are to be seen nowadays fit into the later stage(s) of development characterised by eclecticism and degeneration. These capitals are thus ca 300 BC or later, viz. Hellenistic in style and therefore of the Ptolemaic or Roman period in Cyprus. In this fashion there is no subsisting evidence that any of the independent Cypriote kings elected to construct any temple/monumental building in the Doric style (whatever their elected Greek pedigree/affinities may have been). On the other hand there is very considerable evidence that the subsisting Doric capitals in Cyprus are related to those at Alexandria and other places under Ptolemaic rule or influence.

no archaic type capitals

but Ptolemaic – Roman

Jefferey's study

The only uncertainties to this rather clear position derive from mention of Doric capitals made by the able architect Jeffery in the early part of this century. These were illustrated in an interesting lecture delivered in 1924 on the Doric style, its origins and its presence in Cyprus. Unfortunately this was only published much abbreviated in the form of a recension by Sir John Myres (Archaeologia 78 1928 pp. 37 ff.) which focused attention away from Doric remains in Cyprus onto traditional building construction. In this fashion the illustrations of Doric Capitals on ancient sites in Cyprus appears in a rather isolated manner and it is regrettable not to know what Jeffery made out of the material in its overall context. His concern was principally with three capitals. Two were from "Hyle", i.e. the Sanctuary of Apollo Hylates near Kourion and one, stated to be of unknown provenance, was then at the Bedestan (covered market or *Suq*) in Nicosia. Jeffery wanted this material to illustrate a development from a local archaic style (with Mycenaean affinities) into the classic mould of the Parthenon capital.

KOURION

local evolution thesis

not substantiated

Taking Jeffery's fine drawings more or less on trust, they do not substantiate this thesis. First of all there is nothing in the two capitals from the Kourion Sanctuary to invalidate the apparent absence of formative Doric in Cyprus. These Kourion examples are probably late (Hellenistic-Roman) capitals of varied non-classical detailing, and this is not the first occasion that non-classical detail has been ascribed to an early (pre-classical) age when it was post-classical, viz. late Hellenistic. On the face of it these capitals could belong to the main development of the Sanctuary in the first or second century AD and they may be discussed together with the numbers of Doric capitals from this period later excavated on the site by the Pensylvania expedition.

The capital which could qualify the apparent late occurrence of the Doric Order in

Cyprus is the Bedestan capital. At first glance Jeffery's large scale profile drawing (p. 43, fig. 4.3) presents this as a late classic capital. It shows a virtually straight sided echinus with (an ample) curvature concentrated in the head, at its accord with the abacus. It also shows the fluting to die out gradually at the head continuing the line of the echinus downwards below the necking so that it curves more or less uninterruptedly into the column shaft. If this representation of profile detail is correct, then the capital looks to be close to that at Bassae (cf. for convenience, Roux Argolide p. 92; Normand Parallel Orders pl. 6; Bannister Fletcher p. 86) and thus to be (early) in the "streamlined style" (cf. Apollonia p. 68).

However as against this impression it is necessary to contrast the overall aspect of the capital in its relation to the column (cf. Jeffery p. 42, fig. 3). And here the picture is quite otherwise. The capital is much slighter than the classic form. Taking only the most basic proportions the statistics are clear and consistent:

$$\frac{\text{total height}}{\text{upper diam of column}} = \text{ca } \frac{1}{3}; \quad \frac{\text{projection of capital}}{\text{upper diam of column}} = \text{ca } \frac{1}{7};$$

angle of inclination (or set) of echinus = ca 55°. Precisely this congery characterise the specimen capitals given by Willberg for the latest stage of his development table (pp. 176–177), viz. capitals from Samothrace, from the Stoa of Attalos at Athens; and from the Upper Agora at Ephesos (v. p. 171, fig. 113) dating from the 3rd century BC to the 1st century AD.

According to its proportions then, the Bedestan Capital is a late Hellenistic capital with the echinus detailed after the manner of Bassae and the 4th century BC. But was this really so; or did Jeffery, recognising a finely carved capital (said to be in "local marble"!), give it the curvature which he thought appropriate? Jeffery's special study was Gothic architecture and, moreover, in his time very little was known about post classical Doric. It is not impossible that Jeffery took the dimensions accurately but "normalised" somewhat the contours of the echinus to a more familiar profile. That at times he could do such a thing is shown by his fine drawings of the Doric order in the Tombs of the Kings at Paphos (Archaeologia 66 1915 p. 116 fig. 7). Here the meagre Domestic Doric capitals surmounting plain shafts are drawn as classical Parthenon style capitals on classically fluted shafts. On the other hand he appears to contrast accurately the completely angular contours of a Roman capital from the Sanctuary (v. p. 44, fig. 5). In any event the balance of the evidence he presents shows the Bedestan Capital to be of Ptolemaic age or later and thus to fall in line with the general position in Cyprus.

The most striking Doric Capital presently to be seen in Cyprus is one at Kourion KOURION

City lying near the custodian's office and in front of the "Nymphaeum" — a virtually unpublished monument stated to be 1st century AD in origin (v. RDAC 1983 pp. 272–273). This capital could be of 3rd century BC date although it is probably later. It is of interest in typifying the presence and survival in the Island of a quite monumental sort of capital which although it is post classical still manifests the classical heritage to the full. Furthermore some of its characteristics are encountered in the Alexandrian sphere. 298

in classical tradition

It is cut with perfect regularity and precision in hard limestone and the attached portion of the shaft is impeccably fluted in the classical manner with 20 flutes meeting in keen edge arrises. Also the echinus is taut and erect with the slightest of curves. However, while harmonious, the overall composition is not the simple bipartite abacus and echinus. The annulets also constitute an element of equal weight in their own right set between the two and at a different, much steeper angle than the echinus — i.e. they have slipped down off the echinus but not as yet right down onto the column shaft (cf. Apollonia p. 71). Equally the abacus has acquired an added dimension. It is both splayed slightly and crowned with a substantial cyma moulding which combine to increase the projection. These variations make the expression of the capital's proportions a rather subjective matter. Nevertheless, however they are reckoned, the proportions are clearly post classical. The capital is a relatively slight one with little projection in spite of the peculiar abacus: the proportion $\frac{\text{total height}}{\text{upper diameter}}$ is ca $\frac{1}{3}$; while the $\frac{\text{projection}}{\text{upper diameter}}$ is ca $\frac{1}{8} - \frac{1}{7}$. Again the set (angle of inclination) of the echinus is quite steep, ca 50°, (and of course the necking is steeper). The date of the capital is thus unlikely to be earlier than the 3rd century BC, yet the capital can still be thought of in meaningful development categories. It is late mannerist in style, not just a free choice mix-up, and is close to the capital 552 from the Altar Court at Samothrace (R. Lehman Samothrace 4 II New York 1964 p. 31, pl. XII) and the capital from the Doric temple at Apollonia (Apollonia pp. 49–50, figs. 5, 6), both ca 300 BC in date.

late mannerist style

Formally speaking, whatever its date, the capital indicates a type or trend which was to remain popular in the area until the end of the period under discussion. This is the angular capital and good examples of the type (of varying degrees of sophistication) have been discovered at the nearby Sanctuary of Apollo Hylates.

KOURION SANCTUARY

rectangular style

As illustrated in Scranton, these are all entirely rectangular, every trace of curvature having been eliminated. They are clearly of the period (early Roman) given for the monument by epigraphy and archaeology. All the capitals except one are for unfluted shafts. The exception is from the West Complex (Scranton p. 44, fig. 36) and the fluting is quite unusual — 20 flutes but with fillets and arched heads in 299, 300 300

the Ionic manner. Furthermore the flutes are not struck on a curve but the fillets are straight sided reaching back to an inner circumference of the column (cf. in general a capital from the Cyrene Agora Portico B5 v. S. Stucchi L'Agora de Cirene, Rome 1965 pp. 153 ff., figs. 86, 87). This capital, moreover, demonstrates a characteristic feature shared by others (e.g. capitals from the Hostel, Scranton p. 41, fig. 30). The annulets have dropped completely off the echinus and are set (vertically) at the top of the shaft. This detail is found on capitals from the Alexandrian monumental rock cut cemeteries (e.g. Mustafa Pasha Tomb II, v. A. Adriani Annuaire 1933–35, p. 82, fig. 32). This is the formal end of a process and leaves no doubt as to the late date of the capital (Apollonia p. 81; Annuaire 1933–35 p. 83). ALEXANDRIA

Other rectilinear capitals from the Sanctuary show varied (more or less rudi-
299.2 mentary) detailing. One capital found near the Paphos Gate (Scranton p. 44, fig. 37) is like a cubist drawing of a good Doric capital, all the elements and proportions of the classic capital are quite recognisable but reproduced as straight lines and angles (unusually the annulets are set at a flatter angle than the echinus). A large capital
299.1 found in the North West Building (Scranton p. 42, fig. 31) shows the composition reduced to the plainest possible form, the annulets simplified into wedges. Finally another capital found near the Paphos Gate (Scranton p. 45, fig. 38) is an angular parody of latest Doric — consisting below the abacus of a succession of chamfer and
299.3 wedge mouldings so that at first glance it is impossible to distinguish echinus from annulets.

Striking though the development of the angular Doric Capital is in Kourion, other capitals show that it was not the only mode known in Cyprus. There was also a simple type of capital which retained a curvilinear profile (to the echinus and sometimes also to the annulets), but without much sense or subtility. Depending on
301, 302 weight, it merged into the "domestic doric" class; and in any event, overall it seems less monumental in concept than the angular class. It is however a parallel development from late-classical capitals. It is not a specifically Roman type of Doric. The curved echinus while not a genuine echinus curve is not an ovolo moulding. This is the type of capital probably represented by Jeffery's N°s 1 & 2. Indeed his N° 2 could
301.5 well be the capital from the South Building, Scranton p. 35, fig. 27, except for the different dimensions given for the shaft (30 cms in the Scranton illustration and 1′ 6″ = ca 46 cms in Jeffery's illustration). Either capital may be a conscious archaising piece but the annulets as an independent element set between echinus and shaft show their date to be the same as others from the Sanctuary. As for Jeffery's N° 1 with its cyma moulding in place of annulets, a close parallel to this oddity is to be seen in a
301.4 capital from Amathus in the Limmasol District Museum. The profile of the echinus

domestic Doric style

illustrated here is the characteristic one of the class which suggests that Jeffery's contours are idealised.

Dorian associations of KOURION

Scanty and sporadic though this record is, it raises interesting considerations. First of all it shows capital types known in Alexandria (and in Ptolemaic Cyrenaica). Secondly, whether by accident or not, the majority of Doric Capitals presently to be seen in Cyprus are localised about Kourion; either at Kourion itself or at the Sanctuary of Apollo Hylates or from Amathus, supposedly a Kourion foundation in origin. Perhaps this reflects a conscious programme on the part of ancient Kourion, a self styled "Argive" city and anxious to advertise its ancestry. Should this be so, it is the more striking that all this is a late academic phenomenon. Since nothing remains of any early Doric capitals in this region any more than elsewhere in Cyprus.

This leads on to a final consideration. If ever a monument in Cyprus should have exhibited an early Doric capital, then it is the Temple of Apollo Hylates at Kourion Sanctuary. Built in a territory which later demonstrated its fondness for Doric, the first Temple is supposed to date from Cypro-Archaic times. Yet in spite of intermittent excavation extending well over a century, no specific evidence for such a capital has been brought to light. According to the findings of the later American expeditions, Cesnola did in fact clear about the remains of the Temple itself. However no trace remains of his "... columns in white marble and bluish granite ... lying scattered in every direction" (Cesnola p. 373). Perhaps these columns were like Falstaff's men in buckram, and so it is with archaic Doric capitals. Roman period Doric capitals in plenty scattered about the Sanctuary and the Roman period Temple was provided with Nabataean type capitals; but no capital of any description has been found to go with the preceeding masonry remains reckoned to be those of a Cypro-Archaic Temple.

THE CORINTHIAN ORDER

Paphos regional association

Since it is clear that almost all architectural fragments in the classical manner surviving in Cyprus are from Ptolemaic-Roman times then it is to be expected that Corinthian capitals figure among these remains. In fact there are a few quite striking Corinthian capitals to be seen chiefly in the Paphos region, and, to all intents, unpublished. This location in the West of the Island associates them with Alexandria, the metropolis of the Ptolemaic Empire of which Paphos was a sub-metropolis. It is therefore not surprising that all these capitals are heterodox capitals of one form or another. So far as can be known at present, the first orthodox Corinthian capitals, i.e. incorporating the elements and proportions specified by Vitruvius (IV.1, 11–12) were the (white) marble ones going with (coloured) marble monolithic shafts. And the mass importation of these elements constituting an ecumenical marble style has been taken to mark the end of the idiosyncratic building history of ancient Cyprus towards the end of the 2nd century AD.

Vitruvian form imported later

37.8
306

widespread 'movement'

In this sequence Cyprus forms a part of a widespread architectural community of taste within Oriental Hellenism (e.g. Egypt, Cyrenaica, Palestine, Arabia, etc.) the motivating force of which has never been accurately assessed. Since little has been attempted in the way of overall critical assessment of this "movement" at large, it is not in place here to enquire deeper into the style of the Cypriote capitals. Therefore the very interesting heterodox Corinthian capitals in Cyprus are only presented according to overall category and they await future detailed analysis.

general background

It is generally considered that the Corinthian Capital was developed because of the unsuitability of the Ionic design for use with the angle column of a peripteral colonnade. There is no mistaking this latter fact. The Ionic Capital is of quadrilateral design and is meant to be seen head on (or glanced at side on). It is not meant for a three-quarter view, and that was precisely the main approach view planned for the classical Greek peripteral temple. The only way out of the dilemma within the resources of the design was to suppress the side view and make the capital a *quadrifrons*. This involved angling the volutes into the diagonal. There were two impediments in this solution. First was the basic one that it negated the fundamental logic of the design which consisted precisely in the fact that the upper member, the canalis *cum* volutes, does have a front and a side; and the second impediment was that the solution only became logical in design when the capital has acquired a square upper plan as opposed to an oblong one — i.e. when its face is not (much) longer than its side. This in fact was the destined status of the capital as it became an increasingly slighter and less spreading member.

In these circumstances the Romans took the logical step (prefigured like much else at Bassae) and made the quadrifrons version into a standard type (cf. Robertson GRA p. 212). Having done this there was nothing to prevent them applying the newly oriented upper member above any supporting lower vessel. And this they also did in the Composite Capital (cf. Normand's Parallel Orders, Pls. 55–57). However neither of these two Roman designs have been encountered in Cyprus.

Aeolic connection

The just solution to the problem of the three quarter view was found in leaving altogether the cadre of the Ionic Capital form and devising a new design which shared in common with this form only one feature: the volutes, now arranged naturally to occur on the diagonals. The volutes, however, had a stance different from Ionic. In this they resembled the Aeolic (and Proto-Aeolic/Timorah) capitals and some have wished to see a very direct connection between Corinthian and Aeolic (cf. Betancourt p. 132; Ciasca p. 22). However it must be emphasised that the Aeolic style capitals are, equally with the Ionic, frontally designed — they have a face and a side and are not meant to be seen at the angle. Thus the Corinthian Capital is as much an advance on them as on the Ionic.

The Corinthian Capital is, in fact, structurally speaking, an advance on all preceeding types of column capital. A column capital must make a transition from a lower circular plan (of the column) into an upper rectangular/square plan (of the entablature). This in general is done by the superposing of a square/rectangular member, the abacus — a feature common to more or less all types of capital. The Ionic capital is an exception in making the transition within the body of the capital and thus logically does not need an abacus (and this was omitted from time to time on Archaic Ionic capitals). The Doric Capital, however, makes the transition abruptly between the echinus (the capital proper) and the abacus (the impost block). It is thus liable to "angle weakness" — i.e. the echinus entirely supports the abacus at the mid points of the faces but it leaves the abacus virtually unsupported at the angles. This is an apparent weakness which is seldom commented on but quite manifest in soffite plan. Of course all this is a matter of show only, since structurally the load never comes on the angles of the abacus but is transmitted via a raised circular disc or pad on the upper bed of the abacus directly down onto the restricted area of the column section. However in architectural design it is appearances which matter — and all these various angle difficulties were met by the design of the Corinthian Capital.

basic design

This design took the old calyx or bell form, vegetally ornamented capital well known in Egyptian architecture and added to it volutes set on the diagonal so that they project far out to the extreme angles of the abacus — acting specifically as angle consoles. Structurally speaking (whatever may be thought of the decoration involved) it was a very neat solution — its obviousness belying its ingenuity — and it was the invariable constituent form of the capital whatever variants of decoration were applied to it. Unfortunately it is this variant decoration which has been made the basis of classification of Corinthian Capitals, and particularly of their classification into Orthodox and Heterodox types, all of which to some degree has obscured the underlying unity of structural form.

Vitruvian definition

Vitruvius (IV.1, 11–12) described and defined the normal (orthodox) type of Corinthian Capital almost incidentally in the process of laying down the proper proportions to be applied to the member.

proportions

According to Vitruvius' proportions, the Corinthian Capital is always a substantial member and cannot "waste" into a slighter scale as the Doric and Ionic capitals tended to do. Viewed from full face, the lower diameter (= upper diameter of column), the total height, and the overall breadth (of abacus) tend to have proportions of ca 2 : 3- : 4- i.e. the capital is taller than its lower diameter (e.g. ca 1.3 to the ca 0.5 of the Doric and Ionic) and it overhangs the lower diameter by about one

half. These dimensions come about as follows. Vitruvius recommends that the height of the capital be made equal to the lower diameter of the column while the diagonal of the abacus should be twice the height, thus the abacus' breadth is ca 1.4 of the height. And since the lower diameter of the capital is equal to the upper diameter of the column which is less than the lower diameter of the column by the amount of diminution applied to the column (ca 1/4 to 1/3) then the lower diameter of the capital is correspondingly less than the height of the capital: i.e. we have proportion of ca 7 : 5 : 3.5 or 7 : 5 : 4 or very roughly speaking 4 : 3 : 2.

composition
abacus
bell
acanthus wreath

It is in specifying how to divide up the total height into successive vertical registers that Vitruvius describes and defines the design composition of the capital. He sets aside 1/7 for the abacus and then specifies that the remainder should be divided into three superposed registers of equal height. The lowest to be occupied by a leaf (i.e. a wreath of 8 acanthus leaves). As is also the middle register (i.e. set in the interspaces between the former and on the axial lines of the capital another wreath of 8 acanthus leaves emerges from behind the lower leaves, and climbs to 2/3 of the height of the bell). However it is the uppermost register which is the crucial one in characterising the design. Vitruvius states that there should be stalks (cauliculi) rising through the middle register (they are to be set beside the central leaf on each face) and they should sprout the ornament which occupies the upper register. This consists of leaf supported volutes running out to the extreme angles of the abacus and between these there should be smaller spirals set just under the abacus, while above these pairs of medial spirals, in the centre of each face, a flower is to be carved on the abacus.

volutes

It is doubtful that as it stands Vitruvius' description would have conveyed adequately the details of the decoration applied to Corinthian capitals; however, since it corresponds accurately with a decorative scheme well demonstrated archaeologically, there is no doubt what Vitruvius means and his description can be expanded (as above) accordingly. As to Vitruvius' capital, it must be said that it is more normal to us than it was in antiquity — this because the Renaissance theorists (Vignola, Scamozzi etc.) accepted it as the model for their designs. Accepting as Corinthian a capital consisting of a bell shaped body (the kalathos = basket) decorated below with (acanthus) leaves from which emerge four volutes to support the angles of a quadrangular abacus, then neither in their proportion nor in their parts do many such capitals conform to Vitruvius' description. There may not be two wreaths of leaves (nor indeed scarcely one) and it is by no means the rule that the upper row stands to twice the height of the lower. (In the earlier examples it was always less and the climbing of the leaves up the bell is a later development.) Above all, many otherwise reasonably normal capitals did not show the device of the cauliculus sprouting conjointly the angle volutes and the decorative medial spirals. The cauliculus may be lacking, the medial spirals may be lacking or the angle and medial spirals may spout separately — to name a few of the vicissitudes undergone.

heterodox forms

development The design indicated by Vitruvius was thus only achieved by way of historical development and that it became the ecumenical norm was perhaps by way of historic accident. Only the most occasional instances are available in this history. The first recognisable Corinthian capital is that on the single free standing column in the

BASSAE Cella of the Doric Temple of Apollo at Bassae, ca 420 BC (v. Robertson GRA pp. 136 ff. & 328, figs. 58 & 59). Here the spirals develop from broad blade-like shafts and there is no cauliculus. The first cauliculus appears two generations later on capitals

TEGEA crowning the engaged inner order of the Doric Temple of Athena Alea at Tegea ca 370 BC–350 BC — but here the inner spirals are lacking (cf. Robertson GRA pp. 143 & 329, fig. 61). The first composition manifesting all the elements of the Vitruvius

ATHENS schema are the oldest capitals from the Temple of Zeus Olympios below the Athenian acropolis, a work of 200 years later — ca 170 BC (v. Robertson GRA pp. 160 ff. & 334 f., fig. 69); but here the second wreath of leaves still stands up only half as high as the bottom wreath. The first capitals to accord with the Vitruvian system

ROME of proportion are those from the Temple of Castor and Pollux in Rome, ca 6 AD, and thus a building of Vitruvius' time (v. Robertson GRA pp. 215, 234, 340). Thereafter the system is found on many major temples at Rome and at other places in the Empire indubitably associated with Imperial building programmes (e.g. the Roman colony of Baalbek where the Great Temple exhibits orthodox capitals of the first century AD (cf. Robertson GRA pp. 222 ff., 340).

normal capital Whatever may be the detail of stylistic evolution through 250 years which achieved the normal capital form in the Olympeion at Athens, the adoption of this form in Rome, as presently explained, seems accidental. It is reckoned that Sulla looted columnar material from the Athens Olympeion to adorn the Temple of Capitoline Zeus in Rome after it was burnt in 83 BC (v. Robertson GRA pp. 160, 200) and this example is supposed to have prompted Vitruvius' definition of the normal type which accounts for its subsequent fortunes.

heterodox development This is one strand of the story. There is another. A succession of handsome capitals are known following on that at Bassae — e.g. on the tholoi at Epidauros, Delphi, Olympia (cf. Robertson pp. 144 ff.). It was long ago realised that a light and graceful touch flourished in the wake of Bassae, centred in the Peleponnese (cf. Robertson GRA pp. 141–142) and this school has been finely delineated by G. Roux, L'Architecture de l'Argolide aux IVe et IIIe siècle av JC, Paris 1961. One of the more

ARGOLID striking facts of ancient art history is that great numbers of Corinthian capitals (especially in the period prior to the emergence of the ecumenical normal type) bear designs originating in this milieu — striking that is to say, in view of the far flung occurrence of these capitals, e.g. from Southern Italy and other westerly regions to North Africa, Alexandria and eastward to Afghanistan. These capitals have been

surveyed and divided into regional groups (e.g. by Dellbrueck, Ronczewski, Schlumberger, etc.) but the impulse and manner of expansion remains obscure; above all whether the style spread out equally east and west from Greece (the several cross currents meeting in Alexandria as Weickert thought v. RM 59 1944 p. 208) or whether the track was first west to, above all, Sicily and then east to Alexandria and onward (cf. the question of Sicilian masons at Alexandria discussed by Ronczewski and others v. Annuario CXII 1984, p. 171). ALEXANDRIA

In any event behind these forces it has been suggested that there may stand one of the salient facts of the Hellenistic world; the Seleucid-Ptolemaic rivalry. The normal type capitals of the Olympeion at Athens were provided by the Seleucid king Antiochos IV Epiphanes and may be thought to represent a type then familiar in Antioch and its dependencies in North Syria and Asia Minor (cf. the capital of the Miletus Bouleterian v. Robertson GRA p. 162, fig. 70). Accordingly Schlumberger (Syria XIV 1933 pp. 283–317) saw clear historical and geographical divides, with the influence of Antioch passing via Athens and Rome (orthodox capitals) supplanting e.g. in the second century AD much that was previously an Alexandrian art province (heterodox capitals). *political background* ANTIOCH

If there is anything in these conjectures then Cyprus stood in an interesting case. Close neighbour to Seleucid Antioch, it was ruled from Ptolemaic Alexandria. Thus the question of the common form taken by the Corinthian capital in the Island has a significance more than insular. As stated at the outset, the information so far to hand in Cyprus seems unequivocal. Something like a half a dozen good Corinthian capitals in limestone can be studied. There is not the slightest reason to suppose any of them are older than the orthodox capitals of the Olympeion — indeed most are likely to be of the time of Vitruvius or later. Yet all are heterodox and can find close parallels in Alexandrian capitals, exhibiting features which can be traced in Sicily and eventually back to well known early capitals from Bassae and related sites in the Peleponnese. *Cypriote situation*

A typical capital was published fifty years ago by Schlumberger (Syria XIV 1933, pl. XXVII 1). It comes from a reused Archaic tomb at Amathus (SCE II pp. 14, 78; pl. CLXI 2 & 3) and is dated by the excavators to the 3rd century BC (SCE II p. 16). This is in the Epidauran tradition, resembling the capital on the Khartoum column which Ronczewski (pp. 7 ff., fig. 2) puts at the beginning of his Alexandrian development. There are no cauliculi and the volutes and medial spirals emerge separately side by side from beneath the upper acanthus wreath. The interesting peculiarity is that in place of normally disposed medial spirals, it appears that the medial spirals were designed differently on the several faces; the main face in AMATHUS *in Bassae tradition*

Schlumberger's photograph showing a finely disposed "lyreform" design (cf. Ronczewski Form III, pp. 25 ff., pl. VI). Although mutilated, it can be seen that the spiral *blade shafts* stems are of the flat blade like type of the original Bassae and Epidauros capitals (cf. Ronczewski p. 8, fig. 4). This svelte looking and finely proportioned capital seems to constitute a distinct type in Cyprus — its various characteristics recurring jointly and severally in other Cypriote capitals.

OLD PAPHOS There are two very much eroded capitals on display in the Kouklia site museum, both of which have a similar, fine upstanding presence. One of these capitals closely follows the Amathus Capital in its design and components. The double wreath of 303.2 erect acanthus leaves occupies only the lower half of the kalathus leaving the upper half *décolleté* which gives the capital its tall, graceful aspect. This is achieved by allowing the upper acanthus wreath to stand only slightly above the lower. This pleasing arrangement is general on all heterodox Corinthian capitals in Cyprus and the "overall' leafage of the Vitruvian scheme is only found on the later "mass marble" versions. What closely allies this capital at Kouklia with Schlumberger's Amathus capital is the design of the spirals. The shafts of the volute spirals are of the same broad blade like formation (the Epidauros style). Equally the central composition varies on the several faces — one face showing the "adossed" design (Ronczewski's Form II, cf. pp. 20 ff., figs. 17, 18, pl. V); while the other has diminutive spirals abutted against the volute shafts something like the Bassae capital.

There are however secondary decorative elements of interest. On the more "normal" face there is a central upstanding leaf (which in concept goes back to the Tegea capital); also there are tendrils running across the top of the bell so as to blossom into rosettes in the angles, a device common in Alexandrian capitals (cf. Ronczewski figs. 3–5, etc. etc.). A very similar overall design is evident on a capital from the Theatre at Kourion of which only the upper block is preserved (v. Kourion Theatre p. 69, fig. 305.1 31); likewise on an unpublished anta capital from New Paphos, lying near the Polish 305.2 excavations.

The other capital in the Kouklia Museum is of the same overall disposition and reveals the same variant decoration in its several faces (including secondary tendrils 303.1 and rosettes). One face shows a more or less normal pattern of medial spirals, while another face shows an adossed design identical with that on the former capital. *stalk shafts* However this capital belongs to the other moiety of the Alexandrian capitals — where the volutes sprout from fluted, cylindrical stalks (v. Ronczewski e.g. fig. 12, pl. VI *et pass*). This tradition goes back to the volutes on the Tegea capital as opposed to the Epidauros capital.

Alexandrian community It is quite a waste of space here to go further into the details of these Cyprus capitals — they are completely encompassed by the numerous capitals from Alex-

andria (and from Dendereh and Edfu) examined in such detail by Ronczewski. Above all they parallel in their ramification the series of heterodox Corinthian capitals from the Roman Baths at Apollonia in Cyrenaica (v. Apollonia pp. 192 ff.). According to our knowledge of heterodox Corinthian capitals carved in limestone from Cyprus and elsewhere, Cyprus, during the centuries immediately before and after the Christian era, in its architectural décor was linked with Alexandria and remained so for two hundred years after Roman annexation.

Additional Note:

Several instances combine at this point to force specific mention of circumstances which have beset the entire work. According to official direction it is impossible to visit sites in the Northern Part of the Island and in the years prior to 1974 much archaeological work was carried on there which remains unpublished. Particularly important is the great site of Salamis where the Department of Antiquities' long continued excavations have only been mentioned in preliminary notices.

Recently some brief field notes have come to hand of a visit I made to the site in 1968. These notes refer to three possible types or stages of Corinthian Capitals used in the Bath/Gymnasium complex. The earliest should be ca Augustan in date and the material is limestone. I noted as a background to the Nabataean capital published in Praktika 1 (pp. 175–178, pl. XXXII) that in the same region were to be seen various more or less mutilated fragments of heterodox Corinthian capitals (including one or two pieces reused built into late buttresses on the south side of the Baths). A thumbnail description states "Broad blade like shafts at the angles to form the volutes (missing) and an intertwined motif as the central feature". This material must equate (in part at least) with a capital fragment published in Apollonia (p. 209, fig. 25) identified as "from Salamis Gymnasium". So far as the very heterodox central ornament is concerned, its design is a récherché variant of one class of Ronczewski's Alexandrian Type III — the lyre form (v. pp. 5 & 25 ff. and for convenience cf. Apollonia pp. 200, fig. 21). This is represented at Apollonia by Group II "The Interlaced" (v. Apollonia p. 193, fig. 10, pl. XXXIXB) but on the Salamis capital the stems cross over twice to be intertwined. For the broad blade like volute shafts cf. Ronczewski's Group I capitals deriving from the tholos at Epidauros model (v. e.g. Ronczewski figs. 2, 4 & pl. I).

Salamis

304

At the other (latest) end of the time range the monolithic marble columns of assorted sizes which were assembled in the 4th century AD to reconstitute the Palaestra peristyle were crowned with the stiff white marble orthodox Corinthian capitals of the "mass marble" style. However this peristyle was a Rhodian peristyle and the grander columns at the east end appear to have been crowned with marble capitals of a different nature. These appear to be tall and graceful with the foliage clinging to the bell, restricted and discrete, leaving the bell considerably exposed. Or so it appears from a distant view (the columns have been set up again and there is no detailed illustration of the capitals). It is possible that these capitals form exceptions to the general rule in Cyprus and are examples of the orthodox Vitruvian type in the tradition of the capitals of the Temple of Zeus Olympios at Athens and date from the first or earlier second century AD.

This is not fit notice for a handbook but in the circumstances it is probably better than silence since omission of reference inevitably will be taken to equal absence of material.

Nabataean Capital

endemic form in Cyprus

It is quite recently (at the First Cypriote Congress in 1969) that the presence in Cyprus of the Nabataean type capital was specifically noted — with some surprise (Praktika 1 pp. 175–178). Since that time a truly surprising number of such capitals have come to light in the Island (v. Arch in C p. 70 n. 132). So that now there is not only no doubt about the endemic significance of this capital type in Cyprus, but also the Cypriote examples have provided interesting new dimensions to the general development of the type. In this way it is clear that the name Nabataean no longer squares with the facts — nonetheless it is retained simply as an accepted designation without prejudice to the origins and distribution of the type.

background
Petra
Medain Saleh
Hauran
Negev

The general background of the Nabataean Capital may be stated briefly. Capitals of this form occur as a norm on the rock-cut monuments of the Nabataean cities of Petra in Southern Transjordan (v. R.E. Brunnow & A.V. Domascewski, Die Provincia Arabia I, Strasbourg 1909) and Medain Saleh, the ancient Hegra, in northern Hejaz (v. A. Jaussen & R. Savignac, Mission Archéologique en Arabie, Paris 1909). Other examples are known from lesser sites in this continuum together with a few more examples in the Hauran, the southern part of present day Syria (v. H.C. Butler, Publications of the Princeton University Archaeological Expedition in Syria 1904–1905 & 1901 Division II, Leyden 1909 pp. 236–239, 393–394). There are also capitals from settlement sites in the southern most regions of Palestine, on the roads leading from Petra to the sea (A. Negev, Nabataean Capitals in the Towns of the Negev, IEJ 24 1974 pp. 153–159). Thus their occurrence is in or by lands known to have been inhabited by Nabataeans and they are often closely associated with Nabataean inscriptions which indicate that they flourished in the first century of the Christian era (and continued to be employed some time into the second).

draught version of Corinthian

However, as was early seen, the form is not a bizarre provincial invention but the expression in draught form of the Corinthian Capital; for on those simple rock cut façades at Petra and Medain Saleh devoid of classical detailing no Nabataean capitals are found and Nabataean capitals only appear on the façades together with other classical elements — antae, entablatures, etc. (cf. Praktika 1 pp. 175 ff., pls. XXXIV–XXXV). This essential equivalence with the Corinthian Capital has been clear since de Vogüe's letter to Doughty a century ago (published in Arabia Deserta London 1888 p. 61), however the detailed expression of the equivalence has often been uncertainly realised — and this in turn has led to false trails and insubstantial arguments (cf. Schlumberger Syria XIV 1933 p. 289; G. Dalman, Neue Petra Forschungen, Leipzig 1912 pp. 270 ff.).

mainly for anta & pilaster

Because of their principal employment on the façades of rock cut monumental tombs, the majority of these capitals are anta or pilaster capitals (i.e. angular

capitals) cut in rock, with only restricted examples of column capitals worked in the round in normal masonry. Nonetheless the design remains constant whether the capital is angular or circular in form. There are two basic designs of Nabataean Capital which may be called respectively: the "full" and the "flat" (N.B. these terms reflect the true understanding which often has not been completely in mind). The 307.3 "full" capital consists of two elements (and where the capital is in normal masonry, 307.1, 2 these are invariably fashioned out of two separate blocks). The "flat" capital has one element only. But what precisely of the original Corinthian Capital these elements represent has often been left in obscurity.

two designs "full" "flat"

A Corinthian capital essentially is composed in vertical succession of three zones not two: the wreath at the base, the volute zone and the abacus. Now on the upper element of the "full" Nabataean Capital there is no division of any sort marked out. All that can be clearly seen are the "horns" which obviously represent the volutes and a protrusion at the top centre of each face which represents the central flower ornament. In this fashion the element has been taken to represent either the entire capital or, on the contrary, only a sort of hypertrophied abacus. It is neither — it represents the upper two zones of the capital: the abacus and the volute zone. In this fashion the lower element (consisting of a member spreading upwards worked with a series of mouldings) represents the double wreath at the base of the capital. This is crucial for the understanding of the form and it is made quite evident on the surviving remains (if examined closely). A few monuments e.g. the East Arch at Bosra in the Hauran (v. Butler pl. X) show the *Bossenform* Nabataean capitals matched with capitals partly or entirely worked in detail. Also the fillet and astragal moulding which is always present at the bottom of the lower member clearly indicates the top of the column shaft and thus the base of the capital. Thus it is quite misleading to look on this lower member as a sort of necking ornament with the upper member taken as comprising the entire capital itself. In this way the "full" Nabataean Capital is a draught version of the Corinthian Capital design with its two superposed wreaths of acanthus leaves which in the earlier capitals are something like 1/2 the height of the bell, not the 2/3 specified by Vitruvius (v. J. Patrich, The Development of the Nabataean Capital, Eretz Israel 17 1984 pp. 291–304, in Hbr). N.B. The division of the full Nabataean capital into two registers corresponds, of course, to the technics employed in cutting the Corinthian capital. The lower half of the capital (the two superposed wreaths of acanthus leaves) is entirely circular in section and was draughted out by being turned on a lathe. The upper half, consisting of both the volutes and the abacus, is square in section and was initially draughted out conjointly as a plinth. All this has been demonstrated clearly by observation of an unfinished Corinthian capital at Pompeii (v. RM 79 1972 pp. 323 ff., pls. 134, 135).

correspondence with Corinthian

technics of cutting

The "flat" Nabataean Capital is equally the draught version of another form of Corinthian Capital, the very heterodox type which lack partly or almost completely the acanthus foliage at the base. The design is, of course, specifically relevant to pilaster and anta capitals. It can be seen freely at Alexandria (cf. Ronczewski pl. VII). In addition it is notably well developed at Petra, e.g. on the Khasne and the Arched Gate (cf. Ronczewski JDAI 1932 AA I–II cols. 38 ff. and, for convenience, Eretz Israel 17 1984 p. 295). A feature of these capitals is the compensatory development of the acanthus leaf as a support below the volutes, and this feature is correspondingly represented on the draught Nabataean "flat" form (cf. Jaussen & Savignac p. 95, fig. 38 *et pass*; also, for convenience, IEJ 17 1984 p. 293).

ALEXANDRIA
PETRA

occurence in Cyprus
SALAMIS
AMATHUS
KOURION
NEW PAPHOS

Nabataean capitals have been discovered at a number of sites in Cyprus — e.g. Salamis (Praktika 1 pp. 175–178), Amathus (BCH 106 1982 p. 748, figs. 5–7). Kourion (BCH 98 1974 p. 894), New Paphos. Little chronological information is available concerning them, but nothing is inconsistent with dates in the first century AD. If these capitals are set against the background given above, some interesting matters become apparent. The Cypriote capitals are all of normal masonry in local limestone and there are no rock cut examples. There are pilaster or anta capitals (angular), column capitals (circular) and capitals to composite pier and half columns (mixed). Although the question is not entirely settled, it would seem that the capitals were "full" capitals and no "flat" capitals are preserved. 308.3, 308.1, 308.2

Cypriote modifications

The lines of the Nabataean Capital in Cyprus are not exactly those of the capitals familiar from the monuments of Petra and Medain Saleh. Although the Cypriote capital is the Corinthian Capital reproduced in the same draught form, additional lines are shown to indicate more of the detail. Above all the distinction is clearly drawn between echinus and abacus; and indeed on occasion (e.g. the Amathus capital) the detailed moulding of the abacus is completely rendered. 310

abacus

volutes

In the same way the volutes are outlined in somewhat more than profile — something of the actual spiral is indicated (rather cleverly in a rectangular way). However, what in fact makes the lines of the volute appear noticeably different on the Cyprus capitals is the surprising fact that the stance of the volute as represented is different from that represented on the familiar capitals from Petra, etc. The volute stems are shown as emerging almost side by side in the centre of the capital face and diverging thence to the angles, so rising at something like 45° to the horizontal. This is foreign to the design of the Corinthian Capital as generally known. In fact these lines closely recall those on another class of Nabataean Capitals — the figured capitals in block basalt from the Hauran (cf. Van Merklin Figuralkapitelle pp. 23 ff., n°s 70–81, figs. 94–108) where the central motif is a bust. Although little has been said about the derivation of these latter capitals, they in turn closely recall, both in

the stance of the volutes and the figural motif, some Italian capitals of which the best known example is from the Corinthian-Doric Temple (The Temple of Concord) at Paestum (v. Robertson GRA p. 204, fig. 91) — and cf. their representation on second style wall paintings (v. Van Mercklin figs. 1372 ff.; Praktika 1 fig. $XXXVI_2$). It is impossible not to recall the Aeolic Capital as an influence here (as Robertson unhesitatingly does). The Aeolic Capital, of course, has a special development in Etruria (cf. A. Ciasca, Il Capitello detto Eolico in Etruria, Florence 1952) and Robertson links this with the capitals at Paestum. This possible connection is of great interest in Cyprus where Aeolic style capitals had such a vogue both structurally and as décor in Archaic-Classical times.

cf Aeolic capital

The final and perhaps most noticeable difference in detailing appears in the lower
312 member of the capital — the draught version of the acanthus foliage. The Cypriote lower member comprises the same mouldings, viz. a lower cyma recta surmounted by two rolls or fasciae (the overhanging tops of the two registers of acanthus leaves). However the latter are set vertically and this gives the member the appearance of being complete in itself. In this way it could be taken for something like a foliate (palm leaf) capital of the type found in the Treasury of Massilia at Delphi (v., for convenience, Robertson GRA p. 102, fig. 46) or the Stoa of Eumenes at Pergamum and hence sometimes called the Pergamene Capital). This is the way it has been taken at Salamis where it occurs among the remains of the Roman additions to the
313 Prison of St. Catherine (v. Salamis Nec. I pl. LX). However its true nature was apparent at Amathus where it was convincingly associated with the volute member of a Nabataean capital to an angle pilaster of the Temple of Aphrodite (v. BCH 106 1982 p. 784, fig. 7; 107 1983 p. 958, fig. 3). Other examples of this lower member have
310 been recovered at Kourion in the Departmental Excavations at the West of the city (BCH 98 1974 p. 894). And now most recently, see a specific treatment of this
311 question based on finds at Larnaka (RDAC 1988_2 pp. 219–228, n.b. pp. 223 ff.).

acanthus wreath

cf foliate capitals

SALAMIS

AMATHUS

KOURION

No such element came to light at the Temple in the Sanctuary of Apollo Hylates where fragments of the volute member of a Nabataean anta capital were discovered (Kourion Sanctuary pp. 22–23; Apollo Sanctuary pp. 127–135). Accordingly Soren
129 restored the capitals as "flat" ones consisting of a single member (v. BCH 106 1982 p. 729, fig. 99). The Department of Antiquities, however, partly rebuilt the monument
37.9 (v. ARDA 1986 p. 21, figs. 3 & 17) and they restored the capital *in rem* as a "full"
130 capital, taking the model for the lower member from the aforementioned example found in Kourion town. This question is not one for facile decision. The fact that this element is always the lower member of a "full" Nabataean capital does not mean that Nabataean capitals in Cyprus are always provided with this lower member. It is theoretically possible that some Nabataean capitals in Cyprus were "flat" ones.

KOURION SANCTUARY

unfinished capital in quarry XYLOPHAGOU

Finally is to be mentioned perhaps the most interesting remains of capitals in draught form discovered in Cyprus — but it is not certain that these are Nabataean Capitals. They were left abandoned in an ancient quarry near Xylophagou on the north shore of Larnaca Bay and were found together with blocked out statues much 309
larger than life size. It has been proposed that this material (now stored in the Larnaca Museum) was designed for a monument commemorating Trajan's Eastern Wars (Studies Presented in Memory of Porphyrios Dikaios Nicosia 1979 pp. 189–193). The capital blocks are unfinished, whatever the final form was to take. It is possible that they were intended to be worked into "full" Nabataean column capitals. Equally they could have been dressed into some form of (heterodox) Corinthian Capital — or even (interesting thought) into Composite Capitals. Certainly the more elaborate style would have accorded fittingly with a "display" monument.

source

When the Nabataean capital was first noted in Cyprus, the question was raised as to its avenue of approach — viz. was it directly derived from Nabataean expansion or was it a parallel expression of a generalised stylistic fashion (cf. Praktika 1 p. 177). All the subsequent evidence suggests the latter. As yet no epigraphic evidence has come to hand of Nabataean colonies in Cyprus, such as existed in many commercial centres of the Mediterranean world. On the other hand, examples of Nabataean type capitals are known in Alexandria and environs (cf. E. Breccia, Monuments de l'Egypte Gréco-Romaine I 1926 p. 129, pl. LXVIII; JDAI 20 1905 pl. 10, fig. 9; E. Breciani, Medinet Nadi (Fayum) Milan 1968 Figs. 10, 14 & pls. XX-XXII) while the practice of leaving masonry in draught form for decorative effect is well attested on Pompeian wall paintings of the second style (cf. Praktika 1 pl. XXXVI 2). Moreover recently evidence has been assembled of the draughting out process of Corinthian capitals during this period at Rome (v. RM 79 1972 pp. 323–329) and this in turn bears closely on the specific detailing of the Cypriote capitals (cf. Eretz-Israel 17 1984 pp. 293 ff.). N.B. the partial representation of the volute spirals which reflects the detail of the volutes rising up into the abacus (cf. Eretz Israel 17 1984 p. 300, fig. 11) known on heterodox capitals in Cyrenaica (cf. Apollonia pp. 193 ff., figs. 9–13).

NABATAEA

ALEXANDRIA

THE ORDERS — GENERAL

So little has been preserved across the ages of architectural fragments other than capitals, that it is better to make a few general remarks rather than to try to discuss individual orders or putative orders. The non-classical types of capitals: Stepped Capital, Timorah Capital, Hathor Headed Capital must have comported very little in the way of accompanying architectural members. While so far as the classical

non-classical forms

classical forms

Greek style capitals are concerned, almost all the associated architectural fragments are late Hellenistic in appearance. They witness to the period when elements of the classical orders became more or less interchangeable and bases, shafts and entablature no longer unequivocally bespoke one or another monumental style.

early Ionic votive columns

So far as may be seen, there is no archaic item. This leads to the suspicion that some Ionic capitals possibly of this age were for votive rather than structural columns. On the other hand there are no (marble) pieces in the pure classical manner of one style or the other (Doric or Ionic) which are clearly pre-Roman (e.g. to go with the fine classical Ionic Capital and its good Asiatic base from Arkalou site Kouklia). A considerable quantity of (marble?) architectural fragments was discovered at Soli in the years prior to 1974, but this has not been published in detail and preliminary reports indicate that it is most likely ca 200 AD or later.

marble

later Roman

prefabricated

Symptomatic of this state of affairs is the fact that few standard monumental column drums have been discovered. The "pre Greek" supports were angular piers etc. in stone or wood. The later (ca 200 AD) Roman "mass marble" imports were
37.8, 306 monolithic marble and not infrequently spirally fluted, "barley sugar" columns (v. J. Benson AJA 60 1956 pp. 385–387). The column fragments surviving are mainly (limestone) *frustra* not drums — the base and the lower part of the shaft in one piece,

limestone frustra

39 the capital and the upper part of the shaft in another (and the body of the shaft in one or more pieces on which individual drums could have been indicated by scoring.
302 Equally the fluting may be vestigial (i.e. a token register at the neck) or irregular (e.g. Doric capitals could go with unfluted columns or with Ionic type fluting, i.e. fillets
298 not arrises). The classical fluting on the neck of the mannerist Doric capital from Kourion is very noticeable.

entablature

Consonant with this is the record of entablature fragments, a considerable quantity of which are now to hand from the Sanctuary of Apollo Hylates and the recent (unpublished) Departmental Excavations at the Lower Town of Amathus (cf. preliminary notices BCH III 1987 pp. 691–692, fig. 236). The salient characteristics may be summarised as follows:

41.6 Architrave in two or more fasciae;

Doric frieze with more than one triglyph to the intercolumniation (the glyphs cut off square at the head) and with conical guttae;

41.4, 5, 7 Ionic cornice with corona carried on modillions (no example of mutules with
315 guttae known).

general picture

This is the picture of the mixing of the orders at the turn of the eras when modillions first seem to have appeared in force (Plommer ACA p. 278). There is a close correspondance in detail to the building from the period in both Egypt (cf. H. von Hesburg, Zur Entwicklung der Griechischen Architektur in Ptolemaischen Reich,

Mainz 1978) and in Cyrenaica (cf. Ptolemais pp. 215–225; Apollonia pp. 189 ff.). N.B. In a survey of this scope it is impossible to give attention to specific mouldings — but it may be said that, in general, the mouldings appearing on these members are well cut and fully conscious of their ancestry. They are in no way crude and degenerate.

classical orders structural use in Graeco-Roman times

A brief conclusion to this summary is that building according to the canons of the classical orders appears only to have become a feature in Cyprus with the Ptolemaic regime and most remains known at present appear to date only from the beginning of Roman administration.

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(iv) FLOORS

Summary pattern of distribution and historical succession. Survey of types: Earth and Clay Floors; Plaster Floors; Stone Floors; Wood Floors.

The types of floors used in ancient Cypriote building are those generally known in neighbouring regions, but there seem to be variations in frequency characteristic of the Island. Also, whether or not due to the unequal archaeological record, a certain pattern of historical development is noticeable.

beaten earth

plaster

stone

inland pebble

potsherds

mosaic

Beaten earth floors were characteristic of the earliest round houses and remained standard for the simplest domestic building down to modern times (Maison Rurale p. 79). Although not as strikingly attested in Neolithic building as on the mainland, plaster flooring (of various types) was well developed in the Chalcolithic period and subsequently it achieved great prominence. It became the preponderant type of flooring for most of the Island's history and is of relatively greater development in the Island than in some neighbouring regions of the mainland (e.g. Syria, Palestine). On the other hand, stone flooring in the form of flagstones or dressed slabs is of restricted occurrence and only becomes general in Graeco-Roman times. However inlaid pebble floors were surprisingly common from an early period and constitute a local particularity — a position which they share with an allied form, flooring of inlaid potsherds (cf. Maison Rurale p. 79). In turn, whether or not any connection can be seen, there are several fine examples of pebble mosaic floors in Ptolemaic times, while in a later Roman age the Island became an important centre of floor mosaics. However, in the present state of information it appears that this development can be associated significantly with important marble décor as signifying a subsequent era beyond the limits of the present study.

1. EARTH AND CLAY FLOORS

a. Beaten Earth

KHIROKITIA

VRYSI

Compacted earth floors are reported continuously in the early Round House building of ancient Cyprus. At Khirokitia Dikaios spoke of earth or pisé (Khirokitia pp. 202–203; SCE IV 1a p. 7). While at Sotira he describes floors as of mud of finer quality; yellowish white mud; yellowish white rammed soil or mud etc. (Sotira p. 157). At Ayios Epiktitos *Vrysi* the floors are summarised as of mud or clay (Cyprus p.

28). This universal basic type of flooring for village construction remained current in Cyprus throughout the ages (cf. at LC Bamboula "Floors of brown earth, dark red clay or packed sandy clay", Bamboula Architecture p. 55) and was standard for the traditional modern village house (Maison Rurale p. 79). BAMBOULA

B. MUD BRICK

An alternative type of mud or clay flooring is out of mud brick. This has never been a much favoured vehicle, neither in Cyprus nor elsewhere, but is known (cf. in Palestine, ABSP p. 440). There are instances of the use of mud bricks in random crazy paving fashion (e.g. at LC Maroni, v. RDAC 1986 p. 43). One late (ca 300 BC) example of an extensive regularly set mud brick paving is the famous "Nicocreon" cenotaph platform at Salamis. All the evidence shows that this monument was a work of great haste and therefore carried out in instantly available materials (mud and wood). These considerations doubtless explain the use of this unusual flooring material (v. Salamis pp. 151 ff., pl. 87, 90). MARONI SALAMIS

C. POT SHERDS

Earth or clay in the form of terra cotta should be a reasonable flooring material, and pot sherds have never been in short supply. However, although it is known (cf. ABSP pp. 440–441), it has never been popular, and for one reason or another, does not appear highly functional. (N.B. in view of the enormous accumulation of sherd dumps at excavation sites, I have tried it for "dig houses" but it does not seem to give good results. It is superfluous if set in cement and it does not seem to bind well in a mud bedding.) Nevertheless this type of floor was relatively more accepted in Cyprus than elsewhere (it seems to go with a somewhat similar type of flooring of inlaid pebbles). Examples are mentioned at LC III Maa (Maa p. 99) and Ayios Dhimitrios (RDAC 1980 p. 33). Sensibly enough, pithos sherds are specified. MAA AYIOS DHIMITRIOS

2. PLASTER FLOORS

In considering archaeological references to plaster floors, it must be kept in mind that both crushed limestone (*havara*) preparations and burnt lime plaster were in use, that it is difficult to distinguish between the two on the ground, and that furthermore the descriptive terminology is confused and does not lend itself to expressing the distinction accurately. Furthermore it is now known that lime burning was one of the first technologies developed by man in earliest neolithic times. These are matters of

importance in Cyprus since references to plaster flooring of some description are very frequent there.

round house

The introduction of plaster flooring in Cyprus is not as well defined as might be expected and the circumstances do not seem to parallel exactly those e.g. in neighbouring Syria and Palestine. There, as is well known, the use of massively laid out and finely burnished plaster floors is a characteristic of neolithic times, so much so that at Jericho historical developments were analysed in terms of "plaster floor people" (cf. ABSP p. 437). In Cypriote round house building the situation seems to be different. Dikaios, whose observations defined the norm of this period, does not

KHIROKITIA

notice plaster floors at Khirokitia but rather specifies beaten earth, *terre pisée* etc. (Khirokitia pp. 202–203) and it is difficult to think that he would have called anything like the plaster floors of Palestine and Syria by another name. On the other hand, the more recent excavators of neolithic round houses, Todd (at Tenta) and Le Brun (at Khirokitia) clearly indicate that they recognised plaster floors of some sort

TENTA

(often painted). By implication Le Brun's material (lime-marl) should be crushed limestone (Khirokitia FR pp. 28, 31–32). Whereas Todd's "fine hard plaster" would suggest burned lime, but no physical analysis is available (Tenta p. 45). In any event it is only in chalcolithic times that reference to plaster floors becomes the norm. At

ERIMI

Erimi Dikaios specifically stated that floors were generally of beaten earth but in the uppermost houses there were lime plaster floors (RDAC 1936 p. 24); while in the

LEMBA

recent work at sites in the Paphos region it is stated that floors at Lemba are of beaten earth or in places of a hard white lime preparation ca 15 cms thick (v. Levant XI 1979 pp. 16 ff.; XII 1980 p. 15; XIV 1982 p. 39). At another of these sites, Kissonerga

MOSPHILIA

Mosphilia, very recently the interesting observation was made that *havara* floors were

ash

set on 8 cms of grey ash. This is certainly a device of chemical soil stabilisation well attested in neighbouring Palestine (v. Dust and Ashes as Soil Stabilisers, A. Aharoni in Beer Sheba I Tel Aviv 1973).

The upshot of all this is that plaster floors were not the striking features in Neolithic Cyprus that they were in Palestine and Syria (cf. ABSP p. 437) and that they became more prominent in (later) Chalcolithic times (4th and 3rd millenium BC) mainly, it seems, as crushed limestone (*havara*) preparations. Perhaps it is just possible that some historical significance can be read into this, i.e. the Cypriote

PPNB tradition

Round House tradition equates with the PPNA of Palestine, whereas it is the rectangular building of PPNB which manifests the elaborate burned lime plaster floors.

EC-MC

It is in the immediately succeeding period (EC-MC) of rectangular village style

burned lime

building that the first specific mention of burned lime occurs. Gjerstad in his

ALAMBRA

KALOPSIDHA

pioneering excavations at Alambra and Kalopsidha noted "slaked lime" plaster

floors at both sites (SPC pp. 22, 29). With the introduction (LC II-III) of monumental dressed stone masonry building, plaster floors remained the superior type of flooring in use — and in more elaborate developments. The dressing of ashlar blocks produces inconvenient quantities of stone chips and lumps = masons' waste. This limestone can be mixed in with lime plaster to good effect to bulk it out as a flooring material. This has been observed at Kition (v. Kition Exc V.1 p. 55). The mixture with crushed limestone (*huwwar*) is well known in the flooring of Iron Age monumental building in Palestine (v. ABSP p. 438). The preparation is the *maddeh* (spread) of traditional Arab building made up of *nhateh* (i.e. masons' waste) and lime. A superior type is *maddeh arabiyeh* or *maddeh hajariyeh* consisting of equal parts of stone chippings, lime and ashes (v. ABSP p. 438; JPOS 1933 p. 77).

LC

lime & masons waste

KITION

Gjerstad (whose excavations of settlement sites of different periods provided him with a good background in the matter) gave particular attention to identifying and categorising the floors in the Vouni Palace and these may be taken as representative of Archaic and Classical monumental buildings. Here in the majority of instances the more or less imposing rooms were floored not with stone paving but with some form of plaster preparation. Gjerstad lists about half a dozen types and it is reasonably possible to interpret his descriptive categories (SCE III pp. 147 ff.) in the light of more recent concern for physical analysis of materials.

archaic – classical
VOUNI

In the first place he makes a distinction between lime-marl and lime-cement/concrete. Obviously it is highly probable that this corresponds to a distinction between crushed limestone (*havara*) and burnt lime (slaked lime).

crushed limestone
burnt lime

He mentions two types of lime-marl floor: white lime-marl and red lime-marl. The former would seem to be straight forward *havarah*, but the red lime-marl may be worth some consideration. It is possible that there was a natural deposit of this colour marl in the vicinity. On the other hand, a reddish lime preparation is well known throughout the Middle East in traditional modern building. This is *hamra* ("red" in Arabic) and consists of a mixture of lime and crushed potsherds. It is very good for surfacing cisterns etc. since it spreads well and has good hydraulic properties (v. ABSP p. 371, JPOS 1933 p. 24). Gjerstad mentions moreover that his red lime-marl "has proved to be of great elasticity" (SCE III p. 149).

hamra

By lime cement and lime concrete Gjerstad must have intended a preparation based on burned lime, i.e. slaked lime — although he never makes the distinction specifically (whereas he used the term "slaked lime" in his SPC report on Alambra). However since the cementitious properties are emphasized there can be little doubt that the preparation involved burning whatever the original material employed. This virtually has now been confirmed by the physical tests carried out on materials of an apparently similar nature at Idalion. This material is shown to be lime

IDALION
physical analysis

cement/concrete based on the burning of various lime-marls (Idalion OIC pp. 10–11). Furthermore the different descriptions of lime cement/concrete given by Gjerstad suggest possible additional components known to be used in the preparation of cements. As well as simple lime cement/concrete or white-buff coloured material, Gjerstad describes two other types: thick blue grey lime cement (SCE III pp. 151–152) and reddish lime concrete/red cement (SCE III pp. 148, 151–152). The latter could well be a form of hamra, while the former would seem to be the product of lime burnt with ashes (recapitulating the primordial neolithic invention, cf. ABSP p. 373). These possibilities demand clarification by physical tests such as are said to be in progress on the Idalion cement/concrete (where it should be noted, lime marls of different colours — blue, reddish, etc.) are specified as raw materials.

3. STONE FLOORS

A. Bed Rock

The most elemental expression of stone floors e.g. in Cyprus is the bed-rock floor which is something of a local feature. Because of the non tell-forming habit of settlement, a large proportion of building is on virgin sites, often outcropping or thinly covered bed-rock. Where this rock surface is irregular it is a characteristic device to cut the rock down to a level floor within the confines of the room and leave the walls to be built partly on upstands of rock. This can be seen at all ages — e.g. in LC III Bamboula (Bamboula Architecture p. 55); Archaic Vouni (SCE III pp. 147–148) and the Roman Sanctuary of Apollo Hylates (Kourion Sanctuary p. 4).

trimming

Bamboula
Vouni
Kourion

B. Stone Slabs

Flooring of this type is in the nature of things a product of the epoch of building in dressed stone, i.e. LC II–III and later. However the notable fact is that within this tradition stone slab floors appear not so much an expression of monumentality but to have a functional ratio. Such flooring has e.g. the virtue of being waterproof — i.e. it will not dissolve or deteriorate in water and it can be cleaned by swilling and scrubbing. This seems to be its main *raison d'être* in LC times where out of a dozen or so instances noted ten are set about wells — mainly at Enkomi (in the Ashlar Building and in Batiment 18, etc.) but there are one or two recorded at Kition and Hala Sultan Tekke (v. Hult Ashlar p. 17). The most notable example is the closely fitting lead pointed paving of the "Bathroom" at Hala Sultan Tekke Area A, Room 1 (Ashlar p. 9).

well heads
Enkomi

bathroom
Hala Sultan Tekke

Equally in later times the largely ashlar built Vouni Palace (ca 500 BC–450 BC) is provided with plaster floors in the more significant apartments and there is only one floor of stone slabs. This was a room where fire-wood was stacked for firing the hot bath (*praefurnium*), i.e. it received heavy loads and shocks and was subject to burning, necessitating the solidity and durability of stone (SCE III p. 152; Corolla Archaeologica p. 146). VOUNI *service apartments*

A rather special application of stone paving is in the sepulchral context where its ratio is symbolic rather than functional. A built masonry tomb is a version of the original rock cave "house of a million years" and thus the image connotes stone flooring (that is if the floor is not itself rock cut). At least one Bronze Age ashlar built tomb at Enkomi is floored with ashlar slabs (Hult Ashlar pp. 9, 17). The matter is well illustrated by the built tombs at Salamis in Archaic times. Typically they are constructed in a large cutting in the earth and floored with stone slabs of the same nature as the walls — cf. e.g. Tombs 2, ca 700 BC, and 3, ca 600 BC (v. Salamis Nec I pp. 6 ff., figs. 1 ff. & pp. 27 ff., figs. XIII ff.). Other good examples are the Archaic Royal Tombs at Tamassos (Built Tombs p. 37, fig. 10) and the Classical Royal Tomb at Pyla (SCE IV2 p. 47, fig. 17). The same circumstances continue into Graeco-Roman times, cf. Tourabi Tomb 9 at Kition (Kition pp. 148–149, figs. 22–25). *tombs* ENKOMI SALAMIS TAMASSOS KITION

However, in general building, finely dressed stone paving did not become a standard mode of monumental flooring until the Graeco-Roman period. Most of the surviving evidence is from Roman times, cf. some of the buildings of the Sanctuary of Apollo Hylates e.g. The Trajanic Hostel (v. Kourion Sanctuary pp. 33–35, fig. 23). At Kourion in addition to limestone paving, marmar (gypsum) slabs were used as is (was) still the fashion in traditional modern building (Kourion Sanctuary p. 4). What may be an interesting historical succession is seen in the Evreti Classical Building at Kouklia where the original plaster floor of the court was later slabbed over in Hellenistic times (RDAC 1985 pp. 113–116). *Graeco-Roman dwellings* KOURION KOUKLIA

c. Pebble Inset

The sea shores and dry wady beds of Cyprus provide an ample store of smooth waterworn pebbles. They are small-medium in size and very frequently of hard (e.g. basic igneous) rock. Whether or not for this reason flooring of such pebbles set into grounds of some sort has been common in Cyprus at many periods — and relatively more common than in neighbouring countries. This type of flooring has a general affinity with inset pot sherd floors and sometimes the two occur in conjunction — e.g. at Ayios Dhimitrios (RDAC 1980 p. 33) and Bamboula (Bamboula Architecture p. 55). Many examples are recorded from LC times onwards extending down to the AYIOS DHIMITRIOS BAMBOULA KOURION

Roman Sanctuary of Apollo at Kourion. There blue pebbles are used for many of the important rooms almost to decorative effect (v. Kourion Sanctuary p. 4).

D. Ornamental Floors

As remarked above, the Cypriote liking for inset floors (pebbles, sherds, etc.) lends itself to a certain decorative development and such a concern survived into traditional modern building where quite frequently earth floors in village houses were swept and watered into a patterned design (Maison Rurale p. 79). In this light it is noteworthy that from an early stage in Graeco-Roman times there is striking evidence of ornamental flooring in Cyprus notwithstanding that there is so little archaeological evidence of any sort for this period. At both New Paphos and Kourion very fine pebble mosaics have been revealed: that at New Paphos (an imaginative naturalistic Scylla) is ca 300 BC (Paphos p. 232–234, fig. 212; Guide to the Paphos Mosaics pp. 16–18, fig. 4) while the one at Kourion (more stereotyped genre composition of amphora and marine life) is about a century or so later (D.W. Rupp, RDAC 1978 pp. 254–265). Quite similar pebble mosaics are known from Ptolemaic Alexandria (v. La Maison Privée pp. 76 ff., figs. 37–38).

pebble mosaics

New Paphos

Kourion

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It is possible that the baths in the Apollo Sanctuary at Kourion contained (true) mosaics of a very simple form in black bitumen and white gypsum tesserae which could have been of Trajanic date (Kourion Sanctuary p. 59). These however are of marginal significance compared with a splendid series of mainly figural mosaics which have been cleared in recent years in and about New Paphos (v. Arch in C p. 70). Good coloured illustrations of these can be found conveniently collected in Karageorghis & Maier "Paphos" and in Daszcewski & Michaelides "Guide to the Paphos Mosaics" Nicosia 1988. These mosaics are significant additions to the repertory of ancient mosaics and are notable items in the artistic heritage of the Island. However it is very difficult to recognise any of them as much earlier in date than ca 200 AD, and for the most part they are clearly 3rd and 4th century AD work. Thus they are important in defining the character of the style of monumental building which introduced a new age — one based on a more ecumenical sort of life style and requiring another volume for its treatment. N.B. for a full treatment of the development of mosaics in Cyprus now see W.A. Daszcewski & D. Michaelides, Mosaic Floors in Cyprus, Ravenna 1988.

later figural mosaics

4. WOOD FLOORS

Floors of wooden boards are a possible construction in a well forested region like

Cyprus. However such flooring has never featured in traditional modern building where floors are always solid (only in the Troodos mountain villages floor boards are sometimes seen in the upper storey). In ancient Cypriote building there are frequent indications of wooden sills, thresholds etc. but on only one occasion has evidence been adduced for a board floor. This was at the Graeco-Roman Sanctuary of Cholades by Soloi where the SCE reports speak of a wooden floor to the southern pteron of the Temple E court (v. Soloi figs. 50 & 60). The evidence is the impression of large wooden beams set in gypsum plaster, but it is quite impossible to understand whether the report means to indicate a floor, or a wall or a sleeper wall (cf. Soloi pp. 23, 52, 73–75). In any event the date of this feature is given as 4th century AD (Soloi p. 93). SOLOI

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(v) DOORS

Door refers variously to the aperture passage and the means of its closure. The door in Round House building. In village style domestic building. In monumental building — native and Graeco-Roman. Initial use of detached shutters for closure in Neolithic times. The pivot mounted simple wooden door leaf of village style building surviving across the ages into traditional modern use. The door leaf in monumental contexts — Cypriote evidence entirely from sepulchral context.

It is impossible to be specific in the use of door (or its equivalent in other languages) as it always signifies jointly and severally an entrance (aperture) and the means of its closure (for detailed terminology v. ABSP pp. 442–443). The universal modern practice of hanging a door (leaf) by horizontal metal hinges fixed into the framing of one (door) jamb brings the door frame and the leaf (or leaves) into something of a unity of construction. This did not as a rule obtain in ancient doors and it is better to consider separately the framed entrance aperture (doorway) and the door leaves which close it. SOLOI

Door Framing

The door in round house building has (or can have) a very distinctive aspect. To *round house*

arrange a rectangular vertical door in a beehive shape structure is not necessarily very convenient. A very common solution at all ages is to build out some small entrance porch/lobby on rectangular lines (e.g. as at Arpachiyah v. J. Mellart, Earliest Civilisations of the Middle East, London 1962 pp. 121–122, fig. 106). This was not commonly adopted in Cyprus round house building. Thus whatever the inward curvature of the walls in elevation may or may not have been (now become a contentious matter) there can be little doubt that originally, in the nature of things, the door aperture of Cyprus round houses was not rectangular but rounded off at the angles (for a general reconstructed view showing doors, v. Tenta fig. 21). With round plans (and incurving walls) corbelling is the natural construction for the door head. Equally the door sill was generally not at floor level (neither internal nor external) but raised some distance above (SCE IV 1A pp. 7, 11, 79 — cf. the manner of a port in a ship's bulkhead). This primaeval aspect was maintained across the ages in archaising representations — e.g. model shrines, cf. the EC Vounous Model (Archaeologia LXXVIII 1940 pp. 118–125; Cyprus p. 45, fig. 31, 32) and even the Iron Age model in the Cyprus Museum (v. Khirokitia Pl. LXXXVI). All of which set the door off on its long and varied life as a powerful symbol — and here the form is reminiscent of the aperture which marks man's first momentous passage, birth. The second archaic characteristic of round house doors is also to be mentioned here although it is dealt with more fully subsequently. Initially the closure was not by way of a leaf fixed in place against the frame but by a moveable shutter drawn up and secured in position by propping and barring (cf. ABSP p. 447), a manner long preserved in the stomion stone of the rock cut tomb.

in exact terminology

model shrines 87

village houses

The form and construction of the door in the succeeding rectangular village building, although not well demonstrated archaeologically can be reliably inferred from its preservation in traditional modern building (cf. Maison Rurale p. 71 *et pass*).

door position

With rectangular plans there arises the important consideration of positioning the door — whether in the (middle of the) run of the wall or in an angle. Not only basic design concepts are at issue here (i.e. Long Room, Broad Room and Bent Axis entries, etc.) but also an important structural consideration. The clean stopping of a rubble wall constitutes a potential weakness, therefore setting the door in an angle is economic construction, since only one (clean stopped) jamb must be fashioned. So little has been published in detail concerning this class of building that any overall assessment of the relative frequency of the two schemes of positioning doors is premature. It is of some interest to note that Gjerstad's EC Alambra house, one of the oldest and earliest excavated village type houses, has the door differently positioned in each room, one at the angle and one in the middle of the wall (SPC pp. 19 ff., fig. 1). Perhaps the safest assessment is to say that both schemes were practised.

ALAMBRA 159A

Some rather striking evidence for the angle positioning of the door has been revealed
159B in recent excavations, cf. the MC village house at Alambra Mouttes (RDAC 1982 pp. 81–82, fig. 1) and the LC non-monumental buildings at Ayios Dhimitrios (RDAC 1979 pp. 22 ff., figs. 3–6; 1983 pp. 102 ff., figs. 3–4; 1984 p. 16, fig. 1; Cyprus CLBA p. 13 fig. 2). This is also the picture at LC Episcopi *Bamboula* — "generally in BAMBOULA
or very close to an angle" (v. Bamboula Arch p. 55). On the other hand in traditional
28–30 modern village housing the door is characteristically positioned in the middle of the wall.

In form and construction the village house door is a basic rectangular doorway (ca *construction*
0.60 m — 1.00 m broad) closed with one or two (wooden) leaves. The lintel was invariably of wood and much wood was used in the construction generally, including on occasion the sills (cf. Bamboula Arch p. 56; SCE III p. 146) which were otherwise often of selected flat stones. In rubble masonry construction care was taken to fashion the jambs securely. A universal practice was to build the clean stopped wall end in specially chosen (larger) facing blocks often crudely knocked into shape. At Episcopi *Bamboula*, where in general certain traces are apparent of a more monumental construction, door jambs were sometimes revetted with stone slabs "rather thin, usually unhewn but carefully selected". In one instance a large regular shaped block was found set up on end to constitute a jamb. Also "evidence for the use of a wooden jamb" can be seen (Bamboula Arch pp. 55–56).

In traditional modern building a wooden door frame is always provided (v. *door frames*
Maison Rurale pp. 64, 71, 164–169) consisting of two posts, head and sometimes sill, whether this was inevitably so in ancient building is not clear since the wood members have always been entirely decayed. However sometimes the former presence of such a wooden frame (and the grounds for its fixing) is clearly demonstrated by rebates or impressions left in plaster or mud construction (cf. SCE III p. 146). The door leaves were set in place by the standard method of fitting projections of one door post (stile) into pivot housings at top and bottom. The lower pivot is a cup shaped stone, the frequent survival of which forms valuable archaeological evidence indicating the position and nature of doors in denuded remains.

In addition to this very normal type of room door there are indications of the use of a more pretentious feature in special circumstances. Here again the ancient evidence can be matched with traditional modern practice. The door is a symbol — it is a speaking mouth. Therefore in buildings of some note the door is given extra distinction. It is made larger (two leaves) and above all, it stands higher than its surround. This type of door is provided for the main external door to a substantial building dignified by an enclosed courtyard (cf. Bamboula Arch p. 56). The most significant application of this practice is the door or gate to the temenos of a

sanctuary as is clearly demonstrated by the Vounous model (v. Archaeologia LXXVIII 1940 pp. 118–125; Cyprus p. 45, figs. 31, 32). This is exactly a "high gate" (a term still used in Ottoman times to signify the court of the Padishah). Precisely this feature survives in the *Xoporti* of traditional modern building where it is generally built of stone, often arched and ornamented (cf. Maison Rurale pp. 63–65).

high gate

ashlar building

With the introduction of dressed stone masonry this basic treatment of the door no longer sufficed universally. A fine wall needs a fine door. This is not to say that on all occasions a monumental treatment of the door was necessary. For most internal doorways inset wooden door frames continued to be used (as today). Rebates taking wooden door frames can be seen cut into ashlar masonry at LC Ayios Dhimitrios (v. RDAC 1984 p. 22, fig. 2, cf. rear of Pl. v. N° 2), while the use of wooden door frames was general at Vouni Palace (v. SCE III p. 146). However on occasion some monumental treatment was required for doors (e.g. principal external entrances to Temples etc.). This was expressed in the framing itself and on occasion also in the architectural setting (i.e. prefixed or inset columns, pillars, etc.). Although not extensive there is a certain amount of evidence for such embellished doors surviving both from normal building and (particularly) from monumental built tombs.

wooden frames

monumental expression

columnar porch

Columnar porches and the like may be mentioned first. It seems that two free standing (tree) posts, piers, columns, etc., set before doors to sacred precincts were symbols of establishment and order. The best known examples are the famous Jachin and Boaz of Solomon's Temple (v. PEQ 1959 pp. 6–22) cf. also the columns before the Temple of Hierapolis celebrated by Lucian in *de dea Syria*.

KITION

The principal temple (Temple 1 — Astarte Temple) in the Kition Sanctuary was furnished with these emblems. At the main (east) entry a small roofed entrance porch or lobby which answered to the *ulam* of the Solomonic Temple and was built up in ashlar masonry at least some courses above the orthostates (v. Kition Exc V.1 pp. 176–178, figs. 41, 67). It is possible that in LC times two such columns were set before this entrance. These symbolic columns were certainly present in the Phoenecian Temple of Astarte (9th century BC) set before the holy of holies (debir) whether or not they existed in the original LC III design (v. Kition p. 98). N.B. an interesting Assyrian cuneiform text speaks of the inhabitants of Sidon cutting down such features as an affront or an act of despite to the Assyrian authorities (v. Nimrod letter XIII in Iraq 17 1935 pp. 130–131, pl. XXI; but the word *equ* is there translated as "water course"). Further evidence of these features set before doorways in Cyprus appears on model shrines of Archaic date (cf. Studies PD pp. 109–110; AJA 75 1971 pp. 427–428) and also on Roman coins depicting in a stylised way the famous Temple of Aphrodite at Paphos (v. Acta Archaeologica IV p. 204, figs. 1–3).

105

equ

model shrines

coins

Indirect evidence of another type of embellished doorway is afforded by the

proto Aeolic capitals

Proto-Aeolic capitals which in Cyprus are of Archaic date. Close investigation of these capitals in Palestine has shown that there they capped pilasters, engaged piers or free standing piers set in doorways and this context must be presumed to hold good for Cyprus although it is nowhere clearly demonstrated (Qedem 11 pp. 1–49). That is to say in upstanding building. For in Cyprus Proto-Aeolic Capitals and
199 engaged piers are used in exactly this fashion to frame the main doorways of the Royal Tombs at Tamassos (Qedem II, p. 38, fig. 56). However it is always possible to argue that tombs constitute a special case.

TAMASSOS

The door framing itself was given some degree of monumental expression in several different ways. This involved construction in stone coupled with fine (ornamental) dressing. Most of the earlier evidence is from tombs but this can be seen to follow normal models — although it is possible that some forms were specially relevant to underground construction.

fine stone frame
NITOVIKLA

The concept of the door frame out of fine masonry and differently expressed from the surrounding wall masonry seems to be attested at a very early date in LC times. In the fortress of Nitovikla at a period (LC1?) long before dressed stone masonry
229 occurs in connected passages of construction, finely dressed upright slabs form the jambs to a main entrance way (Ashlar pp. 15, 17, fig. 14). Later in LC III times at
234 Hala Sultan Tekke remains of an ashlar door frame can be seen inset into an ashlar faced wall (v. Ashlar p. 9, n 71). Also at Bamboula in non-monumental rubble construction selected slabs are used to revet jambs (Bamboula Arch p. 55). This probably shows the influence of dressed stone masonry. However in general there is a surprisingly little surviving evidence for fine trilithon door frames until they are introduced as part of classical style building in Graeco-Roman times.

HALA SULTAN TEKKE

recessed orders in tombs
VOUNOUS

One well-attested motif expressed in monumental doors is that of stepped mouldings or recessed orders which is proper to sacred doors (an elaboration version is well known in Gothic architecture). This can be seen on rock cut tombs with early instances on several ECI tombs at Vounous, ca 2500 BC (Antiquity 1939 pp. 461–463). An excellent example is Tomb 84 (6th century BC) in the Cellarka cemetery at Salamis where the lintel shows the extra decoration of a carved crescent also seen on the Proto Aeolic capitals (v. Salamis Nec II, pls. CLXI, CLXII, fig. LXXI); Salamis pp. 127 ff., fig. 31, pls. 70, 71). The most monumental expression of
199, 319 this motif is of course on the doors of the built "Royal Tombs" at Tamassos (v. Built Tombs figs. 9, 10, 12, 13; Qedem 11 pl. 18).

SALAMIS

TAMASSOS

on model shrines

This device was reckoned a shorthand indication of a sacred structure as demonstrated by the shrine models which often represent only (or largely) a door of this form, sometimes with a figure standing within the doorway (v. ABSP fig. 351). However basically it is doubtful whether these representations of openings framed

by recessed mouldings necessarily have much to say regarding actual doors in Cyprus. Whatever their relation to an original architecture (wherever) may have *on stelai* been, these representations on stelai are a mode or style which can be traced across great tracts of time and space in the Middle East. Indeed their most salient expression is at the furthest extension in South Arabia and Ethiopia (cf. G. Frankovitch East and West 1966 pp. 201–260). A very striking Cypriote example is the LC III HALA SULTAN TEKKE block from Hala Sultan Tekke, a sizeable (0.58 m × 0.28 m × 0.15 m) stele or altar 317 fragment which shows a façade consisting of a door surmounted by louvred windows (v. HST III 1977 pp. 150–155). This design in particular is very reminiscent of examples in South Arabia. Also an interesting collection of such stelai-shrine models KOUKLIA was recovered from the Persian siege mound at Kouklia and is thus of 6th century BC date. Although this material has not been published there are advance illustrations and notices of a few pieces (v. RDAC 1974 p. 142). The finest (KA 2122) is on display 318 in the Kouklia Museum and shows very truly the architecture of a shrine door with recessed orders (v. RDAC 1974 pl. XXI, 1). Another example shows a figure standing in the door (RDAC 1970 p. 76, pl. VIII, 1).

Another motif embellishing or monumentalising a door is (to us) the arch — i.e. an *arched head* arch headed door. This device is, however, not as clear in its significance during antiquity, as in general its application seemed originally more utilitarian (e.g. figuring in underground construction) before being accepted by classical taste as dignifying ornament in Hellenistic times. In any event, in Cyprus the earliest *in tombs* examples of arch headed doors in dressed stone masonry came from built tombs — SALAMIS e.g. at Salamis, cf. The Prison of St Catherine and nearby tombs of Archaic date (v. 204 Sal Nec I, pls. CII, CIII, CXXXVI, CLXV, CLXVI).

The foregoing instances serve to show that there is little evidence for strong development of ornamental monumental door framing in native Cypriote building. This feature becomes standard in Cyprus only with its introduction as part of the *Graeco-Roman ornament* classical heritage in Graeco-Roman times. In this connection, as is general, the surviving evidence is almost entirely Roman. However there are sufficient indications to show that such doors were known in Ptolemaic days — e.g. inset cornices NEW PAPHOS to doors in the rock-cut Tombs of the Kings at Paphos (for the manifold illustrations 323 of Ptolemaic door frames in Alexandria v. Maison Privée pp. 80 ff.). An excellent display of ornamental and monumentalising door frames in Roman Cyprus is to be KOURION seen at the Sanctuary of Apollo Hylates by Kourion. Here very often these pleasing 321, 322 ashlar door frames with their moulded architraves and cornices are set in rubble walling, so that in addition to monumentalising the aspect, they provide (together with the windows) the stiffening framework for the rubble construction (cf. Kourion Sanctuary p. 5, figs. 10, 22, 43, 44 etc.). So far as arch headed door and gateways are

concerned, the evidence is much curtailed because of the striking absence in Cyprus of the Triumphal Arch and City Gate. However the arch was ornamentally expressed in arcosolia and niches etc. and arch headed doors and gates clearly existed, e.g. in Theatres, etc.

Door Leaf

Information regarding ancient Cypriote door leaves is mainly inferential since these were almost entirely of wood which has not survived, although quite often the presence of deposits of ash in the vicinity of a doorway shows the former existence of such wooden leaves.

Shutter

As has been mentioned above, the initial scheme for door closure was formally anterior to the fixed, turning door leaf. The use of the shutter in the earliest round building is attested in archaising funerary devices, cf. the Chalcolithic house-urns of Palestine (ABSP pp. 322, 447). The actual history of earliest door closure in Cyprus can only be derived from the presence or absence of lower socket stones. There is virtually no mention of these in the careful excavations of Khirokitia, Tenta and Sotira etc. (only one possible socket at Khirokitia, a surface find — v. Khirokitia p. 292, pl. XCII). However pivot stones are found at Lemba (Lemba pp. 30, 32); while the newly discovered model shrine at nearby Kissonerga *Mosphilia* encompasses a representation of a socket to take the door which is also present in effigy (Levant XXI 1989 pp. 195–197). Thus it seems reasonable to suggest that in Cyprus the fixed door leaf turning in a pivot comes into general use in Chalcolithic times and remains the rule thereafter.

pivoted leaf

construction

The system of setting doors so as to swivel in pivots in general survived unchanged throughout ancient time and is still in use today for massive and ponderous doors and gates. The system puts no strain on the door jambs (a distinct advantage in rubble and mud construction) and the bearings are not subject to bending but are put in compression. Thus, in technical terms, the door was set not hung (as on modern horizontal hinges). The door leaf was fashioned with one strong post/stile (or alternatively with two vertical pegs) projecting up and down (the pivots) and these were lodged so as to constitute a vertical axis of rotation — the lower extremity in a hollowed socket set in the sill or the floor and the upper extremity either in a recess in the roof or lintel, or else in a ring fixed in the wall or jamb.

traditional modern building

In general practice everywhere for ordinary domestic building this system of setting doors has long been superseded by the practice of hanging the door leaf on several horizontal hinges fixed to the door frame. However in traditional building in Cyprus the old system can be seen employed alongside the hinged system (v. Maison

Rurale pp. 165–166). A local peculiarity is that the upper pivot is often arranged not with one projection but with two projections close to each other. The axial projection turns in a normal recess and the other turns in a quarter circle grooving in the lintel, thus avoiding lateral play in the lower pivot. In view of the survival of the pivot system, we can take it that the type of wooden door leaf of traditional modern building in Cyprus maintains in essentials the form of the long vanished wooden doors of ancient village type building. These traditional modern door leaves are invariably of the type known today as battened and ledged — i.e. vertical planks (battens) secured by 3 or 4 horizontal cross pieces (ledges). They are unframed and in general without inclined braces between the ledges (cf. Maison Rurale pp. 71, 165).

monumental door leafs

While this simplest type of door leaf obviously continued in use across the ages in village style domestic building, new considerations arose from LC III times onward when more monumental construction was introduced into Cyprus. For the door leaves of these monumental buildings much direct evidence from antiquity is available. Monumental doors in neighbouring regions of the ancient Near East are known both from ancient representations and actual survival of the objects themselves, cf. the famous Balawat Gates in the British Museum (v. ABSP pp. 447–448, fig. 357). The essence of the upgrading is to take the basic structural elements (e.g. the ledges) and to emphasize them as ornament. This was effected principally by incorporating them in metal (either plated or solid), cf. the Prophet Isaiah's "doors of brass" (v. Isa 54.2).

in tombs

In Cyprus the available evidence is entirely from a sepulchral context. This parallels normal building, i.e. just as the simple wooden door survived for ordinary purposes so the simple closure of rock cut tombs by a stomion stone continued; but for the monumental masonry tombs an ornamental door was provided paralleling that provided for monumental buildings (e.g. temples, etc.). In later Archaic times

TAMASSOS

ca 600 BC Tamassos Royal Tomb N° 1 (v. BuiltTombs p. 37, fig. 10) incorporates the interesting sepulchral device of the false door, a profoundly Egyptian motif. The lateral walls of the ante-chamber show false doors in exactly the position where other monumental tombs (e.g. the Pyla Royal Tomb) develop lateral chambers. The door leaves are quite plain except for a prominent bolted lock. These doors would be described in modern terms as flush doors, but in fact it is unlikely that they say much or anything concerning door leaves in Cyprus since they are probably conditioned by the typology of false doors in Egypt (cf. G. Jequier Elements de l'Architecture pp. 125–28; for Ptolemaic false doors v. Maison Privée figs. 49–54).

199, 319

On the other hand an as yet unpublished find from Amathus shows exactly what door leaf design was current in superior class Cypriote building about the middle of

the first millenium BC. Presently stored in the Limmasol District Museum is a monumental stone door (ca 1.92 m × 0.70 m) found by the Department of Antiqui-
320.2 ties in the dromos of an Archaic tomb. The door leaf is in form exactly what today would be called a framed and panelled door — the proper form for superior building. It is a two panel design and it is a mark of the early establishment of norms that this door leaf design could easily appear in any present day building (cf. Sharma & Kaul p. 216, fig. 630). The design is also reproduced on a painted false door from the Tombs of the Kings at New Paphos (v. Arch in C pl. XXIV.10). AMATHUS NEW PAPHOS

In addition to its imposing and harmoniously designed proportions, the door incorporates a perfectly preserved bronze shoe to the lower pivot (cf. the shoe to a wooden door frame from Palestine v. ABSP fig. 353; and now cf. Tel Aviv 15–16 1988–1989 pp. 197–205). This is a standard device well attested in neighbouring Near Eastern regions where in monumental construction either the door socket or the pivot might be provided with a metal bearing (ABSP p. 447). And even in traditional modern Cypriote building certain metal fittings may be found on some door leaves including metal runners in the lintel for the upper pivots (cf. Maison Rurale p. 166). *metal shoe*

There is also another stone door (ca 5 cms thick) from a tomb of the same period which was found in the Cellarka cemetery at Salamis. A somewhat less elaborate door, this is a single panel design with the added feature of dentils suspended from the top rail. The projecting pivots have no metal casing (v. Exc SN II pp. 39–40, fig. 1). SALAMIS

In conclusion a very unusual find indeed should be mentioned of very great significance for door leaves and their fixing in place. Several bronze (door?) hinges, ca 7 cms long, were discovered in the sanctuary area of the Western Acropolis of Idalion, ca 7th century BC (v. SCE II pp. 540–541, pl. CLXXVII). They were in the vicinity of what was interpreted as a wooden partition wall. They must be some of the earliest hinges known. *metal hinges* IDALION

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(vi) WINDOWS

General importance of fenestration in determining the character of a building. Peculiar climatic conditions in Cyprus and their possible effect on fenestration. Windows in Round House building — apparently both rectangular and rounded in form. Windows in village style building — evidence available from modern traditional building. Windows in monumental stone building — Schaeffer's Batiment 18 at Enkomi. Evidence of wooden frames available in Crete, both direct and by way of ancient representation. Indirect evidence of windows in Cyprus from the iconography of "The Woman at the Window". Introduction of finely dressed stone window frames as distinct structural entities in Graeco-Roman times. Evidence from Sanctuary of Apollo Hylates by Kourion. Devices for closure of windows and introduction of glazing in Roman times witnessed in Kourion Baths.

an important design element

It is a truism to say that the overall aspect of a building, internal as external, is largely determined by the fenestration — the nature and area of the windows. A building may have the same floors, doors and roofs but if the windows are very different in nature the building will be a very different one. Unfortunately since windows are generally set at a fair height above ground level *in situ* archaeological record of them, especially in non-monumental construction, is restricted. In this way information concerning ancient fenestration must be derived in considerable part from secondary sources, e.g. from ancient representations on models etc. Since there has been so little excavation in Cyprus of settlement sites in many periods these considerations are prominent ones. Nonetheless it is possible to say something about windows in ancient Cypriote building.

tied to climate

There is a rather obvious remark of general application which is worth making as a preliminary. Climatic conditions are one very important determinant of building, particularly in simple housing. And in this connection no distinction is more important than that between an equable climate and a rigorous climate of extremes. In the former it is optimum to be able to let the external air into the building, and in the latter it is optimum to be able to keep the external air out of the building. This distinction in climate may be referred to compendiously to that between a maritime and a continental climate. Now in this respect Cyprus is a strange place. It is an island and therefore its climate should be that of an island — i.e. it should have a maritime climate. However it possesses sizeable bodies of fairly high mountains and for one reason or another much of the interior (between the mountains) approaches desert. Therefore the climate of Cyprus is anything but uniformly maritime — in many parts it is quite decidedly continental, a climate of extremes where it is necessary to keep the weather out. These two basic types of climate directly condition fenestration: the maritime climate invites a larger window space to be left open to admit the cooling sea winds; the severe continental climate recommends minimal opening of walls so as to keep out the inclement weather (either the heat of the desert

unusual conditions in Cyprus

open & closed structures

or the cold and blizzard). It is thus quite possible that there were considerable regional differences in fenestration in the ancient domestic building of Cyprus.

Finally in this connection it is to be observed that nothing like modern ideas concerning minimum window space per unit floor area (in the combined interests of lighting, ventilation, heat control and outlook) applied in anquity. Simply put it was quite possible to have no windows at all.

inexact terminology

In giving a brief outline of windows in ancient Cypriote building it must be remembered that as with doors, the term window connotes both the aperture in a wall and the device to close it. However the window is designed to admit a measure of light and air when desired. It differs from the door in not being designed for human passage.

in round house

Generally speaking, little is known about windows in round house building. However a considerable amount of detail has been reported concerning windows or possible windows at Tenta. (v. Tenta pp. 38–39.) Apertures of various shapes and sizes were preserved but in no instance was the head surviving intact. Therefore it is not conclusively demonstrated how this was built (either by wooden lintel or corbel arched in some way). Furthermore there are a number of special factors. On occasions it is difficult to decide whether the aperture represents a window or a wall niche (these latter definitely occur) where the outer wall skin has fallen away. Also some of the apertures seem to be partly blocked and converted doors. Finally important evidence comes from a building (S 34) which may have been designed for storage and thus have its own special requirements of ventilation and access hatch etc.

TENTA

large rectangular

small rounded apertures

However in general terms it may be said that both rectangular and rounded apertures were known. The rectangular apertures were large (e.g. ca 50 cms × 75 cms) and thus corresponding to the windows proper of later building; the small rounded apertures (e.g. ca 18 cms in diameter), inevitably to be thought of as portholes perhaps correspond to the air vents in later buildings. The sides and bottom of the apertures were plastered. As has been mentioned the structure of the head was unknown. One might certainly say arched for the "portholes" and presumably with wooden lintel (or rather lintels) for the rectangular "windows". In general the apertures appear to be set about 50 cms above internal floor level.

closure

So far as the system of closing the apertures is concerned nothing is reported. It is certainly likely that the "porthole" air vents were left open. Pursuing the analogy of doors it is possible that originally the "windows" were blocked when necessary by putting and propping or hanging in place a detached shutter object. The material can only be wood or perhaps matting or fabric. If in later times some means of closure was permanently attached to the aperture surround, then this of course could only

have been of wood (or perhaps framed fabric). In any event of such a device and its means of attachment nothing is known (no mention is made of wooden framing of any sort).

EC-MC village ALAMBRA

Very little village style housing has been excavated with wall masonry preserved high enough to give evidence of windows. One exception is the MC site of Alambra Mouttes. Here a range of terrace houses was cleared with the walls in some cases standing to a height of over 2 m (RDAC 1983 pp. 76–91). However these circumstances were very atypical in so far as the terrace conformation meant that the windows could only be opened from the (completely eroded) front walls or to the internal courts. In any event no mention is made of windows in the preliminary reports.

traditional modern building

Since ancient evidence is almost entirely lacking it is necessary to turn to the information provided by modern traditional building which preserves the general scheme of pre or non-urban ancient building. Here window design and construction is very standard and incorporates no feature (except glazing) which is intrinsically inconsistant with the ancient building. Thus (as with doors) this evidence is almost certain to apply in essentials to the ancient predecessors of the traditional village houses (cf. Maison Rurale pp. 71–73, 169–171).

larger window small air-vent

Certain preliminary generalisations can be made compared with modern norms, window space is very much reduced and it is by no means rare for windows to be non-existant in the simplest cabins. There are two types of aperture: the window 325
proper — an upright rectangle: and the air vent — a very small aperture placed high up in the wall just beneath the ceiling level. The relative disposition of these two 324
types of aperture incorporates a scientific understanding of aeration. They are set on opposite walls and the difference in area induces differences in air pressure which maximise through draught. While the high position of the air vents means that the hot air below the ceiling is exhausted leaving the cool air to refresh the room at ground level (cf. the stack effect, v. Sharma & Kaul pp. 470–471).

construction

The window apertures (ca 0.50 m × 1.00 m) are built with three wooden poles as lintels. Into these apertures is fitted a simpel four piece wooden frame (flush with the outside wall face). The sill height is generally low, ca 0.60 m above floor level. The air vents on the other hand are set high up in the wall just below ceiling level and are less than half the size of normal windows. The construction of air vents depends on that of the wall. If the walling is mud brick, the air vents are fashioned by the convenient device of setting three mud bricks in the form of an open triangle. If the walling is rubble, then the air vent is a miniature wooden framed window. It is extremely likely that all the above arrangements applied in principle in ancient village style building. The existence of triangular air vents in early mud brick building is attested by their

survival as skeuomorphs in later stone construction (e.g. at Ras Shamra v. Ashlar p. 113, fig. 17) as by their representation on ancient models (v. Studies PD pp. 94, figs. 2d, f. & 3d).

closure
wooden shutters

As regards closure the situation is less evident. In modern traditional building the air vents are left open and window apertures are closed with casement style shutters hung laterally by hinges on to the frames. They are generally double and open back into the thickness of the wall. Glazing is not traditional and is a fairly recent innovation. However in a number of instances window apertures in the simpler
325 houses are closed only by wooden grilles fixed into the framing. Thus it may be surmised that in ancient village style building window spaces were closed with shutters swivelling in pivots or by fixed wooden grilles. N.B. Considerable information is available regarding such wooden window frames, grilles and shutters in Graeco-Roman Egypt (v. Maison Privée pp. 97 ff.).

monumental building
ENKOMI

For windows in monumental stone masonry building striking evidence survives in Schaeffer's Batiment 18 at Enkomi (Ashlar pp. 6–7, 17; Enkomi-Alasia pls. XLV-LVI). And this in effect is virtually the only direct evidence to survive. Batiment 18 (LC III ca 1200 BC) so far as may be understood is a very large seigneurial residence and its south façade is constructed in fine fry jointed ashlar masonry comprising a socle course surmounted by orthostates on both faces. Above this the construction is not clearly demonstrated (v. Enkomi-Alasia pp. 239 ff.). This ashlar façade street frontage is pierced by four large doorways (2.10 m–2.14 m broad) and four lesser apertures identified as windows. These latter are broad enough, being something like half the breadth of the doors or ca 1 m broad. The apertures are framed between the orthostates and the foot is very low down being only slightly above the level of the door sills. (That is all except one window which appears to be a later revision of design and is cut out of a single orthostate so that it is somewhat smaller and set at a slightly higher level.) There is no means of determining the height of the window heads but clearly it must have been substantial. Thus by their attested size and low positioning these windows are in effect what we know (in popular terms) as French Windows. The occurrence of these large upright rectangular windows, unexpected and unparalleled in Cyprus, is not unique. Windows of the same nature occur in nearby Ras Shamra (v. Ugaritica IV p 17) and above all in Crete (v. Ashlar p. 122, fig. 59). They are also often represented on model shrines (v. Studies PD pp. 94 ff., figs. 1–3).

closure
wooden frames
CRETE

Whatever may be the general position regarding the closure of window apertures, windows such as those at Enkomi must be closed. Manifestly the only practical method of effecting this is by way of substantial wooden frames. Direct evidence of these wooden frames has been gathered in Crete *via* the presence of mortoises in the stone sills for wooden dowels securing the frame in position (v. Minoan Architecture

pp. 174 ff.). N.B. This analysis is entirely parallel with that of O. Callot in deducing the half timbered construction of the Kition Temples, thus all details must be taken into account. No observations of this nature have been published for Enkomi Batiment 18 — doubtless for the good reason that the evidence was obscured by the secondary rubble filling of this apertures. Indirect evidence for the wooden frames can be seen in numbers of ancient representations, e.g. the faience plaques of the MMII Town Mosaic (v. Pendlebury AC pl. XXI). If such representations are taken literally it would seem that these large windows could be either left clear and closed by large shutters or broken up into several (e.g. 2 and 4) smaller casements.

ancient representations

Cretan analogy also provides grounds for additional suppositions concerning windows in Cyprus. It has now been indicated (v. AJA 64 1960 pp. 330 ff.) that one of the functions of the recessing in the façade common in Cretan Palaces building is to house windows in the upper storey (*piano nobile*). Although the device is not a feature of Cypriote building, it is present in Building X at Ayios Dhimitrios (v. RDAC 1984 p. 20, fig. 3). On the present interpretation of the feature it is thus quite likely that it indicates windows in the façade of the upper storey for a main apartment.

facade design

Further evidence for windows in the indigenous monumental building of Cyprus is indirect and iconographical. It concerns one of the best known religious motifs in the Ancient Near East — the Woman at the Window (*Aphrodite Parakyptousa*). The window depicted is standard. It is enclosed by a rectangular frame with recessed mouldings and the lower part is screened across by a balustrade of colonnetes. Such a window can be seen in effigy above the door in the Tamassos Royal Tombs (v. Built Tombs p. 37, figs. 10–12). Further several slabs have been discovered at Kourion and Ktima showing this motif, of which the best preserved is from Kourion and now exhibited in the Episcopi District Museum (v. BCH 94 1970 pp. 226–229, fig. 80; Qedem 11 p. 43, pl. 19). Also many fragments of such reliefs have come from the spoil of the sanctuary outside the walls of Old Paphos (presumably dedicated to Aphrodite Parakyptousa) which the Persian forces destroyed ca 490 BC to provide material for their siege mound (RDAC 1969 p. 34 pl. II.1). Here it should be noted that the simple coffered window found (the basic element of the Parakyptousa composition) can be found already in Cypriote iconography ca 1200 BC. Such windows are shown on the Pigadhes altar and on the stele block from Hala Sultan Tekke, although these windows are barred or louvred (v. HST 3 pp. 151 ff., figs. 172–210).

ornamental windows

the woman at the window

TAMASSOS 319

KOURION 326

PIGADHES 91A

HALA SULTAN TEKKE 317

Since representations of this type of window are clearly an early established and wide-spread iconographic motif, it is questionable what they convey regarding actual windows in Cyprus (or anywhere else). Such frames (and balustrades) have always been considered to be proper to wood originals (v. HST 3 pp. 151, 154). However remains from Israelite Palestine (Ramet Rahel) indicate that ornamental

balustrades of this nature as a real window screen were fashioned out of stone (cf. ABSP fig. 359).

Whether or not such actual window frames, simple or ornate, were ever built of hewn stone (cf. East and West 16 1966 pp. 201–260; ZDPV 83 1967 pp. 123–125), no evidence of this construction has ever been encountered in Cyprus building during the days of its indigenous development. The dressed stone window frame as a distinctive unit in itself appears to have come to the Island in Graeco-Roman times as a part of the classical building tradition. The situation in all respects seems parallel to that of the door frame. Striking examples of the ornamental stone window frame adding dignity to the construction can be seen at the Sanctuary of Apollo Hylates. An excellently preserved example of moulded stone window frame is
327 illustrated from the East Building (v. Kourion Sanctuary pp. 15 ff., figs. 11, 12). One of several such windows, this shows cuttings in the sill for the pivots on which the double casements were set, and also for the drop bolt to secure them closed. However in addition mortoises are cut all round the frame to take a metal crossed grille (presumably of iron). This fact has contributed to the supposition that the premises constituted a treasury. Unfortunately the head of the window frame is not extant. This fine window is of special interest in that it is most likely of Hellenistic date. The unit contains some of the oldest monumental building in the sanctuary — i.e. from the 3rd century BC, although there was rebuilding in the time of Augustus (v. Kourion Sanctuary p. 21).

dressed stone window frames

Graeco-Roman

KOURION

metal grilles

Other ashlar window frames are preserved and indeed have been rebuilt, in different parts of the Sanctuary, cf. those in the South East Building ("The Palaestra" v. pp. 50 ff., figs. 43, 44, 52). The frame on occasion bears moulded ornament — e.g. a crowning cornice. These window frames were sometimes de-
269, 270 signed in conjunction with door frames to make a pleasing composition (cf. fig. 44a). The ashlar framing of both was furthermore tied together constructionally to form units (something after the fashion of the combined door and window frames in prefabricated metal which are available at the present day for insertion into building). In this manner the combined ashlar framing, together with ashlar coigning, provided the essential stiffening for the angular rubble construction of the walls. It seems that window framing was also emphasized by painted plastering (cf. Kourion Sanctuary pp. 50–51). In this connection it is to be noted that quantities of painted plaster fragments belonging to window frames were found in Hellenistic excavations at Tamassos (v. Arch in C p. 69; BCH 103 1979 p. 707).

ornamental mouldings

painted plastering
KOURION

TAMASSOS

Finally a general matter of basic significance is brought into sharp focus at Kourion. Until the Roman Period it is more or less automatically presumed that window apertures were closed with wooden shutters (or fretted wooden grilles).

lighting

fretted wood mica etc

Although it is possible that on special occasions mica sheets or translucent stone slabs, i.e. of alabastar (or gypsum?) may have been used. However from Roman times window glazing was practised — generally by breaking the expanses up into small units (as with our leaded casements). In this connection there is a most interesting report that the large opening from the Exedra to the Sudatorium of the baths was "closed by glass admitting light to the Sudatorium, while restricting the escape of heat" as "Quantities of glass panes were found in the area" (Kourion Sanctuary p. 59). The Sanctuary Baths should have been constructed ca 100 AD (p. 62). However there is no guarantee that such glazing is not of a later date.

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(vii) STEPS

Archaeological importance of recognition of evidence for stairs in ancient building remains. Survey of subject matter: independent features and those serving buildings, the latter in two groups — steps to entrances where there is a change in floor level and stairs leading from one storey to another. Outline of steps and stairs in traditional modern building. Evidence of stairs in LC fortresses and in Archaic-Classical Palace at Vouni. Correlation between ancient and modern construction.

very significant diagnostic

The recognition of steps/stairs in building remains is a very important matter since it can well be the only surviving indication of multi-storied design. On occasion actual (stone) steps are preserved but very seldom to any height, more often than not the existence of the steps/stairs must be inferred from the conformation of the foundation plan and for this a certain knowledge of construction is necessary.

terminology

An even more fundamental matter is the basic terminology since it is rarely employed consistently, least of all in archaeological reports. A step is the individual unit comprising something to "tread" on (= tread) set at a certain "rise" above the preceeding footing level (the vertical front face of the step is called the "riser"). In this way a more or less continuous collection of such units are, or can be, called steps — and are generally so called if they are cut into the ground or are built up solid. On the other hand if their construction takes a more sophisticated form of building the ensemble is generally referred to as "stairs" and the construction necessary to support and contain the individual steps is called the "staircase". If the stairs occur in a residual space with the surrounding building rising all round them, then this

space is called a stair well. Also perhaps considered mainly from the point of view of the plan, the (long) area containing the steps may be called a stairway (as contrasted with a level "passage way").

Beyond this in describing the conformation of different types of stairs, the terminology is technical and consistent. A horizontal platform at the top of a series of steps (a flight) is called a landing. The stairway may be arranged to change direction at the landing. If it changes direction through 90° then the landing is a quarter (space) landing. If it changes direction through 180° the landing is a half (space) landing. On the other hand stairs can change direction by shaping individual steps so that the treads are not rectangular but splay to the outside. Such steps are called winders. They may be set in place of landings at the end of a straight flight or alternatively they may be continuous to form spiral stairs.

The angle of inclination of the stair (given by a line joining the nosing of each step) is called the pitch and this is determined by the relation of the dimensions of the tread and the riser (= the going to the rise). It is very easy to slip and fall in a dangerous way on stairs and modern building regulations contain stringent specifications to ensure safety. Treads must have a minimum going and risers a maximum rise so that the pitch is kept at a restricted angle. Above all there must be minimum head room. None of these factors were of any consideration in the construction of steps in ancient buildings and such steps/stairs were almost all of impossibly steep pitch according to modern ideas.

Awareness of these various constituent elements helps to define the subject matter which is to be considered here. Steps are demanded in a variety of contexts, some closely associated with or within buildings and some not, the latter being independent constructions for passage way (e.g. in the nature of public works) or for military or industrial purposes. In the last mentioned case there is a vast development in Cyprus connected with the mining industry but this is not considered here. At Idalion there is a rock cut stepped tunnel of 21 m descending beneath the city gate to give a concealed sally-port on the hillside below. This is reckoned LC III in date (SCE II pp. 489, 522 ff.; Plan LXVIII; SCE IV 1C pp. 36–37, figs. 21, 22; Problems p. 6, figs. 1, 2).

stepped tunnel
sally port
IDALION
80, 81

However the present concern is significantly with features associated with a building. And here it is possible to make a useful preliminary distinction: constructions associated with (small) changes in floor level and constructions to give access to terrace roofs or upper storeys. The former would automatically be called steps and the latter stairs.

steps
stairs

Steps at the external entrance of a building as from courtyards to rooms have always been a standard feature of building, generally to accomodate a rise in the

steps in round house

internal floor level above its external surrounds. However since in early Neolithic round house building the floors are usually a sunken emplacement, the steps are usually down to the interior — in fact the door is often with a raised up sill so that there may be steps both up and down (cf. Khirokitia pp. 199–200; Tenta p. 41). In these entrance steps the treads were apparently sometimes of wood. Generally such

monumental stone

steps are of rubble construction. However with the advent of monumental dressed stone building approach steps on occasions were treated monumentally and built in

KITION VOUNI

dressed stone — cf. the southern entrance to Kition Temple I — in LC III times (Kition Exc V.1 p. 45, pl. LXXVIII 12, Pl. 58.2) and Vouni Palace (Cor Arch pp. 146–147, figs. 1 & 2). When the classical type of temple made its appearance in Cyprus in the Roman age it generally took the form of a podium temple necessitating

KOURION SALAMIS

a stepped approach, e.g. at Kourion Sanctuary (RDAC 1979 p. 322; Kourion Sanctuary p. 79) and Salamis (Praktika 2 pp. 363 ff., fig. 2; RDAC 1975 p. 123). This was sufficiently elevated and of developed construction that the term stairs would be appropriate.

100, 101 138, 254 128–130 132

stairs to upper floor

More important constructionally are the stairs to an upper floor of a building. These have been shown to occur already in the non-monumental building of Cyprus — both the Round Houses and in the village style building. In the latter instance the surviving practice in traditional modern Cypriote village building is of great interest in demonstrating ancient forms.

round house "sende"

The earliest round houses (e.g. at Khirokitia) incorporate some form of sleeping loft, a feature similar in intention to the *sende* of traditional modern building — i.e. a sort of cubby hole over some service apartment (the bathroom in latest times) which

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can be used as a box room or for accomodation of domestics (cf. Khirokitia pp. 19–20, fig. 2A). Access to this was (and still is) obviously by way of portable step ladders.

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traditional modern building

This most primitive type of step-access to upper floors always remained in use on occasion for village style building — as it does today (cf. Maison Rurale p. 45). Fixture steps to terrace roofs or upper floors in traditional modern village houses are either external or internal, more frequently the former (Maison Rurale p. 73–74). The construction may be equally in stone or wood. If stone the steps are built up on a solid sub-structure; if in wood the steps are cased in the simplest fashion. In any event the first steps are generally in stone whatever the construction (Maison Rurale p. 72). On the other hand if the stair is of more than one flight then very generally the second flight is in wood whatever the construction of the first may be (Maison Rurale p. 196 — for an exception v. p. 61). If stairs are designed of more than one flight these are almost inevitably with quarter landing (not with half landing).

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It is a matter of solid inference that these circumstances applied to ancient village

style domestic building of which virtually nothing has been investigated. However beyond this it is interesting to see that in overall terms the circumstances can be related to what is known, or conjectured, of stairs in more monumental ancient building.

fortresses

The earliest building where it was obviously necessary to identify stairs were the forts, fortresses erected at the very beginning of the LC times. The essence of such buildings is that their high external walls provide an obstacle to attackers, therefore some means are required for defenders to mount up to the ramparts and other fighting platforms. At Nikolidhes stretches of foundations paralleling the external walls at a distance of ca 1 m indicate the rubble casing for wooden stairs (SPC pp. 39–41, fig. 5). At Nitovikla, on the other hand, the excavators recognised two small masonry platforms set against the ramparts. These they considered to be podia or the like for wooden staircases (SCE I pp. 398, 402). A better description would be that they were the foundations for the initial two or three stone steps which almost inevitably initiate a wooden staircase. Thus in general the SCE reconstructions of wooden staircases are reasonable (SCE I pp. 400 ff., figs. 157, 158).

65 NIKOLIDHES

67, 68 NITOVIKLA

At much the same period, during the earlier part of LC times, there was a fortress building (Area III) at the northern limits of the later Enkomi city development. This fortress resembled in general that at Nikolidhes and evidence was recognised for somewhat similar stairs — viz a few (e.g. three) initial stone steps with succeeding wooden stairs the strings supported on wooden posts as indicated by post holes (cf. Enkomi pp. 40–41, 60 etc.).

ENKOMI

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Essentially the same picture was revealed by the SCE excavations of the Vouni Palace (ca 500 BC) almost a thousand years later (v. SCE III pp. 156–163). The record is summarised as follows: "The short straight (*steps*) communicating between rooms on different levels on the ground floor were, as a rule, built of stone blocks . . .; The longer (*staircases*) leading to the upper storey were of wood resting on a stone substructure or were entirely made of wood" (SCE III p. 156). An extended staircase gave access from the service apartments to the upper living rooms on the east side of the court (i.e. from Room 60 to the room above Room 46). This was a three flight wooden staircase with quarter-landings (v. SCE III pp. 162–163).

VOUNI

In general it is of interest to note how closely the interpretation of the archaeological evidence of ancient stairs parallels the stair construction of traditional modern building in Cyprus.

classical stepped buildings

Finally it should be noted that some of the public building types introduced from Graeco-Roman culture, viz theatres, amphitheatres, etc., are stepped structures by

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nature and additionally incorporate a multiplicity of steps as access features. However their origins have nothing to do with Cyprus and reference to these buildings is not in point here.

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(viii) ROOFS

Disparate nature of buildings roofed. Overall synopsis of historical development. Round house roofing: present controversy — domical or flat. Continuance of traditional flat mud roof in non-monumental village building down into living memory. Also utilised for monumental building in dressed stone masonry of LC II-III and Archaic times. Different tradition of stone roofing for built tombs from LC times onward. LC tombs flat roofed but Archaic & Classical tombs have ridge shaped and vaulted roofs. True barrel vaults in Hellenistic times and true masonry dome in Roman times. Stone roofing in upstanding building not evidenced before Graeco-Roman times — evidence from public buildings at Kourion and Salamis. Roofing tiles introduced into Cyprus ca 6th century BC and common in Graeco-Roman period. Detailed evidence from Kourion Sanctuary of Apollo.

It is not a straightforward matter to give a systematic account of roofing in ancient Cyprus. The obvious analysis is by way of the structural system employed viz trabeated, arcuated, etc. However the utterly disparate types of building concerned across the ages make such categories anything but homogenous. Much the same thing may be said for using a classification based on materials of construction, viz mud, tiles, stone, etc. In fact the only practical method is to give some historical outline of the subject matter and then, in the light of this, to consider some sort of systematic categories. The reason for this is obvious, but nonetheless interesting. The categories in the various analyses (historical, structural, etc.) are in no way coincident or parallel — i.e. e.g. trabeated roofs and mud roofs do not coincide with each other nor with e.g. roofing of non-monumental buildings etc.

historical analysis

It is possible to list the subject matter as follows:

(1) Early Round House Building.
(2) Village style non-monumental building.
(3) Cypriote Monumental Building.
(4) Graeco-Roman Monumental Building.

However already cutting across the last two categories is the important division between up-standing building and underground building, the latter almost entirely restricted to built tombs and thus of disproportionate significance in Cyprus because of the one-sided archaeological development in the Island. Quite different functional

upstanding & underground

and structural considerations appear in this latter division and this in turn has affected aesthetic attitudes. This appears in the fact that underground building is often regarded as in the nature of engineering — the German term *Tiefbau* being expressive in this connection.

round house

Round house building was of two kinds as is clearly shown by remains in Cyprus and elsewhere (ABSP pp. 24 ff.): light wooden frame (brushwood clad, wattle and daub, etc.) structures and solid masonry.

pavilion

The light wooden construction was obviously roofed in a variety of "pavilion" styles, conical, parasol, etc. (i.e. like a yurt or a teepee etc.) as they still are (v. Village Planning *pass*).

solid masonry

However the roofing of the substantial masonry round house has become recently the subject of great controversy.

beehive domed roof

The natural design of a round house in elevation would seem to be a beehive type of building. The design has survived in the Middle East in various places (the best known being the Hama region); and even quite recently (about the middle of the present century) when labour costs were still reasonable such round houses were seen to be good and economic building and used in a variety of modern development programmes. Therefore when the Cypriote Neolithic round houses were first excavated, Dikaios had no hesitation in restoring them in this image (Khirokitia p. 20, fig. 2A). For this he also had the authority of some walls preserved to a considerable height which showed an incurving profile (Khirokitia p. 198, figs. 34, 36, etc.; cf. SCE IV 1A p. 8 fig. 3) and, what is more to the point, the extra one or two buttressing skins of masonry at ground level to provide the compressive reinforcing to stop the vaults from spreading (Khirokitia figs. 102, 103). Indeed the main point of issue seemed to be whether the construction of the roofing was corbelled vaulting or in fact a form of true vaulting with the rubble or clay units laid radially on inclined beds as true voussons (v. Khirokitia figs. 102 Ic, 103 IIb; cf. BSA 76 1981 pp. 128–130).

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contra-indications

However findings in the current round house excavations (Khirokitia, Tenta, etc.) have impugned this interpretation in two ways. Firstly it has been suggested that the incurving of the walls is not original but due to subsequent deformation from down slope soil creep (Khirokitia FR p. 27). It is very possible this is true in some circumstances, however Dikaios' sections look very purposeful although of course some of these are diagramatic (e.g. figs. 102, 103). More significantly not only at Khirokitia but at other round house sites (e.g. at Ayios Epiktitos and in the Lemba area) many fragments of flat mud roofing showing the impression of poles and reeds etc. have been found (cf. Khirokitia FR p. 27, pl. IV: 1–2). All this has led to the acceptance of the fact that round house building was roofed with the typical flat mud roof of the Middle East village building. Accordingly current round house reconstructions show the two types of roofing, viz beehive and flat (v. Tenta figs. 21, 22)

VRYSI LEMBA *flat roof remains*

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and a measured conclusion seems to be that "at least some of the buildings were flat roofed ..." (Tenta p. 44).

Very certainly the succeeding type of non-monumental rectangular village building was roofed with the standard device of thick mud plaster laid on a ground of reeds, sticks and matting supported on closely spaced pole rafters (for actual remains of such roofing from Graeco-Roman Egypt v. Maison Privée p. 67, fig. 29). This type of roofing remained absolutely standard in Middle East village building down to the last generation (for Cyprus, v. Maison Rurale pp. 74; generally ABSP pp. 459–461). It has some merits as providing good thermal insulation and as affording flooring for an upper storey or roof terrace. It is however structurally unsound as its self load is quite excessive as can be seen in sagging and collapsed remains. Furthermore prolonged heavy rains can destroy it. In short whenever the flat mud roof first became standard in Cyprus building (8th millenium or 3rd millenium BC) it certainly remained standard for non-monumental building until the most recent years. 328, 329

traditional modern building

LC monumental building

Moreover its significance in ancient Cypriote building was far greater than this. When monumental building in dressed stone was developed in Cyprus during the 13th century BC it could well have been that this comported a new type of roofing since roofing tiles are a prominent feature of Mycenaean Greece (v. O. Wikander, Ancient Roof Tiles, OA XVII: 15 1988 pp. 203 ff.). However on the contrary there is absolutely no indication of this and at Late Bronze Age sites like Ayios Dhimitrios, Maroni, Enkomi, Kition etc., all evidence shows that the monumental dressed stone buildings continued to be roofed with traditional flat mud roofs.

continuance of flat mud roof

detailing

Within this type of roofing considerable difference in aspect accrues depending on the detailing at the margins. This can take basically three forms: virtually no detailing at all, what may be called the box-lid roof; projecting eaves; or a parapet upstand. The first two are the rule in modern traditional building in Cyprus (v. Maison Rurale *pass* & p. 160). However the parapet upstand provides the more monumental aspect and this is the type chosen for the architectural roconstructions of these Temples at Kition (v. Kition Exc V.1 pp. 221–224 etc.). 328 101, 102 330, 331

archaic & classical
VOUNI
flat mud roof

According to all evidence the flat mud roof survived as the standard roofing for monumental building of Archaic and Classical times. At the most extensively excavated complex of such buildings, the Vouni Palace, it was emphatically noted that not a single fragment of roofing tile was found and the type of roofing was the flat mud roof of traditional Middle Eastern building (SCE III pp. 153–154). Accordingly it would be concluded *à priori* that roofing in the classical manner was first introduced into Cyprus during the Ptolemaic period. This however is not so. Scanty finds of roofing tiles at e.g. Idalion (SCE II pp. 490, 530 ff.) and Kouklia (Haji 139, 140 332

roofing tiles
IDALION
KOUKLIA

Abdullah, v. OA III 1960 p. 172) show that this type of roofing was known in the Island ca 500 BC. However before proceeding to discuss these developments it is necessary for historical continuity to discuss roofing of a completely different nature.

from 500 BC

In LC II-III times, more or less co-aeval with the introduction of building in finely dressed stone masonry the traditional Cypriote rock-cut chamber tomb was supplemented by the built underground tomb of stone masonry. Thereby was introduced a new roofing material, stone, conditioned by the fact that these roofs were structurally speaking of quite different function — since their principal purpose was not so much to keep out the weather but to sustain the load of the overlying earth. Although the numbers of built tombs are insignificant compared with the myriads of rock cut tombs, nevertheless compared with the restricted excavation of upstanding buildings (particularly of well preserved buildings) these built tombs supply a major part of the evidence for roofing from LC times onwards.

LC built tombs

with stone roofs

Following on their introduction in the Late Bronze Age built tombs of varying degrees of monumentality are found throughout the first millenium, not only during the period of the old Cypriote Kingdom but in Graeco-Roman times. As in all aspects of Cypriote building the continuity between the Late Bronze Age examples and those of Archaic times is not specifically demonstrated. However, in broad general terms, the family likeness of all these tombs is sufficient to justify summarising overall development in the types of roofing — indeed it is possible that on occasion such developments constitute useful dating criteria.

Only about 10 built tombs of Late Bronze Age date have been recorded and the oldest of these form a special type which does not occur in later times. These are tombs of more or less circular plan with roofing formed in whole or part by some form of corbelled masonry vaulting. There are three examples, all at Enkomi, and all appear to be from LC I-II, i.e. from pre-urban times (SCE I pp. 570 ff.; Built Tombs p. 43, N° 33, fig. 15; Alasia I pp. 51–122; Acts MEM pp. 248–253). The roofing is reminiscent of that proposed for the old Neolithic round houses — i.e. brick and stone masonry corbelling with on occasion the crown slabbed over (which later detail could well have occurred in the Neolithic houses); the domical structure being buttressed externally about the haunches to contain the thrust. The likeness has raised the obvious question if the old building tradition could have survived in some way across the ages (Alasia pp. 120–121) — cf. the tradition of vaulted tombs in Crete and their possible connection with Neolithic round house building (S. Hood Cyprus and the Early Bronze Age Circular Tombs of Crete, Praktika 2 1982 pp. 43–49).

tholos tombs corbelled vaulting ENKOMI

possible survival of neolithic tradition

The remaining Late Bronze Age tombs are rectangular chamber tombs of dressed stone all discovered at Enkomi, five of them by the British expedition at the end of the

rectangular tombs

last century and two by the recent French expedition. There are LC II-III in date (from the urban period of the site) and they appear to stand in the same overall tradition as the built tombs of later periods. Unfortunately they are inadequately published. Only one tomb (British tomb 66) is illustrated by drawings (Exc in C p. 5, fig. 5). However the manuscript records of the British Expedition have been consult-

flat slab roofs

ed by later scholars (SPC pp. 67 ff.; Hult Ashlar pp. 8–9). The roofing in each case where observed is flat being formed of slabs (Ashlar p. 8) the span reduced on 239 occasion by projecting cornices or corbelling the sides inwards.

archaic & later vaulted tombs

This, the simplest type of stone roofing, survives during the subsequent periods but it is of great interest to observe that it does not remain the norm. Instead it gives place in Archaic and later times to a great variety of contoured forms which can be described loosely as vaulted. This development is so significant that it needs to be specified in more detail. And here a preliminary word is necessary concerning the

terminology

ambiguities in the generalised use of vault (or arch). These terms can refer either to structure or to aspect. Perhaps in non-technical language they are generally applied to the aspect and it is important to realise that the structural sense may be completely contrary, i.e. it is possible to create a soffite of vaulted (arched) form by hollowing out a stone slab and by straddling two inclined slabs together; while on the contrary it is possible to construct a true arch with a flat soffite (flat arch).

The surviving material is quite considerable. It was well summarised and presented by Westholm fifty years ago (Built Tombs) — in general he gives a diagramatic illustration of the roofing to accompany his plans (p. 50, fig. 20). However since that time many other built tombs have been revealed notably at Salamis, Amathus and Paphos (Exc NS I-IV & RDAC *pass*). The general position may be suggested as follows.

aspect

Once the built chamber tomb is fully established in Archaic times the preferred roof is in vaulted aspect, either a straight sided "triangular" vault or one with some

structure

curvature to the soffite. These aspectual forms are engineered by three structural devices: (a) hollowing the soffite of a massive (megalithic) capstone, (b) corbelling (c) straddling two inclined stones to bear against each other at the apex. Each of the structural systems may be employed to produce either the rectilinear or the curvilinear type soffite. A few specimen instances may be cited from the better known tombs.

Hollowed Capstone: triangular vault — The Prison of St Katherine (Built Tombs 338 pp. 46 ff. N° 35; Salamis Nec I pp. 90 ff. Tomb 50); arched soffite — The 195 Phaneromeni Tomb, Kition (Built Tombs pp. 39 ff. N° 20; SCE IV2 fig. 12,1).

Straddling Slabs: triangular vault — The Royal Tombs at Tamassos (Built 199

Tombs pp. 30 ff. N°s 17–19; SCE IV 2 p. 41, fig. 13); arched soffite — The Egyptian Painted Tomb (Salamis Nec III pp. 123 ff. Tomb 80).

195 Corbelling: triangular vault — Ohnefalsch Richter's Xylotymbou Tombs (Built Tombs p. 42, N°s 26, 27; SCE IV2, fig. 12, 3,5); arched soffite — Amathus
210 Swedish Tomb 2 (Built Tombs p. 34, N° 9; SCE IV2 fig. 12_2) also the Evangelis Tomb at Kition (Kition p. 149).

possible historical development

Although this material has not been studied in detail, it may be possible to recognise the development from corbelling to inclined slab. Both the Xylotymbou tombs and the Amathus Tomb 2 are reckoned early Archaic (ca 700 BC), while the Tamassos Royal Tombs are later (ca 600 BC). Certainly there is a formal development since the straddling blocks appear to lead on to a type of arch; i.e. the single slab is succeeded by two slabs one above the other, cf. the Pyla Royal Tombs (Built Tombs fig. 20, .23; SCE IV2 p. 47, fig. 17).

Graeco-Roman true vaulting IDALION LARNAKA

342 In any event standard masonry barrel vaulting by way of small voussoirs set radially in compression seems to be of Graeco-Roman (Hellenistic) date, cf. the
211 Idalion Vasilika Tomb (BCH 96 1972 pp. 1024 ff.), and Cobham's Tomb at Larnaka (Kition pp. 149–152). Both these tombs are multi-chambered with barrel vaulting and the roofing of Cobham's Tomb has an added interest. The ante chamber shows a flat slabbed roof, the soffite of which has been carved into the likeness of the classic coffered ceiling of Greek Temples.

ornamented ceiling true dome NEW PAPHOS KITION *ornamental ceiling*

343 In Roman times (mid 2nd century AD) there is also a surprising example of a true masonry dome (saucer dome on continuous pendentives), the arcosolium tomb at New Paphos (RDAC 1982 pp. 202–206). Another arcosolium tomb, apparently of Roman date, is the Tourabi Tomb 9 at Kition. Here the chamber roof is flat but with considerable ornamental detail — the slabs are lodged on a moulded cornice and have recessed margins like ceiling boards (Kition p. 142, figs. 22–25).

upstanding building

This brief outline of sepulchral roofing in dressed stone directs attention to possible parallels in upstanding building. There is absolutely nothing to suggest that monumental roofing in dressed stone, slabbed or vaulted, was employed in Cyprus prior to Graeco-Roman times. However it is obvious that some public buildings of the latter age (significantly the Roman period) were roofed in this fashion. Baths, theatres, nymphaea etc., all these classes of buildings as a rule incorporate vaulting in their construction and there is sufficient indication to show that this held good in Cyprus.

Graeco-Roman public buildings

theatres KOURION *vaulted substructure*

144–146 The remains of the theatres at Salamis and Kourion show that the outer part of the cavea in both cases was carried up in a system of radial walls and tunnel vaults. Although little is stated directly on the matter, the Kourion report indicates that this work was dressed stone masonry (Kourion Theatre — section p. 43, fig. 6 and

inventory of voussoirs p. 76, also used for *parodoi* roofing and probably for *skene* substructure). At Salamis, although there are no definitive reports on the large scale excavations of public buildings, it is possible to adduce some evidence of monumental stone roofing. The gymnasium-bath complex contains stone masonry of all periods from Ptolemaic to Late Antique. The interim plan published in the Salamis Guide Book shows as a principle constituent two apsidal halls, which in the nature of things should have been vaulted. It is stated that these elements are of the 2nd century AD and that the "... massive walls ... carried a vaulted roof of stone" (Salamis Guide Book p. 11).

SALAMIS gymnasium baths

vaulted rooms

150

vaulted reservoir

Another interesting public building at Salamis is the Loutron, a great rectangular reservoir (*castellum*) storing the city's water supply brought from afar by aqueduct. This is built of ashlar stone masonry and the roof was carried on a forest of pillars so that it resembled the Bin Bir Direk reservoir at Constantinople (SCE IV3 pp. 17–18, fig. 14). The building was excavated a hundred years ago by the British Expedition and is reported on in some detail (JHS XII 1891 pp. 81 ff.). It is said to be of the 2nd century AD and the roof was vaulted, presumably in cut stone like the rest of the building since nothing is said to the contrary.

64

in cut stone not concrete

Thus even from these vestigal instances it appears that monumental vaulted masonry in Cyprus was carried out in cut stone after the Hellenistic tradition and Roman style concrete vaulting never became a norm of construction.

It now remains to outline the development of the classic alternative to flat mud roofing. Although there is no archaeological evidence whatever to substantiate the fable that roofing tiles were invented in (Bronze Age) Cyprus by King Kinyras (Pliny Nat Hist VII 56, 195), there is enough evidence to show that roofing tiles were introduced into the Island in Late Archaic times, i.e. not far out of line with their generalised diffusion from Greece in the late 7th and 6th centuries BC (OA XVIII: 15 1988 pp. 205 ff., N.B. pp. 205–206). There are reports of terra-cotta roofing tiles from Idalion ca 600 BC (SCE II p. 490, 530) and from the Haji Abdullah Palace at Kouklia ca 500 BC (OA III 1960 p. 172). Virtually no details are available concerning the form of these tiles but tile fragments from the Bamboula site at Kition a century or more later in date (5th–4th centuries BC) have been studied and reconstructed into a recognisable scheme of classical tiling (J.F. Salles Kition Bamboula II Paris 1983 pp. 110 ff.). They are well detailed Corinthian tiles (cf. Kition Bamboula II pp. 108 ff., figs. 42–48).

roofing tiles

IDALION

332

KITION BAMBOULA

Corinthian type

For the later (Graeco—Roman) history of tiled roofing in Cyprus there is considerable evidence available at the Kourion Sanctuary. Scranton's original report sets out the position quite clearly (Kourion Sanctuary pp. 5–6).

KOURION

333, 334

(1) In spite of the fact that large quantities of flat mud roofing material was found,

"vast numbers of fragments of roofing tiles were found in the ruins of all the buildings".

(2) Most of these were clearly in use at the end of the life of the sanctuary (4th century AD) and probably originated during the main (Trajanic) period of development.

(3) The tiles are all of the Corinthian type. There are minor differences in detail but no archaeological evidence for dating in the variant sub-classes.

(4) The significant variations in detail are two:

333.x, y (a) In one class the weathering bar (or upstand) at the rear (up slope end) of the tile is a separate entity set between the lateral upstands (flanges), of different profile, and at some distance from the end of the tile. While in another type the 332.z lateral upstands are continuous around the rear (upslope end) of the tile to constitute the weathering bar. This distinction corresponds to general typology (cf. Apollonia pp. 55–56 & 79 ff., figs. 15–16 & Pl. IX).

(b) A curious variation exists in the device to secure the overlap. At the foot (downslope end) of the tile, the underside of the lateral extremities must be recessed so as to ride down over the lateral flanges of the downslope tile a certain distance and then to lock against them to prevent the tile sliding further down. In one class this detailing is carried out in the normal way by a recess moulded in the tile. In another class the tile was apparently moulded without this recess and was subsequently adapted for use by chipping away the necessary recess!

Later a detailed typological study was made of this material (Huffstot Apollo Sanctuary pp. 263–299). Basically he distinguishes two classes: the one with the separate weathering bar and the other with the continuous flange. According to him 333.z the latter class (Z) has no lateral indentations at the toe whatever (p. 272, fig. 185). Theoretically this is a defective design since the only means of ensuring an overlap and fixing the tile into position would be by cementing the tile in some way. The other class with the separate weathering bar (his types X & Y) have the requisite lateral notches in the underside at the toe, either (as Scranton noted) originally moulded or subsequently chipped away. However according to the drawing (figs. 336 179, 180) in both cases the detail is defective since the recessing does not extend sufficiently far back to allow sufficient overlap so that the down turned toe of the upper tile can sit properly on the downslope tile (i.e. beyond the weathering bar) to ensure efficient waterproofing. This was noted by Huffstot (pp. 266–267) "... it appears that these sockets were seldom large enough to actually function properly and it is very common to find fragments which have both preformed sockets and additional knocking and trimming performed during installation". However as

shown in the drawings this additional trimming still would not make the tile to function properly.

Huffstot considers type Z to be later in origin than the other two types (ca 65 AD) but all survived in use until the end of the sanctuary's existence in the 4th century. Certainly this unrefined type of tile is generally associated with Roman tiling (cf. Apollonia p. 81; Lugli, La Tecnica Edilizia Romana, Rome 1957 p. 545, fig. 112).

It is difficult to interpret the published record. Apparently the waterproofing of Huffstot's types X & Y was defective, and the fixing of type Z non existent. May be much cement was used in either case.

pitched roofs

Finally it is necessary to survey in outline what the discovery of tiles means in terms of roofing form in Cyprus. Clearly the flat mud roof remained dominant for domestic village building, however from the 6th century onward, some roofs in Cyprus had a reasonable pitch, ca 25° or so and could not be used as terraces. Probably for the most part these were stoa type public buildings in the capital cities and sanctuaries of the old Cypriote Kingdoms. Such buildings could have been covered with roofs of a single pitch. Roofing tiles were never in any way restricted to temples in the classical world and there is little evidence for Greek style temples in Cyprus at the time. Later in the Hellenistic and Roman periods classical gabled temples were introduced and were roofed with tiles in the standard manner.

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d) Methods

Traditional village housing essentially unchanged across ages and thus evidences methods of construction for non-monumental building.

Changed works organisation required for monumental dressed stone building of Late Bronze Age (13th century BC). Its origins. Its continuance in Archaic and Classical times.

Standard classical Greek methods of construction introduced in Ptolemaic period. Their continuance under Roman rule.

Construction methods are a very significant factor in the history of building, but

unfortunately in Cyprus for the most part there is little direct evidence concerning the subject.

It is perhaps possible to begin on firm ground. Whatever may have been the characteristic works organisation of round house building (cf. O. Aurenche La Maison Orientale; A. Rapaport, House Form and Culture), that of rectangular village style which succeeded it is fairly evident since structures of exactly the same type continued to be built until a generation ago and there is not the slightest reason to suppose that methods of construction were changed in any significant way.

traditional modern practice

The construction of such houses is a professional business carried out by jobbing masons (or master builders, if you like). They contract for the work (building materials and labour included). By tradition certain items are supplied by the client at his cost. These are products of specialised crafts — e.g. doors and windows as items of carpentry. Also if the client's family work on the construction then, of course, the builder's labour costs go down and the price accordingly. No plans are drawn but there are two or three standard types of houses which are known and can be specified by name. According to the type ordered the builder marks out the plan directly on the ground in agreement with the client.

Broadly speaking if the building material is mud brick one skilled builder (the master) alone is required with two or three labourer assistants. If the building material is stone (rubble) then two skilled builders (including the master) are customary together with the necessary assistants. Rubble stone walling is of facing and core construction and this is effected most economically by two builders working simultaneously, one on each side of the wall.

Wall construction involves no items of greater weight than can be handed up or carried up on back and shoulders. Thus no heavy scaffolding is necessary. For stone walling putlogs and planks are used served by a ladder. For mud brick walls the bricklayer mounts up directly on the top of the rising wall.

The only items which can not be set in place by these methods are the rough timber roofing beams. There are theoretically two methods of getting these into position. The first and most obvious is to get them inside the structure, laid out on the floor more or less in position but slightly skewed. Then workers on the top of opposite walls haul them up by ropes attached to each end. In Cyprus however the second method is preferred. The beams are stood upright in their correct positions leaning against one wall. Then they are drawn up into place by men on the other wall by ropes attached to the bottom end of the beam. This process is helped and guided by propping from below with forked bearers.

The standard flat mud roofing on reeds, matting, etc., is very often women and children's work.

Proceeding from this basic works organisation, perfectly familiar to anyone in a Cypriote village forty years ago, it is possible to estimate all developments and variations required for other forms of construction.

absence of megalithic construction

The first thing to be noticed is that no school of megalithic building ever appeared in the Island, so that this highly specialised form of "pre-fabricated" construction does not enter into consideration. In this fashion a new building works organisation comes into question only with the monumental public buildings of dressed stone

LC monumental building

erected in the 13th century BC. These buildings certainly required such a different system of construction that the question has always been at issue as to whether the system and its master operators were of foreign origin. In general, it has been assumed that they were, although there is no agreement as to the place of origin. For long it has been considered that political events pointed to Mycenaean Greece as the source of the new methods, but this is not supported in any real way by the details of the building itself. This, in turn, led to the suggestions that Mycenaean immigrants arrived in Cyprus via Middle Eastern regions (e.g. Anatolian coast) and brought the new building capacities with them from there. In fact the introduction of the new building style in Cyprus seems to have been a cumulative process during the 13th century, and its wholesale development at the end of the 13th century a matter depending rather on increasing wealth and socio-political organisation rather than on any sudden arrival of foreign expertise at this time (cf. Hult Ashlar pp. 88–90).

However brought about, the changes in building organisation were great. First of all the building industry was made dependent on a totally new and heavily capital-

quarrying

ised industry — quarrying. In non-monumental village building the materials of construction: earth, *havara*, field stones, tree trunks, branches and brushwood, can all be hewn down, gathered and fashioned by unspecialised labour working within the limits of family or village communal effort. On the other hand, the winning of stone in large blocks and its transfer to building sites require well organised labour gangs and some heavy equipment. All of which in turn demand a social surplus to finance the heavy capital expenditure together with developed administration and managerial techniques to organise large scale industrial activity. The ultimate background to this lay in the Egyptian past (cf. S. Clarke & R. Engelbach, Ancient Egyptian Masonry Oxford 1930).

architect

Of equal importance is the human factor. The new monumental buildings required for their design someone who must be described as an architect/engineer rather than a jobbing mason. Temple 1 at Kition is very different from Temple 3 and its design had to be worked out in advance with details and elements disposed of accurately and properly subordinated to the overall composition. In short it needs the preliminary drawing up to scale of a plan.

scaled plans works organisation

Finally the most obvious change must be considered — the onsite working organisation, its personnel and plant. Clearly the erection of Temple 1 demanded a well organised mason's yard with a sizeable detachment of skilled stone-dressers (masons) controlled by a master who communicated exact dimensions and form and supervised their execution. Consequent on the fashioning of large blocks of dressed stone arose the problem of setting and fixing them in the structure. Here were units *heavy loads* weighing a ton and more which could not be possibly handled/carried about or up and down, yet moreover must not be damaged in this handling. Large blocks of dressed stone can be moved about easily enough on rollers without damaging them, but to raise them up into position on a wall face is a different matter.

Only two basic methods exist — either the blocks are hauled up ramps or they are *hauling lifting* cleanly lifted. According to the reconstructed drawings of the Kition I Temple (Kition Exc V.1) two classes of blocks are in issue here: orthostates and stepped capitals. If the reconstruction is just then it can be seen that restricting the heavy 241*ff* blocks to the first upstanding course of masonry indicates that lifting was avoided and the blocks were hauled or pushed up small ramps or bridges (the reconstruction of the temple porch showing walls faced entirely with heavy dressed blocks is suspect — cf. Kition Exc V.1 figs. 11 & 69). There remains, however, the question of the 278, 279 stepped capitals. These seem far too massive to be carried up ladders and if they crowned composite wooden pillars as indicated (v. Kition Exc V.1 figs. 35, 36, 55, 60, etc.) the only practical method of setting them would be by clean lift. (Except that is, for the Egyptian method of filling the surround entirely with earth — which does not seem likely.) The question is a difficult one and will be taken up again.

The works organisation here postulated is manifestly different from that for building village housing. Whether this organisation remained continuously viable in Cyprus through the centuries after its introduction in the 13th century is not known. It appears adequate to any building known in the Island down to its incorporation into the Ptolemaic Empire. However this over all assessment remains subject to the exception of heavy capital blocks since characteristically the system functioned without complicated mechanical devices — i.e. block and tackle, windlass, capstan, etc.

Equally with the Bronze Age stepped capitals, the erection of massive capitals in 288, 294 Archaic or Classical times, would appear to demand some form of lifting device. At *Archaic & Classical practice* 297 this period such devices were standard equipment in Greek building and presumably were obtained in Cyprus for exceptional building operations of this nature. And that such operations were exceptional appears to be indicated by present evidence — i.e. classical columns and capitals were more likely isolated features and not constituent parts of columnar building — e.g. peristylar temples. As far as the wall masonry

VOUNI

of Cypro-Archaic and Classical ages, e.g. that at the Vouni Palace, it shows in itself no evidence of being lifted into place — i.e. there are no lewis holes. Furthermore although being carried up on occasions to roof heights, the blocks are facing cut away to and left rough at the interior. This both reduces their bulk and facilitates setting so that they can be viewed in a different case from the solid, close fitting ashlar blocks of Classical Greek wall masonry.

Graeco-Roman masonry

Although there is no intrinsic evidence presently available, it can hardly be doubted that in the ensueing Ptolemaic period monumental building in Cyprus was carried out by standard classical Greek methods as spread throughout the Hellenistic world (v. Martin MAG pp. 163–306) and that such building operations in Cyprus were in all respects those of the metropolis, Alexandria. These methods involved as standard practice setting ashlar masonry by lifting into position, and in consequence

cranes & hoists

required the presence on a monumental building site of the necessary hoisting mechanisms. Finally the existing evidence indicates that these methods remained in force during the Roman Period. Roman concrete building involved a conspicuous revolution in ancient building methods (v. G. Lugli, La Tecnica Edilizia Romana, Rome 1957). However there is no evidence that such building was current in Cyprus during the first two centuries AD. It seems increasingly likely that Cypriote builders

no shuttered concrete

evolved their own concrete in Archaic times, but this was used as core filling of masonry walls not as independent walling which necessitated the timber form work of Roman concrete construction.

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CHAPTER FIVE

FOREIGN CONNECTIONS

In view of its geographical position and in the light of history the question of foreign connections is of special interest in Cyprus. Accordingly it has received close and varied investigation. Much of this has been centred on political history and based on textual evidence. Identifications of places mentioned in ancient records has let in whole fields of speculation very erudite indeed. It is quite impossible to take into account these matters here — either to base theories on them or let them condition observations. All that can be done here is to draw attention to any manifest similarities between ancient Cypriote building and the building remains of surrounding regions.

1. Levantine and Middle Eastern

As currently understood, building in Cyprus began (ca 8th millenium BC) with fully developed round house style brought by colonists from Syrian mainland and pursued a long (ca 5000 years) development independent of influences from any other quarter. Evidence of influence from later Neolithic and Chalcolithic rectangular village houses of Syria-Palestine, e.g. at Ceramic Neolithic Sotira (5th millenium BC) and eventually (in 3rd millenium BC) these ousted round house form to establish village settlements of a type which survived until mid 20th century AD.

The π form design and its connections. Various types of fortification during middle of 2nd millenium BC of basically local development. The rock cut chamber tomb evolved in the Island but forms very closely parallel those in Syria and Palestine.

Retarded but precipitous urbanisation ca 1250 BC — 1200 BC embodying new building forms: viz town planning, urban fortifications, city temple, palaces and public buildings, variant funerary practices — all expressed to some degree in monumental dressed stone masonry. Such new cities (e.g. Enkomi) assumed basic condition of Syro-Palestinian cities (e.g. Ras Shamra, Megiddo, etc.) subject to local characteristics (cf. town planning, urban fortifications, public building design). The "Old Mediterranean Temple Type" at Kition — cf. Tell Qasile etc. Long gallery store houses at Maa, cf. later Israelite "Pillar House" type. Syro-Palestinian connections for extra-mural burial in built tombs (e.g. at Ras Shamra and Megiddo). Notable development in Cyprus of Bronze Age ashlar masonry constituting a distinct school based on selection of devices apparent in Syria (and elsewhere).

Cyprus building rested within Syro-Palestinian connections until Hellenistic rule. Difficulty of determining whether Archaic ashlar masonry represents a survival of Bronze Age tradition or renewed Levantine influence at time of Phoenenian expansion. Vouni and Greek sources on Cypro-Phoenecian (concrete) masonry. Temple type decisively linked with Syro-Phoenecia until first evidence of classical temple in Graeco-Roman times. Some Middle Eastern connections in Persian period palaces at Vouni and Old Paphos.

The later development of the rock cut tomb: survival from LC forerunners or renewed foreign influence. Specific Anatolian influence on Archaic tombs at Tamassos and Salamis. The tumulus in Cyprus and Phrygian/Lydian connections. The Tamassos Royal Tombs and two classes of Phoecenian style ornament: the Proto-Aeolic Capital and the colonneted window frame.

initial communion

It is perhaps more fitting to speak of an initial communion in building between Cyprus and the neighbouring region of the Asiatic mainland (the Levant), rather than of a connection. In any event there is no compelling reason to seek any other

connections for Cyprus building until well into the latter part of the second millenium.

by colonisation

Current understanding holds that building began in Cyprus as a part of the developed culture of its Neolithic colonists — i.e. its presence in the Island was the product of diffusion. Theoretically these are other possibilities; that it evolved on the Island through local development from 'pre-structural' palaeolithic settlement; or that its salient characteristics largely took shape in the Island. It is not the place here to argue this basic question (cf. evolution, RDAC 1973, pp. 36–61, v diffusion, Levant IX, 1977, pp. 66–81, WA 9, 1979, pp. 27–42).

round house

The earliest buildings in Cyprus are the well defined Round House type. The nearest area where such buildings are known at the time they appear in Cyprus has also one of the closest shores to the Island. The area in North-Central Syria and so it

origin

is presumed that colonists made the sea-crossing from there (viz the coast from say Tartous to Lattakia) to introduce Round House building into the Island. To this there are several possible qualifications. First of geography. This is not necessarily the shortest crossing; that due south from the Southern coast of Anatolia may have been shorter, but so far there is no record of Round House building in that region (cf. Tenta, p. 83; Mellaart, NNE, pp. 91 ff.). There are also possible historical qualifications. The date originally proposed for the colonisation of Cyprus was ca 6th millenium BC (v. NNE, p. 130). This fitted rather oddly with building development in the accepted homeland where by this time it was reckoned that the PPNA Round House *floruit* was virtually superseded by the PPNB rectangular building (for an attempted reduction of the evidence cf. Levant IX, 1977, pp. 66–89). However, the effect of continued application and refinement of ^{14}C tests has indicated that the colonisation and beginning of Round House building in Cyprus was two millenia

8th millenium BC

earlier, ca 8th millenium BC, at which time the mode still flourished on the mainland from Mureybit in the North to Jericho, Amman and Beidha in the South. In this fashion the diffusionist thesis has been strengthened.

A very substantial amount of detailed information regarding this round house building is now available and has been analysed systematically (cf. Aurenche, La Maison). However, in spite of all this, it is doubtful whether it is possible to localise precisely by way of analogy the exact point of origin of the first colonists (cf. Tenta, pp. 179–85). They brought with them a style of building widespread in Syria and Palestine. The concentration of sites is definitely in Central Syria and Palestine yet the colonists should have made as short a sea crossing as practical. Further archaeological exploration in the appropriate region of the north central Syria coast is a worthwhile project in an effort to determine the colonists' point of departure.

Once established in Cyprus, Round House building had a completely other

development than that in Syria-Palestine. In Cyprus it remained dominant for 5,000 years or so instead of being supplanted within a millenium or two by the rectangular building of PPNB times. However, during the course of these long ages there is evidence of subsequent influential connections between Cyprus and the mainland. At Sotira in the Ceramic Neolithic Period (ca 4500 BC-4000 BC) the dominant
156, 157 buildings are a type of centralised semi-quadrilateral plan with well rounded angles. These testify to significant influence from Late Neolithic-Chalcolithic houses at sites in Central Syria and Palestine, e.g. Ramad, Beisamun, etc. (cf. ABSP, pp. 28–30, 284, figs. 23, 283; NNE, pp. 58–60). Although the structure (and by extension social structure) of Sotira sites show considerable variations from the Khirokitia model, the change in building form does not seem to have persisted and the Round House regained and maintained its position in Cyprus for almost another 2000 years.

subsequent history dissimilar

long survival

SOTIRA

Nonetheless during the middle of the second millenium BC it was finally supplanted by rectangular building. Recently a rectangular building plan has been uncov-
20 ered among the Round Houses of the Late Chalcolithic site of Kissonerga *Mosphilia* in the Paphos District (RDAC 1985, pp. 28 ff.; 1988, pp. 43 ff.; Levant XXI, 1989,
22 pp. 195–99) while at Kaminoudhia (by Sotira) there is an entirely sub-rectangular settlement of the latter part of the second millenium BC (Arch in C, pp. 115–24; Acts COO, pp. 29–44). The markedly agglutinative type of planning there suggests influence from Northern Syria where this type of development has been noted and studied. Heinrich, the exponent of the style, considered it to characterise the region North of Hama (cf. Heinrich Haus, § 4.2 in Reallexikon für Assyriologie 4; ABSP, pp. 144, 293, fig. 42).

introduction of rectangular building

MOSPHILIA

KAMINOUDHIA

agglutanitive

However, this agglutinative style of planning never became a principal feature of Cypriote building. Rather a basic simple, detached village house unit evolved comprising a single room or two rooms (with a defined court area). This remained the type of rural house in Cyprus down to the middle of the present century (cf. I. Ionas, Maison Rurale) and it undoubtedly had its roots in the archetypal village house of Chalcolithic times. The first discovered and one of the few examples of a
159A coherent plan of this type was Gjerstad's "Shepherd's House" at Alambra (SPC, pp. 19–27; SCE IV 1A, p. 215, fig. 85) and this invites comparison with the traditional Chalcolithic village house in Palestine e.g. at Meser (ABSP, p. 286) continuing later e.g. at Arad (ABSP, p. 283, fig. 213) and surviving there likewise as the type of village house in traditional modern building until a short time ago (cf. T. Canaan, The Palestine Arab House, in JPOS 12, 1932 & 13, 1933).

simple village house

survival into modern times

ALAMBRA

Proceeding beyond this elemental form some specimens of the pre-urban building development in the Island have been recovered. At Alambra itself in a neighbouring
159B locality (Mouttes) are a range of terrace houses (like Gjerstad's house) of date early

MOUTTES

terrace development

in the second millenium BC (RDAC 1983, pp. 76–82). Although the street frontage of the house has been lost through erosion they can be seen to be of *Langbau* disposition with the main rear compartment further partitioned by angle chambers. Almost inevitably (if economy of space is a consideration) terrace building is *Langbau* — cf. some rather similar, two compartment *Langbau* terrace houses in Palestine at MB IIC Tell Nagile (v. ABSP, fig. 231) and the scheme remains in vogue until the Iron Age e.g. at Tell Saidiyah (v. ABSP, figs. 230, 231). Perhaps because of their basic *Langbau* form the terrace houses at Alambra *Mouttes* have been compared with

TARSUS terrace houses in EB II Tarsus (by K. Schaar, in RDAC 1985, pp. 37–44). At a later date towards the middle of the second millenium there is quite a large house of a

KALOPSIDHA dozen or so compartments at Kalopsidha (v. SPC, pp. 27–37; SCE IV 1B, pp. 1–3 & fig. 1). This is squarish in form and appears to be centralised to some degree about a

hofhaus court. It suggests contemporary MBIIc town houses at e.g. Megiddo (cf. ABSP, figs. 220, 223). 160

Much more idiosyncratic and worthy of comment is a distinct design principle or type which has been observed in Cyprus building from about this time (mid 2nd

π form millenium) down to the present day. It has become known as the π form. Dikaios

ENKOMI drew attention to it when reporting the pre-urban levels at Enkomi, justly noting its survival in the rural house planning of traditional modern building (v. Enkomi I, p. 163). It can be seen to provide the design principle of major public buildings in the

MARONI urbanised Cyprus of LC II–III times e.g. at Maroni (The Ashlar Building, RDAC

AYIOS 1987, pp. 81–84, figs. 1, 2) and at Ayios Dhimitrios (Building X, v. RDAC 1983, pp.

DHIMITRIOS 18–24). Above all it is clearly the ratio behind the lay-out of the first Palace at Vouni

VOUNI in Late Archaic times, ca 500 BC (v. SCE III, pp. 111 ff.; IV2, pp. 13–29, fig. 6; Corolla Archaeologica, pp. 145–71). 25, 162 170 120, 133 138

In connection with his various publications of the Palace Gjerstad discussed this plan form very discursively. He recognised that it was a traditional local schema, as opposed to the classical Greek ideas which he saw as standing behind the reorganisation of the Palace lay-out a generation or two later in the middle of the 5th century BC. However, additionally Gjerstad was determined to show that this Cypriote plan schema had an ancient Middle Eastern background. And to this end

Iwan he linked it with the Iwan form. The Iwan (a Persian term also current in the Arabised form Liwan) is properly and essentially a completely open-fronted hall. Whether or not it is derived ultimately from the great reception tent of the nomad dignitary, it is certainly an appropriate form for arid countries and its open façade can be screened off as necessary by (sumptuous) hangings. As a planning unit in the Middle East region it is also found to occur in a group of three more or less identical chambers set in parallel of which only the central unit is open fronted. The lateral

chambers sometimes project beyond the Iwan to form wings and the ensemble is fronted by a porch (the Tarma). This configuration gives a traditional house design in Iraq known as the Iwan or Tarma House (v. O. Reuther, Das Wohnhaus in Baghdad; ABSP, p. 142, fig. 37; F. Oelmann, Hilani und Liwanhaus, Bonner Jahrbücher 127, 1922, pp. 217 ff.). *tarma house*

It was presumably this latter configuration which prompted Gjerstad to associate with the Iwan the Cypriote π form plan — i.e. a design scheme where a sizeable court was backed and flanked by three ranges of rooms, the court to be left open at the front or screened off by a gate wall. Taken jointly and severally the features of open fronted hall and side wings about a court give onto a wide array of ancient building types. And Gjerstad adduced them all: Etruscan atrium houses; Hellenistic oecus and peristylar houses; Islamic Mosques and Medresses, etc., to mention only some of the more proximate. He thus wished to place the Cypriote schema fairly in the light which comes from the East. Furthermore this extensive apparatus of comparative studies was adopted and maintained in all the SCE personnel publications (e.g. SCE IV 3, pp. 34–48; A. Westholm, Temples at Soli, pp. 177 ff; The Paphian Temple of Aphrodite, Acta Archaeologica iv, pp. 223 ff.). That it is conclusive in relating Cypriote building "to the Anatolian and North Syrian culture" (Cor Arch, p. 168) is by no means evident. It is the common case of an argument based on a category of undefined extension. A building of three wings about a central court is not naturally equivalent to a composite cella or oecus fronted by a court (with which much of the above argument is concerned — e.g. in connection with temples at Soli and Paphos). However, of course, on occasion both aspects may be conjointly present. These studies are a strangely extravagant aspect to the, in general, extremely reserved publication style of the Swedish Cyprus Expedition. *eastern analogies*

Perhaps the first building types known to us to go beyond the ambit of the rural village settlement are the disparate collection of (variously termed) fortified observation posts, refuges, forts, fortresses, etc., of the middle of the second millenium BC, i.e. MC III — LC I. The one common factor shared by all being that they are apparently non-urban fortifications and since they are the only fortifications of this period known, this has raised the presumption that they are pre-urban in date. They are listed in SCE IV 1C (pp. 30 ff.) and the publication of Sjoquist exactly 50 years ago, Problems of the Late Cypriote Bronze Age, gives a general consideration of these features (or such of them as were then known). Recently a very comprehensive examination of all these structures has been made by Fortin in Military Architecture in Cyprus during the Second Millenium BC, but unfortunately it is available only in typescript copies. *fortresses* *MC-LC*

None of these works are definite. The plain fact is that these features are so little

category undefined

known that it is impossible to offer any general analysis of their nature and connections. Fortin (p. 491) lists 18 fortified sites ranging in size from 6 hectares to 28 m^2. He wishes to reduce them as far as possible in spite of their diversity to the overall category of fortified outlook posts and/or places of refuge. Whether or not this is the true rationale of the phenomenon in all its manifestations, it is perhaps possible to

area enclosure

recognise an overall distinction between area enclosures (whether of permanent, semi-permanent or occasional occupation) of which the best known are now Krini *Merra* and Dhali *Kafkallia* (but all are very little known); and on the other hand more or less individual buildings (or building complexes) corresponding in some way to the general idea of fortresses. Of these latter Nikolidhes and the block-house at Enkomi (Area III) are well known and published in reasonable detail. The former class may cover an area of ca 5–6 hectares; the latter are the standard size of a significant public building, i.e. something over 500 m^2. Standing astride these two categories is the well-known fortress of Nitovikla which on the one hand covers an area of 6 hectares and on the other contains a well constructed castle or keep, ca 1400 m^2 in extent.

KRINI MERRA 70, 73

blockhouse

NIKOLIDHES ENKOMI 65, 74

NITOVIKLA 66, 67, 68

origins

The question of whether this apparently new solid political development in the ancient building of Cyprus is the result of foreign influence has been considered by everyone; and in this connection the models and sources of the influence have always been sought in the Anatolian-Syrian areas (cf. Sjoquist, Problems, pp. 136–89). The overall conclusion reached by Fortin with the benefit of the accumulated comporanda seems to be just. There is nothing, neither of constructional device nor design concept, which necessitates a foreign connection. All the elements revealed in this building programme can most easily be accounted for as native development of pre-existing village style building so far as it is known (v. Fortin, pp. 515, 520). Indeed there is a notable absence of known factors in the military building of nearby regions, e.g. the spacious casemates of Anatolia, the earth ramparts (glacis) and the "toothed" Gate houses of Syria Palestine, etc.

Anatolian-Syrian influence

not demonstrated

blockhouse fortresses "migdol"

In reality it is only the "fortresses" e.g. at Nikolidhes, Enkomi, etc., which are sufficiently well published to warrant consideration at this stage. Here as a general type it is certainly possible to recall the Migdol ("Tower") of Syria and Palestine (cf. Sjoquist, Problems, pp. 143–46). This feature owed its recognisable identity in name and nature to Egyptian records (cf. Fortin, figs. XIII, 2–4; A. Bedawy, History of Egyptian Architecture III, pp. 448–57; R. Naumann, Architektur Kleinasiens I, pp. 311–15) where it appears in connection with controlling the Syrian possessions and Eastern approaches to Egypt. What has been identified as the Egyptian garrison migdol at Beth Shan is not dissimilar in plan from the block houses at Enkomi but the

BETH SHAN

Beth Shan Migdol is two centuries later in date (v. ABSP, p. 473; A. Rowe, Beth Shan I, Philadelphia 1930, pp. 20–22).

It is fitting to conclude with what perhaps may be the only (partial) exception to the general assertion of the indigenous nature of these defensive features. The fortress at Nitovikla shows some refinements of construction — occasional elements of (quasi) ashlar masonry and stretches of something like Cyclopean walling. It is possible that this fortress with its sophisticated plan of keep, ward and bailey may owe something to foreign influence (cf. Fortin, p. 515) — it is also possible that the building is considerably later than its ascribed date (MC III-LC I).

NITOVIKLA
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masonry developments

Tombs are generally mentioned last in any account of building. However, as is well known in Cyprus of the pre-urban period, they comprise far and away the most significant part of the ancient remains. The connection here with the Syro-Palestinian region is striking (cf. ABSP, pp. 324 ff.). Not it must be added that this is to say the tomb types in either region are necessarily derived directly from those in the other. What is meant is that tombs in both regions show an overall development which is in the closest parallel, while there are some individual forms and features where there are very specific resemblances. This is unfortunately a subject which has never received the overall survey treatment which it demands.

tombs

Syro Palestinian similarities

The rock cut chamber tomb is shown to have a local evolution in Cyprus via the pit tombs and beehive shape tomb cut in the soft havara rock. It is one of the features which marks the transition from the old Round House society of Neolithic and Chalcolithic times to the rectilinear village society of EC times — i.e. it is a feature of the later third millenium BC and therefore appears something like a millenium later in Cyprus than in Palestine-Syria. However, the distribution and incidence of these tombs in large cemeteries (near settlements) where the secondary limestone outcrops or is close to the surface is virtually identical in both regions. Furthermore there appears to be the same overall development in form from irregular curvilinear forms in earlier times towards more regular rectilinear forms in later times, i.e. later 2nd millenium BC (cf. ABSP, p. 325, figs. 266–68).

rock cut chamber tomb

Within this development one or two special forms have evoked considerable discussion concerning their apparent common occurrence both in Palestine and in the Aegaean (v. F. Schachermayer, Die Levante, Vienna 1962, pp. 229–35; I. Pini, Beiträge zur Minoischen Gräberkunde, Wiesbaden 1968, p. 37, figs. 13–17 & 20–24; AJA 70, 1966, pp. 331–40; 74, 1970, pp. 139–43). In point here are the bilobate (buttress) types, Petrie's so called Hyksos Tombs from Tell Farah (v. ABSP, figs. 270, 271), cf. Stewart's anomalous early tombs at Vasilia (SCE IV 1A, p. 216, figs. 86, 87; J.B. Hennessy, Ayia Paraskeve and Vasilia, Göteborg 1988, figs. 32–37) and the MB–LC tombs of similar form (v. SCE IV 1B, pp. 205–06, figs. 4–6; SCE IV 1D,

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"Hyksos" tombs

p. 708; Problems, pp. 146 ff.). N.B. also the LC II–III occurrence of tombs with a central cist (v. Petrie's Philistine Tombs v. ABSP, figs. 270, 272 — cf. SCE IV 1B, figs. 26, 6–7; IV 1C, fig. 27.7; Problems, p. 18, fig. 4). However, beyond these discussed topics it is a simple matter to point out close and idiosyncratic resemblances between certain types of Cypriote rock cut tombs and contemporary tombs in Syria-Palestine, e.g. the MB tombs of very irregular outline with petal-like niches (v. in Palestine ABSP, fig. 266 B2 and in Cyprus, SCE IV 1B, figs. 4, 6).

"Philistine" tombs

181, 184

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The transformation of Cypriote building during the latter half of the 13th century BC was tremendous — as building booms sometimes are. A good parallel would be the transformation of Cyprus building during the second half of the 20th century AD. On this occasion from an overwhelmingly rural scene of Chalcolithic style mud brick and rubble village houses, within one generation (50 years) the landscape was dominated by four ever spreading ferro-concrete urban developments. Here both the economic resources for the development and the building elements incorporated came from the same source — "internationalism"; the proprietors of the new property wealth however remain almost exclusively indigenous. In the 13th century BC the building scene was more or less that of the neighbouring mainland except for the momentous differences that the mainland's characteristic feature of walled cities were lacking. These were then provided on the Island in the "instant" manner. Whence came the resources for this process and who commanded these resources (and possessed the new towns) are questions of ancient history not be discussed here. It is however the present concern to discover (if possible) the source of the elements used to express the new building programme and to determine if this involved new foreign connections beyond the communion with the neighbouring regions of the Levant which had hitherto characterised building in Cyprus.

urbanisation

28–31

At issue here are various design concepts: first of all that of the city at large, i.e. town planning, then of the principle elements constituting the city — urban fortifications, the city temple, palaces and public buildings and any new funerary practices devolving from city life. Above all and most striking is the new mode of construction adopted to embody these features, viz monumental stone masonry.

constituent factors

The long retarded and then explosive urbanisation of Cyprus is an intriguing phenomenon. Thanks to the energies of C.F.A. Schaeffer this is documented *in extenso* at Enkomi. Indeed it is the evidence at Enkomi which defines the phenomenon and that at other sites (e.g. Ayios Dhimitrios) is basically interpreted in the light of Enkomi. Although not exhaustive the evidence at Enkomi is clear. In the latter part of the 13th century the settlement was enclosed by a city wall of quasi-rectangular configuration and articulated per long straight streets intersecting at right angles to

ENKOMI

48 form a rectangular grid with very elongated insulae of buildings showing continuous street frontages (v. RDAC 1986, pp. 97–121). *grid town plan*

A rational orthogonal grid lay out is in no way proper to a town growing up on its tell (the town on its mound) of the ancient Middle East. Therefore in the first instance it is difficult to associate the undoubted concern at Enkomi for such a plan with a background in the neighbouring regions of the Levant. Since the non-urban (village) settlements of the preceeding thousand years or so have not been excavated *in extenso*, it is possible that the concept was not unknown in the Island and its striking manifestation at Enkomi may be a scaled up verson of a local tradition. *not proper to tells*

On the face of it however a somewhat different explanation seems more probable. During the later Middle Bronze Age there seems to have been some sort of population vagary in Syria and Palestine so that the restricted confines of the city on its mound could not provide the necessary living room and accordingly new lower towns were established at the base of some old tells (cf. ABSP, pp. 162–63) e.g. Hazor in Northern Palestine, while in some cases new independent developments of a similar nature were established e.g. at El Mishrifeh (Qatna) and Tell Sefinet Nuh in Central Syria (v. ZDPV 85, 1969, pp. 24–34). In each case these took a rectangular outline and although they have not been excavated in sufficient area to define their internal planning it seems reasonable that they were laid out on orthogonal lines. *but cf lower towns* HAZOR QATNA

This development brings into focus what is a matter of common sense, viz that if a large settlement is to be laid out *de novo* on a flat terrain by some controlling authority with adequate resources, then almost inevitably it will be rationally planned on orthogonal lines. Examples of such creations are known in Egypt, e.g. the model workers town at Lahun and of course Akhnaton's new capital at el Amarna (v. A. Badawy, Orthogonal and Axial Planning in Egypt, ZAS 85, 1960, pp. 1–12), while just across the narrow seas from Enkomi a new port for Ras Shamra was developed on those lines at Ras Ibn Hani on the southern margin of the bay to flourish during the 14th and 13th centuries BC (cf. Hult, Ashlar, pp. 28–29). This latter example is both an excellent case to illustrate the general rule and also is so immediate in time and place to the town planning of Enkomi as to have acted in some measure as a model if that were necessary. It is of some interest to reflect that new ports are a common requirement and they are specifically subject to rational lay out — e.g. the Piraeus was reckoned the classic field for the energies of Hippodamos. LAHUN RAS IBN HANI

There are one or two local issues at Enkomi. First of anterior history. Urban Enkomi was not founded on a virgin site. According to the limited soundings into the deeper levels, the site was previously occupied by a settlement of scattered hamlets. How the disposition of these pre-urban buildings was taken up (as it is said to have been) into the orthogonal scheme is not clear. Secondly an ethnic argument has been ENKOMI *transition to grid*

raised. On the Palestinian coast at Tell Qasile in the early Iron Age (Stratum X — late IXth century) something of an orthogonal grid plan can be recognised (cf. ABSP, fig. 62; A. Mazar, Tell Qasile, figs. 16, 17). This is reckoned to be a Philistine creation and the town development at Enkomi was adverted to in this connection as evidence of an Aegaean (Philistine) habit and origin for the phenomenon (v. F. Shachermayer, Die Levante, Vienna 1962, pp. 129 ff., fig. 17; ABSP, p. 488).

TELL QUASILE

origins

city wall

ENKOMI KITION

A well defined novelty in the archaeology of the Island is the city wall at Enkomi (and at Kition). From the walls of the Neolithic settlements of Khirokitia, Tenta, etc. no permanent settlements have been revealed in Cyprus furnished with enclosure walls (this, of course, is not to say that they do not exist). However, there is a local antecedent for such walls in the ill defined "non-urban fortifications" of the look out posts, places of refuge or the like reckoned to characterise the middle of the second millenium (perhaps ca 300 years earlier). In this fashion almost every authority has considered the question of the origin and background to the new urban fortifications of Cyprus in the later 13th century BC (cf. Problems, pp. 187–89; Enkomi II, p. 515; Cypriote Bronzes, p. 39; Fortin, pp. 540–57). 75 76, 77

unlike Syro-Palestinian type

There are some obvious matters. The style of these urban fortifications have nothing in common with the highly evolved MB system of fortifications of Syria and Palestinian tells. The latter have curtain walls with a regularly patterned broken trace (expressed in the guise of turrets) but with no face towers only the highly evolved, characteristic tower gates — Migdol Gate (cf. in general, ABSP, pp. 172–215). The entire absence of this ordonance is a surprising fact. On the contrary the Cypriote defenses consist of quasi-rectilinear, sprawling curtains with occasional sizeable, rectangular face towers and the most rudimentary of gates, often simple gaps in the curtain. A tradition of rectangular face towers can be found in Northern Syria and Anatolia, from Troy VI and Hittite Boughaz Köy etc. continuing into Iron Age times (cf. Naumann Architektur Kleinasiens 1, pp. 222 ff.) — but the resemblances are not close. Again parts of the two major fortifications, Enkomi and Kition, are built with very large (perhaps slightly hammer trimmed) boulders. The principle is similar to the Cyclopean walls found in Anatolia and at Mycenaean Greek Citadels and must owe something to an awareness of this manner. However, the details of the Cypriote walling do not follow the foreign examples (cf. Fortin, pp. 535–53, fig. XIV 3). 75, 78 75–77

Anatolia & Mycnaean Greece

In this way most appraisals of the foreign connections of Cypriote urban defenses have been negative or hedged with qualifications — and such statements are difficult to summarise. The system of fortifications at, e.g. Enkomi, does not parallel that of any known system in the neighbouring Levant (or elsewhere), least of all does it echo the highly developed system of MB tell fortifications in Syria and Palestine. On the

other hand some elements incorporated are more or less similar to those found on the mainland — e.g. the use at times of massive boulders (Cyclopean Masonry) found in Anatolia and Greece at the time (cf. Naumann, pp. 232 ff.; N. Skoufopoulos, Mycenaean Citadels N.B. pp. 100–07; Fortin, pp. 5–10; Lawrence, GA, pp. 69 ff.)
79–81 and the interesting device of secret tunnels to concealed posterns or sally ports as one found at Idalion (SCE II, pp. 522 ff.; IV 1C, pp. 36–37, figs. 21, 22; Problems, p. 13, figs. 1, 2) and in a modified way at Enkomi (Enkomi I, pp. 71 ff., pls. 24:1, 253). These are notable in Anatolia and also occur in Greece (cf. Fortin, pp. 553–56; Naumann, pp. 122 ff., 281–83, figs. 115–117, 352–353; ABSP, p. 493; AA 1967, pp. 504–27). The most reasonable assessment of all this is that the fortifications of Cypriote towns drew on a knowledge of fortifications in neighbouring regions and incorporated certain features or devices in the local tradition of barrier walling familiar from the non-urban fortifications of the past (N.B. Nitovikla, if indeed the date of this fortress is not more or less contemporaneous with urbanisation).

secret tunnels

If the connections of Cypriote urban fortifications are unclear, the same need not be said for the city temple. There is every indication that *al fresco* enclosures in the countryside were significant religious centres from the earliest times in Cyprus as they were in later, e.g. Archaic, times. However, nothing is known of temples or sanctuaries within the confines of village style settlements since none of these have been excavated in area. Therefore the discovery of religious buildings within the walls of the newly developed towns during the 13th century BC marks the appearance of a new category of building in Cyprus. A number of such buildings have been
94–97 identified at Enkomi and Kition and they conform very clearly to a defined building
98–104 type.

city temple

ENKOMI
KITION

According to our ideas this is a somewhat haphazard looking, non-monumental type of plan. It is basically a long building comprising a main (public worship) hall, often provided with benches or platforms and a small back room which is the repository of the cult paraphernalia. Characteristically the entrance is not axial but indirect or eccentric in same way (sometimes with a lobby). This temple type has been recognised and defined in Palestine where it occurs at the end of the Late Bronze Age (LB II) and the beginning of the Iron Age (IA I) i.e. 14th-11th centuries BC. Notable examples are the Fosse Temple at Lachish (ABSP, figs. 144–146), the Wayside Shrine at Tel Mevorakh (ABSP, fig. 150) and above all the temples at Tell Qasile (ABSP, figs. 157–160). Equally this temple form occurs at Mycenae during the later 13th century and thus contemporaneously with the buildings in Palestine and Cyprus (ABSP, fig. 171). Here the disposition of a sanctuary hard by the citadel wall comprising two temple buildings and a temple workshop is very reminiscent of

non-monumental plan

LACHISH
TEL MEVORAKH
TELL QASILE

temple workshop

KITION

the early stages of the Kathari Sanctuary at Kition with which it is exactly contemporary (v. Antiquity XLIV, 1970, pp. 270–80).

The community between these temples in Palestine, Cyprus and Greece has been noted (A. Mazar, Excavations at Tell Qasile, Jerusalem 1980, pp. 62 ff.; for a convenient conspectus v. ABSP, figs. 171–173) and if this community is accepted the type may be referred to as the Old Mediterranean Type (or, from a Palestinian point of view, the Western Type). Inevitably the question of ethnic correlations and origins has been debated. Is it a Canaanite form spreading to the Aegaean or is it an Aegaean form established in Canaan by e.g. the Philistines? (cf. Kition Exc. V.1, pp. 99–103, 240–42, referring to the views of Mazar and Schaeffer, AA 1983, pp. 551–58). The occurrence in Palestine could begin marginally earlier than in Cyprus and Greece. In any event whatever the ultimate origins of this type of temple may be there is no need to see on this account Cyprus departing from or preceeding beyond its old connection with the Syrian mainland. (N.B. Schaeffer accepts the link between Cyprus and Palestine but wishes to distance the Mycenaean temples from the group.)

Old Mediterranean or Western type

ethnic correlation

secular public building

A fundamental concomitant of urban society is the secular public building, and the latter part of the 13th century is well distinguished by the appearance of such buildings. At Enkomi Dikaios excavated and published in detail two such buildings (his Areas I and III); while recently notable buildings of this class have been revealed at Ayios Dhimitrios and Maroni — all falling within the compass of the second half of the 13th century. These buildings have varying functional attributes but all alike suggest buildings housing some aspect of socio-political direction and control. Dikaios' Area III building hard against the North Wall of the city seems to have evolved from a "block house" fort but came to be a residence with industrial apartment (metal working) and perhaps a cult installation. His Area I succeeded to something like a manor or villa, and attained the character of a grand residence containing an important chapel(s) or sanctuary, etc. Ayios Dhimitrios Building X appears to have been designed as a revenue centre with storage for produce levies etc. (probably there were residential apartments on the upper floor). There are two adjoining buildings at Maroni of a similar disposition which appear to have functioned also as public stores — in this instance perhaps as part of a sanctuary (they probably include an olive press).

ENKOMI 134–137

AYIOS DHIMITRIOS MARONI 133, 169

function

74, 135

162, 136

In view of the fact that the origins, development and proposed function of these buildings vary, their basic similarities of design and construction are surprising. They are all dignified by (partly) ashlar construction — and in that respect they differ markedly from any buildings of the preceeding era. On the other hand it is possible to analyse the overall design concepts embodied in these buildings in terms

ashlar construction

of a single principle — that of the π form where ranges of rooms border a court on three sides leaving it open to the front. This is the most salient design form observed in Cyprus and as Dikaios noted, it survived in its rural manner to articulate traditional housing in modern times. It is clearly to be seen in the pre-urban building at Enkomi and there the most significant development to accomodate it to urban conditions is a wall with gate across the mouth of the court to give a proper street frontage (cf. Enkomi IIB, pls. 266–27). *π form*

As noted previously Gjerstad and the Swedish scholars treated this design form very discursively. However, in no case did they wish to derive it from any source other than an ancient Middle Eastern one. All that is necessary to remark on here is the notable continuity shown in this connection between urban and traditional pre-urban forms.

Perhaps a certain rider may be added here. The recent publication of the excavations at Maa (LC IIc, mid 13th century) show one of the more important units (Building III) to have been designed as a store house (v. RDAC 1982, pp. 86–108). This is not a commanding administrative building like those at Ayios Dhimitrios and Maroni, but a straight forward repository. Its design is the familiar long gallery type here articulated into aisles by rows of pillars. It is thus an example of the "Pillar House" government store (*miskenot*) which is so prominent in monarchic Israel (cf. ABSP, pp. 306–08, figs. 244–46). The Maa example is thus further evidence of the close relation between the two regions. MAA store house

An aspect of urban development in Cyprus of some importance in so far as foreign connections are concerned is the change in funerary customs. Almost the only archaeological record of the preceeding ages are the countless cemeteries of rock cut chamber tombs. It is customary to say that they illustrate the habit of burial outside the settlement area. Doubtless they do, but if one wished to express the evidence more accurately one would say rather that they show there was no settlement within cemeteries — since so little is known about the pre-urban village settlements. In any event according to the evidence at Enkomi this separation of settlement and cemetery no longer obtained when the settlement became a walled city. From this period tombs were located below and about housing within the walls. (It was this unexpected change which caused the SCE archaeologists to ignore the evidence of contemporary housing which they encountered in their tomb excavations.) *urban funerary customs* ENKOMI *intra mural burial*

Furthermore not all the sepulchres were rock cut; built tombs began to be constructed, some of them more or less monumental in style. It seems that extramural burial and built tombs are in their origin associated phenomena. It is possible to speculate on logical grounds concerning this matter . . . e.g. if the living needed the protection of defensive circuit walls, so did the dead; if the dead once more rejoined *associated with built tombs*

the community of the living, then the habitation site was by no means likely to provide the outcrops of firm rock required for the rock cut tombs and hence the necessity of built tombs or simple inhumation were a corollary.

The question here, however, is not the *ratio* of these new urban practices but their foreign connections. Little can be said but that similar circumstances (just as little understood) are to be found in Syria and Palestine. The very extensive excavations of

MEGIDDO

the Palestinian city of Megiddo brought to light a number of intra-mural burials. These include some domical and vaulted built tombs. The earlier (MB) domical tombs of rubble construction (ABSP, p. 330, figs. 274 & 365) are reminiscent of the built tholos tombs at Enkomi somewhat (Acts MEM, pp. 248–53) which also, be it noted, are said to be pre-urban (LB I–II) in date! Also one of the tholoi is stated to be partly built of burnt brick, inevitably suggesting Mesopotamian influence (Acts MEM, pp. 395–96). However, a more likely explanation is that the bricks were burnt by funerary fires. On the other hand Ras Shamra, the north Syrian town reckoned to have been the trading counterpart of Enkomi is well known for its tradition of *intra-mural* built tombs set beneath the floors and courts of houses. These are of quite monumental vaulted ashlar construction (v. ABSP, pp. 330–31, figs. 275, 366). Some of the earlier tombs, however, are smaller and only corbelled in somewhat at the shoulders to permit their being slabbed over (ABSP, fig. 274). These tombs are reminiscent of the rectangular ashlar built tombs at Enkomi (v. Hult, Ashlar, p. 8).

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RAS SHAMRA

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These comparisons do little towards explaining the occurrence of built *intra-mural* tombs in Bronze Age sites either in Syria-Palestine or in Cyprus. However, at least they show that the connections are the traditional ones.

ashlar masonry

The occurrence of some odd individual blocks of more or less finely dressed stone masonry at the fortress of Nitovikla somewhere about the middle of the second millenium shows that the technical ability to dress stone fair faced was available in or could be brought to Cyprus from that date. The contemporaneous appearance during the second half of the 13th century BC of extended passages of walling in public buildings carried out in dressed stone shows that it was socio-economic developments which made possible this expensive form of construction and that these developments did not embody some hitherto unimagined phenomenon.

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extensive East Mediterranean Koine

During the period under review fine stone masonry of a type reasonably similar to that introduced into the Island was known in North Central Syria (Ebla, Ras Shamra, Alalakh, Byblos, etc. — v. Hult, Ashlar, pp. 21–33, 36–40) with some manifestations in Palestine (Hazor, Megiddo, etc. — v. Hult, Ashlar, pp. 36–40; ABSP, pp. 342–47, 401–07, *et pass*). There were also examples in Hittite lands (Boghaz Köy etc. — v. Hult, Ashlar, pp. 41–44; Naumann, pp. 37–42, 66–86, et pass.) and elsewhere in Anatolia (e.g. Troy — v. Hult, Ashlar, pp. 36–40; Naumann,

pp. 66–86). At a further remove, and to be discussed in detail later, there is masonry of the same order in Crete (Hult, Ashlar, pp. 44–49; J.W. Shaw, Minoan Architecture, pp. 83 ff.) and Mycenaean Greece (Hult, Ashlar, pp. 49–52). While perhaps as a background to all this there is the continuance of the age long tradition of fine-stone masonry in Pharaonic Egypt (Hult, Ashlar, pp. 37–41; Clarke & Engelbach, AEM).

Everyone has been interested in attempting to localise if possible the specific source of this pervasive feature of urban building in Cyprus. To this end the essential characteristics of LC dressed stone masonry are recapitulated as follows: *characteristics*

(1) In the main it was composed of regularly coursed orthogonal blocks.
(2) It was never entirely solid masonry, finely dressed and closely jointed on all faces throughout the thickness of a massive wall, but generally was fair facing to a rubble core.
(3) Anathyrosis as an aid to close jointing and cramping to fix blocks are little evident.
(4) It occurred both as a socle of orthostate blocks (to a superstructure of some other construction) and as regularly coursed masonry from ground level.
(5) Very frequently the faces of blocks were left in the marginally draughted state (i.e. the central base was not fully dressed away).

In brief (1) distinguishes the Cypriote masonry from the Pharaonic Egyptian tradition; (2) distinguishes it from the later classical Greek ashlar (marble) masonry; however (1) — (5) occur in some manner or other in virtually all the regions mentioned earlier than and/or at the same time as their occurrence in Cyprus (ca 1250 BC — 1200 BC). Any localisation is thus dependent on refinements of stylistic differences and of chronological occurrence.

229 Here first of all a caveat must be entered regarding the reporting of the Cypriote masonry. In recent years because of the extensive display of masonry accessible at Kition (accentuated by the inaccessibility of the masonry at Enkomi) there has been a tendency to accept the detailed picture at Kition as standard for the Bronze Age ashlar masonry in the Island as a whole. This in fact is not so, and fuller aquaintance with the record is likely to show that the detailing of this masonry may have been very diverse as is suggested by the following. The ordonnance of orthostate on bossed *orthostate & plinth* KITION
241*ff* plinth is the Kition Sanctuary style (cf. Hult, Ashlar, pp. 11–13; Kition Exc. V.1, pp. 165 ff., figs. 1–71). Whether such orthostates also occurred at e.g. Ayios Dhimitrios, Maroni etc. cannot be ruled out; but certainly at these sites and Hala Sultan Tekke
233, 234 there are surviving passages of coursed masonry from footing level (cf. Hult, Ashlar, *coursed masonry* pp. 9–10). At Hala Sultan Tekke there is also an example of revetting with very thin
236 slabs, i.e. veneering (v. Hult, Ashlar, fig. 2). Even more basically it is possible that
239 close survey of the Enkomi masonry would show that continuous bedding and

orthogonal jointing are by no means universal (cf. e.g. Hult, Ashlar, fig. 34). While the remains at Kouklia include blocks which may be described as megalithic and are 240
in no way facing (cf. Hult, Ashlar, fig. 11).

Now all these variations can be found jointly and severally in the different provinces where this school of Bronze Age Ashlar is found — Syria, Anatolia, The Aegaean. Hult gives careful consideration to such details in endeavouring to establish where the closest connections to Cyprus lie. However, in view of the diversity of detailing encountered in Cyprus during the short period in which Ashlar masonry was carried on there it seems doubtful whether there is much finality in this. The various manners of treating ashlar were known and practised throughout the continuum and it is doubtful that there is over much chronological or regional implication to them.

pre-eminence of Cyprus

The urban development building boom in Cyprus came at a period when fine ashlar masonry was declining in surrounding areas — indeed these two phenomena are probably linked — and in this fashion during its brief floruit (less than a century) in the Island, Cyprus became perhaps the leading province in this manner of construction. Virtually every aspect of ashlar building manifested in Cyprus can be paralleled in the neighbouring region of Syria (cf. Hult, Ashlar, pp. 21–31, 36–41, 61 ff.) and there seems little point in seeking to localise a main influence in other areas.

stepped bedding ENKOMI *veneering* HALA SULTAN TEKKE

A few individual issues may be mentioned. The stepped bedding, irregular coursing and non-orthogonal blocks at Enkomi are closely paralleled at Ras Shamra (v. Hult, Ashlar, figs. 16, 20, 22) as might be expected. The veneering of the Hala Sultan Tekke bathroom, of course, is very reminiscent of the lustral areas in the Cretan palaces (cf. Hult, Ashlar, fig. 75). It is possible to draw an interesting and

OLD PAPHOS

unexpected comparison for the remains of the Aphrodite Sanctuary at Kouklia. The general impression is very different from other Cypriote sites, although in essentials

massive Egyptian style

the masonry elements are the same, and as has been mentioned at several junctures the impression is that of the gravity and ponderous solidity of Egyptian building. This is engendered by the monolithic pillars and the quite megalithic walling where 92, 240
single upright slabs constitute the entire thickness of the massive wall (v. Hult, Ashlar, figs. 11, 12). The matter is probably one of impression only, but it might be wondered why Euripides chose to hymn the locality in terms applicable only to

pillars

Egypt and the Nile. Certainly Cyprus shows a strong development in pillar supports, 277
monolithic or built up, which in the overall suggests Crete (cf. Hult, Ashlar, figs. 78, 80). Connected with this is what appears to be a local Cypriote development, the 278

stepped capital

stepped capital with cavetto (v. Hult, Ashlar, fig. 87).

orthostate socle

Perhaps the most deep seated and endemic question is the relation between the two manners of ashlar use: the orthostate socle and plinth (to a mud brick super-

structure) and coursed ashlar block construction from ground level. There is a tendency to suggest a chronological succession for these two manners (cf. Shaw, Minoan Architecture, p. 83; Hult, Ashlar, pp. 46–47). Certainly in the later, 1st millenium ashlar usage of both Archaic Cyprus and Israelite Palestine orthostates appear to be ousted by coursed ashlar. However, in 2nd millenium masonry it is doubtful whether there is a meaningful development. Indeed at times the two manners are not as distinct as might be supposed (cf. at Megiddo, Hult, Ashlar, p. 71). Cyprus employs the orthostate style with extreme refinement (at Kition) in a manner more reminiscent of Crete (orthostates on both faces of the wall) than in Syria (on one face with a massive backing) yet at a time when the construction was no longer practised in Crete (v. Hult, Ashlar, pp. 68–70). Moreover if there is any sequence in Cyprus it would be the reverse = Kition orthostates later (LC III) than the coursed masonry at Maroni, Ayios Dhimitrios and Hala Sultan Tekke (LC II). However, as yet there is insufficient evidence to proceed with such analyses.

coursed masonry

To conclude shortly without entering into a mass of detail, the Late Cypriote ashlar style seems to be its own creation using basic masonry devices common to an extended area (penumbral to Egypt). All of these devices could have been found in neighbouring Syria and there is little to suggest any special concern with mainland Greece or Anatolia. Resemblances to features in Crete are real, but the old question of the inter-relations between Crete and Ugarit enters the argument here. In any event there is no reason to suppose that Crete rather than Syria was the principle influence.

autonomous Cypriote school

According to the tenor of this record, Cyprus colonised from Syria was urbanised in a Syrian image. From this juncture something like a millenium elapsed before the Island was brought under Hellenistic rule. The question immediately arises as to the degree to which Cyprus building maintained its primary connection with the Syrian mainland during this extended period (which saw the rise of classical civilisation). The difficulty incidental to this question is the unexpectedly incomplete building record which survives. Although there are various indications that no "dark age" supervened in Cyprus in the 11th century, there are, nonetheless, very few indications of monumental buildings in Cyprus until many centuries later. The one salient exception during Geometric times is the revived Temple of Astarte at the Kition Sanctuary, but this is in essentials a rebuild of the Bronze Age temple. What evidence there is shows Cyprus building to rest within the Syro-Palestinian connection.

1st millenium BC development

Very symptomatic is the question of fine stone masonry construction. Since virtually all masonry preserved from the 9th century temple at Kition is reused, the first post Bronze Age ashlar is from late Archaic times, ca 500 BC, e.g. in palaces at

late Archaic

VOUNI KOUKLIA

Vouni and Kouklia in the West of the Island. The overall defining characteristics of this masonry are exactly those set out above as defining the Bronze Age masonry and there is not the slightest reason why it should not represent a local continuation of the old tradition — except for the salient fact that virtually no such masonry has been found from the intervening centuries. The one significant difference (or development) is that the orthostate style has given place to coursed masonry. Here the blocks are set header and stretcher wise both on bed and on edge (to give the *carreaux* and *boutisses* of French terminology) in such a way that they act not only as a variegated facing to the wall core but also compartmentalise it both vertically and horizontally speaking (for illustrations of patterns at Vouni cf. SCE III, plans XVI–XXIII). 258

ashlar tradition maintained

orthostates not prominent

cf Israelite

This detailing is in the same tradition as good Israelite masonry (cf. Y. Shiloh ... Israelite Ashlar Masonry, Qedem 11 Jerusalem 1979; ABSP, pp. 402–07) e.g. at Samaria (Shiloh, pp. 56–57, pls. 26–28). And it is generally assumed that the Israelite Ashlar masonry is a surviving representative of the school which had its main centre of development in Phoenecia where because of continuous occupation of this heartland no archaeological remains of this type are as yet known (cf. ABSP, pp. 347, 406 — for a recent attempt to revalue Phoenecian monumental masonry from remains at Dor on the north coast of Israel, v. BASOR 267, 1987, pp. 21–42).

Phoenecian & masonry

According to this record it is a moot point whether the ashlar masonry of Archaic Cyprus represents a continued surviving tradition from the Late Bronze Age ashlar — or whether it was re-introduced during the Phoenecian expansion into the Island during the 9th century BC. When the refounding of Kition (New City) was every bit as significant as that of Carthage (New City) and was at a time when the Palestinian witnesses to the Ashlar masonry tradition flourished most.

Greek sources Vitruvius II 8

Greek literary sources testify to a connection between Cypriote and Phoenecian masonry. The patterned and compartmentalised arrangement of the ashlar walls at Vouni corresponds entirely to Vitruvius' well known remarks (II 8) concerning the superiority of a type of Greek masonry over contemporary Roman *opus incertum* and *opus reticulatum* (however they be interpreted, cf. ABADY IV, 1987, pp. 79–96). Since latterly it has been shown that the cementitious mortar employed in Cyprus at the period is equivalent to pozzolana in its chemistry (Idalion OIC, p. 8) then such walls are exactly Vitruvius' *Graecorum structura* (concrete of the Greeks) and the patterning comprehends the much discussed *emplekton*. Now the Hellenistic Greek sources always couple Cypriote and Phoenecian masonry together when they refer to the amazing strength and durability of this composite walling (cf. Theophrastos, Peri ton Lithon 64–66; Philo, Belophoecia 79.5; Arrian, Anabasis 2, 21.4).

emplekton

Cyprus & Phoenecia linked

Thus it may be seen that whatever the facts of survival of Bronze Age ashlar may

have been, Cypriote ashlar masonry remained throughout in communion with the Syro-Phoenecian tradition. A further exemplification of this basic connection is afforded by the pier and panel type of walling. This comprises piers of fine stone masonry which provide vertical reinforcement at intervals for an infill of inferior (rubble) construction. This type of walling has a long history in the Syro-Phoenecia area (ABSP, pp. 407–08, figs. 321, 322; Eretz, Israel 15, 1981, pp. 70–77; BASOR 267, pp. 27–29). Its latter day development is very marked among the Phoenecian colonies of the West, whence a certain manifestation is called "opus Africanum". *pier & panel masonry*

265 Examples of this type of walling appear in Cyprus during Hellenistic times at Ayios Philon (RDAC 1980, pp. 161 ff., pl. XXVI 2) and Ayia Irini (Studi Cyprioti I, Rome 1971, pp. 63, 162, figs. 4–7, 22, 23). This manner of walling is quite foreign to classical masonry and its late occurrence (or survival) in Cyprus is a mark of the continued communion with the East. AYIOS PHILON AYIA IRINI

If any category is critical in determining the affinities of Cypriote building in pre-Ptolemaic times, it is that of the temple type. From the rebuilt Temple of Astarte in Kition (ca 850 BC) to the rural sanctuaries extending down into Graeco-Roman times remains of about two dozen temples or shrines have been uncovered. It is a very salient fact that in no instance can a classical Greek style temple be identified with any certainty, and certainly there is no instance of a standard peristylar temple on a crepis. The development of the temples in the Kathari Sanctuary at Kition *temple type* *absence of peristylar temple* KITION

99, 100, 105 evolved through a more monumental version of the Old Mediterranean Temple type into a monumental Phoecenian hall temple with its Jachin and Boaz (cf. ABSP, fig. 173) in a manner which closely recalls the evolution of Solomon's Temple out of the preceeding background of Canaanite Temples (cf. ABSP, pp. 254–67). Thereafter the record of the clearances and excavations of the rural sanctuaries in Archaic and later times shows that where a cell or shrine building is present this is almost inevitably a square or squarish cella (or 3 cellae juxtaposed) preceeded by one or *hall temple* *Solomon's temple* *square cella*

116, 117 more courts (cf. SCE IV 2, pp. 1–23, figs. 2–4). There is nothing Greek about this form but it is an essential type of Phoenecian/Semitic shrine (cf. the Temple *debir* and the *kaaba*) extending from Bronze Age times onwards and in its later development it is prominent in the North African Punic colonies (cf. ABSP, pp. 129, 234–35, figs. 124, 166, 167). This type continues down through Graeco-Roman times until ousted by Christianity, cf. the Soli Kholadhes Sanctuary (v. SCE IV3, pp. 1–8, figs. 1–9). It is the type represented on the coins and medals showing the shrine at Paphos (in Roman days) and treated so discursively by Westholm (v. SCE IV 3, pp. 34–48; Temples at Soli, pp. 177 ff.; The Paphian Temple of Aphrodite, Acta Archaeologica IV, pp. 223 ff.). *debir & kaaba*

Graeco-Roman period

Although the position cannot be regarded as definitive in view of the very imperfect archaeological record, all present indications are that the first classical type temples were built in Cyprus after the Ptolemaic Conquest, and the surviving evidence for them is almost entirely Roman. At this period there are reasonably preserved temples at the Kourion Sanctuary (Scranton, pp. 22–25); the Amathus Acropolis (Praktika 2, pp. 279–86); and the Salamis Agora (Praktika 2, pp. 363 ff.). Although these temples are recognisably Graeco-Roman in inspiration, not one of them has a classic Greek peristyle on crepis plan. The most elaborate is the Temple of Zeus at Salamis and this sums up their development. Essentially they tend to be podium temples with a conspicuous adyton. The recent restored plan of the Temple of Zeus with its opulent internal decoration of engaged half columns make the temple a baroque building (cf. M. Lyttleton, Baroque Architecture in Classical Antiquity, London 1974) something after the manner of Baalbec. The type might be referred to as the Roman Temple in Cyprus to connote its close parallel to and connections with the Roman Temple in Syria as illustrated by Krenker (v. Römische Tempel in Syrien, Berlin 1938).

KOURION AMATHUS SALAMIS — 129, 130, 131, 132

podium temples

cf Roman temple in Syria

There is, of course, very little non-religious building of much consequence presently known from the pre-Ptolemaic period. However, the two principal complexes, the palaces at Vouni and at Old Paphos (Haji Abdulla), both reveal interesting Middle Eastern connections. The period concerned (ca 500 BC) is that of Persian rule and some building forms can be interpreted in this light.

palaces

VOUNI — 138

The Palace at Vouni as first constructed, so far as its central monumental unit was concerned, was laid out on the local Cypriote form principle, viz ranges of rooms around three sides of a court. However here, for reasons of state, the mouth of the court was provided with a gate-house (cf. SCE IV 2, p. 26, fig. 6; Cor Arch, p. 148, fig. 1). Now it is impossible to ignore that this centralised cross in square building recalls units and gates at Persepolis, e.g. The Gate of All Nations (cf. AAAO, p. 219, fig. 119). This flattery by imitation would be in accordance with the usual polity of underlying rulers.

OLD PAPHOS — 141

LACHISH

Even more strikingly Oriental is the plan of the Palace at Old Paphos built against the city wall in the Haji Abdullah area (v. RDAC 1985 pp. 106–07; OA III, 1960, pp. 155–73). With its (barrel vaulted?) ranges of long rooms set behind a great court the plan strikingly recalls the contemporary Persian Residency at Lachish (v. ABSP, fig. 198; Lachish III, pl. 120; E. Stern, Land of the Bible in the Persian Period, pp. 57–60) which is likely to be modelled on Babylonian public buildings (cf. ABSP, pp. 503–08; Mesopotamia 2, 1967, pp. 165–83; Sumer XXXV, 1979, 1–2, pp. 391–63), since it was from this ancient capital that Persian rule was promulgated in the lands

across the river (cf., also, D. Metzler, Zur Wirkungsgeschichte des Darius Palastes in Susa, in Acts of 7th Iranian Congress, Münich 1976, p. 217).

built tombs

The problem of continued survival from Bronze Age times or renewed foreign influence is very vexed as it concerns the more or less monumental built tombs in Cyprus of the mid-first millenium. As always, the sepulchral record is fuller and more continuous than for any other aspect of building and there are built tombs of various sorts from quite early Geometric times. However, the evidence as yet does not demonstrate the continued survival of the type of built tomb discovered at LC II Enkomi — nonetheless typologically speaking, the monumental ashlar masonry built tombs of Archaic Cyprus could be evolved perfectly well from their LC predecessors.

TAMASSOS

Whatever may be the facts of survival, one instance where developed monumental
199 tombs of the archaic period clearly manifest foreign connections is at Tamassos. Here the two royal tombs cleared by Ohnefalsch Richter (Built Tombs, pp. 36–39, figs. 9–13) suggest by their forms and high pitched gable roof, coupled with skeuomorphic detailing (e.g. heavy dentils and ceiling as from logs or split logs) the wooden tomb chambers preserved in Lydia and Phrygia (e.g. the Midas Tomb at Gordion — Martin MAG, p. 8, pl. IIa; AJA 62, 1958, pp. 139 ff.) as also the numbers of stone tombs in that region which follow the wooden prototypes (Martin MAG, pp. 6–9, pl. 1; AA 85, 1970, pp. 71 ff.; H. Metzger, Anatolien II, pp. 184–85, figs. 83 ff.).

Anatolian influence in detailing

tumulus

The primary characteristic (and a most conspicuous one) of the Phrygian and Lydian tombs is that they belong to a tumulus custom (cf. H. Metzger, Anatolien II, pp. 62). This custom is widely yet episodically dispersed throughout the ancient world. However, the evidence as it stands appears to show that the custom was never endemic in Cyprus. Nonetheless the evidence is not as straight forward as sometimes assumed. It is quite possible, indeed probable, that a *sēma* (sign) of the presence of an underground tomb was more or less always a small mound of earth (over the dromos); particularly so perhaps for a built tomb, here over the chamber (SCE IV2, pp. 30, 42; RDAC 1964, p. 30). Such features however (now largely unrecognisable) are not in any way to be interpreted as tumuli. On the other hand the interpretation is not so clear with a number of funerary mounds which occur by the North East
183 coast of the Island. These extend in time from MC (Paleoskoutella, SCE I, pp. 416 ff.; SCE IV 1B, p. 10) to Archaic times (Trachonas, SCE I, pp. 461 ff., fig. 182) and
189 Classical-Hellenistic times (Kountoura Trachonea, SCE I, pp. 439–60). There is nothing against considering these features small tumuli. In which case they must be regarded as exceptional and because of their location as the outcome of foreign influence from the adjacent region of the mainland here so close by.

PALEOSKOUTELLA
TRACHONAS

A quite other dimension is present in the remaining lmiting case. There are two

SALAMIS

full scale monumental tumuli (ca 50–60 m in diameter) rising above the very densely packed burial grounds to the West of Salamis. One tumulus (Tomb 3 — Exc. NS I, pp. 25 ff.) marks a built Archaic Royal Tomb (ca 600 BC), the counterpart of the Tamassos Tombs. This feature thus draws together the evidence at Tamassos and Salamis to indicate a specific Anatolian influence on the Archaic built tombs of Cyprus (cf. V. Karageorghis, Tomb Architecture, pp. 361–68). It is important, however, to remark that this evidence is specific and refers to specific (carpentery modes and tumuli) influences at Tamassos and Salamis. It is not to be taken as generic in explaining the occurrence of the Cypro-Archaic built masonry tombs. The other tumulus at Salamis (Tumulus 77) is thought to be the cenotaph of the last native king (at the end of Cypro-Classical times). Its presence can be accounted for as an emulation of the earlier monument (D.L. Cheal, Early Hellenistic Architecture in Cyprus, pp. 20–42).

205

206, 207

ornament

Reversion to the Royal Tombs at Tamassos epitomises foreign connections of a different nature. Tomb N° 1 illustrates in correct architectural setting two important categories of ornament which are well known in Cyprus as *disjecta membra*. Both undoubtedly emanate from the (Syro) Phoenecian sphere. They are the Proto-Aeolic Capital and the window frame with colonetted balustrade famous as the setting for the Woman at the Window (Aphrodite Parakyptousa) motif.

Proto Aeolic or Palm Tree capital

The Proto-Aeolic Capital is defined by its occurrence in monarchic Israel, there now called the Timorah or Palm Tree Capital (v. *in extenso*, Y. Shiloh, The Proto Aeolic Capital, Qedem 11 Jerusalem 1979; ABSP, pp. 432–33; cf. Levant XIX, 1987, pp. 121–22). It is used to cap plasters, engaged piers or, rarely, free standing piers (not columns) set in doorways (Shiloh, figs. 12, 14; ABSP, figs. 334, 335). Most occurrences are 9th century BC in date, although some examples are still found used (or re-used) at Ramet Rahel ca 600 BC. A number of these capitals (ca 10) have been found out of context in Cyprus, all dated to Archaic times. The appearance of these capitals carved in relief on pilasters flanking doors of the Royal Tombs at Tamassos (v. Shiloh, pl. 18) is entirely in accordance with what has been deduced regarding their architectural function in Israel. There is a strange anomaly in the chronology between the two regions, Palestine and Cyprus — in fact the Cyprus examples are exactly the date of the somewhat similar Aeolic (or Proto-Ionic) capital, however this is of distinctly different detailing and moreover is a column capital. The explanation of disparity in date usually given is that the capital form was centrally based in Phoenecia and endured there, but no examples have been preserved (Shiloh, p. 90).

TAMASSOS

199, 283

balustrade window frame

Very similar circumstances apply to the colonneted window frame type. This appears as false windows set in the pediments above the doors of the ante-chamber in

319 Tamassos Tomb 1 (Built Tombs, figs, 10, 11, 13). This is a perfectly rational positioning for such window frames which are known in the main as motifs on ivory plaques of the Phoenecian School (cf. the Nimrud Ivories v. R.D. Barnett, The Nimrud Ivories, pp. 150–51). Some evidence of their structural use has survived in the late Judaean Palace at Ramet Rahel, also cf. elements from Jerusalem and Amman (v. ABSP, p. 450, figs. 359, 360; Shiloh, p. 43, pl. 14; cf. Levant XIX, 1987, pp. 122–27). However, it is in Cyprus that several real stone window frames of this
326 nature have been discovered intact, e.g. at Kourion, Kouklia and Ktima (cf. BCH 94, 1970, p. 216, fig. 55; p. 226, nos 68–69, Shiloh, p. 43, pl. 19). Interestingly enough Shiloh wishes to stress their evolution from wooden window frames. It is striking to observe that no instance of classical Greek ornament occurs on Cypriote built tombs until Ptolemaic-Roman times.

cf Phoenecian Ivories

RAMET RAHEL

KOURION

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2. AEGAEAN

Overall position one of surprisingly little connection prior to Graeco-Roman rule. Possible influence of long surviving Cypriote round house building on Cretan tombs. Possible Minoan models in formation of Cypriote urban building, e.g. orthostates, stone slab veneering, window style, also use of foot as unit of measure.

Although more closely connected chronologically and historically, little specific Mycenaean influence. Corridor circulation. Very general resemblances in fortifications. Mycenaean communion in "Old Mediterranean Temple" type, but here close connections are between Cyprus and Palestine. Only one positive signal of Mycenaean immigration, the distinctive type of rock-cut chamber tomb with long splaying dromos at end of LC III.

No further comparison possible because of absence of remains until late Archaic times. Notable lack of connection between Classical Greek building and building in Cyprus. No classical peristylar temple nor secular public buildings

(theatres, gymnasia, stoa, etc.). Fine masonry construction not influenced by classical Greek masonry techniques, and little indication of classical architectural ornament. However N.B. a Greek feeling for city siting in the formula apparent at Amathus, Vouni, Soli. One of the earliest recorded hypocaust arrangements present at Vouni Palace. Also introduction of terra-cotta roofing tiles.

very restricted connection

In the present state of information regarding the history of building in Ancient Cyprus it is manifest how little specific connection can be precised with building in the Aegaean — this is, prior to the incorporation of Cyprus in the Hellenistic world ca 300 BC. This statement, of course, is not meant to refer in any way to other aspects of ancient Cypriote life — goods, chattels, religion and above all, language. Indeed the very fact that Greek was understood and used in the Island from the beginning of the first millenium makes it *à priori* a likely place where Greeks could organise their dealings with the neighbouring (Semitic speaking) regions and thereby become familiar with modes of building practised there. However, all the indications are that whether or not refugees from mainland Greece took Mycenaean civilisation with them to Cyprus so that aspects of it were preserved there after its downfall in Greece, this did not include building manners. Mycenaean immigrants and their descendents did not live in settings reminiscent of the buildings of Greece (e.g. Megaron style palaces) but in settings similar to those obtaining nearby on the Levant coast.

circular tombs in Crete

The first possible connection in point of time between Cyprus building and the Aegaean is a case where Cyprus may be the instigator. The tradition of the round tombs in the Mesara of Crete is now demonstrated to be of greater antiquity than previously believed. It thus could well overlap the latter stages of the round house building in Chalcolithic Cyprus — i.e. during the first half of the third millenium BC. Accordingly it has been proposed recently to see Cyprus domestic building as the model for the Cretan sepulchres (S. Hood, Cyprus and the Early Bronze Age Circular Tombs of Crete, Praktika 2, pp. 43–49).

Minoan orthostate construction

As a common countercurrent to this supposition it is possible to imagine that the developed Minoan building style with its finely dressed masonry may have played some part in the formation of the Urban Cypriote "ashlar" building style. In particular the Minoan use of orthostates is somewhat similar to that in Cyprus (cf. Hult, Ashlar, pp. 46–47, 66–69; Shaw, Minoan Architecture, pp. 83–92; AJA 87, 1983, pp. 213–16). However, the difficulty here is that the floruit of orthostate construction in Crete is much earlier (ca middle of the second millenium) than in Cyprus and it is difficult to point to any Cretan examples contemporary with those at e.g. Kition (ca 1200 BC). Indeed the fairly protracted use of ashlar masonry in Crete extending over a number of centuries seems to show a clear chronological succession of orthostate followed by coursed masonry construction.

Minoan veneering

A category superficially related to orthostates is veneering with stone slabs to form

a dado. This is a familiar device in Crete (Shaw, pp. 20–23, 91) where the preferred material was gypsum (Cypriote *marmara*). The material was also used in a similar fashion for flooring. The two practices are combined in the lustral areas. A very
236 similar use is seen in the so-called bathroom (House A, Room 1) at Hala Sultan Tekke (Hult, Ashlar, pp. 9, 17). Thicker slabs (which may be termed fragile orthostates) revet the north wall of Temple 4 at Kition (v. Hult, Ashlar, pp. 11, 17). Inevitably these examples have recalled Cretan construction (Hult, Ashlar, pp. 79–80, fig. 75).

HALA SULTAN TEKKE

In this connection mention may be made of a peculiar type of flooring known in the Cretan Palace, popularly termed "tarazza". This is composed of rounded beach pebbles, uniformly graded, set in and on a matrix of hard lime plaster. It is used functionally (e.g. in the service areas) in Late Minoan palaces (v. Shaw, pp. 218–21, figs. 250–53). Its occurrence is of interest in view of the rather surprising use made in Cyprus at all periods of pebble inset flooring (cf. e.g. Kourion Sanctuary, p. 4), a practice which is not common on the mainland nearby.

pebble flooring

KOURION

Another specific detail in Cyprus ashlar construction which appears to have parallels in Crete is the large rectangular windows in Batiment 18 at Enkomi (Hult, Ashlar, p. 117, fig. 34). Windows of this disposition are common in Crete where they have been recognised by the dowel holes to secure wooden framing (v. Shaw, pp. 174–81, figs. 205–09; AJA 64, 1960, pp. 330–33). Investigation into the distribution of windows in Cretan buildings has shown that they bear a very definite relation to the shallow recesses which articulate prominent façades (AJA 64, 1960, pp. 330–33). This characteristic Cretan practice is little evident in Cyprus but can be seen clearly
32 on the main street façade of Building X at Ayios Dhimitrios (RDAC 1984, pp. 18–24).

windows
ENKOMI

AYIOS DHIMITRIOS

Finally a very striking and pervasive feature of Cypriote building — the unit of measure employed appears to be aligned with Cretan practice. It is surprising to find that from earliest times the common unit of length in Cyprus was a foot rather than a cubit — although there are occurrences of the latter measure with a value of ca 54 cms (RDAC 1984, pp. 42–49). Both a long (ca 33 cms) and a short (ca 30 cms) foot can be recognised. The same complex of circumstances have been specified for Crete. The above-mentioned recessed panelling on the façades provides a defined basis for testing and measurements of these show that the unit employed was a foot not a cubit (v. AJA 64, 1960, pp. 335–41). The length analysed is ca 30.3 cms although a value of ca 33.4 cms might also apply in some instances (was there a royal foot on the analogy of the royal cubit?). Further investigations of a different type have suggested that, in addition to the foot, a cubit of ca 54 cms (reckoned to be derived from Anatolia) was

metrology
the foot

CRETE

also in use in Crete as a basis for modular design (AJA 71, 1967, p. 193 & AJA 72, 1968, p. 171 — cf. RDAC 2, 1988, p. 145).

Mycenaean Greece

Mycenaean building is in bulk much more contemporary with Cypriote urban building than is the palatial building of Crete. It is also much closer connected historically. However, in fact, there is not much connection to be observed in the actual building remains. The details of ashlar masonry are not close (Hult, Ashlar, pp. 49–52, 89) and there is virtually nothing like the Mycenaean palace planning based on the megaron in Cyprus (cf. The Mycenaeans, pp. 89–110).

absence of megaron

corridor circulation

One interesting point of detailed planning may be mentioned here although the ultimate localisation is not clear. A curious feature of Cypriote planning has been noted where a corridor provides direct communication with the rear apartments of a building, often supplementary (or paralleling) other forms of circulation. The feature is well demonstrated in the LC II–III buildings, Ayios Dhimitrios Building X (v. RDAC 1984, pp. 19–20, fig. 3) and Enkomi Area III. An interesting, and apparently close, connection here can be observed in the Middle Cycladic House at Phylokapi (Lawrence, GA, pp. 52–53, fig. 33). A somewhat similar manner is also to be seen in the Late Hellenistic Palace at Gla (Lawrence, GA, pp. 79–81, fig. 46).

AYIOS DHIMITRIOS 32
ENKOMI 26

PHYLOKAPI

GLA

fortifications

Speaking at large it is perhaps Mycenaean fortifications which seem most relevent to Cypriote urban building development. However, the resemblance of massive boulder construction (Cyclopaean masonry) and sprawling non-geometrical trace are of principle only, not of detail (cf. Lawrence, GA, pp. 69 ff.; Lawrence, Fort, pp. 4 ff.).

temples

Much has been written lately on pre-classical cult places in the Aegaean (cf. B. Rutkowski, Cult Places in the Aegaean World, Warsaw, 1972; Vordorishe Tempel, in H.G. Buchholz, Agäische Bronzezeit, Darmstadt 1987, pp. 407–25) and views have been expressed concerning their relations with Cypriote sanctuaries (e.g. B. Rutkowski, Religious Architecture in Cyprus and in Crete, in Acts RCC, pp. 223–27). The points of connection are of interest but they are in essence social and religious ones rather than architectural. They concern the organisation of religion to provide for communities traditionally settled in fashions other than the Middle Eastern City State individuated to a greater or less degree by its temple(s). In this way the extra-mural cult places of the Aegaean (cf. B.C. Dietrich, Peak Cults and the High Place in Minoan Religion, Historia 18, 1969, pp. 257–70; The Mycenaeans, pp. 71–72) have been brought into connection with the Cypriote Rural Sanctuaries. There is also the interesting connection between lodging the cult in apartments within a building which is overall of non-religious function (e.g. a palace or the like) as in Knossos or Mycenae (cf. The Mycenaeans, pp. 65–69) and at Enkomi.

palace chapels

The specific building connection is more restricted. It was once considered that

congregational temples

Mycenaean civilisation did not build public congregational temples (cf. The Mycenaeans, p. 69). However, more recently, buildings of this nature have been identified (cf. W. Taylour, New Light on Mycenaean Religion, Antiquity XLIV, 1970, pp. 270–80). The temple at Mycenae (Antiquity XLIV, 1970, p. 271, figs. 1 & 2) with its main room (cella) and small sacred repository at the rear was quickly put in connection with temples of similar plan in Palestine, e.g. at Tell Qasile, and in
98–104 Cyprus, e.g. at Kition (Kition Exc. V.1, pp. 94–103; A. Mazar, Excavations at Tell Qasile, pp. 62 ff.; ABSP, figs. 171–173). The closeness of this connection has been impugned (AA 1983, pp. 551–58). In any event it is clear that the Mycenae Temple is not the primary centre of this communion and the building connections of Cyprus here (Kition, Enkomi) are much closer to Palestine (Tell Qasile).

MYCENAE

TELL QASILE
KITION

rock cut chamber tomb type with long dromos

However, if some definite trace is sought in Cyprus building of a Mycenaean presence it can only be found in the appearance of a distinctive type of rock cut chamber tomb at the very end of the Bronze Age. These tombs were characterised by a more or less rectangular chamber and a long narrow (stepped) dromos the sides of which can splay out to the stomion stopped up with rubble walling, not a discrete stomion stone. When this type of tomb was first noted at Lapithos (SCE I, pp. 172–265) and Kourion, they were ascribed to the very beginning of Geometric times (Protogeometric — Geometric I) and Gjerstad was concerned with a short (ca 50 years) chronological gap between the last Mycenaean (sub-Mycenaean) occurrences in Greece and the earliest occurrences in Cyprus (SCE IV 2, pp. 30, 238–39). However, recent excavation and publication of cemeteries at Alaas (v. V. Kar-
186 ageorghis, Alaas, Nicosia 1975), Skales (v. V. Karageorghis, Palaepaphos-Skales, Konstanz 1983) and Kourion (J. Benson, The Necropolis of Kaloriziki, Göteborg 1973) have shown that the type appeared in Cyprus during LC III B times and continued into Cypro-Archaic times (cf. in general Aegaeum I, pp. 227–34; cf. SCE IV ID, pp. 50, 707). The model relationship of the type with the Cypro-Archaic built tombs at Salamis is a matter of interest.

LAPITHOS
KOURION

ALAAS
SKALES
KOURION

SALAMIS

late Archaic times

To consider subsequent connections between Cypriote and Greek building requires the lapse of several centuries — i.e. until the formation of the classical building style in Greece. This brings us to the 6th century BC and an age (Late Archaic) when the thread of building in Cyprus is picked up again after an almost total absence of monumental remains since the end of Bronze Age times. However, the new Cypriote building of this age is notable in that until now there appears to be a very negative relation with classical Greek style building. Ashlar masonry appears to maintain the old Bronze Age tradition and there are positively no examples of walling in the meticulous solid ashlar Greek style where blocks finely dressed and closely jointed on each face throughout the thickness of the wall are fixed together with metal cramps

no classical Greek masonry

no peristylar temple

(cf. R.L. Scranton, Greek Walls, Cambridge Mass. 1941). Equally no example is known of the classical peristylar temple on its crepis. At best there are some dubious instances of a long building "sekos" or a megaron style plan, e.g. the Archaic (?) Temple at Kourion Sanctuary (cf. Arch in C, p. 69) and the Paradisotissa Temple at Vouni.

classical ornament

Doric Ionic

Finally there is very little in the way of classical ornament. In spite of Jeffery's attempt to see good Parthenon style Doric in Cyprus or even a local formative Doric (Archaeologia 78 1928, pp. 37 ff.), there is not presently to be seen any manifestly pre-hellenistic Doric capital. There are indeed some Ionic capitals which appear to be classical or earlier date (cf. Arch in C, p. 69). They include the two unusual capitals from Kition (RDAC 1984, pp. 209–13). One capital is of gypsum and only marginally Ionic. It could be a hybrid Ionic-Aeolic capital and ca 6th century in date. Ionic capitals of reasonably classical appearance have been found at Tamassos (Arch in C, p. 250, fig. 9) and Kouklia (with an Asiatic base — Paphos, p. 223, fig. 204) and these could be of 5th–4th century date. However, no classic entablature fragments of a similar date have been found and thus it is still open to conjecture that early Ionic capitals may have been for votive columns. What then can be pointed out of Classical Greek building in Cyprus prior to Graeco-Roman rule?

291–294

KITION
TAMASSOS
KOUKLIA

291

293

294

siting
AMATHUS
VOUNI SOLI
IDALION

First of all there is an interesting aspect of city siting and development. The sites of Amathus, Vouni, Soli (and also Idalion) appear to conform strongly to pattern. This consists of a laterally confined ridge of land rising gradually from the sea (from the plain at Idalion) to a surmounting pinacle at the rear which is cut off from the hinterland by a steep chasm. This summit is crowned with a sanctuary below which is a palace and on the slopes beneath spreads out the lower town. Now speaking at large this is a Greek concept of a model city not an Asiatic one. It might almost be regarded as a materialisation of the gnomic utterance of the early poet Phokylides, "This too said Phokylides: Better a little town well founded on a rock than disordered Nineveh's excess".

52, 53

secular public building

When, however, these and other sites of the Cypro-Archaic and Classical period are investigated for those secular public buildings which provided for the good life, the Greek way of life — theatres, gymnasia, stoai, etc., almost all such buildings can be seen to belong to the subsequent Graeco-Roman period. An early Ptolemaic

balaneion

stoa

balaneion has been uncovered at Kition (BCH 90, 1966, pp. 364–66) and something like a stoa can be seen in (early) Hellenistic Tamassos (Arch in C, p. 251, figs. 11, 12) but as yet classical buildings of this nature have not been identified in the days of the Cypriote Kingdoms. Rather it seems we can only speak of isolated elements.

149

119

baths
VOUNI

In the palace of Vouni (early 5th century) there is a baths quarter *sui generis* (SCE III, p. 207). These rooms compose a standard suite of caldarium, frigidarium and a

sudatorium set above a firing chamber. This latter hypocaust arrangement must be one of the oldest archaeologically recorded. There is also an undubitable Greek construction element received in Cyprus during late Archaic times. This is the
332 terra-cotta roofing tile which has been found at Idalion in the 6th century BC (SCE II, pp. 490, 530). Its presence suggests that some buildings could have been of Greek form since it was found better to roof them in this novel manner.

roofing tiles IDALION

With the imperial expansion of Hellenism set in motion by Alexander and finalised so far as Cyprus was concerned by the Ptolemaic conquest, Cypriote building was transformed entirely. Be it noted that Cyprus stood in unusual case with respect to this process. Although Cyprus was a place where Greek was spoken (e.g. like the Ionian Coast and Cyrenaica) yet unlike those regions its existing building style was not Greek. Thus the effect of Hellenistic rule in Cypriote building was more akin to that on Syria, Egypt, etc. (where Greek was a foreign language), not at all akin to that on Ionia and Cyrenaica where Greek, as in Cyprus, was a native language. Speaking at large this meant not so much that a hybrid building style was evolved, it meant rather that Greek style building was adopted for relevent parts of the building programme (in Cyprus for previously non-existent public buildings) and that the old local style survived were applicable (in Cyprus for rural building including rural sanctuaries). Unfortunately the record of this process is very defective since virtually all the remains of the epoch hitherto uncovered are Roman in date. However, the evidence of these remains is such that a good deal can be extrapolated with respect to Ptolemaic building since it is evident that essentially building in Roman times preserved the Ptolemaic manner.

Ptolemaic & Roman times

immediate transformation

In view of these circumstances, viz that Greek monumental building was introduced into Cyprus under Ptolemaic rule and that most of the preserved remains are Roman in date, it is better to give further consideration to this question under the following sub-divisions dealing with Egypt and Rome.

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3. Egypt

Two distinct topics. Connections with Pharoanic Egypt and with Ptolemaic Egypt.

Very restricted Pharoanic connections. Some specific instances when Cyprus under Saite rule. Hathor Head capital and polygonal facetted column shaft. Tomb 80 in Salamis Necropolis painted in Egyptian style.

Full community with Alexandrian style during Ptolemaic and early Roman times but evidence almost entirely from Roman period. Tombs of the Kings at New Paphos a replica of the rock-cut cemeteries about Alexandria (e.g. Mustafa Pasha). Much architectural ornament in limestone of 1st–2nd centuries AD consisting of column and entablature fragments (heterodox Corinthian, Nabataean and non-classical Doric) detailed entirely after Alexandrian model.

Pharoanic & Ptolemaic

In discussing the connection between building in Cyprus and building in Egypt, it is obvious that two virtually distinct topics are involved, viz connections with Pharoanic Egypt and connections with Ptolemaic Egypt. And the overall assessment on both accounts is straightforward (and antithetic). The building connections with Pharoanic Egypt are virtually negligable (cf. SCE IV 1D, p. 707); while the building connections with Ptolemaic Egypt are (so far as monumental building is concerned) virtually total.

Pharaonic architecture self-contained

As a general rule, Pharoanic Egyptian architecture was not for export, being so much a product of the totalitarian political regime in the country. And this rule holds good in Cyprus (especially since political conditions in the Island were anything but totalitarian). With the introduction of monumental building in the 13th century as part of the urbanisation process, it would have been quite possible theoretically for Cyprus to have adopted elements or aspects of Egyptian building at the time of the latter day floruit of the New Kingdom (cf. Ramses III). The basic factor of fine stone dressing is symptomatic. This school of masonry belongs to a *koine* spread throughout the Eastern Mediterranean from Crete to Syria. While doubtless in its ultimate genesis it drew on the already ancient tradition of fine stone dressing in Egypt (cf. Clarke & Engelbach, AEM; Hult, Ashlar, pp. 34–36), it developed along its own lines. And there is no trace of any direct connection in stone dressing between Egypt and Cyprus in the 13th century BC (cf. Hult, Ashlar, pp. 88–89). The manners are very distinct.

stone dressing

Old Paphos

In fact, and then speaking at the level of general impressions, the only aspect of Cypriote building at this period which in any way suggests Egypt is provided by the remains of the Sanctuary of Aphrodite at Kouklia (as has been noted several times). The massive blocks of the temenos wall and the stark rectangular pillars certainly

92, 240

give a severe Egyptian impression. It is possible that there was a Hathorian element to the goddess (cf. The Temple at Deir el Bahari) but this is simple fancy.

Saite rule

Definite Egyptian building elements appear in Cypriote building only at the very end of Pharaonic times during the short period of Saite rule exercised over the Island. At this time various examples of the Hathor-head capital are found and more recently it has been demonstrated that a polygonal facetted type of column shaft was used. While theoretically this latter feature could represent a primitive version of the Doric column, there is little doubt that it is derived from the Egyptian tradition of polygonal column shafts. The earliest occurrence of the Hathor Head Capital in Cyprus is ca mid 6th century BC at the time of Saite rule, but the form became popular and continued in use during the Cypriote Classical period, albeit somewhat Hellenised in its detailing. The bifacial type adopted confirmed that the Egyptian model was the pre-Ptolemaic form (cf. in general Berytus XVI, 1966, pp. 174–75). Although the capital was used decoratively on stelai and votive columns etc., it was a structural form and evidently so used in Cyprus, e.g. at Vouni. However, nowhere has an associated column shaft been discovered with it. For this reason among others, the recent notices of polygonal facetted shafts are of interest (e.g. at Idalion, Amathus and Kition — cf. SCE II, p. 523, fig. 234; IV2, p. 6; Acts COO, pp. 378–80). The time range of this occurrence is exactly that of the Hathor Head Capital (Late Archaic and Classical times) and it is possible they could have been used in association. Some votive colonnets of this form from the Persian siege mound at Kouklia are on display and one is crowned by an Egyptian palmiform capital (RDAC 1974, p. 145, pl. XXI.5). Finally there is a striking memorial of Saite Egypt of quite different nature. One of the monumental tombs at Salamis (Tomb 80, ca 550 BC) has a barrel vaulted ceiling and is painted with an overall pattern of lotus flowers and rosettes in an entirely Egyptian manner (Salamis, pp. 98–99, fig. 57; Exc. NS III, pp. 123–24, fig. XVIII, pl. 1).

288, 289 *Hathor headed capital*

facetted column

290.4 AMATHUS KITION

SALAMIS *Tomb painting*

Ptolemaic influence

It would be of great interest to know how immediately Ptolemaic monumental building got under way in Cyprus. However, this is the rare occasion when Cypriote archaeology has been inhibited by the problem of the overburden of later remains. Habitation was continuous throughout the Graeco-Roman period on the monumental sites and it is only most recently that the overburden of Roman remains has been penetrated in any way to afford some knowledge of the underlying Ptolemaic levels (cf. RDAC 2, 1988, pp. 195–203). So it is that the bulk of the evidence for connections with Ptolemaic Egyptian building comes from the period of Roman rule in Cyprus, clearly demonstrating the maintenance of pre-existing Ptolemaic manners in building.

Roman overburden

Very little conclusive evidence is to hand concerning building design in Cyprus

during Ptolemaic times. The remains of classic style city temples (Kourion Sanctuary, Amathus, Salamis) are all Roman, and in any event little is known of Ptolemaic temples of classical form in Egypt. In this way attention is directed to secular public buildings. Out of the possible gamut of such buildings a definite selection of types can be recognised as occurring in Cyprus — e.g. the agora, stoa, baths, gymnasium, theatre, nymphaeum; i.e. those buildings concerned with facilities for cultured leisure, rather than with the business of government. However, almost all surviving examples are Roman in date. Only the hellenistic *balaneion* at Kition (BCH 90, 1966, pp. 364–65); the stoa in the sanctuary at Tamassos (Arch in C, p. 251, figs. 11 & 12); and the Fabrika Hill Theatre at New Paphos (BCH 112, 1988, pp. 836–37) are clearly Ptolemaic. Of these the most diagnostic is the Kition *balaneion* which is reminiscent of the numerous examples brought to light in Ptolemaic Egypt (cf. Balaneutike, pp. 187 ff.). 149

public building

balaneion
stoa
theatre
KITION

From literary sources it is well known that there were palatial dwellings in Cyprus during Ptolemaic times — indeed the Palace of the last Ptolemaic ruler ("King Ptolemy") at New Paphos was renowned for its luxury when Cato the Elder put it under the auctioneer's hammer at the middle of the 1st century BC. This building may underlie the later villas at the Maloutena area (The Villa of Theseus) which is probably the Palace of the Roman Governors from ca 200 AD onwards (v. Arch in C, pp. 282–86). Some samples of the underlying construction are now being uncovered (v. RDAC 1988_2, pp. 195–203).

palace

However, in order to point out indubitable examples of Ptolemaic design in Cypriote building, attention must be directed to tombs. And here the so called Tombs of the Kings by the sea several kilometres to the North of New Paphos form a close replica of some of the cemeteries about Alexandria. These are the tombs of resident Ptolemaic government officials from the 3rd century BC onwards. Their form is based on the peristylar house; cf., e.g. Mustafa Pasha, Necropolis at Alexandria (Lawrence, GA, p. 249, pls. 137, 143; Archaeologica 66, 1915, pp. 168–69). 213

tombs
NEW PAPHOS
ALEXANDRIA

In contrast to these somewhat negative observations, a quantity of architectural ornament lying about on excavated sites or displayed in site museums (at Kourion, Amathus, Paphos) demonstrates the closest of connection with the style of Alexandria. Its focal date is the turn of the eras and the first century AD and it represents a building programme instituted under Augustus marking the renewed prosperity of the Imperial peace. It is well cut in limestone — there are no marble items and it consists of column and entablature fragments. The capitals are mainly Corinthian and Doric and the entablature is of a standard pattern applicable equally to either order. The Corinthian capitals are all of the "heterodox" (non Vitruvian) type and the Doric capitals have lost the classic composition (of the Parthenon model) and are 39, 298–305, 41, 315

ornament

in limestone
capitals
Corinthian
Doric

characterised by some "manner" — e.g. complete angularity or the like. The entablature consists generally of an architrave (with two fasciae), a Doric triglyph frieze and a Corinthian cornice with prominent (decorated) modillions. In outline this may be a genre picture of the age (cf. Plommer, ACA, p. 259) but the detailing is entirely that of Alexandria and other cities under Ptolemaic rule whether in Egypt (e.g. Hermopolis, Edfu, Dendereh) or other areas (notably Cyrenaica, cf. Tolmeita, Apollonia). In all these areas the style continues on during the first century or so of Roman rule. A convenient and well illustrated summary of these features can be seen in H. Mahler ed., Das Ptolemaischen Ägypten, pp. 137–45, Griechische Architektur im Ptolemaischen Reich; cf. also J. Dentzer, Le Décor Architectural en Transjordanie, in IVe Congress sur ... Jordanie, Lyon 1989. A matter of special note in Cyprus is the popularity of the Nabataean Capital, with a slight regional distinction as compared with its central occurrence in Nabataean territory (for its connections and ultimate origin of the form in Alexandria, cf. Praktika 1, pp. 175–78).

entablature

survival into Roman period

308–314

Nabataean capital

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4. Rome

Roman building a term with three connotations: area, style, period. The latter most relevent to Cyprus. Survey of monumental building in Roman times: amphitheatres, highways, aqueducts, nymphaea, baths, theatres, tombs, temples. Characteristic Roman materials and methods of construction (concrete and burnt brick) never introduced into Cyprus. Continuance of dressed stone construction with structural use of orders (after Alexandrian style).

There are two senses, or by extension three, in which Roman building can be used: the local, the stylistic and the temporal. The first signifies the indigenous building of the region about Rome (Latium etc. even a good deal of Italy — perhaps here Italian

terminology local

stylistic building might be a better term). The second sense is the core meaning of the term and indicates that type of building which came to be widespread in later Republican and Imperial times which (whatever its origins) is recognisably different in style from e.g. Greek building — we think here of the use of the arch and the vault in *chronological* concrete construction, etc. The third sense is not very cogent. It means any building erected during the period of Roman rule whatever its style. Nonetheless in broad general, down to the latest limits of this study (late 2nd century AD) the term Roman building in Cyprus is to all intents confined in significance to the last sense. In short during the period of Roman rule in Cyprus to all intents the same style of building was employed as in the preceeding Ptolemaic period — and a brief survey of the known remains does not qualify this position very substantially.

public buildings amphitheatre Although the exact record of types of public buildings erected in Ptolemaic times is not known, it may be taken that the amphitheatres in Salamis and Paphos were a *roads* Roman innovation. Equally it may be assumed that the arterial highway system was regularised according to Roman standards — numbers of mile stones survive. While 8
aqueducts if aqueducts of some nature existed in Ptolemaic times the large scale engineering of KOURION SALAMIS the systems at Kourion (ground level) and Salamis (overhead) are typical Roman 61
features to meet the increased water requirement of the cities due to changed habits of bathing (J. Last, Kourion, The Ancient Water Supply, PAPS 119, 1975, pp. 39–72). Associated with the question of water supply was the introduction of the *nymphaeum* nymphaeum as a city amenity (S. Walker, Roman Nymphaea in the Greek World, in RAGW, pp. 60–70). Here it is of interest to note that the two rather contrasting types were each represented, viz the "Italian" private nymphaeum, a hall with exedra, KOURION SOLOI found in villas (at Kourion) and the baroque style city monument, in cavea form, prominent in the Roman East during the 2nd century AD (at Soloi).

Roman bath building in Cyprus shows affinities with that in neighbouring re- *baths* gions. The surviving remains of the bath complex at Salamis are a tangle of repairs, 150
SALAMIS renovations and adaptations. However, it can be seen that in the principal (1st century AD) period the baths closely resembled the contemporary Bath of Capito at Miletus, being based on a close packed block lay-out (v. RAGW, p. 53, fig. 15). On KOURION the other hand the baths at Kourion Sanctuary show a concern for freedom of 151
circulation in a manner resembling that of the Baths of Trajan and Hadrian at Cyrene (v. RAGW, p. 57, fig. 19). In neither instance is there any resemblance to the concepts of the Great Imperial Thermae at Rome (v. RAGW, p. 56, fig. 10).

Another important type of public building already known in Ptolemaic Cyprus *theatre* but developed on a larger scale in Roman times was the Theatre. Here important aspects of the Eastern or Hellenistic type theatre were jointly or severally retained — 144–147
e.g. rock cut *koilon*, orchestra greater than a semi circle, high shallow stage (*logeion*),

rectilinear *skene frons* (cf. M. Bieber, History of the Greek and Roman Theatre, Princeton 1951).

tombs

Also in funerary arrangements the Roman period continued to develop the standard underground sepulchres preserved by Cypriote tradition. It did not introduce the practice of lining approach roads to towns with picturesque monuments
191–193 and tombs. The rock cut tomb continued in its more regular forms including the *kok* type, or as a more specifically Roman plan the arcosolium tomb. Equally the
210, 211 underground built tomb continued to develop more sophisticated constructions (e.g.
340–343 barrel vaulted or ornamental coffered ceilings as at Kition (cf. Kition, pp. 149–52).
122 One of the arcosolium tombs at New Paphos is built with a true ashlar masonry dome (RDAC 1982, pp. 202–06).

kok

KITION

arcosolium

NEW PAPHOS

temple type

The last category to be mentioned is Temple Building in Roman times. It is a most important question and one by no means evident in the present state of knowledge.
128–132 All the surviving monumental remains (Salamis, Amathus, Kourion) are from early Roman times and comparing what is known of them, it would seem that in Cyprus as in neighbouring lands (e.g. Syria and Anatolia) a considerable freedom of choice was possible in designing the character of a temple: something approaching a Greek temple, something approaching a Roman temple, or a modification of either in-
131 corporating oriental elements. Perhaps the Temple at Amathus evidences most connection with the Greek form, e.g. reasonable crepis (RDAC 1988[2], pp. 143–47).
128, 129 The later Kourion Sanctuary Temple was a podium temple as was the Temple at
132 Salamis. According to the recent reconstruction (Praktika 2, 1982, pp. 363 ff.) the latter was a peristylar Romano-Oriental temple after the fashion of Krenker's Römische Tempel in Syrien. Its design was integrated into a more or less grandiose temenos closely resembling those on the mainland, e.g. Petra, Jerusalem, Jerash, Baalbek, Pisidian Antioch, Aezani, Pergamum, etc. (cf. RAGW, pp. 38–49). Like much of this work it was a baroque building. Quite distinct from all this (perhaps because of its very special status) was the extensive Roman redevelopment of the great Sanctuary of Aphrodite at Kouklia. Here nothing like a Greek or Roman temple was incorporated into the scheme. This involved classical elements (columns, stoai, etc.) monumentalising the old rural sanctuary disposition (Paphos, pp. 81–102, 272–83; The Paphian Temple of Aphrodite, Acta Arch IV, 1933).

AMATHUS

KOURION

SALAMIS

OLD PAPHOS

It has long been reckoned that building during Roman times in the Eastern Mediterranean provinces of the Greek world (viz North Africa, Syria, etc.) maintained Hellenistic modes and materials of construction involving the continued primacy of ashlar stone masonry. Roman control did not internationalise the scene with the revolutionary construction methods and materials established in Rome. To this general position there are obviously many exceptions and qualifications in

construction Hellenistic survival

various different regions. Cyprus, it seems, was a place where the rule was as categoric as may be imagined. For something like two centuries after Roman rule was introduced into Cyprus, monumental building maintained its cut stone expression with a modest structural use of orders in styles developed during Ptolemaic times. No significant use of concrete has been reported on the Island from this (or any later) period — although e.g. it has been revealed in Palestine during Herodian time (cf. also RAGW, pp. 94 ff.).

dressed stone

no concrete

The fine masonry was not the dry stone hair line jointed and metal cramped Greek ashlar. It was, in general, fair faced (marginal draughting and bossing were not popular) and it was reasonably truly jointed, set in mortar and quite solid throughout the wall. However, there was some measure of interior packing with fragments and roughly dressed stone. No use of cramps is to be seen except for necessary engineering purposes, e.g. in breakwaters. What is of interest here is the apparent ousting of the old and vital tradition of walling (e.g. at Vouni) where dressed stone faced and interpenetrated a core of mortared rubble. This has been identified reasonably as Vitruvius' *Graecorum structura*. In these circumstances it seems that one form of concrete construction declined and was not replaced by another.

dressed stone

267, 268

265

greek concrete

Equally striking is the fact that no examples of burnt brick construction have been noted in the Island during Roman rule. This appeared neither as solid construction, nor as facing (to a filled core) nor alternatively bonded with courses of stone — in all of which manners it occurred during Roman times (e.g. 1st and 2nd centuries AD) in Greece, Crete and Asia Minor. Indeed it survived on to become a standard Byzantine form of construction (cf. RAGW, pp. 94–116). Where ashlar masonry was not demanded but some reasonable wall construction was required, it seems that (coursed angular) rubble stiffened with ashlar elements as framing was popular, as can be seen freely in the Sanctuary of Apollo Hylates at Kourion.

burnt brick

stiffened rubble

269, 270

Design remained basically rectilinear and trabeated. Vaulting was used but generally speaking where it was not expressed externally, e.g. in building of Roman type theatre caveae and in underground work as for tombs. It was carried out in cut stone not in brick, or concrete. In this way an early masonry dome is to be seen in a tomb at New Paphos.

design

145

340–342

212, 343

Roman building in any sense other than chronological did not become established in Cyprus until the latter part of the 2nd century AD and then it was in the limited sense of the ecumenical "marble style". So far as can be seen, Roman building in the local Italian sense of brick and concrete construction never had any place in ancient Cypriote building.

subsequent developments

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CHAPTER SIX

CONCLUSION

It is not a difficult matter to epitomise the development of ancient building in Cyprus according to what is presently known, the difficulty is to believe this account — for it is indeed singular. A sizeable island in the closest proximity to main centres of the ancient Middle Eastern world, Cyprus is shown by events to have been easily accessible from these centres by short sea crossing. Equally it is shown to have sufficient natural resources to support levels of material and social development of the same order as those of adjacent regions. Yet, for enormous stretches of time, its building development appears to have remained markedly different from that of the adjacent regions. This is one pole of its singular building history. The other pole is that at several junctures, by sudden explosive developments, building in Cyprus assumed to all intents the pattern prevailing in those adjacent regions.

According to ^{14}C dates, Cyprus was colonised from Syria in the 8th millenium BC by Neolithic people who had command of a developed round house building style — and this type of building with little essential change provided for the needs of society in the Island during the ensueing five thousand years. Embodied in this building style was the knowledge of materials and methods of construction sufficient to carry out any (non-monumental) building programme demanded by a differentiated society. However, building programmes in Cyprus remained of the simplest: a multiplication of simple round house units (varying only in size) to serve as living space, working space, storage space, as also a place for burial and for worship. One or two millenia after the colonisation, the style of building in the parent communities changed completely. Where then was the nearest place to Cyprus where the same pattern of round house building remained in force? North Africa?

Subsequently in the 3rd millenium BC when heavily walled towns with palaces and temples existed on the mainland, building in Cyprus changed to the rectangular form. At this stage the individual units must have been once more indistinguishable from houses on the neighbouring mainland. What overall form the Cypriote settlements showed is not known. There is certainly no evidence of walled cities. No area excavation of this period has been made so the question remains open. However, the fact that no tells exist in Cyprus suggests that ancient and long continuing walled settlements did not exist.

Then in the latter part of the 13th century BC there was a mutation in Cypriote

building. Within one or two generations large well planned, strongly fortified cities were built up provided with temples and public buildings of a similar nature and on the same scale as the old established cities on the mainland. The newly established Enkomi and Kition were of the same order as the two thousand year old Ras Shamra and Megiddo. Thus building in Cyprus remained a province of Levanto-Syrian building. It owed nothing to Egyptian building or Mesopotamian building. And if aspects of Cypriote building resemble building in the Aegaean then it means that in overall basics this school of building formed a continuum extending to that area.

The characteristic quality of this school of building as compared with Egyptian or Mesopotamian building is its human scale — it has nothing of the striving after the superhuman: the ziggurat, the pyramid, etc., the great monumental temple set apart from the world of men. The only feature developed on anything like a grandiose scale were the walls and gates of the urban fortifications in Syria, and this feature was not so developed in Cyprus.

Where Cypriote building differs from that on the Syrian mainland it appears as a characteristic local development. It is not to be explained by allying it with some other region within the continuum. The Cypriote town of the Late Bronze Age differs in nature from the monumentally fortified city on its tell of Palestine and Syria. Yet it is not to be aligned with other forms of settlement, e.g. the massively fortified citadel settlement of Mycenaean Greece or the unfortified palace settlement of Minoan Crete.

The subsequent development of building in Cyprus is of the greatest interest given the fact that from the end of the 2nd millenium BC immigrants introduced the Greek language into the Island, where it took root to endure in use until the present day. Unfortunately the building record as presently known is very defective. Such collateral evidence suggests a continuity in building development, yet there is virtually no archaeological evidence of settlement building for three or four hundred years or so.

When next monumental buildings are revealed, it is the extremely prosperous period of the sixth century BC. There are differences in design and construction detail as compared with the antecedent monumental buildings of the Late Bronze Age, but the general impression is a development of the same school. In any event there is little to suggest that building in Cyprus followed the Greek experience of a prolonged period of depression and then the evolution of a new school, the Classical style. Unfortunately there is little positive evidence of this supposed continuity. This is indeed unfortunate since a demonstrated continuance of monumental building in Cyprus during the "dark ages" of mainland Greece (in view of the common language) may have afforded some contribution to the evolution of the classical Greek building style. On the other hand during the 5th and 4th centuries BC when

Classical Greek building was at its apogee, there is little evidence that this building style was imported at large into Cyprus. Some isolated classical columns and some tiled roofs appeared, but no peristylar Greek temples or cultural amenities (theatres, etc.) have been discovered in the Island from this period.

At this juncture, ca fourth century BC, building in Cyprus was again or still akin to that on the mainland. And this was the end of its more or less autonomous development over many thousands of years. With the Ptolemaic conquest, building in Cyprus was assimilated to the Alexandrian school of Hellenistic building — a position little changed by the transfer to Roman rule in the middle of the 1st century BC.

In brief, Cyprus was a place where a building style was quickly developed and long retained by tenacious conservatism. Both processes appear to be equally the work of Cypriote genius, but the former required some stimulus involving *ingerance* from the outside world.

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Note: Numbers in bold type refer to Illustration numbers in Vol. II.

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