Patterns of Settlement

in the

Early Prehistory of Cyprus

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To the people of Cyprus

E pluribus unum

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PREFACE

The fieldwork on which the Thesis is based was carried out in Cyprus between January 1971 and October 1972. For every assistance and encouragement during this period I am indebted to Dr. V. Karageorghis, Director of the Department of Antiquities in Cyprus; also to Dr. K. Nicolaou, Curator of the Cyprus Museum; the late Mrs. A. Pieridou, and Mrs. I. Nicolaou, Assistant Curators, for access to material stored in the Museum; to Mr. M. Loulloupis and the other officers of the Archaeological Survey Branch for patiently answering my many queries about Survey records; and to the other members of the Department of Antiquities and many individuals throughout the island for extensive help in many ways. I owe a special debt to Dr. H.W. Catling, who offered valuable encouragement in first recommending this topic and who most generously allowed me to make full use of the unpublished Cyprus Survey material recovered under his direction between 1955 and 1960.

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conceived and finally executed. Although personal communication was unfortunately limited to a single meeting in Heidelberg in December 1970, my appreciation of his pioneer work should be evident from the present contribution to which it gave rise.

L. P. Stanley Price

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ABSTRACT

The present Thesis examines certain aspects of settlement patterning in the earlier prehistory of Cyprus by reference to one particular problem, namely the absence in Cyprus of those tell-formations so characteristic of neighbouring countries in the Levant. Although much of the discussion concentrates on this central problem, its empirical basis takes the form of a Catalogue of all Sites and Finds of the period under discussion. An Introduction to the Catalogue explains the sources from which it is compiled, the entries listed under each Site, and the Code of attributes by reference to which the archaeological material is described. Various Appendices to the Catalogue collate the information in earlier publications where inconsistent with the method of recording or with the criteria for inclusion which have been adopted here.

The period of time covered by the Thesis extends from the earliest dated finds reported from the island to the beginning of the local bronze age (EC 1), the latter, arbitrary, terminus being fully discussed in the text (Chapter 3). The date of the earliest finds is considered in Chapter 1, where it is argued that there is no evidence of human activity which can be reliably dated earlier than the 6th millennium b.c. This argument (Chapter 1.6) is preceded by an attempt to reconstruct the early Holocene geography of Cyprus, which, in the virtual absence of research with this objective, depends on extrapolation from a number of secondary or circumstantial lines of evidence. The two conclusions of major importance to subsequent discussion are that Cyprus has always been an island

since its initial emergence in the Mesozoic, and that the early Holocene environment of the island is likely to have been very different to its present appearance. The latter conclusion is consistent with the extensive evidence of Holocene erosion and deposition, and the ecological arguments for a climax vegetation of Mediterranean evergreen sclerophyllous forest over most of the island.

In Chapter 2, a historical review of the development of research into Cypriot prehistory and of current research objectives raises the question of the utility of the framework model within which current work is pursued. This framework, established by P. Dikaios over many years, is argued to represent a serious obstacle to the study of change in Cypriot prehistory, embodying a fault common to most studies in which the changes in the archaeological record are simultaneously the chronological basis and the actual object of enquiry. Specifically, the difficulties enshrined in the present framework result from the inappropriate conjunction of two independent ordering methods, the one a literal application of the Three Age model, the other based on pottery seriation studies. The framework inherited from Dikaios makes it appear that explanations of broader cultural problems have to await the excavation of a fuller chronological sequence, whereas, it is argued here (Chapter 2.4), the results of chronometric dating make a framework model a matter of choice and not an initial procedural problem.

For this reason the results of radiocarbon dating of sites in Cyprus take precedence in Chapter 3, which is devoted to the three main methods of chronological ordering relevant to this study, namely absolute chronology, stratigraphy and seriation. The available radiocarbon dates suggest that most

of the dated sites fall into two groups, those of the 6th millennium and those of the 4th millennium, with only one site (Dhali Agridhi) possibly to be placed between them. Preliminary calibration of the younger dates puts Erimi in the late 4th millennium B.C., allowing the local bronze age (EC 1) to start in the early third. The major conclusion arising from discussion of the stratigraphy of excavated sites is that, with the exception of three sites (Khirokitia, Mari Tenta and Troulli) with superimposed aceramic and ceramic components, no site can be shown to have two (or more) non-consecutive phases of occupation. The argument from stratigraphy is borne out by studies of pottery occurrence and frequency (Chapter 3.4) which attempt to establish criteria for the applicability of seriation in the Cypriot context. The lack of allowance for regional variability in the island in the current framework is rectified by proposing a model of alternating regional traditions of predominantly monochrome and predominantly painted pattern pottery, between the North-Northwest and South-Southwest of the island. This simple model, with additional features summarised in Fig. 3.7, forms the basis for approximate ordering of sites within any geographically circumscribed area, as attempted in Chapter 6.

Chapter 4 briefly examines the nature of the sample of sites recorded in the Catalogue. A progressive loss of information since their original occupation, due to factors affecting the preservation, discovery and identification of sites (Fig. 4.1), results in a pattern of uneven survey coverage of the island (Fig. 4.3), which is relevant to the analysis of site distributions. Prior to the attempt to do so in Chapter 6,

an extended example of settlement patterning at the single site level is given in the analysis of Sotira in Chapter 5. The stratigraphical evidence from Sotira allows the identification of three main Phases in the settlement on the plateau, such that a reconstruction of the actual development of the site is possible. Using the information in Dikaios' published account, an analysis of the distribution of pottery wares among the houses of the plateau leads to the isolation of distinct complexes, each of which has similar architectural components and related features. A model of intra-settlement relationships is built up from this data and a review of the resources exploited from the site indicates that Sotira was a pioneer settlement in its area.

Apart from providing a broader context for the Sotira study, Chapter 6 develops a general model for explaining the pattern of site distribution in Cyprus, empirically based on the Site and Find evidence recorded in the Catalogue and the chronological arguments brought forward in Chapter 3. Preliminary considerations of the possible course of settlement in the island, given the absolute dating evidence, and of the nature and permanence of site occupation, introduce an analysis of site distributions. In the light of the cautionary factors outlined in Chapter 4, certain areas where the evidence appears to be least inadequate are analysed for the distribution of sites and their relative order. A discussion of the natural constraints on communications in the island proceeds to use distributional information on Sites and Finds and, in particular, on "greenstone" artifacts and pottery wares, to argue for a network of intra-island exchange and communication during the

ceramic phase of settlement (6.4). At this point the main conclusions of the preceding chapters are synthesized in a series of five hypotheses concerning the nature and distribution of settlement in the ceramic phase. Using these as premises, a general explanation of the nature of settlement in the ceramic period is proposed, as having been initially determined mainly by defensive considerations and subsequently by the local availability of arable land. Exhaustion of this primary resource led to a pattern of periodically shifting settlement (and hence an absence of tell-formations), the actual pattern varying in the analyses discussed earlier with the arable potential of the region in question. The pattern of aceramic settlement appears to represent an independent phase of colonisation (cf. Chapter 1.6) of short duration; although continuity of settlement from the 6th to the 4th millennium b.c. is only hinted at on the present evidence, the location of many earlier ceramic sites strongly suggests a further colonisation to account for them.

The final chapter is devoted to placing the Cypriot evidence, and the initial aceramic settlements in particular, within the context of the Levant as a whole. A chronological model of settlement recession in the Levant, based on the results of radiocarbon dating, makes a 6th millennium initial colonisation of Cyprus appear quite tenable. A theoretical treatment of the nature of island colonisations and a review of selected cultural traits of a socio-psychological nature suggest that the lack of comparability between island and mainland material may be more apparent than real. The model proposing a colonisation of Cyprus at this period has a number of wider implications for the interpretation of socioeconomic change in the

Levant during the 8th to 5th millennia. Specifically, the site of Khirokitia represents a reversion to a pattern of settlement organisation characteristic of earlier phases while simultaneously showing features consistent with contemporary change in mortuary practice on the mainland. Finally, the contrasting evidence for continuity of prehistoric occupation in Cyprus compared with that in Crete, as seen especially in the occurrence of tell-sites of long duration, is taken to be an important factor in accounting for the marked differences in the rates of prehistoric change in the two islands.

INTRODUCTION

The aim of this Thesis is not simply to put on a systematic basis the earlier prehistoric settlement data from Cyprus. The Catalogue included with the Thesis does have that objective, but the text is intended to be more than an extended commentary upon the information contained in the Catalogue within the current framework of research in this field. Rather it attempts to provide a detailed study to support the contention that there is a valid alternative to the conventional classificatory approach to archaeological material. The application of absolute dating methods allows the changes in the archaeological record to be the object of investigation without simultaneously acting as the criteria for definition of time-periods. That recognition and acceptance of this simple point can lead to quite different treatments of essentially the same material can be appreciated by comparing the arguments of the present Thesis with the general synthesis of the subject recently published by T. F. Watkins (RDAC 1973).

The topics and material discussed in the Thesis have been selected with two principles in mind, (1) that the topics are immediately relevant to the problem chosen for examination and (2) that the material used is sufficiently reliable that the arguments are not vitiated from the start by inadequacies in the data. The exclusion of certain subjects which might have been expected to receive attention can be justified by reference to these two principles.

First and foremost, the theoretical approach to the problem in question - the rarity of tells in Cyprus - involves a concept of "pattern of settlement" which is at variance with most usages of that term while entirely defensible. Since the emphasis is not on the classification of sites into phases but rather on the successive

nature of site-occupation, the approach takes a very literal view of the "pattern" of settlement, namely the way archaeological sites are distributed when plotted cartographically (cf. the Exemplars of Chapter 6). Most studies of "settlement patterns" have been concerned with the location of sites with regard to the natural resources of their vicinity with very little reference to the time-dimension or to the relationships between sites (cf. site catchment analysis). This approach would not have been suitable for answering the questions raised in this Thesis, besides being quite beyond its scope, requiring as it does intensive multidisciplinary study of each site. It is therefore a limited, but basic, sense of "pattern" which is referred to in the Thesis title.

As to the reliability of the empirical base, chiefly the sample of sites recorded in the Catalogue, the Introduction to the Catalogue makes clear the variety of sources involved. Although personal inspection of material and sites has removed the worst dangers of data inadequacy, the sample coverage is admittedly uneven, a point emphasized in Chapter 4 and Chapter 6. For this reason and for others associated with the use of predominantly surface material, the arguments about site patterning in Chapter 6 are not taken further than they are.

The analysis of within-site patterning at Sotira (Chapter 5) stands alone because no other published site has been excavated sufficiently extensively to merit detailed treatment. The one exception is, of course, Khirokitia, but any attempt to perform a similar analysis on this site encounters too many stratigraphic problems (to be clarified, it is hoped, in a project due to start in 1976), and would anyway demand a Thesis in itself.

Similar circumstances have resulted in the general treatment of Levantine parallels to Cypriot culture in Chapter 7. Greater chrono-

logical precision for the parallels discussed is highly desirable but hardly one of the Levantine sites referred to has been published sufficiently fully to make this possible. Notwithstanding this deficiency, the discussion attempts to justify an overall treatment of the material in question and, particularly, to argue that the absolute dating evidence is capable of prompting new insights independently of the "cultural" context of the relevant finds.

It is this point, perhaps, which is inherent in the whole Thesis; namely that so long as problems of chronological sequence are not paramount, then different approaches to a subject become possible. If a new approach finds inadequacies in data previously collected for other ends, this problem is hardly peculiar to the present areaof interest, nor indeed to the discipline concerned.

Chapter 1. The Early Holocene Geography and Initial Settlement of Cyprus.

1.1 The nature of the evidence.

There are severe limitations to the evidence available to attempts to reconstruct the probable natural environment of Cyprus in the early Holocene. In contrast to the neighbouring areas of the Mediterranean coastlands, no systematic work to this end has been carried out in Cyprus. In the absence of such research, any reconstruction depends on extrapolation (1) from more recent and contemporary environments in Cyprus, (2) from indications of the Pleistocene environment, and (3) from the results of research on this problem in the adjacent continental countries. This chapter draws on these three lines of evidence to reconstruct in broad outline the probable environment encountered by the first settlers in the island.

Information on the recent and modern environment is relatively abundant, due largely to the intensive investigation of the natural resources and land-use of the island during the period of British colonial administration and continued following Independence. While invaluable in certain respects, this information refers to a situation which has patently been transformed over many millennia since the first occupation of the island. It describes the present state of a long history of land-use of which the aim here is to define the start. Some indications of a stage preceding this starting-point are provided by the evidence of the Pleistocene environment although this too is scanty. The Pleistocene evidence considered in the light of extrapolations backwards from the contemporary environ-

ment forms the basis of the following discussion. Although no substitute for deliberate investigations aimed at this problem, this approach allows some approximation to the early Holocene environment to be made. Moreover many of the geographical constraints discussed here have been equally operative at all phases of human occupation of the island.

1.2 Geological origin and regions of Cyprus.

The island of Cyprus is the third largest in the Mediterranean, its area of 9251 sq. km. (3572 sq. miles) being smaller than that of Sicily or Sardinia but slightly larger than that of Crete. The geology of the island has long been studied, from the pioneer researches of Gaudry, Unger and Kotschy, and Bellamy to the synthesis of Henson et al. (1949) and the detailed mapping by the Geological Survey Department. An explanation of the geological origin of Cyprus has recently been proposed by means of a model based on sea-floor spreading and plate tectonics (Gass 1968). According to this model, the main, southern mountain-range of the island, the Troodos Massif, was formed on a mid-Tethyan oceanic ridge and then exposed subaerially when the African underthrust the European plate during a phase of the Alpine orogeny. The present Massif is the heavily eroded remnant of the volcanic pile. Continuing geological and geophysical research (e.g. Moores and Vine 1971) has borne out the validity of this model, and effectively refutes the common notion that Cyprus represents the remnant of a submerged land-mass.

The geological structure of the island can be briefly summarised in the light of this model. Exceptional differential uplift, followed by heavy erosion, has resulted in the roughly

annular structure which the Troodos Massif takes today. Thus the Sheeted Intrusive Complex, Plutonic Complex and Pillow Lava series form a succession outwards from the centre of the massif, with decreasing age (and increasing silicity) of the rocks as the edge is reached. The Massif covers between one quarter and one third of the island's surface, consisting of the main bloc with two main inliers to the east (Troulli) and west (Akamas) (cf. Fig. 4.2). The major part of the Southern Range is surrounded by undeformed, largely calcareous sediments of the Upper Cretaceous-Miocene Age. In the north of the island the brecciated and recrystallised limestones of the Kyrenia or Northern Range represent the most southerly fold arc of the Taurus which has been thrust southwards and deformed during Alpine orogenic movements. Between the two Ranges, the Pliocene-Pleistocene sediments of the Central Lowlands conceal the contact between the deformed and undeformed formations. Thus the overall structure of the island can be seen as a series of belts trending approximately east-west and gently convex to the south (Bear 1963).

The postulated origin of the island as a mid-oceanic rise is supported by geophysical evidence for the East Mediterranean seabed topography (Wong et al. 1971). The possibility of a land-bridge between the island and the continent in the post-Miocene is thus ruled out, even on the most generous estimates of the extent of sea-level regression during the Pleistocene. If the sea-level stood as low as a maximum 130m. below modern sea-level at 17000 - 15000 B.P. (Milliman and Emery 1968), the additional exposure of land-surface in this area would not have reduced the extent of open sea between Cyprus and the Anatolian/Syrian mainland to less than 65 km. in width. Nor has there been

excessive differential uplift between Cyprus and the continental coasts. Although there are differences of opinion as to the precise dating of the Pleistocene raised beaches in Cyprus, most workers are agreed that they represent a similar succession to the sequence exhibited on the Levant coast (Pantazis 1967, Ducloz 1968, Turner 1971). In other words, the conclusion is soundly based that, apart from a possible general dessication of the Mediterranean in the late Miocene (Hsu et al. 1973), Cyprus has remained an oceanic island since its initial appearance. This conclusion is important in its implications for colonisation of the island by floral, faunal and hominid species.

The extreme diversity of the natural relief of Cyprus has always encouraged a similarly diverse pattern of adaptations to this environment. Several schemes have been put forward by different authors in order to encompass this diversity in defining the "natural regions" of the island but these tend to coincide at a large scale, differing in detail according to the criteria of interest to the author. For instance, the regions of Cyprus have been defined on general geomorphological grounds (landforms and drainage) and on land-use criteria (both in Christodhoulou 1959), as landscape units for the study of soils (Osmond 1954) or as geographical units subdivided in the light of ancient settlement evidence (Gjerstad 1926b, Catling 1963). The aim here is to define a minimum number of regions which bring out the grosser topographical divisions of the island while avoiding subdivision according to other criteria. The least variable feature is the solid geology and so, given this aim, the following regional classification is proposed to form a basis for the following discussion:

(1) The Northern Range and Coast

(2) The Karpass Peninsula

(3) The Central Lowlands

(4) The Southern Range

(5) The Southern Chalk Plateaus

(6) The Paphos District

This regional division has the merit of simplicity and brevity, each Region being clearly identifiable on topographical grounds although merging into each other without clear boundaries between them (Fig. 1.1, cf. Folded Plan 1). The physical extent of these Regions follows Christodhoulou (1959, Fig. 2) whose account also forms the basis for much of the following descriptions.

Region 1 is dominated by the Northern (Kyrenia) Range, running virtually the length of the north coast until declining gradually eastwards into the Karpass Peninsula (Region 2). The Range forms a wall-like barrier between the very narrow coastal strip and the Central Lowlands (Region 3), rising to over 1100m. at its highest point and broached by three main fault-lines-- the Panagra, Kyrenia and Lefkoniko passes. The Range consists mainly of Hilarion limestone, a massive, structureless recrystallised limestone which is generally brecciated and locally altered to marble. At the eastern and western ends of the Range in particular are several exposures of igneous rocks, which also appear as thrust slices in the Kythrea formation. This formation of flysch forms a band some 9km. wide on the south slopes of the range where it has been intensely folded into a near-horizontal stratification, and a much narrower band on the north-

ern slopes. The broken topography of these northern slopes includes a series of platforms and terraces identified as Pleistocene raised beaches (Ducloz 1968).

Region 2. The Karpass Peninsula is the most clearly defined of the Regions, having its root at the northern end of the Famagusta Bay. The continuation of the Northern Range forms the backbone of the peninsula but folding here was much less severe. Apart from the central ridge, the landforms are predominantly of flat plateaus or deep valleys or basins, running longitudinally only in the middle third of the peninsula. The Kythrea flysch is the main exposure, with rare igneous outcrops in the Northern Range continuation and a large area of Pleistocene fanglomerates in the middle of the peninsula.

Region 3. Following Christodhoulou (1959, 12) the "Central Lowlands" is a much more apposite name for this Region than the commoner "Mesaoria Plain" which is erroneous on both geomorphological and toponymic grounds. It is used here to include all the terrain lying between the two main Ranges, including the plateaus reaching southeast to Cape Greco but excluding the Larnaca region. The term "Central Lowlands" covers a very diverse pattern of landforms (Christodhoulou 1959, 12-16) but the main features are the eastern and western alluvial fan regions, flanked by limestone-capped plateaus and to the southeast by the Southern Range. The geological exposures of the Central Lowlands are mainly of Pleistocene fanglomerates and fragmental limestone with marl (Nicosia and Athalassa Formations) forming the plateaus, and of Upper Miocene-Pliocene marls.

Region 4. The Southern Range forms the central igneous core of the island, being rarely under 700m. high and reaching over 2100m., at its highest peak. The Troulli inlier, some

40 sq. km. in area, lies about 10 km. to the east of the main massif while the Akamas inlier is separated from it by the sediments of the Khrysochou Valley. The main Range is more massive to the west than to the east, reaching to the coast of northwest Cyprus and forming a formidable barrier between the southwest and the rest of the island. Geologically it has an annular structure from the central ultrabasic core through gabbros and the extensive diabase to the Pillow Lava series which virtually encircle the Massif.

Region 5. This Region includes the area of Larnaca which, although forming a distinct drainage unit, can on geological grounds be treated with the chalk plateaus of south Cyprus. The general topography of this Region, which is similar in many respects to that of Region 6, is of a low gentle dip-slope descending gradually to the sea, ending sometimes in raised beaches and, rarely, in narrow coastal plains. A number of deeply-incised canyon-like river valleys cut through these plateaus to the sea.

Region 6. The Paphos Region is separately defined here because of the major topographical barriers between it and the rest of the island. To the northeast of the Region the Southern Range outliers reach right to the sea while to the south the hilly topography between Cape Aspro and Petra tou Romiou intrudes upon the narrow coastal strip and forms a similar barrier to communication. Much of the Region is of limestone plateaus as in Region 5, with a main watershed between the Khrysokhou valley to the north and the slopes facing south and west. Of geological importance is the Mamonia Igneous Complex exposed by river-cutting to the north and east of Paphos itself and which also forms the core of the Akamas.

The area is geologically unstable and prone to earthquakes.

1.3. Geomorphology and water-supply.

These Regions may serve as a background against which to review those geomorphological changes which have evidently taken place since the Pleistocene. It is here that the lack of research devoted specifically to this end is most felt since, although these changes are often identifiable, the dating of stages within them has rarely been attempted. The research currently being undertaken by C.M. Rumke should be a valuable contribution in this direction but for the present too much has to depend on extrapolation from the present situation. Although certain geomorphological changes can be referred to changes in climate since the Pleistocene, these may well have been initiated or accelerated by human interference with the natural environment, for instance through deforestation. In particular, the hydrological balance is liable to be affected by human- as well as climate- induced changes; on the scale of these changes depends any estimate of the water-supply and vegetation which was available to human and animal life in the past.

1.3.1 Geomorphology.

The steep slopes of both mountain-ranges give the rivers in Cyprus very pronounced gradients, resulting in the mountains in deeply entrenched valleys and in the lowlands in wide flood-plains within which the rivers tend to meander. The great transporting power of the courses carries much heavy detritus as far as the middle reaches of the rivers in the lowlands (cf. the Serakhis, Akaki, Pedieios and Yialias river beds). Christodhoulou (1959) gives examples of river gradients within the Southern Range of some 330 feet per mile and from source to mouth of

142 feet per mile (Akaki River) or 79 feet per mile (Pedieios River). With such gradients the slow steady erosion of perennial streams is rare compared with the violent erosion and transport of heavy material caused by the torrents following sudden downpours. That such conditions obtained at times also in the past is evident from the deeply incised river valleys of the Massif and also from the quantities of heavy material deposited in the lowlands. Many rivers are actively downcutting at present but there have been two main phases at least of deposition in the past, as represented in upper and lower river terraces visible in some valleys, e.g. those of the Ovghos, Yialias, Vasilikos and Maroni rivers. Work on the dating of these terraces is in progress (by C.M. Rumke) but the formation of the upper one apparently antedates neolithic sites founded upon it while the lower terrace is probably late Roman/early medieval in date (C.M. Rumke, personal communication). The evidence visible in the field is on a much smaller scale than that reported elsewhere but it seems that the Holocene fluvial history of Cyprus is broadly comparable to that documented for other Mediterranean valleys (Vita-Finzi 1969).

From the field evidence which can be observed, it seems that Holocene river-courses have been constant, with minor changes as a result of meandering within that course. The size of river and area being drained, however, have varied under different regimes, and Christodhoulou quotes several examples of stream capture and drainage changes. Thus the Pedieios has captured most of the Ovghos (west-flowing) waters of the west central lowlands (Christodhoulou 1959, 13) and the Ovghos and Aloupos rivers have clearly been in competition in the past.

Similarly the Yialias is a much smaller river-system than the abandoned tributary courses would suggest; a likely cause of this change lies in the headward cutting of the Tremithios River, breaching the Troulli anticline and retreating eventually to capture part of the Yialias drainage (Christodhoulou 1959, 15). The dating of these processes can not be established at present; however, Koucky and Bullard (1974) have suggested on circumstantial grounds that the gradual capture of the Yialias drainage near Dhali took place mainly during the occupation of the Idalion city-site, that is during the first millennium B.C. They also suggest as a corollary that the Yialias may simultaneously have been lengthening its course, thereby reducing its gradient, through having to breach the sand-dune at its mouth in Famagusta Bay.

In fact, the evidence of these two major rivers, the Pedieios and Yialias, argues against any simple model of alternating phases of downcutting and aggradation during the Holocene since both rivers have been actively depositing material in their lower reaches in recent centuries while other rivers have been downcutting. The extent of recent deposition is clear from field observation of the examples quoted by Ballamy and Jukes-Browne (1905) and elsewhere. Deposition and dune-formation by blown sand, with perhaps a slight recession of sea-level through uplift as a contributory cause, are together mainly responsible for the present configurations of the Pedieios/Yialias river mouths and of the Larnaca and Akrotiri salt-lakes. The Pedieios mouth is recorded on maps as an inlet of the sea until the end of the last century. The floors of the extensive salt-lakes at Larnaca are below modern sea-level and a recent origin through the development of sandspits and offshore bars has been proposed

(Tarnall 1959). Similarly the Akrotiri salt-lake was probably formed as a result of the seaward development of spits from the mouths of the Kouris and Garyllis rivers, eventually reaching the offshore island running west from the present Cape Gata and forming a tombolo, with an area of sea-water isolated as a salt-lake (Bear and Morel 1900).

The approximate dating of these events is uncertain for lack of systematic investigation but on the most conservative estimate they are all the accumulative result of processes continuing, with interruptions, during the Holocene and can therefore be assumed to have reached their present configurations relatively "recently". The late Bronze Age anchors from Hala Sultan Tekke (Karageorghis 1968a) suggest that the barrier creating the salt-lakes had not then been formed, while the late Roman pottery reported by Bear and Morel (1960) some 10 m. below the top of the Akrotiri sands also indicates a relatively late date for their accumulation. For the period under study, then, the area now covered by the Larnaca lakes is assumed to have been a series of lagoons open to the sea, and the Akrotiri peninsula no more than a shallow gulf between the mainland and the offshore island of Cape Gata. It is tempting to make a very broad temporal correlation between the gradual accumulation of the Pedieios and Yialias river-mouth barriers, the Larnaca lake-barrier and the main phase of the Akrotiri spit formations with the deposition of the lower terrace in those valleys where it can be observed. The absolute dating of this phase probably falls within the first millennia B.C. and A.D. but it certainly seems to have occurred much later than the period under study. If the earlier, upper terrace represents a depositional phase in the earliest Holocene (since antedating neolithic sites), then during the occupation of those sites downcutting is assumed

here to have been dominant over deposition in the river-valleys. This conclusion is of importance to the discussion of site locations in Chapter 6.5.

The relationship between the depositional/erosional cycle and climatic conditions, principally precipitation, is a controversial one. The direct relationship proposed by Vita-Finzi (1969) between increased precipitation and increased deposition can only be accepted in the most general terms since the latter is strongly affected by other, local factors such as vegetation and topography. The aim here is not to reconstruct the early Holocene climate of Cyprus since it is the effects of it on the island's environment which are of interest, and not the climate itself. Moreover past climates can usually only be inferred from their effects, and the dangers of circular argument are sufficient to discourage the attempt. Although much of the work devoted to reconstructing the early Holocene climate of the Near East, for instance through pollen analysis, refers to conditions local to the area of investigation, there appears to be a general consensus that the climate was generally comparable to that obtaining at the present day (see most recently Butzer, in press). The discovery of early agricultural sites (e.g. Mureybat, Tell Abu Hureyra and Umm Dabaghiya) outside the present limits of rainfall adequate for dry farming suggest that precipitation may have been rather heavier, or differently distributed, throughout the year than at present. But, compared with the evidence for much lower temperatures and extreme fluctuations in aridity during the late Pleistocene (synthesized by Farrand 1971), the climate by 8000 B.C. is likely to have been subject to fluctuations on a scale similar to those of recent

centuries. This assumption is the more justifiable now that the cyclical variation in weather patterns is becoming better understood, for instance through the study of sunspot cycles. On this argument, the factors affecting the probable precipitation and water-supply of Cyprus at this period can be examined in the light of more recent records.

1.3.2 Water-supply.

The amount of water available to support life depends ultimately on precipitation; whatever the absolute annual rainfall of Cyprus in the early Holocene, the relative fluctuations observed at present can be extrapolated to past climates. The recent fluctuations are extreme, in the variations between different regions within the island and in Cyprus generally over a number of years. The climate of the island is strongly affected by continental influences, situated as it is at the furthest point of the almost land-locked Mediterranean Sea and having many of the travelling lows diverted north by the southwest coast of Turkey. The little rainfall that occurs results almost entirely from winter cyclones, over 80% of it concentrated between November and March (German Water Mission 1965). Its distribution in the island (Fig. 1.2a) reflects the relief map, emphasizing the rainshadow of the Central Lowlands which is responsible for an average rainfall of less than 250 mm. to the west. The summer rainfall, much of which is lost through evaporation, usually arrives as torrential downpours, commonest in the middle reaches of the Pedieios and Yialias drainages (Fig. 1.2b). The extreme annual rainfall variability is brought out by Fig. 1.3 which uses the data from selected stations over a fifty-three year period, a valid procedure since seasonal variability is

similar throughout the island (Christodhoulou 1959, Fig. 24). It is clear that the mean annual rainfall statistic is of little significance compared with this record of variability through time. In a recent period of 48 years, cycles of nine years are identifiable in which the mean is exceeded and not reached an equal number of times. Extremely dry periods happen every fifty years (German Water Mission 1965), while in lowland Cyprus the unreliability and frequent inadequacy of rainfall is particularly marked (cf. Christodhoulou 1959, Figs. 25 and 26).

The low input into the hydrological system is further reduced by the very high potential evaporation rates, a result of the extreme insolation and low cloudiness characteristic of the island. A recent estimate (German Water Mission 1965) puts the present loss through evaporation as high as 87% of total precipitation, with 6% occurring as surface run-off and 7% as percolation. The highest run-off is in the area of greatest rainfall, the Southern Range, owing to its impervious rocks and steep gradients. Gradual snowmelt reduces the irregularities in streamflow and the only rivers with perennial flow nowadays are in the southwest of the island (Fig. 1.2c). Run-off from the Chalk Plateaus of Southern Cyprus is relatively high, as it is from the Kythrea silts on the south side of the Northern Range. On the flysch this is sufficiently rapid to avoid dissolving the salts, and helps to feed the rivers of the Central Lowlands. The availability of water through springs is greatest in the highly fissured Hilarion Limestone of the Northern Range, which absorbs almost all the precipitation falling upon it and gives rise to many springs, several of them perennially abundant. Numerous small springs are found on the igneous and chalk formations

where water stored in faults and shatter zones issues at the junction with the marl formations. The extent of standing bodies of water in the early Holocene is unknown, but these are not primary sources of water because of their high salinity through evaporation and their attraction as breeding-grounds for mosquitoes. River-beds (especially in winter) and springs are therefore the main sources of water for any population not undertaking subsurface exploration.

1.4 Vegetation and erosion.

The amount of water available in springs and as run-off depends also on the vegetative cover of an area. While there is no doubt that vegetation reduces run-off, both through transpiration and the evaporation of water held by foliage, the nature of the cause and effect relationship between forest cover and streamflow is the subject of much controversy. A recent comprehensive review (Pereira 1973) concludes that world-wide evidence is strong that in well-watered areas streamflow response is proportional to the reduction in forest cover. In areas of lower rainfall, the relationship is likely still to hold but to be more variable, not least since xerophytic vegetation may have a higher transpiration power than mesophytic. There is some evidence from Cyprus that riverbed and riparian vegetation does reduce streamflow, both in lowland and upland forested areas. The upland afforestation helps to reduce surge run-off, the amount of actual run-off depending largely on the nature of the local geology. Thus the rate of percolation, in contrast to run-off, on the Northern Range limestones is extremely high even under the wettest conditions, and afforestation would only reduce the resulting streamflow through transpira-

tion; on the other hand, afforestation of the salineKythrea and Lapithos shales would probably reduce run-off and give greater opportunity for leaching and rendering the water saline (Cawley 1947). Thus under the climatic conditions of Cyprus, with rainfall heavily concentrated in the winter months and occurring in summer mainly as sudden downpours, the chief benefit of afforestation lies in its check on the erosion of soils.

The historically recent heavy erosion of slopes in Cyprus (Burdon 1951), still continuing despite extensive terracing and contouring measures, represents, in a sense, but one phase in the erosion/deposition cycle, but it has also been greatly exacerbated by the gradual deforestation of the island, well documented since Roman times at least (cf. various excerpts in Cobham 1908). In reconstructing the probable early Holocene environment before human intervention in the island's ecosystem, the currently visible results of this erosion have to be ignored in favour of some estimation of the vegetation cover at that time. Although vegetation too follows a succession, the climax concept still has some validity for assessing the Holocene tree-cover of Cyprus prior to the arrival of man. The most authoritative report on Cypriot agronomy (Jones et al. 1958), in stressing that the vegetation is wholly Mediterranean in character, asserts that "there is no doubt that the whole island, including the Central Plain, was at one time covered by Mediterranean evergreen sclerophyllous forest in which oaks, juniper and cypress were the dominant species in different areas" (1958, 24). The map of climax vegetation zones accompanying the report is based on the existing distribution and behaviour of the main

tree and maquis species and shows the probable arrangement of forest types before their destruction by man. Of these zones the forest of the Larnaca area and most of the Central Lowlands in particular must be hypothetical for lack of surviving evidence. The Central Lowlands must nowadays be considered as semi-arid on standard formulas (Christodhoulou 1959, 46) and if similar conditions prevailed in the early Holocene, a cover of maquis rather than true forest may be a more plausible suggestion. (The often quoted passage of Strabo (Geographia 685) refers to conditions existing at the time of Eratosthenes - the first millennium B.C. - which must represent a secondary stage in the forest succession. The description itself is more suggestive of a maquis vegetation than the true forest which it is generally assumed to prove.) On the evidence of rare relict occurrences, the climax forest prior to degradation was probably associated with deep well-developed soils with abundant humus in the upper layers, soils which can be rapidly removed following forest clearance. Moreover "as many of the climax trees, e.g. Juniperus phoenicia, Quercus calliprinos, Cupressus sempervirens and Cedrus, can only establish in moderate shade and in a humus-rich soil, once they have been cleared there is a tendency for them to disappear altogether or be replaced by light-seeded invading species, e.g. Pinus brutia" (Jones et al. 1958, 54).

The only independent check upon this hypothetical climax vegetation lies in studies of the modern flora (Holmboe 1914, Zohary 1973) and in the pollen analyses published by Bottema (in Boekschoten and Sondaar 1972, 322). Zohary also treats the flora as wholly Mediterranean (1973, 28) since the 30 Euro-Siberian, 60 Irano-Turanian and 20 Saharo-Arabian species

are insignificant by comparison with the Mediterranean species; along with the high number of endemic species (80 from 25 or more families), however, they are important in documenting the long isolation of the island from the mainland (cf. 1.2 above). As to the Pleistocene flora, Holmboe reports (1914, 334-5) several beds of fossilised leaves in calcareous tufa, including Platanus orientalis (abundant), Ficus carica and Laurus nobilis in an environment now too dry to support these species. The pollen analyses (Table 1.1) were performed on samples of lake-bottom sediments from a Pleistocene basin-fill of a karst depression near Kythrea, on the south side of the Northern Range. Grass pollen (mainly Gramineae) is common in all samples but arboreal pollen, particularly pine, is also well represented. Bottema concludes that the vegetation of the mountains round the basin "probably consisted of open to more dense pine forest; deciduous trees were absent or played a very restricted role", and finds support for the suggestion of Jones et al. (1958) of a climax vegetation of Cupressus sempervirens L. and Pinus brutia Ten. in the area, although cupressaceous pollen was rare in the samples, perhaps through selective destruction. The sediments were more likely to have been formed "under interglacial than under glacial conditions" (Boekschoten and Sondaar 1972, 321).

The only areas in which the climax would probably have consisted of maquis rather than true arboreal vegetation are the marshy areas of the Pedieos/Yialias mouths and round Syrianokhori in the west of the Central Lowlands, and perhaps in some of those areas in which kafkalla predominates. Kafkalla, the local name for a hardpan calcrete, is formed through the accumulation of calcium carbonate, which hardens on exposure, often cementing a

TABLE 1

Pollen content of Kythraea samples.

Sample nr.	7		8		9	
	%	no.	%	no.	%	no.
Pinus	6.7	41	25.5	117	54.4	685
Cedrus	0.3	2	1.3	6	0.1	1
Quercus	1.8	11	3.7	17	0.6	8
Ostrya-type	0.2	1			0.2	2
cf. *Fraxinus excelsior*					0.2	3
cf. *Phillyrea*	0.2	1			0.1	1
Cupressaceae	0.2	1			0.2	2
Viscum-type					0.1	1
cf. *Pistacia*	0.2	1				
Alnus	0.3	2	0.2	1		
Ephedra fragilis-type			0.2	1		
Total tree pollen	9.8	30.7		55.8		
Artemisia	0.8	5	0.4	2	3.0	38
Chenopodiaceae			0.9	4	0.1	1
Plantago			1.5	7		
Plantago media-type	0.2	1				
Plantago coronopus-type	0.2	1				
Plantago maritima-type	0.2	1	0.2	1		
Plantago lanceolata-type			0.4	2		
Centaurea solstitialis-type			0.4	2	0.7	9
Sanguisorba minor-type	0.3	2	0.4	2		
Asphodelus	1.1	7	3.9	18		
Gramineae	54.3	333	36.6	168	37.6	473
Cerealia-type	0.3	2	0.7	3	0.1	1
Cirsium-type	3.6	22	7.0	32		
Matricaria-type					0.8	10
Carthamus-type	0.2	1				
Other Tubuliflorae	2.0	12	3.1	14	0.1	1
Liguliflorae	23.0	141	13.1	60	0.3	4
Umbelliferae			0.2	1		
Caryophyllaceae	0.7	4	0.2	1		
Cruciferae	0.8	5			0.6	8
Leguminosae	0.2	1				
Liliaceae p.p.	0.3	2				
Ranunculus					0.1	1
Galium-type	2.0	12			0.1	1
Convolvulaceae					0.2	3
Mentha-type	0.2	1			0.1	1
cf. *Mercurialis*	0.3	2			0.1	1
Pollen sum		615		459		1260
Cyperaceae	0.2	1	0.9	4	0.1	1
Cladium-type					0.3	4
Sparganium-type	3.4	21	246.1	1129	0.4	5
Trilete Spores	1.0	6				

Table 1.1 Pollen Content of Kythrea Samples.
Source: Boekschoten and Sondaar, 1972. Table 1.

Pleistocene fanglomerate. It is probably formed in situ through alternating dissolution by percolating rainwater and reprecipitation during the wet and dry seasons respectively. Since this process can be very rapid (viz. forming since Roman times), no specific climatic or chronological significance can be automatically ascribed to the present formations. However, many have been subjected to long-term erosion since their formation, resulting in the "flat-irons" or remnants of old slope-facets particularly characteristic of the southeastern Central Lowlands (Goudie 1973a, Everard 1963); these caprocks may have had their origin in the late Pleistocene/early Holocene.

Relict areas of undisturbed vegetation in the Akamas and Karpass suggest that in zones of milder climate (i.e. in all but the Central Lowlands but here evidence is lacking) a deep humus-rich soil can be developed and maintained on kafkalla. Continuous vegetation helps to check evaporation from the soil itself and therefore to check, or slow down, the formation of a kafkalla crust. The thickness of a kafkalla deposit may therefore be partly due to the length of time since the vegetation was cleared; indeed, Jones et al (1958, 66) point out that most of the areas of kafkalla which is now unrippable (through Mechanical means for cultivation) are situated on the coast and "must have been cleared at a very early date and their soils exposed in many localities for millennia". Once formed, kafkalla has a high lime content (c. 80%) and a very low water absorption capacity, on average about 10% and sometimes as low as 0.2-0.5%, making it comparable in this respect to some igneous rocks (Goudie 1973a, b). It is found on all formations except the igneous and the lavas, but true kafkalla, with the

thick underlying havara layer, has a particularly extensive distribution on plateaus of the Central Lowlands (Fig. 1.1). Recovery of these areas is to maquis (as exists at present in the Karpas, Akamas, Akrotiri, Episkopi and Kormakiti etc. areas) or to garrigue. The present batha and grass steppe of the Central Lowlands kafkallas may be due as much to the continuous heavy grazing pressure as to the more arid climate of this Region, and a garrigue or even maquis cover of these plateaus in the early Holocene is probable.

If the main premise of the authorities quoted above is accepted as reasonable, then the forest or maquis cover of the island would have presented a quite different appearance to the environment of today which is manifestly the result of a long succession of ecological changes. The Kythraea pollen samples refer to "interglacial" conditions (as presumably do Holmboe's tufaceous deposits) while the climax vegetation is reconstructed for a typical Mediterranean climate. It is permissible to suppose that, following the early Holocene (Postglacial) afforestation which is well attested for Europe and the Near East, a similar tree-cover existed in Cyprus. The deposition of the upper river-terrace may well have occurred during the latest Pleistocene (?10,000 B.C.) when erosion would have been greatly facilitated by the lighter tree-cover (Vita-Finzi 1969). By the time the rivers were downcutting (8000 B.C. at the earliest according to Vita-Finzi), forest cover would have developed fully under natural conditions of regeneration.

1.5 Summary.

To summarise the preceding discussion, the natural early

Holocene environment in Cyprus is assumed to have been a Mediterranean evergreen sclerophyllous forest or maquis, the latter more typical of the Central Lowlands and, perhaps, of the Southern Chalk Plateaus (cf. Climax Vegetation Zones map in Jones et al. 1958). Following a phase of deposition in the river-valleys, downcutting began to predominate over aggradation in these rivers at a time (post-8000 B.C. ?) when forest cover had probably reached its maximum extent. This cover would have absorbed much of the rainfall through transpiration but would have helped to reduce run-off and evaporation. Water availability in rivers and springs may therefore have been rather less in very pervious zones (e.g. the Hilarion limestone) but more plentiful, or better distributed, in impervious zones where the vegetation impeded surge run-off. Gross erosion of slopes would only have occurred following deforestation through human-directed activities. Although relying on evidence which is far from adequate and making use of over-simplified cause-effect relationships, the picture presented here is likely to bear a closer resemblance to the environment of the island as it appeared to the first settlers than does its present aspect.

1.6 The initial human occupation of Cyprus.

The earliest proof of human activity in Cyprus which has been dated chronometrically consists of the settlement evidence from Khirokitia. A group of seven C14 dates from the site form a cluster about the mid-sixth millennium b.c. mark (Table 3.1; Stanley Price 1975). Other C14 dates from comparable sites are similar, namely the single Dhali Agridhi determination (Lehavy 1974) and three unpublished dates from Cape Andreas (F.10; Le Brun, personal communication). Other arguments

which have been put forward in favour of a human presence in Cyprus at a date earlier than the mid-sixth millennium have had to rely on typological and/or purely circumstantial evidence. These claims must now be examined.

Of the material claimed to be older on typological grounds, the "pre-neolithic?" remains claimed by Stockton (1968) can be dismissed as recent flints produced for threshing-boards. His description of the flints and the poor illustrations compare well with accounts of threshing-board flints (e.g. Crawford 1935) and re-inforce the conclusion drawn from a study of his material in the Cyprus Survey collections. Of the five flints published by Vita-Finzi (1973a), neither the three found on the ground surface nor the two recovered from a red clayey silt in the Maroni river-bank bear any chronologically diagnostic features. The gological evidence quoted in support of an early date for the two flints reportedly in context is too imprecise to merit extended discoussion. Moreover since the flints' context is implied to support the monoglacialism theory which is itself invoked to propose a date for the flints, a circular argument is involved, and one which ignores the extensive evidence for several raised beaches in the region (Pantazis 1967). This claim for palaeolithic remains cannot be seriously considered on the evidence presented.

Arguments on circumstantial grounds for a pre-mid sixth millennium occupation of Cyprus have depended either on analogies with apparently similar insular situations or on a priori assumptions about culture change. The Pleistocene fauna reported from Cyprus long ago by Bate inevitably invited comparison with the faunal and cultural record of Sicily, Malta and Crete, in particular, although the lack of any evidence for Pleistocene

human activity in Cyprus was acknowledged (e.g. Bate 1906). Bate's work has been greatly clarified and extended by the research of Boekschoten and Sondaar (1972) who acknowledge the continuing lack of such evidence and also point out how importantly Cyprus differs in its geological origin from the other large Mediterranean islands. They therefore conclude of the Pleistocene species that "the fossil vertebrates of Cyprus either swam (the hippopotamus and the elephant), drifted (murid and insectivorous mice) or flew (bats) to the island" (1972, 334). As with Crete, an analogous situation with comparable evidence, the cause of extinction of the larger Pleistocene mammal species is unknown but there is no secure evidence of association with material of human origin. Reese (personal communication) has claimed struck flints from one of the Hippopotamus phanourios localities near Akanthou but these are not stratified in the ossiferous breccia deposits and no true association can yet be claimed (personal inspection on visit with D.S. Reese, 1973).

The argument using purely cultural reasoning for an earlier occupation of Cyprus has been expressed most fully by Watkins (1973). His reasoning has three main points, (1) that the "insular retardation" exhibited by the aceramic culture of Khirokitia requires that there have been an antecedent stage in the seventh millennium b.c., (2) that there is no close parallel between the Khirokitia evidence and contemporary mainland culture and (3) that the very sophistication of Khirokitia presupposes an earlier formative stage (1973, 47). Although this reasoning, if valid, entails only that evidence for perhaps seventh millenium settlement ought to exist, Watkins goes further to "speculate on

the possibility of an ancestral upper palaeolithic culture in Cyprus (1973. 49). His suggestion that palaeolithic evidence may be lacking because never looked for ignores the declared interests of scholars since the 1930s (Schaeffer 1936) and the extremely intensive archaeological coverage of the island over several decades (Chapter 4). The other arguments concerning a possible independent invention of agriculture (1973. 59) rest on one very limited model of economic behaviour which is rendered doubtful by the evidence at hand (Chapter 7).

In summary, there is no reliable evidence that Cyprus was inhabited by man prior to the Holocene and no absolute dating evidence that his arrival preceded the mid-sixth millennium b.c. It would be rash to exclude the possibility of a Pleistocene landfall on the island, but it cannot be shown that any such event initiated a history of settlement in the island of which nothing earlier than the sixth millennium remains are known. Similarly since the lowest occupation levels of Khirokitia antedate those from which the C^{14} samples were taken, one cannot deny that the earliest evidence in the island must slightly precede the middle of the sixth millennium b.c. Nevertheless, on present evidence, a Holocene arrival of man in the island remains the most plausible hypothesis. A chronological context for this event is proposed in Chapter 7.

Chapter 2. The Development of Research into the Early Prehistory of Cyprus.

2.1 Previous research in historical perspective.

The prehistory of Cyprus has been the subject of systematic research for some eighty years during which it has followed a course characteristic of the evolution of archaeological research in general. The notably rapid developments in archaeological theory and practice during the last decade have only recently led to new approaches to early Cypriot prehistory. A summary of the history of research in this field will clarify its present status and help to put these new developments into perspective.

The wealth of archaeological material to be found in Cyprus was first recognized through the private collections of a number of foreign diplomats resident in the island in the latter half of the nineteenth century, among them General Palma di Cesnola. During the later years of the century, the widespread demand by museums and individuals for Cypriot antiquities prompted a number of excavations in the island, notably by Ohnefalsch-Richter, the Cyprus Exploration Fund and the British Museum Turner Trust Expedition (Catling 1964, 1-3 with references). In line with the prevailing attitude toward the archaeology of Classical lands, prehistoric finds were of limited interest and the excavation of prehistoric cemeteries served primarily to afford experience of local conditions. Little attention was paid to excavation methods by the British Museum expedition despite the pioneering work by J.L. Myres in 1894 (Myres 1897). Having started fieldwork with the Cyprus

Exploration Fund's campaigns, Myres undertook excavations with the object of testing current theories in Cypriot archaeology rather than accumulating material of artistic interest. The publication by Myres and Ohnefalsch-Richter (1899) of a Catalogue to the Cyprus Museum brought order to the mass of material accumulated by themselves and earlier investigators. With the establishment of the Cyprus Museum in adequate premises in 1908, further excavation of Bronze Age cemeteries was undertaken by its Curator, Menelaos Markides, and by Myres himself.

Until the 1920's, however, no prehistoric site had been recognized as antecedent to the local Bronze Age. The progress of archaeological research in other countries within the Three Age system had led to expectations that a Stone Age would be discovered in Cyprus, but no more than a few stray finds (summarised in Nicolaou 1967) had hinted at its existence. As a result of the excavation and survey work carried out by E. Gjerstad in 1923-4, evidence for Stone Age settlement was confirmed, although this result was incidental to the extensive research into the Bronze Age which had been the object of his fieldwork (1926b). Despite the absence of pottery at the site he excavated at Phrenaros (Catalogue number F.7) and so contrary to the precepts of the Three Age classification, Gjerstad declared the site to be Neolithic on the basis of its flint industry (1926a). The recognition of the Neolithic in Cyprus from an aceramic site provoked discussion at the time, a curious antecedent of debate about the concept of aceramic neolithic some thirty years later. As a result of Gjerstad's work and a change in the Antiquities Law allowing a one-third division of finds to foreign expeditions, the Swedish Cyprus Expedition in 1927 started the four-year programme of research which was to be a milestone in Cypriot

archaeology. Within the very broad scope of the Expedition, both chronological and geographical (Gjerstad et al 1934, xlv-xvi), the Stone Age occupation of Cyprus was further documented through the excavation of four sites, Petra tou Limniti (N.20), Lapithos (K.28 and K.29) and Kythrea (N.17), of which the first proved, like Phrenaros, to be aceramic (Fig. 2.1).

The publication schedule of the Swedish Expedition meant that a fuller interpretation of its discoveries had to await a final volume of synthesis which, as it turned out, was not published until thirty years later. During those thirty years, the Stone Age was the subject of continuous research by P. Dikaios as Curator of the Cyprus Museum. During this period, all other prehistoric excavations were concerned with Bronze Age sites. Nevertheless, when Dikaios was invited to write a volume of synthesis for the S.C.E., his research had made possible a substantive account of the period (cf. Stanley Price 1972b for an appreciation).

The parallel between Dikaios' research into the neolithic and Gjerstad's work on the Bronze Age is instructive. Gjerstad (1926b, 1) had aimed to establish a chronology of the Bronze Age, to define and describe the area where the culture flourished and to study its external relations. Since the distribution map of known sites was evidently a reflection of the different rates of research in different parts of the island, he surveyed those areas which appeared to be under-represented in sites. His excavations at Nitovikla, Kalopsidha and Alambra managed to cover the phases of the Bronze Age and led to the more extensive excavation work by the S.C.E. under his direction. Dikaios' programme of research into the neolithic adopted a similar

approach, although the responsibilities of the new Department of Antiquities (established 1935) caused the programme to be carried out over several years. The sites excavated by the Swedes and the first season of excavation at Erimi (L1.4) suggested that the neolithic occupation of Cyprus had been extensive. Similarly the extent and wealth of Early Bronze Age settlement, which Dikaios had further documented in his excavations at Vounous (1938) indicated the likelihood of a flourishing antecedent stage. Dikaios accordingly covered a large part of the island in looking for sites (cf. Schaeffer 1936), putting test trenches into the majority of those he found (Dikaios 1934; 1935a; 1936). With the distribution of sites known in outline, the intensive excavation of one site (Khirokitia; L4.9) over a number of seasons (1936-8, 1943, 1946) gave depth to this picture of neolithic settlement. Although the Department's activities in prehistoric research were already well known in Aegean and Near Eastern archaeology and had, through O.G.S. Crawford, been communicated to a wider public, the good preservation and extensive uncovering of Khirokitia brought it to the attention of other prehistorians, including V.G. Childe who visited the site (cf. Childe 1953).

By the time Khirokitia was published (1953), Dikaios had completed his fieldwork save for two supplementary campaigns at Sotira (L1.4) which, after Erimi and Khirokitia, became the third site to be the object of more than trial excavations. The work at Sotira was undertaken for the University of Pennsylvania Curium Expedition at a time when the excavations at Enkomi were the main project of the Department. In the remaining ten years of his work in Cyprus,

Dikaios completed the publication of this excavation (1961) and the synthesis of his research (1962) in which preliminary accounts of some trial excavations (e.g. at Troulli (K.23) and Kalavassos (La.3 and La.6)) were included. Following his departure from Cyprus in 1963 until his death in 1971. Dikaios' preoccupation with the final publication of Enkomi meant that the neolithic trial excavations were never published in full. Nevertheless, the sequence outlined in Khirokitia and revised in the light of radiocarbon dates in the synthesis could be evaluated on the evidence there presented.

The published syntheses of early Cypriot prehistory (Dikaios 1962, Catling 1966; also Karageorghis 1968b) have made use, to varying degrees, of another source of evidence in addition to the Swedes' and Dikaios' work, namely the results of the Archaeological Survey of Cyprus. The Survey, established in 1955 under H.W. Catling, aimed to compile a register of archaeological sites covering the whole island. The quantity of evidence yielded by fieldwork meant that by 1960 two areas only of the island had been surveyed in detail. The results of these surveys have not been published but the neolithic and Bronze Age sites discovered during them have been reported respectively by Nicolaou (1967) and Catling (1963). Since 1960 the Archaeological Survey has been occupied with the recording and rescue excavation of sites threatened with destruction, which are reported annually in the Chronique des Fouilles in B.C.H. (Karageorghis 1963 etc.). Excavation of neolithic sites was resumed in 1965 with the first of five campaigns at Philia Drakos Site A (N.26; Watkins 1970, 1972). Thereafter other excavations have been undertaken at Aylos Epiktitos Vrysi (K.8)

in 1969, 1971-3 and continuing (Peltenburg 1972), at Cape Andreas Kastros (F.9) in 1970-3 and continuing (Le Brun 1974), at Dhali Agridhi (N.2) in 1972, to be continued in 1974 (Stager, Walker and Wright 1974), and at Khirokitia (Stanley Price and Christou 1973). Field surveys have resulted in the fuller recording of known neolithic sites (Quilici 1971, Symeonoglou 1972), while rescue excavations and survey by the Department of Antiquities continue to make important finds.

2.2 Current research objectives.

Until the excavation of neolithic sites was resumed during the last decade, research necessarily followed a course appropriate to the investigation of a culture identified only from a few sites of unknown affinity. As Gjerstad had done for the Bronze Age, so Dikaios aimed to construct a chronology for the neolithic and to examine its distribution and external relations. These objectives largely determined the form of his interpretations as the work proceeded (1936, 1940, 1946, 1953) and, in line with the policy of the S.C.E., of the eventual synthesis (1962). The synthesis represents the culmination of his attempts to construct a chronological and cultural framework for the period. Although the evidence for relative chronology had not increased markedly since the publication of Khirokitia, the application of independent methods of dating greatly extended the time-scale under consideration and raised different problems of interpretation.

The necessity of making the available evidence span a much longer period than previously envisaged made its inadequacy appear all the more prohibitive to interpretation of cultural developments. Although it was difficult not to assume external origins of each cultural phase, Dikaios left these problems

unresolved for lack of decisive evidence. The other major synthesis (Catling 1966) depended upon much the same evidence as had been available to Dikaios and, with a few reservations about the chronological status of Troulli, was based upon the framework he had established. The evidence of settlement distributions, as revealed in particular by the Archaeological Survey, helped to put into perspective the few sites which had been widely excavated, and some suggestions as to possible causes of cultural discontinuities in the form of earthquakes or other natural calamities were put forward. However both syntheses emphasized the uncertainties of the sequence and the virtual absence of foreign contacts, which together appeared to form a barrier to the wider understanding of the neolithic in Cyprus.

The resumption of excavation since 1965 stemmed initially from a continuing concern to establish a sequence for the period but has been subsequently prompted by different research objectives. Although the preliminary reports on Philia Drakos Site A do not state why the site was selected for excavation, it is clear that the chronological significance of the results is the main concern (e.g. Watkins 1972). The excavations at Ayios Epiktitos Vrysi were undertaken specifically to fill one of the gaps in Dikaios' sequence (Peltenburg 1972) and for one season (1972) attention was also given to the systematic collection of faunal and botanical material. Other recent and current excavations have not treated the construction of a chronology as the primary objective. The Cape Andreas excavations form part of the C.N.R.S. programme of research into the prehistory and protohistory of the Near East and were designed to investigate the beginnings of sedentary life on the island (Le Brun 1974),

Dikaios (1962) had referred without further discussion to Braidwood's research into early agriculture in the Near East and similarly the possible importance of Khirokitia in this respect had been noted (e.g. Braidwood and Willey 1962) but not followed up. The sounding at Khirokitia in 1972 (Stanley Price and Christou 1973) had four main objectives concerned primarily with the internal chronology of the site and evidence for subsistence resources. The excavations at Dhali Agridhi (Stager, Walker and Wright 1974) were undertaken because of its proximity to the Idallon city-site, forming part of a study of human adaptation to the resources of one area from neolithic to Roman times. Finally the rescue excavation of the cemetery at Souskiou (P.21; Nicolaou 1973, 423; also ARDA 1972, 17) was prompted by continued looting of a site known to be of particular interest. Both the latter excavations promise to be as important for chronological questions as those specifically undertaken with this end in view (cf. Chapter 3). Recent survey work has concentrated on site distributions within the vicinity of excavations (e.g. Symeonoglou 1972) or on the intensive investigation of a single site (Morrison and Watkins 1974).

The majority of these projects are still continuing or, if completed, are not fully published, and no further attempts at a synthesis have appeared. However, Watkins (1973) has recently reviewed what he considers to be the main problems of the period, making use of the unpublished Cyprus Survey evidence to define phases and isolate gaps in the sequence. The underlying theme of the paper echoes the recent statement (Peltenburg 1972, 2) that "a much more detailed framework is therefore required before the sequence of cultural developments in pre-Bronze Age Cyprus can emerge and a start made to the solution

of the problems just mentioned", namely (1972, 1) "such as the nature of the advent of the earliest cultures in Cyprus, the chronological definition of the ceramic horizon, foreign and domestic contacts and the role of regionalism".

Whether these essentially synchronic problems or the more dynamic questions posed by Watkins are the object of research, the implication of both these papers is that any explanations of change or continuity during the period must await the establishment of a more detailed chronological framework than that currently available. Since the framework established by Dikaios, apart from some questions of detail such as the chronological position of Troulli, is taken as the basis for further work, it is necessary to examine its validity for this purpose. Even should its validity as a chronological sequence be demonstrated, it may not necessarily represent an appropriate framework within which to study change. There are grounds for arguing that, having been of heuristic value in the development of a relative chronology for the period, its fine structure cannot withstand a close examination as to its utility on either of these counts.

Its weaknesses as a chronological sequence (examined in detail in Chapter 3) arise from the circumstances under which it developed; its shortcomings as a framework for the study of change are evident once the nature of this origin is recognized. In brief, in the absence of an absolute chronology for the period, the evident changes in the archaeological record formed the basis for subdividing that record. Any attempt to explain change within a framework established on the basis of that change runs the risk of circular argument. This danger is avoided if the chronology is independently derived (for

example, through chronometric dating). Furthermore, a classification formulated for one purpose (subdivision of the record) need not be appropriate for another (for example, the explanation of change). The circularity likely to result from using the one classification for both purposes bears out this point. That the framework inherited from Dikaios has come to represent an obstacle to the explanation of change unless its origin is recognized must be demonstrated through an analysis of its development.

2.3 The present framework model.

In the absence of an independent chronology, the archaeological evidence for a region has to be ordered relatively before explanations of cause and effect are possible. Any subdivision of the record into phases to act as units for relative ordering amounts to a classificiation of the known evidence according to some set criteria. Any classification is a logical construct whose function is to break up continuity so that units can be formulated. Unless this function of classifications is recognized, however, the units thereby formulated have a tendency to become treated as real entities bounded by rigid divisions, rather than as the arbitrarily defined segments of a continuum which they are. Explanations of change then rely on extrapolation to account for the differences between units, once the problem of definition of units has been solved. But the continuing lack of resolution of this problem acts as a constraint on attempts at explanation (cf. the passage quoted above). This situation in the subject under discussion is a result of the original choice of classificatory model by Dikaios and its subsequent development. The close link between the choice of framework and the type of explanation to which

it gives scope has been discussed by Groube (1967; cf. Golson 1965, Shawcross 1969) for an insular situation with a shorter time-scale than prehistoric Cyprus. Groube identifies three types of what may be termed framework models:

(1) stadial models, which mark off stages in cultural development, having a chronological order but no absolute position on a time-scale;

(2) stagal models, which serve to divide a regional sequence into phases without any implications of progression or change in level of organization; and

(3) strophic models, which emphasize the points of change in a sequence rather than the platforms of conservatism. The development of Dikaios' framework can be illustrated by reference to Groube's discussion.

The first of these models to be applied in Cyprus was a stadial one whose utility had been proved elsewhere. From the time of the first prehistoric discoveries in the island, the Three Age model was introduced to serve two purposes: as a classification to bring order to the known evidence, and as a predictive model to account for future discoveries. As a classification it became increasingly refined with the division of the Bronze Age into Early, Middle and Late phases (Ohnefalsch-Richter and Myres 1899), and with the tripartite division of each phase as research progressed (Gjerstad 1926b). The tripartite division was adopted from the system already established with the Minoan and Helladic terminologies for Crete and mainland Greece. By analogy, "Cypriote" came to be used interchangeably with "Bronze", while "Copper" was also sometimes used for the earliest "Bronze" Age. As a heuristic model it led to the recognition of the Stone Age (Gjerstad 1926a) and later of a

Copper Age (discussed below).

The use of stadial models embodies the danger of circular argument referred to above; namely that by classifying the evidence according to stages in cultural development, there is a tendency to assume those changes which ought to be demonstrated (Rowe 1962). The utility of the model in explaining change lies in testing the goodness of fit of the evidence to the stadia by employing an independent set of ordering criteria. Dikaios did indeed use independent criteria, but as a complementary method of establishing a sequence rather than as a check on the utility of the stadial model. By trying to reconcile the results of the two different ordering methods, a number of inconsistencies arose from the lack of fit between the two (cf. Table 3.3).

The strain first became apparent with the discovery of an object of almost pure copper in the upper levels of a neolithic site (Dikaios 1936), a find which was a neat vindication of the heuristic value of the Three Age model. But although these levels could with consistency be labelled Chalcolithic, the application of the other method for ordering sites created difficulties. The results of frequency seriation of pottery wares could not accomodate the juxtaposition of the Erimi Chalcolithic layers and the Vounous Early Cypriot tombs in a continuous time-sequence. So a "Copper Age" was inserted as a Transitional Age between the two (Dikaios 1936 , 1938), a concept necessarily of heuristic value since no known site could be ascribed to this Age. The technological status of the Copper Age vis-à-vis its predecessor and successor was never made clear, but with the discovery of Ambelikou (N.1; Dikaios 1946) it

became evident that a strict application of the Three Age criteria had given way to pottery seriation studies as the basis for relative ordering. A seriation of the pottery from Ambelikou made possible its attribution to the proposed Copper Age, despite the complete lack of metal finds at the site.

The obstacles in the way of explanation of change inherent in the current classificatory system have arisen from attempts to reconcile the results of the two ordering methods, on the assumption that the two different variables they measured were linked rather than independent. A consistent application of either the Three Age criteria or the frequency pottery seriation results might have yielded a reliable chronological order (though cf. chapter 3). But an attempt to harmonise the two created the conditions which are at the root of subsequent research. In particular:

(1) By continually adjusting the sequence of phases to accomodate the results of pottery seriation, the possibility that the order produced by seriation was not solely chronological had rarely to be considered.

(2) The phases inserted into the sequence on the basis of pottery seriation created anomalous discontinuities in the technological record.

(3) The proliferation of phases as further segments of the pottery continuum were isolated led to an increasing fragmentation of the evidence into discrete units.

Many of the present barriers to understanding are a logical consequence of these three points. As a result of (1) the interpretation of pottery traditions in regional terms has rarely been mentioned, since the need to establish a ceramic sequence

made the absence of regional variation a more attractive assumption. Consequently the striking regional variation in traits other than pottery has been underemphasized. As a result of (2), the study of early metallurgy in Cyprus has foundered on the lack of evidence for those phases expected to have been crucially important. The timespan in question became extended through the insertion of phases assumed to be of chronological significance, with the result that evidence for early metalworking appeared to be extremely scarce for many centuries. As a result of (3), the uneven attribution of evidence to phases of equal status tends to emphasize the discontinuities and inadequacies of the archaeological record. But current attempts (e.g. Watkins 1973) to identify the discontinuities in that part of the record covered by frequency seriation studies rest upon two mutually incompatible postulates. If the chronological seriation of pottery assemblages is valid, the continuous development which the method assumes (even if not fully represented in the available evidence) rules out the possibility of cultural discontinuities. On the other hand, if the discontinuities are thought to exist, then the validity of the chronological order produced by seriation must be in doubt.

One or other of the conditionals must be rejected, but the nature of archaeological procedure helps to ensure that discontinuities, once expected, can apparently be substantiated. First, each phase is usually characterised by no more than one or two excavated and published sites, one of which is designated a "type-site". Other sites are assigned to those same phases, as if all sites of one phase were broadly contemporary with the type-site, rather than being placed at other points along the pottery development continuum. Secondly, discontinuities

between phases appear to be demonstrated by differences in material culture, as represented at the type-sites of each phase. Differences in, for example, architecture or settlement pattern acquire undue emphasis, although there may be as much variation within one phase as between two successive phases (e.g. the architecture at Sotira and Kalavassos Site A compared with Kalavassos Site B).

Because the construction of a chronological sequence was Dikaios' primary aim, the incompatibility of the two ordering methods rarely led to difficulties of interpretation. For the purposes of establishing a sequence, preference was given to the pottery seriation results over the technological criteria, as the attribution of Ambelikou showed. The apparent paradox of Copper Age sites (Kythrea and Lapithos in addition to Ambelikou) which lacked any evidence of metal would have been removed had the Three Age terminology not been used out of context. The publication of Khirokitia (1953) represents an attempt to avoid these difficulties by adopting a stagal model instead of the previous stadial model. The Three Age terminology was dropped, although the economic and technological definitions of the neolithic were invoked to define the status of Khirokitia itself. Instead the Neolithic and Chalcolithic were subsumed under three "cultural stages" (A, B, C) which were equivalent to the three Periods (I-III) used in the first two editions of the Cyprus Museum Guide (Dikaios 1947: 2nd ed. 1953). These were followed by three unnamed stages characterised respectively by Ambelikou, by Kyra (N.13 and N.15) and Philia (N.32), and by the Vounous Site A tombs. As a stagal model, it was empirical rather than heuristic and found its simplest expression in the synoptic table (1953a, 314-5). The cultural stages were occasionally

referred to as "cultures" as in the "Khirokitia culture" to which the site of Petra tou Limniti, for example, belonged. But the limited nature of the evidence made "cultural stages" rather than "cultures" more easily identifiable.

The present framework model is inherited from the synthesis (Dikaios 1962) and the third edition of the Museum Guide (1961). The sequence there presented rested as before on the results of pottery seriation but with the addition of radiocarbon dates. Prompted by Braidwood's terms for his stadial model based on subsistence-settlement (as in Braidwood and Willey 1962), Dikaios referred for the first time to terminological problems. While having reservations about it, he retained the Three Age terminology in conjunction with the stages of Khirokitia named after key sites; for example, the period Chalcolithic I was coterminous with the Erimi culture or cultural stage. The terminology was rationalised in order to remove the inconsistencies of earlier formulations and to take account of the much extended duration of the sequence indicated by the radiocarbon dates. Thus the anomalous Copper Age became Chalcolithic II while the whole Erimi deposit was attributed to Chalcolithic I. The Philia tombs and the Kyra sites represented an Initial Stage of Early Cypriot I and a distinct stage (Neolithic Ib), and Period (II) for the Museum Guide, was created for the evidence of Troulli.

As noted above, Dikaios devoted little attention to interpretation of the sequence therein described except where relevant to chronological considerations. Some of the suggestions of possible foreign parallels or invasions of people put forward in Khirokitia were treated more cautiously in the light

of the recently extended chronology. However the lack of fit between the results of the two ordering methods came into prominence again when the chronology of the later phases was discussed. The connotations of the Three Age terminology were such that Dikaios found it necessary to assume that copper was being used in Chalcolithic II, perhaps more abundantly than in Chalcolithic I. The one small object from Erimi (and some needles in the surface layers of the site) was the only evidence of copper from Chalcolithic I. For Chalcolithic II Dikaios identified from the surface of the Ambelikou site "a stone mould probably used for a copper adze or celt" (1962, 147 and Fig. 70, 5), but the illustration of the object (and inspection of it in the Cyprus Museum in 1972) does not lend support to this identification. However, as a stone mould "evidently for a copper celt or adze" (1962, 188), it was used to corroborate the suggestion of copper utilisation in Chalcolithic II. The difficulties in the way of interpretation are exacerbated by retaining the Three Age terminology out of context as in the naming of Chalcolithic II. It is usually recognized that the continued use of the terminology is of referential value only, but the tendency to circularity of argument in a stadial model still finds an expression in the statements in recent syntheses (e.g. Karageorghis 1968b, Buchholz 1969) that the attribution of Erimi to the Chalcolithic is confirmed by the copper object from the site.

This analysis of the development of the current framework model draws attention to the error in interpretation to which a conflation of the results of two independent ordering methods may give rise. It also underlines the point that some preconceptions about the scale of change in the subject under study

are necessary before an appropriate framework model can be selected. Before any systematic research has been carried out, such preconceptions must be based on comparisons with other countries; hence the original application of the Three Age model to Cypriot material. With the development of research, the divisions of the record resulting from the original choice of model may prove to be inappropriate if one type of framework model is thought to be most useful. For example, it has been suggested that there is a case for dividing the Bronze Age at MC I-II and LC I-II rather than at the divisions established in the past (Catling 1966, 35; Deshayes 1966). In other words a strophic model is favoured in which the points of change are emphasized rather than the platforms of conservatism, as the phases EC III - MC I and MC III - LC I appear to be. The selection of one particular framework model is indeed a matter of choice and depends on the kind of change to be explained. As a result of the work of Dikaios and others, some conception of the scale of change in early Cypriot prehistory is now possible. The remaining section of this chapter is devoted to some theoretical considerations of the scale of change here under study.

2.4 Time-scale and explanation.

In the preceding section, the conceptual difficulties inherent in the current framework model are argued to represent obstacles to the interpretation of prehistoric cultural development in Cyprus. It was argued that a framework against which to measure change must be established independently of the change selected for explanation. Although it is possible to measure one kind of change (e.g. economic) against a framework

constructed on another (e.g. technological), the ideal framework is one which is quite independent of any variable which might itself at some stage be a subject for investigation. A framework based upon elapsed time measured by chronometric methods fulfils this requirement. A further advantage of an interval scale over an ordinal scale (as in the periodic system) lies in the greater ability to measure rates of change, a necessity if the course of prehistoric development in Cyprus is to be compared in any detail with those of other areas. With a chronology based on chronometric methods of dating, a periodisation of the material becomes a matter of choice instead of being an initial procedural problem. Consequently those assumptions about cultural change which had to be made for purposes of periodisation can be independently examined.

The problem selected here for investigation concerns one of the main difficulties encountered hitherto in establishing the time-dimension of the subject. It has been frequently remarked that early occupation of sites in Cyprus had not resulted in the large mounds of occupation debris typified by the tells of the Near East. A chronological sequence for the period could not therefore be established by sondage excavation of a few deep stratigraphies. If the lack of tells is viewed solely as a contributing factor to the difficulty of establishing a sequence, then it remains without further interest, at least until a sequence is established. But if it is viewed as indicative of the degree of permanence in the occupation of any one site, it becomes a problem worthy of investigation. Furthermore, by investigating the degree of sedentism as a dependent variable, the difficulties of establishing a sequence may appear in a different light.

The nature of this problem is such that the time-span of the material under study becomes particularly important. The time-dimension is defined in the following chapter but a preliminary comment on questions of scale is necessary. In all disciplines concerned with diachronic change, the type of explanation appropriate to a problem is directly related to the scale of time (and space) being considered. Hoffman (1972) has discussed this principle with reference to Cypriot culture history of the last 3300 years, drawing on a discussion of similar principles in geomorphology (Schumm and Lichty 1965). He examines the different types of explanation appropriate to what he terms (1) Synchronic Time, of a few years or less in duration; (2) Diachronic or Short Historical Time, varying in length from a generation to a few hundred years; and (3) Long Historical Time, of approximately a millennium or more in length (1972, 17).

Similar concepts are of value in studying the early prehistory of Cyprus. Certain types of explanation are appropriate for the diachronic study of a few hundred years and others when the duration of one phase of one site is under study (the closest to synchronic analysis normally allowed by archaeological evidence). But they may no longer be so when a span of several millennia is involved, as with the problem described above. In particular, the effect of radiocarbon dating in markedly extending the time-scale of the period results in the need for explanations on a different scale to those generally offered. On the one hand, this link between time-scale and explanation encourages a more cautious use of catastrophic explanations or those invoking migration of people to account for "events" now seen to develop over a long period of time. On the other hand, an explanation of cultural development over several millennia cannot

ignore changes in the natural environment during that length of time. Schumm and Lichty (1965) make the point that as the time-span is shortened, the status of variables is altered. For synchronic analysis the environment may be treated as a constant; it may be attributed a relatively insignificant role as a variable in the study of a few centuries. But during the course of several millennia, it acquires importance as a major constraint upon human activity, while simultaneously subject to extensive modification as a result of that activity. In this specific instance, the early Holocene environment is assumed to have been initially free from anthropogenic influence but, following human intervention, to have been increasingly modified during subsequent millennia.

The reaction against catastrophic explanations leads to a greater emphasis upon adaptive and non-adaptive sources of change in human behaviour. The extremely long-term interaction of man with his social and natural environment and the regional diversity encouraged by the geography of the island (Chapter 1) together provide ample scope for this type of explanation. This scope has not hitherto been fully realised in discussions of Cypriot prehistory. The solution of problems raised by imperfect knowledge of the prehistoric sequence has been thought to lie in discovering material to fill out the gaps in that sequence, as a prerequisite to any explanation of cultural development (Peltenburg 1972, Watkins 1973). Failing discovery of such material, it remains necessary to invoke an external origin for those cultural assemblages which lack insular antecedents. If, on the other hand, the material currently at hand is viewed as the end-result of diverse cultural adaptations over several

millennia rather than as the remnant of a unilineal but discontinuous series of cultural phases, then the true importance of immigrant populations may be assessed.

The preliminary points made here constitute a general outline of the theoretical framework within which explanations of cultural development will be put forward in Chapter 6. First, however, a more detailed consideration of chronological problems is necessary (Chapter 3) before evaluating settlement evidence relevant to the problem described above.

Chapter 3. Absolute Chronology, Stratigraphy and Seriation.

3.1 Introduction: the establishment of a chronology.

The material relevant to the study of the problem mentioned above - the lack of tells in Cyprus - includes the sum total of evidence for early prehistoric settlement of the island yielded by past research. In specifying the time and space dimensions of the material, therefore, this discussion is of general application to Cypriot prehistory. The spatial dimension is simply defined as being co-extensive with the land surface-area of Cyprus and its offshore islands (except as in Chapter 7 where it is extended to include neighbouring areas). The time dimension is the subject of this chapter, in which various methods of chronological ordering are reviewed with the purpose of establishing a framework for the sites which are the subject of the following chapters.

The methods here discussed are concerned with either the establishment of an absolute chronology or of a relative ordering of units. For the reasons given in Chapter 2, an absolute chronology based on the application of chronometric dating has a number of advantages over relative ordering methods for the diachronic study of change. For the subject under study, radiocarbon dating alone of the available chronometric methods has been applied. Pending easier access to chronometric dating facilities, which is in turn dependent upon the wider recognition of its potential value (Vita-Finzi 1973), methods of relative ordering will remain of importance for the near future. The three main methods - stratigraphical analysis, cross-dating and seriation - have all been aplied to Cypriot prehistory and

the results are reviewed below. The nature of the evidence available for study determines that certain of these will be of greater applicability than others. As already noted, the lack of deep stratigraphies on prehistoric sites reduces the scope of the first of these methods. A greater emphasis has therefore to be laid upon seriation and cross-dating, which together are largely responsible for the current chronological sequence.

The latter method, in the absence of chronometric dating, is of potential value in deriving absolute dates in addition to relative order, but estimates of absolute dates in Cyprus through correlation with dated contexts elsewhere have largely foundered on the lack of such correlations. Dates for the beginning of the EC period have been argued on the basis of such cross-datings but the paucity of them for earlier phases has been a major contributing factor to the chronological difficulties encountered in the past. An alternative, less precise method of cross-dating, by means of geomorphological evidence, is of limited use in this instance since the majority of Holocene geomorphological features in Cyprus are dated on archaeological grounds, with consequent circularity of argument.

With cross-dating of some limited value for external correlations and occasionally applicable within the island, seriation has remained the most important method of chronological ordering, as the history of past research testifies. Thus the two methods which depend on further archaeological assumptions have continued to be developed alongside those methods - stratigraphy and chronometric dating - which alone provide a check on the validity of those assumptions. In the virtual absence of deep strati-

graphies, the most economic use of chronometric dating methods consists in applying them to sequentially ordered sites. But the selection of consecutively rather than of contemporaneously occupied sites for excavation and dating involves predicting their probable order through methods of relative ordering, notably through seriation of surface material. Thus by investigating this problem, those difficulties which can best be solved by chronometric dating may be identified, and those which cannot may profitably be viewed from a different angle.

3.2 Chronometric dating.

The establishment of an absolute chronology for early Cypriot prehistory depends at present on radiocarbon dating, which yields, strictly speaking, a relative chronology only until calibrated with a calendar. The continuing research devoted to the construction of a precise calibration of the radiocarbon with the Christian calendars makes any absolute chronology based upon the available C14 dates a tentative scheme and subject to revision. Furthermore, the samples from Cyprus have not been obtained by similar methods. While those samples from excavations undertaken since 1965 have been deliberately collected in the course of excavation, those submitted by Dikaios had necessarily been obtained by other means. Thus the Khirokitia samples were collected by further excavation of the faces left exposed by the previous excavations, while for the other dated sites, samples which had been stored in the Cyprus Museum for several years were used (K. Georghiou, personal communication). These differences in sample collection and the notable advances in sample pre-treatment since the late 1950s when Dikaios' samples were run, must be kept in mind when

constructing a composite C^{14} chronology (Table 3.1 and Fig. 3.1). The close agreement of those dates recently obtained at Khirokitia with those reported by Dikaios is nevertheless encouraging in this respect.

The twenty-four determinations currently available from prehistoric contexts in Cyprus are here quoted in radiocarbon years b.c. on the 5568 half-life. (The conventions of b.c. for radiocarbon years and B.C. for calendar years are followed here and throughout). All the Stockholm dates - those obtained by Dikaios - are corrected after adjustment from a provisional to the NBS oxalic acid standard, following the Radiocarbon Comprehensive Index (Deevey, Flint and Rouse 1967). They therefore differ from those quoted by Dikaios (1962) and in the paper by Watkins (1972) in which they have not been so corrected and have been calculated using A.D. 1960 instead of A.D. 1950 as a base date. Two of the samples from Dhali Agridhi (GX2847, GX2848) were experimental tests using bone apatite carbon dioxide and were considered less reliable by the laboratory concerned (L. Stager, personal communication). The sample GU-452 is also discounted by the excavator as being unreliable. These three samples are therefore excluded from Fig. 3.1. In Table 3.2, the younger determinations are calibrated by reference to the MASCA tables based upon the composite dendrochronological framework of the La Jolla, Arizona and Pennsylvania laboratories (Ralph, Michael and Han 1973). All calibrations of radiocarbon dates are tentative at present and will be more soundly based only when the bristlecone pine results have been checked with data from areas of differing climatic regimes. The Belfast dendrochronological sequence should be of particular importance

Site	Years B.P.	Years b.c.	Lab no.	Reference
Khirokitia	7655±160	5705	St-415	Ostlund and Eng-
	7515±125	5565	St-414	strand 1960, 193;
	7445±160	5495	St-416	Flint, Deevey and Rouse 1967, 150.
	7294±78	5344	BM-852	
	7451±81	5501	BM-853	Stanley Price 1975.
	7442±61	5492	BM-854	
	7308±74	5358	BM-855	
Dhali	6800±375	4850	GX-2848	
	7290±465	5340	GX-2848A	Lehavy 1974
	4335±200	2385	GX-2847	
	6415±310	4465	GX-2847A	
Aylos Epiktitos	5825±146	3875	Birm-182	Shotton and Williams 1971, 155; 1973, 468.
	5740±140	3790	Birm-337	
	5418±79	3468	GU-453	unpublished
	5351±94	3401	GU-454	
	5253±150	3303	GU-455	
	3106±130	1156	GU-452	
Sotira	5405±110	3455	St-337	Ostlund 1959, 43.
	5095±130	3145	St-350	" "
Philia A	5270±110	3320	Birm-72	Shotton, Blundell and Williams 1969, 269.
Kalavassos B	5085±110	3135	St-419	Ostlund and Engstrand, 1960, 194.
Erimi	4575±80	2625	St-202	Ostlund 1957, 496.
	4485±80	2535	St-203	" "
	4425±150	2475	St-338	Ostlund 1959, 43.

Table 3.1 Prehistoric radiocarbon dates from Cyprus.

Site	Lab. no.	years B.C.	Years B.C.
Sotira	St-337	3455±110	4270-4330
	St-350	3145±130	3800
Philia A	Birm-72	3320±110	3920
Kalavassos	St-419	3135±110	3790
Erimi	St-202	2625±80	3380
	St-203	2535±80	3220-3330
	St-338	2475±150	3180

Table 3.2 MASCA calibration of some C14 dates.

in this respect and may indicate whether different areas, for example, the Near East, each require to have independent calibration curves (Burleigh 1974, Burleigh, Switsur and Renfrew 1973).

The aim in calibrating approximately the dates in Table 3.2 is to clarify the relationships between radiocarbon dated sites and historically dated sites where they appear to be in juxtaposition in the third millennium B.C. The historical dates for the early EC period are based on very imprecise cross-datings of a few stylistic resemblances with mainland material (Catling 1966) and recent arguments have tended to raise the dates of the period (Hennessy 1974, Mellaart 1974). Even if these higher datings are accepted, the sites in which the cross-dated objects are found (mainly the Vounous and Philia cemeteries) are, on the strength of these datings, unlikely to antedate the early third millennium B.C.

Where the absolute dates for a site obtained by working backwards from the EC cemetery material (Dikaios 1953) have differed from its radiocarbon date, the latter has generally

been preferred (Dikaios 1962) although some general reservations have been entered (Catling 1966, 7). The approximate calibration of the mid-third millennium b.c. C^{14} dates suggests that the occupation of Erimi extended barely, if at all, into the third millennium B.C. in calendar years. Of the three Erimi samples submitted for dating, St-202 and St-203 were from, respectively, "Layer 2" and "Layer 3" (Ostlund 1957, 296) while St-338 was ascribed no specific provenance within the site. In view of Dikaios' statement (1962, 198) that the three samples were collected from the upper levels of the site, it is clear that "Layers 2 and 3" refer respectively to the second and third uppermost layers of the site encountered during excavation. This supposition would seem to be confirmed by the description of the layers in these terms (i.e. second, third) in preliminary reports of the excavation (e.g. in RDAC 1934 and 1935) and by the fact that Roman numerals rather than Arabic were employed for the subsequent numbering of the layers from earliest to latest (Dikaios 1936). The dates St-202 and St-203 are therefore in reverse stratigraphic order but none of the Erimi dates differs significantly from any other. (Two dates are here considered probably to be significantly different if their arithmetic difference exceeds twice the square root of the sum of the squares of each error term). Rather, they form a homogeneous group centred on c. 3200-3300 B.C. when calibrated, dating the final levels of the site. Although there may be further adjustments to be made following the ultimate definition of the calibration curve, it seems improbable that Erimi was occupied at all after 3000 B.C.

The four dates from Sotira, Kalavassos B and Philia Drakos A fall within a maximum range of 550 radiocarbon years or a mini-

mum range of 100 years if no date is allowed to fall outside this range by more than one standard deviation (cf. 6.1). Of this group of dates, only the Kalavassos date (St-419) and the Philia date are significantly different from one another as are the Erimi dates from the Sotira/Kalavassos dates. The earlier and later Sotira dates belong respectively to Phase 1 and Phase 2 of the site as defined below (Chapter 5), while the Kalavassos sample came from between bedrock and the lowest floor of one of the site's structures (Dikaios 1962, 198). Within the interpretative limits imposed by the reliability of single determinations, it is plausible to suppose that some part of the occupation of Philia A overlapped with the occupation of Sotira, and that Phase 2 of Sotira was in turn broadly contemporary with the Kalavassos occupation. Apart from the short entry in Radiocarbon, the cultural context of the Philia date has not been described in print, the date being considered unreliable by the excavator (Watkins 1973, 52). The chronological status of this site is discussed further below (3.3.8 and 3.4.3).

The five acceptable dates from Ayios Epiktitos Vrysi form a series within the fourth millennium b.c., although little information is yet available about their archaeological context. The two dates originally reported (Birm-182, Birm-337) are both earlier than the three dates (GU-453-5) obtained more recently, for which some systematic discrepancy between the results of the two laboratories may be responsible. The GU-series are not significantly different from the earlier Sotira date and the Philia determination, and some broad measure of contemporaneity between these three sites is probable, within the range defined above.

Of the Dhali Agridhi dates, the later (GX-2847A) differs significantly from the earliest from Ayios Epiktitos. The earlier date (GX-2848A) which, in contrast to the later, comes from an aceramic context (Lehavy 1974) falls within the range of the Khirokitia dates. However the large error terms of both dates make any precision of the site's chronological status impossible without further determinations. The series of dates (BM-852-5) from the recent sounding at Khirokitia (Stanley Price 1975) is indistinguishable from the results obtained by Dikaios and provide adequate confirmation of the mid-sixth millennium b.c. date for the site.

3.3.1 Stratigraphy.

Prior to the application of radiocarbon dating the prehistoric sequence worked out by Dikaios relied upon the three relative ordering methods of stratigraphic succession, cross-dating and seriation, the latter proving to be the most fruitful approach. The earliest material which could be paralleled with dated mainland contexts seemed to be the Philia cemetery pottery and metal types (Dikaios 1962) although the affinity to Cypriot sherds of certain sherds found at Ras Shamra in fifth millennium contexts had been noted long before (Dikaios 1936, 69; Schaeffer 1936, 22; cf. Catling 1966, 18) but left in abeyance for lack of clear chronological implication. The short stratigraphies characteristic of most sites which were sounded in the 1930s made it clear that analysis of stratigraphical successions could not alone provide a firm relative chronology. The exceptionally deep deposit at Erimi proved to be of limited use for establishing phases to which other, shorter-lived sites could be referred because of the relatively slight changes in cultural material throughout

the succession (cf. 3.3.6 below).

Nevertheless the lack of marked change throughout site sequences and the characteristically shallow deposits have implications for the continuity and permanence of occupation of a site to which stratigraphical analysis can contribute. The available stratigraphic evidence is potentially ambiguous because of the limited area of soundings made on sites. Of those sites with deposits more than 4m. in depth, only Khirokitia and Ayios Epiktitos Vrysi have been excavated sufficiently extensively to overcome the grosser risks of sample bias in the cultural remains uncovered. At Erimi, the excavated area of 150 sq.m. (15m.x10m.), reduced to 136 sq.m. below the top three layers, is evidently but a small proportion of the total extent of the site; while the 2m. square deep soundings at Troulli and Ambelikou impose severe limitations on stratigraphical analysis of these sites. Conclusions about changes through time in pottery ware frequencies demonstrable on stratigraphic grounds are also at risk unless the possible sampling bias is controlled for. Despite these limitations, however, the evidence of stratigraphy remains basic to interpretation of site continuity of occupation and as a check upon seriation results, and is best reviewed by considering each of the major excavated sites in turn (cf. Fig. 2.1 for their locations).

3.3.2 Khirokitia (La.9)

The stratigraphic evidence from the extensive excavations at Khirokitia seemed initially to represent a continuous sequence from an aceramic stage to the introduction of pottery (Dikaios 1953). In spite of the uncertain nature of the contexts in which pottery was found, Dikaios assumed that the aceramic and

ceramic deposits were consecutive in time, a conclusion which the C14 dates led him to revise. His suggestion that the pottery was the product of a re-occupation of the site some two thousand years later (Dikaios 1962, 180) is supported by an analysis of the sherd provenances, which lack any unambiguous association with the structural remains identified by Dikaios (Stanley Price and Christou 1973). Both absolute dating and stratigraphic analysis therefore rule out the need to postulate any cultural relationship between the two occupations. The stratigraphy demonstrates only the relative order of the aceramic-ceramic occupations, an order exhibited at two other sites, Mari Tenta and Troulli.

3.3.3 Mari Tenta (La.12)

On the evidence of his excavation notebooks (Dikaios n.d.), a trial pit with 1.10m. of deposit dug by Dikaios immediately to the south of the architectural remains (Dikaios 1960, Pl. 18) at Tenta yielded no pottery but traces of floor levels, although sherds of Red Lustrous and Combed wares appeared on the surface. Elsewhere (Dikaios 1962, 180, n.3) these are said to occur in the topmost level as well as the surface layer but they are nowhere associated with the architecture. The section exposed by a railway cutting on the east slope of the hillock contains stratified levels with pottery and other features which overlie in places c.2m. of deposit with flints but without pottery. This section confirms the relative order of the aceramic-ceramic occupations in the area, but in the absence of other features, the aceramic deposit in this section is as likely to represent hillwash from up the slope as occupation levels. Without a superposition of stratified occupation levels, the two sites

are named separately in the Catalogue (La.12 and La.2), but cf. the Catalogue Addendum.

3.3.4 Klepini Troulli (K.23)

The site of Troulli has been badly disturbed by looting (Dikaios 1935a) and the excavations carried out by Dikaios provide the only stratigraphic control for the abundant surface material from the site. Following a trial trench in 1935, in 1941 he cleared some architectural remains (Area C) and dug a deep sounding (Area A) on the south slope of the site. The published site-plan (Dikaios 1962, Fig. 32) shows that Area A was more extensive than the 2m. square sounding he described, and also that a 2m. square area (B) due south of A and a larger trench north-east of A were also opened up. In the absence of a fuller report, however, it remains unclear whether B was the 1935 sounding and whether the feature on Fig. 32 across the 12m. contour on the east slope depicts further architectural remains.

Apart from the structure in Area C in which excavation ceased at the uppermost floor, the site's stratigraphy is known only from the deep sounding (A) which reached bedrock at 5.40m. depth. The excavator's assumption that the aceramic-ceramic sequence represented continuous occupation and subsequent suggestions (Catling 1966, 11 and Watkins 1972, 172) to the contrary have both owed much to the evidence of comparable sites available at the time they were made. Circumstantial evidence of this kind does indeed argue against an aceramic-ceramic continuity at Troulli, but the supposition can be given a stronger basis through an analysis of the published evidence.

If the section of the deep sounding (Dikaios 1962, Fig. 34, reproduced here as Fig. 3.2) is interpreted according to the

usual conventions, the stratigraphic sequence from earliest to latest could be broadly described as follows:

Level 1. Below c. 5.25m. Soil on bedrock.

2. c.5.25-4.50m. Dark deposit.

3. c.4.50-4.00m. Light deposit with stone rubble on Layer 2.

4. c.4.00-3.40m. Similar to Layer 3 but darker with stone rubble.

5. c.3.40-2.80m. Dark deposit as Layer 2 with surface at 2.80m.

6. c.2.80-2.50m. Soil as Layer 1 on bedrock.

7. c.2.50-0.80m. Alternating light deposit as Layer 4 with bands of dark deposit as Layer 2 of varying thickness.

8. c.0.80-0.20m. Light deposit as Layer 3 filling stone-lined pit (?) cut into Layer 7.

9. c.0.20m.-surface Topsoil.

The recording of the more distinctive finds from the sounding by 20cm. levels makes possible their attribution to these levels as follows:

Level 9.

Level 8.

Level 7. Stone hammer.

Level 6.

Level 5. Stone mortar. Fragment of terracotta ring-shaped stand.

Level 4. 2 obsidian blades. 2 stone bowl fragments.

Level 3.

Level 2. 5 obsidian blades. Bone awl. Stone pestle.

Level 1.

(The stone mortar from the top of Level 5 (3.00-2.80m.) is described as a sandstone bowl but in the caption to the illustration (1962, Fig. 36.8) it is a mortar. Those finds given the provenance "level 0.40m." evidently come from the house in Area C, even when not specifically said to do so. For example, both perforated pottery discs have the provenance "0.40m.", and since the provenance of one example is depicted on the house floor-plan (1962, Fig. 33, no. 5). it may be assumed that both these finds and the others from "level 0.40m." belong to Area C and not to the deep sounding.)

The abundant surface material thrown up by previous digging, which is comparable to aceramic material found at other sites, makes it unlikely that the lack of pottery in the lower c.2m. of deposit is fortuitous. The occurrence of five obsidian blades, a pestle and a bone awl within the dark deposit (Layer 2) strongly suggests an aceramic occupation level. The overlying level (3) with stone rubble lacks any small finds, while the subsequent deposit (4) with scattered stone rubble includes the level (3.60-3.40m.) at which pottery is said to appear. This level (3.60-3.40m.) also contained two obsidian blades and a limestone bowl rim; the fragment of a terracotta "ring-stand" falls within the next level (5) above the stratigraphical distinction drawn in the section. In view of the collection of finds by 20cm. levels, the possibility of a mixture of deposits between 3.60m. and 3.40m. cannot be ruled out (see below). In particular the two obsidian blades from this level should not be considered as definitely stratified within the ceramic deposit; the provenances of the other five blades together with Dikaios' statement (1962, 72), possibly a slip, that seven blades came from the aceramic deposit, add weight to this argument. A minimal conclusion

would state that the aceramic occupation is definitely represented in the Level 2 defined above and that the base of the ceramic deposit may show some mixture, either as excavated or in reality, with stone rubble and a few objects from the earlier occupation.

This conclusion, which is based entirely on the published evidence, gains plausibility from the circumstantial evidence of the finds from the sounding preserved in the Cyprus Museum, where they are stored according to the 20cm. levels established during excavation. (The unpublished finds from Troulli are to be the subject of a study by Dr. E.J. Peltenburg in connection with the excavation of Ayios Epiktitos Vrysi). A very approximate calculation of the total number of finds, including bone, shell and flint, from each of the 20 cm. aceramic levels shows a marked fall-off above the Level 2 defined above. Whereas from 5.40-4.80m. the average number of finds per 20cm. level is c. 180, this number falls to c.40 at 4.80-4.60m. and averages no more than 13-14 for 4.60-3.60m. This fall-off seems too striking to be wholly attributable to sampling bias, for example through a change in function of the area excavated between Level 2 and Levels 3-4. The "transitional" level 3.60-3.40m. contains no more than some 20 sherds whereas for each of the succeeding 20cm. levels between 3.40m. and 2.40m. the average number of sherds is nearer 130. These results are of course liable to bias, both during excavation and in the museum storage of material, but the much greater quantity of finds in levels above 3.40m. than in preceding levels suggests the re-establishment of occupation in that area.

The combined evidence of the stratigraphy and of the finds indicate therefore that there were two distinct periods of

occupation at Troulli, one aceramic represented at least in Level 2 as defined above, and the second one with pottery from Level 5 upwards. Although there may once have been a clear interface between the two, within the level 3.60-3.40m., this was not isolated during excavation, owing to the collection of material in 20cm. levels and the restricted area of the sounding. If, as mentioned above, the average number of sherds per 20cm. ceramic level between 3.40 and 2.40m. is c.130, then, assuming a constant rate of sherd deposition, the level 3.60-3.40m. would have yielded the twenty or so sherds recorded from it if no more than 3-4cms. of the level as excavated had in fact belonged to the ceramic deposit. In view of the very small margin of error involved, it is possible to suppose that the aceramic/ceramic stratigraphical break coincides with the distinction drawn between Levels 4 and 5 on the published section. This line may signify simply a weathering horizon between the two occupations, or, more likely, Level 4 (and conceivably Level 3 also) represents a deposit formed through erosion of the remains of the earlier occupation. Overlying the initial aceramic layer (5), occupation was probably continuous, in view of the consistent number of finds reported. The ceramic occupation would have been c.2.60m. deep (Levels 5-7) and the aceramic c.0.75m. deep (Level 2) or c. 1.25m. if Level 3 be included.

3.3.5 Ambelikou Ayios Georghios (N.1)

The site at Ambelikou, with a depth of deposit of some four and a half metres, has been partly cut away for the construction of a road on its eastern side. Excavation in 1953 of the area exposed by the road-cutting had been preceded in 1941 by a 2m. square deep sounding with the aim of "gathering sherd

material and ascertaining the depth of the deposit" (Dikaios 1962, 141). Although these aims were achieved, no phases could be identified within this small area of excavation, the pottery being collected by 20cm. levels. One glance at the stratigraphic complexity of the published section (Dikaios 1962, Fig. 67) is sufficient to discourage any attempt to read precise meaning into the ware percentage frequencies but a little information as to the nature of the site's deposit can be gained from the published section.

The total depth of deposit as illustrated is 4.40m. (not 4.60m. as the text and pottery percentages record), of which the top metre appears to be post-occupation deposit. In the area excavated adjacent to the road-cutting, architectural remains were encountered immediately below the disturbed surface (section A-A, 1962, Fig. 66) but there is no way of relating the two areas stratigraphically. The section of the sounding suggests a deposit of c. 3.40m. The upper part of this deposit, between c. 1.50 and 2.70 m., consists of isolated lenses, truncated strata and a large pit around the 2m. mark; the lower part shows a less complex stratification with some differentiation of deposits, notably a band of stone rubble between the 3 and 4m. lines. This layer effectively divides the lower metre of deposit from the overlying 2.40m., within which there may have been further distinctions not immediately detectable in the section (for instance, perhaps between 3.00 and 2.80m. below datum). As at Erimi, however, the divisions observed in a sounding of this size are as likely to represent local shifts within the site as actual breaks in occupation. The pottery evidence, discussed below (3.4.4) points to an overall continuity in ware production, the only possible break occurring at

c. 3.60m. below datum, i.e. above the stone rubble layer.

3.3.6 Erimi (Li.4)

The stratigraphy of the Erimi settlement is sufficiently well described and illustrated (Dikaios 1936) to make possible the definition of phases within the site's occupation. Such phases were recognised by Dikaios but became obscured through the need to make the sequence fit the Three Age model. Thus, although on architectural evidence the site seemed to have two different periods (1936, 23), the single fragment of a copper object from a depth of 2.40m. prompted a different division of the sequence, namely into a Neolithic III (Erimi 1) and a Chalcolithic (Erimi 11) (1936, 70-71). With the later ascription of the whole sequence to the Chalcolithic (Dikaios 1962) the finer distinctions have tended to be overlooked in subsequent work. The site is generally described as a single sequence characterised by round huts with stone foundations, but Dikaios' report makes it clear that more than one phase is represented, and emphasis of this single architectural trait obscures some of the site's most significant features.

The stratigraphy of Erimi is clear from the consistent picture presented by the main sections AA, BB, FF with the text description (1936, 3-7, Plates I, II and Fig. 1). The absolute depths of the interfaces between different deposits vary according to the section being described but their relative depths are consistently depicted throughout. There are three main phases to be identified, of which Dikaios isolated the earliest and combined the later two as one. Although, as Dikaios emphasized, the excavated area is but a small part of the site, it is the interpretation of these phases which

is liable to sampling bias, and not their actual validity, which can be demonstrated.

Phase 1.

Phase 1 occupation is represented by the remains in the hollows in bedrock. The hollow recorded in Section BB was not fully excavated, being 6m. wide NW-SE and 3.80m. NE-SW as cleared, and containing strata of red clay floors and charcoal layers. A second similar hollow in bedrock some 4m. to the north also contained floors and occupation debris but was mainly outside the excavation area (Section AA and to the left of BB). On the evidence of the disturbance of the terra rossa on bedrock, the large scoop-shaped depression west of the second hollow (Section AA) also represents Phase 1 activity. The end of Phase 1 is marked by a layer of earth of varying thickness which underlies Level VI (thus Section BB at c.3.30m. below datum (b.d.), Section FF on bedrock (Layer V), Fig. 1 under Hut VIB foundation). Section CC, on the other hand, across the middle of the excavated area, shows that Level VI rested on a thick layer of red earth which seems to have been levelled for the construction of a hut; this section also shows that the clay floors and carbonised layers in the Phase 1 hollow in bedrock continued to accumulate until deposition of the red earth layer underlying Hut VI. Since the layer (V) underlying Layer VI is therefore a result of continued use of the area over the hollow without apparent break of occupation, all the features assigned to Level V (1936, 10-12) represent activity contemporary with the use of the hollow, rather than forming a separate transitional phase as Dikaios (1936, 23) had suggested. Among those features, the remains of circular post-hole structures and feature no. 14 (Pl. III.1), which is

more plausibly part of a hut than a hearth and which covered an earlier shallow cavity dug into the rock (1936, 11), show that Phase 1 occupation was of a more diverse character than hollows in bedrock alone.

Including the hollows, the maximum depth of deposit in Phase 1 underlying the earth layer on which the Layer VI occupation was initiated is c. 1.50m. (viz. between c. 3.40m.b.d. and 4.90m.b.d. to the right of Section BB and between c. 3.70m.b.d. and 5.20m.b.d. at its centre; and c. 1.50m. on Fig. 1). Where distinguishable, the upper limit of Phase 1 is at c. 3.50m.b.d. on Section AA, at c. 3.40m.b.d. on Section BB to the right, at c. 3.60m.b.d. on Section BB in the centre, and below, since not represented, 3.50m.b.d in Section FF. This phase therefore includes layers I-V through which there is apparent continuity of occupation.

Phase 2.

The bottom of the Phase 2 deposit rests on the red earth layer described above, and its top is well defined by a thin but almost continuous layer of black earth running across the excavation area (thus Section AA at c. 2.00m.b.d. to SW, and at c. 2.30m.b.d. to WE; Section BB at c. 2.40m.b.d. to NE and at c. 2.40m.b.d. to SE; Section FF at c. 2.40m.b.d. - 2.60m.b.d.), coinciding broadly with the top of Layer IX. Phase 2 represents Layers VI - IX inclusive, and incorporates the Intermediary Layer (1936, 12) of which the floors may be an earlier stage of the Layer VI huts. Within this phase there is a distinction between Layers VI-VIII, which represent three phases of single structures, and Layer IX in which new huts are built on a slightly different alignment to their predecessors. In addition to the stone-based structures, other subsidiary huts of lighter construction are known from the areas immediately adjacent, from the evidence of

post-holes and post-bases. Over the major part of the excavated area the upper limit of Layer VI, and so of Phase 2, is marked by the thin layer of black earth at c. 2.50m.b.d., above which there is a layer of earth up to 0.60m. deep (in Section FF; 1936, 20). The Phase 2 deposit, although variable, is therefore about 1.0m. deep.

Phase 3.

Phase 3 consists of the remainder of the occupation deposit above the earth layer overlying Layer VI, the top of which is at c. 0.50m.b.d., giving an occupation layer of c. 2.0m. depth. This phase therefore covers Layers X-XIII, characterised by layers of carbonised debris and by stone-built huts on quite different alignments to those of Phase 2. The whole of the south and northwest parts of the excavation area was covered by carbonised debris (1936, 6 and Section AA).

The three phases with their depths may be summarised as:

Phase 1. 1.50m. (Bedrock to c. 3.50m.b.d.)

Phase 2. 1.00m. (c. 3.50m.b.d.-2.50m.b.d.)

Phase 3. 2.00m. (c. 2.50m.b.d.-0.50m.b.c.)

The exact significance of these phases has to be viewed within the context of the scale of excavation. If the layers of earth between them are of natural pedogenic origin, they may nevertheless be local to that part of the site. The continuity of occupation within the phases here defined is attested for the floor debris in the hollows, and by the re-building of huts on similar alignments during Phase 2. Consideration of the pottery (discussed in 3.4.4 below) emphasizes the overall continuity of its production despite some variability, and argues against abandonment of the whole area of the site for any length of time. It is more plausible that the breaks between the phases

represent temporary shifts within the site, followed by re-building in the area on different lines to the preceding structures. The simultaneous existence of different architectural forms is well documented, contrary to the evolutionary scheme proposed by Dikaios. Each phase, then, in some way represents the duration of one structural complex, whether a hollow in bedrock or a stone-based hut, before a re-building was undertaken.

3.3.7 Sotira (L1.14)

The stratigraphy of Sotira is discussed at length in Chapter 5 where three phases are distinguished, covering Dikaios' Phases I-IV. The three phases are there argued to be consecutive in time without any break between them, and the site therefore represents a single occupation from its initial foundation to its eventual abandonment.

3.3.8 Philia Drakos A (N.26)

The stratigraphy of Philia was found to be badly disturbed by erosion when excavated. A division of the site's sequence into four phases has been put forward in annual accounts in B.C.H. (Karageorghis 1968 and following) and in other preliminary reports (Watkins 1969, 1970, 1972). Since, in the virtual absence of stratified deposits on the site, these phases have been distinguished primarily through grouping of pottery wares and pattern frequency counts, the site does not provide a sequence independently established on stratigraphic grounds to act as a basis for further relative ordering. The phases are held (Watkins 1973, 50) to document a cultural continuity, being characterised by:

(1) Dark-faced burnished ware and coarse ware.

(2) DFBW, coarse, painted (RW) and Red Lustrous pottery.

(3) Wares as in (2), with DFBW declining as RL increases.

(4) Coarse, RW, and RL wares.

Where superimposed, Phases 3 and 4 are apparently stratigraphically separated by a thin band of sterile marl (Watkins 1970, 8) but no details of this feature are yet available. It is unclear whether these two phases are also distinguished by their ware frequencies since two statements (1970, 7 and 8) are contradictory in this respect. Combing is said to be present in Phases 3 and 4 but not in 1 and 2, and more commonly as Pcb than simple Combed ware. Ripple painting is found in Phases 2 and 3 in small amounts until becoming the dominant pattern in Phase 4. The distinction heavily drawn between the DFBW and RL and RW wares (1970, 4-5) may be clearer for the forms than the fabrics, since elsewhere (in Karageorghis 1970, 239), some of the early painted pottery is said to have organic tempering as in the DFBW, and, again, (Karageorghis 1969, 512) two or three DFBW sherds in the earliest contexts are said to bear traces of red paint. The continuous development from the DFBW to the later RL and RW wares suggested by the excavator would therefore seem plausible on the little evidence so far available, but the isolation of a Phase 1 with DFBW and coarse wares alone seems more doubtful. The sole context for which it has been claimed is a hole in the rock below the floor of House 6 (Karageorghis 1970, 238), never in association with any floors, building or other features (Watkins 1970, 6). Unless any stronger stratigraphical basis for the distinction is forthcoming, Phase 1 and 2 may be considered as one.

The tentative conclusions to be drawn from the preliminary reports can be summarised as follows: the final excavated phase (4) of the site was characterised by RW, chiefly with ripple

painting, with smaller amounts of RL. Pcb and Cb wares occurred in lesser quantities, in similar ratio to each other as RW was to RL. Underlying this phase and perhaps distinguishable stratigraphically, was a phase (3) with the same wares but with much greater emphasis in the RW on other patterns than ripple painting, notably on wavy lines. Other deposits on the site could not be consistently related to these phases on stratigraphic grounds, but, on the basis of ware frequency counts, several contexts of an earlier phase (2 and 1) can be isolated in which the DFBW, which appears also in Phase 3, is associated with a small quantity of RL and a rather larger number of RW with patterns related to those of Phase 3. A more precise stratigraphic basis for these pottery phases must await the final publication.

3.3.9 Ayios Epiktitos Vrysi (K.8)

The excavations at Vrysi promise to provide, inter alia, an invaluable stratigraphical record of ceramic changes for the relative ordering of unexcavated sites. At the conclusion of the fourth season of excavations (1973), three phases have been tentatively identified as representing a continuous development (Peltenburg in Karageorghis 1974). The first phase, known only from a small sounding, is associated with a wide variety of painted wares. These are further developed and elaborated in the succeeding phase to which belongs the bulk of the material described in a preliminary report (Peltenburg 1972). Towards the end of this phase there appear ripple patterns on the painted ware, which then become much the commonest type of decoration in the final phase, known only from a large central hollow of refuse cut through the occupation levels of the second phase. Cb and Pcb wares occur in small quantities in the later middle phase and more frequently in the hollow of the third phase, the

deposits of which illustrate several stylistic and some typological developments. Further analysis of this sequence must await fuller publication.

To summarise this review of the stratigraphic evidence for the relative ordering of cultural material, three sites (Khirokitia, Mari Tenta and Troulli) exhibit an aceramic-ceramic sequence of phases but in no case can the ceramic occupation be shown to follow on directly from the aceramic. Continuity of occupation on a site once established is certain for Sotira, probable for Erimi and Ambelikou and is indicated in the preliminary report on Aylos Epiktitos. Only at Philia is there a reported break between two phases but more details are needed to clarify its nature. The stratigraphic evidence, such as it is, nowhere demonstrates a substantial break in occupation of any site except those with both aceramic and ceramic phases.

3.4 Seriation

In the previous chapter some preliminary remarks on the methods adopted by Dikaios to establish a sequence for the period were made in the wider context of problems concerned with explanatory models and classifications. With the increase in the amount of material retrieved through excavation, the Three Age classification became inadequate as a cultural framework, although it continued to lend its terminology to phases identified through other methods. The most important of these methods was seriation which involves "the placing of items in a series so that the position of each best reflects the degree of similarity between that item and all other items in the data set" (Johnson 1972). The utility of this approach has been amply demonstrated

by its withstanding the application of absolute dating methods. However its utility in initial formulations is not such an absolute guarantee of its validity as subsequent work has tended to assume, particularly so long as the seriation criteria being used remain inexplicit, and a critical assessment of the limitations of seriation for prehistoric Cypriot material is overdue. Such a critique is all the more necessary for the earlier prehistoric material which is relatively extremely sparse for the length of time under consideration compared with the abundant material of the EC-LC period for which more sophisticated analyses than seriation are now appearing (e.g. Frankel 1974).

This section on seriation first takes an example of regional differentiation within Cyprus to which a chronological significance has hitherto been assigned (3.4.1), then examines the choice of historical classes for seriation purposes (3.4.2). Two sections on the scope and limitations of occurrence (3.4.3) and frequency seriation (3.4.4), making use of Dikaios' published evidence, introduce the recognition of regional traditions as a basis for seriation work (3.4.5). The validity of using surface collections for seriation is briefly reviewed (3.4.6) and a final section summarises the criteria on which the sites in the Catalogue are to be ordered.

3.4.1 Chronological vs. spatial distance: an example.

The chronological sequence of phases inherited from Dikaios' work, whose genesis was discussed in the previous chapter, was there shown to be the result of seriating material from sites of which some had already been ordered according to Three Age criteria. The main structure of this sequence as ultimately presented (Dikaios 1962) can be schematically portrayed to

emphasize the different contributions of the two methods (Table 3.3).

Phase		Three Age System	Seriation
Neolithic 1a	Aceramic	Khirokitia	
Neolithic 1b			Troulli
Neolithic II	Ceramic	Sotira	
Chalcolithic I	Copper	Erimi	Kalavassos A Kalavassos B
Chalcolithic II			Ambelikou
Initial Stage of EC I			Philia Vasiliko
EC I	Bronze	Vounous	

Table 3.3 Structure of chronological sequence established by Dikaios.

The technological classification of later sites never developed far because of the rarity of analytical work on metal finds; the few analyses of the metal finds from Erimi (Dikaios 1936. 50) and Vounous (Dikaios 1938. 174) confirmed the presence of tin-bronze at the latter site alone. The ordering of sites through their pottery assemblages rested largely on an occurrence seriation of certain wares. with frequency seriation being used to give further precision within phases. In general, the occurrence of Red Polished ware distinguished an Early Cypriot site from a Chalcolithic while painted pottery of the type found at Erimi served to distinguish a Chalcolithic from a later Neolithic site. on which Combed pottery was typical. The antecedence of Troulli within the Neolithic was dictated by the apparent stratigraphic continuity from the aceramic (on which cf. 3.3.4) and the absence of Combed ware at that site (Dikaios 1962).

As noted in the previous chapter. Dikaios assumed that the

order of sites produced by applying these criteria was consistently a chronological one, since the construction of a cultural sequence would have been greatly impeded had the possibility of regional variability within the island been admitted. However the many difficulties raised by excluding regional variation have been able to be discounted hitherto only through positing special circumstances which have no independent support. These difficulties can be illustrated with the problem of the so-called "Philia Culture" and related materials.

Because the end of Erimi was dated (by C14) to c. 2500 B.C. and the Philia cemetery (by rather tenuous cross-dating to Anatolia material) to c. 2300 B.C., the apparent gap of some 200 years had to be filled with some material, for which the evidence from the Philia B settlement (N.27) and from Ambelikou (N.1) was adduced. This material appeared to fulfil the requirements of informal seriation, in that it included traces of the painted pottery characteristic of Erimi but was predominantly of the monochrome wares distinctive of the Philia Culture sites. In fact this group of sites, the Ambelikou, Philia B and Kyra (N.13) settlements and Philia Vasiliko and Kyra Kaminia (N.15) cemeteries, are generally comparable in the wares represented at them. They form a single, highly concentrated group, with the more distant site of Ambelikou lacking the BSC ware found on the other sites. However Dikaios used this ware as proof of a chronological link between two "stages", whereupon the material which Stewart was to term the Philia Culture appeared to develop from the Chalcolithic II stage, while no such link could be found with the Vounous material.

Hence Dikaios argued that the Philia material was antecedent to the latter, naming it the "Initial Stage of EC1". Merrilees (1966), following similar reasoning, introduced the term "Chalcolithic III" for the same material, with the object of clarifying the terminology involved. (It need hardly be said that the acceptance of the term "Chalcolithic III" presupposes recognition of the chronological argument, a condition avoided by Stewart's neutral term "Philia Culture").

The evidence of distribution (examined more fully in Chapter 6) and association is far from supporting this argument, however; in fact, much of the evidence (summarised by Merrilees 1966) adduced in support of it demonstrates much more convincingly the status of the Philia-related sites in the Ovghos valley as a regional focus within an island-wide cultural stage of which there are several other known manifestations. Complementary to the heavy concentration in the Ovghos valley of those features (particularly the broad, flat vessel bases) hitherto described as diagnostic of the Philia Culture are a number of sites at which Philia-type features are found associated with other material of no specifically Philia affiliation. To the material listed by Merrilees (1966) from Kalopsidha, Ayia Paraskevi, Vasilia, Arpera and Vounous can be added that from Polis (P.17; Nicolaou 1964), Sotira (L1.13) and Anoyira (L1.1), and probably also the Tomb 1 material recently reported from the Kourion Bamboula cemetery in the same area (cf. Merrilees 1974). Along with the ceramic material quoted by Merrilees should be considered the evidence of ornaments (variously called spindle whorls, beads, fish-amulets and pendants by Dikaios (1962) and Stewart (1962)) found on several of these sites.

These sites form two distinct groups in general - those in the north, centre and southeast of the island in which both Philia and North coast (Vounous) features are represented and those in the west and southwest in which Philia-type features occur either in isolation or in association with Erimi-type material. The grounds on which Dikaios ascribed Sotira and Anoyira to the Philia stage appear to be the single Philia-type jug from the only tomb excavated at the Kaminoudhia cemetery (Dikaios 1948) and a conical terra-cotta spindle whorl with incised circles, seemingly comparable to those found at Philia Vasiliko (Dikaios 1962, Fig. 84, 13, 14), which was handed in with stone axes, flints and a figurine, and probably with RP sherds, from a site near Anoyira (Li.1 and Catalogue Addendum). Although the Polis, Sotira and Bamboula evidence testifies only to the occurrence of Philia-type vessels in simple tombs, the presence of Philia-type features on settlement sites in the southwest is borne out not solely by the Anoyira evidence but by the abundant surface remains from the site of Kissonerga (P.5). Four stone biconical spindle-whorls with incisions of similar type to the Philia examples have been collected from the surface of this site (held in the collection of Mr. G. Eliades, who has confirmed their provenance, personal communication).

The three main varieties of pottery at Kissonerga and similar sites yielding large quantities of surface material (such as P.4, P.7) are a bright red fine RL ware, a duller RL ware and a painted pattern ware of which all the motifs can be directly paralleled at Erimi. Non-ceramic material at these sites includes abundant stone axes and adzes and picrolite ornaments and figurines which would also normally be referred

to the Erimi "stage". The bright red fine ware is closely comparable in quality and firing to early RP ware in the north of the island, only the colour of the slip differing. Now the visual distinction between early RP of EC 1 or the Philia culture in the north and the later RL of the Erimi Chalcolithic is far from clear-cut, as Dikaios (1936, 27, Type II) originally recognised. Such differences as have been observed usually consist in the quality of the clay used, which may be expected to vary by region. (For this reason a composite RL/P category has been used in the Catalogue where the distinction between RL and RP seemed arbitrary. The imprecision in defining the time-span of the period under consideration here (cf. Introduction to the Catalogue) is due to this lack of an unmistakable cut-off between the red monochrome wares of the "late Chalcolithic" and "Philia Culture" or EC 1 sites. Rather, as the argument in Chapter 2 emphasized, the search for a cut-off stems from attempts to define phases within the overall continuity of development into the EC period, a point further substantiated in Chapter 6).

Although very few complete shapes are known from the south-western sites, many of the morphological features characteristic of Ambelikou and the Philia sites, such as flat bases, raised lugs, either ledge or tubular, and vertical loop handles, are represented, especially at Kissonerga. The RP sherds at Paphos (P. 14) bear the pointillé lines and chevrons found on EC 1 sherds elsewhere in the island, but are associated with patterned or reserved painted sherds and a pointed base normally referable to an earlier date. The association of RW pots typical of Erimi with Philia-type pottery has been known ever since the recognition of the latter in the Vasiliko and Kyra Kaminia tombs, so

that the absence of painted pattern pottery at such sites as Kyra Alonia is as likely to be of cultural as of chronological significance, unless no more than an indication of inadequate sampling. Moreover it is the combination of a long-spouted jug with a flat base (which the long spout requires for balance) which is distinctive about the Philia material and not, as usually claimed, flat bases in themselves since these are well-documented at Erimi (Dikaios 1936, Fig. 11, F,G,K,L and Pl. XVI) and other "Chalcolithic" sites, for example Ambelikou (Dikaios 1962, Fig. 68).

Equally important in relating different areas of the island is the evidence of beads and amulets. The shell and stone pendants from Philia Vasiliko (Dikaios 1962, Fig. 84, 18-24) compare well with those in stone from Ayia Paraskevi (Stewart 1962, Fig. 105, 10-12) which in turn are an elaboration, through thinning and removal of the centres, of the pear-shaped pendants at the same site (Stewart 1962, Fig. 105, 7 and 9). With the latter should be compared those from several "Chalcolithic" sites (e.g. Erimi, Neokhorio (P.8) and Kissonerga) and the rather rougher stone pendants found in the cemetery at Souskiou (Nicolaou 1973, Pl. 84, Fig. 39b), from which many shell examples of the Philia pendants referred to above have been recovered (in the Pierides Collection, Larnaca). This important site demonstrates the association of tombs which would elsewhere be assigned to the EC period with painted pottery comparable with Erimi, cruciform figurines characteristic of the "Chalcolithic" and a copper spiral ornament (Maier 1973; D. Christou, personal communication).

The distributional and associational evidence briefly reviewed here strongly suggests that the northern and southern materials under discussion stand in a homotaxial relationship to each other, rather than a chronological one as usually argued.

In other words, the contexts which have been hitherto referred to a "Philia Culture" are in reality manifestations of a single island-wide stage of which the material described in the preceding paragraphs represents the southwestern component. The Philia Culture is therefore essentially a local regional phase centred on the Ovghos valley, and not a chronological stage. The logical consequence of treating regional phases as island-wide stages lies in the need to postulate depopulation of a region where the material of one "stage" is not represented. Thus the Paphos district has been considered to have been depopulated during the EC 1 period (Catling 1963) for the virtual lack of the finer RP ware characteristic of the north and centre of the island. Merrilees (1966, 35) had to come to similar conclusions about the area of his "Chalcolithic III" sites since it failed to exhibit the succession found at sites elsewhere in the island. With the recognition of the phasal nature of several "stages" currently in use, the present chronological "gaps" are explicable in terms of geographical distance between several regional foci of broad contemporaneity. "Broad contemporaneity" here means an approximate equivalence in time such that any discrimination between the foci in material content cannot justifiably be ascribed to chronological distance.

An apparent objection to the proposed broad synchronism lies in the 200 year gap referred to at the start of this section which absolute dating suggested there existed between the Erimi and Philia "stages". However, neither the c. 2500 B.C. date for the end of Erimi nor the 2300 B.C. date for the start of the Philia culture are inherently accurate within ± 100 years, whatever the true calendrical relationship between C14 and historical years. The current inaccuracy of C14 dating over this time-span and

the ambiguous nature of the cross-datings available for the Philia material (Hennessy 1974; referred to in 3.1) render the figure of 200 years of quite spurious precision. While dating refinements may well eventually establish an absolute time-difference between occupation of the site of Erimi and use of the Philia Vasiliko tombs, the gist of the argument presented in this section is that the evidence from those sites and others culturally related to them cannot justifiably be used to support any major chronological differentiation which is not more plausibly to be attributed to the continuing development of regional traditions within the island.

This extended example showing some regional differentiation enshrined within the current chronological framework must prompt a reconsideration of the logical basis of that framework. The following sections examine the prerequisites for successful seriation of the Cypriot material, leading to a composite picture of alternating regional pottery traditions in the island, within which the example discussed above forms one component.

3.4.2 Dikaios' wares as classes for seriation.

Although Dikaios considered other material, notably architectural features, in ordering his sites, the following discussion concentrates on pottery because it remains the material most commonly used to this end and illustrates most effectively the value and limitations of seriation. These have been expounded recently by Dunnell (1970) and McNutt (1973), two papers which are virtually alone in the extensive seriation literature in evaluating the method of seriation rather than developing more sophisticated versions of its technique. The necessary conditions under which seriation is an appropriate method (Dunnell 1970)

are similar for both occurrence and frequency seriation but the latter requires further conditions which are particularly hard to satisfy (McNutt 1973).

The three conditions to be fulfilled by any groups to be seriated are that the groups (in this case pottery assemblages) (1) must be of comparable duration, (2) must belong to the same cultural tradition and (3) must come from the same local area (Dunnell 1970, 311). As regards the first condition the comparison of excavated with surface collections is especially dubious unless the duration of the sites yielding the collections can be estimated. For the comparison of excavated sites alone, this condition is particularly crucial for frequency seriation in making unique assignments of relative order.

The second condition, of belonging to the same cultural tradition, is a relative one, and can be satisified if all the classes being used (e.g. the pottery wares defined by Dikaios) are relevant to all the groups being seriated. The site of Dhali Agridhi (N.2) constitutes an apparent exception to this rule since its pottery is distinct from the wares defined by Dikaios (Lehavy 1974). However it bears a generic resemblance to the dark burnished ware excavated at Philia A (Watkins 1970) where it seems to develop into the wares which do come under Dikaios' classification. Dhali can therefore be considered within the same cultural tradition although antecedent to the majority of it, and so this condition can be fulfilled.

The third condition, that all groups must be from the same local area, is also a relative one since impossible logically to satisfy. Since variation is bound to occur along the spetial dimension as well as the temporal, the only circumstance under which spatial variation may be excluded lies in a set of stratigraphi-

cally superimposed units, in which case seriation would be unnecessary. The condition can be satisfied relatively by using classes which have distributions which are primarily the result of change through time and only minimally through space (Dunnell 1970, 315). It is the lack of control over spatial variation which has created difficulties in construct-in a prehistoric sequence in Cyprus and which the application of radiocarbon dating is beginning to point up.

Since the object, both past and present, of seriation of the prehistoric material has been not only to order exising groups but also to assign groups not included in the original seriation, groups must be ordered according to intentionally defined classes. These classes are deliberately chosen to represent features of limited historical or temporalduration. Now the wares identified by Dikaios which still form the basis of pottery classification for the period are defined on the grounds of their surface treatment. The identification of these wares in fact makes use of classes with subclasses as variants either in surface slipping, painting or firing treatment (Fig. 3.3), demonstrating a homogeneity of tradition in pottery decoration and hence providing strong support for the requirement that all groups being seriated should belong to the same cultural tradition.

All of Dikaios' wares can be logically incorporated into this stepwise analysis of the production process, as exhibiting purely secondary functional variation (cf. Binford 1965). Thus the system currently in use to identify wares is essentially a tree-type classification of this kind and not, as sometimes conceived, a series of types each consisting of an attribute cluster, which, as Whallon (1972) suggests, are of uncertain

utility for analytical pruposes.[1] Within this homogeneous tradition there are two main broad Classes, respectively with a red slip (Monochrome) and with red painted pattern (Patterned), within which the other wares represent subclasses.[2] Wares which lack any painting or decoration constitute a third Class, which is conveniently termed Coarse although it is this negative feature rather than specific connotations of coarse fabric which is the defining characteristic of the Class.

The division into the two main Classes, Monochrome and Patterned, finds a logical basis in the decision of the potter at the painting stage whether to cover the whole vessel with a red slip or to create a painted pattern. Since all secondary decoration must be effected on a vessel already bearing a monochrome slip or painted pattern, the Subclasses Cb and RR belong to the Monochrome Class and the Subclass Pcb to the Patterned Class. Although the technique of combing is common to Cb and Pcb, it is a secondary decorative technique, and the two Subclasses must be distinguished on the basis of their Class affiliation. In parenthesis, because the Classes and Subclasses are all defined in terms of surface decoration, they can be used analytically to examine the distribution and interaction of ceramic traditions even though originally defined for taxonomic ends, that is for seriation. This double role of the wares defined by Dikaios is fortunate for present purposes, not least since they must of necessity be employed for those assemblages excavated and published by him, unless these collections are to be analysed afresh with different classes in mind.

The continued use of 'Dikaios' classes for seriation of more recently collected material, and for analysing the Swedish

collections, presupposes the identical attribution of wares to classes by all observers. For occurrence seriation this problem is less serious than for frequency seriation where correct proportional identification of wares is essential. Even for occurrence seriation, however, this condition has not been met since Dikaios' RS Subclass has been dropped by current workers for difficulty of distinguishing it from RL, while other Subclasses such as CR and RL/P (and DFBW) have been created on empirical grounds (as in the Catalogue). The CR Subclass includes those sherds of coarse fabric with a thinned red wash; on the basis of the fabric, this ware is less similar to Dikaios' RS than to Coarse ware, which may in many cases have lost a red wash it once had (e.g. at Erimi (Dikaios 1936, 38) and at Kythrea (Gjerstad et al. 1934, 297). The RL/P category was introduced here to classify sherds which could not be discriminated between the published descriptions of RL and RP wares. While emphasizing the continuity in technical development between these two wares, this hybrid category clearly causes problems in the assessment of ware frequencies. Because of the difficulties over discrimination between red monochrome wares and because they are not of limited historical duration, they are not used here for occurrence seriation and are included under the general Monochrome Class for frequency seriation.

The number of CR sherds listed in the Catalogue is few, and the Coarse Class would not be greatly increased by adding to it CR sherds, though this has been done where relevant. Furthermore, the RBL Subclass cannot be reliably used for occurrence seriation in view of published descriptions. Although no separate RBL category was defined, Red and Black Lustrous

sherds were evidently found at Erimi (Dikaios 1936, 27) and at Sotira (e.g. under Cat. nos. 597, 600, 607, 146 etc. in Dikaios 1961a), but included under RL, although one sherd (Cat no. 472) was ascribed to a Red and Black ware (1961a, 71). Blackened areas on RW and Cb sherds are also reported from Sotira (e.g. under Cat. nos. 600, 607, 454, 50, etc.) which presumably testify to firing accidents. This is sufficient to raise doubts about the exact comperability of collections analysed at different times, including those by the same observer (cf. the discussion of Lapithos and Kythrea ware-class in 3.4.4).

The discussion hitherto has assumed the correct attribution of sherds to Subclasses if the significatum of each Subclass is clearly defined. However, further problems in sherd identification are raised by the loss of paint through weathering, the small size of many sherds and the differential breakage of various wares. These problems are again much more crucial to frequency seriation and, in the small samples which alone are often available, they can lead to quite erroneous results. Table 3.4 gives some examples of potential mis-attributions of

		Classes			
		RW	Pcb	Cb	RL	PW
	RW		X		X	
Sherds	Pcb					
	Cb		X			
	RL	X	X	X		
	PW	X	X	X	X	

Table 3.4 Potential mis-attributions of sherds to wares.

sherds to wares either through loss of paint (especially in the case of PW sherds) or through the examination of a sherd too small to be representative of the whole vessel (e.g. a Cb sherd may come from a Pcb vessel).

The differential treatment of the interior and exterior of vessels (Table 3.5) is a further source of error if one or other surface is unidentifiable. In such cases the use of positive criteria, e.g. the presence of certain attributes such as combing, ensures consistency of attribution without guaranteeing its correctness. Differential breakage has to be assumed not to have been operative for frequency seriation but the greater friability of Coarse ware is undoubted. These factors affecting identification should not be over-emphasised, but have to be taken into account for the potential validity of frequency seriation (discussed in 3.4.4).

	RW	Pcb	Cb	RL
RW				
Pcb	X			
Cb	X	X		
RL	X		X	

Table 3.5 Differential treatment of interior and exterior of single sherds reported from Sotira. Source: Dikaios 1961a.

3.4.3 Occurrence seriation of excavated sites.

In seriating excavated sites on the simple occurrence of chosen classes, the great disparities in the area uncovered at different sites, and the varying amounts of published information about them, are less important than for frequency seriation.

The following discussion includes sites which have been extensively excavated, sounded with one or two trenches, or which have cemetery evidence alone. Although there is some risk of semple bias under these conditions, the seriation aims to achieve only what it claims, namely rank the sites according to the occurrence of the chosen classes, and is therefore limited to the information at hand. The cemetery at Younous has been included in the occurrence seriation in order to demonstrate the continuity of pottery traditions into the EC period, a continuity best demonstrated by those wares (RL/P, RBL, RW/WP) which are not included in the seriation for just that reason, namely that they are of continuous duration in time. The classes used in the seriation and the significatum (defining characteristic) of each class are as follows:

Painted and combed. (Pcb). Red painted pattern of which some has subsequently been combed.

Combed. (Cb). Red slip subsequently combed in part.

Red on Red. (RR). Red painted pattern on red slip.

Relief/Incised. (R/I). Decoration added in clay or incised into clay.

Black Slip and Combed. (BSC). Red slip covered by black slip subsequently combed to expose red slip.

Reserved slip. (Res. sl.). Buff slip covered by red slip subsequently wiped in pattern to expose buff slip.

These selected historical classes represent variants in surface decoration. Relief or incised decoration, which is recorded in the publication of the sites concerned (although the Philia B evidence is inadequately known), occurs on Monochrome sherds. The two techniques are here combined in one

class since of rare occurrence, although few sites have published examples of both. BSC and Res. sl. (at Vounous) are valid historical classes althoggh technically related to Cb and Pcb; they are distinct variants of them, however, in that BSC uses a black slip (the single Bcb sherd from Sotira being quite incomparable in fabric and firing, cf. 5.6 below), and in the broad wiping of Res. sl. in contrast to the multi-pronged combing of Cb and Pcb. The re-emergence of earlier techniques (e.g. BSC, Res. sl. and White Painted (=RW) at Vounous and elsewhere), often with new recombinations of elements or with an unusual twist added to an otherwise dying form, is a well-known phenomenon (Rands 1961) and no absolute chronological break between earlier and later variants need be postulated, as Stewart (1962, 230) and others have recognised.

The classes in Table 3.6 have been listed in order to produce a pattern as close to the ideal petrified sequence as possible. On the basis of radiocarbon dating (3.1) and of the historical cross-dating of Vounous, the order produced by the seriation may be inferred to be broadly chronological (as illustrated, from earliest to latest). However, the order is of groups of internally indistinguishable sites rather than a strict chronological sequence.

Other attributes of pottery, notably morphological, stylistic and decorative features, have been referred to in the past for the purposes of ordering pottery assemblages, but their explicit definition and use in a demonstrable seriation has never been attempted in print, and their utility remains untested. For example, an overall trend within the period from shallower, open vessel forms to deeper lugged shapes has been noted by several authors but few of those attributes

	Pob	Cb	RR	R/I	BSC	Res. sl.
Aylos Epiktitos	X	X				
Philia Drakos A	X	X				
Sotira	X	X	X			
Khirokitia	X	X	X			
Kalavassos A	X	X	X			
Kalavassos B	X	X	X	X		
Erimi		X	X	X		
Lapithos East				X		
Kythrea				X		
Ambelikou				XX		
Philia Vasiliko			X	X	X	
Philia Drakos B				( )	X	
Kyra Alonia				X	X	
Vounous				X	X	

Table 3.6 Occurrence seriation of some excavated sites, using decorative modes.

listed in the Code in the Catalogue can in fact be shown to be of the short historical duration needed to seriate sites effectively. Thus rounded, flat, flange and concave bases (Code nos. 2a,b,c,e,f), straight, everted and diverging rims (Code nos. 3b,c,d), tubular and bridge/cutaway spouts and funnel necks (Code nos. 4b,c,d) occur on both earlier and later sites (as ordered on independent criteria) and may be suspected to do so on others which are not adequately published. A frequency seriation of such features might well give substance to the observed trend (e.g. in increasing numbers of lugs through time) but the available evidence, especially the rarity of complete vessels, does not permit its construction. The only morphological features

whose simple occurrence appears to be of limited duration seem to be open spouts (Code no. 4a), knob bases (Code no. 2d) and loop handles (Code no. 6a, to be distinguished from perforated lugs) (Table 3.7). The pointed base from Sotira (Dikaios 1961a, 142, no. 660) is not strictly comparable to the other examples; the Philia Drakos B evidence is again inadequate to ascertain whether loop handles are represented. On the evidence of the ware seriation presented above and independent absolute dating, open spouts are characteristic of the earlier range of sites, knob bases of the intermediate and loop handles of the later range.

	Open spouts	Knob bases	Loop handles
Ayios Epiktitos	X		
Philia Drakos A	X		
Khirokitia	X		
Kalavassos A	X		
Sotira		(X)	
Kalavassos B		X	
Erimi		X	
Lapithos East		X	
Kythrea		X	
Ambelikou		X	X
Philia Vasiliko			X
Kyra Alonia			X
Philia Drakos B			( )
Vounous			X

Table 3.7 Occurrence seriation using selected morphological attributes.

The use of attributes of style (the disposition of decoration over a vessel surface) and decoration (particular motifs and designs) have not yet been shown to be suitable for seriation purposes. Several authors have noted an overall trend from earlier painted vessels with expansive motifs spread over most of the vessel surface to later vessels characterised by the scattered disposition of few, more delicate motifs over large areas of buff ground. Certain individual patterns, such as the ripple pattern identified at Philia (Watkins 1970) do seem to have a limited historical duration (in the earlier range of sites in the case of ripple painting). But many of the motifs described as characteristic of one phase (e.g. circles, lattices, chevrons) and the contrasting painting styles can be shown to exist at most sites with adequate material. If painted patterns or styles are to be used as classes for seriation, rather than as indicators of continuous potting traditions for which they are perhaps better suited, their treatment requires much more systematic study than that received hitherto.

Since the primary aim here is to provide a basis for seriation of the sites in the Catalogue, the extreme rarity of identifiable historical classes whose occurrence alone can be used to this end is a serious drawback. It serves to emphasise the homogeneity of ceramic traditions during the period, such that minor changes in the frequency of different attributes are characteristic, rather than rapid shifts to new ones. The close technical relationships of the wares produced (cf. Fig. 3.3 above) is matched by the lack of abrupt change in the shapes recovered .

Elements of continuity in technique and vessel-shapes between sites generally considered to belong to different phases

are also demonstrable at a more detailed level with specific examples. The use of sticks in constructing the necks of jugs, for example, is documented at Ambelikou (Dikaios 1962, 144), Sotira (1961a, 176, n.1) and Khirokitia (Dikaios 1953, Pl. LXX, 451). The "unique" black slip of Sotira (Dikaios 1961a, 187) is in fact recorded from Erimi too (Dikaios 1936, 27). Rectangular or "elongated" vessels, though rarely illustrated, are reported from Sotira (Dikaios 1961a, Cat. no. 780 (Cb. ware) and perhaps Cat. no. 425s (a fragment of a vessel with angular sides and a kind of outlet (?) in Dikaios 1961a, 171 and 45 respectively), Ambelikou (1962, 143 of RL ware) and Erimi (Dikaios 1936, 27 (RS Type IIId) and 28 (RW shape 1)). Moreover, the seemingly unique tripod stand from Ambelikou (1962, 144, and Fig. 69) finds possible parallels in legged objects found at Troulli (1962, 71 and Fig. 36, 23); Erimi (1936, 39, Fig. 11, S and I (ware not specified)); Sotira (1961a, Cat. no. 755s "part of a stand with part of one leg painted red and of the ring on which are parallel curved bands"); Lapithos (a RW base with four projections, Gjerstad et al. 1934, 29); and Kythrea (small knobs rarely used as stands for bowls and probably a tripod base of RP; Gjerstad et al. 1934, 297). It is these rare atypical finds, often not fully published because each is seemingly unique, which help to document the inter-relationships between sites often considered to be of unrelated cultural spheres. Their very rarity may suggest production at single centres or in one region only, but in being found throughout the island, they too emphasise the homogeneity of the cultural tradition of the time.

This homogeneity, apparent not only in their pottery wares but in such details as architectural construction techniques,

hut installations and small finds including beads, which is represented at such sites as Sotira, Aylos Epiktitos Vrysi, Philia A and Troulli is now being recognised (e.g. Peltenburg 1972, Watkins 1969). On the strength of these detailed parallels, the single radiocarbon date for Philia is quite credible in assigning this site a late 4th millennium b.c. date.

Further support for this homogeneity can also be adduced by plotting the dimensions of vessels in different wares found at different sites (Figs. 3.4 and 3.5). The sample on which this is based is very uneven, consisting entirely of those vessels sufficiently complete to be reconstructed and whose dimensions are either published or can be estimated from published drawings. The accuracy of the latter is variable when they can be compared with published dimensions, and so the plots in Figs. 3.4 and 3.5 are designed only to convey overall trends rather than precise detail.

Sources for vessel dimensions used in Figs. 3.4 and 3.5:

Aylos Epiktitos: Peltenburg 1972, Fig. 5.

Philia: Watkins 1970, Fig. 1.2; 1969, Fig. 2.3.4.5.

Sotira: Dikaios 1953, Catalogue nos. 496, 1045, 1169, 939.

Erimi: Dikaios 1936, Pl. XXVI.

Kalavassos A: Dikaios 1962, Fig. 53.

Kalavassos B: Dikaios 1962, Fig. 64.

Kyra Alonia: Dikaios 1962, Fig. 72.

Souskiou: Maier 1969, Fig. 1.

Kythrea: Gjerstad et al. 1934, 292-4 & Pl. XIII.

The plots in Figs. 3.4 and 3.5 demonstrate within-site homogeneity in vessel-size independent of surface treatment and between-site homogeneity of vessel size regardless of area. That is, vessels of open or closed shapes which are of comparable

dimensions may have RL, RW, Cb or Pcb surface treatment, and such vessels may have been found at sites on opposite coasts of the island. This is equally true of the Philia DFBW deep bowls which, contrary to Watkins' claim (1970) of their basic difference in size from previously reported types, are of comparable dimensions to the smaller Sotira RL vessels. The sample is too small and uneven for finer analysis, but it is interesting that the Pcb and RW bowls at Sotira, which are argued in Chapter 5 not to be of local origin, tend to smaller forms than the RL and Cb from there assumed to be of local manufacture.

Comparison of Fig. 3.4 with 3.5 demonstrates clearly the trend during the period to deeper bowls and large storage vessels. Open and closed forms outside the lower end of the size-range are grouped in distinct clusters in Fig. 3.4 whereas in Fig. 3.5 the majority of vessels form an intermediate group between these two clusters, indicating forms of more nearly equal height and maximum diameter. The single examples of closed shapes from Kythrea and Souskiou (Ht. c. 60 and c. 30 cms. respectively) are piriform jugs which compare very closely in size with similar forms from Erimi.

This approach demonstrates once again the similarity of cultural tradition common to diverse parts of the island (north coast, Ovghos valley and southern river-valleys), a tradition which continues throughout the period with only minor shifts towards different decorative modes and vessel forms. The changes which are detectable, however, do not occur at comparable rates throughout the island. It is in the assessment of their significance that the nature of the inter-relationships between different areas of the island is most clearly revealed, through

examining the limitations of frequency seriation.

3.4.4 The limitations of frequency seriation: within-site ware changes.

The basic assumption of frequency seriation is that the distribution of any historical class exhibits the form of a unimodal curve through time. Granted this assumption, the conditions to be fulfilled for frequency seriation to be feasible amount to the selection of valid historical classes (itself involving a self-fulfilling assumption), and the use of groups of a similar duration in time, from the same cultural tradition and from the same local area (Dunnell 1970). However if no independent chronological control is available, the very nature of percentage calculations of frequencies renders the unimodal curve assumption self-contradictory if only two classes used. It can also produce quite erroneous results for Subclasses if their frequencies are computed by reference to the total collection (McNutt 1973). The use of a Subclass frequency within one collection for comparison with that Sub-class's frequency in other collections may be quite misleading unless each is expressed as the frequency within its class. Only when raw counts in numbers are available can this situation be identified and controlled for.

In assuming the one-for-one replacement of one attribute by another, frequency seriation as a technique is designed to minimise the anomalies in actual attribute collections which seem not to conform to its assumptions when seriated. It is in acting to make different collections conform to the unimodal curve pattern that quite erroneous orders can be produced if raw counts are not available so that the actual representation

of wares in different collections can be checked. In the face of these difficulties over the methodological validity of the method, a preliminary task is to examine the actual frequency of wares in collections which are independently ordered, of which stratigraphically ordered units form the most suitable controls. Only after the dynamics of ware-changes at single sites have been established by independent means can examination of the three pre-conditions determine whether frequency seriation of unordered collections is feasible.

The majority of those ware-frequencies for sites excavated by Dikaios are published without any indication of the raw counts on which they are based. Moreover the particular nature of the excavated areas to which they refer render them liable to serious sample bias. The small soundings at Troulli, Ambelikou and Kyra exemplify the interdigitation problem, in that wares fluctuate widely in frequency between level and even "disappear" and "appear" in later levels. For these three sites and for Erimi, where a larger area was excavated but still only a small proportion of the total site, ware-frequencies are usually quoted as ranges between several levels rather than for each level separately. Without any knowledge of the sample size involved, acceptable sampling error is difficult to distinguish from significant changes in ware-frequencies. At the two Kalavassos sites frequencies are given in full for each level but they refer only to the successive deposits of a single pit-dwelling at each site, the pottery of which cannot be assumed to be representative of the whole duration of the site. These serious drawbacks to many published figures must undermine the faith sometimes placed in them hitherto for drawing conclusions about cultural and historical processes.

There are four sites only for which the published evidence is adequate to compile raw counts of sherds, namely Sotira, Lapithos East (K.28), Kythrea (N.17) and Khirokitia. The latter (Dikaios 1953) is of limited use, however, since no stratigraphic separation of different levels is now possible and the sherd-counts are of composite contexts including surface finds. The raw counts and percentages of different wares at Sotira, Lapithos and Kythrea (Tables 3.8 - 3.10) are available or can be reconstructed from the site publications (Dikaios 1961a, Gjerstad et al. 1934, 30-31 and 300). The phases at Sotira in Table 3.8 are those identified and documented in detail in Chapter 5. The Lapithos phases are synonymous with the Strata identified by the excavator and supported by the sectional evidence as representing four superimposed units sealing the earlier bothros. The Kythrea phases amount to the Periods identified by Gjerstad on stratigraphic grounds, to each of which two or more hut floors could be assigned. Strata 5 and 6 have been combined here as one since the small samples from each belong to successive layers of the same hut (III).

The Sotira ware-frequencies in Table 3.8, computed by reference to the total assemblage of each phase, show a complete lack of significant change during the duration of the site in the production of the three major Classes. These Classes consist of Patterned (RW, PW, Pob), Monochrome (RL, RS, RR, Cb, Bob and the blackened wares BL, RBL, and GL) and Coarse (C). The unchanging pattern of production is such that the composite frequencies obtained by amalgamating all sherds from the site is indistinguishable from those of any one phase. The social context within which this remarkable consistency of ware-production was maintained is examined in Chapter 5.

	Cb	Peb	RW	RL	PW	RS	C	RR	BL	RBL	GL	Ecb	Total
N.	768	26	49	1154	6	14	255	1	2		4		2279
Phase 1													
%	34	1	2	51	-	-	11	-	-		-		100
N.	4491	173	328	4940	12	818	1395	2	4	1	154	1	12309
Phase 2													
%	36	1	3	41	-	5	13	-	-	-	1	-	100
N.	733	24	52	804	1	102	254		1		17		1988
Phase 3													
%	37	1	3	41	-	5	13		-		1		100
N.	5992	223	429	6898	19	934	1904	3	7	1	175	1	16576
TOTAL													
%	36	1	3	42	-	6	11	-	-	-	1	-	100

Table 3.8 **Frequency of wares at Sotira, by phase.**

	RP	PW	RW	Total
N	1151	475	393	2019
Phase 1				
%	57	24	19	100
N	937	370	284	1591
Phase 2				
%	59	23	18	100
N	835	387	208	1430
Phase 3				
%	58	27	15	100
N	202	86	27	315
Phase 4				
%	64	27	9	100
N	3125	1318	885	5355
TOTAL				
%	58	25	17	100

Square		RP	PW	RW
D3	N	465	198	137
	%	58	25	17
E3	N	1055	432	307
	%	59	24	17
D5	N	692	273	202
	%	59	24	17
E5	N	913	415	266
	%	57	26	17

Table 3.9 **Frequency of wares at Lapithos, by phase and square.**

The Lapithos statistics (Table 3.9) document a similar homogeneity of ware-production during occupation of the site, despite appearances to the contrary. Comparison of the statistics for the four phases seems to demonstrate a gradual decline in RW, especially in the final Phase 4, relative to RP and PW. (The higher proportion of RW in the pre-Phase 1 bothros may be due to other factors such as preferential deposition, as Gjerstad suggested). However the decline in RW is clearly correlated with sample size and cannot simply be attributed to decreased production. A contributory factor may be the difficulty of ware identification. The PW buff slip is said sometimes to be a brownish-yellow, forming a transitional type between PW and RP wares and Gjerstad noted (1934, 28-29) how RP which lost its slip could be mistaken for PW. Of the Kythrea wares classified under the same categories (Gjerstad 1934, 296-8), the PW is said to be covered by a light red (sic) or buff slip usually thicker than the wash of the RP ware. (The few PW sherds illustrated from Lapithos (1934, Pl. X,1) appear to have some paint on them.) Given this overlap of technique and the tendency for slips to flake off (Gersted 1934, 28), the RP and PW wares may best be thought of as a composite Monochrome Class.

The loss of paint on RW sherds would lead to their classification as PW or RP (i.e. as RP sherds presumed to have lost their slip). The small sample of sherds from Phase 4, in which the decline in RW is most marked, come from only two Squares where Stratum 4 was preserved under the surface layer (1934, Plan IX, Section V), where loss of paint would have been most common. The relative increase of PW sherds in the top layers of a site is well documented at, for example, Erimi (Layers 0.40m. - surface), Kalavassos B (Layers 0.80m. to surface) and Troulli (0.60m.-0.40m., although sampling problems are paramount at

this site). At Erimi and Kalavassos B, however, the increase in PW is correlated with an increase in RW at a time when RW pots are characterised by relatively few painted motifs over an extensive buff ground. These two factors, loss of paint and the low motif to background ratio, may both affect adversely the number of sherds actually identified as RW at Lapithos (and at other sites), while the production of RW had in fact remained constant. This conclusion is strongly supported by the ware-frequencies by phase in each of the 2m. squares, which show that the Phase 4 deposits alone are significantly anomalous. The frequencies of wares in individual squares with all phases combined is constant, being identical with the result obtained by amalgamating all the sherds from the site. In short, then, the decline in RW during the site's occupation is illusory, being due solely to sampling, and perhaps also to identification factors.

The samples from Kythrea (Table 3.10) are much smaller than those from Lapithos or Sotira, and more variable in quality. The

		HP	PW	RW	T
Phase 1		-	-	-	-
Phase 2		(350)	18	2	(370)
	%	95	4	-	100
Phase 3		418	114	4	536
	%	78	21	1	100
Phase 4		250	70	12	332
	%	75	22	3	100
Phases 5 & 6		37	37	3	77
	%	48	48	4	100
TOTAL		712	219	21	952
	%	75	23	2	100

Table 3.10. Frequency of wares at Kythrea, by phase.

RP count from Phase 2 (Phase 1 had no sherds) includes several complete or fragmentary vessels reported from Stratum IVB, of which five produced a total of c. 335 sherds (Source: Catalogue of Finds in Gjerstad, 1934, 286-295). The reported occurrence of a red slip on some PW sherds, and the same difficulties over loss of paint as at Lapithos, make a distinction between PW and RP particularly problematical. In view of the probably distortion caused by the exceptional number of RP vessels from Stratum IVB and the small Phase 5 and 6 samples, there is no good evidence for any marked changed in ware production during the duration of the site, with RW forming a constantly small proportion of the total assemblage.

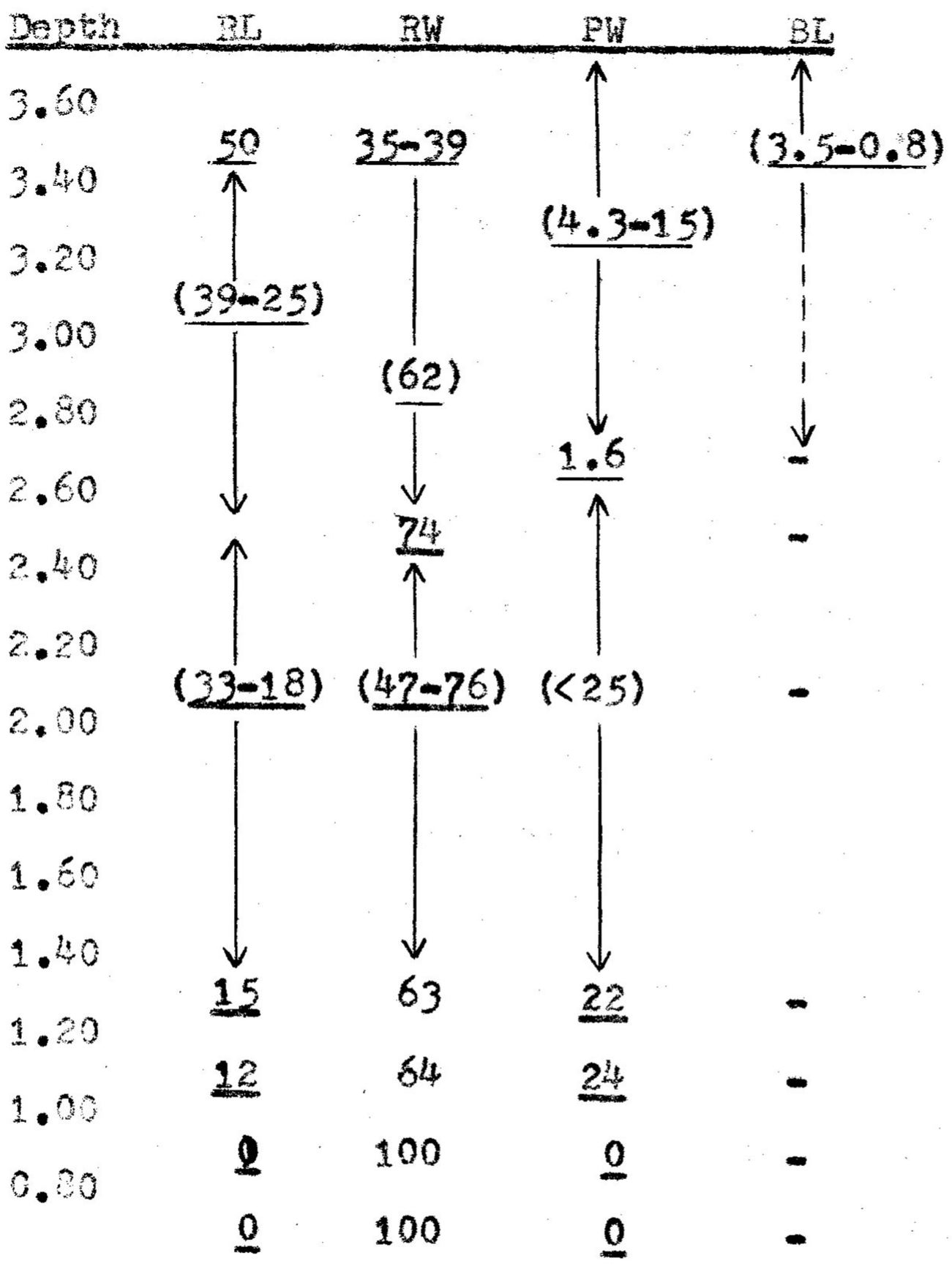


Table 3.11 Ware frequences at Troulli. Published figures or ranges underlined.

Because sample sizes and hence raw counts are unknown, and because of the sampling problems already noted, the frequency statistics from Dikaios' other published excavations can give only a broad indication of changes within pottery assemblages at those sites. For example at Troulli (Table 3.11) the overall trends in ware frequencies from the stratified deposit of the deep sounding can be identified from the published information and some simple arithmetic. If anomalous fluctuations are attributed to sampling error due to the small area excavated, the figures appear to document a gradual but consistent change from roughly equal proportions of Monochrome and Patterned wares to exclusively Patterned wares at the top of the sounding, as Dikaios noted. (PW seems to increase as RW predominates and its sherds may well come from RW pots, either from unpainted areas or where the paint has been lost). Because Monochrome wares disappear completely, the possibility that the observed change is due solely to increased RW production can be ruled out. Insofar as the results of the sounding may be representative of the whole ceramic occupation of the site, the consistency of the observed trend argues for continuity of production on the site and hence continuous occupation.

The sample from Ambelikou is liable to the same limitations as that from Troulli with the added disadvantage that with seven different wares being reported, the published information is quite inadequate to identify significant trends at the site. It is clear, however, that over 90% of the pottery was in the Monochrome tradition since a range for the frequency of Patterned wares (including PW) can be reconstructed from Dikaios' figures (Table 3.12). Within the Monochrome Class, the marked increase in RBL during the site's occupation noted by Dikaios is plausible,

since although BP and RB wares are also simultaneously varying, their quantities are evidently very small. Without any indication of raw numbers, the actual dynamics of ware-changes within this Class cannot be deduced. The restricted nature of the sounding prohibits any reliable observation as to continuity of occupation, since the sudden increase in RBL at the 3.60m. level is not above sampling consideration. But the lack of any abrupt discontinuities in ware representation betrays some degree of permanence.

Depth (m.)	RW + PW	%	
4.60	5.28 - 3.28		
4.20	8.21 - 6.83		
	4.94 - 1.56		Stratigraphical break
2.80	3.27		
2.60			
1.20	1.19 - 0.51		
1.00	2.50 - 1.82		

Table 3.12 Frequency ranges of Patterned wares at Ambelikou

Although also open to errors of interpretation since recorded by ranges and by 20cm. levels, the sample from Erimi is much sounder because derived from a more extensive excavation and presumably of an adequate size to be representative of that area. The actual sample size is not stated but Dikaios (1936, 3) refers to "the overwhelming quantity of pottery finds" and "great quantities of sherds continually coming to light". Consequently the overall trend noted by Dikaios from predominantly Monochrome to predominantly Patterned wares (Table 3.13) may be accepted as valid. However, the correlation of the frequency-ranges with the

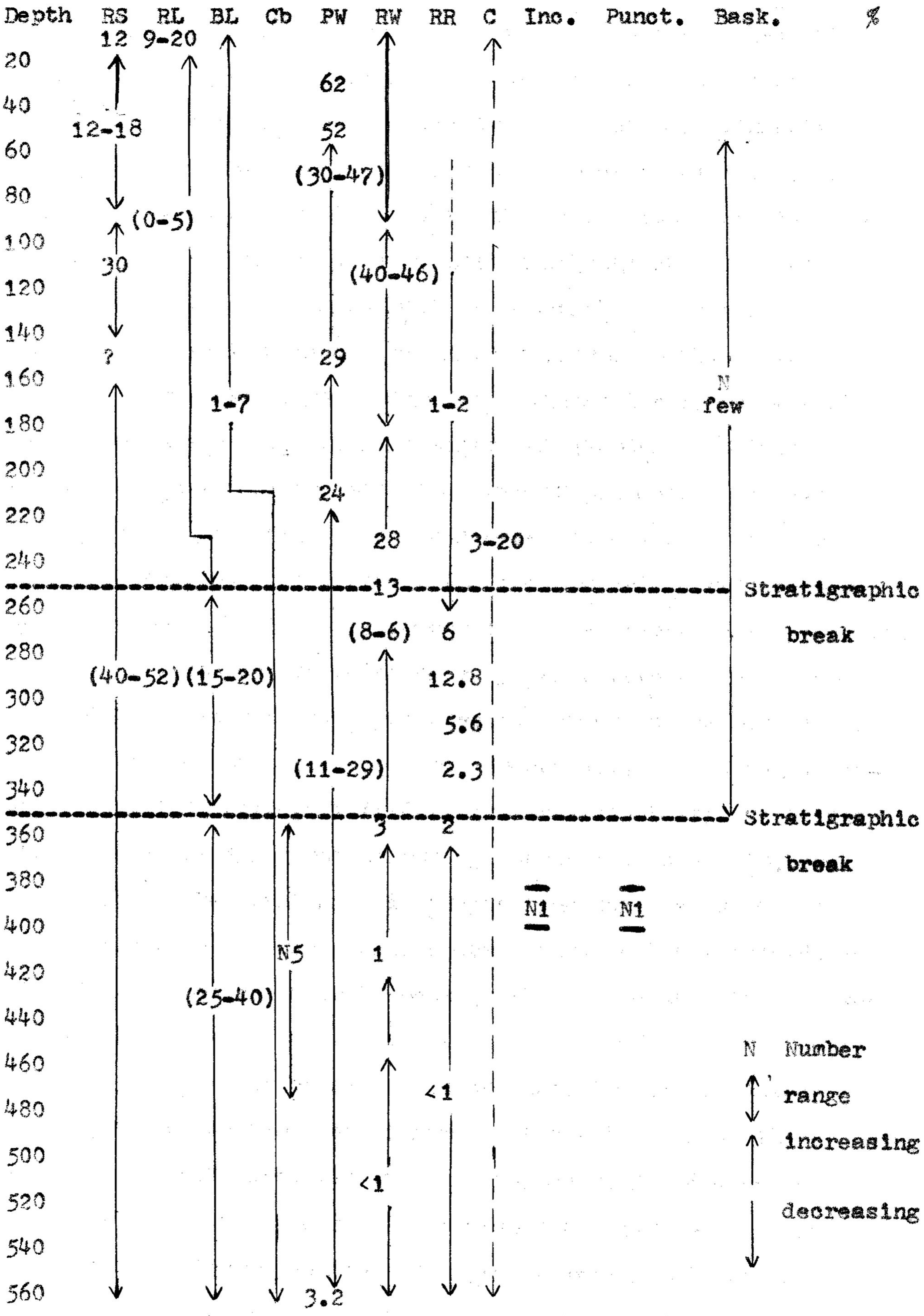


Table 3.13 Ware frequencies at Erimi

stratigraphic levels is more equivocal. The break between the initial hollow occupation and subsequent deposits is marked by the occurrence rather than the frequency of wares, namely the absence of Cb, Incised and Punctured sherds and the appearance of Basket wares in the post-hollow deposit. Otherwise the gross overall trend noted above straddles both stratigraphic breaks and argues for continuity of occupation on the site, even though the stratigraphy may document temporary within-site shifts in occupied areas. (Since the excavated remains at each level are consistently of structures and associated debris, there is less likelihood that the changes are due to differences in function of the area). The increase in RW ware starts when PW was already common; in fact, the peak in Red-on-Red, concentrated between the two stratigraphic breaks, represents the initial profusion of pattern painting on a red slip before the white-slipped wares were used. This observation has to be made in the absence of raw counts, of course. In summary, occupational continuity at Erimi is documented by the consistent overall trend, the RR unimodal distribution and the constantly small BL proportion; while the stratigraphic breaks find some basis in the occurrence of minor wares and, conceivably, in the abrupt fall-off of RL and increase in RW between the middle and final phases of the site.

The two Kalavassos sites are of limited value in this context since the published figures refer only to one pit-dwelling at each site, albeit described as representative. Even so, the figures do refer presumably to the wares in use and broken during occupation of a single structure. The Kalavassos A percentages, with the exception of Floor VI,

total between 98 and 99% only, and three of those at Site B total 93.0, 95.2 and 97.5% respectively. Nevertheless, such as they are, the figures for the Site A structure show that Patterned wares (RW) represent less than 5% of sherds found, while Cb forms a very small percentage within the rest of the sherd assemblage. In Hut VIII at Kalavassos B, on the other hand, much more Patterned ware is found showing a tendency to increase relative to Monochrome wares during occupation of the structure, while Cb is all but absent. However, there are extreme fluctuations in ware-frequencies in both these structures, probably due to the classification of relatively small samples of sherds among nine or ten different wares. The frequencies should only be used therefore as a rough indication of the wares in use in one structure of each site.

3.4.5 Regional Traditions as a basis for frequency seriation.

The examination above of published frequency statistics for excavated sites provides indications, despite their imperfections, of the extent to which they may reflect ware-changes within sites and therefore may be used for seriation purposes. The Sotira sample is the only large sample in which fluctuations in Subclasses can be identified within their Classes rather than within the assemblage as a whole. It shows that the apparent decline in RL is relevant only to the Monochrome Class, since the RS and GL wares are variants within that Class. In this example, then, the one-for-one replacement of wares assumed by frequency seriation seems to be demonstrated. The detailed statistics for some dozen wares, the majority of them minor ware subclasses, over the three phases emphasize the complete lack of marked change during the site's occupation, a feature observable

in the only other two samples, from Lapithos and Kythrea, for which raw counts are available.

On the strength of this evidence, frequency seriation would seem only rarely to be capable of distinguishing short chronological phases, and any application of the method must be concerned with much longer-term changes. In fact, when viewed over a greater duration than single site-sequences, some long-term changes in ware-frequencies are apparent which can be made the basis of an ordering method. The significance of fluctuations in ware Subclasses is liable to misinterpretation for the reasons outlined in the previous section, but the relative proportion of Classes, namely Patterned, Monochrome and Coarse, do provide a reliable criterion to this end. Equally important, they can generally be computed for most site assemblages of adequate size. Since the Coarse ware proportion at all sites remains more or less constant (c. 10-15% or less), the Monochrome:Patterned ratio promises to be the statistic most suitable to be calculated from the evidence usually available while least susceptible to the drawbacks of percentage expressions. It is also much less susceptible to errors introduced by the ware-identification problems discussed above than if Subclasses are involved. As a corollary to this choice of criterion, the self-contradictory nature of the unimodal curve assumption in two-class systems is accepted, so that frequency distributions through time of one Class may be expected to be bimodal, or even tri-modal, according to the fluctuating proportions of the two Classes over time.

The significata of the two Classes to be used for frequency seriation are as follows:

Monochrome: red slip covering all of vessel which may be blackened in parts.

Patterned: red paint added to selected areas of light ground.

Within each of these Classes, the frequency of Subclasses cannot usually be computed from the information available. But the frequency of such Subclasses as Pcb, Cb and RBL within the total assemblage may be used with caution to lend greater precision to results yielded by the use of Classes alone.

Before proceeding with any ordering of assemblages on this basis, the three conditions must be met. It was shown above (3.4.2) that excavated sites from three regions of the island (northern coast, central lowlands and southern river-valleys) shared a homogeneous cultural tradition. The groups to be seriated can therefore be accepted as having satisfied this condition.

The condition that the groups should be of equal duration is usually the most difficult to meet in combining surface collections with excavated assemblages in a single seriation. Since the condition is a relative one and since the evidence for the duration of the sites in question is extremely sparse, it can be satisfied so long as the possible differences in duration are not such as to affect the distribution of the denotata of the classes used for ordering (Dunnell 1970, 312). The relative depth of deposit of each occupation unit identifiable on stratigraphic grounds provides the most promising criterion of comparable duration in the absence of an independent chronology (with which seriation would be unnecessary). Comparison of those sites in which excavations have been made (Table 3.14) shows that very few sites have a deposit greater than 2m. in depth. Of those which have, phases can be distinguished within their duration

Site	Catalogue	Neolithic Deposit(m.)	Comments	Reference
Ayios Epiktitos	K.9	Total nearly 6m	3 phases	Peltenburg 1973
Troulli	K.23	2.60		Dikaios 1962: infra 3.3.4
Erimi	Li.4	Phase 1: 1.50		
		Phase 2: 1.00	Total 4.50	Dikaios 1936
		Phase 3: 2.00		infra 3.3.6
Ambelikou	N.1	Phase 1: 1.00	Total 3.40	Dikaios 1962
		Phase 2: 2.40		infra 3.3.5
Philia A	N.26	"Nowhere deeper than 2m."		Watkins 1970, 8
Sotira	Li.14	1.80		Dikaios 1961a
Kalavassos B	La.6	1.80		Dikaios 1962
Khirokitia	La.9	1.60		Dikaios 1953, Fig. 48; Stanley Price and Christou 1973
Ay. Epiktitos Mezarlik	K.6	1.60	Incl. topsoil	Dikaios 1936
Lapithos W	K.29	1.50		Gjerstad 1934
Nicosia Ayios Prodhromos	N.24	(1.40)	Incl. topsoil, bedrock not reached	Dikaios 1936
Kalavassos A	La.3	1.10		Dikaios 1962
Kyra Alonia	N.13	1.0		Dikaios 1962
Pyla Mandres	La.17	1.0		Dikaios 1936
Ay. Epiktitos Kelali	K.5	1.0	Incl. topsoil	Dikaios 1936
Kythrea	N.17	0.80		Gjerstad 1934
Lapithos E	K.28	0.80		Gjerstad 1934
Alaminos	La.1	0.60		Dikaios 1936
Orga	K.35	0.60	Incl. topsoil	Dikaios n.d.
Pyla Gypsaroi	La.16	0.60		Dikaios 1936
Dhikomo Petros	K.12	0.60		Dikaios 1936
Philia B	N.27	0.50		Dikaios 1962
Philia Kafkalla	N.29	0.50		Dikaios n.d.
Philia Pervola	N.30	0.30		Dikaios n.d.
Dhali Agridhi	N.2	Less than 0.50		Lehavy 1974

Table 3.14 Depth of neolithic deposit in excavated ceramic sites

(cf. above for Erimi and Ambelikou, and Peltenburg (1973) for Ayios Epiktitos) which thereby become depositional units of comparable depth to single-phase sites. Although the equation between depth of deposit and length of occupation is not a simple one and is liable to disruptive factors, especially post-depositional erosion, the narrow range of depths of the great majority of sites in Table 3.14 is sufficient to document adequate comparability of duration for the purposes of seriation. (The broader implications of the evidence in Table 3.14 are examined in Chapter 6.)

The third condition, that the groups to be seriated must come from the same local area, is crucial to the present study. As mentioned above, it is logically inconceivable for spatial variation to be excluded from a seriation; for a chronology to be inferred from a seriation, the groups being ordered must vary primarily along the temporal and only minimally along the spatial dimension. In order to minimise spatial variation, only groups of sites in the Catalogue within an extremely localised area, such as a single river-valley, are ordered relative to one another in Chapter 6; however, it is clear that, for the comparison and integration of these local groups, there is sufficient spatial variation within the island to invalidate the seriation of all assemblages irrespective of their region of provenance. Several of the ware subclasses used in the past for relative ordering of sites have a geographical distribution heavily concentrated in certain parts of the island (e.g. Cb. and RR. along the south coast, BSC in the central lowlands and western north coast; cf. Chapter 6). Since these subclasses are also of temporal significance, their geographical concentration matters less for occurrence seriation (cf. Table 3.6) than

for frequency seriation. For the latter, low frequencies of these Subclasses are as likely to reflect spatial variation as temporal, and cannot be used for ordering purposes unless this is controlled for.

Given the concentration of some Subclass distributions, the Classes to which they belong may also exhibit regional differences in their relative proportions through time. On the evidence of C14 dating (3.1), the contemporaneous existence on the island of sites with predominantly Monochrome and others with predominantly Patterned pottery is undoubted for the 4th millennium b.c. and can be inferred for early third millennium b.c. assemblages (Fig. 3.6). Prior to the time-span covered by Fig. 3.6, a phase of predominantly Monochrome pottery seems to be documented in the DFBW from Dhali and Philia A, but the exact definition and regional extent of such a phase remains uncertain for lack of evidence. The alternating predominance of Monochrome and Patterned traditions between the north/northwest and south/southwest regions of the island continues into the EC period; indeed, the virtual lack of sites with RP in the Paphos district, discussed above, is perhaps the most striking witness to the operation of this Kroeberian cycle (cf. Hockings 1963).

The recognition of this cycle opens up three approaches to the ordering of sites:

(1) as an initial step, the approximate relative position of a site if in the N/NW or S/SW of the island can be inferred by determining whether its pottery is predominantly Monochrome or Patterned.

(2) the proportional occurrence of subclasses within an assemblage may be used to refine the order produced by (1) but (a) only if their frequency in their Class can be calculated or

controlled for, and (b) only for site assemblages found within the region of predominance of that Class; e.g. the use of Cb, RBL, R/L and BSC frequencies in predominantly Monochrome assemblages, and of Pcb in predominantly Patterned assemblages. (The evidence of Erimi and Kalavassos B suggests that RR, though a Subclass of Monochrome, peaks during a shift from Monochrome to Patterned predominance.)

(3) in the case of low frequencies of Subclasses found in assemblages predominantly of the other Class, the possibility that they represent other than local products should be seriously considered.

Each of these three points requires further comment. (1) The cyclical nature of the patterned/non-patterned predominance would normally exclude the use of a two-class system were it not that the products of each of two "Peaks" of predominance of one Class can be distinguished from one another. For example, the RL from Sotira is readily distinguishable from the RP current during the later Monochrome "Peak" in that region, on the grounds of fabric, finish and firing. Nor could WP ware be confused with the RW of the earlier patterned "peak". Thus, by means of this simple seriation approach, a sound indication of relative order can be gained from only a very small part of the available information (Cowgill 1972). Inclusion of the Coarse Class would make Meighan's tripole technique (Meighan 1959) a useful tool, but the factors affecting its preservation, and its friability, would perhaps lead to greater ordering errors than by retaining the two-Class system alone.

Points (2) and (3) are related and concern the necessary conditions affecting the production and distribution of pottery which must obtain for the assumptions posited by seriation

theory to be fulfilled. The most important are, first, the existence of continuous traditions such that the frequency of production of specific pottery-wares does result in a unimodal curve when plotted diachronically, and, secondly, the contemporaneous existence of different traditions such that the distribution of the wares of one may overlap with the region of distribution of the others. The latter phenomenon will generally be manifested in the reporting of small quantities of a Class or one of its Subclasses outside the region (broadly, N/NW or S/SW) of its current predominance. If the proportion is consistently small, this situation can be distinguished from another with which it could be confused, namely the sparse representation of Classes or Subclasses at the beginnings and ends of their temporal distributions. When a stratified sequence of assemblages is available, such a situation should be identifiable (e.g. the increase in Patterned ware during the Erimi sequence). For small surface collections this distinction is more difficult to recognise. Otherwise the minor and irregular occurrence of wares of the non-predominant Class may be attributable to an extraneous origin and not to local production. Allowing for the sampling problems discussed above, Table 3.15 lists some possible examples.

The identification of imported wares in pottery assemblages depends both on much fuller distributional evidence (discussed in Chapter 6) and, preferably, on petrological analysis of clays. No such analysis has yet been attempted on this material with the exception of the thin-sections of RP wares analysed by Courtois (1971). The samples from Kato Moni Kambia (N.7) proved to be from a clay source derived from the local Perapedhi formation, with the exception of one (Thin-section 69-26) whose origin lay

in a clayey marl of sapropelic mud type (Courtois 1971, 123-5). The latter was comparable with three samples analysed from a site described as "Mersinia" without further details, perhaps to be identified with Myrtou Mersinia (K.34, under Kafkalla).

Site	Predominant Ware Class		% of assemblage	Reference
Ay. Epiktitos	Patterned	Cb	("small quantities" "sporadic")	Peltenburg 1972, 1974.
Philia A	Patterned	Cb	("very rare", "Much less than 5%)	Watkins 1970, 6; 1973, 51.
Sotira	Monochrome	RW Pcb	3 1	Infra, Ch. 5; Dikaios 1961a.
Ambelikou	Monochrome	RW&PW	Less than 5	Infra, 3.4.4. Dikaios 1962.
Kalavassos A	Monochrome	RW&PW Pcb	Less than 5 ("In small numbers in some dwellings")	Dikaios 1962. Dikaios 1962.
Philia Vasiliko	Monochrome	RW	c.3-5 where present	Dikaios 1962.

Table 3.15 Minor representation of wares in assemblages predominantly of other Class.

In default of more comprehensive analyses, the published descriptions of clay colours (Table 3.16) is suggestive while inevitably inconclusive. The majority of easily exploited clays in Cyprus are either residual weathering products from igneous rocks or derived from marls, which are further distinguished by contained elements such as clay, sand or limestone. The former are characteristically of a reddish-brown colour and the latter a greenish-white buff. Moreover colluvial clay deposits derived from terra rossa overlying limestone kafkalla are also reddish-brown in their natural state (cf. Courtois 1970). Despite the severe limitations of the information in

Table 3.16, the clay colour of the predominant ware-Class and, significantly because presumably of local production, of the Coarse Class at a site can generally be compared with the likely nearest source of clay on geological grounds. That is, the wares from those sites on or adjacent to the igneous formations (Ambelikou) or to terra rossa on limestone (Sotira, Khirokitia and Erimi) are predominantly of red clay while the buff wares from the Ovghos valley would be of a marl origin. The available evidence is not sound enough to investigate the significance of the exceptions to this principle, but it does suggest that the Patterned wares (Pob, RW) at Sotira and Khirokitia are of a different clay to that used for the great majority of pots found at those sites. It is possible therefore that they are of non-local origin, both at Khirokitia (where each forms 5 - 6% of the assemblage) and at Sotira (discussed below, 5.5.).

Site	Wares					
	RL/P	CB	C	Pob	RW	PW
Troulli	LB	-	-	-	B	B
Sotira	R	R	R	B	B	B
Khirokitia	R	R	R	B	B	-
Erimi	R,B	LB	R	-	R,B	R,B
Ambelikou	R	-	R	-	R,	R
Kyra Alonia	R	-	R	-	-	-
Kyra Kamainia	B	-	-	-	B	-
Philia Vasiliko	B	-	B	-	B	-

B Buff
R Reddish
LB Light Brown
- Not present

Table 3.16 Clay Colour of wares as published by Dikaios.

The significance of recognising wares of non-local production, quite apart from the evidence for inter-regional contact

which it constitutes, lies in the serious effect their inclusion may have on a frequency seriation. If the frequency of an imported ware is computed by reference to the total assemblage, not only will its actual representation and importance be obscured but, because it varies independently of locally-produced wares, the frequencies of the latter will be adversely effected unless computed independently of it. This information cannot unfortunately be retrieved usually from most of Dikaios' published reports, and is not yet available for more recently excavated sites, so that the reconstruction of inter-regional pottery distributions is unduly hampered (Chapter 6). Nevertheless, the inclusion of imported wares constitutes another potential source of error in using frequency seriation to order sites. Thus the overall content of an assemblage, whether predominantly Patterned or Monochrome, remains currently the least potentially erroneous application of frequency seriation theory to the available evidence. It remains only to examine the applicability of seriation to surface collections.

3.4.6 The seriation of surface collections.

The use of seriation on surface collections involves the same pre-conditions as those discussed above, with the further requirement that the material may be assumed to be representative of the underlying cultural remains. This condition is again a relative one and can be satisfied so long as the material is sufficiently representative for the collection to be ordered correctly within the selected limits of precision. Rather than accept Dunnell's criterion for judging whether this be the case, namely that "the successful construction of a seriation constitutes an affirmative test of these conditions" (Dunnell

1970, 317) which is rightly criticised by McNutt (1973, 59), some independent check on the validity of surface samples for seriation purposes is needed.

The conditions of similar cultural tradition and similar local area have been satisfied within the selected limits of precision, and hold for all known sites of the period whether excavated or not. The condition of comparable duration was demonstrated to hold for the large majority of excavated sites (Table 3.14) and must by extension apply equally to the majority of unexcavated sites. This is because those sites excavated or tested by Dikaios are not known to have been deliberately selected for potential depth of deposit, and therefore represent a "grab" sample of occupation sites of the period to which they belong. Since the appearance of those sites prior to excavation was evidently similar to the majority of still-unexcavated sites with surface remains, comparable depths of deposits could therefore be expected if they were to be excavated. This condition can be said to be satisfied, then, for the purposes of this study.

The examination of surface material from an unexcavated site makes use of a basic hypothesis that "surface and sub-surface artifact distributions are related so that a description of the first will allow prediction of the second" (Redman and Watson 1970, 280). The objective may be either the prediction of the distribution of sub-surface features or, as here, the prediction of the cultural material content of the underlying deposit. The latter will normally be impossible

(1) if the underlying deposit consists of two (or more) chronologically distinct occupational phases;

(2) if the deposit, though resulting from a single occupation, is of such a depth that major changes in cultural material

occur between bottom and top;

(3) if cultural material is subject to differential survival and preservation once exposed on the surface.

No surface collection can be used reliably for seriation if any of these conditions is suspected to obtain. The recognition that these crucial factors were in fact frequently operative was instrumental in prompting Phillips' (1971) revision of Ford's classic seriation studies (Phillips, Ford and Griffin 1951) in favour of the "historical integration" of clusters of similar components, representing phases of limited duration in time and space. The present study aims in precisely the opposite direction, namely that by using seriation to order all sites relative to one another in a continuum, the difficulties created by assigning sites to ill-defined phases (cf. Chapter 2) can be shown to be largely artificial. That the three conditions above are not sufficiently common to render unreliable the seriation of surface collections can be illustrated from the preceding discussion.

As to condition (1), from the examination of the stratigraphy of extensively excavated sites (above, 3.2), no sequence can be shown to incorporate two phases separated by any length of time, with the exception of these sites with an aceramic-ceramic succession. In such cases, the surface pottery relates to a single ceramic phases of occupation and an earlier aceramic phase would be identifiable only on other positive criteria, such as the presence of obsidian which has been found only in aceramic contexts. (The single specimen from Ayios Epiktitos Vrysi (and perhaps that from F.8) constitutes an exception but is of uncertain significance, having perhaps been acquired from the debris of one of the nearby aceramic sites. There is no

independent record of the obsidian reported from Ayios Epiktitos by Buchholz (1969) which seems to be an error (Peltenburg 1972, 12 and n.2).) All other excavated sites seem to be single-phase occupations and so this condition does not obtain.

Conditions (2) and (3) both concern the degree to which surface collections may in some way be unrepresentative of the underlying cultural material before they must be considered unsuitable for seriation. Condition (2) is known to obtain at a few sites, for example at Erimi and Troulli (on an inadequate sample) which are in fact exceptions to the generalisation about shallow occupation deposits. However, given that all deposits represent continuous occupation, the surface sherds deriving from the upper level of deeper sites would nevertheless make possible a sufficiently reliable chronological ordering of it. Because of the shallow deposit on the majority of sites and the lack of marked change in ware frequencies throughout those (Sotira, Lapithos E and Kythrea) for which sufficient evidence is available to document it, it can be assumed, subject to condition (3), that a surface sample will reflect to a certain extent the relative frequency of wares in the underlying deposit. In fact the evidence of Sotira and Lapithos E demonstrates how a single sounding would have been adequate to gauge the approximate composition of the pottery assemblage. From the trial pit excavated at Sotira in 1934 (Dikaios 1936, 63; not mentioned in the site-publication) which encountered a deposit of 1.60m., including topsoil, the majority of the sherds were RL, followed by Cb and lastly RW which represented the minority - a fair summary of the site's excavated assemblage in terms of the wares then recognised for the period. At

Lapithos E the consistency of the relative ware frequencies between each of the excavated squares (Table 3.9) demonstrates that, had a single test pit been placed anywhere within this part of the site, the wares recovered would have reflected accurately the proportions of the sample obtained through subsequent excavation.

Although there is little evidence with which to assess the significance of condition (3), similar arguments as those advanced above suggest that it is not of crucial importance. The shallow depth of deposits and the continuing erosion of surface sediments ensure that material is constantly being brought to the surface, a process aided in the case of many sites by agricultural activity upon them. As noted above, the more friable coarse wares are liable to yield greater quantities of sherds on breakage but on the other hand their surface survival rate is probably lower. Another potentially complicating factor - the differential life-span of vessels during their use - becomes effective at a much more refined level than is relevant here. Certain ethnographic studies (e.g. David 1972) suggest a longer life-span for cooking/storage and storage vessels than for movable bowls and jugs, and hence their lesser representation in an archaeological sample. But on an archaeological time-scale, vessel breakage can be assumed to have been broadly constant for the purpose of studying the imperfect samples that are available. Moreover storage vessels are but a minor element of the majority of excavated assemblages being considered here and cannot seriously affect the analyses (including that of Sotira in Chapter 5).

A potentially greater source of error in using surface collections lies in the differential collection of wares from

sites by different operators. Any collection which aims simply to obtain a non-selective sample of the surface remains is free from this possible bias; this requirement is known to hold for the samples collected by the Cyprus Survey and by the author, and may have been met for those samples collected by Dikaios and others in the past. Some preferential collection of patterned sherds by the latter would have been understandable, given their greater diagnostic value in establishing a preliminary sequence. Equally serious, though, is the small sample often available from a site's surface. On the size of the sample will depend whether any estimate of the frequency of wares, rather than their simple occurrence, is feasible or not. Rather than introduce stringent criteria, however, the relative ordering of sites in the Catalogue (in Chapter 6) is conduoted within the limits of confidence afforded by the nature and size of sample there recorded or published elsewhere. Since, as it must be emphasized again, the present aim is primarily to secure a relative order of sites in a region and not their precise ascription to a chronological phase, this method of procedure is quite adequate. The requirements for the seriation of surface collections may therefore be considered to have been met within the limits of this objective, and the criteria by which they will be ordered may be briefly summarised.

3.5 Summary: the criteria for ordering of sites.

The criteria to be used for ordering ceramic sites are summarised in Fig. 3.7, which represents a synthesis of the preceding discussion and is therefore self-explanatory. The frequency of Subclasses within the two main Classes can be used to lend added precision to the relative order of a group of

sites, but only if their frequency within their Class is known or controlled for, and only if the size of the sample justifies the procedure. This latter condition remains the most important for determining the degree of precision with which site assemblages may be ordered.

No adequate criteria exist by which aceramic sites may be ordered. Their actual identification involves the minimal definition of that which fulfils the criteria for inclusion in the Catalogue as a Site, from which no pottery has been reported. This definition should be supplemented by positive criteria, for example the presence of obsidian and of stone bowl fragments. On present evidence, the occurrence of obsidian is a sufficient criterion, but the reporting of stone bowls (as opposed to mortars) represents a necessary but not a sufficient criterion. Instead the relative proportion of stone to ceramic vessels constitutes a useful statistic for ordering site collections on the aceramic - ceramic scale. With the establishment of these criteria, the following chapter examines the nature of the sample of those sites actually recorded.

Chapter 4. Site Distribution: the Nature of the Sample.

4.1 The study of site distribution.

The idea that the physical distribution of archaeological sites could be a valuable source of evidence for reconstruction of the past received its greatest impetus from Willey's Viru Valley Project in the late 1940's. In the following two decades the study of settlement patterns has developed as if a "settlement pattern approach" were akin to, for example, a typological or laboratory analytical approach to artifactual remains. Though its viability was denied from the start by Willey (1956, 1) a "settlement pattern approach" gained much of its appeal through its apparent divergence from, or even independence of, traditional artifact-based studies and through its demand for past environmental evidence, for the collection of which techniques were simultaneously being developed in various fields. It is now more widely recognised that the physical distribution of sites represents in some way not simply the adjustment of a community to its physiographic environment but a compromise solution between a number of factors frequently in conflict. These factors are concerned with optimising the location of sites with regard both to natural resources and to the requirements of spacing between different communities.

Contrary to the appeal of the "settlement pattern approach" suggested above, neither the locational analysis of sites with regard to natural resources nor the study of between-site spatial relationships can be adequately accomplished without close attention to artifactual studies, whether

distributional, analytical (of style or of provenance) or morphological. Thus whereas earlier studies favouring a "settlement pattern approach" tended to view the available site distribution data against a, usually static, environmental backcloth, more recent work has concentrated on artifact-based analysis of between-site relationships in which the physical environmental factors, if acknowledged, have played a secondary role only. The concept of a "settlement pattern approach" has gradually succumbed to the theoretical advances of recent years and site distribution data is now an integral part of much of the work within three of the four paradigms (ecological, anthropological and geographical) which have been held to characterise current archaeological research (Clarke 1972, 1)

Together with the increasingly sophisticated treatment of such data has developed a better understanding of the nature of archaeological samples and of the techniques (notably some form of field survey, cf. Ruppe (1966)) required to redress the bias found in much past research. Most work in this direction has been concerned with research designs based on sound sampling theory to be applied in further fieldwork projects. Much less has been devoted to the harder task of assessing the nature of the currently available sample of evidence, through examining the aims and methods of previous workers. This chapter draws attention to various factors which have effected the sample of sites recorded in the Catalogue, in order to justify a cautionary approach to the discussion of site distributional evidence in Chapter 6.

4.2 Factors affecting the preservation, discovery and identification of sites.

In order to analyse the site distributional evidence of the period under study, it is necessary to assess the relationship of the sample recorded in the Catalogue to the total evidence which once existed for human activity in that period. The Catalogue sample is the end-product of a selective process of elimination of evidence (cf. Clarke 1973. 17) which has decreasingly retained:

(1) that sample of human activity which resulted in material remains;

(2) that sample of (1) which has been preserved from post-depositional destruction;

(3) that sample of (2) which has been discovered and reported;

(4) that sample of (3) which has been correctly identified.

To take these samples in reverse order, sample (4) is the sample of sites recorded in the Catalogue, as compiled in 1972. The criteria for inclusion of sites (Sites and Finds as there defined) are discussed in the Introduction to the Catalogue. Since the original report and the material from almost all recorded sites have been preserved in archives or in study-collections, and could be checked for the majority of sites through field survey, a high degree of consistency in correctness of cultural identification is assured. Given this control over the correct identification of sites, there has been very little loss of positive information between sample (3) and sample (4). The following sections try to assess the loss of information in sample (2) and sample (3), in discussing the factors affecting the preservation and discovery of sites. The sample (1) of human activity which left material remains for subsequent

discovery cannot be evaluated on archaeological grounds without first proposing various models of settlement for the period under discousslon. This is thereforedeferred to the next chapter but one.

4.2.1 Preservation

The main factors affecting the past preservation, recent discovery and correct identification of neolithic sites in Cyprus are summarised in Fig. 4.1. Of the natural agencies affecting the preservation of sites, perhaps the majority of sites are exposed through the erosion of surficial deposits to the uppermost occupation layer, sometimes aided by human activities such as ploughing. The recent heavy erosion of slopes in Cyprus, as documented in the figures published by Burdon (1951; cf. 1.4 above) may have resulted in the burial of other sites beyond immediate detection. The main areas of alluvial deposition have been in the east and west of the Central Lowlands, and other smaller stretches of the coastal strip where major rivers debouch (Fig. 4.2). The Bottomlands in the eastern Central Lowlands still receive an annual renewal of alluvium, while the accumulative effect of local alluvlation in the Yialias/Pedieios floodplains since medieval times is clear from field observation of, for example, the Prastio causeway and the Panayia Theotokou churchyard at Asha (Bellamy and Jukes-Browne 1905). Karageorghis (1964, 1 n.3) reports Iron Age tombs in the Mesaoria at about 2m. below the modern land surface, for instance in the alluvial area north of Lysi.

It is unknown whether these recent alluvial deposits conceal prehistoric sites. Those which are known from alluvial areas, for instance many of the Ovghos valley sites, Nicosia (N.24)

and Dhali (N.2) do not have deep surficial deposits, although there may yet be others which do and have not been discovered. This possibility has to be admitted although other evidence for the location of sites provides an indirect evaluation of its importance (Chapter 6.3). Moreover it is worth noting that no prehistoric remains have been reported at great depth from any of the numerous wells, boreholes and foundation trenches sunk in the areas of alluvial deposits.

Of the human activities affecting the preservation of sites, cultivation, if conducted with traditional methods, contributes primarily to the discovery of sites albeit with partial destruction of the uppermost layers. Earthmoving for construction, whether of agricultural terracing or of buildings, can remove all trace of a site (e.g. probably N.10 and the tombs of N.32), as can the removal of earth for use elsewhere. The removal of material for commercial purposes is usually confined to the looting of tombs. Few of the cemeteries in the Catalogue have escaped this activity (most notoriously Dhenia (N.4) but also the less well-known Souskiou (P.21)), which, paradoxically, contributes to the recognition of sites while destroying much of their information value.

Almost by definition, the importance of these factors in the destruction of sites cannot be assessed, and only certain observations are possible. There is no evidence that a substantial site could be destroyed without trace by erosion alone, and the majority of known sites were recorded before deep ploughing had been widely adopted. Although these activities may since have removed all trace of sites not previously recorded, the effect of most of them is to betray the existence of a site while simultaneously destroying its content either slightly or

wholly. This discussion has necessarily been concerned with the remains of substantial occupation sites. Sites of less intensive activity, such as areas of raw material working and food-collecting or temporary shelters, are much more likely to have been destroyed without trace by natural agencies. Sample (2) is therefore already heavily weighted in favour of substantial sites, and particularly of those in areas in which recent deposition has not been dominant over erosion.

4.2.2. Discovery.

Of those sites which have been preserved, the method of discovery has varied according to the development of archaeological research in an area. In archaeology generally, a phase when sites were known mainly through chance finds has led via a phase of hunch survey to one of systematic survey, either as pure research, now often involving some form of sampling design, or as a result of emergency rescue work. Along with the rapidly increasing numbers of sites reported as this development has occurred, has gone a realisation of the inadequacy and biassed nature of samples yielded by chance finds and hunch survey. This section attempts to assess qualitatively the scale of past survey bias through examining the aims and methods of previous investigators in the field.

Chance finds and hunch survey.

In contrast to other countries, extremely few chance finds had been reported in Cyprus until Dikaios commenced his surveys in the early 1930's (Nicolaou 1967). After discovering the site of Erimi in 1933 while working on the Kalorizkl cemetery across the Kouris river, he hypothesized that the level of cultural development revealed by its excavation implied

an extensive distribution of other sites. His survey over the next few years (Dikaios 1936, 72) followed a hunch that water supply would be crucial to such settlements, and accordingly utilised a list of perennial springs on the island to help locate them (P. Dikaios, personal communication, 1970). Thus many of the sites reported in 1936 were found through local information and actual search around villages located near perennial springs. For the two decades following 1936, further discovery of sites depended less on Dikaios' personal fieldwork than on the activities of members of the Department of Antiquities, especially by G. Anastasiou, K. Cecroghiou and Chr. Paraskeva. These activities, based on Nicosia, were complemented by similar work by local Museum staff or individuals in other districts, notably by N. Petrides at Limassol and G. Eliades at Paphos. The sample of neolithic sites yielded by this kind of fieldwork is potentially open to three main biasses, which result from:

(1) the distance-from-base factor, whereby sites nearest to the base of operations stand a greater chance of discovery than further sites;

(2) the probability-of-accidental-discovery factor, whereby sites within areas of contemporary settlement are more likely to be found than those in remote areas;

(3) the selective perception factor, whereby mainly those types of sites are recognised which are already familiar or of interest to the investigators.

A number of considerations together suggest that the worst effects of these potential biasses did not materialise during

this work. As far as the distance-from-base factor is concerned, distances within the island from any one centre are generally so small as to minimise its importance. Thus the Department's Nicosia-based fieldwork covered the Kyrenia, Famagusta and Larnaca Districts, while the work of the Limassol- and Paphos-based antiquities officers compensated for the greater distance of those centres from the capital. The only areas of the island for which the accessibility of the capital or district centre had an adverse effect during these years on survey coverage were the Karpass Peninsula, the Northern Paphos District and the main massif of the Southern Range.

The second factor would tend to lead to sites being reported primarily from areas of contemporary land development with sites being exposed through earthmoving and construction work for buildings, roads, pipelines or agricultural works. Although this bias cannot be discounted, the method of operations in the field helped to mitigate its effects. In investigating a report of accidental discovery of antiquities, the Department representative would take the opportunity to survey that area for sites of all periods, making use of local information and personal fieldwork. Since the accidental discovery of antiquities is essentially random (in a limited sense), the result of these investigations is a series of randomly selected areas surveyed for sites of all periods. This method of procedure also ensures against the worst effects of selective perception. Moreover since the surface appearance of neolithic sites was well known to those working in the field and since they formed the major research interest of the Museum's curator, it is unlikely that their surface remains went unrecognised during this fieldwork. Through assessing from the filed site-reports the frequency and

intensity of fieldwork by members of the Department during this period, some idea of the depth and extent of coverage of the island can be gained (see below).

Systematic survey.

The middle 1950's saw a change in emphasis from this randomised survey work to a much more systematic approach, with the founding of the Archaeological Survey of Cyprus under H.W. Catling. The aim of the Survey was to compile a new register of archaeological sites covering the whole island. The systematic nature of the fieldwork, and the very large numbers of sites consequently recorded, meant that by 1960 only two areas of the island had been exhaustively covered (No.2 on Fig. 4.3). Before it was discontinued in this form at the end of that year, a third area, around the town of Polis, had been surveyed by a team under K. Nicolaou. This survey, together with an intensive survey of part of the Akamas Peninsula in 1946 by Col. J.S. Last and E. Markou (unpublished; report on file in Department of Antiquities) added much to archaeological knowledge of one of the three areas mentioned above as being potentially less accessible to routine survey work. The detailed results of the Survey have regrettably remained unpublished hitherto, but many of the neolithic sites have found their way into print, as reference to the Catalogue will show.

Since 1960 the work of the Archaeological Survey has reverted to rescue operations for which there has been an increasing necessity in recent years. Its areas of operation have therefore again been subject to the probability of accidental discovery, and moreover slightly limited by the exclusion

of a few politically inaccessible zones. The distance-from-base factor has ceased to operate as a constraint upon the investigation of distant areas, but with more attention being paid to rescue excavation of threatened sites, proportionately less time has been devoted to surface reconnaissance of the surrounding area.

Systematic survey has been resumed in recent years by foreign expeditions, concentrating on the immediate vicinity of their current excavations. Partly because of the unsatisfactory form in which previous work has been available, these "systematic" surveys have often not contributed as much new information as might have been hoped. For instance, the site reported by Dikaios near Phlamoudhi (F.6) was entirely missed by one such survey although material was independently collected from it by the author on two occasions in the same year (cf. Catling 1973 for criticism of this survey).

As a different approach to systematic survey, the author developed in 1971/2 a research programme of survey through random sampling of areas. The impetus towards this approach lay in the common opinion of those working in this field that only a fraction of the neolithic sites to be discovered had in fact been found. The aim was therefore to test the reliability of the sample of sites already reported by carrying out a systematic survey in certain areas, these areas to be chosen by random sampling. At the time that the design was developed, no example of the actual execution of such an approach had appeared in print, although random sampling of a single site's surface area had been attempted (Watson and Redman 1971). The choice of design and sampling units was therefore made without benefit of the experience of more recent studies to this end

(e.g. Mueller 1974, Thomas 1973).

The sampling method which was adopted was as follows: the land-surface of Cyprus was treated as the frame in which the units were 5X5 km. squares as defined by the co-ordinates of the UTM Grid System. The frame was stratified in terms of seven regions of the island; these regions were squared-off outlines of the morphological regions defined above (1.2) with the exception that a separate Larnaca region was created covering the southeastern Central Lowlands eastwards to Cape Greco. The 25km.^{2} squares within each stratum were sequentially numbered and a sample of them selected for systematic survey by consulting a Random Numbers Table. Sufficient squares were selected until 5% of the total area of that stratum had been chosen. In coastal regions, of course, not all the chosen squares totalled 25km.^{2} in area, thereby necessitating the selection of additional squares.

Since the aim of the design was to randomise the areas of systematic survey, and not to use the results as a basis for statistically sound predictions to a site-population for the island, this format achieved its purpose without encountering the problems which the second objective would have raised. The extent of coastline in particular would have created difficulties for any valid application of sampling theory. In fact, even the first, much more limited objective proved to be unattainable, for lack of time and resources, and so the details of the drawn sample are not given here. Certain randomly chosen areas were surveyed (no. 7 on Fig. 4.3, and Stanley Price 1972a) and proved of value in providing negative evidence for neolithic settlement in those areas. In brief, though, the limited resources available made the execution of the design impracticable

and were better devoted to examining the sample of previoaly reported sites.

Fig. 4.3 attempts to summarise the relative depth and extent of coverage of the island through archaeological survey, based on the discussion of the previous paragraphs (cf. too Table 6.1). It should be compared with Fig. 4.2 above, showing the outlines of the Southern Range and of alluvial deposits in the island. It can be seen that only the Karpass Peninsula, the main area of the Southern Range and, to a lesser extent, the central Paphos District have been under-surveyed relative to the rest of the island. The eastern Central Lowlands too have not been intensively surveyed but there the obvious effects of recent deposition have been a deterrent to systematic work.

The major part of the island has therefore been the subject of sustained investigation over some forty years, providing, when collated, basic information on site-distribution which is reasonably free from the biasses which often characterise such work. Certain areas have additionally received systematic, intensive survey such that the great majority of those sites preserved at the time of survey may be assumed to have been recorded. This differential intensity of coverage undoubtedly creates an imbalance in the reported results which must be acknowledged. The density of sites in the northern area covered by the Archaeological Survey gives perhaps some impression of the total preserved sample (2) which could be recovered elsewhere, given similarly favourable field conditions. However there is little logical justification for attempting to predict site-densities elsewhere on the basis of the Northern Range data since this would involve assuming that those conditions which favoured settlement in that area also obtained in other areas.

This is something which is to be investigated rather than assumed, and so the attempt will not be made here. Similarly the differential coverage impedes any quantification of the discovery-rate, i.e. the ratio between sample (3) and sample (2), the latter figure itself being an unknown. As noted above, any estimate of ratios must begin by considering different models of settlement patterning and their probable results visible in the archaeological record. This is deferred until Chapter 6.

4.2.3 Identification.

The criteria for inclusion of a Site (or Find) in the Catalogue as being of neolithic date are described in the Introduction to the Catalogue. It was pointed out above that a high degree of consistency in correct identification could be assumed, although the number and condition of the artifacts on the surface of a site could be very poor. This raises the problem whether such small numbers of finds can be used reliably to infer the existence of a site, however diagnostic of a period they may be. The justification for making this inference lies in Dikaios' programme of trial excavations during the 1930's. This programme showed convincingly that areas of ground with sparse scatters of artifacts, mainly sherds, afforded ample evidence when excavated of a site on that spot. The cultural deposit was often little more than a metre but in no case did a surface scatter fail to relate to an underlying site.

It can therefore be assumed that any surface scatter of the defined size produced through erosion or cultivation does betray the existence of a site, provided the artifacts are in primary context. In the absence of excavation, only careful field observation can determine whether the surface soil or the artifacts

themselves have been recently introduced from elsewhere. This may come about not only through large-scale transport of soil for agricultural or construction purposes but also through the unthinking disposal of spoil from excavations. There have been at least two recent examples of careless disposal of excavated material from prehistoric excavations in Cyprus, one of which has already misled later investigators. Only careful field observation can guard against misidentification of sites from material in non-primary contexts.

The extent and nature of a site (cf. Fig. 4.1) can rarely be estimated from surface evidence of the kind under discussion. Where erosion has been active, especially on hillslopes, the areal distribution of surface finds can be only approximately related to the probable original extent of the site. For this reason no significance should be read into the areal estimates recorded in the Catalogue. Nor can the occupational nature of a site be deduced from the surface evidence alone, apart from the cave/open site/cemetery classification used in the Catalogue. The distinction also employed there between Sites and Finds is necessarily arbitrary although it appears from experience to distinguish successfully between assemblages which relate to an underlying site and scattered isolated finds of uncertain significance. Apart from these distinctions, the identification without excavation of the nature of a site - whether permanent or seasonal, for example - is extremely tenuous and must follow from some prior model of settlement patterning.

Both the dating and extent of a site may be complicated if (1) there are superimposed later occupations or (2) if the sample of material available is the result of previous selective collection. As far as (1) is concerned, it remains true that

almost none (La.14 is a possible exception) of the recorded sites are covered by later occupation levels. This fact must inspire confidence as to the potential recovery-rate of preserved neolithic sites, while simultaneously being a matter for investigation. The occurrence of superimposed neolithic occupations is discussed in 3.4.6 under seriation of surface collections, as also is the problem of selective collections. In both cases these potential difficulties are found to be less crucial to the correct identification of sites - within the limits of confidence here selected - than is often true elsewhere.

To summarise the previous discussion, no attempt can be made here to quantify the effects of those factors affecting the preservation, discovery and correct identification of sites which result in sample (4) in the Catalogue. The aim of this chapter has been instead to draw attention to those factors as an indication of the incompleteness of the available sample. The interpretation of the significance of site distribution, whether in the island as a whole or in particular regions, has always to proceed with these uppermost in mind. This is attempted in Chapter 6, following an analysis in the following chapter of a single settlement. The analysis of Sotira proceeds at the level of the single structure and at the level of patterning of structures within the site, while Chapter 6 utilises the information on site-distribution across the island (cf. Trigger 1967).

Chapter 5. The Settlement at Sotira.

5.1 The nature of the excavated evidence.

The position of the settlement at Sotira (L1.14) on the top and slopes of a prominent hill subjected it to much disturbance of its occupation deposits subsequent to its abandonment. The flattish hill-top and some of the natural terraces around its slopes have been scratch-ploughed in recent times, and its steeper slopes have been terraced in the interests of cultivation. The slopes have also been subject to natural erosion through weathering. As a result of his six initial trial trenches in 1947, Dikaios chose to concentrate intensive excavation on the hill-top (hereafter called the plateau), and only in a later season (1954) did he return to one of the 1947 trenches (Area I) at the foot of the hill to investigate its relationship with the occupation on the plateau. The results of the excavations other than on the plateau are discussed below (in 5.4 on the Extent of Occupation of the Site) and the plateau alone is the subject of this and the following two sections.

The trial trench at the northern end of the plateau (Area V) encountered part of the area of deepest stratigraphy, up to 2m. in depth, and extended southwards into shallower deposits. As excavation proceeded, it became clear that these shallow deposits were the norm, and not the deeper deposits at the edge of the plateau, such that the average depth of stratigraphy over the plateau as a whole is less than 1m. Bedrock was actually visible in places as natural outcrops and had been further exposed elsewhere through erosion and ploughing;

the foundation of a wall on bedrock was no automatic indication of an early date. Excavation was conducted through the careful stratigraphic methods described by Dikaios (1961a, 4-5) and the results presented in this form. A corollary of the methods he describes lies in the fact that excavation below a structure was carried out only within one part of the area of that structure. Hence phases of occupation under later structures are often represented only as small areas of floor or debris without associated features. The walls of later structures, and often other features too, such as cupstones on their floors, were left in situ, reducing the area of investigation of earlier levels. The interpretation of these depends much more, therefore, on the evidence of the sections than if they had been uncovered over a larger area.

Complementary to stratigraphic analysis, architectural evidence provides an indication of the relative date of some related structures. Several subsidiary structures were formed through building onto existing ones or building cross-walls between them. However the lapse of time between the building of a structure and its subsidiary is unascertainable on these grounds, and the two may have been constructed virtually simultaneously or with some undefined interval of time between them. Similarly, in those stratigraphic sections which illustrate the foundation of two structures on the same layer, the time-differential between them or their precise order of construction is unknown.

In order to assign a relative date to those structures with no apparent stratigraphic relationship to the better-defined building-sequences, Dikaios used the evidence of the latter to argue by analogy to dates for the former. Having

established the existence of two destruction-horizons from the better documented stratigraphies, he used the number of floors occupied in the unrelated structures to date their period of use relative to the destruction-horizons. The analysis of the stratigraphy which follows attempts to provide a stratigraphic basis for the floor-dating method of assigning dates to structures. The evidence on which it is based consists of the description of the structures, the section-drawings, plans and occasionally, the plates in the site-publication (Dikaios 1961a). Although, in general, the observations of an excavator are to be preferred as being more reliable than later interpretations, these can be amplified by judicious use of the published evidence. In particular more evidence for the first phases of occupation on the plateau than Dikaios allowed can be reconstructed. Moreover there exist a few discrepancies between the published description and the section-drawings which need to be resolved.

To anticipate the conclusions of this analysis, the overall sequence established by Dikaios is soundly based, but the attribution of individual structures to phases is sometimes open to a different interpretation. As he recognised, there was evidence for chronological subdivisions within the four phases he established and of the continuation of structures from one phase to the next. The following discussion attempts to remove the discrepancies in Dikaios' analysis by allowing greater elasticity within the phases which can be defined. Following Dikaios (1961a, 208) it tries to "picture the development of the settlement as the result of continuous building-activity punctuated by certain events with widespread effects".

In the analysis below, each excavated structure which was numbered is given the prefix H., e.g. H.5, irrespective of whether it was reported as a house or an annexe. H. may stand

for "Hut", if necessary, rather than "House" with the latter's connotations of domestic family units. The equation between structural and biological units is something to be demonstrated rather than assumed, and is discussed later. Discrepancies between text and illustration are examined as they occur. A preliminary detailed interpretation of the stratigraphic sequence on the plateau (5.2) leads to a reconstruction of the site-plan on the plateau during each phase (5.3). The plateau sequence is then incorporated with the evidence for occupation elsewhere on the site (5.4) and distributional evidence (5.5) is used to analyse the internal structure of the site (5.6). A final section (5.7) is devoted to the natural resources exploited by the occupants and a summary (5.8) brings together the main conclusions of the previous discussion.

5.2 Stratigraphy of the plateau occupation.

The stratigraphic evidence for the sequence of occupation on the plateau rests mainly on sections drawn across the interiors of structures, and secondly on sections relating different structures. The majority of the latter are on a north-south axis and the relationship between structures on an east-west axis has often to be extrapolated through a chain of extra-mural and intramural sections. The main section (1961a, Pl.9) through the site on a north-south line is a composite of many smaller sections included under the description of the structures, and need not be separately discussed.

The most important sections which show the relative order of different structures are concentrated to the north of the plateau, as follows:

Pl. 13a H.36 - H.5 - H.15, H.31A

Pl. 14b H.29 - H.13; H.40 - H.27, H.28

Pl. 16AA,BB H.39 - H.13

Pl. 17BB H.1 - H.5

Pl. 18a H.1 - H.1A

Pl. 18b H.1 - H.6

Pl. 27a H.38 - H.13A - H.13

Pl. 27b H.37 - H.5 - H.14

Pl. 28b H.17 - H.28

Pl. 37a H.3 - H.34A

Other sections which show structures founded on the same layer include:

Pl. 17CC H.1 and H.9

Pl. 19BB H.3 and H.5

Pl. 21BB H.7 and H.1

Pl. 23b H.4 and H.34

Pl. 35 H.14 and H.31

(Plates 15a and 27a are of the same section through H.38 but there a number of differences between them which can be summarised thus:

Feature	Treatment	
	Pl.15a	Pl.27a
Retaining wall	schematised	detailed drawing
Unexcavated part	schematic lines	marked as such
Deposit under H.13A	undifferentiated	differentiated
Square numbering	incorrect	correct
Floor numbering of H.38	IV, III	II(=IV), I(=III)
Floor III depiction	schematic, no pit	detail, with pit
Deposit on H.13A floor	"white"	"white" omitted

It is clear that Pl. 27a is a later and more accurate version of Pl. 15a and will be followed here in preference.)

5.2.1 Phase I Stratigraphy.

North Plateau Edge.

At the northern edge of the plateau where the deepest stratigraphy on the site is preserved, the structures identified by Dikaios as constituting Phase I form a group all sealed by a uniform destruction layer of debris. On the evidence of this layer, HH. 39, 38, 29 and 40 can be taken to have been in use simultaneously at the time of this destruction. To the deposits in this area attributed by Dikaios to Phase I can be added the Floor III described as underlying H.28 and H.27 which is in fact the floor of H.40 (compare Pl.14b and Pl.28b), and hence the deposits between Floors III and II of H.28 and H.27 which are in fact the destruction layer of H.40. Furthermore, in Pl.28b, the stone wall on bedrock in Square K9 is the south wall of H.40 (later used as the north wall of H.17) against which Floor III and the layer of fallen debris abut. (The Area V site plan (1961a, Pl.8) is reproduced here as Fig. 5.1). On the exterior of this same wall in Squares K9 and K10 and continuing south, Floor III rests on light brown soil "evidently the original surface of the ground" (1961a, 97) and was covered with an ashy layer before the south wall of H.17 was built upon it. The features on Floor III under H.17 (Pl. 28b) are therefore connected with activity on the immediate exterior of H.40 contemporaneous with use of the floor on the interior, i.e. during Phase I.

A second construction which can be argued to belong to Phase I in this area is H.13A, which was anomalous in Dikaios'

analysis in being the only wall in the area assigned to his Phase II. In Pl.27a, the fallen debris of the Phase I destruction overlies the wall and upper floor (I=III) of H.38. As depicted, it also indubitably overlies the floor assigned to H.13A, abutting against its stone wall. This strong case for dating the H.13A wall and floor prior to the Phase I destruction is supported by the limited extent of the wall (Fig. 5.1) since its northernmost point rests on, but continues no further than, the southern wall of H.38. An explanation for the construction of H.13A as a subsidiary enclosure wall on the exterior of H.38 is offered below in the description of the Phase I site plan (5.3.2). Its attribution to Phase I on these grounds removes the difficulties faced by Dikaios in accounting for H.13A, namely that its floor was not traced over the area of H.38 (1961a. 13. n.1) and that the destruction layer covering it was not found in the other structures of his Phase II (1961a. 86). Rather, the statements (1961a. 85 and 13) that H.13 covered both H.38 and H.13A to the south of it and was founded in part on the carbonised layer of the Phase I destruction implies strongly that H.13A preceded that destruction. H.13A is therefore to be assigned to a late stage of Phase I.

Central and southern plateau.

The layer with ashes and lumps of clay under H.13A in Pl.27b belongs therefore to an earlier stage of Phase I, and the deposit between this and the foundation of H.13 in Pl.27b is part of the destruction layer on which H.13 was founded. These two distinct subphases within Phase I, which may be thought of as Phase Ia and Ib, can be traced elsewhere in the structures on the northern edge of the plateau (cf. 5.3.2 below)

and also in the centre of the plateau. The carbonised layer overlying Floor IV on bedrock outside H.38 (Pl.27b) is found in the adjacent Squares I 11 and I 12 to the north of H.36 (Pl.13a). In Square I 12 two components of the carbonised deposit are distinguished, a lower "ashy" layer on bedrock, as on Floor IV outside H.38, and an upper "grey" layer which is the same as the destruction layer of lumps of clay and ashes overlying H.36 Floor III. The lower, ashy, layer abuts on the yellow deposit to the north of H.36 which on its interior covers the first floor (IV) of the structure on bedrook. The two subphases of Phase I are therefore represented in the two floors of H.36 and in the two layers distinguished outside it to the north. The layer of "ashes mixed with yellow-white soil" (1961a, 9) sealing the floor of H.37 is from the same destruction at the end of Phase I which seals H.36.

Underlying the Phase I destruction layer to the south of H.37 (the "mixed debris" on Pl.27b) is a grey layer abutting against the H.37 south wall. This grey layer, overlying the terra rossa on bedrock, is attributable therefore to Phase Ia and suggests that H.37 was founded simultaneously with H.36, a conclusion which the surviving architectural evidence supports (1961a, Pl.13a and 13b Plans). In Pl.27b and, south of H.36, in Pl.13a, the north wall of H.5 is in a foundation-trench cut into the Phase Ib destruction layer (1961a, 9). In Pl.20, the same north wall rests on an undefined grey layer overlying terra rossa in Square J 15, midway between the foundation-trench evidence in I 15 in Pl.13a and in K 15 in Pl.27b. Although here undefined, this grey layer must, on the foundation-trench evidence, belong to the same Phase Ib destruction layer. Furthermore since "ashes actually underlie both the north and south walls" of H.5, and its "Floor III seals these mixed layers" (1961a, 41),

it is plausible to suppose that the ashy layer under the south wall and the undefined grey layer under the north wall shown in the H.5 section (Pl.20) are one and the same layer on which Floor III was made when H.5 was built. Consequently the ash layer under the south wall must also represent the Phase Ib destruction layer.

This being so, the intermediary layer under the south wall in Pl.20 between the Phase Ib ash and the terra rossa must equate with or antedate Phase Ib. It is this same deposit which in Pl. 17BB (the section between H.1 and H.5) underlies the south wall of H.5 and abuts against the north wall of H.1. Since this deposit equates with or antedates the Phase Ib destruction, the conclusion is unescapable that H.1 was already in existence at the time of that destruction.

The Date of H.1.

Since this conclusion is the basis for assigning a number of other features to Phase I (e.g. H.7, H.9), and affects materially any interpretation of the development of the site layout, it is necessary to examine a possible objection to it and, in particular, why Dikaios assigned H.1 to his Phase II. The analysis presented above is based on the consistent picture afforded by section evidence and text description together. Even so, there are apparent grounds for doubting the strength of Pl. 17BB, on which the conclusion strongly depends, as evidence for the early establishment of H.1. It might be argued that no trace of the extensive use of floors outside the subsidiary structures (e.g. H.1A, H.6) to the north of H.1 appears in Pl. 17BB as one might expect and that the layer of lumps of mud with ashes is therefore a composite deposit in

which finer divisions have not been noted. It would therefore represent a slow accumulation of debris outside H.1 and not a single deposit. But this objection, as well as being contrary to the excavator's interpretation of the deposit, is vitiated by the evidence of the H.5 foundation-trench which is clearly cut into the deposit. Since elsewhere the H.5 foundation-trench was cut into Phase Ib destruction levels, there is a strong a priori case that this deposit derives from, or antedates, the destruction.

The assignment of H.1 to Phase I removes the difficulty recognised by Dikaios (1961a, 41) that H.1 and H.5 both appeared to belong to his Phase II although H.5 was certainly built later than H.1. Dikaios' argument that H.1 postdated the Phase I destruction rests on equating the layers of "lumps of mud with ashes" on the exterior of the structure to north and south (Pl. 17BB and CC) with the layer used for levelling the ground on the interior of the structure before the making of the first floor (III). Because the ash in the interior was probably from the destruction, then the construction of H.1 must have been subsequent to that destruction. Since the exterior layers were of similar composition, so he argued, they must have been used to level the ground on the exterior at the time of construction.

The similarity of the two layers, exterior and interior, on which his dating depends exclusively, may be questioned. The exterior deposits are of "lumps of mud mixed with ashes" or "lumps of white clay and ashes", while the interior levelling is of "a layer of white clay containing veins of ashes" (1961a, 21-22). The distinction between these two is a fine one but it exists. Moreover, a plausible source of ashes in the

interior levelling layer lies in the "thin layer of ashes which seems to penetrate under some of the stones of the wall" north of H.1 (1961a, 22 and Pl. 17BB). If so, this ash layer conceivably antedates the construction of H.1. The argument that the exterior layers resulted from the levelling of the ground with Phase Ib destruction debris when H.1 was built has a number of weaknesses. The deposit is confined to the north and south of H.1,where subsidiary structures are known to have existed at a later date; although there is no section to the east of H.1, the layer to the west between H.1 and H.7 is of loose soil and ashes (Pl. 21BB) and does not contain this "levelling layer". Where represented in Pl. 17BB and CC, the deposit is overlain only by surface soil, whereas in the sections of structures to the north of H.1 (e.g. H.6, H.1A), although not excavated to bedrock, various layers and features are defined in relation to H.1. The "levelling layer" would have to be assumed to have been removed from these areas. Not the least inexplicable aspect of the suggested "levelling layer" is the apparent need to have levelled the ground surface with such a thick deposit that the exterior level was considerably higher than the interior.

It remains much more plausible that the deposit, rather than constituting an artificial levelling layer at the time of construction of H.1, in fact derives from the debris of subsidiary structures to the north and south of H.1 which were contemporary with an early phase of that structure, i.e. Phase Ib. Independent evidence of such a structure is found in the Floor III antedating H.6, in the area immediately north of H.1 and H.7. The absolute level of this floor is well below the top of the supposed "levelling layer" in the adjacent section and

must antedate the deposit. The ashes and tiny bits of yellowish mud (1961a, 27) on this Floor III equate well with the mud with ashes deposit outside H.1. Floor III can be assigned, therefore, to a late Phase I date, contemporary with Floor III under H.8A to the south of H.7 (discussed below).

If H.1 is of Phase I, then the only slight evidence of activity in the area prior to its construction is the ash layer reported to lie partly under its north wall. Otherwise H.1 is founded on terra rossa, which fills the unevennesses in the bedrock (1961a, 21). H.7 is similarly founded on terra rossa, with depressions in the bedrock filled with ashes or with whitish soil (1961a, 50). The section between H.1 and H.7 (Pl. 21BB) shows that the east wall of the latter was bedded on a white clay layer on terra rossa and Pl. 21AA and Pl. 24b similarly show H.7 founded on terra rossa. Floor III was on the same red soil, made partly of mud and partly of "pebbles from the bedrock immediately underneath" (1961a, 51). The only slight discrepancy in this consistent picture is in Pl. 25 in which the north wall of H.7 is shown as resting on a mixed layer over the terra rossa. This contradiction is not sufficient to refute the weight of the other evidence and may be explained as a mistake in depiction or as evidence for a re-building of this wall when H.11 was added (a possibility discussed below, in 5.3.3).

In common with H.1 and H.7, H.9 to the south of H.1 was founded on terra rossa and on bedrock where it outcropped. The contemporaneity of the H.1 south wall and H.9 north wall is proven by the layer of lumps and mud with ashes abutting against both, which are founded on a white clay course on terra rossa

(1961a. 57 and Pl. 17CC). Pl. 24b, an important section but barely commented upon in the text, shows that Floor III under H.8A abuts on the walls of H.7 and H.9 over terra rossa. It can therefore be assigned to Phase I, denoting occupation in the space between the three houses H.1, H.7 and H.9. This evidence is independent confirmation of the Phase I date attributed to H.7 and H.9 on the basis of Pl. 17CC and Pl. 21BB.

The only evidence of subphases within Phase I in this area consists of the ash layer under the H.1 north wall already mentioned, which to the north abuts on a large stone. Further north, the strata of ash and mud and a pit underlie the levelling layer of the Phase Ib destruction on which H.5 was built (Pl.20), and are associated with the remains of two collapsed walls (?) which may represent an earlier structure in the area. This evidence can be added to the other Phase I remains on the plateau, which are so dated through their being sealed by the destruction layer debris. Other contexts can be similarly assigned through their stratigraphic position relative to the following Phase 2 (using Arabic numberals for the phases defined here to distinguish them from Dikaios').

5.2.2 Phase 2 and Phase 3 Stratigraphy.

The Phase 2 Destruction and the retaining-wall.

The stratigraphic position of Phase 2 is clearly defined in those sections which show the relationship of two or more structures. Its terminus post quem is the Phase Ib destruction layer and its terminus ante quem the destruction layer associated with the building of the retaining-wall at the northern edge of the plateau. Phase 2 here therefore subsumes Dikaios' Phases II and III, and Phase 3, following the construction of

the retaining-wall, is equivalent to his Phase IV. Within Phase 2, however, subdivisions can be made of its stratigraphic record and some structures assigned to an early or late subphase. Structures which were assigned a relative order by Dikaios through floor-dating can be given a closer stratigraphic definition. The arguments put forward by Dikaios for the stratigraphic interpretation of the retaining-wall and its associated deposits (1961a, 85-86, 136-138) are irrefutable and are here fully accepted. However, since they are crucial to the relative ordering of the structures of Phases 2 and 3, they are briefly recapitulated with a few additional points.

The evidence of H.13 (Pl.27) and H.18 (Pl.29) in particular demonstrates that the retaining-wall was built following a collapse of building-debris onto the lower of two floors in each structure. The upper floor in each abuts onto the construction of the wall or one of the cross-walls incorporated within it. The possibility that the wall was a much later phenomenon built after the abandonment of the site (cf. Dikaios 1948, Pl. VIA for a view of it prior to excavation) was refuted by Dikaios (1961a, 86). All the ceramic material from the body of the wall and from the floors which abutted against it was comparable with the pre-construction deposits. Furthermore the wall was carefully built with stabilising cross-walls and abutted directly on to the pre-construction deposit which had fallen away and been exposed. The evidence for the cause of this exposure is reviewed below (5.2.4) in the reconstruction of the Phase 3 site layout.

The destruction layers in other structures can be attributed to the same phenomenon because of the overall consistency of

the stratigraphic record of these structures with those in which the relationship is directly attested. This consistency is so striking as to rule out an alternative explanation, that each destruction layer represents the natural collapse of structures after abandonment at different times. This argument fails to account for the re-occupation of certain buildings following the destruction, which exhibits an identifiable pattern (discussed below) and for the strong evidence for the unexpected nature of the collapse, as seen in the mass of material associated with specific activities which was sealed by the destruction debris. Rather, the consistency of composition of this layer, from H.13 and H.18, and hence to adjacent structures such as H.17, H.31, H.16, H.14 and so across the plateau, confirms its synchronous deposition throughout. The overall consistency also rules out the possibility that subsequent erosion or recent ploughing have selectively destroyed any trace of substantial building following construction of the retaining-wall. In short, the conclusions drawn by Dikaios on this point are irrefutable.

Phase 2 structures. Central and eastern plateau.

To Phase 2 in general belong all those structures appearing on the site plan (Fig. 5.1) and described by Dikaios with the exception of those destroyed in Phase 1. Many of these structures can be ordered relatively to each other within Phase 2, however, on both stratigraphic and architectural grounds. The largest group of structures is that founded on the debris of the Phase 1b destruction. Of these H.5 has been discussed above as being built with foundation-trenches cut into this layer. H.3 to the east of it rests on a similar destruction layer

(Pl. 19BB) and makes possible the attribution of structures to the east and north of it. The level of ashes and lumps of clay overlain by the first floor (III) of H.3 seals in turn traces of carbonisation within the layer of terra rossa over bedrock. These traces must represent an early stage of Phase 1 which subsequently became covered by a layer of terra rossa when the ground was levelled.

The layer underlying Floor III of H.3 can be equated with the layer of whitish soil which levelled the ground prior to the making of Floor III to the north of H.3 (under H.3^{4}A) which abuts against the north wall of H.3 (so 1961a. 13^4, and Pl. 37AA where for "S. wall" read "N. wall"). With the making of Floor II in H.3, the wall of H.3^{4}A was built to the north and Floor II made within it. (The section of H.3 (Pl. 19AA) fails to distinguish the white of Floor II from the white clay course on which the north wall was founded (1961a. 3^4) with the result that the north and south walls of H.3 appear to rest on different layers).

If, as Dikaios suggested (1961a. 13^4), the wall of H.3^{4}A, which is late in Phase 2 relative to the earlier floor (III) and the construction of H.3, abutted onto H.4, the latter must antedate H.3^{4}A. (Pl. 52d shows H.4 and H.3^4, not H.3^{4}A as published). H.4 and H.3^4 form a constructional unit of which the walls rest on a floor (III) which antedates their construction (1961a. 64) and was made on the terra rossa overlying bedrock. A mixed layer was laid on this floor before the making of the first floor (II) inside H.3^4 (Pl. 23b). Now if H.3 and H.4 are both earlier than H.3^{4}A. (i.e. Phase 2a) and if H.3 is early in Phase 2 because similarly founded with H.5 (Pl. 19BB) (therefore also Phase 2a), then it is possible

to relate the pre-H.5 debris and the pre-H.3 carbonised debris to the pre-H.4/H.34 floor on terra rossa, and probably also the grey layer on bedrock underlying H.34A, in belonging to Phase 1 activity in this area.

To the northwest of this area H.14 was built at a stage subsequent to H.5, since the latter's foundation-trench was filled and cut into when H.14 was built (1961a, Pl. 27b,AA). However that the lapse of time between the two was not great is shown by the inclusion of the stones of the north wall of H.37 of Phase 1 (underlying H.14) within the line of the H.14 north wall, such that they formed part of H.14 Floor II (1961a, 92 and Pl.27b Floor II Plan). The implications of this evidence for the deliberate building of H.14 on the outline of H.37 following the latter's destruction are discussed in 5.6. Whereas the south wall of H.14 rests on debris from the Phase Ib destruction, the north wall rests on a white layer overlying bedrock (not depicted in Pl.27b, AA but shown in Pl.35AA and described in 1961a, 123), as does the wall of H.31 which abuts against that of H.14. This evidence of building partly on Phase 1b destruction debris and partly on a white levelling layer is paralleled in H.13 (Pl.13a, Pl.16AA, BB, Pl. 27a). Pl.13a in particular shows how the white layer was put down to create a level surface with the destruction debris, on which H.13, H.14, H.15, H.17 and H.31 were built. H.15, H.31A, H.31, and H.30, though founded on the same layer, make use of the walls of H.14, H.13 and H.17 and must therefore postdate them to some degree. The latter can be ascribed to an earlier sub-phase within Phase 2 (2a) and their subsidiaries to a later sub-phase (2b).

Northern Plateau.

To the north again, on the edge of the plateau, H.18 made use of the east wall of H.40 of Phase 1 as its west wall, while its other walls rest on a mixed layer on bedrock (1961a, 100). It has a single floor prior to the Phase 2 destruction. In the same area, H.27 made use of the south wall of H.40 as its own south wall, as did H.28 to the west which used the east wall of H.29 of Phase 1 as its west wall (1961a, 121; not depicted in Pl.14b). In Pl.14b the grey layer covering the H.27 Floor II abuts on to the east wall of H.13, whose Floor II antedates this layer. The two floors between the east wall of H.13 and the east wall of H.29 in Pl.14b must belong to Phases 2 and 3 respectively, since they overlie the Phase 1b destruction debris, and not to H.29 as assigned by Dikaios (1961a, 11) though admitting the lack of connection. To the east the north wall of H.25 abuts on the east wall of H.18 but is in a foundation-trench whose filling seals an earlier floor (II) overlying red soil. It is more plausible to make this floor contemporary with the occupation of H.18 before H.25 was built than to assign it to Phase 1, but the possibility of a Phase 1 date exists.

West and southwest plateau.

The evidence discussed hitherto for the foundation of structures in Phase 2 in the centre, east and north of the plateau points to a levelling of the debris from the Phase 1b destruction and the making up of a level surface with white soil where necessary. Thus in the area of H.5, the carbonised debris was extensively levelled such that Floor III of that structure lay directly over the remains of Phase 1, while much other material was removed when the foundation-trenches of H.5

were cut. Since the evidence for the area north of H.5 (e.g. under H.14 (north wall), H.13, H.30, H.31) suggests that the levelling was completed with white soil, the surplus carbonised debris from the area of H.36, H.37 and under H.5 must have been deposited elsewhere. The most economical explanation for its disposal lies in the "mixed layer" of debris which, with only three exceptions, underlies the foundations of every structure not yet discussed under Phase 2, namely HH. 32, 33, 10, 11, 8, 19, 20, 21, 22, 23, 35, and 2. Of the exceptions, H.24 to the east of H.1 was founded on terra rossa (but postdates H.2 on architectural grounds, Pl.33a); H.16 was not excavated to bedrock, while H.12 was founded on a deposit of ash which was made up with a layer of white earth (discussed further below). Otherwise all Phase 2 structures in the west and southwest of the plateau rest on mixed material whose origin must lie in carbonised debris from the destruction of Phase 1b, including that from the centre of the plateau higher up the slope (for the overall slope south and west of the plateau, cf. 5.3.1 below).

Strong indirect support of this postulated origin is found in the fact that none of the structures which rest on this layer can be shown to pre-date Phase 2, while some definitely postdate Phase 1 on architectural evidence. If this mixed layer marks levelling activity following the Phase 1b destruction, then the evidence of activity which it seals must belong to Phase 1. Thus in the southwest of the plateau, the pits in bedrock under H.8, H.21 and H.22 can be assigned to this phase, as probably can other areas where the terra rossa on bedrock has been removed. That the bedrock cleared of terra rossa was sometimes used as a surface in Phase I is

proven by the floor outside H.38 and by the bare bedrock under and to the south of H.36. Within the area of the pits to the southwest and elsewhere in the west of the plateau, the terra rossa seems to have been disturbed prior to the deposition of the mixed layer under H.12, H.10, H.23, H.19 and H.20. Occupation prior to H.23 was attested by Dikaios in the form of small pits in the terra rossa and an area levelled with white soil (1961a, 114). Under H.20 there is a large depression in the terra rossa while under H.19 the terra rossa is cleared from the flat bedrock, which is levelled with white material in a depression further west (Pl.30a). Under H.10 (Pl.25a) the stone rubble in a grey layer against a bedrock outcrop from which the terra rossa had been cleared over nearly 4m. is particularly reminiscent of features found at the northern edge of the plateau; the lack of reported finds from this context might argue against any form of Phase 1 occupation on this spot but nor are there finds reported from under H.23 where occupation is attested. The significance of this fragmentary evidence of probably Phase 1 date is discussed below (5.3.2) in reconstructing the Phase 1 plateau site plan.

The evidence from the area further north where H.12, H.16, H.32, and H.33 are situated lends further support to this argument. The carbonised destruction layer of Phase 1b found outside H.38 is not represented immediately to the west outside H.39 where instead a hard white layer overlies the white layer which made up the ground surface outside H.39 in Phase 1 (Pl.16BB; this same section shows that on this white layer was built the structure to the west of H.13 which is not numbered or described in the site-publication, Fig. 5.1). The

same white layer as that to the south of H.39 is found in H.19 (not fully excavated) and under H.12 which forms an architectural unit with H.19. The foundation layer of H.12 is, significantly, partly of this white earth and partly, to the west, of ashes (1961a, 78 and Pl.26b). West again of H.12, H.32 is founded on a grey ash layer while H.33, with which it forms one unit, is similarly founded, with the difference that an earlier floor (III) is sealed by this ash layer, having been made on a lower grey layer on bedrock. If the white layer and the ash layer in H.12, and the ash layer on which H.32 and H.33 are founded represent levelling after the Phase 1b destruction, as argued above, then the early floor under H.33 can be attributed to Phase 1.

The attribution of structures to Phases 2 and 3, with their destruction layer compositions and subphases distinguished, where possible, is summarised in Table 5.1. All those buildings described by Dikaios can be attributed on the stratigraphic evidence reviewed above, as can the unnumbered structure (for which H.42 would be the appropriate designation) in Squares F 11-12 which appears to belong to Phase 2. There remain several traces of buildings not described by Dikaios whose attribution to a phase must remain uncertain, although an ascription to Phase 2 is probable. These remains are:

H.26 in Squares Q 21-22 on the east edge of the plateau;

a wall abutting on to H.34 in Squares N 18-19 and O 19, which may have also abutted on to H.24 to the south and would have included the cupstone and circular feature in Squares O 20 and N 20 respectively, and also the numerous finds from this area;

the stone with two postholes in Squares Q 17-18;

					17	13	15	14	1	7	9	8A	3	5	4	34	34A	23	33	32	8	2	6	10	11	12	16	19	20	21	22	24	35	25	18	28	27	30	31	31A	1A
PHASE 3					×	×		×	×	×		×	×	×							×	×	×	×	×	×	×	×	×	×		×	×	×	×		×		×	×
Debris	D				D	D	D	D	D	D	—	D	D	D	—	—	—	—	—	D	D				D	D		A		D		?	A	D	A	A	A	D	A	D
Ash/Grey	A						A															A	A	A			A			A										
Eroded	—																																							
PHASE 2	b				×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
	a												×	×			×											×					×					×		
Debris	D																																							
Ash/Mixed	A	D	D	D	D	D							A	A	A	W	A	W	A	A	A	A	A	A	A	A	A	W	W	A	A	A	A	W	?		A	D	D		W	A	
White	W	A					A	A				A																												W	W	
PHASE 1	b	×	×			×	×		×			×	×	×	×	×	×	×	×				×																	
	a	×	×	×	×		×	×	×	×	×																													

39 38 29 40 13A 36 37 1 33 32 24

Table 5.1 Sotira Plateau. Phase representation, by structure.
Double bar denotes foundation of a stone structure.

the complex of stones including one or two cupstones in Squares N-P 11-12. again on the badly eroded eastern edge;

a semi-circular wall (with entrance to south?) abutting on to H.27 and H.28 in Squares L 9-M9;

a similar wall abutting on to H.12 and H.16 in Squares G-H 13-14;

and. finally. the stretch of wall at the western edge of the excavated area in Squares A 16-17 (cf. Dikaios 1952. Fig. 30). In the absence of description of these features. they cannot be reliably assigned to a phase but the lack of evidence for the building of new stone structures in Phase 3 makes a Phase 2 date probable.

5.3 Reconstruction of the plateau site plan. by phase.

5.3.1 The Plateau prior to occupation.

On the evidence for assigning structures to phases which has been reviewed above. it becomes possible to reconstruct the site-plan of those structures existing at any one phase. On any site with continuous building activity. a division of the sequence into phases and the ascription of buildings to those phases tends to conceal the continuity and to be positively misleading. However. since the building activity at Sotira is punctuated by two distinct and well-defined destruction layers. those structures which show traces of the same destruction can be assumed to have been in use contemporaneously. The structures in existence at the end of a phase are therefore of more importance in this respect than those founded at the start of a phase. The latter are definable only within broad limits of confidence as to relative ordering. as the discussion of stratigraphy above demonstrates. whereas a destruction layer provides a firm

terminus ante quem. Nevertheless some deductions as to the development of the site layout during any one phase are possible.

Unlike the levelling operations undertaken prior to Phase 2 building and to the Phase 3 occupation of ruined structures, the conditions obtaining on the plateau prior to Phase 1 occupation owed more to the natural appearance of the plateau than did later phases. Local evidence for the levelling or clearing of the terra rossa on bedrock has already been noted, and depressions were filled with white earth (as in H.1) or with debris to provide a surface for construction. However decisions taken as to the location of the first structures on the plateau were clearly influenced by the overall configuration of the hill-top. This is brought out by a reconstruction of the bedrock contours of the plateau (Fig. 5.2).

The sources for Fig. 5.2 are the section-drawings already discussed (1961a, Plates 13-37). The position of each section-line within the Squares which it covers are given on the accompanying Plans; one slight discrepancy is in H.30, the section of which on the evidence of the Plan must lie just within Squares L 10-12 rather than K 10-12 as published. Elevations of bedrock above sea-level are taken from the section-drawings at 1m. intervals, i.e. in the centre and at the junction of the 2m. squares, omitting those rare cases where bedrock has been artificially deepened (e.g. the pits under H.29, H.8 and H.21).

This method gives 194 readings for bedrock elevation over the plateau. Each reading is taken to the nearest 0.20m. (elevation) in order to stay within the limits of accuracy inherent in section-drawings reduced to size, an accuracy quite sufficient for deriving the main contours. The resulting contour map

shows the points at which readings were available so that the extent of extrapolation is clear. Contours are drawn smoothed between points but local peaks or depressions are recorded as positive (+) or negative (-) residuals: the hatched areas denote bedrock exposed on the surface (source: Fig. 5.1 and Plans of H.9, H.10, H.32 and H.34A). The exact line of the 330m. contour to the northwest and southeast cannot be fixed through the available bedrock elevations and has been added as a broken line in Fig. 5.2 on the basis of Pl.4 in Dikaios (1961a). The good fit in the southwest of this interpolation to the reconstructed map is proof of the latter's validity. The accuracy should not be expected to be greater since the levels on Plate 4 and those on an earlier site-plan (Dikaios 1952, Fig. 30) were evidently taken prior to excavation; the 333m. contour in particular must there be based on the top of the retaining wall. Allowing for these factors, the overall fit between the measured and reconstructed contour map is extremely good.

The most important feature of the contour map is the pronounced slope southwards and westwards of the plateau. A difference in elevation of nearly 4m. between the NE and SW edges of the excavated area gives an overall gradient of c. 1 in 15. This gradient is slightly steeper, however, to the south and west of the excavated area and, over the area approximately bounded by the 330m. contour, the southwestward slope would have been rather less pronounced at c. 1 in 20. The plateau would have presented an area of some 2000 sq.m. on top of the hill to the first occupants of the site. Local depressions in the bedrock would have been filled with the terra rossa naturally formed on a limestone bedrock, of which outcrops had been exposed through weathering. The large outcrop on the west edge of the

plateau would have been particularly prominent (cf. Fig. 31 in Dikaios 1952).

5.3.2 Occupation on the Plateau in Phase 1.

As noted above in the discussion of the stratigraphy, subphases within the Phase 1 building activity can be recognised, and these help to illustrate the development of the settlement pattern of the site.

The two floors of H.36 have already been attributed to a Phase 1a and 1b, while H.37 appears to have been built contemporaneously with H.36 and to have continued in use until the Phase 1b destruction. The second floor of H.36 is made on an uneven thick yellow deposit which is concentrated in the centre and north of the structure and extends beyond the north wall, on which abuts the lower ash layer assigned to Phase 1a above (Pl.13a). The yellow soil probably derives from the northward collapse of a mud roof over H.36 contemporary with, or slightly earlier than, the deposition of the Phase 1a ash layer. H.37 seems to have been unaffected by this collapse and its floor continued in use in conjunction with the new floor made on the collapse in H.36. South of H.36 and H.37 the distinction drawn between the Phase 1a and 1b ash layers disappears in the undifferentiated ash layer which underlies H.5, and so H.1 cannot be directly dated with regard to the two subphases. However, if the ash layer under its north wall antedates the structure, H.1 may belong later, rather than earlier in Phase 1, and by extension so would H.7, H.9 and the Floor III under H.6 and H.8A.

The Phase 1a ash layer on bedrock to the north of H.36 is the same as that overlying Floor IV on bedrock outside H.38 (Pl.27a). The recognition that H.13A is a Phase 1 construction

built abutting on to H.38 removes another of the difficulties faced by Dikaios in accounting for the deposits of H.38. Because he attributed H.13A to his Phase II, he had to assume that the Floor IV on bedrock outside H.38 continued in use unchanged even after the collapse on the earlier of the two floors inside H.38 (1961a, 85). But with the recognition of the mud and ash layer on Floor IV outside the structure as a Phase 1a horizon, there is a simple equation of this with Floor II (=IV) inside, and of Floor III of H.13A outside with Floor I (=III) inside, both of which lie on a destruction layer and are themselves covered by the main Phase 1b destruction layer, thus:

exterior	H.38	interior
"H.13A" Floor III		Floor I(=III)
Ashes and clay		Stone debris
Floor IV		Floor II(=IV)
Bedrock		Bedrock

The stone debris on the floor of H.38 represents a partial collapse of the wall and a re-building with an inner course resting on some of the stones of the previous floor (1961a, 12). Simultaneously the subsidiary wall on the exterior (H.13A) was built abutting on to the H.38 south wall at a point defined by a change in constructional technique visible on the plan (Pl. 15a, Floor III Plan).

The original structure of H.38 was formed by building a cross-wall between H.39 and H.29, which must both antedate it to some degree. It is significant that sherds were found in the make-up of the floor of H.38 (and of H.29) but not of the earlier H.39. The south wall of H.39 was built on a step in bedrock, the space between it and the rock being filled with

debris and a hard white surface made over it. Four steps descended from this surface on the outside to the first floor of the structure, made of havara over bedrock (1961a, 14-15). H.39 also has two floors within Phase 1 which, however, lack any evidence of destruction between them. The second floor shows a reorganisation of the internal features of the structure. H.29 to the east of H.38 was also founded at a point where the bedrock fell away, such that steps down into the interior resolved the difference in level between interior and exterior. H.29 has only one floor, but the "thin greyish layer which accumulated on the original floor" (1961a, II; Pl. 14b) suggested to Dikaios some duration of occupation.

Under H.29 is a large pit which is described with the floor of H.29 and said to be full of debris from the fallen superstructure (1961, 11-12 and Pl.14b). The evidence of the section, on the other hand, suggests that the use of the pit antedates H.29. The floor of mud in H.29 and the layer of accumulation above it both overlie and abut on to the stone slabs surrounding and apparently sealing the pit. Moreover the easternmost slab appears to underlie the lowest stone course of the east wall of H.29. Although there is a clear discrepancy here between text and section, the evidence of the latter taken with the occurrence of sherds in the terra rossa prior to the making of the H.29 floor suggests that use of the pit antedates the erection of the structure.

To the east of H.29, H.40 was built as a substantial structure using the east wall of the latter as its west wall. This structure was founded on the terra rossa over bedrock, which was here much higher than to the west, being on a level comparable to the exteriors of H.39, H.38 and H.29. There was

therefore only a single step down into the interior, the exterior of the step being provided with a curb of stones similar to that round the uppermost step on the exterior of H.39 (1961a, 15 and 17). H.40 had one floor only without evidence of subphases of activity, which, together with the structure's relationship to H.29, suggests that it was constructed in a later, rather than earlier, stage of Phase 1. Significantly, too, there is no evidenee of Phase 1 activity on this higher level of bedrock anywhere to the east of H.40, since levelling in Phase 2 accounts for the mixed layer under H.18. South of H.40, however, the floor (III) under H.17 was used contemporaneously with the structure, and the remains of a possible wall on a north-south axis ending in a stone-built posthole at the south end may well have abutted on to the H.40 south wall in a similar manner to the wall H.13A outside H.38.

In summary, then, several subphases can be recognised in the Phase 1 occupation areas and the contemporaneity of different structures can be demonstrated for subphases prior to that sealed by the destruction. Occupation of the northern edge appears to be as early as in any part of the plateau. One possible sequence would be: H.39 (1) and the pit under H.29 - H.29 - H.38(1) and H.40 - H.38(2), H.13A and the wall to the south of H.40. In the middle of the plateau, the foundation of H.36 and H.37 has a terminus ante quem in the destruction on the first floor of H.38, while to the south the H.1-H.7-H.9 complex, as argued above, probably relates to a later, rather than earlier, subphase of Phase 1.

Probable development of Phase 1.

Although this relative order is reasonably well-established,

a closer precision in correlating the subphases of different structures can be obtained by considering the causes of destruction during and at the end of Phase 1. It is quite clear that the Phase 1b destruction debris in those structures on the plateau edge with substantial stone walls (preserved up to 1.40m. high in H.29) consists of decomposed mud (H.13A, H.40) with a few streaks of carbonised matter (H.29) or with stones (H.39; H.38 has unspecified debris). Outside these structures, on the other hand, the debris is uniformly of carbonised matter with lumps of mud and ashes. It is possible to suppose that the former deposit represents, following Dikaios, the collapse of a heavy, mud-packed roof, while the latter testifies to the burning of combustible material in conjunction with lesser amounts of mud, as if from a lighter form of roof than those covering the larger structures. Should this broad correlation be accepted, rather more can be inferred of the architectural development of Phase 1.

Thus, the deep carbonised deposit covering the early floor on bedrock outside H.38 and extending southwards to H.36 may represent the burning of a light roof appended to H.38. Its collapse caused damage to the southwall of H.38 which was then thickened and a new floor made, without the roof - which rested on the walls of H.39 and H.29 - having collapsed. The second floor of H.39 may have been made at this time. Outside H.38, in place of the burnt light roof, the H.13A wall was built to support a stouter roof. In the main destruction at the end of Phase 1 this roof collapsed, resulting in a heavy debris deposit similar to that inside the structures. To the south, and covering H.36 and H.37, is a homogeneous mud lump and ash layer which suggests roofs of lighter construction

covering those structures, instead of the heavier mud covering which had collapsed on the first floor of H.36. The grey layer overlying the floor to the south of H.40 may also mark the burning of a roof supported in part by a post in the post-hole there discovered. It is significant that in H.39 alone a deep carbonised deposit, piled against the south wall, underlies the layer of roof debris, as if there had been a conflagration in the structure before the roof collapsed. The evidence of the floor which "showed everywhere traces of fire" (1961a, 16) supports this view. The eventual collapse of the roof in H.39 would have brought down in quick succession the roofs of H.38, H.29 and H.40, all of which rested on shared walls. The conflagration enveloped the area south of these structures, destroying H.36 and H.37 and the structure, if such there was, under H.5 but not the southern complex of H.1, H.7 and H.9 which continued to be occupied into Phases 2 and 3.

Whether or not this reconstruction of the development of Phase 1 is accurate in detail, the choice of location for the first structures on the plateau can be illustrated by comparing the Phase 1 site plan with the bedrock contour map (Figs. 5.2 and 5.3). The northern edge was deliberately selected for the siting of structures which appear to be as early as any on the plateau. Some advantage was taken of the hillslope where it fell away sharply, in order to found H.39, H.38, H.29 and H.40. There is no published evidence that the bedrock was cut into for these structures; in this case H.29 and H.40 in particular must have required substantial terracing under their north walls to counter the slope of the hill. South of these structures the plateau was level save for the southwestward slope, and H.36 and H.37 were founded in the centre of it. Further south H.1

and H.7 rested on level platforms whereas H.9 was founded over a hollow and outcrop of bedrock on ground sloping strongly to the south; hence its subsequent semi-destruction through erosion.

Taking into account the traces of occupation to the east, west and southwest, it seems that little of the plateau was left unoccupied, or unutilised, during Phase 1. The evidence is obviously incomplete, both because of the excavation methods described in 5.1 and because of the levelling following the Phase 1 destruction. The hatched zones in Fig. 5.2 denote occupation or use of areas for the majority of which there is evidence for structures now lost. The evidence discussed above for pits and other activity on bedrock to the SW and W of the plateau is not conclusive about the nature of occupation but its substance and early date are established. Some of it (especially that under H.10) appears to be related to the edge of the flatter plateau but constructional or floor evidence is generally lacking. On the other hand, Floor III under H.33, while lacking an associated structure (although Dikaios suggested wooden supports) yielded a mass of occupation debris including evidence on the floor itself for antler-working activities (1961a, 131). The location of this floor at the edge of the plateau compares well with those to the north.

Thus the existence of other structures at the west and southwest edge (and perhaps also to the east where not excavated) may well have escaped detection because of the limited investigation of earlier levels. Their existence would help to make more explicable those founded to the north where most exposed to northerly winds (although their doors face SW/S/SE). The

recognition of these fragmentary traces of other Phase 1 activity only emphasizes how inadequately it is represented in the surviving record. The areal extent of Phase 1 occupation was probably considerably greater than hitherto recognised; its relationship to Phase 2 is discussed in 5.6.

5.3.3 Occupation on the Plateau in Phase 2 (Fig. 5.4).

In common with Phase 1 the destruction layer which ended the phase marks a horizon at which all the structures then in existence may be assumed to have been occupied simultaneously. These are depicted in Fig. 5.4. Evidence for subphases within Phase 2 was discussed above in connection with the stratigraphy, but the potential number of fine distinctions in relative chronology, and the difficulties in precisely correlating different structures, renders unfeasible a detailed discussion of the kind presented above for Phase 1. Those structures which can be assigned to a later, rather than earlier, stage of the phase have been distinguished by stippling in Fig. 5.4, but this distinction is no more than a visual aid, since the phase was a period of continuous building-activity. Rather than analyse the fine detail, then, a broad outline of the probable development of the site during Phase 2 will be given. (The discussion of building-complexes identified on other than strictly architectural grounds (5.5) represents a considerable amplification of the conclusions reached in this section).

Phase 2 began with the levelling of the Phase 1b destruction layer into which (H.5) or on which new structures were founded. As argued above, the southwestward slope of the plateau encouraged the levelling of some debris downhill to the

south and west, although levelling was also carried out to the east. To the north the levelling was supplemented by white earth, probably derived from bedrock.

The impression of continuity conveyed by the levelling layer and building on it is strongly reinforced by the evidence of those structures which survived the destruction. The interpretation by Dikaios of floor-deposits of ash and carbonised material in non-destroyed structures as the result of "natural accumulation" (i.e. accumulation through human activity) has some independent support. Those structures which on stratigraphic and architectural grounds were founded relatively late in Phase 2 tend not to have any layer of accumulation depicted between their floors and the destruction debris. On the other hand, H.29, founded well before the end of Phase 1, had a layer of carbonised deposit accumulated upon it. If the thickness of accumulated deposit is even approximately proportional to the duration of a floor, then Floor III of H.1 lasted twice as long as did Floor II, and Floor III of H.7 continued without interruption until late into Phase 2. The making of a new floor was sometimes prompted by a partial collapse of the superstructure, as noted for Phase 1. Thus, in H.5 the features of Floor III which continue to be used on Floor II are in the northern part of the structure, while in the south postholes and other new features were made (1961a, 43 and Pl. 20). Similarly in H.7, the features which continue in use between Floors III and II are in the S and SW, but the north wall is reinforced internally, covering the previous hearth (1961a, 53). A re-building of the north wall at this stage would explain the anomalous section (Pl.25b) which depicts

the north wall of H.7 as resting on a mixed layer rather than on bedrock as elsewhere. This part of the wall coincides with the semi-circular enclosure constructed inside H.11 and so a correlation between Floor II of H.7 and the construction of H.11 (soon followed by H.6 to the north) is plausible.

The depth of deposit on the early floors of H.1 and H.7 is some indication, then, of the length of time over which it accumulated, affording indirect support for the early foundation and continued use attributed to them on stratigraphic grounds. Apart from these structures, and the eroded H.9, the development of the site during Phase 2 starts with the erection of free-standing structures over a large part of the plateau (HH.3, 5, 10, 18, 13, 14, and 8). Subsidiary structures were added between these at a later date (HH.30, 31, 31A, 15, 27, 28, 25, 11, 6, 8A). The relative position within the phase is uncertain for other structures, including the two-part units (H.12/H.16; H.32/H.33; H.4/H.34/ H.19/H.20/H.35; H.22/H.23; and H.2 and H.21). H.4 is postdated by H.34A and H.2 by H.24. The sequence of building to the southwest of the plateau cannot be determined on the available evidence. As building spread over the plateau certain structures made use of or modified outcrops of bedrock for their foundations (H.32, H.10, H.4; and H.18 (1961a, 100), while others made use of the surviving walls of Phase 1 (H.17, H.27, H.28, H.13 and H.18).

Those doorways which were excavated or suggested by Dikaios are shown on Fig. 5.4 and convey some impression of the directions of movement about the plateau. The only areas in which any open space is available are to the NE (though here erosion may have removed traces of structures), to the SW between H.8 and H.20 and, minimally, to the north of H.1. H.1A with the stub

of wall and posthole found on Floor II (1961a, 26 and Plan) belongs to Phase 2. The H.6 wall, since built on to a Phase 2 structure (H.11; 1961a, 23, where H.9 is a slip for H.11) belongs to that phase too. The "porch" of H.1 is uncertainly identified since, as Dikaios noted, there was no trace of an entrance in the south wall of H.1, and its west wall serves also as the east wall of H.8A, making a Phase 2 date certain. Otherwise the structures became closely packed such that access to some of them was comparatively restricted. Thus, the wall of H.10 almost abuts on to the suggested doorway of H.7, while other areas, for example to the east of H.16, appear to have provided access to at least three different buildings. The only reported evidence for access to the plateau from elsewhere lies in Dikaios' suggestion of steps in the west of the bedrock outcrop between H.10 and H.32 (1961a, 71 and Pl.51d). However access on this side of the plateau where the slopes are the steepest does not appear very probable and there may anyway have been another structure to the west of this outcrop (cf. the stretch of wall in Squares A 16-17). Access is much more likely to have been from the slopes to the east and south where the settlement is known to have extended.

5.3.4 The Phase 2 destruction and Phase 3 occupation (Fig. 5.5).

In contrast to the destruction of Phase 1, the debris resulting from the collapse of the Phase 2 structures shows little sign of burning. Table 5.1 shows the nature of the debris overlying the floors of each structure affected by the destruction, and Fig. 5.5 those structures which seem to have been re-occupied in Phase 3. Evidence of re-occupation in some other structures (e.g. H.32, H.4 and H.34) may have been removed

through erosion. In some cases the debris covered only part of the floor, the approximate extent of which is depicted by broken lines in Fig. 5.5. The majority of destruction layers are of decomposed mud with or without straw, stones or (H.21, H.12) burnt branches. The few which appear to be of grey material, possibly ash, are in minor structures (H.27, H.28, north part of H.15, H.25 and H.30) or one larger one (H.10) or are mixed with mud (H.24, H.32). The widespread collapse of roofs in the absence of extensive traces of fire suggests some other cause than fire for their destruction.

In this context the evidence adduced by Dikaios for subsidence of the northern edge of the plateau is particularly convincing. As evident in sections (Pl.16AA, BB) and in his description of the retaining-wall as being built against the exposed face of the deposit (1961a, 86), the occupation deposit accumulated on the northern edge during Phases 1 and 2 must have subsided, causing a minor landslide of material at the point of subsidence. The fracture of the quern on the floor of H.29 along the line of subsidence (1961a, 13) is further confirmation of this theory. An earthquake remains the most likely phenomenon to have caused the subsidence and the collapse of the structures. The traces of burning within some destruction layers would therefore be a consequence rather than a cause of the destruction. Furthermore, subsidence of the northern edge through tectonic activity might explain why debris, where confined to one part of a structure, is concentrated to the northern end.

The lack of any prolonged lapse of time between Phases 2 and 3 is documented by the building of the retaining-wall against the exposed strata of Phases 2 and 1, and by the continued use of some features of the previous floor in those structures

which were re-occupied (e.g. H.13, H.14). The retaining-wall was evidently undertaken to consolidate the northern slope and to remove some of the debris from the plateau, as Dikaios argued, prior to re-occupation. The cross-walls and careful packing of stone fill with mud mortar suggest that it was designed as a long-term investment, as it indeed proved to be - longer than the period during which the site in fact continued to be inhabited.

The re-occupation in Phase 3 after the earthquake follows a certain pattern. Structures which show traces of further investment of labour in constructing postholes, stone installations and walls are concentrated on a north-south axis across the plateau (HH.13, 13A, 30, 3, 14, 1A, 1, 8A, 7 and 2). In the other structures, including all those to the SW, the debris is flattened and a few finds may be associated with a posthole or stone base, but only those noted above show extensive evidence of re-occupation. In both H.1 and H.3 fallen stones impacted into the floor represent the main evidence of destruction; these structures seem to have escaped total destruction, with wall-stones falling without the roof caving in.

Continued occupation appears to have centred on the remains of large structures surviving from Phase 2. A feature of Phase 3 is the profusion of small postholes, as if light shelters were put up against or over existing walls. In particular, H.31A has some seven postholes and a post-base in the area between H.13 and H.14, while H.1A and H.6 to the north of H.1 have fifteen postholes between them in Phase 3. Further evidence of occupation in confined spaces between the walls of existing structures lies in the making of a floor between the north wall of H.8A and the wall of H.7 (Pl.24b). These make-

shift features and the lack of any major building-activity in Phase 3 - apart from the retaining-wall - suggest that the period of re-occupation was relatively short and that the plateau at least was abandoned fairly soon after the earthquake.

5.4 Extent of Occupation of the site.

The promise of well-preserved structures on the plateau held out by the Area V trial trench in 1947 meant that much less attention was given to the occupation areas other than on the hill-top. Dikaios remedied this imbalance to some extent by returning in 1954 to his Area I trial trench of 1947 which had yielded architectural remains and two graves. In spite of this further work, the relationships between the remains in Areas I-IV and the well-documented sequence on the plateau was never adequately investigated. Any subsequent attempt to define them is impeded by the lack of details about Areas II-IV, which were only briefly summarised in the excavation report, and by the limited nature of the Area I evidence. However the published account, supplemented by a few comments in the two preliminary reports (Dikaios 1948, 1952) allows some conclusions to be drawn about these areas.

In comparison with the S/SE slopes the ground to the W, N and NE of the plateau falls away quite steeply such that any occupation of it appears unlikely (cf. Dikaios 1948, Pl.IVa for a close-up view of the site from the north). There are no surface remains on these slopes whereas to the south and southeast, where occupation is proven, sherds and other finds are common. To the south, in particular, a broad, gently sloping plateau (cf. 1961a, Pl.3b) forms a prominent feature of the site and proved on excavation (Area IV in 1947) to have well-preserved stone structures with almost complete vessels found

in situ (Dikaios 1948, 18). With the opening up of Area V these structures were not excavated further than their top floors (1961a, 3 and Pl.6b and 7a). Unfortunately the lack of any discussion of the material from them leaves unclear their relationship to other areas.

A small trench (Area II) opened a little lower down the SE slope where steeper and recently terraced encountered remains of demolished habitations of pisé (sic). The area was badly eroded but the lower layers appeared to be less disturbed and an almost complete vase was found (1948, 18). However on the gentler slopes to the SE, at 70-80m. distance from and some 30m. lower than the plateau top, further structural remains were found in Area III. These appear to be the remains of at least four structures, abutting onto each other to form a single complex (1961a, Pl.6a and 7b); also a cross-wall linking two structures to the west, and one wall abutting onto a bedrock outcrop. Dikaios' suggestion (1961a, 3) that the main wall formed a road seems unduly influenced by the Khirokitia example, as was his original interpretation, later retracted, of the wall in Area I (1948, 17-18). Again the remains from this area are not published.

At about 100m. to the east of the plateau at the foot of some of its steepest slopes, some 200 sq.m. were excavated as Area I where one of the 1947 trial trenches had been placed. The deposits on this slope had been eroded and further disturbed by light ploughing but the stratigraphic sequence can be deduced from the published section (1961a, Pl.5). On the bare bedrock was founded the west wall of a structure (H.41) resting on a white clay bedding course. An unconnected piece of walling to the east may have formed part of a second or adjoining structure.

A layer of white soil was used to level off the sloping bedrock to the west of the wall, on which there accumulated a 0.30m. deposit or carbonised material with ashes, pebbles, bones and sherds. This deposit was concentrated, however, in three main areas, immediately west of H.41 in a depression in bedrock, in a large area to the northwest and in another, incompletely excavated, further west (Pl.5) where the bedrock formed a level platform. Subsequent deposits have been badly disturbed but at some stage a new floor was made inside H.41, resting on a thick yellow-white deposit overlying the previous floor. Outside the structure a number of oblong burial pits were cut into the underlying stratum, or into bedrock. The sectional evidence lacks precision at this point since Grave 4 (Pl.5) is depicted in Square D 3 when it was in fact found in Square B 4. It is clear that the drawn section has been telescoped at the D3/B4 junction, since the wall of H.41 ought to appear at the B6/7 junction and not in the centre of B6 as depicted. Taking the sectional evidence (telescoped as it is) to be essentially correct vertically, the grey soil filling and extending downhill from Grave 4 is confined to the area of the carbonised deposit previously noted. Otherwise there is no evidence for any activity following the cutting of the graves, at least none sufficiently substantial to have escaped destruction through erosion.

If the earlier concentrations of carbonised deposit are connected with the building and first floor (II) of H.41, as seems probable, then both the second floor and the cutting of the graves must postdate the main activity in the area. Only the grey layer filling Grave 4 documents extramural activity following that represented by the main deposit. Although not

related stratigraphically, Floor I and the cutting of the graves may therefore be considered to be broadly contemporary. The fill of the graves is of material from the layers into which they were cut, or, in the case of some (e.g. G.2, G.12, G.9) which were dug outside the areas of carbonised deposit, of similar material presumably collected for the purpose. The small numbers of sherds (save for the large G.12) and the lack of joins rule out the possibility that whole vessels were placed in the graves. In theory, then, the graves have only a terminus post quem in the main deposition of carbonised material, but the filling of neolithic sherds and the lack of later activity in the area is sufficient to confirm their contemporaneity with the related remains. Furthermore all preserved burials were in oblong pits in contracted position with head facing east (except for G.2 with head to the west) and covered with stones. The consistency of this rite also argues for near-contemporaneous deposition.

In conclusion, then, the burials appear to have been made subsequent to the main occupation on the area not long before the abandonment of the site. Floor I of H.41 seems to be similarly dated; indeed the stratification of H.41 in general would, if found on the plateau, be sufficient to assign Floors II and I to Phases 2 and 3 respectively, as Dikaios noted. Although the evidence is inadequate to establish this point, Area I appears to represent a minor sector of the site and a relatively late stage within its development. The trial pits in all directions around Area I, except where the ground is steeply terraced to the west, gave negative results, which argues against extensive occupation in this area. Indeed the virtual

lack of features or finds on the H.41 Floor II and its remote position relative to the better documented areas on the plateau strongly reinforce this view. It is tempting to relate the burials to the effects of the earthquake before the final abandonment of the site but the age-estimates (with the exception of the child; Angel 1961. 224-7) suggest that death from natural causes is as plausible as any more dramatic explanation. In the absence for other evidence for disposal of the dead on the site, nothing can be added to Dikaios' discussion (1961a. 140) which remains inconclusive.

With this evidence for Area I as a peripheral part of the settlement and the lack of published details about Areas II-IV. hypotheses about the extent and development of the site must rest on more general considerations. The demonstration above (5.3.2) that most of the plateau had been built upon or otherwise occupied by the end of Phase 1 entails that subsequent expansion would have required intensified construction on the plateau itself or the foundation of structures elsewhere. That both solutions appear to have been adopted testifies to the degree of expansion during Phase 2. The widespread building in Phase 2 of subsidiary structures. two-part units and linking cross-walls on the plateau increased substantially the area of roofed space. (Roofs would have been as important for providing shade as protection against the weather.) On the other hand, the appearnce of structures built in the agglutinative fashion characteristic of Phase 2 on those slopes most suitable for occupation (as revealed partially in Areas III and IV) suggests that the other solution to expansion was also adopted. It is possible, of course, that the natural terrace of Area IV had already been selected for occupation in Phase 1, but on the avail-

able evidence, notably the preference for plateau-edge locations in Phase 1 at the start of that phase, a gradual expansion of settlement from initial foundations on the plateau to Area IV, and so to Areas III and I is most likely.

In view of the circumstantial grounds on which it is based, this conclusion remains tentative. However it accounts for the available evidence better than the alternative hypothesis, that settlement expanded to the plateau from the slopes. The continuous sequence exhibited in the three plateau phases represents a coherent development in settlement patterning to which the occupation on the slopes should be related, rather than vice-versa. In conclusion, then, although the extensive excavation of the plateau tends to emphasise that area at the expense of the others, it seems nevertheless to have uncovered one, if not the, major concentration of occupation. In particular the labour expended in building the retaining-wall is more intelligible if the plateau had always served as a focus of activity on the site.

5.5 The Manufacture and distribution of pottery.

5.5.1 The Nature of the evidence.

Discussion of the internal organisation of the site (in 5.6) is based mainly on the distribution of artifacts and the evidence for different activities on the plateau. For the distributional evidence to be susceptible to interpretation in these terms, it is necessary to assess both its completeness and its definition on stratigraphic grounds. Its completeness is limited by the range of material selected for recovery during excavation and by the number of contexts from which finds are reported. Its definition on stratigraphic grounds

rests upon the ability to distinguish those contexts which are broadly contemporary and upon determining the significance to be assigned to deposits between floors.

The available distributional evidence consists of the mass of material described by Dikaios according to its context within each structure. It is less certain how much material was found outside each structure or elsewhere on the site. Although the site grid was used for labelling finds not associated with a structure (1961a, 4), there are less than thirty extramural contexts on the plateau from which finds were reported (1961a, 168-171). With only three exceptions, these finds are less than five in number and usually consist of single stone or bone implements. From Squares M 20 and M 22, however, in the space between H.1, H.2 and H.24, some 280 sherds and nine flint implements were reported, and in Square E23, immediately west of H.8, a dozen small finds and four sherds were found. In the Catalogue of shells (1961a, 238) there are references to floors in Squares E 23 and P 21 which are not described in the text. The relative lack of finds outside the structures may be significant for interpretation of activity organisation but the excavation method, which concentrated attention on the structures once they had been located, may have militated against the intensive investigation of extramural areas. For these reasons the virtual lack of finds remains suggestive without being conclusive.

Similarly, the incompleteness of the published Catalogue is evident in the scarcity of details about finds from Areas I-IV. In Area I sherds from the surface and from Squares D 1-2 are described but none from other contexts (e.g. Squares B 4-5) to which sherds are referred elsewhere. Various pendants and other small finds are reported from Squares in Area I which fall outside

the excavated area (e.g. 1961a, 168-171, nos. 658, 657, 688, 689), and must have been found in the trial pits excavated within the vicinity "with negative results" (1961a, 139). From Areas II-IV again only a few pendants and small finds are described, although a selection of sherds was illustrated in a preliminary report (Dikaios 1948). The published record is clearly incomplete, then, for areas outside the plateau and cannot be used to complement the plateau evidence.

A further limitation lies in the nature of the material selected for recovery. Although artifacts may be assumed to have been collected systematically during excavation, the information on organic remains is very restricted. As to faunal remains alone, from the whole site there were less than 40 identifiable bones (about two-thirds identified to species). Again, if this statistic is reliable, it has implications for, at the least, the disposal of refuse on the site, but the possibility that the sample recovered was incomplete must be kept in mind (cf. below 5.6).

In evaluating the main source of distributional evidence - the artifactual finds - much depends on the relationship of the deposits between floors to the preceding or succeeding floor. In the discussion of the stratigraphy above, it was suggested that these deposits represent the accumulation of material on a floor during its use. The objects within them would therefore have been in use during the continued occupation of a structure, of which the floor represented the start of one phase of occupation. In support of this view, there tend to be many more finds reported from between-floor deposits than from the floors themselves, which sometimes lack any finds at all. This phenomenon is in part an artifact of the excavation

procedure, since the floors to which objects belong tend to be encountered subsequent to their accumulated floor-deposit. It is entirely plausible, therefore, to assign the finds from between-floor deposits, including destruction layers, to the floor immediately preceding them, for the purposes of broad chronological distinctions. The exceptions to this principle lie in those deposits interpreted above as levelling layers and in those which include surface finds, in which there may have been mixture of deposits through erosion or recent ploughing. With these limitations of the evidence and this principle for assigning finds to floors in mind, the distributional evidence may be discussed.

5.5.2 The Manufacture of pottery.

The great majority of pottery found on the site was in the form of broken sherds. Of the thirty or so vessels sufficiently complete to be partly or wholly reconstructed, most were found either in walled enclosures in a structure (H.5), in pits on the floor (e.g. H.14, H.34A), on a hearth (H.13) or elsewhere on the floor. On the small sample available it appears that no particular form of vessel (bowl, jug, jar) nor any particular ware (fine, patterned or coarse) was confined to any one kind of context. Only rarely were parts of vessels found in between-floor deposits (in H.18, H.31A and H.34). The lack of reported joins in sherds from destruction deposits - if joins were looked for - makes it unlikely that vessels were stored off the floors, whether suspended or placed on shelves. The latter are suggested by the smaller postholes found inside structures which appear not to be roof-supports nor to be concentrated

about the hearth, as for example in H.7, Floor III. These post-holes may have belonged to shelf supports, or indeed to one of a number of possible installations, such as drying-racks, looms or even, in the case of those adjacent to a doorway, to ladders for access and egress.

As a corollary to the suggestion that the depth of between-floor deposits is roughly proportional to the duration of accumulation, there seems also to be a broad correlation between the duration of a structure (as determined on stratigraphic grounds) and the total quantity of sherds reported from it (cf. the sample sizes recorded in Fig. 5.6). A number of factors prohibit the strict interpretation of this point as a valid indication of relative date; the particular function of a structure may have affected the number of vessels in use and broken within it, and earlier deposits may have been disturbed at a later date. Moreover certain structures, such as H.9 (in which only 8 sherds were found from bedrock to surface) and H.22, H.23 and H.35, have had their deposits eroded away. Nevertheless the relationship is demonstrable at a gross level and gives some substance to the necessary assumption that the surviving sample is representative of the material originally deposited.

Within any one phase of occupation or during the use of one floor, a fairly constant breakage rate may be assumed (and derives some support from the observation in the preceding paragraph). Analysis of the relative quantities of bowl and jug fragments reported shows that Combed bowl sherds usually outnumber Combed jug sherds while RL bowl sherds outnumber or are as numerous as RL jug sherds. Since jugs have a larger surface area and make potentially more sherds, it can be deduced that many more bowls

were in use than jugs over any length of time.

Some broken sherds and vessels were recycled, however, and not discarded at once. Broken jugs were sometimes re-used as jars or deep bowls after the spout had broken off (e.g. a Combed vessel from H.5 Floor II, no. 107, and one of RL from H.14 Floor I, no. 52e). The finding of broken spouts without associated body sherds suggests the same practice. Two sherds with neat perforations below the rim suggested to Dikaios the mending of broken vessels, although other functions such as string-holes are possible. Broken sherds have other possible uses, for instance, in being relatively heat-resistant, in protecting the surface of pots from burning fuel during firing, or as linings of hearths or pits (cf. H.7 Floor III where "the lower part of a jug was fitted exactly so as to form a lining for the pit" (1961a, 52). The perforation of sherds to serve, so it is commonly assumed, as spindle-whorls is scarcely documented at Sotira, the only example coming from an uncertain context outside Area I (1961a, 171 no. 688). On the other hand, the rare sherds from imported patterned wares may have retained some aesthetic attraction after breakage and may not have been discarded immediately.

The wares found on the site are divisible into two main classes distinguished by fabric, with variations forming sub-classes defined by firing or painting technique. One fabric class has red clay mixed with stones or grit and/or chopped straw and includes the wares Red Lustrous, Red Slip, Combed and Coarse. The other is naturally light (white-creamy or pink) (1961a, 179, 181) and includes Red-on-White and Painted-and-Combed ware. There is no mention of stones or chopped straw

mixed with this clay which was either smoothed or given a buff slip prior to painting. The whiteness of the RW/Pcb clay in its natural state or of the slip added to it is clear from illustrations (1961a, Pls. 71-79, especially Pl. 71, 773kk; 538cc; 778s; Pl.73, 568j etc.), and is in contrast to the dense red slip of the Cb and RL wares, the latter having sometimes a pale slip as well. Dikaios remarked of one Pcb sherd that its remarkably fine workmanship and the superiority of its ware to the average at Sotira suggested "a different atelier" (1961a, 181). The infilling of the incision of Combed sherds with white chalky material in H.1 (1961a, 29) appears to be an attempt to reproduce the strong colour contrasts characteristic of the patterned wares.

Within the Pcb category, there is a broad distinction between those sherds which are predominantly combed but with certain bands reserved in the paint, and those on which painted patterns (e.g. bands, circles, lattices) have subsequently been subjected to restricted combing. The patterns found on Pcb sherds derive from the same repertoire as those on RW; one sherd, indeed, (568j on Pl.73) appears to have had the lattice decoration added after the pendant band had been combed. Those Pcb sherds which are predominantly combed save for reserved bands have much more in common with standard combed wares but, on the strength of their fabric description, all Pcb sherds at Sotira may be treated as of one broad category with RW.

On the basis of the differences in fabric and style, backed by the relative frequency of occurrence of the two classes on the site, the RW/Pcb wares at Sotira are held to be of extraneous origin and the red clay wares to be of local

manufacture (cf. Chapter 3). Within the latter class, the subclasses defined by Dikaios are all explicable as minor variants in technique of firing or surface treatment. Thus Red Slip is a variant in surface treatment of RL; of Red-on-Red only four sherds are known, consisting of dots or lines added to a previously combed jug or to RL bowls (three examples), perhaps in vain imitation of RW. A number of Cb and RL sherds are reported with blackened areas due to insufficient oxygen during firing. However those sherds on which the body but not the rim, or vice-versa, was blackened demonstrate a greater control over reducing conditions; the GL ware represents a deliberate policy of controlling firing conditions. This technique also accounts for one of the Black Combed sherds, the other of which (in H.31) has a black wash combed to expose a red lustrous slip. This unique sherd is clearly the result of a passing whim, and bears no comparison with the much finer Black Slip and Combed Ware found elsewhere, as Dikaios recognised (1961a, 187 n.1).

In short, then, the great majority of sherds found at Sotira were locally produced, with imported patterned wares never representing more than 4% of all sherds discovered (Table 3.7). There is strong accumulative evidence that the production of pottery on the site, and perhaps the firing too, took place inside structures. The locally-produced fabrics have a black core on bowl fragments and black interior on fragments from closed forms where not fully oxidised. The degree of oxidation in pottery depends on a number of factors, including clay composition, temperature and duration of firing, fuel and draught, but these wares have clearly not been fired in ideal

conditions. If fired either at a low temperature or for a short period, or both, a permanent built kiln is less likely than an open fire or an improvised kiln. Furthermore the evidence of accidental firing-clouds or grey wares produced by controlling reducing conditions suggests a fuel sufficiently malleable to allow partial covering of the pot surfaces to the desired extent. Ash from such materials as dried grass or kindling (rather than dung which has other, more beneficial properties than inflammability) would be suitable for this purpose.

Evidence for the making of pottery (with or without the actual firing) inside structures is diverse but cumulatively strong. Some 5% of all Coarse sherds bear impressions of coiled matting or chopped straw, mat impressions being eight times as common as those of straw. Most of these occur on fragments of bases which typically in Coarse ware are flat, whereas in the other wares they tend to rounder forms and any impressions would have been smoothed away or covered with slip. Pots in general, then, appear to have been made on mats for ease of turning, and in the vicinity of chopped straw. Since this material constitutes one of the fillers added to the clay of local wares, there exists an a priori argument for the manufacture of pots inside structures, i.e. where mats were in use. Specific evidence from structures for other activities associated with pottery-making lies in the chalcedony pebbles (1961a, 199) exhibiting the high lustre characteristic of burnishers, and in the materials used for preparing the red slip. The use of stone implements to grind the lumps of ferruginous umbers found in H.3, H.5 and H.7 was confirmed by chemical

analysis (1961a, 197). These three structures produced evidence both of the raw material and of red-stained implements and H.13 one stained implement. (Of the unworked river-pebbles found in these same structures one possible function could have been as handstones in a paddle-and-anvil technique of pottery-building.) Red colouring material was also put to other uses, as shown by the pieces of wall-plastering retaining red pigment in the destruction-debris of H.40 (1961a, 122).

This evidence suggestive of pottery manufacture inside structures should be contrasted with the lack of any such evidence from areas outside structures on the plateau. It is less certain however whether the pots made in the structures could have been fired in their hearths. The hearths most suitable for this purpose are the large circular clay platforms with central pit-shaped depression, often surrounded by a raised rim of clay and stones, and occasionally with limestone slabs embedded in the platform and overlapping or adjacent to the hearth (1961a, 159). There appears to have been a difference in intended function between this type of hearth with its much greater capacity for draught-action and those which were no more than slabs on the floor or shallow depressions. The firing of pots over a bed of charcoal in the depressions (which uniformly showed traces of prolonged burning) with some covering or stacking to retain the heat seems to be quite feasible. The posts in postholes associated with some smaller hearths are more likely to have supported some form of covering than a chimney, which leads to loss of heat. Jugs would have been less easily stabilised than bowls which would have been inverted over the depression, thereby making symmetrical any warping and

itself acting to conserve the heat of the fire. There is a hint that jugs may have been tied round with a rope to prevent cracking while being dried prior to firing (1961a, 185). No wasters are specifically mentioned although the mention of lumps of mud (in H.30) or of lumps of clay bearing traces of fire (in H.1) on the ash layer in depressions of hearths is suggestive. Further support for pot-firing inside structures derives from analogy with the contemporary site of Ayios Epiktitos, where an undoubted pot waster was found next to a large hearth inside a hut (Peltenburg in Karageorghis 1974, 632).

Although some form of hearth was found in almost every Phase 2 structure at Sotira which was fully excavated, the large clay-built type suitable for firing has a more restricted distribution. In two-part units, only one tends to have a hearth of this type, which is lacking, for example, in H.34, H.32, H.16 and H.19. Large hearths are also lacking in other subsidiary structures such as HH.31, 31A, 17, 6, 1A and 8A, and in less substantial free-standing structures such as H.24 (of mud-brick construction), and H.34A (Floor II, which is in fact subsidiary to H.3). In fact the distribution of this hearth-type, and hence, as argued above, the potential for firing pottery, is such that they are largely confined to large structures of rectangular form. H.30 and H.15 alone appear to be exceptions to this norm (distribution shown in Fig. 5.8). There tends also to be significantly greater quantities of coarse pottery found in those structures with large hearths than in those without, which may conceal the presence of unrecognised wasters.

This suggestion that the large hearths were used for firing pottery is not to deny that they probably served mainly

for cooking purposes, only to emphasise that, given the quality of pottery, the two activities do not require very different installations. Even if the suggestion is rejected in favour of firing in purpose-built kilns elsewhere on the site, the other evidence reviewed above is sufficient to document the production of pottery in a number of structures rather than specialised production at one centre.

5.5.3 The distribution of pottery.

Discussion of the distribution of wares at Sotira is based upon the sherd counts published by Dikaios. Imported wares (RW and Pcb) are excluded from calculations of the ware frequencies in each structure, forming as they do a very small percentage of the vessels in use and being scattered randomly about the site without significant concentrations or breaks in distribution. Reconstructed vessels or parts of vessels have had to be excluded for lack of comparability with finds in sherd form. An arbitrary number of sherds could have been assigned to count for each example but the computed frequencies would not be significantly altered by inclusion of the few examples reported. The percentages of Red Slip and Grey Lustrous are distinguished from Red Lustrous although both are variants of it, since their separate distri-butions are examined below. Only those phases of structures with total samples of more than 50 sherds have been used.

Deposits are assigned to phases in accordance with the stratigraphy and phase reconstructions discussed above (cf. Table 5.1). Sherds from between-floor deposits and from destruction deposits are included with those (if any recorded)

from the preceding floor, while those in the levelling layer prior to Phase 2 structures or in pre-phase 1 deposits are included under Phase 1. For those structures which continue in use from Phase 1 to Phase 2 (H.1, H.7, H.8A and H.6) separation of some sherds according to Phase is impossible. As an arbitrary solution, sherds from the respective Floor IIIs are assigned to Phase 1 and those from the Floor III-II deposits to Phase 2, but the frequencies would have been little altered had the latter been excluded from Phase 2. The sherds from all deposits in or underneath a structure which are assignable to a single phase have been combined for the computation of frequencies, irrespective of subphases where these were identified. Similar statistics for Phase 3 would be misleading since there are few Phase 3 deposits which do not include sherds from surface layers, with consequent likelihood of mixture. For Phase 2 the ware-frequencies of 29 different structures are given, with a mean sample size of just under 400 (viz. 395.1). The Phase 1 deposits are far fewer in number (13), many of them come from less well-defined contexts than those from Phase 2 and the samples are of more variable size. They are discussed below (5.6) in the light of the following analysis of Phase 2 deposits.

The analysis of Phase 2 is therefore concerned with large samples from structures which were all in use at the end of the phase and so contemporaneous. The total pottery found in a structure, however, is in part a function of its length of occupation during Phase 2; hence through amalgamating all the samples assignable to the phase, the resulting ware frequencies may obscure significant changes during its occupation. That

this is not the case is demonstrated by the overall similarity of ware representation between the floors of those structures with two Phase 2 floors. Table 5.2 gives three examples of this internal homogeneity and lack of marked change.

	n	Cb	RL	C	%
H.3 Floor III	170	24	60	16	
Floor II	773	35	57	8	
H.5 Floor III	384	43	48	8	
Floor II	1100	45	46	9	
H.6 Floor III	526	33	65	2	
Floor II	683	30	66	4	

Table 5.2 Sotira Phase 2. Internal homogeneity of ware frequency within structures. RL includes RS and GL.

This lack of marked internal variation justifies treatment of the composite samples as indications of the wares generally in use in a structure. Fig. 5.6 gives the frequency of locally produced wares in the 29 Phase 2 structures and in Fig. 5.7 the same data is presented visually on a site plan of that phase. The RS and GL wares are included with RL for pie-chart presentation, but their actual distributions are separately recorded on the same figure. Since the proportion of these variants of RL in a structure's total assemblage is dependent in part on the size of the sample, their frequency distribution is shown as percentages of the total sherds of those wares from that phase, and not as their frequency in each structure (with which they can be compared in Fig. 5.6). Although RS and GL are technical variants of RL in, respectively, finish and firing, their distributions are far from following the random pattern

to be expected if their production had been haphazard or accidental (Fig. 5.7). Instead each has a markedly non-random distribution, with 41% of all RS in the phase being found in H.14, and a third of all GL being found in H.6. The significance of these distributions is discussed later.

An overall trend across the site (Fig. 5.7) is evident in which Combed ware predominates to the W/SW and the RL wares to the east. By arranging the structures in order of decreasing Cb frequency (Fig. 5.6), this relationship between the wares can be expressed as a gradient in which decorated wares (Combed) decline relative to monochrome (RL, RS,GD) and coarse wares combined. Finer analysis of this gradient in terms of the location of the structures on the site permits the grouping of structures into clusters, defined according to their position on the gradient. Thus by taking cut-off points between H.34A and H.13 and between H.15 and H.32, the structures on the site fall into three groups, broadly an eastern one, a western one and a composite one of northern and southern subgroups (cf. Fig. 5.1 for numbering of structures and overlay for numbering of structures on Phase 2 plans in pocket at rear).

These groups represent, respectively, an area of the site in which Combed ware forms less than a third of the total assemblage (less than 34%, to be precise); an area where it forms an average a little over 50%, and never less than 42%; and smaller areas where the Cb proportion lies between 34% and 42%. The identification of these groups, however, creates three negative residuals to the southwest, H.21, H.6 and H.8A. The sample from H.21 is very small (55 sherds) and is unique in having

more coarse ware than either of the painted wares, Cb or RL. Structurally it is also unique as a small circular structure without being, or having, a subsidiary structure. It seems that some functional difference has been distinguished here, and H.21 may be excluded from this analysis on these grounds. The anomalous position of H.6 and H.8A, both subsidiary structures, and the lower Cb frequency in H.7 relative to its neighbours, is due to the distribution of the RS and GL wares, and is discussed later.

Within these three broad groups, smaller complexes of structures can be isolated on the criterion of their Cb frequency (demarcated by unbroken lines in Fig. 5.7). Some clusters are much more tightly bound together (e.g. the eastern bloc with Cb frequencies of 34, 32, 32, 32, and 31% in its component members) than others which are clearly delineated but which contain internal variability. Although the variation in Cb frequency apparently forms a gradient across the site, there is in fact a striking discontinuity between H.5 and the structures immediately to the NE, E and SE of it (H.14, the H.4/H.34 unit and H.1A). These have much less (average 13% less) Cb ware than H.5 which in turn is closely comparable with H.12 and H.32/33 to the west. This discontinuity is marked by the heavy line in Fig. 5.7.

The structural complexes isolated by literal interpretation of the Combed ware frequencies as being diagnostic of close inter-relationships can be further distinguished using architectural evidence (broken lines in Fig. 5.7). Each of the previously defined complexes consists of a large sub-rectangular building with minor subsidiaries, either attached to it or

free-standing close-by. This is true of those complexes including H.13, H.14, H.5, H.3 and H.1, H.8 appears on these grounds to dominate a further complex, bounded by H.27 to the west and including its subsidiary H.25 to the east. (H.17 has a low Cb proportion in a small sample but must belong with H.27 and H.28 with which it communicates directly). The large complex focussed on H.7 can be divided on architectural grounds into two separate complexes, for H.8 and H.8A, which are interconnecting, should be assigned to the badly preserved H.9, on which H.8 abuts, and which represents the dominating sub-rectangular structure of the group. The southwest complex may be more arbitrarily divided between H.35 and H.22, and H.32 with H.33 may be separated from H.12/H.16 to the east and connected with the fragmentary structure at the western limits of the excavated area. If reconstructed along these lines, the plateau area consists of at least eleven complexes of similar architectural composition (as defined in Fig. 5.9).

The validity of these complexes as internally coherent units gains strong support from independent distributional evidence, both for interior installations and for craft activities (Fig. 5.8). Of the former, the distribution of the large hearths discussed in connection with pottery-firing is such that each of the eleven complexes which was adequately excavated has two structures with this type of hearth, or three in the case of the H.5 and H.7 complexes. Another distinctive feature of some structures is a small semi-circular area enclosed by a stone wall. To Dikaios' list (1961a, 160) can be added three further examples, those in H.38 and H.40 of Phase 1, and that in H.13 formed from the surviving wall-top of H.29 (1961a, 88).

Each of the six examples belonging to Phase 2 (Table 5.3) is found in a distinct complex, such that no complex has more than one example or fails to include one if it was extensively excavated and not eroded.

Phase	Structure	Comments
1	H.36	No finds.
1	H.38	No finds. Partly excavated.
1	H.40	No finds. Partly excavated.
2	H.13	No finds. Formed by H.29 wall, Partly excavated.
2	H.8	No finds. Few pieces of limestone on floor.
2	H.11	No finds. Thick, carefully smoothed mud floor with few stones.
2	H.18	No finds. Forming slight depression. Traces of mud lining.
2	H.2	Contained querns and trough
2	H.12	Contained querns, unfinished axes; 2 pits.

Table 5.3 Sotira. Enclosed areas in structures.

As to the function of these enclosures, Dikaios argued on the basis of those which contained finds that they were used for grinding, both of grain and of stone implements. While grinding activities seem well documented for the areas in H.2 and H.12, these two examples also differ from the others in being accessible from elsewhere as well as from the interior of the structure in which they are found. The H.12 area can be reached from its subsidiary H.16 (as the text with the photograph demonstrates, 1961a, 79 and Pl. 46e), and that in H.2 from outside. The lack of finds in the other enclosures can hardly be fortuitous, unless an unforeseeable destruction

happened to find seven separate areas empty of the utensils normally used or stored there. On the contrary, the deliberate planning of the H.13 example by incorporating the H.29 wall-top, and the hints from H.11 and H.18 of carefully smoothed mud floors argues for a function of inactivity, either prosaic (for sleeping) or less tangible (for ceremonial purposes). Although the function of the H.2 and H.12 areas may have differed to some extent from the remainder, the enclosed areas are structurally and distributionally a distinct and identifiable class of installation.

The distribution of inferred craft activities is also such that each complex tends to contain one structure where such activities were concentrated. The evidence for preparation or use of colouring materials was discussed above in the context of pottery manufacture, and the working up of stone implements, or sharpening of them, is documented by unfinished forms (also found in H.1A of Phase 3) and perhaps by the hoards of unworked pebbles. The distribution of picrolite working is based upon the provenances of unfinished pieces. Finished articles, mainly pendants, were found in other contexts but do not of themselves demonstrate production on the site. The flaking of flint is well documented for H.7 Floor II and H.3 Floor II (1961a, 162) and the other contexts in Fig. 5.8 mark the presence of cores listed by Dikaios. The 100% correlation between the locations of these two activities, picrolite- and flint-working, is notable; although the material is soft enough to be worked with flint, this association is more plausibly a correlation resulting from, and so strong support for, the use of the same structures for all such activities. A

further craft, the working of bone, is to be inferred only from less strong evidence. Antler appears to have been worked on the Phase 1 floor under H.33 (1961a, 131 and Pl.51f) while the worked length of bone from H.35 Floor II (no. 225a-b on Pls.104, 105) seems to be in the course of manufacture for bone beads similar to complete examples (nos. 1, 218; cf. no. 15 (also unfinished?) on Pls. 104, 105). Further analysis of the distribution both of installations (e.g. benches, postholes) and finds not considered here would serve as a means of testing and further refining the identification of these complexes.

5.6 Internal Structure and development of the site

To summarise the distributional evidence so far reviewed, a number of different lines of approach have led to the isolation of distinct complexes of buildings on the plateau during Phase 2. That the mapping of diverse elements should result in consistent groupings of structures is a strong indication that the elements are ultimately correlated, directly or indirectly, through the functions of the structures in which they were found. These complexes are usually distinct architectural units but architectural criteria alone would not have revealed certain distinctions, for instance the separation of H.1A from H.1 and the isolation of H.14. In fact the separation of H.14 as a distinct complex appears to be the most questionable of the identified complexes, on the grounds both of its position and of its relative lack of surviving evidence for craft activities.

The isolation of H.14 is based primarily on the discontinuity in the Cb:non-Cb proportion across the site (Fig. 5.7) which shows an abrupt transition at this point, principally between H.14 and H.5 but also extending northwards and south-

wards between adjacent structures. This transition is less marked at the northern and southern limits of the excavated area where the complexes centred on H.13, H.18 and H.1 appear to document a continuous variation in the Cb:non-Cb proportion across the site. The interpretation of the significance of this pattern depends on previous arguments about the household-based production of pottery. Given the evidence for pottery production in two (or three) structures of each complex, and the clear predominance of Cb ware to the west and of RL wares to the east, it is plausible to propose two different traditions of pottery decoration, each concentrating on one form of decoration (combed or monochrome) to a greater extent than the other. The transitional zones (H.13, H.18 and H.1 complexes) represent a blurring of the distinction between the two traditions, either as a result of the copying of that style typical of nearest neighbours or through the circulation of pots between complexes. The homogeneity of pottery production within structures over a long period has already been pointed out and supports the idea of strong complex-based traditions. The lack of a clear cut-off between the two traditions in the northern and southern complexes may rather be due therefore to the circulation of pots, a suggestion which derives firm support from the unambiguous evidence for circulation of RS and GL wares in a similar way (Fig. 5.9).

The distribution of RS and GL wares demonstrates convincingly the directed exchange of each of these wares to the source of production of the other <u>across the discontinuity already defined</u>. Each ware in reaching the other's centre of production is conveyed via one other complex across the dis-

continuity, which instead of distributing it hands it on to the source adjacent to it. The small quantities of either ware which are distributed outside the exchange-cycle between source-complexes are directed preferentially to the main structure in each complex from which it may then reach subsidiaries. To document these points, before taking the analysis further, the separate distributions of RS and GL will be discussed (Fig. 5.9).

Of the sample of RS sherds (N=818) found in Phase 2 contexts, 41% come from H.14, a sufficiently high proportion to imply that the production of this ware with a thin red slip was the speciality of that structure. Of the remaining 59%, 44% are distributed southwards across the discontinuity towards H.6 which, it will be argued, was the source of GL wares. H.5 has 19% of the RS but distributes none except a tiny amount to H.12 in its own complex, handing it on instead to H.6, which contains 16%. The steady fall-off with distance from H.14 to H.7 continues with the further small-scale distribution of RS from H.7 (to which H.6, the main recipient, belongs) to one structure in each of the neighbouring complexes and to the other members of its own complex. (H.8A has to represent the H.9 complex in this analysis since H.9 itself is too badly preserved). The term "distribution" is used loosely, referring to the distribution as seen archaeologically and is not meant to imply any particular mode of organisation. Very small quantities of RS cross the presumed break from H.14 to the H.13 complex, and a little goes to neighbouring complexes east of the break (H.18, H.3). Some 5% reaches H.4 whence it falls off in frequency to its subsidiaries, including H.1A, from which a fraction reaches H.24 in the H.1 complex.

The distribution of GL wares follows almost exactly the same pattern as does RS, only in the reverse direction. Of the sample of GL sherds (N=154), 32% is found in H.6. In

contrast to H.14, however, H.6 has no large hearth suitable for pottery production; it probably served as storage space for the adjacent H.7 where pottery-making is well documented (even if it was fired elsewhere). The combined H.6+H.7 frequency of 46% GL ware makes this complex the specialised producer of grey wares obtained through control of firing conditions. As with the RS, 19% of the GL is found across the discontinuity or break in H.3 which, distributing none, hands it on to H.14, the source of RS ware, with 16% of GL. From its source in the H.7 complex very little GL is distributed in the vicinity, namely a small quantity to other members of the complex and a little to H.8A, and hence to H.8. At the receiving end a little GL crosses the break to H.13 (and so to its subsidiary H.31) and to H.15 (and hence to H.12 in the same complex). The much more restricted distribution of GL and the smaller quantities involved suggest that its production and circulation were of shorter duration than that of RS.

The clarity and simplicity of the two-way exchange via intermediaries with some secondary distribution is such that radically different explanations of the data are barely credible. In particular the steady fall-off in frequency with distance rules out as an economical hypothesis the possibility that RS and GL were separately produced in different complexes in exactly those quantities to produce the distribution pattern here described. The fall-off alone would discount this alternative and the operation of the two-way flow of wares accounts very satisfactorily for the observed pattern. It is theoretically conceivable that the sources of RS and GL were reversed, i.e. located at the point of lesser representation, and the receiving end where the frequency is greatest. This would not

change the mechanisms involved but is a much less economical hypothesis and accounts less easily for the distributions outside the source- or recipient-complexes. Furthermore the identification of RS and GL wares as specialised products which were circulated about the site provides a neat explanation of the negative residuals, H.6, H.8A and, to a lesser extent, H.7, isolated by the grouping of structures according to their Cb frequency. The high RL frequency in these structures (and hence low Cb) includes a high proportion of RS ware received from elsewhere (viz. 11% in H.6, 14% in H.8A and 6% in H.7). The presence of wares included under the broad RL category which were in fact obtained from elsewhere (both RS and GL in the case of H.8A) and of specialised wares produced locally (GL in the case of H.7 and H.6) together inflate the RL category and thereby reduce the Cb proportion.

Because of the sudden and unforeseeable end to the phase of occupation, the necessary assumption that any distribution as recovered is a valid reflection of the complete past state of a system is here more justified than is often the case. H.5 and H.3 appear to be passing on half only of the RS and GL wares respectively received by them, but this is because the exchange-cycle has been "frozen" in operation at the time of the earthquake. Although a number of pots of the specialised wares were present in the intermediary structures (H.5 and H.3), the fact that they were not distributed elsewhere shows that all pots received were eventually passed on to the source of the other. The directed exchange of RS and GL wares to the source of the other appears to be part of a system designed to set up ties where none existed naturally. If the "break" running north-south across the site represents a social boundary, then

the exchange of the wares is clearly directed to establishing ties across it. The existence in each case of an intermediary between the two source-complexes is not due solely to the latter's non-proximity, for intervening complexes may be avoided if desired. If lack of direct proximity had been the sole obstacle, H.5 would have served to convey both wares, but the deliberate by-passing of H.5 and the use of H.3 to convey GL wares represents a strategy to widen the network involved. The strategy consists in maximising social bonds - by involving other complexes than the source-complexes - while minimising the risk that each source-complex might fail to receive the desired product. There are therefore four complexes crucially involved in what is essentially a cycle between two sources of production. The lack of GL in H.5 demonstrates conclusively that the two wares were not exchanged "for each other" in any literal sense; rather the system is an example of balanced reciprocity (Sahlins 1972, 185-276) in which equivalence of exchanged goods may only be approximate at any one time. Moreover the balancing goods and services are less likely to be amenable to archaeological detection.

As with H.5, so with H.1, it is the absence of certain wares that is no less significant than their actual distribution. Since the H.1 complex was not the source of any specialised ware nor could be drawn in to act as an intermediary between those that were, it received none of either ware, save for the tiny amount (7 sherds) in the subsidiary H.24. In this case the distributional gap strongly supports the argument for cyclical exchange. The secondary distribution of wares from the recipient- or source-complexes themselves represent

occasional gifts directed to the main structure in other complexes, within the existing web of social relationships between complexes. In this respect the RS and GL wares serve slightly different ends insofar as H.7 distributes RS only to complexes west of the social boundary while H.14 sets up further ties across it to H.13 and H.15 by giving GL pots. This observation reinforces the difference of scale between the quantities of the two wares involved in suggesting that the two components of the exchange-cycle were outwardly operating independently, although in fact constituting part of a system of balanced reciprocity between the two components of the settlement.

The existence of two main components among the structures on the plateau, if demonstrable, has important implications for the site development and its social context. As already noted, the system in operation was designed primarily to nullify the effects of a boundary which broadly divided the site into two segments. The precise definition of the boundary to north and south is blurred by the lack of a clear-cut break in the Cb: non-Cb proportion, a blurring plausibly caused by circulation of Cb and RL wares on analogous lines to those documented for RS and GL wares. The production of both Cb and RL wares in different structures in both segments of the site would not rule out the occasional exchange of them, since it is the exchange and not the goods which is of significance. In fact the production of GL in a structure of the predominantly Cb tradition strongly suggests the deliberate manufacture of a ware acceptable to complexes of both traditions for its novelty value. The broad stylistic variability of Combed decoration would have afforded ample scope for the circulation of pots of superficially similar ware, and also provides a fruitful

approach towards testing the suggestion that Cb pots were circulated. The combing technique varies widely according to width and nature of stroke, degree of incision (both probably due to the implement used) and the structure of the design. By concentrating on technique and mapping the distribution of different techniques, the scarcity of complete vessels would not be an obstacle to reconstructing the organisation of pottery-making and distribution in more detail than has been attempted here.

The two segments of the site are centred respectively on an eastern and northeastern area in which new structures were founded in Phase 2 on the Phase 1 destruction debris, and on a southwestern nucleus of structures (H.7, H.6 and H.8A) which had been founded in Phase 1. Any ascription to one segment of the northern (H.13, H.18) or southern (H.1) complexes is difficult because of the blurring of the boundaries through circulation of wares; but, broadly speaking, there is some validity in the distinction drawn between a focus of predominantly Cb ware tradition surviving from Phase 1 and a focus of predominantly monochrome tradition found in Phase 2 structures built following the destruction.

In this context it becomes relevant to examine the distribution of wares in Phase 1. As mentioned above (5.3.3), the Phase 1 deposits which fulfil the criteria for inclusion in a ware-frequency chart number only 13; several of them come from deposits underlying Phase 2 structures without associated architecture, and the samples are of more variable size than the Phase 2 ranges. With these reservations, the ware frequencies of local wares in Phase 1 deposits are depicted in Fig. 5.10, in decreasing frequency of Combed ware as in Fig. 5.6. The

exceptionally high frequency of Cb ware in the small H.40 sample is balanced by the small amount of Cb immediately outside the structure (pre-17) and the two samples combined give a Cb frequency of 35%.

As in Fig. 5.6, a cut-off point between H.13A and H.7 broadly divides the contexts into a northern/eastern group at the low Cb frequency end of the distribution (in which only the pre-H.19 sample is anomalous) and a western/southern group producing relatively more Cb ware. To the latter group would belong H.1 with a Cb frequency of 39% had the Floor III-II sample been assigned to Phase 1 rather than to Phase 2 as above (5.5.3). The distinction is not clear-cut but as with the interpretation of Fig. 5.6, the geographical grouping of structures sharing similar pottery assemblages cannot be denied, and each tradition is concentrated towards the same part of the site in both phases. This pattern alone would support the idea that the divisions observable in Phase 2 had their origin in Phase 1, as might be expected since the continuity between the two phases is well documented on independent grounds. The occurrence of small quantities of RS (in both segments of the site) and of GL (in H.7 alone) also indicates that the Phase 2 organisation represents an outgrowth of a Phase 1 development which had been temporarily disrupted by a partial destruction of the site's buildings. In this connection the founding of H.14 on almost exactly the same foundations as the destroyed H.37 supports not only the continuity between the two phases but also its identification as part of a distinct complex in the predominantly RL tradition.

As mentioned at the start of this chapter, the buildings on the site have been referred to neutrally as "structures"

rather than as "houses" in view of the latter's connotations of domestic family units. General considerations of the covered floor-space afforded by the majority of the structures on the site (cf. Naroll 1956, Leblanc 1972) rules out the possibility that each structure housed a nuclear family. Moreover the large sub-rectangular buildings, which could be argued to have done so, are just those structures in which most of the evidence for domestic and maintenance activities were carried out. The number of installations on any one floor would have severely restricted the amount of space available to an occupant family. With the identification of distinct complexes on the site consisting of one large structure and several subsidiaries, it is preferable to refer loosely to these complexes as representing households, without implications as to the number or biological relationships of their members.

Recognition of the complexes demonstrates that expansion on the plateau consisted in adding to existing cores in a regular manner, and that the observed site pattern is not the result of casual infilling between buildings where space was available. In other words, with the foundation of a large sub-rectangular structure, the area immediately round about eventually became taken up with extensions to and subsidiaries of that structure, such that any major new foundation would have to be sited elsewhere at a distance. On these grounds, then, the space available for occupation on the plateau would have been taken up, or at least "reserved" for expansion of existing units, thereby encouraging the occupation of the slopes of the hill. The packing of structures towards the centre of the site and greater lateral extension towards the

fringes (Fig. 5.9) testifies to continuing expansion within an area already too confined to accomodate it. Significantly, too, the complexes tend to be focussed outwards from the centre or inwardly within any one complex, and not uniformly towards the centre of the plateau; the assignment of H.1A to the H.3 complex is the more intelligible in this light.

Since expansion on to the slopes would have taken place whenever either segment of the site had insufficient space for further major foundations, the relative dating of the other Areas through their pottery is not feasible, sampling considerations aside. The predominance of Cb ware in Area I is not indicative of any particular date since the co-occurrence of the two main traditions rules out any simple seriation for ordering purposes. The 5 sherds of RS from Area I (from the fillings of Graves 4 and 12) may help, however, to confirm a Phase 2 date for that area (cf. 5.4).

If the site developed approximately in the manner here described, the foundation of large structures which subsequently received additions in the space round about them argues for a degree of deliberate planning in their original location on the plateau. As argued above, the location of the earliest structures owed something to the local topography of the bedrock, but as debris accumulated, and unevennesses were levelled, this factor would have been of secondary importance. But the building of large structures with sufficient space between them to receive later additions betrays an element of foresight in site-planning. Now the evidence for various craft activities, reviewed above, is strongly concentrated in the larger structures and is notably rare, if not absent, in subsidiary structures. If space was left for these future additions which were not

devoted to craft activities, then it seems that the extension of covered space was in order to accommodate increased numbers of persons and their domestic needs.

Given (1) an element of foresight that extension to existing structures would be necessary, and (2) that this expansion served to accommodate increased numbers, then (3) a system involving addition to households by recruitment through marriage can be assumed. Although observable in the outward expansion on to the hill-slopes, strict neolocal residence would seem not to have been practised on the plateau. The strongly conservative pottery tradition within structures indicates that potters remained within the household of birth rather than moving between complexes, since household tradition is explicable in terms of continuity between generations, or in the free copying of designs by potters working within a household unit (cf. Friedrich 1970). Thus, assuming female potters, given the scale of local household production, some measure of uxori- or matrilocality is a defensible suggestion.

5.7 External resource exploitation.

This analysis of the settlement at Sotira has concentrated hitherto on the internal organisation of the site for which the available evidence is most abundant. The concluding section is concerned with the external resources exploited by the occupants, insofar as the available data permit its reconstruction. The scope is much more limited since little direct evidence for subsistence activities was retrieved during excavation of the site, and also because of the lack of excavation on contemporary sites in the region. Broadly contemporary sites have been excavated elsewhere in the island.

notably at Philia and at Ayios Epiktitos, but they cannot be used as direct analogies with Sotira, although manifestations of the same cultural tradition (Chapter 3). This section is limited therefore to indications of the probable subsistence basis of the site and the acquisition of raw materials for maintenance and other purposes. A reconstruction of the social and economic systems in which Sotira may have participated is attempted in Chapter 6.

No direct evidence was recovered during the excavation for consumption of cereals or other plant foods, but the circumstantial evidence is strong. Some of the ubiquitous grinding equipment (pestles, mortars, handstones) was used for grinding colouring material or for sharpening stone implements, but the majority probably served for food preparation. The frequent close association of grinding-equipment and pits is also suggestive of the storage of processed foods, although again it is true that some pits were used for storage of, for example, stone tools and vessels. Although no imprints of grains are reported on coarse wares, the common use of chopped straw temper and its occasional impression on pot-bases is strong evidence of the residue from harvesting activities. In sum, then, the consumption of cereals may be assumed for Sotira, documented as it is for contemporary sites elsewhere in the island (Philia and Ayios Epiktitos).

Very few identifiable faunal remains were recovered from the site, far less than might have been expected had meat been an important constituent of the diet. However the paucity of faunal remains is explicable in a number of ways. Butchering would have taken place outside structures and the disposal of bone refuse outside the habitation area, notably down the

north and west slopes, would have been simple. Furthermore the presence of canids, arguably domestic on account not only of their small size (Zeuner and Grosvenor Ellis 1961), would have led to the fragmentation of bones beyond the limits of identification. Nothing is reported of the quantity of unidentifiable bones received for study but the inability to identify many bones beyond the "Ruminant" stage suggests that the sample was badly fragmented. Indeed the majority of the identified specimens are of antlers, horn-cores, tusks and teeth, those parts which are most resistant to destruction. Antlers and horn-cores were saved for the manufacture of tool-hafts, and there is a possibility that particularly fine heads were suspended from the walls of buildings (H.5; Floor II; 1961a, Pl.42d). Meat would have been provided by the ovicaprids, deer and pigs and perhaps also by the canids and equids, while milk products, skins and perhaps wool may have been utilised. A perennial spring of water was to be found a few hundred metres east of the plateau and another in a cavern across the valley to the south (cf. Dikaios 1961a, 1).

After food, water and clothing, the fourth main requisite for daily subsistence, shelter, could also be met with easily acquired materials. However any impression of self-sufficieny on local resources would be misleading for the settlement clearly depended upon materials and products of more distant areas to supplement those locally available (Table 5.4).

The Pakhna limestone formation on which the site is situated provided stone for building and havara for levelling purposes; the harder limestones were also used for a few stone implements and containers. The formation includes calcarenites

Locally available	Procured from elsewhere
Limestone	Hard (igneous) stone
Havara	Chert
Sandstone	Schist
Clay	Ferruginous umbers
Tempering material	Picrolite
Reeds	Chalcedony
Timber	Marine shells

Table 5.4 Some raw materials utilised at Sotira.

and calcareous sandstones, which were used inside structures and also for one perforated ornament (no. 232a (1961a, 200), though described elsewhere (1961a, 32) as of andesite). The reddish clay of the local wares would have been found in secondary colluvial deposits derived from the red palaeosols and tempering materials of chopped straw and stones were immediately at hand. Reeds too were collected for the weaving of mats and, probably, also for baskets. During the occupation of the site large quantities of timber were used for structures, quite apart from other requirements such as fencing and smaller-scale woodworking. The size of trunk needed for some central roof-supports and the numerous poles for minor supports and as roof cross-beams argues for extensive tree-felling. The resulting branches and brushwood served for roofing, with a mud covering, but this would have required more frequent renewal than the structural frame. The quantities of timber used for these purposes and as firewood would have involved a progressive clearance of vegetation from the immediate vicinity of the site as occupation continued.

Of those materials found at Sotira which were procured from elsewhere, only those which must on geological grounds, or because of their habitat in the case of the marine shells, be so defined are listed in Table 5.4. To these should be added others of perishable substance, of which salt is perhaps the most important, and finished articles, such as the white-clay painted wares, which were produced at other sites. These are best discussed within the framework of intra- and inter-regional exchange systems (Chapter 6) but some analysis here may serve as a preliminary framework. In particular, the nature of the excavated evidence at Sotira is more informative of the roles of these raw materials than the simple fact of their extraneous origin.

The great majority of the stone implements, some querns and "cupstones" and rare stone vessels at Sotira were made of hard stone of volcanic origin. Within this class there is a useful distinction between implements and other moveable objects, on the basis of the respective gross volume of raw material required to produce them. Where the local limestone was functionally adequate, the acquisition of hard stone was less of a priority. This is clear from the rarity of vessel fragments (1 against 13 of limestone) but the commoner occurrence of querns of hard stone, for which most limestone would have been too soft to stand prolonged grinding, and the relative abundance of hard stone axes, chisels and pestles.

The identified hard rocks include andesite (on which cf. Chapter 6.4.2), dolerite, gabbro, diabase and olivine, all of which derive ultimately from the igneous massif of the Southern Range. Chalcedony, whose hardness was valued for hammerstones and burnishing pebbles, is usually found as amygdaloids in the

lower pillow lavas, while schist, of which one quern was made, is of restricted natural occurrence within the Mamonia Complex. The absence of chert is one feature distinguishing the Pakhna from the Lefkara limestones, which outcrop some distance to the north of the site between the northern limit of the Pakhna and the igneous contact. It is in the Perapedhi formation at this sedimentary/igneous contact that the umbers occur which were used as colouring material. True ochres are comparatively rare in Cyprus but the permanent and strong colours of Cypriot umbers have always been well-known (Bear 1963, 162). Unfortunately, no details of the pigment analysis are given (1961a, 197). The other non-local material, picrolite, is found in the central serpentine core of the massif in close association with, and often criss-crossing, the veins of chrysotile asbestos, or in the crushed serpentine of the Mamonia Igneous Complex (cf. 6.4.2). The local geology of the area is such that a transect north from the site would successively encounter, at a distance of between 12 and 20 kms. from Sotira, all these imported materials, except schist, in approximately the order: chert, umbers, chalcedony, dolerite, diabase, gabbro, picrolite. The nearest outcrop of schist is within the Mamonia complex west of the Dhiarrizos River valley (about 20km. distant), a transect to which would cross another area of Lefkara limestones, and hence of chert.

Given the natural occurrence of these materials, there are several methods by which they may have in fact reached the site, and which are broadly of two categories:

(1) that raw material was fetched from where it occurred naturally either (a) from its parent formation or (b) from whither it had been naturally transported;

(2) that these materials were acquired through exchange with other areas either (a) as finished forms or (b) as rough-outs or as selected pebbles.

These alternatives are not, of course, mutually exclusive but evidence from the site itself indicates that most materials were acquired in comparable ways. Within the two options of the first category, boulders of volcanic rock and, less commonly, chert nodules too are found in the beds of rivers originating in the massif and transporting material along their course. Such river-beds are the obvious source of hard stone for low-land sites located on river banks, but this is not true of Sotira (as Dikaios noted), to which the nearest potential source lies in the Kouris river some five kilometres to the east of the site. That suitable pebbles were brought to the site to be worked up into implements as required is documented by the hoards of unworked river pebbles and by the axes and other implements in various stages of manufacture. Both the hoards and the re-working of damaged implements point to the careful storage and full utilisation of a valued resource.

Transportation of such heavy material, especially of querns and "capstones", is not a problem if a necessity (being well documented for recent mobile societies) and anyway equids were available for such tasks. Dikaios noted (1961a, 190) the poor workmanship of most implements, which often retained traces of flaking, and that the smaller forms tended to have more surface polishing than the larger. Since in general axes were manufactured for use off the site itself, a predominance of unfinished forms may be expected to be found in excavation, but Dikaios' observation holds true that the degree of workmanship

of implements is directly related to the local availability of raw material. Thus the Sotira implements appear not to have reached the site as finished forms from a site located near a good source of raw material. Now the route to the nearest source of raw material, in the Kouris river due east of the site, traverses the environs of the broadly contemporary site of Kandou (11.5), at which the surface material includes fine polished axes and adzes. Consequently, it seems that the Kandou site was not occupied simultaneously (cf. 6.5.1) such that the nearest river-bed source could have been the actual source, unless Sotira acquired its material from a river-bed outside the vicinity of a contemporary site. Evidence for the exploitation of resources towards the sea, discussed below, suggests that the lower reaches of the Kouris would have been a suitable alternative source.

The method of acquisition of materials other than those available in the nearest river-bed (which may have included chert) is less certain. The evidence from the site does indicate, however, the form in which some of the raw material reached Sotira. The quantity of chert on the site is not great relative to the area excavated. Stekelis (1961a, 230) studied 831 pieces, apparently all those from HH.1-34 (alone), of which nearly 5% were small cores and a little under two-thirds were unretouched flakes. Some of the flakes, the smallest being 1.5cms. long, showed wear traces and it is possible that, given the need to acquire chert from elsewhere, most flakes were put to some use. The few examples of translucent quartz may represent an attempt to overcome the limited supplies of good material, which seem to have been acquired in the form of

nodules rather than as finished implements.

All the piorolite on the site is found in the form of finished objects or in partly worked form. As with the stone implements various stages of manufacture, mostly of pendants, are represented and several show signs of re-boring where a pendant had broken at the perforation. The size-distribution of all comparable pieces (Fig. 5.10) shows a pronounced peak between 3.5 and 4.0cms., the usual size for pendants. A few such smaller fragments have probably been reworked from broken pendants, while the upper size-limit is rarely above 5cms. Since the largest piece (1961a, Pl. 102 no. 90) is artificially smoothed and already partly worked (1961a, 38), it seems that piorolite arrived at the site in the form of "blanks" of material of a size suitable for small pendants but nothing larger.

The final item of Table 5.4, marine shells, represent the only strong evidence for exploitation of marine resources in the area since the tooth from a fish or reptile among the faunal remains is equivocal. The species belong to a variety of littoral and offshore habitats and may have been collected for food. However the small quantities found at the site are no indication of their dietary importance since transportation of marine mollusca as a food resource is quite uneconomical of effort and consumption at source is the only feasible strategy. Rather, those found in the excavation had probably been used for decorative purposes. Dance (1961a, 238) remarks that many of the specimens of Cassis sulcosa, the commonest species, had a perforation "almost certainly not caused by a marine predator". Although not described as such, other shells too were perforated, (e.g. 1961a, Pls. 110, no. 404 (Cerithium); Pl. 112, no. 450 (Trochus turbinatus); Pl. 114 no. 453a,b (Murex trunculus)).

Many perforations of marine shells are in fact caused by boring sponges (Shackleton 1968) but this does not prevent their being strung for decorative purposes, and those found in the structures at Sotira seem to have served this purpose. If the shells were acquired at source, rather than through exchange, then one feasible route to the coast would have been southeastwards towards the Kouris river-mouth, an excellent source for hard stone. Such excursions may have had as a primary purpose the collection of salt from similar littoral areas.

5.8 Summary.

The questions raised concerning the natural resources exploited by the inhabitants of Sotira cannot be discussed without broader consideration of the evidence for exploitation of the whole region, including the problem of the contemporaneity of nearby sites. On the solution of this problem depends any estimation of the relative importance of exchange of finished articles compared with the collection of raw material at source. These questions are discussed in Chapter 6 but the evidence reviewed above has defined certain limits within which they can be pursued. There is strong evidence for the transportation to the site of raw material in a form suitable for further working (selected river boulders, chert nodules, picrolite blanks) which was fully utilised by constant re-working and re-cycling. There is no satisfactory evidence for the acquisition of finished articles, although the criteria for distinguishing these are mainly negative, namely the absence of objects of a superior quality to those seemingly manufactured on the site.

The production on the site both of utilitarian tools and containers and of decorative items was carried out in the main

structure of each complex and, as with pottery-making, was evidently a household rather than a centralised or specialised activity. The nexus of social relationships linking different complexes and the two main components of the site, as demonstrated by the ware distributions, would have served equally effectively to distribute the raw materials, however acquired, which each complex needed for daily subsistence and maintenance activities. The distribution of finished picrolite ornaments, of perforated shells and bone beads is diffuse across the site and these decorative items would also have circulated freely within the settlement. The general picture is of the individual complex, within which generalised reciprocity would have obtained between the members of a single household; and also, perhaps, of a basic social division within the site, a division bridged through the continuous exchange of gifts and services which would have fluctuated about an overall balance of debits and credits in the long term. It is tempting to see this social division as having been lineage-based, originating in the social composition of the founding members of the settlement.

The size of that founding group is difficult to determine because of the fragmentary evidence for Phase 1. Several of the structures of that phase have been shown (5.3.2) to be secondary rather than primary foundations, and there are only two or three main foci (H.39, H.36/37 and perhaps H.7 and H.9) which can be isolated as being chronologically prior to any other activity in their area. For lack of stratigraphic correlation, nothing conclusive can be said of the number of initial foundations, but the number of households involved would seem due to be reckoned in twos and threes rather than a dozen or more.

The continuity and permanence of the settlement, once established, is firmly documented by the stratigraphic and architectural evidence, and given strong support by the extreme lack of change in the overall production of the various wares during its life. The length of that life is hard to determine independently of absolute dating methods, which are themselves liable to considerable margins of error. An estimate in terms of generations would ascribe at least one to Phase 1, and at least two to Phase 2. This estimate for Phase 2 is based on the number of subsidiaries added to the large structures founded in Phase 1, assuming these to represent the extension of covered space to house those coming into the household on marriage. As already noted, the length of occupation envisaged following the earthquake, as reflected in the labour input of the retaining-wall, was evidently greater than its actual duration which was probably no more than a generation. These generation estimates are clearly minimal but provide a duration of the site of at least four generations, say 80-100 years.

The passage of time during Phase 2 is documented not only by architectural evidence and the accumulation of deposit, but also by smaller details such as the disuse of earlier hearths or pits and the making of others on the same floor (e.g. the hearths on H.14 Floor II and the pits in H.13 Floor II). A supplementary argument would suggest that the considerable expansion of the site on to the slopes testifies to some length of time of gradual population increase from the numbers of the founding settlers. Immigration to the site would of course be responsible for the same effect, but the very lack of change and novel elements during the occupation argues against extensive

immigration. On these grounds, Phase 2 would have spanned three or four generations at least.

The radiocarbon dates of 3455±110 b.c. for the first phase and of 3145±130 b.c. for the second are liable to the errors discussed in Chapter 3, but they are significantly different and, taken on face value, they suggest a duration of Phases 1 and 2 of some 300 years. This estimate seems quite reasonable in view of the minimum span of 80-100 years argued above, but greater precision is not possible on the available evidence. The abandonment of the site was largely a result of the earthquake suffered during Phase 2 and therefore, significantly, need not beattributed to exhaustion of the local resources. The fact of subsequent settlement in the region within a few centuries also points to this conclusion, and is discussed elsewhere.

Chapter 6. Patterns of Settlement.

The aim of this chapter is to examine the patterns of settlement in Cyprus during the early prehistoric period by combining the information on sites recorded in the Catalogue with the chronological arguments in Chapter 3. The chapter first defines alternative models of settlement history based on the absolute dating evidence (6.1) and then considers the occupational nature of the sites under discussion (6.2). The patterns of settlement are examined by taking four specific areas of the island for which the available information on sites is most abundant, and then by comparing the patterns suggested by the distribution in these areas with the less adequate data for other regions (6.3). After a section (6.4) devoted to the evidence for intra-island contacts, the alternative models of settlement history proposed in 6.1 are evaluated by introducing the concept of a "focus" of settlement (6.5.1) and proposing hypotheses about the nature and development of both ceramic (6.5.2) and aceramic (6.5.3) settlement episodes.

6.1 Implications of the C14 date distribution.

In synthesizing the arguments of the previous chapters in order to develop models of settlement patterning, the evidence of radiocarbon dating provides more than a calendrical correlation for the settlement data. As absolute dating took precedence in the discussion of chronology in Chapter 3, so here prior consideration of the C14 dates helps to define alternative explanatory models. In Fig. 6.1 the radiocarbon dates used in Fig. 3.1 are displayed by means of dispersion

diagrams (Ottaway 1973). The two diagrams make use of respectively the sixth millennium (aceramic) dates and the fourth millennium dates (all without calibration). The determination of the sample asscciated with pottery at Dhali Agridhi (GX-2847A) and those from Erimi are excluded from the diagrams, although discussed with them below, because of their separate significance. The ceramic context of the Dhali date cannot be readily identified with those of other determinations (though cf. below) while the Erimi dates, referring as they do to the very end of the site's occupation, are barely older when calibrated than the historical dates now assigned to EC material (Chapter 3,2).

The implications of Fig. 6.1 concern the question of continuity of prehistoric occupation of Cyprus. Although the dates used in each dispersion diagram are too few and from too few sites to represent any random sample of C^{14} determinations from prehistoric contexts, the interquartile ranges can be used with caution to interpretative ends. For the sixth millennium aceramic phase the interquartile range of 182 years, based only on the seven Khirokitia dates and the one Dhali date, is unlikely to be much extended when two unpublished dates from Cape Andreas are included. These are apparently entirely compatible with the recent Khirokitia determinations (Le Brun, personal communication). The fourth millennium interquartile range of 371 years is the result of determinations from four different sites, each independently chosen for excavation as probably representing a different chronological phase to those previously investigated. With the inclusion of Erimi, the interquartile range of 582 years (radiocarbon) may form a

provisional estimate for that resulting from the collation of all future radiocarbon dates from culturally comparable contexts. Naturally the present sample needs greatly to be increased to allow any statistical confidence in this predlotion.

The wider significance of Fig. 6.1 lies in the non-overlap of dates from aceramic and ceramic sites by more than 1500 years, and hence the question whether Cyprus was uninhabited during that gap in the radiocarbon chronology. The more C14 dates from future determinations which fall within or only marginally extend the present interquartile ranges, the more probable that those contexts which date to the present gap are extremely rare. In this respect, the later Dhali date (GX-2847A) of 4465±310 b.c. is important despite its large standard deviation. Although the sherds in the dated context are not comparable with the main fourth millennium repertoire, their closest parallel apparently lies with the early monochrome ware from Philia (Lehavy 1974). Since the Philia wares occur in the earliest of several phases which are probably successive (Ch. 3.3.8) and for which a C14 date of 3320±110 b.c. from a later though unspecified phase is available, a late fifth millennium b.c. date, but no earlier, for the Dhali ceramic occupation seems most plausible. Thus there would still remain a full millennium without a dated context on the island.

Solely on the basis of radiocarbon evidence, then, various alternative models of settlement history are possible (Fig. 6.2). The pattern of the C14 date distribution (a in Fig. 6.2) argues against a settlement history of Model b, in which an initial colonisation leads to exponential settlement growth. It suggests rather a bimodal distribution of site-

occupations, following the first peak of which there was either a marked decrease in number of sites (Model c) or an absolute break in occupation of the island (Model d). The three models depict only these three main alternatives and have all assumed, for ease of depiction, that later (ceramic) settlement growth levelled out when a certain level was reached and that it was continuous. These assumptions are examined in the following sections of the chapter which attempt also to discriminate between Models c and d presented above.

6.2.1 The nature and permanence of site-occupation.

Before examining the distribution of sites in the following section, the scanty evidence for their nature and permanence needs briefly to be reviewed. The degree of permanence of sites can be estimated indirectly from the nature of their remains and more soundly from the internal evidence of extensively excavated sites which have also been radiocarbon dated. Of the latter, only Khirokitia and Sotira provide any tangible leads; on the evidence of the C14 dates, it is unlikely that the duration of the aceramic phase of Khirokitia can be defined within the error limits of radiocarbon determinations, the interquartile range of seven dates amounting to a little over a hundred years (Stanley Price 1975). However more extensive work on the internal chronology and extent of the site is necessary before accepting this conclusion.

An analysis of the structural development of Sotira (Chapter 5 *supra*) suggested a duration of some hundred years while the C14 dates on face-value span a little over three hundred years. The true duration may lie somewhere between the two estimates. Aylos Epiktitos Vrysi may yet provide a sound estimate for the duration of that site but the differences in the available C14 dates may be due partly to discrepancies

between the two laboratories. The other radiocarbon dates define points in time rather than durations, which must therefore be estimated on other grounds.

The evidence of depth of deposit, which is a rough guide to duration in the absence of major postdepositional changes, points to an overall comparability of ceramic sites (Table 3.14). The variations in this data must be due partly to differences in postdepositional history, and the deeper deposits of such sites as Erimi and Ambelikou can be attributed to the superimposition of identifiable phases within the sites' histories (3.4.5). It was also argued in Chapter 3 that at no site, except those with both aceramic and ceramic occupations, could a break in occupation be demonstrated which amounted to more than a within-site shift in occupation focus. The evidence from aceramic sites is comparable, as reference to the Catalogue will show. At Cape Andreas (Le Brun 1974) the full depth of deposit has not yet been ascertained although observation suggests that it is unlikely to be as much as 3m. where best preserved, making it rather less than that of Khirokitia. In summary, although it is speculative to correlate depth of deposit with duration, it seems that no site, or phase of a site as defined in Chapter 3, represents a duration of more than a couple of hundred years. Indeed it seems likely that the majority of sites, on the strength of their deposits, lasted for a considerably shorter period.

As for the degree of permanence of sites, in terms of seasonal or perennial occupation, arguments of a circumstantial nature point to continuous occupation throughout the year. Seasonal occupation is much more difficult to demonstrate than perennial, given the gross time-differential of prehistoric

contexts, and the analysis of faunal and floral remains in Cyprus to this end has barely started. However indirect evidence for investment of labour at excavated sites, as reflected in the structural remains and domestic facilities especially, is complemented by the meagre subsistence data in documenting the essentially sedentary-agricultural basis of known settlements. In support of this contention may be cited the analysis of Sotira above which depicted a permanent and stable settlement acquiring a variety of resources at varying distances from the site, and the summary or preliminary reports of domesticated animals and plants represented at, for instance, Khirokitia, Sotira, Erimi and Ayios Epiktitos (Peltenburg in Karageorghis 1973).

With the present vogue for claiming seasonal transhumance at prehistoric sites elsewhere in the Mediterranean habitat, it is worth pointing out that long-term transhumance has only rarely been documented in Cyprus, for which a major reason must be the close proximity of arable land and upland pasture in most parts of the island. This is one of those geographical constraints referred to in Chapter 1 which must have been as operative in prehistoric as in recent times. In summary, then, the inadequate evidence suggests that the majority of Sites (as defined in the Catalogue and further justified in Ch. 3.4.6), both ceramic and aceramic, were agriculture-based, permanent establishments, with external forays limited to certain segments of the population on specific occasions.

6.2.2 Degree of permanence as a variable.

If the majority of sites are permanent agricultural settlements of limited duration, then the problem addressed in this thesis - the rarity of tells in Cyprus - can be better defined. The tells which are characteristic of many areas

of the Near East, Greece and the Balkans are the product of a number of complex factors including the site's environment, function, duration, local resources and form of architecture. But if two prime factors can be isolated, these are the length of occupation and the raw materials introduced to the site, notably those used in building construction. Davidson (1973) concluded from the results of phosphate and particle-size analyses that the 11m. high tell of Sitagroi in Northern Greece was formed largely as a result of human activity in introducing river alluvium onto the site for the construction of house-walls. The low clay content of the alluvium compared with the local terra rossa soils necessitated more frequent wall renewal, with the collapse material being the chief contributor to the evolution of the tell. Length of occupation is the other main factor, of course, and the height of tells is directly related to their duration, although the modern profile may have altered considerably since the tell's formation (Davidson 1974).

In commenting on the absence, or rarity, of tells in Cyprus, it is the lack of the tells characteristic of immediately adjacent areas which is significant. From the previous section it is apparent that the length of occupation factor alone is sufficient to explain their absence in Cyprus. The raw material factor is of little importance here, although relevant to explaining the differences in construction methods between different parts of the island. The absence of tells is particularly significant in the Central Lowlands where mud-brick is the main constituent of contemporary architecture. In fact at the only site extensively excavated in this region, Philia Drakos A, the limitations of local supply were evidently

overcome in the effort to build stone structures in a predominantly "mudbrick" terrain.

However, "explaining" the absence of true tell formation in Cyprus as being due to the relatively short-term occupation of individual sites remains uninformative unless models can be proposed which account adequately for the variable length of occupation of a site. The approach adopted here is empirically-based, consisting in the examination of the actual settlement pattern as documented by the information recorded in the Catalogue.

6.3 Patterns of site distribution.

6.3.1 Method of approach.

In order to analyse patterns of site distribution, it is unnecessary initially to treat the whole island and the total available sample so long as adequate areal subsamples exist. These subsample areas must each of them be large enough in extent for the full pattern to be faithfully reflected in them and to have been sufficiently investigated to eliminate the worst biasses inherent in any form of sampling. In choosing the subsample areas, then, the factors affecting the preservation, discovery and identification of sites (discussed in Chapter 4) will determine the method of selection and the degree of confidence to be placed in their interpretation.

Of the four areas discussed in detail below, referred to as "Exemplars" of the site distribution, three (1-3) fall mainly within the area of the Cyprus Survey's intensive exploration of 1955-1960, which is assumed to represent the most reliable survey work undertaken in Cyprus (cf. Fig. 4.3); only the northeast quarter of Exemplar 3 falls outside this

area. Exemplar 4 covers an area of the chalk plateaus adjacent to the south coast between the rivers Xeropotamos and Vasilikos. Although not subject to the same intensive coverage as the area of Exemplars 1-3, this region was frequently explored by members of the Antiquities Department during the period of long-term excavations in the vicinity and a large number of sites is known. More importantly, the area forms a useful counterbalance to the northern/Central Lowland emphasis of the other three Exemplars.

The present analysis is mainly concerned with ceramic sites, since the absolute dating evidence suggested that the aceramic phase sites, constituting less than 10% of the total sample, probably represent a separate episode of occupation. This is considered later (6.5.3). The search for patterns of distribution within a very incomplete sample of sites spanning at least a millennium and a half is justified by its degree of success. In other words, if models which take account of the chronological and cultural arguments of Chapter 3 and allow for inadequate sampling are used in proposing explanations of site distributions, then it can be assumed that the surviving sample somehow enshrines the original pattern (cf. the Körös study mentioned by Clarke, 1972, 24).

The significance of the patterns recognised in the Exemplars is then briefly put to the test by considering the poorer evidence from the rest of the island. However this testing is of a preliminary nature and only emphasizes the need for systematic survey in under-explored areas, notably the Paphos District and the northeastern Central Lowlands/Karpass.

The variability in the available sample is brought out

by comparing the numbers of Sites and Finds from each District reported in the Catalogue (Table 6.1). Since the Districts are recent (and more recently defunct) political entities enclosing variable areas of land, no great significance should be read into these figures. However, it is worth noting that, in those areas which have been subject to intensive survey, Sites greatly outnumber Finds (Nicosia and Larnaca Districts) or are broadly equal (Kyrenia and Limassol Districts), while in the under-explored Districts, Finds greatly predominate (Famagusta and Paphos). Taking these figures at face-value, the proportion of Finds suggests that there are many Sites to be found in the latter Districts once systematic survey work is undertaken. The alternative interpretation, that the differences in the Sites:Finds ratios are culturally significant, is certainly plausible, however, but only further work can evaluate it. In the commentaries on the Exemplars, the occurrence of Finds in addition to Sites is briefly discussed where relevant, while the wider significance of isolated Finds is further examined in the following section (6.4).

District	Sites	Finds	Total
Nicosia	32	18	50
Kyrenia	48	42	90
Famagusta	10	20	30
Larnaca	21	3	24
Limassol	15	15	30
Paphos	24	38	62
Cyprus	150	136	286

Table 6.1 Sites and Finds by District.

The commentaries on the Exemplars are self-explanatory with the exception of the relative ordering section. The discussion in Chapter 3 emphasized the inadequacy of the evidence for the relative ordering of sites but in this chapter an attempt has to be made where feasible, in order to provide foundation to the central argument. As mentioned above (Chapter 3.4.5) only those sites which form a highly localised group are ordered relative to one another, in order to minimise the spatial component of seriation ordering. The criteria used are those summarised at the end of Chapter 3 (3.5 and Fig. 3.7); the painted pottery:monochrome ratio is the criterion most commonly used to indicate approximate order, although occurrence of wares and ware attributes are occasionally employed. Needless to say, the suggested order is not meant to indicate the actual order in which the sites were occupied. Within brackets after each site, pair or group of sites, the seriation criteria are given, using the following abbreviations:

A- B	:	A occupation is earlier than B
A / B	:	no distinction possible
pp:m	:	painted pottery : monochrome ratio
Patterns	:	early painted patterns
wares	:	occurrence of diagnostic wares
4a	:	Code attribute 4a (open spouts)
2d	:	Code attribute 2d (pointed base)
6a	:	Code attribute 6a (loop handles)

A comment on the patterns is necessary. In discussing these earlier (Chapter 3.4.2), it was said that distinguishing early from late designs had received no systematic study, such that their usefulness for seriation remained unclear. Only ripple-

painting (Pattern 2) was therefore included as chronologically significant in Figure 3.7, but to this pattern should be added Pattern 3, with which it co-occurs at Philia (Watkins 1969), and also reserved painting (Pattern 14) in which enclosed areas of buff ground are left unpainted. This technique is common at Ayios Epiktitos Vrysi and Troulli (Peltenburg 1972) and very rare on later sites. Its occurrence is used here as diagnostic of earlier rather than later sites.

The maps illustrating the Exemplars are drawn at a uniform scale of 1:50,000 and oriented to Grid North (UTM Grid). Sites are numbered as in the Catalogue, the relevant District being given in the caption. The caption to Fig. 6.3 includes a key to the symbols used. Most of the springs which are marked are those recorded on the K715 1:50,000 map series, but this source is far from comprehensive. In particular it fails to mark the minor spring-line at the unconformity between the Kythrea formation and the Kyrenia calcarenite along much of the north coast, or the smaller seeps near limestone outcrops. Moreover the major springs of the north coast foothills, as at Lapithos and Karavas, are depicted as watercourses rather than springs (only major watercourses are shown on the maps, few of them perennial today).

The distribution of springs on the maps, therefore, gives only some indication of those areas with good water-supply in which prehistoric sites have not been reported, while the absence of a spring near a reported site should not be thought significant. Several springs have been marked on the basis of personal knowledge but many others published in earlier works, notably in the lists in Russell (1881) and Raeburn (1945),

have had to be omitted because their exact locations are unknown. The very large number of known associations of prehistoric sites with perennial springs justifies the assumption that a reliable supply of water, perhaps the main determinant of settlement location, was always available to such sites. In some cases the nearest known spring is 500m. away or more, but it may be assumed that springs were more plentiful, and river-flow more commonly perennial, prior to the recently extensive deforestation and irrigation (cf. Chapter 1.3).

6.3.2 Exemplars of site distribution.

Exemplar 1 (Fig. 6.3)

Area: Region 1. Northern Range and coast.

Sites: K.13-18, 21, 24, 28-38, 40-48.

Finds: Kf.12-18, 24, 28-34, 37-42.

Relative order: (a) K.35-24-32 (pp:m; Pattern 2 at K.35, ? at K.24).

(b) K.21 (Pattern 14)-34-15-33 (pp:m).

(c) K.30-42-40/47/48 (pp:m).

(d) K.28-29 (pp:m; Gjerstad 1934, 32).

Discussion: The Sites form distinct clusters, some of them extremely tight such as the Myrtou group (K.15, 21, 33, 34) and Vasilia group (K.40, 42, 47, 48). The sites K.28, 29 are probably part of a similar cluster of which other members lie under the modern village of Lapithos. Indeed modern villages have probably obscured a number of prehistoric sites as the many stray finds from them suggest, e.g. Kf.32 from within the village of Larnaca tis Lapithou. A major reason for this coincidence is the determinant effect of perennial springs, as Dikaios (1961a, 1) predicted.

A different pattern is represented by the succession K.35-24-32, which with the unordered K.45 are spaced at c.2km. from each other. K.35 (Orga) and K.24 (Kormakiti) share similar locations insofar as both are situated on the slopes around the two major outcrops of Hilarion limestone in the area, forming grey craggy bluffs which are prominent landmarks both to seaward and along the coastline. Beyond the later site K.32 on the seaward slopes due west of K.24, some evidence for the exploitation of the further Kormakiti peninsula is provided by the axes (Kf.33) found adjacent to the two springs at the NW extreme of Fig. 6.3. The association of stone axes with springs is a common one throughout the island, Kf.41 on this Exemplar providing a comparable case.

Exemplar 2 (Fig.6.4)

Area: Region 1. Adjoins Exemplar 1 to west, cf. K.36.

Sites: K.1-12, 19, 20, 22, 23, 25-27, 36, 39; N.16-18.

Finds: Kf.1-11, 19-21, 23, 25, 26, 35, 36; Nf.10.

Relative order: (a)K.3-2-1 (pp:m).

(b)K.8-9 (pp:m; Patterns 2,14) - K.5-K.6

(pp:m; wares RL/P and Relief dec. at K.6).

Discussion: The Sites exhibit clustering as in Exemplar 1 but less tightly, being consistently spaced at 0,5 - 1.0 km. from their nearest neighbour. Exemplar 2 provides the only instances of rockshelter sites in the total sample, all of them being found in the higher cliffs of the Northern Range but easily accessible from open sites on the slopes below. Only the Kotjakaya cave (K.2) has more than a handful of material but the co-occurrence in this sample of both open spouts and loop handles suggests repeated short-term use rather than any

permanent installation. Their use as temporary shelters is indicated by their advantageous locations for exploiting the upland pastures, and, more significantly, by their siting on natural routes crossing the Northern Range, viz. K.2 and K.19 on the most direct, if steep, route via St. Hilarion (cf. K.19) to the lower seaward slopes (cf. K.20), and N.19 on the route crossing via Pentadactylos to the hinterland of Sites K.5-9. Other Finds point to exploitation of areas without reported Sites, for example the vicinity of Kazaphani between Sites K.5-6 and K.27-39 whence a number of axes have been reported (Kf.20, 21; cf. ARCA 1914, not in Catalogue), and the area of Koutsovendis. Here a cache of six axes (Kf.26) was found a little uphill from the spring at Ayios Chrysostomos (cf. Kf.25); these axes may prove on identification to derive from the local Koutsovendis basalt outcrop, one of the potential sources of hard stone in the Northern Range.

Exemplar 3 (Fig. 6.5)

Area: Region 3, Central Lowlands.

Sites: N.3, 4, 9-15, 26-32.

Finds: Nf.3, 5, 9.

Relative order: (a) N.12 (Pattern 2; 4a) - N.10 (pp:m; 2d) - N.11 (pp:m; Wares RBL).

(b) N.14 - 13 (Wares BSC).

(c) N.26 - N.29 (pp:m; Pattern 2) - N.30 (pp:m) - N.27 (Wares BSC).

Discussion: The Sites along the middle and lower reaches of the Ovghos and Merikas rivers form three distinct clusters around Khrysilliou, Philia and Dhenia. Philia consists of a central tight nucleus with two subsidiary settlement areas

c. 1.5 km. respectively upstream and downstream. The small distributional gap between N.26-28 and N.29-30 may be illusory, with the modern village obscuring intermediary sites; this group of sites is treated as one for relative ordering purposes. Of the few surface finds, Nf.3 suggests use of the route northeastwards from Philia skirting the 200m. contour, which cuts through to the Northern Range foothills. An alternative route follows the western edge of the same plateau of higher ground, starting due north of Kyra and eventually debouching to the south of the Myrtou settlement concentration.

Exemplar 4 (Fig. 6.6)

Area: Region 5. Southern Chalk Plateaus.

Sites: La.1-9, 11-14, 19, 20. But cf. Catalogue Addendum.

Finds: Laf.1, 2.

Relative Order: La.11 (4a)/La.2 (Wares Cb) - La.3 - La.6 (pp:m; Cb frequency; ware RR; cf. Dikaios, 1962) -La.4 - La.5 (pp:m).

Discussion: The number of sites in this less well surveyed area is smaller, but the evenness of their spacing in an area of broken topography is striking. It encourages one to predict that future survey work will recover additional sites near the existing clusters and a further cluster on the lower reaches of the Pendaskinos river midway between La.13-14 and La.1. To La.19 (aceramic) and La.20 should perhaps be added the unlocated site referred to in the La.20 Catalogue entry, while the Finds Laf.1 and 2 suggest other sites, the one near to La.1 and the other near Kophinou broadly equidistant from it and from La.19/20. The Kalavassos group of sites (La.2-4, 6, 11)

represents a regular spacing of a little over 0.5 km,; the late site La.5, located high on the interfluve, breaks up this pattern but, significantly (cf. Chapter 6.5.1), its RP sherds may put it well within the local EC phase.

6.3.3 Analysis of the Exemplars and other regions.

The Exemplars described above show that the sites which have been recorded tend to cluster in significant fashion. Over 80% of those mapped in Exemplars 1-4 are less than 2 km. from their nearest neighbours while over 60% are at less than 1 km. distance (Fig. 6.7). This statistic alone does not convey the degree of clustering, which is most accurately conveyed by the contoured maps. Computation of a nearest-neighbour statistic or of some index of clustering based on density per area would only be misleading, because of the uneven sample coverage and, most importantly, in a terrain of variable relief, because straight-line distance may be irrelevant compared with travelling-time between sites. Many of the clusters amount to two or three Sites only, but the evidence of Finds suggests the presence of additional sites in a similar pattern which future survey should recover.

The importance of the relative ordering of sites, where sufficiently numerous in a cluster and where the archaeological material allows, lies in its demonstration of non-contemporaneity of immediately adjacent sites. Again despite the limited scope for this approach, there are sufficient instances to allow the prediction that sites within a cluster tend to be consecutively rather than contemporaneously occupied. The implications of this point are returned to below (6.5).

Recognisable in the four Exemplars are three main patterns (or models) of ceramic site distribution:

Type 1 pattern. Highly clustered; sites are virtually contiguous, or separated by only 100-200m. Examples: the Myrtou and Vasilia clusters (Exemplar 1) and the Philia cluster (Exemplar 3). Modern villages may obscure other sites belonging to these and further clusters, e.g. Lapithos (K.28, K.29).

Type 2 pattern. Spaced at 0.5-1.5 km. distance. Examples: K.13-14 (Exemplar 1); K.25-26-1-3; K.7-8-9; K.27-39; K.5-6; K.11-12; and N.16-17-18 (all Exemplar 2).

Type 3 pattern. Spaced at 2-4 km. distance. Examples: K.32, 34, 35, 45 (Exemplar 1).

Isolation of these three patterns of course ignores the risks of gross sampling bias such that any observed patterns may be quite fortuitous. However assuming that the surviving sample somehow enshrines the form of the original total distribution, it is worth briefly examining the distributional evidence from the rest of the island before attempting to account for them. The other evidence of distribution, as recorded in the overall distribution map (Folding Plan 1) together with the Finds discussed in the following section, will give a more balanced view of the extent of the areas settled or otherwise exploited throughout the island.

Although distributions elsewhere are much more the result of accumulated chance finds, nevertheless several examples of site clusters can be identified. In the vicinity of Pyrgos on the south coast (Fig. 6.8a), three sites make up a Type 2 pattern. The EC cemetery reported at Moni by Dikaios (1935a, 13; for some reason omitted by Catling, 1963) lies immediately

west of Li.6, which may be the settlement to which the cemetery belongs. The cluster of four sites near the village of Kato Moni (Fig. 6.8b) forms a significant pattern when these are ordered relative to each other using the criteria explained in the Exemplars:

N.5 (Cb common; Pattern 2) - N.8 (Cb, Pcb rare; 2d; pp:m) - N.7 (2d; pp:m) - N.25 (pp:m).

Thus the mean distance between each pair of consecutively occupied sites is 2 km., typical therefore of a Type 3 rather than a Type 2 pattern. Further west along the south coast, the sites in the vicinity of Episkopi (Fig. 6.8c) represent also a Type 3 pattern. With those recorded on the map should be considered the probable site indicated by the RP sherds from the base of the Bamboula mound (Benson 1970, 1971; Lif.4), which lies a few hundred metres west of Erimi (Li.4); also the EC settlement at Sotira Linika (Catling 1963, EC. 149) which is probably to be found at the locality Ellinika some 2.5 km. NW of Bamboula; and the unlocated settlement site presumably accompanying the Kaminoudhia cemetery (Li.13) near Sotira village.

Similar patterns can be suggested for other areas of the island where the evidence is much scantier (Folding Plan 1). To the east of the Southern Chalk Plateaus, the Pyla sites (La.16, 17, 18) form a Type 2 pattern while the Kiti sites (La.10, 15, 21) are 3 km. apart, making a Type 3 pattern. Within the Paphos District (Region 6) there is a great predominance of Type 3 patterns which may not be due entirely to the limited amount of survey in the area. Of sites found 2-4 km. apart, a particularly good example are the sites Li.2, 3 and 10 with Anoyira Trapezi (see Catalogue Addendum) which are consistently 2 km. apart; also P.5-P.4, P.4-P.14; if Pf.36,

reported as a Site on inadequate evidence, is indeed a settlement, then it is equidistant with P.4 from P.14. Following the report of Chalcolithic sherds from Kouklia Evreti (Maier 1974, 173) where axes have already been found (Pf.17) in the vicinity of a spring, this probable site and P.20 represent another pair 2 km. apart.

To the north of the Paphos District watershed, examples include P.22-P.7, P.7-P.23, and P.23-P.6. The four Polis sites, including a Philia-related cemetery (P.16-19), form a Type 2 pattern, though their exact locations are unknown. In the Akamas further examples are P.1-P.9, and P.9-P.12/P.13, the latter pair representing a Type 1 pattern. In fact the area on the north coast of the Akamas between the Sotira hill and Fontana Amorosa is an especially clear example of Types 1 and 2 patterns, since Quilici (1971) reports 13 findspots of Chalcolithic sherds from this vicinity with seven of them clustered (Type 1 pattern) round the bay of Ayios Nikolaos itself.

As mentioned above, minor differences in the actual distances between sites is insignificant since variation in topography and a number of complex determinants affect the actual siting of a settlement. These examples are meant only to show that the generally haphazard sample of distributional evidence from the rest of the island does yield some support for the three settlement models suggested by the better documented Exemplars. It goes without saying that further survey work if intensive would increase considerably the number of sites known, especially in the Paphos District, but there is some basis for predicting that the resulting site distribution will enshrine many of the patterns already recognised. Before

looking for explanations for them, an examination of the evidence for intra-island relationships is necessary.

6.4 Intra-island communications and exchange.

Whether or not similar patterns should be expected throughout the island depends partly on the degree of cultural homogeneity of the responsible population and partly on the extent of communications and exchange between different regions of prehistoric Cyprus. The arguments for cultural homogeneity put forward in Chapter 3 are further developed in the following section, and this section is concerned with communications and intra-island relationships. Description of the island's geography (Chapter 1) and the identification of contrasting ceramic traditions in the N/NW and S/SW of the island (Chapter 3.4.5) tends to emphasize the geographical isolation of each major Region within the shared cultural matrix. That this isolation was more apparent than real in cultural terms is brought out by considering first the constraints on movement within the island and then the evidence that they were overcome during the period in question.

6.4.1 Some topographical constraints on movement.

In Chapter 1 the main topographical features of Cyprus were sketched, noting the barrier-like roles of the Northern and Southern Ranges which divided the northern coastal strip from the Central Lowlands and, in particular, the Paphos District from the rest of the island. Natural routes of communication between these Regions are indeed limited, but less so than many authors have assumed in mentioning only the three main passes of the Northern Range (Panagra, Kyrenia and Lefkoniko) and the virtual isolation of the Paphos District.

In fact in addition to these three passes, the Northern Range can easily be crossed on the line of the modern road from Larnaca tis Lapithou to Vasilia, skirting the west slopes of Mt. Kornos, and from NW of Kythrea via the southern foot of Pentadaktylos towards Klepini and the north coast, as demonstrated by the recently built highway and by the probable route of the Roman road between Salamis and Lapithos (Mitford 1966, 98). These five routes and others such as the Halevga road and other forest roads further east show how easily the Range can be broached by the traveller on foot.

Communications within the Karpass and east Central Lowlands need not be discussed because the paucity of prehistoric material from the area renders it irrelevant. In general, the central spine of the peninsula is the only feature slightly impeding access, while in the Central Lowlands only the degree of vegetative cover would have been an obstacle in the past. In the west of the Region, the two routes between the Ovghos valley and the Myrtou plateau were mentioned in the discussion of Exemplar 3.

The area of the island dominated by the Southern Range (Regions 4, 5 and 6) presents problems of communication on a quite different scale. The least-effort method of reaching the far side of the Massif is to circumvent it, whether by land or by sea. By land, the northwestern extremity of the Range can be negotiated on foot without difficulty except where steep-sided spurs of the Tylliria run out almost to the sea between the Pomos and Kokkina points, and further east where uplands continue to border the sea until the flat coastlands of Morphou bay are reached.

Within the Paphos District a broken topography is characteristic, with a main watershed running roughly SW-NE, dividing the deep Khrysochou valley to the north from the gentler slopes descending to the coastal lowlands around Paphos itself. The Akamas forms a high ridge continuing the watershed northwestwards and affords good communications along the ridge to the tip of the peninsula at Cape Arnauti while being a barrier between the Khrysochou valley and the west coast. The watershed is most easily traversed by way of Terra and Pano Arodhes on the Akamas ridge and thence down to the coastlands near Peyia, or alternatively by following the Khrysochou valley upstream and making a direct north-south crossing via Stroumbi and Tsadha. The former route is that of the Roman and Turkish roads, the latter of the modern road (Mitford 1939).

The main features of the southern Paphos District and Southern Chalk Plateaus, and of the northern slopes of the Massif, are the major rivers draining the Southern Range, some of them (e.g. the Ezuza and Dhiarrizos) still with perennial flow. Characteristically these rivers have downcut deep into the Massif, forming trench-like channels, and, along the south coast, they are within a few kilometres of the sea before emerging into the coastal lowlands (cf. the stream gradients quoted in Chapter 1.3.1). The extent of the lowlands is approximately delineated by the 200m. contour line. The importance of this observation lies in the recognition that for the higher land above c.200m. a.s.l. communications are easiest along the interfluves and well-nigh impossible along the rivers themselves, the gorges of which represent severe obstacles to east-west movement in the Massif. On the other hand, east-

west movement in the coastal lowlands is relatively unimpeded, save by the larger rivers at maximum flow.

The only communications barrier along the SW-S coast is created by the spurs of high ground reaching right to the sea between Petra tou Romiou and Cape Aspro. At this point historical (Roman and Turkish) routes struck inland at the mouth of the Khapotami river, taking the eastern lip of its gorge for a few kilometres before following the contours eastwards and gaining the gentler hills and lowlands in the Alekhtora-Platanistia-Pissouri area (Mitford 1939). Although not immediately apparent from the map, this barrier to the Paphos District is no less effective than the Tylliria spurs to the northwest.

In turning to the alternative method of avoiding some of these topographical barriers, namely sea-travel, clearly only those possibilities which would be consonant with the prevailing prehistoric technology need be considered. And although no evidence for sea-going craft of this period has been preserved in Cyprus, one may assume that such craft were powered by natural means and were of shallow draught and modest size. For small vessels not exceeding 2-3m. draught, the coasts of Cyprus are of varying value in offering sheltered anchorages, with the north coast much better provided than the other coasts. Denham (1964) records some score of suitable anchorages along the north coast but barely half a dozen affording comparable shelter on the other coasts.

Prevailing breezes in summer are westerly during the day, varying from NW to SW according to the local lie of the land, while along the north coast there is a slight eastward current, generally less than one knot. Off the east coast the prevailing breeze may begin in the SE but veers to the SW, so that the

shortage of sheltered anchorages along the south coast is a drawback to any vessel heading west. However the deltas of the larger rivers may well have provided shelter in inclement weather. That various points along this coast, as along the north coast, are potential temporary anchorages is evident from their use in recent centuries for loading carobs and other local exports (cf. Christodhoulou 1959, Fig. 58).

With these observations on some topographical constraints, and some of the responses to them in historical times, it remains to determine the extent to which they restricted prehistoric movement.

6.4.2 Prehistoric communication and exchange.

The archaeological evidence for communications consists entirely in distributional evidence, both of Sites and Finds and also of objects of raw materials of limited natural occurrence. This kind of data can only be suggestive in the absence of analytical studies of provenance and composition of artifacts, but the following discussion may indicate the directions which such work might pursue.

Distributional evidence.

In this section all distributional evidence is used, with the exception of aceremic Sites, as being in some way a palimpsest of the original distribution in toto. It is therefore an amalgamation of many non-contemporary finds, since few Finds can be dated relatively. Only with much more detailed work can changes in communications networks between phases be detected, similar to those recently suggested for the MC period (Frankel 1974).

In the north of the island there is little distributional

data to document the use of the three main passes across the Range which might have been assumed. The site K.31 and the Vasilia cluster would have been connected by the route to the west of Mt. Kornos, as the axe from Sina Monastery (Kf.40) may indicate. Furthermore the Dhikomo-Aghirda sites and K.27 and K.39 stand at opposite ends of the Kyrenia Pass (cf. Fig. 6.4) and it is relevant to recall the Philia-type shell pendant reported by Stewart (1962, 264) from Mylos in the Pass. A little to the west of the Pass, the rockshelter sites and the St. Hilarion axe perhaps point to a direct route across the Range at this point, as suggested in the discussion of Exemplar 2, in which the significance of the rockshelter N.19 for use of the Pentadakytlos route was also pointed out.

Distributional evidence from the east of the island is very poor, although the Finds such as Ff.2 and Ff.20 and the Site F.4 demonstrate exploitation of the area. The axe (Ff.6) is suggestive of activity in the area of the Pedieios/Yialias mouths where deposition may have buried other evidence.

In the south/southwest of the island distributional information for movement around and across the Southern Range is extremely suggestive (Fig. 6.9). The map records all those Sites and Finds in the Catalogue with provenance; all the Finds are stone axes with or without associated finds, with the exception of a few other stone tools or figurines (viz. Nf.16, 17; Lif.9, 10; Pf.11, 14, 19, 29). The provenance of some Finds is identifiable only to a village, if the whereabouts of a locality is unknown, but at the scale of the map employed this imprecision is unimportant. Moreover the discrepancy in the Sites:Finds ratio examined above is apparent on the map, but it does not materially affect interpretation here.

It is clear that routes round the very edges of the Massif were frequented, the northwestern being rather better documented than the eastern one. The distribution across the Akamas/Paphos District watershed matches very closely the routes of the Roman and Turkish roads (Mitford 1939, Fig. 10) which suggests that these are indeed the least-effort traverses. Similarly the routes of these same roads heading inland at the Khapotami river and then eastwards towards Alekhtora find some support in the Find, originally reported as a Site, in the Randhi forest (Pf.28) and the settlement nucleus of Li.2, 3, 10 and Anoyira Trapezi in the region where such a route would debouch.

Of equal interest, however, is the evidence strongly indicative of routes crossing the Massif itself. The distributional map (Fig. 6.9) shows a linear scatter of findspots along certain river-courses, or rather along the margin of the interfluves, notably the Dhiarrizos and Khapotami and, less convincingly, the Limnatis which converges with the Kouris a little upstream from Sites Li.5 and Li.14. That these Finds or Sites are in part a result of frequenting of routes crossing the Massif is supported by the isolated axes reported from a spring near the Chrome Mine (Nf.6), another probably from Kakopetria Ailas (Catalogue p.94) in the same area, and a third from Khandria (Lif.7), all on the Troodos watershed. It is clear from the map that by following either the Dhiarrizos, Khapotami or Limnatis and their tributaries to the watershed, it is but a short crossing to the north-facing slopes and the north-flowing rivers, especially the Marathasa, Karyotis and Peristerona and their tributaries. Once looked for, further supporting evidence for the proposed routes should be found in these virtually unsurveyed areas, including the Kouris-Karyotis

watershed and the hinterland of Morphou Bay east of Ambelikou.

Raw materials and resources.

It is significant that the proposed routes cross the Massif at its widest point where the option of circumventing it is least feasible. However it can be further hypothesized that one incentive to penetrating to the Troodos watershed lay in the procurement of a valued raw material, picrolite. The many figurines, pendants and other objects of what is variously called picrolite, steatite, soapstone, serpentine or generally "greenstone" represent one of the most neglected sources of information for intra-island relationships. In addition to those mentioned in a recent artistic study (Vagnetti 1974) there are several other pieces unpublished in the Cyprus Museum, mainly recovered from surface sites in the Paphos District.

One obstacle to the study of this material from other than artistic standpoints has been the inexact identifications of the raw material. Thus Manglis (1953) reliably identifies those from Khirokitia as of picrolite, Vagnetti refers to the Chalcolithic examples as of steatite, whereas Stewart (1962) comments on the occurrence in Philia contexts of pendants of "pseudophyte" or greenstone. According to Read (1962) the hydrous magnesium silicates are divisible into talc, serpentine and meerschaum. Steatite or soapstone is a massive variety of talc, mostly white, or grey of various shades, sometimes greenish or reddish, while picrolite is a columnar variety of serpentine occurring especially along planes of slight shear. whereas steatite is very soft (H.1 on Moh's scale) and has a greasy or soapy feel, serpentine (and so picrolite) is harder (H.3-4 on Moh's scale) is sometimes slightly soapy and can be cut with a knife. Although there is no substitute for correct

geological identification of each piece, the majority of the prehistoric material seems definitely to be serpentine (probably picrolite) rather than talc (steatite or soapstone).

In Cyprus picrolite occurs as veinlets intimately associated with the veins of the chrysotile asbestos (Bear 1963, 128); this association and also talc occurs within the ultrabasic bastite-serpentine, whose geological extent is depicted by the solid areas of Fig. 6.10. Also shown on the map (hatched) are the areas of crushed serpentine forming part of the Mamonia Igneous Complex, but it is unknown whether this provides a suitable source of "greenstone".

On the resolution of this point depends the interpretation of the distribution of the "greenstone" artifacts (Fig. 6.10). Many of these finds are unpublished, though recorded in the Catalogue. Published ones include those from Lapithos and Kythrea (Gjerstad 1934), Sotira, Erimi, Kalavassos and Souskiou with other isolated finds (Vagnetti 1974). It should be mentioned too that serpentine occurs infrequently in the Northern Range but without knowing whether these occurrences include picrolite suitable for artifacts, and were recognised and exploited by prehistoric inhabitants, this possibility can be temporarily ignored. With these reservations, the map prompts the following observations:

(1) the heavy concentration of "greenstone" objects in the Paphos District.

(2) The large number of surface finds from Neokhorio (P.8) adjacent to a bastite-serpentine occurrence.

(3) the predominantly west-about distribution of figurines and east-about distribution of pendants, etc.

(4) the "recombination" of figurines and other finds at sites in the Central Lowlands and Northern Range.

(5) the large number of finds in the Episkopi area at some distance from any serpentine occurrence.

This last point is partly related to the extent of excavation in that area relative to others but if, as the argument above and the Neokhorio concentration indicate, "greenstone" originates in the bastite-serpentine only, then the Souskiou, Sotira and Erimi finds are the result of exchange or acquisition from other regions, as much as those in the north of the island. It is relevant to recall the lack of picrolite figurines at Sotira and the evidence at that site for the importation of "blanks" of raw material (Chapter 5.7). This implies, on the one hand, that theproduction of "greenstone" figurines postdates Sotira, as usually suspected, and, on the other, that the acquisition of raw material and the exchange of finished artifacts, especially the highly-elaborated cruciform figurines, constituted a complex exchange network covering most of the island. On this score, the proposed route across the Southern Range, and in particular the Khapotami-Karyotis route which crosses the serpentine core of the Massif, takes on an added importance.

Without accurate geological identification or analytical work, detailed reconstruction of the intra-island exchange networks has to depend on circumstantial reasoning. For example, hard stone - usually referred to as andesite but incorrectly since true andesites do not occur in the Cypriot igneous suite (J.D. Smewing, personal communication) - would always have been in demand for heavy-duty implements and utensils. Although the river courses of the Southern Range convey ample raw material to lowland regions, in other parts

of the island not so provided one would have to seek further afield. The cache of axes near the Koutsovendis basalt outcrop in the Northern Range was mentioned earlier, and the few such occurrences of hard rock in this Range would have channelled demand and supply through definite routes. Some impression of the demand for non-functional prestige items in stone is given by the fine adzes, both large and miniature (Code attributes 2a and 2b), which are frequently devoid of any extensive utilisation marks. These have been recovered in quantity on some sites in the Paphos District (e.g. P.4) and occasionally on northern sites, and may well have played a role in exchange networks. Flint, too, would have been at a premium in non-calcareous regions, though its characterisation for provenance studies is problematic.

Other raw materials and substances which leave less trace in the archaeological record would have featured in exchanges. Materials such as umbers for colouring and marine shell for decorative purposes are of limited natural occurrence, and salt too must have been exchanged or collected from its source in coastal areas. In the latter respect the axe (Lif.1) from the southern edge of the Akrotiri salt-lake (on which cf. Chapter 1.3.1) is of interest. It would be wrong to extrapolate to the prehistoric period the adaptations to the differential distribution of economic and agricultural resources recorded in Cyprus in recent decades, for instance the symbiotic relationships between upland and lowland villages and the single ownership of land in a variety of ecological zones (Christodhoulou 1959, 85 and 101). But the contrasting agricultural potential of different areas (another basic constraint, Chapter 1) may well have resulted in some exchange of foodstuffs between ecological

zones. To mention but one possible example, the products of olives which would have flourished in the Northern coastal strip, as at Ayios Epiktitos Vrysi (Peltenburg in Karageorghis 1973, 634), would have represented a suitable exchange item for such areas of high cereal production as the Central Lowlands.

Of manufactured items, pottery is one of the most durable, being more easily transported under conditions of a primitive technology than often assumed. In Chapter 3 some suggestions as to wares which may have been imported at certain sites (Table 3.15) were made, arising from the concept of alternating ceramic traditions. In Fig. 6.11 the information contained in that table is presented cartographically by delineating the areas of predominance of one ware (Pcb/RW, Cb and late RW, as at Erimi), and plotting those sites at which the other tradition is predominant but which contain sherds of those wares. In addition to the sites in Table 3.15 the minor representations of late RW ware at N.11 and N.25 are included on similar grounds, while the distribution of the other wares and of Pattern 2 (ripple painting) is based on the information in the Catalogue and in Chapter 3.4.5.

The patterns produced by this schematic presentation demonstrate not only the apparent exchange of pottery across the Southern Range but the focal role perhaps played in this exchange by the sites on the Peristerona river (N.5, 7, 8 and 25; Fig. 6.8b). If this was the case, then the same routes as suggested by the Find distribution and the "greenstone" exploitation would have served the same function. In addition there should be mentioned one sherd with Pattern 3 from Alaminos (La.1), which Watkins (1969) reported as typical at Philia, and one sherd seemingly with ripple decoration illustrated in

a preliminary report from one of the trial trenches at Sotira (Dikaios 1948, 23, second from left, bottom row).

Again it would be wrong to overemphasize these arguments without analytical work on provenance, and these comments are intended primarily to indicate the kind of information which is potentially recoverable with such work. At any rate it seems certain that it would document some movement and exchange across the Massif and throughout the island. An excellent ethnographic account of the kind of exchange networks to be envisaged in an upland zone is provided by Hughes (1974).

Marine communication.

A final comment on the distributional evidence concerns the alternative method of travel, namely by sea. That some form of sea-going craft was in use in both aceramic and ceramic phases can be deduced from the sites on islands, namely Petra tou Limniti (N.20) and Ayios Georghios Island (P.15). Although establishment of the insubstantial occupation of the former, only c.80m. offshore at present with a strait of 7-8m. depth, is conceivable without such craft, the island of Ayios Georghios demands sea-travel for any long-term occupation. Less direct evidence but equally suggestive is the association of sites with inlets offering a sheltered anchorage. Examples of these associations with Denham's comments (1964) include:

Fontana Amorosa (P.11; "good holding ... shelter against west wind excellent");

Petra tou Limniti (N.20; "shelter from the westerlies");

Kordhyli (P.10; "the best sheltered natural harbour on the north coast for small vessels under 8' draught, being open only to NNW; by squeezing in behind four small islets there is

also protection from this quarter");

Apostolos Andreas (F.8; "a useful summer anchorage .... affording a good lee from the prevailing westerly wind and sea. A perfect starting-off point for the Levant");

Cape Greco (F.3; "a convenient anchorage sheltered from the westerly winds ... suitable for a yacht working to the westward");

This list excludes, since not of concern to Denham, many other sites along the north coast in particular which are located on an enclosed bay or adjacent to a headland providing adequate shelter to very small craft. These include, from west to east, K.24, 30, 9, 8, 7, 23 (Troulli), F.2, 1, 6 and 9. Although there are a number of finds from the very foot of the Karpass, their scarcity (Ff.9, F.5) in its interior - unless due simply to lack of exploration - suggest that communications round the Cape may have been mainly by sea. The demonstrable association between coastal sites and sheltered anchorages can hardly be fortuitous and implies that communication by sea was an integral part of the prehistoric world. The fuller implications of this point are examined in the following section which attempts to develop some preliminary explanations for the observed settlement pattern.

6.5 Early settlement history: some hypotheses.

6.5.1 The ceramic phase - foci of settlement.

The main points made in the preceding sections can be summarised as the following hypotheses;

H.1 The C.14 date distribution isolates two main phases of settlement in the island between which there was either a sharp decline or actual break in occupation (6.1).

H.2 Prehistoric Sites were permanent agricultural settlements of relatively short-term duration (6.2.1).

H.3 Within any area, Sites tend to cluster in one of three different patterns (6.3).

H.4 Sites within any one cluster tend to be consecutively rather than contemporaneously occupied (6.3).

H.5 Clusters of Sites were linked in a communications network which extended throughout the island (6.4).

Taking as initial premises these five hypotheses, each of them testable by further research, the course of early settlement history in Cyprus can be modelled by devoting closer attention to the time-dimension than the predominantly synchronic analysis hitherto has given. Apart from distinguishing aceramic from ceramic Sites for analysis, the time-scale covered by ceramic sites requires closer definition, concerning the question of continuity of occupation from the 5th/4th millennium onwards. The distributional evidence strongly supports the demonstration in Chapter 3 that there is a continuity of pottery traditions from the early 4th millennium b.c. into the full bronze age, encompassing the so-called Philia culture as well.

Many of the site-clusters described above include sites with Philia affiliations which fit neatly into the pattern formed by the "neolithic/chalcolithic" sites. As examples there may be cited the sites or cemeteries with Philia-type pottery and/or BSC ware at Vasilia (K.40, 41, 43, 44), at Philia (N.27, 31, 32), at Kyra (N.13, 15), at Dhenia (N.4), at Khrysilliou (N.9). Sites with RP ware which have been described as EC, with or without Philia-type features, and which also fall into the pre-existing settlement pattern include: Kythrea (Catling 1963, EC.86; cf. EC.84 and EC.85 also) only

c. 100m. south of N.16; Arpera Chiflik (Catling 1963. EC.14 and EC.15) immediately adjacent to La.21; Moni Arkakia (Li.6; cf. Chapter 6.3.3 and Fig. 6.8a above); Anoyira Trapezi (cf. 6.3.3 above); Sotira Kaminoudhia (cf. 6.3.3 above) and Polis (P.17).

Given this strong evidence for continuity of cultural tradition and settlement pattern into the local bronze age, the suggestions still current (e.g. Watkins 1973, 46-47) which propose an invasion to account for the entire early bronze age of Cyprus can hardly be taken seriously.

Given (1) a continuous settlement history from the earliest ceramic sites into the bronze age, (2) a duration of the ceramic neolithic phase of c.1500 years (c.4500-3000 b.c.), and (3) a duration of no more than one or two centuries for most sites, the solving of the equation for the actual settlement history still requires to know the unknown variable, namely the proportion of the original site population which the current sample represents. For instance, in any area of continuous settlement, a sample of six or seven sites (as in the Vasilia, Philia or Kalavassos clusters) would represent nearly 100% or rather less than 50% of the original population depending on whether a duration of each site of one or two centuries was envisaged. The shorter the duration proposed for each site, the more incomplete the sample must be.

Despite this difficulty, a further minimal hypothesis can be formulated making use of the concept of a "focus". A "focus" is here defined empirically as any region of limited areal extent in which prehistoric sites are heavily concentrated. It is therefore identified by the occurrence of a cluster of sites as described above. On the basis of such relative ordering

as was possible, the consecutive occupation of sites in a cluster was proposed (H.4); using the corollary of this that no two sites in a cluster are contemporary, a further hypothesis states:

H.6 Within any two foci of continuous settlement there will tend to be one site in each which were in fact contemporary.

Again only detailed local research can test this hypothesis, but considerations of the economic base of these sites tends to strengthen H.4 at least. If any two sites in a focus were contemporary, they would be competing for the same resources, especially arable land, a situation which would run counter to primitive economic theory. Now if certain foci represent a continuous or near-continuous settlement history, and if there are few sites of such permanence that a tell is formed, then it is plausible to see each focus as the archaeological result of shifting settlement around a nucleus of primary resources. In this light the three patterns, Types 1-3, identified earlier can be reconsidered.

The reasons why agricultural settlements shift can be many and complex, including failure of a water-supply, increasingly unhygienic conditions, shortage of firewood or the purely supernatural, but the commonest cause tends to be the failure of a critical resource, notably the exhaustion of the fertility of arable land. Analysis of the locational factors which determined the exact siting of prehistoric sites is beyond the scope of the present work, requiring as it does detailed study of local regions, their resources and geomorphological history. Nevertheless the availability of arable land would seem to be a major determinant of the three patterns of site distribution. Thus the Type 1 pattern is correlated with areas of ample arable

land, for example the environs of the Myrtou focus and along the Ovghos valley. Within the Type 1 pattern should be considered the longer-term sites such as Erimi and Ambelikou. In this pattern secondary factors such as refuse disposal led to settlement "drift" around one spot in which the primary resources allowed long-term establishment.

Patterns of Types 2 and 3 illustrate an important principle of shifting settlement, namely that, although a new area sufficiently removed from the previous one to offer fresh arable is needed, nevertheless the labour investment at the previous site in such facilities as storage-pits, fenced areas and tree-crops render desirable a move of the least distance necessary. The difference between Types 2 and 3 may be primarily due to the relative distance to the nearest arable land.

Thus, for example, the linear distribution of alluvium along the courses of major rivers (which were downcutting at the time (Chapter 1.3.1) and not renewing the alluvium) results in the short distance moves as seen in the Kalavassos focus (Exemplar 4); whereas the patchy distribution of arable in upland zones is reflected in the 2-4 km. moves of the Orga focus (Exemplar 1) and the overall patterning of sites in the Paphos District. However the other important variable, length of occupation, is rarely known, and the extensive scatter of surface debris on many lowland sites in the Paphos District (e.g. P.4, P.5) may in fact testify to a settlement "drift" of Type 1 pattern. Other determinants of upland site-locations, e.g. Omodhos (Li.7) and Kedhares (P.3) would have included avoidance of the valley-bottoms (a frost-pocket in winter and excessively hot in summer) and strategic positioning upon trade-routes (Chapter 6.4).

6.5.2 Ceramic phase colonisation and settlement.

The uncertainty of relative ordering prohibits any detailed analysis of the actual expansion of settlement in the island. However consideration of the location of "earlier" sites compared with "later" sites helps to define certain trends. "Earlier" ceramic sites are those with ordering criteria such as the early Patterns 2, 3 and 14, and also Pcb and Cb wares. (The probable early ceramic occupation of Dhali requires further investigation for its true identity to be ascertained.)

The most significant feature of these early sites is that a defensive position rather than the availability of arable land seems to have been a primary determinant of site-location. Moreover the need for security which resulted in the selection of natural and/or constructed defences seems to have evaporated during the occupation of the sites in question. To take some examples, a naturally defendable location consisted either in narrow headlands, as at Lapithos (K.30), Kordhyli (F.10) and Apostolos Andreas (F.8), a conical promontory as at Troulli (K.23) or isolated prominent hills as at Orga (K.35), Pileri (K.36), Khirokitia (La.9), Sotira (Li.14), Kandou (Li.5; Dikaios 1961, 1) and Paramali (Li.9). Sites which lacked strong natural defences were given deep ditches and/or walls as at Ayios Epiktitos Vrysi (Peltenburg in Karageorghis 1974) and Philia Drakos A (Watkins in Karageorghis 1971). The long cross-wall of Kordhyli (F.10) appears to extend across the headland on which the site is located, while a possible defence-work may be visible at Troulli, both on the ground and on the site plan (Dikaios 1962, Pl.19). That the need for defence was an initial requirement which was soon superseded is

suggested by the building of houses abutting onto and then across the ditch at Vrysi, the expansion of the settlement at Sotira down the slopes (Chapter 5 supra), the occurrence of one or two structures at Kordhyli beyond the cross-wall, and the evidence from Philia that the wall had been collapsed into the ditch after the first phase of the site (Watkins in Karageorghis 1971).

Now the choice of defensive locations for settlements is generally due to the expectation of intergroup conflict, which may be a continuous state of affairs arising from perpetual competition for limited resources or a new development stemming from the attempt of one group to control the territory of another. Since the sites in question are among the earliest ceramic sites known and were occupied when a large part of the island had seemingly not yet been exploited, it appears inherently unlikely that resource-competition was the main cause of selection of defensive locations. Such a situation seems not to have come about until the Middle Cypriot period, some 2000 years later, when there appear stone-built defences around naturally fortified positions within or near existing foci of settlement (Catling 1963, 1966). Instead the hypothesis is put forward here that these sites were fortified in the expectation of an intergroup conflict which never materialised; and that this situation came about through the colonisation of the island as unknown territory which, on proving to be uninhabited, was the scene of an uninterrupted socio-economic development well into the third and second millennia.

In support of this speculative hypothesis, the following observations can be adduced. First, given that the defended sites are among the earliest in the island, and given the coastal

distribution and good anchorage facilities of many of them, then the ultimate origin of their settlers is probably to be sought outside Cyprus. Secondly, given that some ecological effects and habitation residues of a previous colonisation of the island would have been immediately apparent to the incoming settlers and given that the need for defence evaporated during occupation of the initial settlements, then it can be argued that the defensive capacity of these sites was a precaution adopted on arrival in a land not known to be uninhabited. Re-occupation of those sites which bore traces of earlier inhabitants (Troulli, Dhali, Khirokitia and Mari Tenta) would therefore have been of symbolic as much as strategic value.

With the gradual recognition that the island carried no indigeneous population, settlements expanded over and beyond their original defences and some were eventually abandoned in favour of areas better endowed with natural resources. On the north coast there is a detectable move from some of the early coastal locations to inland sites while elsewhere upland sites were deserted in favour of lower-lying arable areas which then became foci of subsequent settlement well into the bronze age. Early sites which were already in areas of good arable form the early components of some of the most clearly defined of the long-term settlement foci.

For example on the north coast, two early defensive sites on the coast, K.30 and K.8, precede the establishment of foci inland, respectively the Vasilia, and possibly also the Lapithos, foci and the Ayios Epiktitos focus (K.6, K.5) with K.9 on the coast of intermediary date. Upland sites such as Sotira and Kandou gave way to longer-lived sites in the coastal

lowlands such as Erimi, and it is interesting to note that the two Maroni sites (La.13 and La.14) in the coastal lowlands would be ordered relatively later than the upland Khirokitia sites (La.9, La.8, La.7) in the same river valley. The independent analysis in Chapter 5 suggests that Sotira was a pioneer settlement in a new area, exploiting a wide range of resources from the site itself, and that Kandou was unlikely to have been contemporary with it (and therefore a successor site). The occupation of sites intermediary between the initial defensive location and the move to the lowlands (e.g. K.9, Kandou and perhaps La.8 and La.7) testifies to the principle of least-distance moves referred to above.

Examples of early sites in good arable areas which gave rise to long-term foci of settlement include Philia, Khrysiliou, probably Dhenia, Pileri and in the vicinity of Kalavassos. Some sites may have led to two different foci through fission, as the coastal K.30 to the Vasilia and Lapithos foci and Philia Drakos A to the Kyra focus (N.14, N.13) in addition to the Philia one. Analytic study of ceramic traditions might prove fruitful in testing this suggestion if adequate samples become available.

This hypothesis of habitation foci resulting from shifting settlement around favoured resource areas has two important implications for ecological and demographic interpretations. From an ecological point of view, a progressively linear pattern of land-clearance with frequent relocation of settlements is typical of pioneer cultivators in "frontier" situations, who "employ swidden techniques as a convenient and productive means of land-clearance and who tend to regard forest resources as either unlimited or expendable" (Harris 1972, 249). The

first signs of primary resource depletion and agricultural intensification do not appear until the EC with the move into areas of marginal agricultural potential (Catling 1963), the introduction of the ox and plough, as demonstrated by the Vounous model and osteological evidence (Dikaios 1938), and culminating in the development of defensive sites adjacent to settlement foci in the MC (Catling 1963, 1966).

Secondly, from a demographic standpoint, the hypothesis undermines many of the arguments for or against population increase during the period (Watkins 1973, 43-44). Such arguments have depended solely on alternative methods of assigning sites to phases (cf. Chapter 2), whereas the approach adopted here, in avoiding assignment to phases, attempts to emphasize continuities in settlement development without quantifying settlement density. If the main hypothesis is valid, the consecutive occupation of sites within foci, many of which were contemporaneous, implies a relatively low population density until the EC/MC. On this view, counting the number of sites per phase as some measure of population size is to misconceive the time-dimension of the evidence at hand (Chapter 2.4).

Much more work is necessary before any quantification is possible and before the relative chronology of settlement in different parts of the island can become clear. All that can be said here is that the distribution of the early ceramic sites and the negative evidence for them in the Paphos District points to an overall N/NE to S/SW trend in colonisation and settlement expansion. Discussion of the possible background to the colonisation is deferred to Chapter 7.

6.5.3 The aceramic pattern of settlement.

Hitherto the chronologically aceramic sites have been excluded from most discussion of settlement patterning, since absolute dating showed them to be at least a millennium earlier than any ceramic site. In the light of the hypothesis that the earliest ceramic sites represent the colonisation of an uninhabited island, the aceramic phase may be considered a separate episode. For, accepting the conclusion of Chapter 1.1 that Cyprus was first settled in the Holocene, and the implication of Chapter 6.1 that all aceramic sites date to the mid-sixth millennium, then an absolute break in occupation between the two phases (Model d in Fig. 6.2) is a logical conclusion.

Such a break is borne out by the absence of any convincing evidence for cultural continuity of material remains between the two phases. This is as true of predominantly cultural media such as representation of the human figure (Vagnetti 1974) as in the more functionally determined art of stone tool manufacture (Waechter 1953). The break indicated by the radiocarbon evidence becomes quite intelligible, and Model d (Fig. 6.2) the most plausible.

Those sites which are considered chronologically aceramic are as follows (Fig. 6.12): Cape Andreas (F.9), Akanthou (F.1), Troulli (K.23), Bellapais (K.10), Karavas (K.18), Petra tou Limniti (N.20), Dhali (N.2), Kataliondas (N.6), Skarinou (La.19), Khirokitia (La.9), Mari Tenta (La.12), Phrenaros (F.7) and Cape Greco (F.3). Of these thirteen sites three only have been excavated extensively (Cape Andreas, Khirokitia and Petra tou Limniti), a further four have been sounded (Troulli, Dhali, Phrenaros and Mari Tenta) and the remaining six are known only through surface finds. Of the latter, Akanthou, Bellapais

and Katalíondas have produced good samples of aceramic material while identification of the others rests upon a small number of finds (Karavas, Cape Greco) or a reliable early report (Skarinou). Certain of the Finds, undatable at present, may document aceramic rather than ceramic exploitation of an area, for instance the dozen or so finds (Ff.18) reported from the vicinity of Cape Andreas. However the two ceramic sites in that area (F.8, F.10) prompt caution in this interpretation. Despite the unevenness of the evidence, certain deductions about the aceramic settlement pattern are possible.

As to the nature of the sites, only three sites (Khirokitia, Cape Andreas and Mari Tenta) are known to have substantial architectural remains and a further three are strongly suspected to have, namely Bellapais (Dikaios 1936, 74), Akanthou and Katalíondas (on the basis of surface evidence). On the other hand, three sites seem to have had insubstantial remains without great depth of deposit (Petra tou Limniti, Dhali and Pirenaros) while at Troulli where no architecture was found the deposit was no deeper than 1.25m. (Chapter 3.3.4). Despite its architecture, Mari Tenta revealed a depth to bedrock of only 1.10m. in a test pit sunk next to it. Thus the most generous estimate would identify barely half of the known aceramic sites as permanent, long-term settlements. In defining "permanent, long-term", it is significant that Khirokitia, which seems to exemplify the phrase better than other excavated sites including Cape Andreas, was probably of a duration shorter than can be measured accurately by radiocarbon (Stanley Price 1975). On this basis, the aceramic episode in Cyprus must be reckoned in terms of centuries rather than a millennium or more.

If this mid-6th millennium episode is the earliest evidence of occupation and was of limited duration, then it is reasonable to view it as the initial colonisation, brief florescence and eventual decline of the population concerned (cf. further Chapter 7.4.). Defining the actual course of this episode presents similar problems of injecting movement into a site distribution map as did the ceramic phase sites. These are now briefly discussed.

The most striking aspect of the aceramic site distribution (Fig. 6.12) is the choice of locations on or near the coast or on major rivers in the centre and south of the island. The insubstantial site of Phrenaros is the only exception, being located on an open plateau a few kilometres inland from Cape Greco. Neither of these sites is known to have a nearby water supply, although discovery of a freshwater spring almost at sea-level in the cliff north of Cape Andreas may indicate that a similar source exists at Cape Greco. Even so, neither site seems to have been extensive of long-lived. The location of the aceramic coastal sites on bays with sheltered anchorages has already been noted (Chapter 6.4.2), and this association is hardly fortuitous if the sites form part of a colonisation movement.

No criteria for the relative ordering of aceramic sites has been established but the distribution suggests an overall eastern-western trend in colonisation moves. In particular the locations of Cape Andreas and Cape Greco, the main landmarks for any landfall in Cyprus from the NE/E/SE direction, point to an arrival from that quarter, with secondary landfalls along the north and south coasts. An east coast landfall may have led to short-term stops at Cape Greco and Phrenaros, and

subsequently, perhaps by following the Yialias upstream, to Dhali and Kataliondas. Dhali too seems to have been a short-term occupation on the available evidence, probably in contrast to the site at Kataliondas, surmounted by an intrusive which forms an outstanding landmark from the east in particular (Stanley Price 1972).

Following the Tremithios upstream from its mouth on the south coast would have led to the same Dhali/Kataliondas region and provides an alternative route inland. The three sites further west each control one river valley draining the Massif, namely the Pendaskinos, Maroni and Vasilikos. Skarinou to the east and Mari Tenta to the west may have been initial foundations contemporary with Khirokitia or daughter settlements which fissioned during the latter's brief florescence. Settlements of some permanence extended along the north coast but the insubstantial remains on Petra tou Limniti and the lack of sites in the southwest may indicate that the island was never fully circumnavigated.

The evidence for variability in the occupational nature of the sites should become more intelligible with more data on the subsistence base than is currently available. The little information at hand (in Dikaios 1953, Gjerstad 1934, Schwartz 1974a) points to an economic base dependent on imported species of domesticated animals, namely sheep/goat, Persian fallow deer and pig, and perhaps dog, gazelle, roe deer and red deer (Schwartz 1974a) although the latter determinations require fuller substantiation before being accepted. Future work will probably demonstrate differences in the subsistence base between Cape Andreas and Khirokitia, in the former's greater consumption of fish relative to cereals, as

the two sites' locations would lead one to expect. Several aceramic sites are well located for the exploitation of arable land, those in the river valleys for alluvial deposits and Kataliondas for the mineral-rich soils of the igneous formations.

It is worth noting the preference for site-locations dominated by limestone outcrops whose main attraction was probably their visibility as landmarks for communications in or around a thickly forested island. The appearance of the two promontory sites, Cape Andreas and Cape Greco, are strikingly similar from a distance and the intrusive dominating Kataliondas has already been mentioned. Both Troulli and Petra tou Limniti form conspicuous landmarks lying off the coast, though several headlands adjacent to Troulli have similar configurations. The Bellapais site lies at the foot of a massive limestone outcrop, now obscured by the Premonstratensian abbey atop it. The Khirokitia hill stands out from neighbouring ridges but Mari Tenta is less conspicuous, a low, round-topped natural hillock on the edge of the Vasilikos upper river terrace. It is worth recalling that Anayia Vounos, claimed as an aceramic site by Dikaios but included as a Find only in the Catalogue for lack of supporting evidence, is a prominent hill on the left bank of the Pedieios, a consistent addition to the settlement pattern outlined here should the identification of the site be affirmed.

In summarising the points made here about the aceramic phase, the site distribution suggesting a colonisation from a northerly/easterly direction and the short duration of the episode are the two points to be emphasized. On the little C14 evidence at hand, it is likely that the whole episode

could be fitted into the time-span of the foundation, florescence and decline of the site at Khirokitia, with a little overlap at either end when the landfall sites were occupied and should some sites have endured a little longer than Khirokitia. On this time-span there is no need to postulate any serious depletion of the island's resources which a millennium of natural regeneration would not have almost made good by the time of the subsequent colonisation. The significance of the aceramic episode, however, lies as much in its implications for interpretation of contemporary developments in the Levant, and these are discussed in the final chapter following.

Chapter 7. Cyprus and the Levant.

Among the many surveys of recent research into the prehistory of the Levant in the early Holocene, Cyprus has not hitherto received much attention. Since Mellaart (1965) included some discussion of Khirokitia in his highly condensed synthesis, most studies of similar scope have failed to refer to the island at all (e.g. Singh 1974). In attempting to remedy this deficiency, the present chapter approaches the subject with a different perspective to that of most authors, to whom the distinctive nature of the Cypriot material appeared to be of little relevance in their wide-sweeping syntheses.

The previous chapters, in having been almost exclusively devoted to the island itself, have involved proposing at least one, and probably two, phases of colonisation to explain the presence of the aceramic and ceramic settlement evidence. The greater part of this chapter concerns the probable circumstances of the original 6th m.b.c. (millennium before Christ in radiocarbon years) colonisation, and only such mainland material is discussed as is relevant to this problem. The discussion starts with outlining a general chronological model of settlement in the Levant (7.1) in which a colonisation of Cyprus forms an integral element. A brief discussion of island colonisations in general (7.2) introduces an examination of the external relationships of the aceramic Cypriot material (7.3). A final section (7.4) explores the wider implications of the colonisation hypothesis and the subsequent settlement history of the island.

7.1 A chronological model of settlement in the Levant.

In attempting to relate the Cypriot material to that from the adjacent mainland coasts of the Eastern Mediterranean, the uneven nature of the available evidence has to be acknowledged. The recent extensive research into the early Holocene cultures of inland Syria and the Lebanon has done much to counterbalance the previous focus of attention on the Anatolian plateau and in Palestine, but much of this material is available only in preliminary reports. Moreover even in the better investigated areas, published distribution maps will need radical updating when the results of recent work are available. This is particularly true of the semi-arid zones, for instance in Sinai (Bar-Yosef forthcoming, Kozloff 1974), in the Negev (Marks 1971), and in the west Syrian Desert (Garrard and Stanley Price, forthcoming), where intensive survey and excavation have transformed ideas of the scale of settlement while also emphasizing the degree of regional assemblage variability throughout the Levant. Any synthesis would immediately be outdated, therefore, but discussion here of certain themes may provide a predictive basis for evaluating the results of further work.

The model to be outlined here concerns the geographical extent of settlement in the Levant in the 7th - 6th m.b.c. as presently established by radiocarbon dating. In making use of chronometric dating results, a common approach is to group those sites exhibiting similar cultural remains (e.g. Kebaran, PPNB) and to compute from the available radiocarbon dates for member assemblages the probable duration of that cultural phenomenon. However this approach tends to obscure the possibility, among many, of significant time-differential between

occupation of sites with similar cultural assemblages, and sometimes leads to the discounting of slightly aberrant dates as unacceptable on archaeological grounds.

For series of dates, the dispersion diagram technique (Ottaway 1973) maximises the positive, redundant information yielded by radiocarbon dates while retaining a good indication of their relative reliability. The individual character of each determination must of course be kept in mind when assessing the confidence to be placed either in single dates or in series. But any system devised to designate confidence-values must distinguish between archaeological and non-archaeological criteria, e.g. known contamination or lack of proper pre-treatment, as does Waterbolk (1971) but not Henry and Servello (1974). Otherwise potentially significant information may be lost. For example, the two dates of 5420±400 b.c. (M-1792) from Munhata Level IV A and of 5780 ± 115 b.c. (Hv 2597) from Sefunim (discussed further below) are ascribed a low confidence level by Henry and Servello (1974), presumably because of the submitters' original comments evaluating their archaeological credibility. The possibility that one or both hint at 6th millennium occupation of, respectively, Lower Galilee and the Carmel barely receives attention.

Rather than evaluate all actual or potential radiocarbon dates in the light of a consensus early 7th m.b.c. date for PPNB materials, it seems worthwhile to review the radiocarbon evidence for 7th-6th millennium settlement in the Levant on independent grounds (Fig.7.1).

Dates used in Fig. 7.1.

1. Tell Aswad Contenson 1973.

The ten dates from two different laboratories come from

two separate soundings. The dates from each sounding are internally consistent though the stratigraphic correlation of the two series is uncertain. In Fig. 7.1 all dates are utilised; the position of the upper quartile barely changes if only the (younger) series from the West sounding is used.

2. Jericho Science 128, 1555; Radiocarbon 5, 83-4; 106-7; 11, 290-1.

Omitting the GL series as Waterbolk advises (1971, 27), there are nine dates from the middle and upper PPNA levels, and seven dates from the PPNB, all but one from the lower and middle levels. The interquartile ranges of the two series fail to overlap by some 400 years; only the PPNB series is used in Fig. 7.1. Further samples from the upper PPNB levels would probably extend the interquartile range by a century or so, to c.6600 b.c.

3. Beidha Radiocarbon 10, 4-5; 323-4; 11, 152; 14, 49-50.

Fourteen dates are available from throughout the sequence, run by four different laboratories. Since three laboratories obtained similar results on the same Pistacia seed sample, the discrepancies between different determinations on the same samples of charcoal (Pistacia, Juniperus) are probably due to ancient use of old timber (Waterbolk 1971, 27). (The majority of the samples discussed here were also of charcoal and so there would be no advantage in making corrections for the Beidha charcoal determinations on the basis of the seed samples).

4. Nahal Divshon Radiocarbon 14, 484; 15, 295-6; 16, 378-9.

The three samples run by different laboratories were taken from the same fire-pit, giving a mean date of 6610 b.c.

5. Ras Shamra Radiocarbon 5, 82-3; 8, 137-8.

The four Pennsylvania samples are internally consistent

against depth of context, which makes Gsy-102 (7080±400 b.c.: not shown in Fig. 7.1) from within this sequence appear anomalous by contrast. Lack of NaOH pre-treatment may mean that P-458, P-459 and P-460 (from virgin soil) are a little too young; in which case a basal date of c.6500 b.c. may be reasonable.

6. Tell Ramad Radiocarbon 9, 128-9.

The six dates form a homogeneous group for the aceramic levels. One of them (GrN 4823) ascribed to Level III (with pottery) may in fact belong to Level II (Contenson 1966) but dating of the floruit of the site appears to be well established with this series.

7. Mersin Radiocarbon 2, 183.

This sample (6000±250 b.c.; W 617) refers to the basal strata of the site.

8. Khirokitia Stanley Price 1975.

9. Byblos Radiocarbon 14, 50.

This determination of 5410±70 b.c. (GrN 1544) revises the preliminary result used by Dunand (1961) and widely quoted. The absolute depth of the sample, c. 1.50m. above bedrock, suggests an earlier foundation date, perhaps c. 5600 b.c.

10. Dhali Agridhi Lehavy 1974.

Other dates.

11. Labwe Kirkbride 1969.

Three dates from this site (K1428, K1429 and K1430) are reported to average 5950 b.c. with a range of 140 years for the individual dates. This average is used here in the absence of fuller details.

12. Sefunim (Iraq el-Baroud) Ronen 1973.

Both samples (Hv 2597: 5780±115 b.c.; Hv 3368: 7445±130 b.c.) were of ash from a hearth in a layer with very little, undiagnostic flint material, overlain by a layer of aceramic neolithic with an ashy hearth at its base. Ronen (1973) prefers to accept the older date and suggests contamination of the younger sample by ash from the aceramic neolithic layer. However contamination from this layer would have had to be extremely heavy to produce this determination for material otherwise suspected to be of the 8th m.b.c. (cf. Waterbolk 1971, 18). The possibility that Hv 2597 dates an aceramic neolithic occupation of the cave cannot be entirely rejected.

13. Munhata Radiocarbon 12, 178-9.

Two samples of soil were dated, one from Level IV B or V (M 1793: 7210±500 b.c.), the other (M 1792: 5420±400 b.c.) from a fireplace in Level IV A. The large error terms make their utility uncertain but neither is to be rejected on archaeological grounds more readily than the other.

14. Cape Andreas

Three dates from this site agree well with the mid-6th m.b.c. date of Khirokitia (Le Brun, personal communication).

The evenness of this sample of some 60 radiocarbon dates leaves much to be desired in many respects, notably in the strong contribution of only four or five sites and in the scanty published descriptions of the stratigraphical contexts of many samples. The information they provide for the duration, floruit or foundation date of chronometrically dated sites is summarised in Table 7.1 and displayed geographically in Fig. 7.2. The interquartile ranges are used for durations (with the extra 100

years for Jericho), the mean or single dates (with an estimate for Cape Andreas) where these alone are available and, for sites which continued into the 5th millennium, the foundation-dates estimated above. All dates are rounded to the nearest century. The modern isohyets are depicted on the assumption that the rainfall distribution pattern was similar in the period of interest even though actual precipitation values may not have been.

	Duration	Floruit	Foundation
1. Aswad	7400-6700		
2. Jericho	7100-6600		
3. Beidha	6900-6700		
4. Divshon		6600	
5. Ras Shamra			6500
6. Ramad	6300-6000		
7. Mersin			6000
8. Khirokitia		5500	
9. Byblos			5600
10. Dhali		5300	
11. Labwe		6000	
14. Cape Andreas		5500	

Table 7.1 Absolute dating of sites discussed (years b.c.).

This diagram gives formal expression to a model of settlement recession in the Levant during the 7th-6th m.b.c. which has frequently been proposed (Perrot 1968, 1969), while differing from it in several respects and increasing its predictive power. So long as a mean date for PPNB culture is considered a useful concept, the temporal differentiation of occupation of PPNB

sites cannot become apparent. If used discriminatingly according to the methods described above, a point which needs careful emphasis, the present sample of dates already suggests that such differentiation has to be recognised in analysing the settlement recession and its possible causes. This remains true even if the present pattern is due partly to the haphazard sampling of contexts for radiocarbon dating, or if it reflects only the recession of permanent settlement.

The broad coincidence apparent between modern isohyets and isochrons defining the limits of settlement should not be over-emphasized at present (cf. the recent work in semi-arid zones quoted above), but it is clear that relative precipitation would have been a contributing factor to settlement possibilities. The often quoted evidence for an arid phase during this period, as indicated by studies of the Dead Sea levels (Neev and Emery 1967) and of pollen from the Huleh Basin (Horowitz 1968), while suggestive, needs to be greatly amplified, with greater attention being given to local site-environments rather than to the recognition of universal climatic zones and phases. Moreover the search for a temporal correlation between settlement recession and environmental change must envisage a "lag and lead" effect rather than a precise calibration. When more radiocarbon dates are available from the widespread PPNB sites in the Levant, particularly from those in the semi-arid zones, this recession trend broadly following the isohyets may be used heuristically to highlight those residuals which demand detailed investigation.

At present continued human occupation in the 6th millennium seems to be well documented for Lebanon and Upper Galilee (Kirkbride 1969, Copeland 1969, Lechevallier and Dollfuss 1973) and only further work and absolute dating will clarify its

coastal, southern and eastern limits. In the Beqaa, at 700-900m. a.s.l., sixth millennium sites tend to be found in close proximity to plentiful perennial springs (Copeland 1969) in a region where 8th and 7th millennium occupation is still little known. Similarly in the Levant coastlands, the late 7th and early 6th millennia see the founding of numerous sites which prove to be of long duration, many of them on small coastal headlands adjacent to freshwater springs. These include Ras Shamra, Byblos and Mersin as mentioned above, and also Tabbat el Hammam, Tell Sukas, and Tell Judeideh in the 'Amuq, to name only the better known (see Perrot 1968 for references up to 1967).

It is in the context of these latter foundations that perhaps the most significant feature of the settlement recession model acquires its importance, namely the possible colonisation of Cyprus at this period. An initial settlement date for the island in the early 6th m.b.c. would be quite consistent with this trend towards coastal locations contemporary with the continued occupation of inland areas affording conditions still favourable to settlement. However any hypothesis proposing a westwards colonisation of Cyprus from the Levant coast at this period appears to be neither economical nor reasonable - uneconomical because of the greater proximity of the Anatolian coast to the island and unreasonable because of the lack of convincing external parallels for the Cypriot material. The following subsections (7.2 and 7.3) attempt to provide a more substantial theoretical and empirical basis for the proposed colonisation.

7.2. On the nature of island colonisations.

Compared with the extensive research into colonisation by lower forms of life, much less attention has been devoted to human colonisation with simple technologies. Although many of the concepts of biological evolution, notably adaptation, appear at first sight to be useful in explaining culture change in colonisation contexts, any parallels between biological and cultural evolution ought to be demonstrated rather than assumed if reductionism is to be avoided. "For the concept of cultural adaptation to stand in anything more than a metaphorical relation to biological adaptation, phenomena like natural selection, the genetic transmission of traits, and mutation must be shown to have operational parallels in culture process" (Burnham 1973, 94). The biological evolution of a colonising population is indeed subject to natural selection but its cultural development depends rather on the degree and nature of communication among the colonisers and between them and other populations.

At a general level, the course of both biological evolution and cultural development is strongly influenced by the relative isolation of the colonising population in its new homeland. If contact between mother and colonising populations is absent or extremely limited, then at a biological level, evolution of the colonists' demographic and physical characteristics will owe much to natural selection acting upon the material available in the gene-pool of the propagule - the minimal number of individuals of a species capable of successfully colonising a habitable island (MacArthur 1967). If the colonising population is small, rapid micro-evolutionary changes may occur through operation of the founder effect and

the selection of different gene frequencies to those in the mother population, this being favoured by changes in selective pressures rather than resulting from isolation as such (Ehrlich and Raven 1969). Conversely, the greater the degree of continued interbreeding between the two populations, the less the probable significance of the founder effect.

In the cultural sphere also, the degree of external contact subsequent to colonisation is important in accounting for differences between colonising and mother populations. If extensive contact is maintained during and following the colonisation episode, and materials, labour and other resources are easily acquired from the homeland, the development of specialised techniques for the utilisation of local resources may well be inhibited (Vayda and Rappaport 1963). But if external communication is very limited following the colonisation of a previously uninhabited island, then different techniques to those customarily used in the homeland may need to be developed to cope with immediate subsistence needs in the new environment. The extent to which new techniques are necessary, perhaps entailing some re-organisation of roles and social institutions to accommodate them, may vary according to whether the colonisation was accidental or deliberate, and according to the variety of ecological adjustments required in the new terrain. Even if the colonisation were deliberately planned, the different availability of strategic resources tends to act against the reproduction in full of the native culture. The form which such readjustments take depends on the perceived environment of the colonisers - those resources and opportunities which register upon their mental maps built up through experience of previous environments. Equally important, even if good communications are maintained

between colonists established at different preferred sites throughout an island, local adaptations to new circumstances may vary widely.

The relevance of the preceding generalisations to the present study concerns the identification of a mother population to which the colonisers of Cyprus can be referred. They suggest that certain classes of information will be of uncertain value in broaching this topic. If it were known that frequent contact continued following the initial landfall, then a search could perhaps be justified for close parallels to Cypriot material in, for example, implements and utensils used in subsistence activities or in the physical make-up of the human population. But since the degree of continued contact is unknown (though discussed further below) then clearly greater attention should be given to material less susceptible to rapid change through primary functional requirements or micro-evolutionary selection. For instance, the flint industry and human physical features at Khirokitia which Mellaart (1965) singles out as without parallels elsewhere both come under this rubric. To take an obvious example, the extreme rarity of arrowheads in the flint assemblage finds a ready explanation in the absence of wild animals to hunt, as hypothesised above.

In trying to relate the Cypriot material to material elsewhere, then, greater emphasis should be given to traits whose significance seems to derive from the social and psychological sphere of cultural relationships, rather than those related to primary subsistence activities. (The distinction adopted here is the traditional one between "adaptive" and "non-adaptive" traits, but this terminology is best avoided since most traits can be argued to have some "adaptive" value if reason is pushed far enough (Burnham 1973)). Such traits include those connected

with group identification and recognition of social status, which may best be reflected archaeologically in portrayal of the human figure and in rites associated with treatment of the dead. Although these manifestations of culture cannot be divorced from the socio-economic matrix in which they are embedded, it is arguable that they indicate some form of relationship between two populations exhibiting similar forms in a way that purely functional items may only rarely demonstrate (cf. Nandris 1970).

In using the term "relationship", no more than an indication of shared experience is implied, without specifying whether this is a result of common cultural heritage of close communication between two populations of different cultural affinity. The following section considers some aspects of relationships in the Levant of the 8th-6th m.b.c. and the role of Cyprus with regard to them.

7.3 External relationships of the Cypriot material.

Since any relationships within the Levant are as likely to be the result of common cultural heritage as direct interaction, a general treatment of the relevant material over three millennia is as valid as any attempt to reconstruct the relationships existing at one moment in time. The evidence itself dictates this course since it is too sparse, and the chronologies too imprecise, to establish truly contemporary cultural foci. Because of the uneven archaeological coverage of the area, positive instances of demonstrable relationships can be given much greater weight than the absence of those features which were once associated and thus might have been expected. The following discussion is concerned mainly with the 8th-6th

millennia culture of the Levant, by which term is meant the whole of the Syro-Palestinian coast and its nearer hinterland. In order to avoid over-burdening the text with references, sources for much of the material discussed here may be found in Cauvin (1972) which treats several of the same themes from a different viewpoint.

It is the study of rites associated with treatment of the dead which makes most apparent the overall cultural homogeneity at this period throughout the Levant, and indeed Anatolia so far as it is known. This homogeneity, which finds a more tangible record in the exchange of objects of the rarer raw materials, makes it possible to talk in terms of an Anatolia-Levant interaction sphere of the time. The homogeneity deserves to be emphasized more than the various differences in mortuary practice between sites, which may in part be due to uneven archaeological sampling. It should be stressed that the widespread practice of certain mortuary rites throughout this area betrays at most a common cultural heritage (cf. below) from which the variations in form and frequency of particular customs have developed. Variations in practice at one site or between sites are presumed to be due to differential treatment acknowledging the variable status positions of the individual deceased, and do not in themselves indicate the degree of culture contact between different populations (Binford 1971).

In general terms, although the customs of simple primary inhumation also occurs, the rite which is best known from the area involves the exposure of the corpse, probably in some form of mortuary structure or stone cairn, for partial excarnation, followed by the removal of the skull for artificial treatment

and public display, and the separate burial of the postcranial skeleton below the floors of structures of the living. The variability in this rite consists chiefly in the degree of excarnation at the time of burial, the precise method of decapitation, the form of treatment applied to the skull, and the single or collective nature of the subsequent disposal of both skulls and postcranial skeletons.

One or more constituent practices of this rite are found on the majority of extensively excavated sites throughout the Anatolia-Levant interaction sphere in the 7th m.b.c., from Hacilar and Catal Hüyük in Anatolia to Beidha in the south of the Levant. Separation of the skull in mortuary contexts forms part of a much older tradition, being recorded from Natufian-related contexts at Ain Mallaha (Eynan) and Erq el-Ahmar. However the elaborate post-mortem treatment of skulls and their display in association with structures of the living are features characteristic of the 8th-7th m.b.c. Levant (Cauvin 1972). Although the precise contexts of many examples are inadequately known, the figurines and heads in stone, clay or lime marl from the same area seem to be symbolic of similar beliefs, and can be considered with them.

Two general themes which permeate the apparent diversity of their expression concern the idea behind the treatment of the head and the head's subsequent display. The variable depiction of facial features and hair both on the plastered skulls from Jericho, Ramad and Beisamoun (Ferembach and Lechevallier 1973), on the stone and clay figurine heads and in the Catal Hüyük frescoes strongly suggests that the heads are a surrogate for the actual body in funerary contexts. Portrayal of those features which distinguish the social persona of the deceased

seems to be the objective, and not a close facial resemblance (cf. Strouhal 1973). To quote an ethnographic account of terracotta funerary heads (Sieber 1973, 72), "a naturalistic likeness was neither intended nor sought, for the context of use - public display in a funeral hut in the middle of the village - and the context of visual association - one or two attributes of the deceased - were sufficient to establish an adequate set of identifying marks". However it is the similarities in treatment through different media which is emphasized here, rather than ideas as to the significance which was attached to it.

The second theme concerns the public display both of decorated crania and heads in stone or clay. The eventual positioning of crania so as to be tilted slightly upwards towards the observer is suggested by their context of discovery where well preserved, as for example at Jericho and Catal Hüyük (Kenyon 1957, Pls. 20A, 32; Mellaart 1964, Fig. 22); by the modelling of the base of plastered skulls to produce this effect (Strouhal 1973); and by the provision of clay anthropomorphic supports for plastered skulls at Ramad (Contenson 1967). The same upward tilt of the heads modelled in stone or clay (e.g. from Jericho, Munhata and Catal Hüyük) may be prompted by similar considerations.

If this specialised mortuary rite is commonest in the 7th millennium, the following millennium sees a gradual shift away from multiple interments and special treatment of the skull towards single primary burials often accompanied by grave goods in the form of containers of implements (Cauvin 1972). This trend has its origin in earlier periods, but most of the objects found with earlier burials, mainly pendants of various forms,

were probably those being worn by the deceased at the time of death. At this point it is appropriate to consider the burial evidence from Khirokitia and to introduce specific parallels to substantiate these generalisations.

In general terms mortuary practice at Khirokitia falls well within the latter stages of the rites described for the Levant as a whole. However many of the features found on the mainland have not been reported from Khirokitia, or elsewhere in Cyprus, although traits with which they were often associated do occur, while certain other practices which are of restricted occurrence on the mainland seem to be commoner at Khirokitia. The concepts of "loss in transmission" and "trait elaboration" may be usefully employed to describe these phenomena. In fact mortuary practice at Khirokitia represents a mix of traditions current in the late 7th m.b.c. on the mainland, consisting mainly in primary individual inhumations, sometimes accompanied by grave goods, but retaining some features associated with earlier methods of disposal of the dead.

As regards the latter, that significance was occasionally attached to the skull finds expression in the leaving of the cranium uncovered by the grave filling, by wedging the head with lumps of pise or with pebbles, and even, in one instance (Tholos XV Grave IV), in the separation of the skull, less the lower mandible, from its skeleton (Dikaios 1953, 96; 214-222; 228-231). The placing of querns or large stones on burials recalls instances on the mainland, for example at Jericho (cf. Cauvin 1972, 42) and Nahal Oren (Wadi Fallah; Noy, Legge and Higgs 1973), as does the common practice of building hearths or, in one case (Tholos IA Grave VII), a stone platform immediately over a burial. As distinct from these customs with an

earlier history, the occasional provision in graves of stone bowls, often deliberately broken, or flint implements is consistent with the change in mainland practice which becomes most marked during the 6th m.b.c.

This trend is most clearly reflected in the predominance of primary inhumation at Khirokitia. The only evidence suggestive of secondary interments (Tholos IA Grave VII, and the burials in Tholos XX; Dikaios 1953, Fig. 60) comes from within the exceptionally large and prominent structures (Tholoi IA, XX, XLV) which have raised platforms in their interiors but minimal evidence for subsistence activities. Pending a systematic treatment of the data, the interpretation of these as mortuary structures for the temporary exposure of selected corpses merits consideration.

Although the find contexts of most of the figurine material are uncertain, the display of heads attached to other objects is indicated by the hole in the base of the remarkable head in unbaked clay, with which compare the alabaster head from Catal Hüyük (Dikaios 1953, 298-9 and Pls. XCVIII and CXLIV; Mellaart 1964, 78 and Fig. 31b); and the lateral holes in the stone heads Nos. 1, 1068 and and 1093, with which compare the clay torso described from Ramad (Dikaios 1953, 298-9 and Pls. XCVI and XCVII; Contenson 1967). The upward tilt of the head is found on other stone figurines (Khirokitia Nos. 1404 and 967) which in this respect specifically recall some of the Munhata material (cf. Cauvin 1972, Fig. 13).

The small quantity of published material of this nature from both mainland and island which is available for discussion of parallels between them cannot be emphasized too strongly.

But the suggestive nature of these observations finds a more solid basis in other evidence for the participation of Khirokitia in the Anatolia-Levant interaction sphere. Not only are many of the rarer raw materials found in both mainland and island contexts (e.g. obsidian, carnelian, "greenstone", "soapstone" and pumice) but also the choice of similar molluscan species for ornaments (notably Dentalium but also mother of pearl, cowrie and Pectunculus) and the collection of fossils and concretions (Dikaios 1953, Appx. IV and passim). Although parallels in the technological sphere are of uncertain informative value (cf. 5.2 above) the hints of lime plaster work with or without added colouring (e.g. Dikaios 1953, 86, 92, 96, 159) and the limited evidence for containers in clay are quite consistent with a late 7th m.b.c. technology in the Levant (Balfet et al, 1969, Frierman 1971). The few fragments of "pottery" in the "aceramic" levels (Dikaios 1953, 265-6 and Fig. 105) are of lightly-fired well-silted clay without temper, found in situ on an open hearth.

The efforts expended on stone bowl production, capitalising on the abundant raw material immediately at hand, represent an elaboration and proliferation of the ground stone containers found on the mainland (cf. the examples too from Cape Andreas and Petra tou Limniti; Le Brun 1974, Gjerstad 1934). Other very close parallels in stone artifacts include the stones with incised chequer patterns, either perforated or not, as at Ras Shamra (Schaeffer 1962, 286), Ramad (Contenson 1971, 280), Byblos (Dunand 1973, Pl. CXVIII no. 32874) and Shaar Hagolan (Stekelis 1973, Pl.58), some of which are virtually identical in form to those from Khirokitia (Dikaios 1953, Pls. CXXXVIII and CXLI). In addition, there is a single find, albeit unstrati-

fied, of the distinctive "butterfly" bead (Dikaios 1953, 306) which has a widespread distribution throughout the Levant.

In the light of the preceding theoretical discussion, these parallels, some of a general nature and others very specific, are sufficient to place Khirokitia within the Anatolia-Levant interaction sphere. They range in date throughout the 7th-6th m.b.c. in mainland contexts but the important point is that the Khirokitia material is not best parallelled with early PPNB, as usually maintained, but is quite consistent with a late 7th/early 6th m.b.c. date in mainland terms. That certain mainland traits appear to have been lost in transmission and others have become elaborated in their insular setting could perhaps have been predicted a priori. The tendency to elaboration of selected cultural traits in insular contexts is a well known phenomenon, of which megalithic construction is only the most obvious manifestation. Viewed with this perspective, the inclusion of Khirokitia within the Anatolia-Levant interaction sphere of the late 7th to early 6th m.b.c. seems quite credible.

7.4 Provenance and outcome of the colonisation.

The model of settlement recession in the Levant predicted a westwards colonisation of Cyprus from the Levant coast. The great majority of the parallels quoted in the preceding section lie with the Levant rather than with Anatolia, but fuller publication of recent work is needed if the accidents of excavations are not to be held responsible. Nevertheless certain other aspects of the Anatolia-Levant interaction sphere reinforce the impression of a westward rather than a southward colonisation.

The significance of the two raw materials at Khirokitia which are certainly non-indigenous to the island, namely obsidian

and carnelian, lies not simply in their occurrence but mainly in their small quantity. Less than 20 pieces of obsidian were recovered from the whole excavation, representing a minimal percentage of the total chipped stone which can now only be guessed at (Stanley Price and Christou 1973, 28, correcting the figures used by Renfrew et al. 1968). Other sites in the island have yielded a little obsidian on excavation (viz. Cape Andreas, Troulli and a single piece from Petra tou Limniti) or on the surface (Akanthou) but its frequency is on the same scale as at Khirokitia. In its accessibility to a supply of obsidian, then, Cyprus is comparable to those sites of the southern Levant which, like Khirokitia, were receiving the majority of their small quantities of obsidian ultimately from the Ciftlik source in Central Anatolia (Renfrew et al. 1968; Wright and Gordus 1969). This was so despite the island's greater proximity to the Anatolian coast, and to the obsidian sources, and despite the tendency for the movement of goods to be easier by sea than by land (Hodder 1975 and personal communication, 1975). It would be wrong then to use the presence of Ciftlik obsidian in Cyprus as evidence of direct contact with Anatolia and indeed the data suggest quite the opposite. Since obsidian was still in circulation in the 6th m.b.c. on the Levant mainland (Copeland 1969, Kirkbride 1969, Lechevallier and Dollfuss 1973), the very small quantities found in Cyprus argue against a continuous supply over a period of time.

The significance of the carnelian is less certain in the absence of characterisation studies, but the nearest probable source lies in the pre-Cambrian rocks of Sinai and the Wadi Arava in southern Palestine. Over 40 carnelian beads were found at Khirokitia but all but three or four of them belong to two

intact necklaces (Dikaios 1953, Nos. 1485, 560). These also serve to prove relationships with the Levant, while arguing against continued access, however indirectly, to a source-area. In fact, if Sinai and southern Palestine were indeed the source-area for carnelian, and probably turquoise too, in the Anatolia-Levant interaction sphere, further work ought to show that the frequency of these materials on sites declined during the 7th-6th millennia with the recession of settlement from the source areas.

Despite the uneven preservation and study of human skeletal remains in the area, one cultural trait which has observable effects on the skeleton is relevant here, namely the practice of cranial deformation which is well documented at Khirokitia (Angel 1953). Confined to the occipital, the flattening seems to have little functional significance compared with the additional post-bregmatic flattening found on females of the 2nd m.b.c. in Cyprus which would have been well adapted to the carrying of heavy objects (Schwartz 1974b). A few cases of cranial deformation intra vitam have been reported from Jericho by Kurth (quoted in Strouhal 1973) who also noted the impression of bandages in the coronal region of one skull. On the other hand, Angel (1971) specifically mentions the absence of the custom in the large sample from Catal Hüyük.

Some form of binding of the head seems to be represented on the back and sides of the head in unbaked clay from Khirokitia and on the stone figurine from Petra tou Limniti (Fig. 7.3; Dikaios 1953, 299; Gjerstad 1934, Pl. VIII,4). It may also be depicted on the Jericho skull with horizontal bands painted over the vault (Strouhal 1973, Pl.2E). Whether these portrayals

recall binding of the head for deformation at birth or symbolise head-binding at death, this evidence indicates a practice which occurred, though perhaps rarely, in the Levant but not in Anatolia, and which became common when transmitted to Cyprus.

Also of relevance to the question of provenance of the colonists is the evidence for cereal and legume species and domestic animal species found at Khirokitia (Stanley Price et al. forthcoming). Although it cannot be known whether the emmer, einkorn, barley and legume species identified from the 1972 sounding were indigenous to Cyprus, it may be significant that all have been found on sites in the Levant of similar or earlier date (e.g. Jericho, Ramad). With the exception of the Triticum compactum reported from Ramad, none of the hexaploid wheats known at this date in Anatolia (and in Crete) have been reported from the Levant. Moreover all the animal species represented at Khirokitia have been found on contemporary sites in the Levant. However material of this nature is still too scanty from Cyprus for basing firm conclusions about distributions.

If indeed the animal species were introduced, which seems probable, the duration of contact between island and mainland must have been sufficient at least to establish viable breeding stocks of those species which survived to be recorded archaeologically. A deliberate colonising episode must be envisaged, even if the initial landfall were accidental. In favourable weather the island is visible from the southern Anatolian coast, and intermittently, excepting the Gulf of Iskenderun, as far as a point a little south of Ras Shamra. A fortuitous landfall in Cyprus from further south than this can be brought about by adverse autumnal weather conditions for light craft working

northwards up the coast (Denham 1964, 140). It is conceivable that a successful colonisation could have been initiated by such a freak event. However the more economical hypothesis would propose a deliberate colonisation from a point at which island and mainland were just intervisible. Given this premise, the pattern of the settlement recession model, and the location of aceramic sites at Capes Andreas and Greco (Chapter 6.6), an embarkation from the northern Levant coast seems the most plausible hypothesis.

As to subsequent developments in the island and their relationship to the Levant, the argument of the preceding chapters involved a further colonisation of the island to account for the ceramic sites. Although an absolute break in occupation may prove invalid, a marked decline in the scale of settlement seems certain. Contrary to popular models proposing the expansion of populations in colonising contexts to a level consonant with the available resources, the population in question seems to have declined well below such a level so far as their archaeological visibility is concerned. In this context one possible explanation concerns the retention of practices regulating population size in conditions of under-population (cf. Wagley 1969). If such practices had come increasingly into effect during the recession of settlement, the apparent failure of the colonising population to ensure sufficient increase for long-term survival may owe as much to retention of these cultural practices as to any limitation of resources, which seems an improbable constraint in the circumstances.

If the recession of settlement did coincide with a decline in population levels in the Levant, it raises questions about

the role of demographic and environmental variables in the socio-economic changes in the Levant during this period. The mortuary rites reviewed above point to a change during the 8th-6th m.b.c. from an ideology emphasizing local descent rights and role recognition at death (cf. the discussion of skull treatment above) to a system in which widely variable status positions were formally recognised at death in the differential provision of grave goods. This trend correlates quite closely in time with the shift from a pattern of permanent settlements situated in very localised areas of high resource potential throughout the Levant to the choice of sites which are limited to the zones of higher precipitation and which are of very variable duration, seemingly related to the relative accessibility of arable land. By contrast some of the changes in intra-settlement organisation and the socio-economic institutions which they may reflect, as hypothesised by Flannery (1972), have already occurred by the mid-7th m.b.c. Deteriorating environmental conditions at this time might well have been an important factor in stimulating these changes and would explain why they can be observed taking place on the very same sites (Jericho, Beidha) in those areas most vulnerable to climatic shifts.

In this context Flannery's implied suggestion (1972, 49) of a possible reversion to a compound pattern of settlement organisation if those factors promoting a village society organisation were no longer operative finds an excellent example in Khirokitia, where the compound pattern typical of earlier phases is associated with features otherwise characteristic of the period. Moreover if the hypothesis is valid, that "the success of village society was a prerequisite for further

political evolution" (Flannery 1972, 49), then the reversion to a compound pattern of organisation may have jeopardised future political developments in the island from this initial base.

Thus both on theoretical and empirical grounds a marked decline, if not an actual break, in occupation bears out the settlement locational evidence for a fresh colonisation in the late 5th/early 4th m.b.c. Positive evidence from the mainland in support of this supposition is not strong, but the theoretical considerations raised above (7.2) are again relevant. There are no parallels in the extremely variable Dark-faced Burnished Ware of the mainland sufficiently specific to afford an independent dating of the Dhali and Philia DFBW pottery. The best parallels for the early painted pottery of such sites as Ayios Epiktitos Vrysi remains with the Ras Shamra IVC-III material as noted long ago by Dikaios (1936; Schaeffer 1936), but the identification of specifically Cypriot pieces in Level IVC seems a little too uncertain without analytical work for deducing chronological arguments.

The technique of combing in Cyprus may eventually prove to be the fusion of two separate mainland elements, the red-on-white painting tradition and the incision of wavy lines on unpainted wares, which co-occur in Northern Palestine in the 5th m.b.c. The lack of clear parallels with Palestinian pottery of the late 5th/early 4th millennia, however, is a deterrent to seeing the similarities between the Cypriot and Palestinian pit-dwellings of this period as other than similar adjustments to differing circumstances. Nevertheless it seems clear that such parallels as there are for the Cypriot material lie with the Levant rather than with Anatolia or with the Aegean or Egypt.

From the Greek mainland a couple of sherds have been claimed to resemble Cypriot, and specifically Sotira, wares, the one from the Athenian Agora (Immerwahr 1971, 11) and another, unstratified and unillustrated, from Sesklo (Theocharis 1973, 308, n.30). If indeed these, and the dozen or so red and white sherds of light fabric from Saliagos (Evans and Renfrew 1968, Fig. 56, 20, 21 and Pl. XXIVb), cannot better be referred to the mainland Greek painted tradition, they nevertheless constitute very sparse evidence for western contact with Cyprus at this period. Indeed the two areas, the Levant and the Aegean, seem to have developed separately following the introduction to the latter of a domestic economy during the 6th m.b.c., as represented most clearly in the Franchthi cave sequence. The separate trajectory of Crete within the Aegean world, following the initial settlement of Knossos (Evans 1968) provides an instructive parallel to the colonisation of Cyprus at the same date, c. 6000 b.c. Although even less is known of subsequent developments in Crete than in Cyprus, continuity of settlement seems to be well documented by the Knossos evidence, culminating in the flourishing palace society in the early 2nd m.b.c.

By contrast in Cyprus at this time, socio-economic developments are much less advanced. Between the initial ceramic settlement episode and the mid-2nd millennium, the best evidence for external contacts in Cyprus lies in the BSC ware in Anatolia and RP in the Levant and the introduction of the ox as a draught animal and metal implements and weapons in the 3rd millenium. These developments mark the beginning of a gradual intensification of land- and resource-use, notably of copper, in the island which is reflected in the changing settlement

pattern (cf. Chapter 6.5; Catling 1963). This process reaches its culmination in the florescence of late bronze age Cyprus and the island's full participation in the Aegeo-Oriental interaction sphere.

The contrast in rates of culture change between Cyprus and Crete during these millennia provides an excellent opportunity for comparative studies. The actual circumstances of their initial colonisations and the subsequent continuity of settlement would be factors of great importance in this respect. If, significantly enough, Cyprus cannot exhibit a site displaying the permanence and steady expansion demonstrated for Knossos in Crete, then perhaps the questions discussed in this thesis may go some way towards providing an explanation for its absence.

CATALOGUE

OF SITES AND FINDS

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INTRODUCTION TO THE CATALOGUE

The aim of the Catalogue is to present the evidence for identification of those sites which form the basis of discussion in the Thesis. It is primarily a catalogue of sites where material has been found which can be dated to the period under consideration. The Introduction to the Catalogue consists of four parts:

(1) The Nature of the Evidence
(2) The Form of the Catalogue
(3) Notes Explaining the Catalogue Entries
(4) Explanation of the Code by reference to which the material is described.

(1) The Nature of the Evidence

1.1. Sources

The major part of the evidence on which the Catalogue is based has been accumulated by the Department of Antiquities of Cyprus from its establishment in 1935 until 1972. It includes sites reported by the staff of the Cyprus Museum and of the Department of Antiquities, particularly in the years 1933-1955, and sites reported by members of the Archaeological Survey of the island since its establishment in 1955. Other sites have been reported by individuals in Cyprus and, more commonly, by expeditions and scholars from abroad during the course of their work in the island. A few sites have been found since the Catalogue was completed, for example those found by Dr. James Carpenter during a survey of the Soloi region in 1972/3 but, being unpublished, these have not been included.

The primary sources of this evidence are the unpublished Records of the Department of Antiquities and the Field Notebooks of the Cyprus Survey for 1955-9. These were fully examined during 1971-2. The references to sites in these sources were cross-checked in two ways:

(i) by going through the twenty volumes of the Cyprus Museum Inventories, the Inventories of the District Museums where available, and

the Cyprus Survey Inventory, and

(ii) by locating in the Cyprus Museum Reserve Collections and in the Cyprus Survey Collections the material from those sites referred to in the Records and Field Notebooks.

The collective examination of these three primary sources gave added precision to the reports of those sites (the great majority) common to all three. Furthermore the evidence of two sources - the Museum Inventories and the Reserve Collections - sometimes gave substance to a site for which the original report was unavailable in the Records. In the case of a few sites for which the source evidence was uncertain, their status was clarified in the light of the personal recollections of their discoverers.

In collating the evidence from these three primary sources, a few instances of double-recording came to light. Although a site when discovered was usually named after the village in whose lands it occurred, and the locality-name of that area, an error in identifying these could lead to the same site being reported at a later date under a different name. Locality names in particular are changeable. Although the Cadastral Survey of the island records those locality names reported to the authorities in the 1920s, there are often in practice more than one name for a locality. Consequently, the name given on the Cadastral Survey plans may be unknown to the contemporary villager who may nevertheless offer alternative names for the same locality. Many stray finds handed in by villagers have been described as having come from one locality, its name being in fact an alternative for that under which a site had already been recorded. The work of the Archaeological Survey in 1955-9 resulted in the exclusion of double-recording in those areas in which field-survey was undertaken. The present work, in combining the results of the Survey's work with more recent discoveries and with the records of stray finds over some forty years, has tried to eliminate double-recording of sites for the whole

island. This was achieved by applying the principles of historical source-criticism to the three primary sources and by finding the locality-names referred to on the Cadastral Survey Plans or, more often, by identifying the localities on the ground by making local enquiries. As a result the large majority of reported sites have been re-discovered and furnished with precise references to two different map-series, to reduce the possibility of future double-recording.

For any site in the Catalogue which is thought to have been reported on separate occasions as two different sites (e.g. N.7), a brief summary of the source evidence is given. There remain nevertheless several sites which could not be precisely identified on the ground owing to the ambiguity of the original report (e.g. N.10). Stray finds which clearly come from a previously reported site are included in that site's Catalogue entry. The resulting Catalogue is therefore a minimum record. Although it is possible that two find-spots have been amalgamated where they should have been separately recorded, the reverse is unlikely to be true. Furthermore the Catalogue is thought to record every site or find dating to the period under consideration which has been reported to the Department of Antiquities up to 1972. The small quantity of material in foreign collections derives, so far as is known, from sites already reported to the Department.

1.2. Criteria for Inclusion in the Catalogue

For a site to be included in the Catalogue a number of criteria had to be filled. The spatial limits are the land-surface of the island of Cyprus and its offshore islands (with the exception of one find, Ff.14, from the sea). The temporal limits are from the earliest human settlement of the island (date undefined) until the Early Cypriot period. As a term of convenience, "neolithic" has been used to refer to the whole extent of this period. Sites which are assigned to the Philia Culture are also

included since they are discussed in the text, although they may well be contemporary with the EC. period. Terminological and chronological problems are fully discussed in Chapters 2 and 3.

For a find-spot to be included in the main Catalogue, it must have produced material which can be dated to the neolithic by comparison with excavated material of that date. Since the amount of material on the surface of an unexcavated site tends to be sparse and the sherds very weathered, the criteria of quantity and quality adopted here, while fairly rigorous, might seem extremely lenient in areas where large quantities of surface remains are found on sites. In the Catalogue find-spots have been divided into Sites and Finds. These are arbitrary terms denoting no more than find-spots which fulfil different criteria. A Find may well document a site of human activity in the past, but does not fulfil the criteria for a Site as defined below.

Both Sites and Finds must have a known provenance to be included in the Catalogue. Finds of uncertain or unknown provenance are listed in an appendix. For a find-spot to be included as a Site, the material must fulfil certain criteria of quantity and quality, viz: more than 5 sherds dating to the period under study; or more than 5 stone or flint implements if they can be similarly dated on positive criteria. Material which is reliably dated but which does not fulfil the quantity criterion, is listed as a Find. Stone and flint implements and stone vessel fragments which are not datable to the neolithic are listed in an appendix. Isolated stone axes have been included as neolithic finds, but future excavation of EC.-LC. sites may require revision of this identification. A group of undiagnostic material, for example a stone vessel fragment with undatable stone or flint implements, is not sufficient to constitute a Site if the area has been systematically surveyed without producing any supporting evidence. For instance, the site reported by Dikaios (1936,76) at Anayia has failed to

produce any neolithic material after several surveys, and the stone vessel fragment he found is therefore listed as a Find (Nf.2). On the other hand, a few sites (e.g. N.22) from which the collected material fails to meet the criteria set out above have been confirmed through the personal recollections of the discoverer.

The majority of sites fulfil the criteria for inclusion in the Catalogue through having produced a number of sherds readily assignable to the wares defined by Dikaios. However a small number of sites have pottery of the RL/P category, a ware which spans the end of the period under consideration and the start of the EC. period. Some of these sites and those ascribed to the Philia Culture may therefore fall outside the neolithic as here defined. This point is discussed at length in Chapter 3.

None of the sites in the Catalogue has been ascribed to a phase within the neolithic period. In many cases the surface material is inadequate for any identification other than neolithic. More important, though, any ascription to phases presupposes a rigorously defined sequence of phases to which sites can be assigned. For reasons given in Chapter 2, this has not been attempted in the Catalogue.

(2) The Form of the Catalogue

In view of the nature of the evidence as described above, the form of the Catalogue is as follows:

(1) A Catalogue of Sites fulfilling the criteria set out above.
(2) A List of Finds not fulfilling the criteria for a site but which have a provenance and are probably of neolithic date.
Appendix 1. A list of neolithic finds of uncertain or unknown provenance.
Appendix 2. A list of finds of uncertain date, perhaps neolithic.
Appendix 3. A concordance of names of sites in the Catalogue with those in earlier reports and on distribution maps.

The sites in the main Catalogue (1) are listed by the present Administrative Districts of Cyprus, viz: Nicosia (N), Kyrenia (K), Famagusta (F), Larnaca (La), Limassol (Li) and Paphos (P). Within each District the sites are listed serially in alphabetical order of the names of the villages in

whose lands they occur. The serial number thus serves as a unique identification of that site (e.g. N.3). The Catalogue entry for each site takes a standard form, viz:

(1) Village and, if known, locality of village in which site lies.
(2) Reference to Cadastral Survey Plan; 6-figure reference to Universal Transverse Mercator Grid.
(3) Original report of site; reference where appropriate to the Records.
(4) Whether excavated; by whom, date of excavation.
(5) Published reference(s) to site and its excavation.
(6) Area excavated, depth of deposit and absolute dating.
(7) Material from site; where stored and accession numbers.
(8) Description of material studied, using Code.
(9) Observations on surface appearance of site when visited. Date of visit and reference to where mentioned in text.

Further explanation of items 1-9 is given in (3) below.

The list of Finds (2) is also arranged by District and in each case follows on directly from the list of Sites in that District. As with the Sites, they are listed serially in alphabetical order of village name, each being uniquely identified by its serial number with an "f" to distinguish it as a Find, (e.g. Nf.3). Those items known to have been purchased are noted as such since they do not represent in situ finds.

The finds in Appendix 1 are arranged by class of material (e.g. stone implements, figurines) and by the date of their Museum Accession numbers within each class. References to published sources and reported provenances are given where available.

The finds of uncertain date in Appendix 2 are listed in order of their Museum Accession numbers. Several sites are included from which stone implements assumed to be of neolithic date were reported to have been found with RP sherds, making a later date more probable. Published references are given where available.

Appendix 3, the concordance of site names, is in three parts. List A is of sites or finds reported without village names, which have been here supplied and reference made to the appropriate Catalogue entry. List B is

of sites or finds reported under erroneous village names, which have been corrected to those under which they appear in the Catalogue, to which reference is made. List C is of those sites reported on two previous distribution maps which may not be readily identifiable with Sites or Finds recorded in this Catalogue. For each site, either reference is made to the Catalogue or a reason is given for its non-inclusion.

(3) Notes Explaining the Catalogue Entries

3.1. Village names. A site is recorded under the name of the village in whose lands it occurs, on the evidence of the Cadastral Survey plans of the island. Where erroneously reported in the past, the name has been changed to the correct one, with the exception of two sites published and discussed under erroneous names. Appendix 3B lists these and those sites whose names have been changed. The orthography for village names and the boundaries of Districts are taken from the Administration and Road Map of Cyprus (1st ed. 1970).

Locality names. The names of localities within village-lands are underlined to distinguish them. Because of their changeable nature, preference has been given to those recorded on the Cadastral Survey plans, unless the site has been published under a different name. Sites published under a locality name alone (e.g. Troulli, Petra tou Limniti) or under a nom de pays (e.g. Akamas) are recorded here under the correct village name. Appendix 3A lists those sites which have been recorded in this way.

Sites are all open sites unless otherwise indicated, e.g. caves, cemeteries.

3.2. Cadastral Survey reference. The Cadastral Survey (abbreviated to Cad.S.) of the island was published during the 1920s and 1930s and covered the whole island. Any point on agricultural land is identifiable through a combination of grid-square number (e.g. XXV), plan number within that grid-square (e.g. 13) and plot number (e.g. 34). If a site is small, one

plot number only is given; if the approximate extent of a site is known, several plots may be listed. Where the plot on which a site occurs is known, accuracy is to less than an acre and usually greater. On common land (hali) and for sites where the exact plot is not known, accuracy is variable.

Grid References. The majority of sites are supplied with a 6-figure reference to the Universal Transverse Mercator Grid for Cyprus (Zone 36 of the International Spheroid), as used on the current 1:50,000 map series of Cyprus (Edition 2-AMS, 1967). The U.T.M. Grid covers the entire world and, if consistently employed, makes possible a standard site-designation system (Edwards 1969). In Cyprus it has replaced the Cyprus Grid to which sites have been referenced in the past by the Cyprus Survey. These sites have been re-referenced where necessary to the U.T.M. Grid, which is to be standard on a new 1:50,000 map series for Cyprus, due to be published shortly. A 6-figure reference identifies a site to an area 100m. square; if the exact location of a site is uncertain, 4 figures only are given, referring to an area of 1 km. square.

The overall distribution map of sites (infra) uses as a base map the 1:250,000 map of Cyprus (Edition 7-GSGS, 1970).

3.3. Original report of site. The majority of sites were reported by members of the Department of Antiquities and of the Cyprus Museum. For sites not published at all or known only through published distribution maps, reference is made to the original report of the sites in the Minute Papers of the Records of the Department. References of the form 161/38:2 refer to Minute Paper 2 of File 161/38.

The sites reported by the Cyprus Survey (abbreviated to CS.) between 1955 and 1959 are described in the Survey Field Notebooks under the serial number of the site (e.g. CS.360). The majority of those found in the Nicosia and Kyrenia Districts are written up in the Index (incomplete) in

the Archaeological Survey office. Those found after 1960 are listed in the CS. Inventory, and are often the subject of reports in the Records. Most of those found since 1960 and those found by foreign expeditions have been published.

3.4. Excavation. A site is unexcavated unless indicated. If excavated, details of by whom, for which institution and the years in which excavation took place are given. Excavations by members of the Antiquities authorities in Cyprus are described without distinction as having been conducted by the Cyprus Museum for 1933-5 and by the Department of Antiquities for 1935-present.

3.5. Published references. Preference is given to primary sources, either to the first published report of a site or to a source which adds information to an earlier report. The report may be no more than a mention by name without details or a point on a distibution map.

For published excavations, the final report is quoted. If no reference is given, the excavation is unpublished. Preliminary reports of current excavations are usually to be found in the annual Chronique des Fouilles .... à Chypre by V. Karageorghis in BCH, and in RDAC. Brief summaries in ARDA are not referred to.

3.6. Details of excavation. A summary of the main features of the excavation is given unless a site has been published or is the subject of full preliminary reports. The summaries of unpublished excavations are extracted from the Department of Antiquities' Excavation Records and from the Excavation Notebooks of P. Dikaios.

The area excavated and depth of deposit are generally estimated from published plans and sections or from unpublished descriptions, and are therefore only approximate. The recorded figure refers to the total depth of deposit including post-neolithic deposit.

Radiocarbon dates are quoted as Years B.P., using the 5570 half-life.

The Laboratory numbers and reference to publication are given.

3.7. Material. For the present location of material from a site, whether from a surface collection, trial or extensive excavation, preference is given to material stored in Cyprus. The list is not therefore exhaustive for material held in collections abroad. The following abbreviations are used:

CS. Cyprus Survey; CM. Cyprus Museum; FM. Famagusta Museum;
PM. Paphos Museum; KM. Kouklia Museum; Larn.M. Larnaca Museum;
Stockholm: Museum of Mediterranean Antiquities, Stockholm;
Sydney: Nicholson Museum, University of Sydney;
Oxford: Ashmolean Museum, Oxford;
Philadelphia: University Museum, Philadelphia.

Accession Numbers of the form CM.1947/III-20/1 refer to the entry in the Cyprus Museum Inventory under which material from that site is recorded. Inventory numbers for material in the Limassol Museum were inaccessible during 1971-2; a new Museum is due to open in 1974. Accession numbers are given only for material in Cyprus. For Sydney material cf. Trendall, Stewart et al. (1948).

3.8. Description of material. With the exception of sites which have been excavated and published, current excavations and a few sites from which the finds have not been studied, the material found at each site is described in summary form. A prefix, e.g. CM. or CS., indicates which collection(s) of material is being described. "Visit" refers to material collected by the author on a visit to the site. This material was added to the existing CS. collection if the site was already recorded by the CS., or entered under a new CS. number if material collected earlier from the site was stored in the Cyprus Museum. Any CS. number with the prefix 19- refers to material collected in 1971-2.

Only material stored in Cyprus is described in detail since its exact provenance is usually known from the Records. Material in foreign

collections derives, so far as is known, from excavated sites or from sites from which other material is stored in Cyprus. The Ashmolean's alone of the foreign collections has been studied; material of certain provenance has been recorded specifically only where it does not reduplicate material held in Cyprus.

Material collected by the author at a site was the result of non-selective picking-up. On sites with little surface material, all finds were collected; where greater quantities were involved, all finds were kept until a series of transects had covered the extent of the site. The heavier stone tools and querns were left in situ. The majority of sites had little material and on those visited on more than one occasion, the finds to be made varied in nature according to conditions. Thus these collections do not represent a truly random sample of a site's surface, or cultural, remains.

Different collections from the same site have been amalgamated for the purposes of description except for a few cases (e.g. N.5, P.7) where a random collection is listed separately. In earlier decades when a relative chronology was the object of research, painted pottery was preferentially collected, whereas the intensive survey of the CS. yielded many sites characterized by coarse wares, stone and flint implements. Marked differences between two collections from the same site have been noted. However, in view of the limited quantity of surface material at most sites, a single collection or the amalgamation of two or more collections need not be unrepresentative of the total surface material at any one site.

For concise presentation, material from a site has been described by reference to a Code of types and attributes. The Code was devised only after handling large quantities of material. The types and attributes were selected as seeming to represent repeatedly occurring features in the material. They have been loosely defined according to formal criteria even

if functional reasons underlie the formal variation. They were devised for the specific purpose of presenting much information without undue repetition and are not intended to constitute a descriptive system for all neolithic material in Cyprus.

The material is arranged by raw material - stone, flint/obsidian/jasper, pottery, bone and shell. Any figure in brackets, thus (7), refers to the quantity of material being described. For several unpublished excavations or surveyed sites these quantities are not recorded, either through not having been studied or it not having been feasible to do so. In a few entries for pottery, an approximate total and proportions of different wares are given instead. Explanation of the types is given in (4) below.

3.9. Observations. The brief observations refer to the surface appearance of a site when visited by the author. The classes of material found on the surface are noted, sometimes with relative quantities (e.g. few, many). The area quoted is very approximate and refers to the area over which neolithic finds were made; the area was sometimes paced but more often estimated visually. It is definitely not an indication of the original size of the site, since erosion and cultivation have distorted this dimension. Where particularly relevant to this problem, certain features such as a site's approximate depth of soil, and its position on a slope or cultivated land are included in the observations. The date of visit(s) is given; where several visits were made, only the first one or two are mentioned.

No attempt has been made to include observations on the locations of sites since they only acquire meaning by reference to an interpretative framework. Since this is developed in the text, reference is made to mentions of a site in the text where relevant to its location.

(4) Explanation of the Code (Folding Plan 2)

Stone. Whole implements or fragments of recognizable implements are recorded. They are defined on formal criteria although named by presumed function (Categories 1-4). Vessels and utensils (Categories 5-6) are usually defined from fragments alone while objects (Categories 7-9) may be complete or fragmentary. Categories 1-7 are subdivided into subcategories numbered a, b, c, etc. If a category entry lacks a subcategory letter, the object was either not recognizable or not recorded as a subcategory.

(1) Axes. Cutting edge convex.
- a. Converging to haft; greatest width at midpoint or towards bit.
- b. Elongated, narrower than a; width more constant along total length.
- c. As a, but length less than 6cms.

(2) Adzes. Cutting edge straight.
- a. Converging to haft as 1a.
- b. As 2a but length less than 6cms.
- c. As 2b but elongated and narrower.

(3) Pestles.
- a. Elongated; round cross-section, convex base.
- b. As 3a but length less than 10cms.
- c. As 3a or 3b but base flat.
- d. Lenticular cross-section, convex edge.
- e. As 3a but shouldered c.2/3 along length from base.
- f. Round cross-section, tapering to point.

(4) Handstones. With signs of utilization.
- a. Depressed spherical with pitting on either surface.
- b. Utilized spherical or subspherical stone.
- c. Subspherical stone, slight tapering to cone.
- d. Conical stone, flat base.

(5) Vessels. Distinguished by wall/base angle and thickness.
- a. Straight or splaying sides, flattish base.
- b. Hemispherical bowl with outcurving sides.
- c. Bowl with incurving sides.
- d. Vertical sides, rounded base, deeper than 5a.

(6) Grinding equipment.
- a. Slab; elongated oval; slight concave surface.
- b. Mortar; distinct from 5a through low rim, large diameter and flat base.

(7) Pendants.
- a. Drop-shaped; perforated at apex.
- b. Oval, sub-oval, perforated near apex.
- c. Circular, perforated at centre.

(8) Figurine.

(9) Macehead. Spherical stone, perforated longitudinally.

N.B. The stone objects are not identified as to material; for those reported in the past as, for example, steatite or andesite, cf. Chapter 6.4.2.

Flint. Under flint is included any crypto-crystalline quartz rock, commonly called flint, chert or chalcedony. Obsidian and jasper are entered separately. The categories a-e are stages in raw material preparation, with the addition of two categories (r, u) of technical attributes.

a. Flake. Any flake with a bulb of percussion or the remains of one which is not a blade (b).
b. Blade. A flake whose length is at least twice its width or the fragment of one.
c. Chunk. Any nodule of flint without signs of utilization.
d. Chip. Piece of flint lacking bulb of percussion.
e. Core. Chunk from which flakes/blades have been struck.
r. Retouch. Intentionally applied.
u. Utilization. Abrasions or other features presumed to result from use.

Pottery. The pottery types cover both containers (Categories 1-6) and other terracotta objects (Categories 7-9). Containers are described by a system of attributes since complete forms are rare, although the attributes themselves are based on complete forms. The categories are of distinctive features of containers (e.g. rims, bases) with subcategories of variations in the form of these features. The noting of a category without a subcategory means that the latter was not distinguishable or not recorded.

The wares are based upon those distinguished by Dikaios, based on surface treatment and decoration. The attribution of sherds to wares is not to be interpreted too strictly for two reasons. The weathered condition of surface sherds means that a non-selected collection of sherds will be weighted towards C, CR, and PW/Undiagnostic wares at the expense of RL and particularly RW wares. Furthermore, as Dikaios noted, some

vessels have different surface treatments on the interior and exterior, for example RL and Cb, such that a sherd should be attributed simultaneously to two wares. In such (rare) cases, sherds have been counted as decorated (e.g. Cb, RW) and not as RL. Some sherds have been ascribed to a RL/P category where any distinction between RL and RP seemed arbitrary. (Cf. discussion of wares, Chapter 3.4.2). The quantities recorded in the Catalogue entries should therefore be read as a record of the material held in the collections, which is subject to these limitations.

Wares:

BSC	Black slip and combed
BP	Black polished
C	Coarse
Cb	Combed
CR	Coarse red
PCb	Painted and combed
PW	Plain white
RBL	Red and black lustrous
RL	Red lustrous
RP	Red polished
RR	Red on red
RW	Red on white

1. Open or closed forms. These are defined by the shape or firing of a sherd, an unoxidised concave surface denoting a closed form. Where not specifically recorded, the form is often clear from the other attributes recorded.

2. Bases.
   a. Rounded.
   b. Slightly flattened.
   c. Flat.
   d. Pointed.
   e. Flanged.
   f. Concave.

3. Rims.
   a. Incurving (hole-mouth).
   b. Straight/vertical.
   c. Everted.
   d. Splayed/diverging.

4. Spouts.
   a. Open.
   b. Closed.
   c. Tubular.
   d. Cut away tubular.
   e. Horizontal.
   f. Raised.
   g. Vertical.

5. Lugs.
   a. Ledge.
   b. Knob.
   c. Tubular.
   d. Horizontal.
   e. Raised.
   f. Vertical.
   g. Perforated.

6. Handles.
   a. Vertical strap.
   b. Bridge.

7. Spindle whorls.
   a. Circular flat, perforated at centre.
   b. Circular flat, perforation incomplete.

8. Figurine.

9. Biconical spindle whorl.
   Unperforated; decorated on sides.

Patterns. Patterns are recorded from some sites only, being often unrecognizable or unclassifiable. The 25 patterns listed are repeatedly occurring motifs, their representation in the Code covering a wide range of minor morphological variation. The nature of the material imposes a bias in the recording of motifs; the decorative style of vessels of later phases (e.g. at Erimi) is such that many patterns are identifiable although many more again are unclassifiable. In earlier phases, however, (e.g. at Troulli), there are far fewer regularly identifiable patterns and great variation in those that are. Again, the recording of patterns is intended solely to present information where available and is subject to these limitations.

Bone. Fragments only; rarely identified to Genera (e.g. N.6, F.1).

Shell. One entry only.

P. C-14 dates reported after completion of the Catalogue are listed in Chapter 5.

1. NICOSIA DISTRICT. SITES

1. Ambelikou Ayios Georghois (site A)

XXVIII:9:West of 226 VD824367

Reported: G. Anastasiou 1942 (161/38/1:80).

Excavated: Dept. of Antiquities 1942, 1953.

References: Dikaios 1946, 244-5; 1962, 141-9.

Area excavated: (1) trial pit 2m. sq. with depth of deposit 4·60m. Floors and layers of debris; (2) area of c.26 sq.m. where road cut site; part of curvilinear stone structure.

Material: CM.1942/III-22/1; 1942/X-3/2.

Observations: many sherds, some flints. Area 50m. x 40m. but concentrated in ploughed area 30m. x 30m. Site cut to East by road; 4m. deep section of deposit with sherds in situ, and stone rubble 0·50m. below surface. Under cultivation.
Visited: 16.9.72.

2. Dhali Agridhi

XXXI:57WI:480, 154-5 WD391770

Reported: G. Anastasiou 1941 (161/38/1:70, 130; 72/38/1:127); stone vessel fragments, flints, bones in deposit 2m. deep. Further finds in 1950 in havara pit, with trace of stone structure in cavity in havara.

Excavated: I. Lehavy for American School of Oriental Research, 1972, 1974.

Reference: Lehavy in Wright, Stager and Furshpan 1974.

Area excavated: 5m.sq. trench; depth of deposit less than 1m. Occupation debris of pottery, flint and stone implements and stone vessel fragments. No trace of stone structures.

Dated: 7290 ± 465BP. GX2047A.
6415 ± 310BP. GX2047A.

Material: CM.1941/VII-22/1; 1950/VII-10/2; CS.661; CH.

Observations: for extent cf. published reference. Partly destroyed by terracing. Visited: 17.4.71, 16.10.71, etc.

NICOSIA DISTRICT

3. Dhenia Kafkalla

XX:54:235-6, 240 WD127913

Reported: 1961. Finds from looters' pits in EC. cemetery (N.4).

References: Karageoghis 1962, 374-5 and fig. 65a, b; Nicolaou 1967, no. 49, and Pl.X.3.

Material: CM.1961/XII-30/1; CS.380.
CS. Stone: 1a, 3a(2), 3e, 4.
Flint: a(2; 1+u).
Pottery: C(1) 2e.
CR(1) open.
PCb(1) open.
RL(6) o& c; 3a.
RW(12) open; 3. Patterns: 2, 5a, 5b, 7b.

Observations: no surface finds. Area unknown but presumably within area of EC.cemetery; partly under cultivation.
Visited: 9.4.72, 17.4.72.

4. Dhenia Kafkalla cemetery

XX:54:235 WD128913

Excavated: Dept. of Antiquities 1960.

Reference: Karageorghis 1961, 306.

Area excavated: tombs with Philia EP ware in EC. cemetery.

Material: CM.; CS.380.

Observations: many sherds from looted tombs. For area cf. published reference. Visited: 61.4.72, etc.

NICOSIA DISTRICT

5. Eliophotes Ova

XXIX:44:107 WD094801

Reported: P. Dikaios 1942 (161/38/1:75) as Kato Moni Kafkalla (Eliophotes).

Reference: Dikaios 1953, 318.

Material: CM.1942/III-26/2. CS.1920.

CM. Stone: 3a, 6a (several).
Flint: None.
Jasper: None.
Pottery: C None.
CR(1).
Cb(6) 3d+RL exterior.
PW(7).
RL(26) o & c; 2e, 3d.
RW(14) o & c; 3b.
Patterns: 5b, 7ab.

CS. Stone: 3a(2), 4 (many), 5d, 6a, 6b.
Flint: a(5; 1+r, 1+u); c(2), d(3).
Jasper: a(3; 1+r).
Pottery: C(1).
CR None.
Cb(3) open; 1+RW interior.
PW/undiagnostic (4)3e.
RL(22) o & c; 3d(2), 4c(2).
RW(14) o & c; 2f, 3d(2).
Patterns: 2, 3, 5a, 5b, 5c.

Observations: many sherds, flints, stone implements. Total area 100m. x 40m.; systematic collection in area 40m. x 10m. (=CS.1920 finds above). Ploughed fields at foot of Kafkalla slope. Visited: 9.8.72.

6. Kataliondas Kourvellos

XXIX:20:112 etc. WD278715

Reported: H.W. Catling 1957 (161/38/2:116, 117).

References: Catling 1957; Nicolaou 1967, no.60 and Pl.X.6; Stanley Price 1972; Watkins and Morrison 1974.

Material: CM.1957/III-16/2; CS.409; Oxford.
CS. Stone: 1a, 1b, 4, 5a, 5b, 5c, 5d, 6a, 6b, 9a(1), 9b(1).
Flint: a,+r, u; b+r, u; c, d, e.
Jasper: a,+r, u; b.
Bone fragments (60). Identified: ovis, dama mesopotamica, sus scrofa, cervus elaphus (?), felis (?), capra hircus (?).

Observations: stone vessel fragments, flints, stone implements, bone fragments. For area cf. detailed survey by Watkins and Morrison (1974). On slopes of hill, part under plough, part recently cultivated or uncultivated. Visited: 2.4.71, etc.

NICOSIA DISTRICT

7. Kato Moni Kambia

XXIX:36:86 etc. WD072803

Reported: P. Dikaois 1941 (161/38/1:34) as Ayia Marina Xyliatou Perasma Batheanes and described as on the left bank of the Peristerona River, on both sides of the road to Ayia Marina Xyliatou. Cad.S. gives Vayiani for the crossing (Perasma) a few yards upstream of the Kambia site, recorded independently by CS. in 1965. The road heads away from the river bank at the crossing, which makes it unlikely that Dikaios is describing a different site at Vayiani (Batheanes).

References: Karageorghis 1966, 328; Nicolaou 1967, no. 44.

Material: CM.1941/II-20/2; CS.1523.
CM. & CS. Stone: 1a (several); 3a.
Flint: a(5; 1+r); c(1), d(1).
Pottery: C(15) 2e(2), 3a.
CR(10) 2b.
PW(6) o&c; 3d, 4cg.
RL/P(140) o&c; 2d, 3bf, 4b, 4be, 4cg.
RW(13) o&c; 2d, 4cg. Patterns: 5a, 5b, 5c, 7a.

Observations: sherds, flints, stone implements. Area 100m. x 40m. Section 1m. deep cut by road; occupation layer 0·30m. deep in situ. Recently cultivated. Visited: 9.8.72.

8. Kato Moni Monarga

XXIX:36:394 WD081819

Reported: G. Anastasiou 1946 (161/38:93; 161/38/2:158).

Reference: Nicolaou 1967, no. 43.

Material: CM.1946/III-14/4; 1961/I-4/1; CS.1922.

CM.1946.	CS.
Stone: 1a(1), 1b(2).	Stone: 1(1) 2a(1).
Flint: a.	Flint: a(3), d(4).
Pottery: C/CR None.	Pottery: C/CR(14) 2e + chaff impressions.
Cb(2).	Cb None.
PCb(1) open.	PCb None.
PW Present.	PW None.
RL open; 2d, 3a, 4cg, 5ae.	RL(34) o&c.
RW None.	RW(4) 3af, 3d.
Bone: (several); antler tip.	Pattern: 5a.
	Bone: (2) frags.

Observations: many sherds, stone implements, few flints. Area 80m. x 50m., but concentrated in smaller area. Under cultivation. Visited: 9.8.72.

NICOSIA DISTRICT

9. Khrysiliou Ammos cemetery

XX:9:616 WD013984

Reported: by Cook (1950, 13) as at Ammos; by Anastasiou (23/48:36) as Ammos, area of Khrysiliou = Catling 1963, EC.115 under Morphou. Morphou Mandres (Catling 1963, EC.116) is the same site on the basis of the map reference there cited, as is CS.220 (Morphou Spilies). Cad.S. gives Spillous as the kafkalla scarp with tombs, Mandres immediately W. and Ammos immediately NE. All reports (including probably RDAC 1936, 115) seem to refer to the one looted cemetery with EC. and Hellenistic/Roman tombs along the kafkalla edge.

References: Dikaios 1953, 324-5 and fig. 108; 1962, Pl.L.11; Catling 1963, EC.115, 116.

Material: CM.1948/X-5/1; 1952/VIII-27/1; CS.220.

Observations: no surface finds. Extent unknown. Visited: 17.11.71.

10. Khrysiliou Aphendika

XX:17:150(?) WD0097

Reported: P. Dikaios (1936, 77) as on left bank of River Ovghos near 29th milestone of Morphou-Kyrenia road. G. Anastasiou (161/38/1: 113) adds - "near bridge over river and in general area of Khrysiliou".

Reference: Dikaios 1936, 77.

Material: CM.1936/XI-24/2; 1948/IX-10/3.
CM. Stone: 3a(1), 6a(1).
Flint: (5).
Pottery: CR(7) 2c, 2e, 5ae.
PW(20) 4cg.
RL(15) 2d.
RW(1) closed.

Observations: one flint, 1 stone implement from locality described. Exact location and area not certain. Probably destroyed by terracing for citrus plantations in area. Visited: 17.11.71.

NICOSIA DISTRICT

11. Khrysiliou Pano Eliokhori

XX:17:470 WD021976

Reported: CS.1955.

Reference: Watkins 1973, Map 5.

Material: CS.244.
CS. Stone: None.
Flint: None.
Pottery: C(1) 3b.
CR(1) 2b.
PW(10) o & c.
RBL(23) o & c, 3b, 3e.
RL(22) 3a(2), 3e(2), 4cf, 5bf.
RW(8) o & c; 3b(2), 3e. Pattern: 6a.

Observations: no surface finds. Extent unknown; area under cultivation. Visited: 17.11.71, 2.1.72.

12. Khrysiliou Spillious

XX:9:608(?) WD015983

Reported: G. Anastasiou 1948 (161/38/1:113) as - "quite close to the village; 20 stremmata to North bank of River Ovghos. Locals dug here in hope of tombs. Very large natural cave/cavern in which some, if not all, the settlement was situated." Probably E. of Spillious (N.9) if "quite close to the village" but the only cavern of any size is among the Spillious tombs.

Reference: Watkins 1973, Map.2.

Material: CM.1948/IX-10/4.
CM. Stone: 6a(2).
Flint: None.
Pottery: C(1) 2c with impressions.
PW(10).
RL(20) o & c; 3b, 4ae.
RW(17) o & c. Patterns: 1a, 1b, 2, 3, 5a, 5b.

Observations: no surface finds save one flint flake. Area not known. Slope below kafkalla scarp under cultivation. Visited: 2.1.72, 23.4.72.

NICOSIA DISTRICT

13. Kyra Alonia

XX:27:257-60 WD058956

Reported: K. Georghiou 1943.

Excavated: Dept. of Antiquities 1945, 1946.

References: Dikaios 1962, 152-5; Catling 1963, EC.80.

Area excavated: 4 trial pits, each 4m.sq.; depth of deposit 1·20m. - 1·40m. Floors and layers with ashes.

Material: CM.1943/II-25/1; 1946/V-17/1; 1946/VIII-12/1.

Observations: no surface finds. Extent unknown. Partly cultivated and terraced. Visited: 30.10.71, 23.4.72.

14. Kyra Chiflikia

XX:27:51 WD053962

Reported: K. Georghiou 1945 (161/38:89) who collected sherds from cutting of Kyra-Kapouti road. Not recorded by CS. which reported a Medieval site but no neolithic.

Material: CM. (Inv. no. not known).
Not seen.

Observations: few sherds, bone fragments from recent pits along road-cutting referred to above. Medieval surface remains, probably overlying neolithic. Extent unknown. Under cultivation.
Visited: 30.10.71, 26.3.72.

15. Kyra Kaminia cemetery

XX:27:251, 458(?) WD058954

Reported: P. Dikaios.

Excavated: Dept. of Antiquities 1946.

References: Dikaios 1962, 156-9; Catling 1963, EC.81.

Area excavated: 1 disturbed tomb with 2 distinct burials.

Material: CM.

Observations: no surface finds. For area cf. published reference.
Visited: 30.10.71.

NICOSIA DISTRICT

16. Kythrea Aspropotamos (Ayios Demetrianos)

XXII:3E:27 WE454013

Reported: C. Paraskeva 1954 (161/38/2:81).

Reference: Megaw 1955, 28.

Material: CM.1954/III-6/9; CS.1923.
CS. Stone: 1a(1) 6b.
Flint: a(25; 1+r, 7+u), d(1).
Pottery: C(6) 3, 5b.
CR(5) open; 5ae.
PW/undiagnostic (2).
RL(1).
Bones: fragments (15).

Observations: sherds, flints. Extent unclear. Badly eroded by gulleys, no perennial vegetation. Visited: 21.10.71, 26.2.72.

17. Kythrea Ayios Demetrianos (Lakkovounara)

XIII:59W:Hali WE442015

Reported: SCE. 1930.

Excavated: A. Westholm for SCE., 1930.

Reference: Gjerstad et al. 1934, 277-299.

Area excavated: area of c.210 sq.m.; depth of deposit 0·50m. max. 2 phases of circular stone structures.

Material: Stockholm; CM.; CS. 1490 (surface).

Observations: no surface finds, though exact site of excavation unclear. Much eroded, over area of 10,000m^2 (Gjerstad et al. 1934, 277 but cf. observations on N.18). Visited: 25.2.72.

NICOSIA DISTRICT

18. Kythrea Kamares (Ayios Demetrianos)

XXII:3E:57 WE447007

Reported: C. Paraskeva 1954 (23/54:43; 161/30/2:30); probably referred to in Gjerstad et al. 1934, 294 no.441, "amulet c. 300m. South of excavation together with neolithic sherds".

Material: CM.1956/III-31/2-3; CS.1924.
CS. Stone: 1a(1), 3c, 4b(1), 5c(1), 6a (frags.).
Flint: a(36; 7+x, 9+u).
Pottery: C(2).
RL/P(6) 3d(1).

Observations: sherds, flints, bone fragments. Concentrated on low rise of dark earth 0·20m. diameter. Under cultivation. Separated from N.17 by Aspropotamos, so probably a separate site. Visited: 25.2.72.

19. Kythrea Phyleri cave

XII:50E:North of 179 WE427036

Reported: 1933. Finds made in sinking shaft for water.

Reference: Du Plat Taylor 1935.

Material: CM. (Inv. no. not known).
CM. Stone: 2c, 3a, 4a.
Flint: a (approx. 10).
Pottery: C(1).
RL(3).
RM(1) 3d. Pattern: 1a.

Observations: small cave in cliff-face. For dimensions cf. published reference. Access path destroyed by quarrying operations in 1971-2. Visited: 13.8.72.

NICOSIA DISTRICT

20. Limnitis Petra tou Limniti

XVIII:47 VD763934

Reported: SCE. 1929.

Excavated: A. Westholm for SCE., 1929.

Reference: Gjerstad et al. 1934, 1-12.

Area excavated: area of c. 75sq. m.; depth of deposit 1·50m. max. 4 phases of a single structure.

Material: Stockholm; CM.; CM.1963/I-11/1 (one axe).

Observations: one stone mortar on surface. Area 30m. x 10m. max. Uncultivated, rock-strewn plateau. Visited: 12.9.71.

21. Margi Alonia

XXX:61:178 etc. MD299762

Reported: G. Anastasiou 1941 (161/38:81).

References: Dikaios 1953, fig.1; Karageorghis 1960-1, 147; Catling 1963, EC.109.

Material: CM.1942/X-6/3.
CM. & visit. Stone: None.
Flint: a, a+d.
Pottery: C(1, with mat impression).
BL 4cg(?).
RP o & c; 3bf.

Observations: sherds, flints. Area 70m. x 70m. Cultivated.
Visited: 5.4.72.

NICOSIA DISTRICT

22. Meniko Phiniki

XXXIX:14 WD1295

Reported: CS. 1963.

Reference: Nicolaou 1967, no.41.

Material: CS.1355.
CS. Stone: None.
Flint: None.
Pottery: EW(2).
Bone: burnt astragalus (1).

Observations: no surface finds. Exact location and extent not known. Area cultivated. Visited: 9.8.72. Despite the paucity of material in the Survey collections, this site is reliably reported.

23. Nicosia Ayia Paraskevi cemetery

XXXI:55 WD338911

Excavated: Dept. of Antiquities 1948; J.R. Stewart for University of Melbourne, 1955.

References: Cook 1947, 43; Stewart 1957.

Area excavated: 5 tombs with Philia RP ware in EC. cemetery.

Material: CM.; Sydney.

Observations: in built-up area. For extent cf. published references. Visited: 16.2.72.

NICOSIA DISTRICT

24. Nicosia Ayios Prodhromos

XXI:5L: WD319918

Reported: P. Dikaios.

Excavated: Dept. of Antiquities 1935.

References: Dikaios 1935, 12; Nicolaou 1967, no.47.

Area excavated: one trial pit. Depth of deposit 1·40m. including Byzantine and recent deposit. Remains of circular huts.

Material: CM.1936/I-7/1; CS.1354.
CM.CS. Stone: 7(1).
Flint: a(11; 6+u), c(1), d(1).
Jasper: C(1).
Pottery (CS. only): C(6) 2c(2) 2f(1); 1 + chaff impression.
CR(3) 3b.
PW(2).
RL/P (78) o & c, 3b(9), 3c(1) 5cg.
RW(3) 2b(3). Patterns: 7a, 7b.

Observations: no surface finds. Area largely built upon; extent not known. Visited: 14.3.71 etc.

25. Orounda Stavros tou Koundi

XXIX:36:10 WD076819

Reported: P. Dikaios 1941 (161/38/1:53) under Ayia Marina Xyliatou. In lands of Orounda.

Reference: Dikaios 1953, fig.1 (with N.7) as Ayia Marina.

Material: CM.1941/II-20/3; CS.1925.
CM. & CS. Stone: 1a(1), 1b(2), 2a(1), 3a, 3b, 4a, 4b, 5a/b, 6a.
Flint: a(9; 2+r, 2+u), c(3), d(2).
Jasper: a(1), c(4), e(1).
Pottery: C(2) 2e.
CR(9) 2b, 3a.
PW(1).
RL (approx.60) o & c; 2b, 3b, 3e, 4bf, 4c.
RW(3) open; 3b. Patterns: 5a, 5b, 9.

Observations: sherds, flints, stone implements. Area 100m. x 30m. where cultivated, probably extending into recently cultivated area. Visited: 9.8.72.

NICOSIA DISTRICT

26. Philia Drakos Site A

XX:36:99 WD07594

Reported: P. Dikaios 1940.

Excavated: (1) Dept. of Antiquities 1941.
(2) T.F. Watkins for University of Edinburgh 1965, 1967-1970.

References: (1) unpublished (35/41).
(2) Watkins 1969, 29-30; 1970, 1-9.

Area excavated: c. 300m^2.

Dated: 5270 ± 100 BP. Birm-72. Shotton, Blundell and Williams 1969, 269.

Material: CM.1940/XII-30/3; 1941/I-24/3; 1941/VII-15/1; CS.163; CM.

Observations: recently excavated. For extent cf. published references. Cultivated. Visited: 16.4.71, 23.8.71.

27. Philia Drakos Site B

XX:36:99 WD07594

Reported: P. Dikaios 1940.

Excavated: Dept. of Antiquities 1943.

References: Dikaios 1962, 150-1; Catling 1963, 80.122, as Vasiliko.

Area excavated: 1 trench 10m. x 1·50m.; depth of deposit 0·50m. max. Probable postholes.

Material: CM.1943/II-23/3; CS.163.

Observations: few sherds, limestone object. Area 40m. x 20m. Terraced and cultivated. Visited: 23.8.71, 26.3.72.

28. Philia Drakos Site C

XX:36 WD0769

Reported: T.F. Watkins 1964; EC. tombs dug into site.

Reference: Watkins 1969, 33.

Material: CS.1442. Not seen.

Observations: sherds. Area unknown. Finds from and around recent shallow pits. Uncultivated kafkalla slope. Visited: 23.8.71, 30.10.71.

NICOSIA DISTRICT

29. Philia Kafkalla tou Koundourou

XX:36:597-600 WD092939

Reported: K. Georghiou 1943.

Excavated: Dept. of Antiquities 1943.

Reference: unpublished (50/43).

Area excavated: trial pits. Depth of deposit 0·70m. (total).
2 floors.

Material: CM.1943/II-23/1.
CM., visit. Stone: 1c(1).5.
Flint: a, a+r.
Pottery: C(6).
PCb present. Pattern: 2.
PL present.
RW Leg. Pattern: 2, 5b, 5c.
In excavated material c. (25)RW. Ripple: other
RW - 1:1.

Observations: few sherds, flints. Concentrated in cultivated area
10m. x 10m. Visited: 17.11.71.

30. Philia Pervola

XX:36:550 WD092941

Reported: K. Georghiou 1942.

Excavated: Dept. of Antiquities 1942.

Reference: unpublished (91/42).

Area excavated: 1 trial pit. Depth of deposit 0·50m. including
0·20m. topsoil. 2 layers with bones and sherds.

Material: CM.1942/XII-29/2.
CM., visit. Stone: 1c, 3b, 4a, 4b, 6a.
Flint: a(13).
Jasper: (1).
Pottery: C(3).
RW(10).
PL(29) 2f.
RW(?2).

Observations: few flints, 1 sherd. Exact location of trial pit and
extent unknown. Terraced and cultivated. Visited: 9.4.72,
23.4.72.

NICOSIA DISTRICT

31. Philia Vasiliko Kafkalla cemetery

XX:35:665 WD072945

Reported: CS.1955, separately from Lexia tou Kasinou tombs (N.32); EP sherds, DW rim, BSC sherd.

Reference: Catling 1963, EC.123.

Material: CS.176.

Observations: no surface finds. Extent not known. Kafkalla scarp edge. Visited: 30.10.71.

32. Philia Vasiliko Laxia tou Kasinou cemetery

XX:35:655 WD072946

Reported: P. Dikaios 1942.

Excavated: Dept. of Antiquities 1942, 1943, 1951.

References: Dikaios 1946, 244-5; 1962, 160-176; Catling 1963, EC.121.

Area excavated: 5 tombs.

Material: CM.1942/XII-11/2; 1942/XII-23/1; 1942/XII-29/1; 1943/II-23/3; 1951/IX-8/4; 1951/IX-10/1; CS.165.

Observations: no surface finds. For extent cf. published references. Probably destroyed by terracing. Visited: 30.10.71.

FINDS NICOSIA DISTRICT

Nf.1 Alambra
1895 One flint knife purchased.
Reference: Myres and Richter 1899, 13.

Nf.2 Anayia Vouno
Fragment of stone bowl, saddle querns.
Reference: Dikaios 1936, 76.

Nf.3 Ayia Marina Mnema tis Christinas
CM.1958/X-16/2 One axe.

Nf.4 Dhali Acropolis
CM.1934/IV-10/1 One axe.

Nf.5 Dhenia
CM.1953/VII-15/6 One stone chisel presented.
Reference: Nicolaou 1967, no.49.

Nf.6 Kakopetria Ayios Nikolaos tis Stegis
CM.1941/VI-11/1 One axe.
Reported: P. Dikaios 1941 (151/38/1:53) as from spring between church of Ayios Nikolaos tis Stegis and installation of chrome mine; no trace of settlement nearby.
Reference: Nicolaou 1967, no.40.

Nf.7 Karavostasi
CM.1937/VIII-2/2 One axe.

Nf.8 Kokkina Petrera
CM.1944/III-14/1 One axe purchased.
Reference: Nicolaou 1967, no.29.

Nf.9 Kyra
CM.1944/VIII-11/1 Stone figurine.

Nf.10 Kythrea Ayios Demetrianos
CM.1935/XII-5/1 One axe.

Nf.11 Loutros Loukkos
CM.1945/III-25/2 One chisel purchased.

Nf.12 Loutros Athkia
CM.1945/I-4/3 Stone figurine head purchased.

Nf.13 Mansoura Ayios Theodhoros
CS.1347 One axe, one grindstone fragment.

Nf.14 Mathiati Savvia
CM.1947/III-31/1 One axe purchased.

Nf.15 Prounda
CM.1941/I-27/1 One axe purchased.
Reference: Nicolaou 1967, no.42.

NICOSIA DISTRICT

Nf.16 Politiko Ayios Herakleidos Monastery
CM.1933/II-1975 Mortar, pounder, macehead.

Nf.17 Sha
CM.1950/VI-1/1 One chisel purchased.

Nf.18 Yeri
CM.1942/XI-19/8 One macehead presented.
Reference: Nicolaou 1967, no.57.

2. KYRENIA DISTRICT. SITES

1. Aghirda Koshou Bashi

XII:42E:176-7 WD237057

Reported: CS.1958; hut foundation traces. Site destroyed by terracing.

Reference: Watkins 1973, Map 2.

Material: CS.781.
CS. Stone: 3a(1), 6a(2 frags.).
Flint: a(3; 2+r).
Pottery: C(1).
CR(3) closed.
RBL(1) 3a.
RL(8) closed; 4cg(1).

Observations: locality visited. Site in military restricted area.
Visited: 4.3.72.

2. Aghirda Kotjakaya cave

XII:35W2:61 WE244068

Reported: P. Dikaios

Excavated: Dept. of Antiquities 1935.

References: Dikaios 1935, 12; 1936, 76.

Area excavated: "small trials".

Material: CM.1935/XI-18/6; 1935/XI-26/1; CS.1320.
CM. & CS. Stone: None.
Flint: a.
Pottery: C(5) 2b, 2e.
CR 2c.
PW o & c; 2c(2).
RL 4ae, 5cf.
RP 4cg, 6ad.
RW o & c. Patterns: 2, 5a, 5b, 6b, 6c.
In CS. Coll. of c. 120 sherds, RL+RP = c. 70%,
RW = c. 5%.
Bone: (2) burnt fragments.

Observations: not visited; site in military prohibited area.

KYRENIA DISTRICT

3. Aghirda Village (Turkish Cemetery)

XII:43W1:39 WE244059

Reported: P. Dikaios

Reference: Dikaios 1936, 76.

Material: CM.1936/II-27/1; CS.776.
CM. & CS. Stone: 3(2 frags.), 4a(1), 6a(1).
Flint: None.
Pottery: CR(3) 2b, 3b.
RL(34) 2d, 3df, 4cg.
RW(14) 3d. Patterns: 5a, 5c, 6a, 6b, 6c.

Observations: few sherds, 1 flint. Extent not known. Site cut by track but no finds in situ. Uncultivated, terraced.
Visited: 4.3.72.

4. Ayios Amvrosios Alakati (Platymmatis)

XIII:19E:102 WE448107

Reported: T.P. Lightbody 1951 (162/38:48) who found RW sherds of spouted bowls, three weathered sherds and a few flints.

Reference: Nicolaou 1967, no.2 and fig.2 (Platymmatis).

Material: CM.1951/VII-27/1; CS.1926.
CS. Stone: None.
Flint: a, a+r, b.
Pottery: RL(?2).

Observations: 2 sherds, flints. Area not known. Finds from recently cultivated area on cliff-top, and on rock-strewn slopes, probably derived. Visited: 19.4.71, 19.9.71.

KYRENIA DISTRICT

5. Ayios Epiktitos Kelali

XII:31E1:462 WE353093

Reported: P. Dikaios 1934.

Excavated: Cyprus Museum 1934.

Reference: Dikaios 1936, 74.

Area excavated: 1 trial pit. Depth of deposit 1m. total.
Postholes forming roughly circular structure.

Material: CM.
CM. Stone: 1c.
Flint: a.
Pottery: PW(8).
RW(30) 3b. Patterns: 5b, 5c, 5e, 6a, 6b.
C(3).
RL(51).

Observations: few sherds, stone implements. Extent not known.
Cultivated and terraced. Visited: 29.9.71.

6. Ayios Epiktitos Mezarlik

XII:31E1:410 etc. WE350094

Reported: P. Dikaios 1934.

Excavated: Cyprus Museum 1934.

Reference: Dikaios 1936, 74.

Area excavated: two trial pits; one 4m. square with depth of deposit 1·60m. and 3 phases of stone hut foundations, the other with deposit 1·40m. deep.

Material: CM.; Sydney. Subsequent finds: CM.1944/III-30/2; 1945/XI-21/1; CS.1927; Oxford.
CM. excav. Stone: 2a, 6, 7.
Flint: None.
Pottery: PW 2d, 2e.
RBL(1).
RL 2b, 2c, 4bf, 4cf, 5ad.
RL/P 3b, 3e, 4cf.
RW 3e, 4cf, 4cg. Patterns: 5b, 5d, 5e, 6a, 6b, 6c, 6d, 7a, 7b.

Observations: many sherds, flints and stone implements. Area 120m. x 40m. Cultivated. Finds from surface, from building foundations in 1971, and from cutting of new Kyrenia-Akanthou road in 1972. Visited: 11.9.71, 29.9.71, 23.1.72.

KYRENIA DISTRICT

7. Ayios Epiktitos Vikla

XIII:17W:32 WE396105

Reported: T.P. Lightbody 1951 (162/38:48), who found three broken axes, a pounder and flint scrapers.

Material: CM.1951/VII-27/2.
Not seen.

Observations: flints in small concentrations. Total area 70m. x 20m. Scrub-covered clifftop, little soil-cover. Visited: 19.4.71.

8. Ayios Epiktitos Vrysi

XII:24E:129/2 WE383101

Reported: T.P. Lightbody 1950 (162/38:42) as Toumba.

Excavated: E.J. Peltenburg for University of Glasgow, 1969, 1971-

References: Peltenburg 1972; Karageorghis 1970, 243; 1973, 631.

Area excavated: c. 600m^2.

Dated: 5825 ± 145 BP. Birm-182. Shotton and Williams 1971, 155.
5740 ± 140 BP. Birm-337.
5351 ± 94 BP. GU-454.
5253 ± 150 BP. GU-455.
5418 ± 79 BP. GU-453.
3106 ± 130 BP. GU-452.

Material: CM.1950/X-5/3; CS.1520; Kyrenia Castle.

Observations: under excavation. For extent cf. published references. Visited: 15.4.71 etc.

KYRENIA DISTRICT

9. Ayios Epiktitos Xylomandra

XII:24E & W:41 1/1, 42 2/1 WE373104

Reported: T.P. Lightbody 1950 (162/38:40).

Reference: Dikaios 1962, fig.1.

Material: CM.1950/X-5/4.
CM. & visit. Stone: 1a(3), 3a(2), 4b(1), 5c(3), 5d(1).
Flint: a, a+r, b, b+r.
Pottery: PW(6).
RL(14) 3d +4ae, 3d(2), 4cg, 7b.
RW(9) 3d, 4c, 4cg. Patterns: 5a, 5b, 7, 10.
Bone: antler frags. (3).

Observations: sherds, many flints, stone implements, few bone fragments. Total area 50m. x 50m. Uncultivated headland; many flints on rocks below, probably derived, and one concentration on top. Little soil cover. Visited: 15.4.71, 19.4.71.

10. Bellapais Vasiliki

XII:38:Village, 6 etc. WE321074

Reported: G. Anastasiou. Foundations of circular huts.

References: Dikaios 1936, 74; Stewart 1950, 8.

Material: Sydney; CM.1941/X-17/1; 1942/VIII-21/1; CS.1929.
CS. Stone: 1(2 tips); 5a(1), 5ac(1), 5bc(1), 5d(1), 9c(1).
Flint: a(2; 1+u), b(3), b segment + r(1), d(3).

Observations: stone vessel and implement fragments, flints. Extent unclear. Steep terraced slope with thick vegetation. Good soil depth. Visited: 15.4.71, 18.9.71, 12.3.72.

KYRENIA DISTRICT

11. Dhikomo Mavro Nero

XII:44E:52 WE283050

Reported: CS.1958. Stone tools, chert implements. Fairly large.

Reference: Watkins 1973, Map 1.

Material: CS.744.
CS. Stone: 4(1), 6a(3).
Flint: a(29; a+r, u); d(6).

Observations: not visited.

12. Dhikomo Pano Petros

XII:53W WE290038

Reported: P. Dikaios.

Excavated: Cyprus Museum, 1934.

Reference: Dikaios 1936, 76.

Area excavated: trial pit; depth of deposit 0·60m. Occupation layers.

Material: CM.1934/III-28/1; 1934/IV-14/5-6; CS.765.
CM. CS. Stone: 3, 4, 6.
Flint: present.
Pottery: CR 2e.
PW present.
RL present.
Bone: antler tip.

Observations: locality visited: 20.9.72.

KYRENIA DISTRICT

13. Dhiorios Ambelia

XI:26W:154 WE033081

Reported: CS. 1955.

Reference: Dikaios 1962, fig.1.

Material: CS.91.
CS. Stone: 1a, 3a(2), 5a(1), 5d(1), 6a (3 frags.).
Flint: a(3; 2+r, 1+u), d(1), e(1).
Pottery: CR(12) o & c; 5c.
PW/undiagnostic (22) o & c; 4ae.
RL/RBL(46) o & c; 2b, 3a(2), 5cf, 5cg.

Observations: no surface finds but exact site not located.
Extent unknown. Cultivated. Visited: 4.2.72.

14. Dhiorios Kypous

XI:26W:138 WD034087

Reported: H.W. Catling 1952.

Reference: Dikaios 1962, fig.1.

Material: CS.174.
CS. Stone: None.
Flint: None.
Pottery: RL present.
RW ? present.

Observations: no surface finds. Exact site not located. Extent unknown. Cultivated. Visited: 4.2.72.

KYRENIA DISTRICT

15. Kambyli Mersinia

XI:44E:152 WE082066

Reported: CS. 1955.

Reference: Dikaios 1962, fig.1.

Material: CS.12.
CS. Stone: None.
Flint: a+r, u.
Pottery: CR 2b, 2e.
PW(3) 2b.
RL(23) o & c; 2d, 3bf(3), 4cg(2).
RW(7) open; 3b. Patterns: 5b, 5c, 7a.

Observations: 1 flint, coarse sherds. Extent not known. Cultivated kafkalla scarp top. Visited: 4.2.72.

16. Karavas Ayios Georghios

XI:24E:333-340 WE181104

Reported: CS. 1959; stone tools over wide area; cultivated and terraced.

Reference: Watkins 1973, Map 1.

Material: CS.1138 and 1146.
CS. Stone: 1a(6), 1b(3), 1c(2), 2a(1), 2b(3), 3a(3 frags.), 3b(1), 3(1 frag.), 5a, 6a(10 frags.).
Flint: a.

Observations: locality visited: 11.7.73.

KYRENIA DISTRICT

17. Karavas Gyrisma

Karavas Petroyitonia Qtr. 1:97 WE178109

Reported: P. Dikaios 1934.

Excavated: Cyprus Museum 1934.

References: Dikaios 1936, 74; Dikaios in Hjortsjo 1947, 3.

Area excavated: (1) 3 tombs where cut by road; (2) trial adjoining area of tombs. Remains of stone structures and pits.

Material: CM.; CS.1126 (under Ayia Marina).
CM., CS. & visits. Stone: 1a(2), 1(1 frag.), 3a, 4b(1), 6a(3 frags.).
Flint: a.
Pottery: C 2e.
CR present.
RL & RBL o & c, 5ce.
RW 3b. Patterns: 5, 6a, 6b, 7a, 7b.

Observations: few sherds, flints, stone implements. Section to south of excavated area exposed by bulldozing in 1973; depth of deposit less than 1m., pits, sherds and flints in situ. Surface area 30m. x 15m. Visited: 8.1.72, 11.7.73.

18. Karavas Vounarin tous Loies

XI:24W:217 WE178100

Reported: CS. 1959; no sherds despite much searching; terraced and cultivated.

References: Karageorghis 1960, 299 and fig.77; Nicolaou 1967, no.22.

Material: CM.1962/I-17/1; CS.1131.
CM. & CS. Stone: 1(4 frags.), 1c(?1 unfinished), 2a(1), 3d(2 frags.), 5c(1), 5d(2), 6a(4 frags.).
Flint: a(10; 6+u), d(1).

Observations: locality visited: 11.7.73.

KYRENIA DISTRICT

19. Karmi Karmi Block Forest cave

XII:35W1:1 WE245076

Reported: CS. 1960.

Reference: Nicolaou 1967, no.14 and Pl.X.4.

Material: CS.1306.
CS. Stone: None.
Flint: None.
Pottery: RW(?3). Patterns: 5a, 5b.
CR(?3).

Observations: not visited. Site in military prohibited area.

20. Karmi Phountji

XII:27W1:42/2 WE249095

Reported: Lady Trench, 1956.

Reference: Nicolaou 1967, no.15.

Material: CM.1956/III-7/3.
CM. & visit. Stone: 3a, 4a(3), 4b, 6a.
Flint: a.
Pottery: C, with chaff impression.
RL(1) open.
RW open.

Observations: few sherds, flints, stone implements. Area 70m. x 30m. Terraced, thick vegetation. Visited: 19.10.71.

21. Karpasia Hadji Pantelis

XI:44W:132/2 WE077066

Reported: H.W. Catling 1952 (162/38:98); small area with sherds; ash, charcoal.

Reference: Dikaios 1962, fig.1.

Material: CM.1952/IX-12/14; CS.122.
CS. Stone: None.
Flint: None.
Pottery: CR(2).
RL/RBL(12) o & c; 4cg.
RW(11) open. Patterns: 11, 14.

Observations: no surface finds. Extent not known. Cultivated.
Visited: 3.10.72.

KYRENIA DISTRICT

22. Keumurju Sivri rockshelter

XII:34E2:75/1 WE236067

Reported: CS. 1958; 7·60m. deep, 5·0m. wide and 3·70m. high at mouth.

Reference: Nicolaou 1967, no.52.

Material: CS.804.
CS. Stone: None.
Flint: None.
Pottery: undiagnostic (4), 4cg.
RBL(1).
Bone: fragments.

Observations: not visited. Site in military prohibited area.

23. Klepini Troulli

XIII:18W:60/2 WE421106

Reported: R. de Bunsen, as Troulli.

Excavated: Dept.of Antiquities 1941.

Reference: Dikaios 1962, 63-72.

Area excavated: (1) trial pit 2m. sq.; depth of deposit 5·60m. Occupation layers; (2) area of c. 60sq. m. Traces of curvilinear stone structures.

Material: CM.1935/III-6/1; Sydney; Oxford.

Observations: sherds, flints, stone implements. Area 80m. x 50m. Uncultivated. Visited: 20.2.71 etc.

24. Kormakiti Kornos

XI:1W:13 WE007136

Reported: CS. 1955.

References: Dikaios 1962, fig.1; Catling 1966, 17.

Material: CS.332.
CS. Stone: 1a(1 unfinished), 1b(4), 1c(1), 2a(1), 3a(2), 3b(1), 4a(1), 6a(3 frags.).
Flint: a(6; 2+r, 2+u), e(1).
Pottery: CR(6) 3d.
PW(25) 2d, 4cf, 5cf.
RL/P + RBL(37) 2b, 3bf, 3e, 5c.
RW(19) o & c; 3d(3). Patterns: 1a, 2(?), 6e, 7b, 8b, 8c.

Observations: sherds, flints, stone implements. Area 50m. x 20m. Uncultivated hillslopes. Visited: 2.1.72.

KYRENIA DISTRICT

25. Krini Konno Arasi

XII:42W:9, 9/1, 11 WE220053

Reported: CS. 1958; large site, many RP sherds, flint and stone implements.

Reference: Nicolaou 1967, no.50 and Pl.X.5, XI.6.

Material: CS.812.
CS. Stone: 2a(1).
Flint: a(3+r).
Pottery: RL/P present.

Observations: locality visited. Site in military restricted area.
Visited: 29.9.71.

26. Krini Merra

XII:42W:2 WE226057

Reported: CS. 1958; small site, on uncultivated slope.

Reference: Nicolaou 1967, no.51.

Material: CS.819; Oxford (one axe).
CS. Stone: None.
Flint: a(4), c(1).
Pottery: C(8).

Observations: locality visited. Site in military restricted area.
Visited: 29.9.71.

27. Kyrenia Pano Ouzoun Cheshme

XII:29W1:44 WE295086

Reported: P. Dikaios (1936, 74) as between 14th and 15th milestones of Nicosia-Kyrenia road. Location uncertain but finds made at above locality, adjoining the old road referred to, suggest that this is Dikaios' site.

Reference: Dikaios 1936, 74.

Material: CM.1935/II-2/9.
CM. & visit. Stone: None.
Flint: a.
Pottery: C(approx. 30).
CR(1).
RL(3).

Observations: 1 sherd, flints. Location uncertain (see above); size unknown. Partly cultivated. Visited: 12.3.72.

KYRENIA DISTRICT

28. Lapithos Alonia ton Plakon (Eastern Settlement)

XI:23W:101-3 WE145111

Reported: SCE.

Excavated: (1) E. Sjoqvist for SCE., 1928.
(2) Cyprus Museum 1934.

References: (1) Gjerstad et al. 1934, 13-33.
(2) Unpublished.

Area excavated: (1) area of c. 52sq. m.; depth of neolithic deposit 0·90m. max. Traces of stone structures, pits and floors; (2) trial pit; depth of neolithic deposit 1·40m. Stone hut foundations.

Material: Stockholm; CM.; CS.866.

Observations: few sherds, stone implements. For extent cf. published reference. Terraced and cultivated. Visited: 10.5.71.

29. Lapithos Alonia ton Plakon (Western Settlement)

XI:22E:164 WE144111

Reported: SCE.

Excavated: E. Sjoqvist for SCE., 1928.

Reference: Gjerstad et al. 1934, 13-33.

Area excavated: area of c. 75sq. m.(?); depth of deposit 1·50m. max. 4 phases of a stone structure.

Material: Stockholm; CM.; CS.864 and 865 (under Mandra tis Zos).

Observations: sherds, flints. Area 80m. x 30m. Terraced and cultivated. Visited: 12.5.71.

KYRENIA DISTRICT

30. Lapithos Vasiliates

XI:6W:16/2 WE126132

Reported: CS. 1957 (162/38/1:144); finds from stone-quarrying operations.

Reference: Nicolaou 1967, no.24 and Pl.XI.5, 7.

Material: CS.513.
CS. Stone: 1a(3), 1b(11), 1(1 frag.), 2b(1), 3e(1), 4a(1), 9a(1).
Flint: None.
Pottery: RL present.
RW o & c. Pattern: 5a.

Observations: few sherds, 1 flint. Extent unknown. Largely destroyed by quarrying operations. Soil cover 1m. deep. Visited: 4.2.72.

31. Larnaca tis Lapithou Panayia Kathari

XI:37E:153 WE119076

Reported: P. Dikaios 1940 (162/38/1:19); axes, pestles, millstones, rare sherds.

Reference: Dikaios 1962, fig.1.

Material: CM.1940/XII-30/3.
Not seen.

Observations: few sherds, stone implements. Area 30m. x 30m. Recently cultivated. Visited: 20.3.71.

32. Liveras Galales

X:8W:6 VE985141

Reported: P. Dikaios 1950 (162/38:47); on terraced and cultivated slope.

References: Dikaios 1953, fig.1; Catling 1966, 17.

Material: CM.1950/XI-13/3; CS.291; Oxford (one axe).
CM. & CS. Stone: 1b(5), 1c(6), 1(2 frags.), 2a(2), 2b(5), 2c(4), 3a(1), 4a(1), 5c(1), 7b(1).
Flint: a+r(1), c(1).
Pottery: CR 4ae, 4cf.
PW(23).
RL(3)2c.
RP(38) o & c; 3e.
RW(6). Pattern: 6a.

Observations: no surface finds but exact site not located. Extent not known. Terraced and cultivated. Visited: 2.1.72.

KYRENIA DISTRICT

33. Myrtou Kastrovounos

XI:44W:142/1 WE080066

Reported: CS. 1964, separately from K.34 which may however form part of the same site.

Material: CS.1468.
CS. & visit. Stone: None.
Flint: None.
Pottery: RL(22) o & c.
RW(2) 3b, 4cg. Patterns: 7(?), 8c.

Observations: few sherds, flints. Area 20m. x 20m. Cultivated.
Visited: 3.10.71.

34. Myrtou Kafkalla

XI:44W:139 WE079066

Reported: H.W. Catling 1952 (162/38/1:63).

Reference: Dikaios 1962, fig.1.

Material: CM.1952/VI-27/7; CS.3 (as Mersinia).
CS. & visit. Stone: None.
Flint: a(3; 2+r), b(6; 2+u), c(1).
Pottery: C(3).
CR(1) 3b.
PW(8) 2c(3), 3bf(4).
RL(12) 2b, 2d, 3bf(1), 3b, 5cf.
RW(4) 3b(1), 3d(2). Patterns: 7a, 7b, 8b.

Observations: few sherds. Area 30m. x 20m. Cultivated.
Visited: 3.10.71.

KYRENIA DISTRICT

35. Orga Palialona

XI:2:245, XI:10W:34-5 WE029126

Reported: P. Dikaios 1940 (43/40:30); also as Kourvella, Paliambela.

Excavated: Dept. of Antiquities 1940.

Reference: unpublished (100/40); Dikaios 1953, fig.1.

Area excavated: 2 trial excavations, one at Palialona, one at Kourvella; depth of deposit 0·40m. Hut foundations in both trials.

Material: CM.1938/VIII-13/1 (Kourvella); 1940/XII-10/1; 1940/XII-30/5; CS.193.
CM., CS. & visit. Stone: 2c(1), 3a(1), 5b + flat base(2), 5c(1); spout with decoration.
Flint: None.
Pottery: PW(18), 3b(2), 4ae(1).
RL(6), 2c, 3a, 4cf, 4cg.
RW(80 approx.), 2b, 2c, 3b, 3d, 4a, 4cf. Patterns: 1a, 2, 5b, 6e, 7ab, 8b, 8c, 9, 12, 13, 14.
7a(2).

Observations: sherds, flints, stone implements. Area round hill-top 80m. x 80m.; finds also on slopes. Cultivated and steeply terraced. Visited: 18.4.71, 4.9.71.

36. Pileri Koja Belenk

XII:41W:70-1 WE203052

Reported: CS. 1959; large site, on plateau and slopes, cultivated.

Material: CS.1017.
CS. Stone: 1b(4), 1c(6), 1(1 unfinished & 5 frags.), 2a(1), 2b(1), 4a(3), 4b(1), 6a(5 frags.).
Flint: a(15; 8+u), b(1+r), d(1).
Pottery: C/CR(20) 2c, 5bf/bg.
PW(23) 5be, 5cg(2).
RL/P(99) 2b, 2d, 3b, 4ae, 4be, 5cg.
RW(48) 2d, 3b, 3b + 4be, 5bf(?). Patterns: 1a, 5b, 6, 8b, 8c.

Observations: locality visited. Site in military restricted area.
Visited: 29.9.71.

KYRENIA DISTRICT

37. Sisklipos

XI:39E WE1506

Reported: P. Dikaios (1936, 76) as on South slopes of the village; millstones, pestles, stone bowl fragment and few sherds.

Reference: Dikaios 1936, 76.

Material: CM.1937/XI-4/3.
CM. Stone: 3b(2), 6a(2).
Flint: None.
Pottery: C(1).
RL(1).
RW(1).

Observations: not visited.

38. Sisklipos Kalosykia

XI:40W:81 WE172066

Reported: CS. 1959. Small site, cultivated.

Material: CS.1041.
CS. Stone: 1c(1), 3a(2), 6a(2).
Flint: a(4; 1+u), b(1).
Pottery: RP present.

Observations: not visited.

39. Thermia Mylos

XII:29W2:151 WE300086

Reported: A.H.S. Megaw 1947 (162/38:36).

Reference: Dikaios 1953, fig.1.

Material: CM.1947/IV-26/1.
CM. & visit. Stone: 3b(1), 6a(1).
Flint: a.
Pottery: RL(4) open.
C(2?).

Observations: few coarse sherds, flints. Exact location and extent of site uncertain. Uncultivated hillside. Visited: 12.3.72.

KYRENIA DISTRICT

40. Vasilia Alonia

XI:13:2 WE111117

Reported: CS. 1965; sherds found in building foundations.

Excavated: Dept. of Antiquities 1965.

References: Karageorghis 1966, 326 and figs.70-73; Nicolaou 1966, 28.

Area excavated: trial 2m. x 1·50m. x 1·50m. Occupation debris.

Material: CS.1525.
Stone: 1a(1), 2b(1), 3a, 2 cut lumps serpentine.
Flint: None.
Pottery: C(5).
PW/undiagnostic (97).
RL/P(55) 2b, 3e(2), 5g.
RW(16) o & c, 3d(2), 5cg. Patterns: 5b, 6a, 6b, 6d, 7a.

Observations: no surface finds. Extent unknown. Site largely built upon. Visited: 4.2.72.

41. Vasilia Evrima cemetery

XI:13W:138-9 WE102117

Excavated: J.R. Stewart for University of Melbourne, 1955.

References: Stewart 1957; Karageorghis 1963, 506-7.

Area excavated: 5 tombs with Philia RP pottery.

Material: Sydney; Oxford; CS.486.

Observations: for extent cf. published references. Visited: 4.2.72.

KYRENIA DISTRICT

42. Vasilia Harma Tarlasi

XI:13E:300 WE110117

Reported: P. Dikaios.

References: Dikaios 1935, 11; 1936, 74; 1953, 318 n.4.

Material: CM.1935/X-28/1; CS.605.
CM. & CS. Stone: 3a(2), 6a(2 and 2 frags.).
Flint: b+u(1).
Pottery: Cb(8) 3bf.
PW(8).
RBL(24) o & c.
RW(2) o & c. Pattern: 5e.

Observations: few worn sherds. Extent not known. Recently cultivated, terraced. Visited: 21.5.71, 4.2.72.

43. Vasilia Loukkos Trachonas cemetery

XI:13W:21 WE098123

Reported: CS. 1957.

References: Catling 1963, EC.155; Karageorghis 1966, 328 and fig.74a, b.

Material: CS.483 and 1522.

Observations: locality visited 4.2.72.

44. Vasilia Myliades ?cemetery

XI:13E:333 WE118116

Reported: CS. 1957.

Reference: Catling 1963, EC.165.

Material: CS.624.

Observations: not visited.

KYRENIA DISTRICT

45. Vasilia Spitia tous Lenous

XI:3W WE053129

Reported: CS. 1955.

Material: CS.360.
CS. & visit. Stone: 3a(1).
Flint: a(20; some + r, 4+u), b+u(1).
Pottery: undiagnostic.

Observations: flints, undiagnostic sherds. Area 15m. x 10m. Scrub-covered headland; little soil cover. Visited: 4.9.71.

46. Vasilia Stypia

XI:12E:36, 37, 124 WE093128

Reported: CS. 1957.

Reference: Nicolaou 1967, no.26.

Material: CS.491.
CS. Stone: 1a(3) 1/2(1 frag.), 3e, 6a(4 frags.).
Flint: a(8; 4+u).
Pottery: RL(11) 3b.

Observations: few sherds, flints. Area 70m. x 20m. Partly cultivated, terraced. Visited: 21.5.71.

47. Vasilia village

XI:13E WE114116

Reported: CS. 1957; site of Co-op. Soc. of Vasilia new premises. In foundation pits sherds, ash and charcoal layers.

Material: CS.592.
CS. Stone: None.
Flint: None.
Pottery: RW(1) 3c.

Observations: no surface finds. Extent unknown. Site built upon.
Visited: 21.5.71.

KYRENIA DISTRICT

48. Vasilia village

Location uncertain.

Reported: CS. 1957; round house of Papapetros in village. Axe and sherds. Material may derive from K.47.

Material: CS.632.
CS. Stone: None.
Flint: None.
Pottery: RL(1).
RW(1).

Observations: no surface finds. Extent unknown. Site built upon. Visited: 21.5.71.

FINDS KYRENIA DISTRICT

Kf.1 Aghirda Onisia
CS.732 Axes, 1 pounder, 2 stone vessel fragments.
Reference: Nicolaou 1967, no.53.

Kf.2 Ayios Epiktitos NE of village
1971 One axe.

Kf.3 Bellapais Eliastres
CM.1943/II-22/1 One axe.

Kf.4 Bellapais
CM.1938/III-22/1 Small green stone axe, perforated at each end.
KF.5 CM.1938/XI-26/2 Stone tools.
Kf.6 CM.1940/IV-25/1 Green stone tool in shape of knife.

Kf.7 Dhikomo Plakes
CS.789 Pounders, grinders. Few sherds reported.

Kf.8 Dhikomo Vounarin tou Koiliare
CS.791 Pounders, grinders. 1 or 2 sherds reported.

Kf.9 Dhikomo Kato
CM.1934/IV-10/2 One axe.

Kf.10 Dhikomo Pano Kato Mylos
CS.767 Pounders, grinders.

Kf.11 Dhikomo
CM.1934/IV-14/5-6 One rubber, 1 shallow stone vessel fragment.

Kf.12 Elaia Pano Elaia
CS.1186 Axes, pounders.
Reference: Nicolaou 1967, no.17.

Kf.13 Karavas Anerades
CS.1489 6 axes, fragment of polished stone.
Reference: Nicolaou 1967, no.23.

Kf.14 Karavas Ayios Andreas
CS.568 1 grinding slab, stone fragments.

Kf.15 Karavas Palaia Vrysi
CS.1134 1 retouched flint, stone tools.

Kf.16 Karavas Petroyitonia
CS.1140 Axe fragments, pounders, quern fragments.

Kf.17 Karavas Pikron Neron
CS.1223 Stone tools.
Reference: Nicolaou 1967, no.21.

Kf.18 Karavas Platani
CS.571 Axe and grinding slab fragments.
Reference: Nicolaou 1967, no.20.

KYRENIA DISTRICT

Kf.19 Karmi St. Hilarion Castle
CM.1938/IX-14/1 One axe.
Reference: Nicolaou 1967, no.16.

Kf.20 Kazaphani Mutti ton Kamaron
CM.1943/V-8/1 One axe.

Kf.21 Kazaphani near village
CM.1942/XI-23/1 One axe.

Kf.22 Kharcha Bambakeri
CM.1947/VII-26/1 One axe presented.
Reference: Nicolaou 1967, no.4.

Kf.23 Klepini 15-16 miles E of Kyrenia
CM.1953/XII-11/4 Neck of painted Chalcolithic jar.

Kf.24 Kormakiti Siemale
CM.1941/I-1/1 One axe.
CM.1941/I-8/1 One chisel.

Kf.25 Koutsovendis Ayios Chrysostomos Monastery
CM.1945/XII-21/3 One axe.
CM.1953/III-23/1 One axe.

Kf.26 Koutsovendis Vrachos tou Savva
CM.1961/III-2/19 6 axes.
Reported: I. Kleanthous 1961 (24/61:1,7) as found in black earth at foot of rock a little above Ayios Chrysostomos Monastery; no other trace of settlement.
Reference: Nicolaou 1966, 28.

Kf.27 Lapithos Adrikkos
CM.1948/V-10/2 One retouched flint blade.

Kf.28 Lapithos Arodaphrioudia
CS.641 One axe.

Kf.29 Lapithos Phloudia
Cs.551 One axe.

Kf.30 Lapithos Pourin
CS.547 4 grinding slab fragments, one pounder fragment.

Kf.31 Lapithos Sphinarin
Cs.554 2 grinding slab and 2 stone fragments.

Kf.32 Larnaca tis Lapithou Ayia Marina
CM.1939/II-3/2 One sherd and one axe.
Reported: L. Nikolaou 1939 (43/39:3) as from NE part of village near Girl School.

Kf.33 Liveras Spilioi ton Dragananon
CM.1941/II-19/1-5 5 axes.
Reported: P. Dikaios 1941 (43/39:20) as N of village; no other trace of settlement.
Reference: Dikaios 1962, fig.1.

KYRENIA DISTRICT

Kf.34 Motides village
CS.1148 1 axe, pounder fragments.
Reference: Nicolaou, 1967, no.18.

Kf.35 Pileri Shimshirlik
CS.1018 Stone tools.

Kf.36 Pileri Profitis Elias, Pyrgos
CS.1084 One small axe, stone tools.
Reference: Nicolaou 1967, no.19.

Kf.37 Sisklipos Ayios Georgios
CS.217 2 coarse sherds, 1 flint, axe fragments, pounders, grinding slabs.

Kf.38 Sisklipos Kalosykia
CS.1040 1 axe, 2 pounders, rubber, quern.

Kf.39 Vasilia Pyrgos Triantaphylia
CS.619 (Reported as neolithic; material not seen.)

Kf.40 Vasilia Sina Monastery
CS.617 2 axes, pounder fragment, grinding slab.
Reference: Nicolaou 1967, no.25.

Kf.41 Vasilia Stypia
One axe at spring under Stylianous' house.

Kf.42 Vasilia Vavilas Chiliomodousa
CM.1951/III-15/2 One axe.
CS.522 1 axe, 1 stone bowl fragment, 1 grinder fragment.
Reference: Nicolaou 1967, no.27.

3. FAMAGUSTA DISTRICT. SITES

1. Akanthou Arkosyko

VI:45W:176 etc. WE686168

Reported: G. Anastasiou 1945 (25/45:1); P. Dikaios 1946 (163/38/1:119).

Reference: Dikaios 1962, fig.1.

Material: CM.1945/III-27/13; 1946/V-17/3; CS.1931.
CS. Stone: 1a(1), 4a(1), 5a(1), 5b(1), 5c(1).
Flint: a(47; 6+r, several+u), b(3), c(13), d(3), e(2).
Obsidian: b(3; 1+r, 2+u), c(1).
Bone: fragments (27). Identified: ovis, sus, dama.
Shell: perforated (1).

Observations: few stone vessel fragments, stone implements, many flint and 4 obsidian implements, bone fragments. Concentrated in area 50m. x 30m., but extending 200m. along coast. Section exposed by cliff-edge collapse with deposit 0·50 - 1·0m. deep. Uncultivated slope. Visited: 19.3.72, 6.8.72.

2. Akanthou Villourin

XIV:2W:169, 170 WE610140

Reported: A.H.S. Megaw 1950 (24/50:11) as between culverts 26/3 and 26/4 of Kyrenia-Akanthou road, between road and sea.

References: Dikaios 1953, 318 n.4; Nicolaou 1967, no.3.

Material: CM.1950/VI-16/13; CS.1934.
CM. & CS. Stone: 1a(2), 3a(1), 3b(1), 4b(1).
Flint: (18) a+r, u; c, e.
Pottery: C(2?).
CR(6) 3d.
RL(3) o & c.
RW(2) open. Patterns: 2, 5b.

Observations: few sherds, flints and stone implements. Area 70m. x 40m. Uncultivated. Visited: 6.9.71, 19.3.72.

FAMAGUSTA DISTRICT

3. Ayia Napa Cape Greco (Tigani)

XLIII:25 WD9714696

Reported: K. Nicolaou 1962. Flint implements, stone axes and vessels.

References: Nicolaou 1966, 28; 1967, no.62.

Material: CM.1962/IX-28/14; CS.1339.
CS. Stone: 4a(2).
Flint: a(2, 1+u); b(1+r).
Bones: fragments.

Observations: no surface finds. Exact location and extent unknown. Little soil cover. Perhaps destroyed by ancient stone-quarrying and recent earth-moving. Visited: 17.10.71, 30.7.72.

4. Ayios Iakovos Dhima

XIV:23E WE7310

Reported: K. Georghiou 1948 (163/38/1:128); sherds with stones and ash.

Reference: Dikaios 1962, fig.1.

Material: CM.1948/X-5/5.
Not seen.

Observations: not visited.

5. Lythrangomi Koutsopetrica

VII:4E XE0627

Reported: P. Dikaios 1941 (163/38/1:93-6); stone implements and sherds.

Reference: Nicolaou 1967, no.7, and Pl.XI.3.

Material: CM.1941/XII-24/1.
CM. Stone: 1a, 1b.
Flint: None.
Pottery: None.

Observations: no surface finds. Extent unknown. Terraced and cultivated. Visited: 27.8.72.

FAMAGUSTA DISTRICT

6. Phlamoudhi Lakkos

VI:48W1:1,3 WE749193

Reported: P. Dikaios 1944 (163/38/1:106). Earlier finds in 1938 from "Lakko - 4 miles from Akanthou" are probably from this site which is in the lands of Akanthou.

References: Dikaios 1953, fig.1; Symeonoglou 1972, 190, no.3.

Material: CM.1938/VII-1/6; 1944/XI-15/1; CS.1932.
CM. 1944 & CS. Stone: 1a(1), 1b(2), 1(1 frag.); 3e.
Flint: a(14, 2+r, 1+u), c(2), d(1).
Pottery: C(7).
PW(7) o & c.
RL(14) o & c; 4c.
RW(19) o & c. Patterns: 2, 5a, 5b, 8a.

Observations: sherds, flints, stone implements. Area 30m. x 30m. Partly cultivated, part with little soil cover. Most finds from track cutting. Visited: 19.3.72, 6.8.72.

7. Phrenaros Vounistiri

XXXIII:43W WD831803

Reported: E. Gjerstad 1923.

Excavated: E. Gjerstad 1925.

Reference: Gjerstad 1926, 54-58.

Area excavated: area c. 15m. x 10m.; depth of deposit 0·80m. Outline of floor of structure.

Material: CM.; Stockholm.

Observations: no surface finds. Extent unknown. Kafkalla covered by recently imported earth. Visited: 17.10.71.

FAMAGUSTA DISTRICT

3. Rizokarpaso Apostolos Andreas Teloneion

II:20W XE42l4484

Reported: G. Anastasiou 1951 (163/38:151); nearly whole circular huts.

References: Dikaios 1953, 316 n.2; Buchholz 1971, 499.

Material: CM.1951/IX-3/3; FM. (Inv. no. not known).
CM. & FM. Stone: 1a(2), 2c(1), 5a(1), 5c(1), ?5(1 frag.); lump serpentine (1).
Flint: a+r, b+r, u.
Obsidian: b(1).
Pottery: RL(1?).
Undiagnostic.
Bones: fragments incl. antler tip.

Observations: flints, stone implements, lump of soapstone, bone fragments. Area 70m. x 60m. Uncultivated, little soil cover.
Visited: 5.9.71, 6.6.72, 6.8.73.

9. Rizokarpaso Cape Andreas Kastro

II:12 XE436514

Reported: H.W. Catling and J.B. Hennessy.

Excavated: A. Le Brun for C.N.R.S. and Commission des Fouilles 1970-

References: Karageorghis 1971, 390; 1972, 1042; Buchholz 1971, 493; Le Brun 1974.

Area excavated: c. 500m^2. Circular stone structures.

Material: CM.1961/VIII-14/1; CS.1359; CM., FM.

Observations: under excavation. For extent cf. published references. Uncultivated. Visited: 6.9.71, 7.4.72 etc.

FAMAGUSTA DISTRICT

10. Rizokarpaso Kordhyli

II:18 XE392498

Reported: NPSP, 1973.

Material: CM.

CM. Stone: 1a(3 & 2 unfinished), 1b(2 & 2 unfinished), 1c(1), 1(3 fragments), 2a(1), 2b(2), 3a, 4b, 6a, 6b, 7b(1 soapstone, broken).
Flint: a, a+r, b(1+gloss), b+r, c, d, e.
Pottery: C(4).
RW(5) 3d, 4be, 4cg. Pattern: 5.
Shell: fragments.

Observations: 8-10 circular stone structures on surface or in section, single stone thicknesses, diameters 2·50 - 4·0m. Some part cut into bedrock. One long cross-wall. Cupholes in stone slabs. Sherds very worn, many stone implements, flint pounders and nodules. Depth of deposit c. 0·50m., area c. 50 x 70m.
Visited: 3.9.73.

FINDS FAMAGUSTA DISTRICT

Ff.1 Akanthou
CM.1941/V-26/2 3 axes handed in.

Ff.2 Ardhana
1951 3 axes, 4 terracotta beads, 1 limestone bead.

Ff.3 Ayios Theodhoros Valia
CM.1946/VI-20/4 One axe purchased.

Ff.4 Ayios Thyrsos Pyrgi
CM.1952/XI-8/5 2 axes.
Reference: Nicolaou 1967, no.8.

Ff.5 Dherynia E of village
FM.201 2 elongated pestles, 1 axe.
References: Nicolaou 1967, no.63; Karageorghis 1968, 291.

Ff.6 Famagusta
1945 Stone age implements.
Reported: T. Mogabgab 1945 (25/45:14) as found in excavations for Dr. Campion's house on Salamis road and on ground surface of the height bearing the same house.

Ff.7 Leonarisso
Ashmolean 1953, 1209 One small green stone axe.

Ff.8 Lysi Ayios Affimianos
CM.1948/V-7/2 1 chisel presented.
Reference: Nicolaou 1967, no.56.

Ff.9 Lythrangomi
CM.1941/II-20/1 One axe handed in.
Reference: Nicolaou 1967, no.7.

Ff.10 Paralimni Panayia
CM.1962/I-10/1 Elliptical pebble with engraved criss-crossing.

Ff.11 Phlamoudhi Melissa
CM.1946/VI-20/2 One axe.

Ff.12 Phlamoudhi Sapilosi
CM.1946/VI-20/3 One axe.

Ff.13 Phlamoudhi Teratsous
CM.1944/XI-28/1 One axe handed in.

Ff.14 Rizokarpaso Anavrysis
CM.1947/III-26/3 2 axes purchased.
Reference: Nicolaou 1967, no.9.

Ff.15 Rizokarpaso Aphendrika
CM.1968/VII-23/1 One axe in sea.

FAMAGUSTA DISTRICT

Ff.16 Rizokarpaso Ayios Philon
CS.1535 One axe.
Reference: Nicolaou 1967, no.11.

Ff.17 Rizokarpaso Sylla
CM.1937/III-27/6 One axe purchased.
CM.1947/III-26/2 One axe purchased.

Ff.18 Rizokarpaso Cape Andreas district
16 finds of stone and flint implements.
Reference: Le Brun 1971. Cap Andreas Prospection (unpublished MS.).

Ff.19 Trikomo Krina
CM.1952/XII-3/6 One chisel purchased.
Reference: Nicolaou 1967, no.5.

Ff.20 Yerani Arones
FM.70 One elongated pestle.

4. LARNACA DISTRICT. SITES

1. Alaminos Zorzakis

L:49:85 WD390526

Reported: P. Dikaios 1933.

Excavated: Cyprus Museum 1934.

Reference: P. Dikaios 1936, 78.

Area excavated: 1 trial pit; depth of deposit 0·60m. max.
Occupation layers.

Material: CM.1933/XII-13/9; 1934/IV-13/1; 1945/IV-7/1; CS.1936.
CM. & CS. Stone: 1a(1).
Flint: a+r, u; b+r(1), b+u(1) c(1).
Pottery: CR(1) 5ad.
PW o & c; 2d, 3a(2), 4cf.
RL o & c; 2d, 2e, 3b(2), 4c(2), 4cg.
RW o & c; 2d(2), 2f, 3d, 4bf, 4cg, 4c, 5be.
Patterns: 3, 5a, 5b, 5c, 6b, 6c, 7a, 7ab.
From surface collection (CS.) RL:PW:RW is approx. 3:2:1.
8(3+).

Observations: sherds, flint implements. Area 150m. x 70m. Semi-cultivated slope, part cultivated plateau. Visited: 15.8.72.

2. Kalavassos Kaoukkos

LV:20:353 WD280457

Reported: G. Anastasiou 1940 (42/36/1:55) as Mari Tenta and (45/40:3) as Ayios Georghios. Tenta (La.12), an aceramic site (Dikaios 1953, 317) is distinct from though adjacent to this site with pottery (see observations below) which is therefore named separately, using the Cad.S. locality.

References: Dikaios 1953, 317; 1962, 180 n.3.

Material: not separable from La.12.

Observations: sherds, flints. Area 60m. x 40m. Cultivated slope, truncated by railway cutting; exposed section c. 2-4m. high with sherds, flints, carbon in situ. Outline of pit with occupation debris c. 1·50m. deep (cf. observations on La.12). Visited: 6.2.72, 2.4.72, 15.10.72.

LARNACA DISTRICT

3. Kalavassos Kokkinoyi (Site A)

LV:20:585, 589, 581 WD290448

Reported: P. Dikaios.

Excavated: Dept. of Antiquities 1939, 1947.

References: Dikaios 1962, 106-112; 1960, Pl.24.

Area excavated: area of 84sq. m.; depth of deposit 1·30m. max. Pits cut in limestone with layers of occupation debris.

Material: CM.; Sydney.

Observations: few sherds, flints. For extent cf. published references. Cultivated. Visited: 6.2.72.

4. Kalavassos Kopetra me Ayious

LV:20:356, 253 WD286458

Reported: C. Paraskeva 1948 (164/38:105, 112); finds from railway cutting.

Material: CM.1948/V-10/3; 1949/V-20/3; CS.1938.
CM. & CS. Stone: 1a(1), 1b(1 unfinished).
Flint: a(13; 3+u), e(1).
Pottery: PW 2f.
RL o & c; 2d, 4cg.
RW o & c. Patterns: 5a, 5b, 5c.
Approx. 70 sherds in CM. RW/PW:RL approx. 8:1.

Observations: sherds, flints, stone implements. Area 40m. x 20m. Finds from surface and from railway cutting. In section occupation deposit 1·20 - 1·50m. deep; ash, flints, sherds in situ. Visited: 19.4.72.

5. Kalavassos Mandres tou Lani

LV:12:115 WD284484

Reported: CS. 1966.

Material: CS.1559.
Visit & CS. Stone: None.
Flint: a(1).
Pottery: C(1) 2e.
CR(1).
RL/P open; 3bf.

Observations: few sherds, 1 flint. Area 15m. x 10m. Uncultivated.
Visited: 22.2.72.

LARNACA DISTRICT

6. Kalavassos Pamboules (Site B)

LV:20:437 WD287453

Reported: P. Dikaios.

Excavated: Dept. of Antiquities 1939, 1947.

Reference: Dikaios 1962, 133-140.

Area excavated: area of 54sq. m.; depth of deposit 2·0m. max. Traces of wooden structures, partly cut in rock.

Dated: 5085 ± 110BP. St. 419 Ostlund and Engstrand 1960, 194. Corrected by Deevey, Flint and Rouse 1967, 150.

Material: CM.; Sydney.

Observations: sherds, flints from recent pit. For area cf. published reference. Cultivated. Visited: 6.2.72.

7. Khirokitia Gypsaros

XLIX:62 WD3150

Reported: P. Dikaios, as East of Khirokitia khan.

Reference: Dikaios 1953, 401 no.1205.

Material: CM.

Observations: no surface finds. Exact location and extent unknown. Uncultivated. Visited: 81.1.72.

8. Khirokitia Kokkinokhorapha

XLIX:62 WD3150

Reported: P. Dikaios, as East of Khirokitia khan.

Reference: Dikaios 1953, 401 no.1204.

Material: CM.

Observations: no surface finds. Exact location and extent unknown. Uncultivated. Visited: 18.1.72.

LARNACA DISTRICT

9. Khirokitia Vounoi

XLIX:61-2:568-9 etc. WD313506

Reported: P. Dikaios 1934.

Excavated: Dept. of Antiquities 1936-9, 1942, 1946.
NPSP for Dept. of Antiquities 1972.

References: Dikaios 1953; Karageorghis 1969, 452. Stanley Price and Christou 1973.

Area excavated: area of c. 3000-4000sq. m.; depth of deposit 4m. max.

Dated: 7655 ± 160 BP. St.-415 Ostlund and Engstrand 1960, 193;
7515 ± 125 BP. St.-414 corrected by Deevey, Flint and Rouse
7445 ± 160 BP. St.-416 1967, 150.

Material: CM.; Larn. M. + CM.1959/II-24/2; 1966/I-21/1; 1968/VII-31/1; CS.1940, (surface finds); Oxford.

Observations: for extent cf. published references. At foot of Vounoi hill to North, 2 structures cut by bulldozing operations in 1971. Finds collected as CS.1940. Visited: 2.9.70 etc.

10. Kiti Avlaki tis Kotchinis

L:38 WD5256

Reported: P. Dikaios, as west of the village, on the N. side of a stream.

Reference: Dikaios 1936, 77.

Material: CM.1934/I-28/2.
CM. Stone: 6a(1).
Flint: a(1).
Pottery: CR(1) 2c.
RL(16) o & c; 4be, 4cg.
RW(5) 3d.

Observations: no surface finds. Exact location and extent unknown. Cultivated. Visited: 30.8.72.

LARNACA DISTRICT

11. Mari **Paliambela**

LV:28:444 WD283441

Reported: G. Anastasiou 1940 (45/40:1-3; 42/36/1:56) as **Katsarka**.

Excavated: Dept. of Antiquities 1947.

Reference: Dikaios 1953, 319.

Area excavated: one trial pit. Pits cut into rock.

Material: CM.1940/IV-27/1; 1940/VII-23/2; CM.; CS.1941.
CS. Stone: 4b, 9c(?1).
Flint: (22), a(9+r, u), b(1+r).
Pottery: C present.
Cb(2) 3d.
RBL(1).
RL(many) o & c, 3d, 4ae.
RW(1). Pattern: 5c.

Observations: sherds, flints, stone implements. Area 15m. x 10m. Finds from spoil of recent pits in site. Partly cultivated. Visited: 6.2.72.

12. Mari **Tenta**

LV:20:285 etc. WD279458

Reported: G. Anastasiou 1940 (45/40:1-3; 42/36/1:55) as **Ayios Georghios**.

Excavated: Dept. of Antiquities 1947.

References: Cook 1946, 119; Dikaios 1953, 317; 1960, Pl.18.

Area excavated: (1) area of c. 90sq. m. Stone curvilinear walls; (2) trial pit; depth of deposit 1·10m. Floors.

Material: CM.1940/IV-27/1; 1940/VII-23/1; CM.; CS.1939.
CM., CS. Stone: 1a(4) 3a(several), 4, 4b(1), 5c(1), 5e(2 - 1 unfinished), 6a(1).
Flint: a(74),+r, u(29), b(14), c(1).
Pottery: C 2e.
CR 2c.
Cb(2+) 3d.
PW(2).
RL(3) 3b.
RW(1).
Shell: 1 murex, 1 charonia sp.

Observations: many flints, few stone vessel fragments, 2 sherds. Area 80m. diameter round hillock. Cultivated. Flints, sherds on lower slope to East (cf. observations on La.2). Visited: 6.2.72, 2.4.72.

LARNACA DISTRICT

13. Maroni Karayiannis

LV:22:545 WD330456

Reported: P. Dikaios 1935.

Reference: Dikaios 1936, 78.

Material: CM.1935/I-13/1; CS.1943; Oxford.
CS. & Oxford. Stone: 3a, 4(several).
Flint: a(approx. 50), b(6; 1+u; 1 serrated with gloss), d(4).
Pottery: C(1).
RL(5) o & c.
RP(3).
RW(9) 4bf(2). Pattern: 5a.

Observations: sherds, flints. Area 60m. x 20m. Cultivated.
Visited: 17.4.71, 18.4.72.

14. Maroni Viklari

LV:30:160 etc. WD330449

Reported: G. Anastasiou 1941 (164/38:76).

Reference: Dikaios 1953, fig.1 (with La.14).

Material: CM.1941/IX-25/1; CS.1942.
CM. & CS. Stone: 1a(1), 1b(1 unfinished), 4b(1), 5a(1).
Flint: a(36; 1+r, 4+u).
Pottery: C(10) 2d.
PW(10).
RBL(1) 3c.
RL(31) 4bf(2).
RW(11). Patterns: 5b, 6a.

Observations: sherds, flints and stone implements. Area 40m. x 40m. at foot of hillock. Few finds on hillock top, area 40m. x 20m. Cultivated. Visited: 18.4.72, 28.6.72.

LARNACA DISTRICT

15. Perivolia Cape Kiti Tower

L:47:9 WD551548

Reported: Cyprus Museum Inventory no.1937/XI-10/1 under Kiti-Pyrgos, probably referring to watchtower on Cape Kiti, in lands of Perivolia.

Material: CM.1937/XI-10/1; CS.1947.
CM. & CS. Stone: 1a(1 unfinished), 1b(1).
Flint: a(19; 5+r, 3+u), c(2), d(12).
Pottery: CR(9).
PW(3).
RL(11) o & c; 4af, 4cg(?).
RW(?3). Patterns: 1b, 5a.

Observations: sherds, flints, stone implements. Area 30m. diameter. Partly cultivated. Good to poor soil-cover. Visited: 30.8.72.

16. Pyla Gypsaroi

XLI:11:36/2/2 WD639739

Reported: G. Anastasiou 1939 (164/38:8).

Excavated: Cyprus Museum 1934.

Reference: Dikaios 1936, 77.

Area excavated: 1 trial pit; depth of deposit 0·60m. Occupation layers.

Material: CM.1934/I-1/6; 1939/II-11/4.
CM. Stone: 1a(2), 1b(2 & 1 unfinished), 1c(3), 2c, 3a, 6a.
Flint: a(3; 1+r), b(12), b+u.
Pottery: C(4).
Cb(20) o & c.
Pcb(1).
PW(12).
RL(109) o & c; 2b, 3b.
RP(2).
RW(11), 3bf, 3b, 3d. Patterns: 5b, 7a.

Observations: no surface finds. Extent unknown. Cultivated.
Visited: 28.1.72.

LARNACA DISTRICT

17. Pyla Mandres

XLI:3:3 WD634755

Reported: P. Dikaios.

Excavated: Cyprus Museum 1934.

Reference: Dikaios 1936, 77.

Area excavated: 1 trial pit; depth of deposit 1m. Occupation layers.

Material: CM.1934/IV-11/1; CM.
CM. Stone: 6a.
Flint: a, a+r, b+u, c.
Pottery: CR present.
PW present.
RL/P present.
RW present.

Observations: few flints. Area 30m. x 20m. Cultivated.
Visited: 28.1.72.

18. Pyla Polles Petres

XLI:3:Hali(1) WD633752

Reported: G. Anastasiou 1939 (164/38:11); a number of sherds.

Material: CM.1939/II-11/6.
CM. & visit. Stone: None.
Flint: a+r(1).
Pottery: CR 2e.
RBL(1) 5a.
RL(3) 3a.
RP(1) 5a.

Observations: few sherds, 1 flint. Area 10m. x 10m. Cultivated.
Visited: 28.1.72.

19. Skarinou Arete

XLIX:47 WD3354

Reported: P. Dikaios 1941(164/38:67) as reached by path from Skarinou road-station, on a slope, overlooking River Pendaskinos.

Reference: Dikaios 1953, fig.1.

Material: CM.1941/I-15/1.
CM. Stone: 5a(1 limestone), 5a with spout (1), 5c(2), 5d(2).
Flint: a(4+r), b(1+u).

Observations: no surface finds. Exact location and extent unknown.
Partly cultivated. Visited: 19.4.72.

LARNACA DISTRICT

20. Skarinou Shisma

XLIX:38:316 WD335552

Reported: NPSP 1972, though site may be referred to by N.F. Kyriazes (164/38:35) who reports suspected finds from Parnas, N.E. and three English miles from Skarinou, after Chavvas and near Prastion, Shismata and Livadhia at the boundary of Lefkara and Skarinou. Parnas not on Cad.S. but description suggests an area further upstream.

Material: CS.1948.
CS. Stone: None.
Flint: a(6), b(2), c(1).
Pottery: CR(2) 3d.
RL(3) open.

Observations: few sherds, flints. Area 10m. x 10m. Finds eroding out of terrace-wall to cultivated field. Visited: 19.4.72.

21. Tersephanou Arpera Chiflik

L:22:11, 12 WD507591

Reported: A. Georghiou 1963 (42/36/3:16) as Kiti-Arperas. In lands of Tersephanou. Finds from dam-construction.

Material: CM.1963/VII-8/1; CS.1949; Oxford (one flint).
CS. Stone: 3b, 4b.
Flint: a(1), d(2).
Pottery: CR(1).
RL(26) o & c, 3bf.
RW(9) o & c. Patterns: 5a, 5b (on red slip), 5c, 6(?).

Observations: sherds, flints, stone implements. Area 100m. x 60m. Area bulldozed for Tremithios dam construction. Good depth of earth. Visited: 28.1.72.

FINDS

LARNACA DISTRICT

Laf.1 Alaminos Pilerka
La.M. 2 axes, 2 pestles, 1 implement.

Laf.2 Kophinou near the church
CM.1950/VI-24/2 3 axes, 2 pestles, 1 pounder, 1 quern fragment.
Reference: Dikaios 1962, fig.1.

Laf.3 Larnaca
CM.1933/III-17/1 One waisted pestle.

5. LIMASSOL DISTRICT. SITES

1. Anoyira
   Location not known.

   Reported: P. Dikaios 1934, as near the village.

   Reference: Nicolaou 1967 no.72.

   Material: CM.1934/III-25/3-10; 1934/IV-12/3-6, 8.
   CM. & CM. Inventory. Stone: 1(9), 4(1).
   Flint: (3).
   Pottery: 9e(1), 8(1).

   Observations: not visited.

2. Ayios Thomas Katsounes

   LII:38 VD751421

   Reported: N. Petrides 1953 (165/38:68-70); large area with stone debris, stone bowl fragments, 3 axes, 1 pestle, 1 pounder and millstones; no sherds. Further finds reported to be from this site: 5 axes, 2 pounders, 2 maceheads.

   Reference: Dikaios 1962, fig.1.

   Material: Limassol Museum (Inv. no. not known).
   Not seen.

   Observations: not visited.

3. Ayios Thomas/Plataniskia Palaiomylos

   LII:46, 54 VD7440

   Reported: N. Petrides 1953 (27/53:2, 20); 1 stone figurine, 1 stone pendant, 2 spindlewhorls, 7 axes and tools.

   Reference: Megaw 1954, 172.

   Material: Limassol Museum (Inv. no. not known).
   Not seen.

   Observations: not visited.

LIMASSOL DISTRICT

4. Erimi Pamboules

LIII:61:243/3 etc. VD928372

Reported: P. Dikaios.

Excavated: P. Dikaios for Cyprus Museum, 1933-4, for Dept. of Antiquities, 1935.

Reference: Dikaios 1936.

Area excavated: area of 150sq. m.; depth of deposit 5·50m. max. Several phases of circular structures, some with stone foundations.

Dated: 4575 ± 80 BP. St.-202. Ostlund 1957, 496.
4485 ± 80 BP. St.-203. Ostlund 1957, 496.
4425 ± 150 BP. St.-338. Ostlund 1959, 43.
Corrected by Deevey, Flint and Rouse 1967, 149.

Material: CM.; Sydney; Oxford.

Observations: sherds, flints, stone implements, lumps of soapstone. Area 80m. x 60m. max. Cultivated plateau. Finds to south of plateau probably derived from terrace cutting to 2m. depth. Visited: 21.8.71, 13.9.72.

5. Kandou Kouphovouno

LIII:44,52:62 VD903403

Reported: J.S. Last 1951 (165/38:57); stone tools, flints, sherds.

References: Megaw 1952, 113; Dikaios 1961, 1.

Material: CM.1951/VI-19/3.
Visit. Stone: 1a, 3d, 5f(2), lumps of picrolite(3), 7(1 frag.).
Flint: a; b+r.
Pottery: C, Cb, RL present.

Observations: sherds, flints, stone implements. Area 150m. x 50-70m. Cultivated hill-top plateau. Visited: 10.10.71.

LIMASSOL DISTRICT

6. Moni Arkakia

LIV:40:605 WD187427

Reported: P. Dikaios (1935, 13) as Early Bronze Age site, described as SE. of Moni inn; as neolithic site on Dikaios 1962, fig.1.

References: Dikaios 1935, 13; 1962, fig.1.

Material: CM.1935/XII-22/1; CS.1950.
CM. & CS. Stone: 6a(1 and frags.).
Flint: None.
Pottery: BL(1).
CR(1).
RL(18) o & c; 3c, 4cf, 5cf, 6ad(2);
1 sherd + applied strip.
RP(7) 3a(?2), 3bf, 3cf.

Observations: sherds, ground stone fragments. Area 30m. x 10m.
Recently cultivated. Visited: 19.4.72.

7. Omodhos Laonarka

XLVII:26:343 etc. VD837572

Reported: J.S. Last 1946 (27/45:17).

Reference: Dikaios 1953, fig.1.

Material: CM.1946/I-21/1.
CM. Stone: 1b(3).
Flint: None.
Pottery: RL(?6).
RW(1).

Observations: locality visited. Extent unknown. Cultivated.
Visited: 6.4.72.

8. Pakhna

Location not known.

Reported: CM. Inventory; 1 pestle, 2 axes, 2 axe frags., 1 stone bowl.

Reference: Dikaios 1962, fig.1.

Material: CM.1934/III-6/6; 1935/V-27/4-9.
Not seen.

Observations: not visited.

LIMASSOL DISTRICT

9. Paramali Mouzomena

LVIII:1:120 VD820362

Reported: A. Polycarpou 1960 (165/38:132-5); axes, flints, sherds (some Cb).

References: Nicolaou 1966, 28; 1967 no.69.

Material: CM.1960/I-26/1; CS.1951.
CS. Stone: 1/3(1 frag.), 1c(1 unfinished).
Flint: None.
Pottery: RL(8) o & c; 2c, 3b, 4cg.

Observations: sherds, stone implements. Area 120m. x 20m. Recently cultivated plateau and eroded slopes. Visited: 13.9.72.

10. Plataniskia Petrera

LII:45:82 VD733414

Reported: N. Petrides 1952 (165/38:64-5); stone rubble, semi-perforated stone, 2 axes, stone tools, 1 flint, RW sherds, fragment terracotta figurine.

Reference: Nicolaou 1967, no.70 and Pl.XI.4.

Material: CM.1952/IV-12/2; 1952/X-6/4.
CM. Stone: 1a(2), 1b(2), 2a(1).
Flint: None.
Pottery: None.

Observations: not visited.

11. Pyrgos Ayia Marina

LIV:40:358, 254 WD172430

Reported: K. Georghiou 1946 (165/38:40).

Reference: Dikaios 1936, 78.

Material: CM.1936/II-18/1; 1946/VI-10/3; CS.1953.
CM. & CS. Stone: 4c(1), 5(1 rim, limestone).
Flint: a(44; 10+r, 25+u), b(5; 2+r, 3+u), c(7), d(11; 1+r, 4+u).
Pottery: CR(1).
RL(13) open; 2c, 3af, 3a, 3bf, 4cf(?).

Observations: sherds, flints, stone implements. Concentrated in area 60m. x 20m. Cultivated. Visited: 23.2.72.

LIMASSOL DISTRICT

12. Pyrgos Vasilika

LIV:39:249 WD169434

Reported: K. Georghiou 1946 (165/38:55).

Material: CM.1946/IV-30/1; CS.1954.
CS. Stone: None.
Flint: a(26; 11+r, 10+u), c(10; 2+u), d(8; 3+u).
Pottery: C(?1).

Observations: flints, few worn sherds. Area 15m. x 10m. Site cut by track; good depth of earth. No finds in situ. Cultivated.
Visited: 23.2.72.

13. Sotira Kaminoudhia cemetery

LIII:43:47 VD872416

Reported: P. Dikaios 1948.

Excavated: P. Dikaios for University of Pennsylvania Curium Expedition.

Reference: Dikaios 1948, 16.

Area Excavated: 1 tomb with Philia RP ware.

Material: CM.

Observations: locality visited. Extent unknown. Visited: 25.3.71, 20.4.71.

14. Sotira Teppes

LIII:43:112,115 VD870414

Reported: P. Dikaios 1934.

Excavated: P. Dikaios for University of Pennsylvania Curium Expedition, 1947, 1951-2, 1954, 1956.

Reference: Dikaios 1961.

Area excavated: area of c. 2000sq. m.; depth of deposit 2m. max.

Dated: 5405 ± 110 BP. St.-337. Ostlund 1959, 43.
5095 ± 130 BP. St.-350. Ostlund 1959, 43.
Corrected by Deevey, Flint and Rouse 1967, 149.

Material: CM.; Philadelphia; Sydney; Oxford.

Observations: for area cf. published reference. Partly terraced.
Visited: 25.3.71, 20.4.71.

FINDS LIMASSOL DISTRICT

Lif.1 Akrotiri Ayios Nikolaos of the Cats
CM.1943/VI-11/1 One axe.
Reference: Nicolaou 1967, no.68.

Lif.2 Armenokhori Paktomena
CS.1469 1 axe, ground stone fragments, 6 flints (3 with retouch).
References: Nicolaou 1966, 28; 1967, no.67.

Lif.3 Ayios Athanasios Asprohomata
CM.1946/XII-18/8 3 axes.

Lif.4 Episkopi Kourion Bamboula
Neo/RP sherds stratified at base of Bamboula.
References: Benson 1969, 5; 1970, 39.

Lif.5 Episkopi
1886 One axe bought.
Reference: Myres and Richter 1899, 13.

Lif.6 Episkopi Kourion
British Museum 1895. One axe.
Reference: Myres and Richter 1899, 13.

Lif.7 Khandria Ayios Kyriakos
CM.1947/VIII-1/1 One axe purchased.
Reference: Nicolaou 1967, no.46.

Lif.8 Limnatis Mavres
1949 2 axes handed in.

Lif.9 Mallia Kilourion
CM.1940/I-31/1 Stone pendant.

Lif.10 Omodhos
CM.1945/XII-28/2 One stone tool.

Lif.11 Omodhos neighbourhood
CM.1948/V-17/2 One stone figurine presented.
Reference: Dikaios 1953, 299 n.1 and Pl.XCVII.

Lif.12 Pakhna junction of Pakhna-Prastio and Anoyira roads
1952 One axe.

Lif.13 Pissouri
CM.1942/I-26/1 One axe purchased.
Reference: Nicolaou 1967, no.71.

Lif.14 Plataniskia Kokkinos
1952 One axe.

Lif.15 Sotira Zanatja
CM.1948/XI-11/10 Small stone chisel.

6. PAPHOS DISTRICT. SITES

1. Dhrousha Ayios Serghios/Argaki tou Kannoudhiou

XXV:46:4 VD3579

Reported: J.S. Last and E. Markou, 1946 (C2 1946:20,28); sherds, flints and axes.

Reference: Nicolaou 1967, no.35 under Akamas.

Material: CM.1946/V-11/4.
Not seen.

Observations: locality visited. Area: finds reported over 100m.
Tall scrub, little soil cover. Visited: 22.8.71.

2. Kato Arodhes Aliki tis Laras

XXXIV:38 VD3668

Reported: A.H.S. Megaw (1954, 30); sherds found in trial excavation against fortification wall on Lara promontory.

Reference: Megaw 1954, 30.

Material: not known.

Observations: locality visited. Extent unknown. Uncultivated.
Visited: 22.8.71.

3. Kedhares Pezoules

XLVI:38:767 etc. VD756552

Reported: P. Dikaios 1935.

References: Dikaios 1936, 78; Schaeffer 1936, 17; Catling 1963, EC.63; Nicolaou 1967 no.73.

Material: CM.1935/VI-17/1; PM.1737.
CM., PM. & visit. Stone: 1(4); 1b(2), 2a(1).
Flint: a.
Pottery: RL(4).
RP(1).
RW(?1).

Observations: few sherds. Extent uncertain. Cultivated and terraced. Visited: 9.2.72.

PAPHOS DISTRICT

4. Khlorakas Vrysoudhia

XLV:50,49:350-360 etc. VD450516

Reported: G. Eliades 1951 (28/51:8) as Moutti; CS.1969 as Vrysoudhia; finds in PM. under Archangelos and Palloures. Cad.S. gives all these localities for the one site.

References: Dikaios 1962, fig.1; Nicolaou 1969, 40; Karageorghis 1970, 218 and figs.42, 43.

Material: CM.1951/II-15/6; 1968/XII-16/1,2; PM.1766/1-13; 1767/1-16; CS.1762.
CM. & CS. Stone: 1a, 1b(2), 2a(5 and 1 unfinished), 2b, 4a(many), 6a, 6b(1 frag.).
Flint: a(3; 2+r); c(1), d(2).
Pottery: CR o & c; chaff impressions.
PW(2) o & c.
RL(16) o & c; 2d, 3b, 3bf(3), 3d, 5cf(2).
RW(3) o & c. Pattern: 5b.

Observations: many sherds, flints, stone implements. Area 400m. x 100m. Intensively cultivated; irrigation channels exposing occupation debris. Visited: 9.10.71.

5. Kissonerga Mosphilia

XLV:142:125 etc. VD449541

Reported: G. Eliades 1950 (28/50:58; 166/38:63).

Reference: Megaw 1952, 113.

Material: CM.1950/X-31/6; 1951/II-15/5; CS.1955.
CM. & CS. Stone: 1a, 1c, 2a, 2c, 3b, 4, 5a + ext. decoration.
Flint: a(6; 1+r, u; 1+r; 1+u), b(2+u; 1 segment +r, u), e(7).
Pottery: CR(5) o & c; 2d, 2e.
RL/RBL(33) 2g, 3bf(2) 3df, 4bf, 5a, 5bf(2), 5c, 6a.
RW(27) o & c; 2c, 3b(2), 4c(2). Patterns: 1a, 5a, 5b, 5d(?), 6a, 6b, 7a, 7b, 8c.
G. Eliades coll., reportedly from this site: broken cruciform figurine, decorated soapstone pendant, conical spindle-whorls, many stone implements.

Observations: many sherds, flints, stone implements and a few stone vessel fragments. Area at least 600m. x 400m. Intensively cultivated; irrigation channels exposing occupation debris. Visited: 21.4.71, 22.8.71.

PAPHOS DISTRICT

6. **Meladhia**

XXXV:22 VD5572

Reported: P. Dikaios (1936, 75) as on slopes of hillock on crest of which is modern village.

Reference: Dikaios 1936, 75.

Material: CM.1934/XI-20/4-5.
CM. Stone: 1a(several).
Flint: a.
Pottery: C 2c.
CR 3c.
RL present.

Observations: not visited.

7. Miliou Ayii Anargyri

XXXV:44:343 VD514665

Reported: R. Gunnis.

References: Gunnis 1936, 341; Dikaios 1935, 11; 1936, 75.

Material: CM.1935/VI-2/1-14; CS.1957.

CM. Stone: 1c(2), 2a(1), 2b(3), 2c(3). Incised plaques; soapstone ½-cylinder.
Flint: None.
Pottery: C None.
CR None.
RL(25) 3b(3), 3c.
RW(30) 3b+4cg. Patterns: 4, 5, 6, 7a, 7b, 12. 7a, 7c, 8(1).
Bones: None.

CS. Stone: 1a(2) 3b(2; 1 broken).
Flint: a(3; 1+r), d(2).
Pottery: C(3).
CR(8) o & c; 3b, 5bf.
RL(42) o & c; 2d, 2f, 3b(7), 3c+5bf, 3, 4bf.
RW(5) o & c.
Pattern: 5b.
Bones: fragments (13).

Observations: many sherds, flints, stone implements, bone fragments. Area 70m. x 70m. Finds in cultivated vineyard on ridge-top, 70m. x 30m., and on eroded slope to E. Section at E. of vineyard 3-4m. deep, with finds in situ in upper part. Non-selective collection (= CS.1957) from vineyard. Visited: 14.9.72.

PAPHOS DISTRICT

8. Neokhorio Ayios Mamas

XXVI:57:174,6 VD438763

Reported: P. Dikaios 1945 (166/38:53, 60). Earlier finds probably from this site in Dikaios 1936, 75 n.2.

References: Dikaios 1936, 75 n.2; 1953, fig.1.

Material: CM.1944/IV-22/2, 7, 11, 12; 1945/X-26/1; 1946/IV-18/1; 1946/V-11/2-3; 1948/VII-28/3.
CM.(part). Stone: 1a, 1b, 1c(many), 2b, 3a, 4a, 7b(1), 8(2 soapstone) labrets(2).
Flint: a.
Pottery: RL 3c.
8(3).

Observations: locality visited. Site not located. Cultivated.
Visited: 15.9.72.

9. Neokhorio Ayios Nikolaos, Horafi tou Mesoyiou

XXV:39:2 VD373818

Reported: P. Dikaios 1945 (166/38:52) as near chiflik of Ayios Nikolaos and of considerable size. This site reported independently by L. Quilici (1971).

References: Dikaios 1953, fig.1; Quilici 1971, 175-192.

Material: CM.1945/X-26/2; 1952/V-4/1; Ayia Irini Excavation Store.
CM. Stone: 1a(2).
Flint: a(1+u), b(1+u), c(1).
Pottery: C present.
CR o & c; 4c.
RL 3b.

Observations: no surface finds. For area cf. published reference (1971). Part recently cultivated. Visited: 15.9.72.

10. Neokhorio Exosirontes

XXV:30:1 VD363830

Reported: J.S. Last and E. Markou 1946 (C2 1946:20,28); sherds, axe.

Reference: Nicolaou 1967, no.36 under Akamas.

Material: CM.1946/V-11/4c.
Not seen.

Observations: locality visited. Area: finds reported in quantities on level ground. Scrub, uncultivated. Visited: 15.9.72.

PAPHOS DISTRICT

11. Neokhorio Fontana Amorosa

XXV:30:1 VD3683

Reported: P. Dikaios 1939 (166/38:22); 2 limestone bowls, 2 flints, 1 axe fragment, described as on plateau, near shore.

Material: CM.1939/X-11/1.
Not seen.

Observations: no surface finds. Exact location and extent not known. Uncultivated, patches of scrub. Visited: 15.9.72.

12. Neokhorio Loutra tis Aphrodites

XXV:48:7 VD404798

Reported: P. Dikaios; CS.1960 (53/53:10,11) under Polis, = Nicolaou 1967 no.34 under Akamas, and described as in a field between the springs and the sea. CS. gives no map reference but the site may be the same as P.13.

References: Nicolaou 1966, 28; 1967 no.34 and Pl.XI.2 under Akamas.

Material: CS.1478.
CS. & visit. Stone: 1a(3), 1b(1), 2a(1), 5c(1).
Flint: a(3; 2+r); d(1).
Pottery: C/CR(14) o & c; 2c(2).
RL(12) o & c.

Observations: few sherds, flints. Area uncertain, if separate from P.13. Recently cultivated. Visited: 15.9.72.

13. Neokhorio Verikon

XXV:48:5 VD402800

Reported: NPSP 1972, though site may be the same as P.12.

Material: CS.1958.
Visit. Stone: 3a(2 unfinished), 3f, 6a(1 frag.).
Flint: a(1), d(3), e(1).
Pottery: CR(7) 3d.
RL(3).

Observations: sherds, flints, stone implements. Area 30m. x 20m. Cultivated. Visited: 15.9.72.

PAPHOS DISTRICT

14. Paphos Sterna

LI:10:Town VD468481

Reported: P. Dikaios (1936, 79) as Ktima Kato Perivolia and described as below Ayios Theodhoros church. G. Anastasiou (166/38:36) gives Kato Paphos Sterna which lies below the church and is the same site.

References: Dikaios 1936, 79; Nicolaou 1966, 561.

Material: CM.1936/XII-7/1; 1940/XII-30/1; PM.18/12/62.
CM. & visit. Stone: 2c(1 frag.).
Flint: None.
Pottery: Cb/reserved(2), and with hatching(1).
PW/undiagnostic(1).
RL(4) o & c.
RP 2d, 3d.
RW(1) open. Pattern: 5b.

Observations: sherds, few flints. Area 60m. x 50m. Cultivated. Site cut by road; no section with debris visible. Visited: 28.5.71, 9.10.71.

15. Peyia Ayios Georghios Island

XLIV:7 VD372623

Reported: A. Westholm.

Reference: Gunnis 1936, 351.

Material: CM.1933/I-5/1; 1933/XI-20/12-13; CS.1842.
CM. & CS. Stone: 1a(1 and frags.).
Flint: (33 approx.) a(13, some+u).
Pottery: C 2e.
CR/C(3) 3b.
RL(?3+).

Observations: sherds, flints, stone implements. Area 100m. x 70m. Uncultivated plateau with scrub. Visited: 22.8.71.

PAPHOS DISTRICT

16. Polis Koilades

XXVI:51 VD4877

Reported: CS.1960 (53/53:10-11); no map reference.

Reference: Nicolaou 1967 no.32.

Material: CS.1282.
CS. Stone: None.
Flint: a+u(1).
Pottery: CR(2).
RL(14) 3b(2).
RW(?1).

Observations: locality visited. Exact location and extent not known. Visited: 16.9.72.

17. Polis Koilades cemetery

XXVI:51 VD4877

Reported: CS. 1960.

Reference: Nicolaou 1964, 177 and Pl.XVIII.

Area excavated: 1 tomb.

Material: CM.

Observations: locality visited. Exact location and extent not known. Visited: 16.9.72.

18. Polis Kokkina

XXVI:51 VD4877

Reported: CS. 1960 (53/53:10-11); no map reference.

Reference: Nicolaou 1967, no.30.

Material: CS.1267.
CS. Stone: 1.
Flint: None.
Pottery: C 2e.
CR/RW/RL present.

Observations: locality visited. Exact location and extent unknown. Visited: 16.9.72.

PAPHOS DISTRICT

19. Polis Pyrokremmos

XXVI:59 VD4877

Reported: CS. 1960 (53/53:10-11); no map reference.

Reference: Nicolaou 1967 no.31 and Pl.X.2.

Material: CS.1292.
CS. Stone: 1a, 1b.
Flint: a+u(1).
Pottery: C(1) 3b.
RL(52) o & c; 3d(3), 3df(3), 5ce, 5cf.
RW(9).

Observations: locality visited. Exact location and extent not known. Visited: 16.9.72.

20. Souskiou Vathirkakas

LII:33:7,8 VD620429

Reported: A. Wilson 1951 (28/51:26; 166/38:65).

References: Iliffe 1952, 50-51; Dikaios 1962, fig.1.

Material: CM.1951/XI-4/4; 1951/XI-15/3; 1953/XI-23/2; KM.; Oxford.
CM., KM., Oxford & visit. Stone: 1a(many), 1b, 1c(1), 2b, 3e, 4, 6a(2).
Flint: a(4; 1+r, 1+u).
Pottery: C present; 5a.
CR 2e.
RL 4cg.
RW 2c, 2f, 3b, 3bf. Patterns: 5c, 6a, 6b, 6c, 7ab, 8b.

Observations: sherds, flints, stone implements. Area 60m. x 40m. Uncultivated. Visited: 10.2.72.

PAPHOS DISTRICT

21. Souskiou Vathirkakas cemetery

LII:33:176 VD620428

Reported: J. Iliffe and T.B. Mitford 1951.

Excavated: (1) J. Iliffe and T.B. Mitford for University of St. Andrews and Liverpool Museums, 1951; (2) D. Christou for Dept. of Antiquities, 1972.

References: Iliffe 1952, 50-51; Nicolaou 1973, 432 & Pl.84a-c; Maier 1973, 193-4.

Area excavated: (1) 3 graves; (2) 1 grave; many others looted.

Material: Kouklia Museum; CM.; CS.1965-9.

Observations: large cemetery much looted; pit and shaft graves. For extent cf. published references. Visited: 8.10.71, 13.9.72.

22. Theletra Skales

XXXV:52 VD5064

Reported: Karageorghis 1960, 264; axes, chisels, painted pottery.

References: Karageorghis 1960, 264 and fig.34; Nicolaou 1967, no.77.

Material: PM.1383.
Not seen.

Observations: not visited.

PAPHOS DISTRICT

23. Trimithousa Ambelajia

XXXV:21/29 VD5270

Reported: P. Dikaios 1934.

Reference: Dikaios 1936, 75.

Material: CM.1934/XI-20/1-1a.
CM. Stone: 2a(1).
Flint: a+r, a+u.
Pottery: C 3e + chaff impression.
RL present.

Observations: locality visited. Exact location and extent unknown.
Visited: 14.9.72.

24. Yialia Appourkia

XXVI:22 VD5484

Reported: P. Dikaios 1934; locality given in CM. Inventory.

Reference: Dikaios 1936, 75.

Material: CM.1934/III-2/2; 1934/IV-29/2.
CM. Stone: None.
Flint: None.
Pottery: RL o & c; 3b(2), 5c.

Observations: no surface finds. Exact location and extent uncertain. Cultivated. Visited: 16.9.72.

FINDS PAPHOS DISTRICT

Pf.1 Amargeti
PM.1591 4 axes.

Pf.2 Androlikou Petrates Potamos
CM.1949/II-15/1 Neolithic implements.

Pf.3 Androlikou Ayios Mamas
PM.964 10 neolithic implements.
NB. Both Pf.2 and Pf.3 may derive from P.8 which is in the lands of Androlikou.

Pf.4 Dhrousha Ayios Kononas
CM.1946/V-11/4 One axe.
Reference: Nicolaou 1967, no.37 (under Akamas).

Pf.5 Dhrousha Ayios Serghios/Ayios Georghios
CM.1946/V-11/4 One axe.
CM.1934/XI-20/7 One axe.

Pf.6 Episkopi Morou Nerou Mandres
1944 One axe.

Pf.7 Inia Lefki
CM.1942/I-31/1 2 axes.

Pf.8 Kallepia Koilades
PM.1935 One axe.
Reference: Nicolaou 1966, 28.

Pf.9 Kato Arodhes Kalapios/Kalamos
CM.1953/IX-11/2 Axes, pestle.
Reported: C. Paraskeva 1953 (166/38:83); c. 3 miles NE. of Peyia Ayios Georghios at Kalapios, a pestle at spring; Kato Arodhes villagers handed in axes found in graves at Kalamos.

Pf.10 Kato Paphos Paralia, W. of lighthouse
PM.1793 One axe.
Reference: Nicolaou 1966, 28.

Pf.11 Kato Paphos Villa of Dionysos excavations
PM. Axes.

Pf.12 Kato Paphos Kaminia
PM. Axes.

Pf.13 Khoulou Vournoi
CM.1949/II-9/2 Stone macehead.

Pf.14 Kidhasi Ayia Mavri
PM.1503 Stone figurine.
References: Karageorghis 1963, 349 and fig.58; Nicolaou 1967, no.78.

PAPHOS DISTRICT

Pf.15 Kissonerga coast between Kissonerga and Peyia
CM.1937/V-27/5-6 Stone bowl fragment with ledge handle; fragment of bone tool(?).

Pf.16 Konia Vastaes
PM.1848-9 One axe, one grinder.
Reference: Nicolaou 1966, 28.

Pf.17 Kouklia E. of village
Axes (information from G. Ioannou).
Reference: Dikaios 1962, fig.1 (probably referring to these finds).

Pf.18 Lara between C. Drepanum and Lara
CM.1949/IV-19/1 One axe.

Pf.19 Lyso
CM.1944/IV-22/14 One stone chisel.
Reference: Nicolaou 1967, no.75.

Pf.20 Marona Ayios Savvas
Axes (information from G. Ioannou).

Pf.21 Mesakhorio Voulles
1955 Axes.
Reference: Dikaios 1962, fig.1.

Pf.22 Paphos Vasiliko
PM.239 One axe.

Pf.23 Peristerona
CM.1934/XI-20/2 3 axes.
Reference: Dikaios 1936, 75.

Pf.24 Peyia Ayios Georghios
CM.1953/IX-11/2 Axes.
Reported: C. Paraskeva 1953 (166/38:83); found in excavation of church of Ayios Georghios.
Reference: Dikaios 1962, fig.1 (probably) as Ayios Georghios.

Pf.25 Philousa
CM.1934/XI-20/3 2 axes, 3 pestles.
Reference: Dikaios 1936, 75.

Pf.26 Polemi
CM.1944/IV-22/9 One axe presented.
Reference: Nicolaou 1967, no.74.

Pf.27 Polis Latsi
CS.1298 (under Prodhromos Kambos) 3 axes, 1 pestle presented.
Reference: Nicolaou 1967, no.33.

Pf.28 Randhi Germanos
Axes (information from G. Ioannou).
Reference: Dikaios 1962, fig.1.

PAPHOS DISTRICT

Pf.29 Salamiou Anefani
CM.1959/XI-3/6 Stone cruciform figurine.
References: Karageorghis 1960, 245 and fig.2; Nicolaou 1967, no.76.

Pf.30 Simou
PM.1635 One axe, one chisel.

Pf.31 Souskiou Ayia Irini
PM.1005 Stone cruciform figurine handed in.

Pf.32 Souskiou Teratsoudhia
PM.1007 Stone cruciform figurine handed in.

Pf.33 Stroumbi Perispomeni
PM.1728/10-12 2 axes and axe fragment.

Pf.34 Terra
CM.1934/XI-20/6 1 pestle, axes.
Reference: Dikaios 1936, 75.

Pf.35 Trimithousa
CM.1944/IV-22/13 Cruciform figurine.

Pf.36 Yeroskipos Ierokipia
CM.1950/XII-14/1 3 axes, 1 fragment of stone vessel.
Reported: G. Eliades 1950 (166/38:64).
Reference: Dikaios 1962, fig.1.

Pf.37 Yialia Ayios Anargyros
1938 One axe.

Pf.38 Yiolou Rodies
1928 2 axes.
NB. These finds are probably from P.7 which is in locality Rodies across the Yiolou boundary.

APPENDIX 1. FINDS OF UNCERTAIN OR UNKNOWN PROVENANCE

Stone Implements

	One axe	Karpass Ohnefalsch-Richter 1889, Plate I, 252.
CM.1935/III-1/1	One axe	? Akamas
CM.1938/V-10/2	One axe	? Kakopetria Ailas
CM.1964/I-27/13	Stone chisel	M.Papacharalambou Collection.
PM.227	13 stone tools	
PM.1668	1 stone mortar	
PM.1670-1	2 axes	
PM.1802/1-4	Axes, chisels	
PM.1806	Hone	? Polis

Flint Implements

CM.1967/III-30/1	One knife	confiscated.

Pottery

BM.1898	Sherds from Kalavassos	BM. Cat. Vases Vol. Li., p.15, fig.23.

Figurines and Pendants

CM.1934/III-2/2	Figurine purchased	Pomos Kaminia Dikaios 1934, 14.
CM.1935/VI-19/1	Pendant purchased	Yialia Dikaios 1934, 16.
CM.1935	Stone pendant	Petrakides Collection.
CM.1935	3 stone pendants purchased at Erimi	Dikaios 1935b, 32.
CM.1944/V-15/1-2	Pendant and amulet presented	
CM.1945/VII-17/1	Terracotta head	Petrakides Collection.
CM.1947/XII-1/2	Stone figurine	" "
CM.1959/I-23/5	Stone figurine	" "
CM.1962/I-20/4	Stone pendant	" "
CM.1963/IV-20/39	Stone figurine	Hubbard Collection.
Pierides Coll. 1-2	2 stone figurines	"Erimi" Karageorghis 1973, 98.
Ashmolean 1963.65	Stone figurine	

Varia

CM.1963/X-17/1	Egyptian predynastic/ Dynastic stone jar presented	Arminou Peratzia

APPENDIX 2. FINDS OF UNCERTAIN DATE

1. CM.1934/II-4/4-8 Arpera Mosphili stone tools with RP sherds
   References: Nicolaou 1967, no.65; Catling 1963, EC.14.
2. CM.1935/I-13/2 Psemmatismenos stone tools with RP sherds
   References: Nicolaou 1967, no.66; Catling 1963, EC.136.
3. CM.1937/XI-16/1 Karmi Lapatsia one axe (?)
   cf. Catling 1963, EC.59.
4. CM.1938/II-14/1 Dhenia Vrysi Katharisti stone bowl fragments millstone, etc. with RP sherds
5. CM.1939/II-27/6 Anglisidhes Solia stone tools with RP sherds
   References: Nicolaou 1967, no.64; Catling 1963, MC.7
6. CM.1941/II-28/1 Akaki Gournes stone tools with sherds reported as Bronze Age
   Reference: Nicolaou 1967, no.39. Not in Catling 1963.
7. CM.1941/IV-29/1 Ayia Varvara one macehead
8. CM.1941/VI-3/1 Ayia Varvara 6 pieces of stone
   Ayia Varvara Mylos Machaira 1 tool, 1 chisel
9. CM.1945/VI-30/1 Famagusta south ramparts prehistoric marble cruciform object
10. CM.1946/III-26/2 Loutros Lymbi stone pounder
    Reference: Nicolaou 1967, no.28.
11. CM.1946/III-29/5 Analiondas Kakasanka 1 flint, 1 stone ship
    Reference: Nicolaou 1967, no.58.
12. CM.1946/III-31/2 Analiondas Ayia Marina 1 stone weight
    Reference: Nicolaou 1967, no.59.
13. CM.1946/XII-24/2 Rizokarpaso Aphendrika Kirkis stone bowl fragment
14. CM.1949/VIII-10/1 Ayios Georghios Loutra one axe with RP sherds
    Reference: Catling 1963, EC.21.
15. 1949 Karavas 4-5 miles west of Kyrenia stone vessel fragment and sherds with grey core from cave near sea
16. CM.1952/III-10/1 Kalogrea Paleoglisia green stone object purchased
17. CM.1952/VIII-2/2 Vouno andesite bowl purchased
18. CM.1953/XII-11/4 Letymbou Kallepia macehead, 2 PW sherds
19. CM.1957/VII-24/4 Peristerona Litharounda stone mortar
20. CM.1958/V-16/4 Ayia Kebir Dashli Yaka andesite tray with handles
21. CS.307 Kyra Kephalia stone vessel fragment, 1 flint, 7 plain weathered sherds
22. CM.1962/XII-20/4 Ayios Iakovos Melia stone vessel
23. CM.1968/VII-12/1 7½ miles east of Kyrenia flints

APPENDIX 3. CONCORDANCE OF SITE NAMES

A. Sites reported without village names

Reported	Village	Catalogue
Akamas Ayios Kononas	Drousha	Pf.4
Akamas Ayios Serghios	Dhrousha	P.1, Pf.5
Akamas Exosirontes	Neokhorio	P.10
Akamas Loutra tis Aphroditis	Neokhorio	P.12
Apostolos Andreas Monastery	Rizokarpaso	F.8
Cape Andreas Kastro	Rizokarpaso	F.9
Ayii Anargyroi	Miliou	P.7
Kyrenia 14-15 mile of Nicosia road	Kyrenia Pano	K.27
26 miles east of Kyrenia	Akanthou	F.2
Lara promontory	Kato Arodhes	P.2
Petra tou Limniti	Limnitis	N.20
Phyleri cave	Kythrea	N.19
Troulli	Klepini	K.23

B. Sites reported under different village names

Reported	Village	Catalogue
Ayia Marina Xyliatou Perasma tis Batheanes	Kato Moni	N.7
Ayia Marina Xyliatou Stavros tis Koundi	Arounda	N.25
Kiti Arpera	Tersephanou	La.21
Kiti Pyrgos	Perivolia	La.15
Ktima Kato Perivolia	Paphos	P.14

Mari Tenta (in the lands of Kalavassos) and Phlamoudhi Lakkos (in the lands of Akanthou) retain their published names. The ceramic site near Mari Tenta is distinguished as Kalavassos Kaoukkos.

C. Sites on published distribution maps

(1) Dikaios 1961, Plate 1.

Name on map	Catalogue or comment
Anayia	Nf.2
Androlikou	Pf.2, 3
Ayii Anargyroi	Miliou P.7
Ayia Marina	Kato Moni N.7
	Orounda N.25
Ayios Georghios	Appendix 2
Ayios Georghios (Peyia)	Pf.24
Site Galata	Liveras K.32
Kormakiti	Kf.24
Site Kornos	Kormakiti K.24
Ktima	Paphos P.14
Liveras	Kf.33
Nisi tou Ayiou Georgiou	no known site*
Pomos	Appendix 1
Toumba	Ayios Epiktitos K.8
Xylomandra	Ayios Epiktitos K.9

* The island of Ayios Georghios off the north coast of the Akamas peninsula is only a score of square metres in area; probably an error for the island of the same name off the coast near Peyia where a site is confirmed (P.15).

(2) Nicolaou 1967, Figure 2

Name on map	Catalogue or comment
Akaki	Appendix 2
Alakati	no neolithic reported
Analiondas	Appendix 2
Anglisidhes	Appendix 2
Aphentika	Ff.14
Ayios Chrysostomos	Kf.25
Onisia	bones only reported (CS.738)
Orounda	Nf.15
Platymmatis	Ayios Amvrosios K.4
Psemmatismenos	Appendix 2
Valia	Ff.3

CATALOGUE ADDENDUM (1975)

Since the Catalogue was completed in its present form (1974) the following information is particularly relevant. From records filed with the Department of Antiquities in Nicosia, it is clear that the site Kalavassos Pamboules (La.6) is on the same spot as Mari Tenta (La.12) (S. Hadjisavvas, personal communication, 1975). In the Catalogue the ceramic finds from Pamboules were given separate status as Kalavassos Kaoukkos (La.2), since the fact that these two sites were the same was not apparent from Dikaios' descriptions. The site of Kalavassos Kokkinoyi (La.3) should now be identified with the map reference given in the Catalogue to Pamboules, and the separate status of La.3 as a site should be dropped. It should therefore be omitted from Fig. 6.6 and from the discussion of Exemplar 4, the gist of which is not however seriously affected by this re-interpretation.

Secondly, it seems that the Anoyira site (Li.1), based on Museum Inventory entries, should be identified with the site Anoyira Trapezi (Catling 1963, EC. 13) as the "Philia Culture" site referred to by Dikaios. The details in Catling (1963) should therefore be added to this Catalogue entry, with the map reference VD 7641, on the basis of the locality Trapezi recorded on the 1:25,000 map series and fulfilling the description given in Catling.

Although most of the stone objects are not identified as to material, the description of some as "picrolite" or "steatite" is only tentative in the light of the discussion in Chapter 6.4.2.

The published references in Catalogue entries N.2 and N.6 should read, respectively, Lehavy 1974 and Morrison and Watkins 1974, and not as there given.

REFERENCES

Abbreviations:

AJA	American Journal of Archaeology
AR	Archaeological Reports
ARDA	Annual Report of Director of Antiquities (Cyprus)
BCH	Bulletin de Correspondance Hellenique
JHS	Journal of Hellenic Studies
JRS	Journal of Roman Studies
PPS	Proceedings of the Prehistoric Society
RDAC	Report of Department of Antiquities Cyprus

Angel, J.L. 1953. The Human Remains from Khirokitia. Appendix II in Dikaios 1953: 416-430.

Angel, J.L. 1961. Neolithic Crania from Sotira. Appendix I in Dikaios 1961a: 223-229.

Angel, J.L. 1971. Early Neolithic Skeletons from Catal Hüyük: Demography and Pathology. Anatolian Studies 21:77-98.

Astrom, P. 1966. Excavations at Kalopsidha and Ayios Iakovos in Cyprus. Studies in Mediterranean Archaeology 2. LUND.

Bagnall, P.S. 1959. The Geology and Mineral Resources of the Pano Lefkara - Larnaca Area. Mem. Geo. Surv. Dept. no. 5. LONDON.

Balfet, H., Lafuma, H., Longuet, P. and Terrier, P. 1969. Une invention néolithique sans lendemain. Vaisselles pré-ceramiques et sols enduits dans quelques sites du Proche-Orient. Bull. Soc. Préhist. France 66:188-192.

Bar-Yosef, O. n.d. The Prehistory of Gebel Mughara, Northern Sinai. Qedem 6 (forthcoming).

Bate, D.M.A. 1906. The Pigmy Hippopotamus of Cyprus. Geological Mag. 5. vol. 3:241-245.

Bear, L.M. 1963. The Mineral Resources and Mining Industry of Cyprus. Geol. Survey Bulletin no. 1. NICOSIA.

Bear, L.M. and Morel, S.W. 1960. The Geology and Mineral Resources of Agros-Akrotiri Area and Apsiou-Akrotiri Area. Mem. Geo. Survey Dept. 7. NICOSIA.

Bellamy, C.V. and Jukes-Browne, A.J. 1905. The Geology of Cyprus. NICOSIA.

Benson, J.L. 1969. Bamboula at Kourion. The Stratification of the Settlement. RDAC 1969: 1-28.

Benson, J.L. 1970. Bamboula at Kourion. Supplementary Remarks on Stratification. RDAC 1970: 25-74.

Binford, L.R. 1965. Archaeological Systematics and the Study of Culture Process. American Antiquity 31:203-210.

Binford, L.R. 1971. Mortuary Practices: their study and potential. in Social Dimensions of Mortuary Practices (ed. J.A. Brown). Mem. Soc. Am. Arch 25:6-29.

Boekschoten, G.J. and Sondaar, P.Y. 1972. On the Fossil Mammalia of Cyprus. Proc. Koninkl. Akad. van Wetensch. B.75, 4:306338.

Braidwood, R.J. and Willey, G.R. eds., 1962. Courses toward Urban Life. EDINBURGH.

Buchholz, H.-G. 1969. Birth of a Civilization. Archaeologia Viva 2, no.3:19-28.

Buchholz, H.-G. 1971. Das Präkeramische Neolithikum vom Kap Andreas, Zypern. Archaeologischer Anzeiger 86:493-504.

Burdon, D.J. 1951a. Some Relationships between Geology and Topography in Cyprus. NICOSIA.

Burdon, D.J. 1951b. The Relationship between Erosion of Soil and Silting of Reservoirs in Cyprus. J.Inst.Water Engineers 5, no.7.

Burleigh, R. 1974. Radiocarbon dating: Some practical considerations for the Archaeologist. J. Archaeological Science 1:69-87.

Burleigh, R., Switsur, V.R. and Renfrew, A.C. 1973. The Radiocarbon Calendar Recalibrated too soon? Antiquity 47:309-317.

Burnham, P. 1973. The Explanatory Value of the Concept of Adaptation in Studies of Culture Change, in The Explanation of Culture Change (ed. A.C. Renfrew):93-102. LONDON.

Butzer, K.W. 1975. Patterns of Environmental Change in the Near East during late Pleistocene and early Holocene times. MS. (in press).

Catling, H.W. 1963. Patterns of Settlement in Bronze Age Cyprus. Opuscula Atheniensia 4:129-169.

Catling, H.W. 1964. Cypriot Bronzework and the Mycenaean World. OXFORD.

Catling, H.W. 1966. Cyprus in the Neolithic and Bronze Age Periods. Fascicle no. 43 of Cambridge Ancient History, Rev. Ed., CAMBRIDGE.

Catling, H.W. 1973. Observations on the archaeological Survey in the Area of Phlamoudhi, Cyprus. RDAC 1973:107-115.

Cauvin, J. 1972. Religions néolithiques de Syro-Palestine. PARIS.

Cawley, A. 1947. Water Supply in Cyprus: Some Aspects of Water Control. in Proceedings of a Conference on Land Use in a Mediterranean Environment. 14-17. NICOSIA.

Childe, V.G. 1953. Review of Dikaios (1953). Antiquity 27:246-248

Christodoulou, D. 1959. The Evolution of the Rural Land Use Pattern in Cyprus. World land use survey monograph 2. BUDE.

Clarke, D.L. (ed.) 1972. Models in Archaeology. LONDON.

Clarke, D.L. 1972. Models and paradigms in contemporary archaeology. in Clarke, D.L. ed. 1972:1-60.

Clarke, D.L. 1973. Archaeology : the loss of innocence. Antiquity 47:6-18.

Cobham, C.D. ed. 1908. Excerpta Cyprla. CAMBRIDGE.

Contenson, H.de. 1966. Notes on the Chronology of the Near Eastern Neolithic. Bull.Am.Sch.Orient.Res. 184:2-6.

Contenson, H.de. 1967. 3e campagne à Tell Ramad, 1966. Rapport préliminaire. Ann.Arch. de Syrie 17:17-24.

Contenson, H.de. 1971. Tell Ramad, a village of Syria of the 7th and 6th millennium B.C. Archaeology 24:278-285.

Contenson, H.de. 1973. Chronologie absolue de Tell Aswad (Damascène, Syrie). BullSoc.Préhist. France 70:253-255.

Cook, J.M. Archaeology in Greece.
1946. JHS 66:108-121.
1947. " 67:34-45.
1950. " 70:1-15.

Copeland, L. 1969. Neolithic village sites in the South Beqaa, Lebanon. Mélanges de l'université Saint-Joseph 45:135-145.

Courtois, L. 1970. Note préliminaire sur l'origine des différentes fabriques de la poterie du Chypriote Récent. RDAC 1970:81-5.

Courtois, L. 1971. Description Physico-Chemique de la céramique ancienne: la céramique de Chypre au Bronze Récent. Thèse. Université de Clairmont.

Cowgill, G.L. 1972. Models, methods and techniques for seriation. in Clarke 1972 (ed.): 381-424.

Crawford, O.G.S. 1935. A Primitive Threshing-Machine. Antiquity 9: 335-39.

David, N. 1972. On the Life-span of Pottery, Type Frequencies and Archaeological Inference. American Antiquity 37:141-2.

Davidson, D.A. 1973. Particle Size and Phosphate Analysis - evidence for the evolution of a tell. Archaeometry 15, 1: 143-152.

Davidson, D.A. 1974. The geomorphological evolution of a tell. Paper presented to Symposium on Sediments in Archaeology, Southampton.

Deevey, E.S., Flint, R.F. and Rouse, I. 1967. Radiocarbon Measurements Comprehensive Index. 1950-1965. YALE.

Denham, H.M. 1964. The Eastern Mediterranean. A Sea-Guide to its Coasts and Islands. LONDON.

Deshayes, J. 1966. Review of Catling (1966). Revue des études grecques 79:499-501.

Dikaios, P. 1934. Other Researches in the Neolithic Culture of Cyprus. RDAC 1934:6-7.

Dikaios, P. 1934. Two Neolithic Steatite Idols. RDAC 1934:16.

Dikaios, P. 1935a. Some Neolithic Sites in Cyprus. RDAC 1935:11-13.

Dikaios, P. 1935b. Recent Acquisitions of the Cyprus Museum. RDAC 1935:23-33.

Dikaios, P. 1936. The Excavations at Erimi, 1933-1935: Final Report. RDAC 1936:1-81 (1938).

Dikaios, P. 1938. The Excavations at Vounous-Bellapais in Cyprus, 1931-32. Archaeologia 88:1-174. (1940).

Dikaios, P. 1940. New Light on Prehistoric Cyprus. Iraq 7:69-83.

Dikaios, P. 1945. Archaeology in Cyprus, 1939-45. JHS 65:104-105.

Dikaios, P. 1946. A New Chapter in the Long Island Story of Cyprus: wartime discoveries of the earliest copper age. ILN 2 March:244-246.

Dikaios, P. 1947. A Guide to the Cyprus Museum, NICOSIA. 2nd., rev.ed. 1953; 3rd., rev.ed. 1961.

Dikaios, P. 1948. Trial excavations at Sotira, site Teppes on behalf of the University Museum Cyprus Expedition. Bull. Univ. Mus. Pennsylvania 13, 3:16-23.

Dikaios, P. 1952. Excavations at Sotira, 1951. Bull. Univ. Mus. Pennsylvania 17, 1:49-58.

Dikaios, P. 1953. Khirokitia. OXFORD.

Dikaios, P. 1960. A Conspectus of Architecture in Ancient Cyprus. Kypriakai Spoudai 24:1-30.

Dikaios, P. 1961a. Sotira. PHILADELPHIA.

Dikaios, P. 1961b. Archaeology in Cyprus 1959-61. Arch. Reports 1961-2:32-46.

Dikaios, P. 1962. The Stone Age. in The Swedish Cyprus Expedition Vol. IV, Part Ia. LUND.

Dikaios, P. n.d. Field Notebooks of Trial Excavations. Unpublished.

Ducloz, C. 1968. Les Formations quaternaires de la région de Klépini (Chypre) et leur place dans la chronologie du Quaternaire méditérranéen. Archives des Sciences (GENEVE): 123-196.

Dunand, M. 1961. Rapport préliminaire sur les fouilles de Byblos en 1957. Bull. Mus. Beyrouth 16:69-73.

Dunand, M. 1973. Fouilles de Byblos. Tome V. PARIS.

Dunnell, R.C. 1970. Seriation Method and its Evaluation. American Antiquity 35:305-319.

Gjerstad, E. et al. 1934. The Swedish Cyprus Expedition. Finds and Results of the Excavations in Cyprus. 1927-1931. Volume I. STOCKHOLM.

Golson, J. 1965. Some Considerations of the Role of Theory in New Zeland Archaeology. N.Z.A.A.S. Newsletter 8:75-92.

Goudie, A. 1973a. Duricrusts in Tropical and Subtropical Landscapes. OXFORD.

Goudie, A. 1973b. The Geomorphic and Resource Significance of Calcrete. in Progress in Geography 5:77-118.

Groube, L.M. 1967. Models in Prehistory: a consideration of the New Zealand evidence. Arch. and Phys. Anthr. Oceania 2:1-27.

Gunnis, R. 1936. Historic Cyprus. LONDON.

Harris, D.R. 1972. Swidden Systems and Settlement, in Man, Settlement and Urbanism. (eds. P.J. Ucko, R. Tringham, and G.W. Dimbleby): 245-262. LONDON.

Hennessy, J.B. 1974. Cyprus in the Early Bronze Age. in The Cypriot Bronze Age (ed. J. Birmingham). Australian Studies in Archaeology No. 1 (1973). 1-9. SYDNEY.

Henry, D. and Servello, F. 1974. Compendium of C-14 Determinations derived from Near Eastern prehistoric sites. Paléorient 2, 1:19-44.

Henson, F.R.S., Browne, R.V., and McGinty, J. 1949. A Synopsis of the Stratigraphy and Geological History of Cyprus. Quart. J. Geol. Soc. 105:1-41.

Hjörtsjö, C-H. 1947. To the Knowledge of the Prehistoric Craniology of Cyprus. LUND.

Hookings, P. 1963. Ceramic Style in Prehistoric Cyprus. Man 63: 65-68.

Hodder, L. 1975. Regression analysis of some trade and marketing patterns. World Archaeology 6, 2:172-189.

Hoffman, M.A. 1972. Process and Tradition in Cypriot Culture History: Time theory in Anthropology. Anthropological Quarterly 45:15-34.

Holmboe, J. 1914. Studies on the Vegetation of Cyprus. Bergens Museums Skrifter. BERGEN.

Horowitz, A. 1968. Upper Pleistocene-Holocene Climate and Vegetation of the Northern Jordan Valley. Geological Survey of Israel. JERUSALEM.

Hsü, K.J., Ryan, W.B.F., and Cita, M.B. 1973. Late Miocene Dessication of the Mediterranean. Nature 242:240-4.

Hughes, I. 1973. Stone Age Trade in the New Guinea Inland. in H. Brookfield, ed. The Pacific in Transition, Geographical Perspectives on Adaptation and Change. 97-126. LONDON.

Iliffe, J.H. 1952. Excavations at Kouklia (Old Paphos). Liverpool Bulletin 2, 29-66.

Immerwahr, S. 1971. The Athenian Agora. The Neolithic and Bronze Ages. PRINCETON.

Johnson, L., Jr. 1972. Introduction to Imaginary Models for Archaeological Scaling and Clustering. in Clarke (ed.) 1972: 309-380.

Jones, D.K., Merton, L.H.F., Poore, M.E.D. and Harris, D.R. 1958. Report on Pasture Research, Survey and Development in Cyprus. NICOSIA.

Karageorghis, V. 1940-8. Finds from Early Cypriot Cemeteries. RDAC 1940-8: 115-152. (1958).

Karageorghis, V. Chronique des fouilles et découvertes archéologiques à Chypre.
1959. BCH 83:336-361.
1960. " 84:242-299.
1961. " 85:256-315.
1962. " 86:327-414.
1963. " 87:325-387.
1964. " 88:289-379.
1965. " 89:231-300.
1966. " 90:297-389.
1967. " 91:275-370.
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1969. " 93:431-569.
1970. " 94:191-300.
1971. " 95:335-432.
1972. " 96:1005-1090.
1973a. " 97:601-689.
1974. " 98:821-896.

Karageorghis, V. 1964. A Late Cypriote Tomb at Angastina. RDAC 1964:1-27.

Karageorghis, V. 1968a. Notes on a Late Cypriot Settlement and Necropolis near the Larnaca Salt Lake. RDAC 1968:1-11.

Karageorghis, V. 1968b. Cyprus. Archaeologia Mundi. GENEVA.

Karageorghis, V. 1973b. Cypriote Antiquities in the Pierides Collection Larnaca Cyprus. ATHENS.

Kenyon, K.M. 1957. Digging Up Jericho. LONDON.

Kirkbride, D. 1969. Early Byblos and the Beqaa. Mélanges de l'université Saint-Joseph 45:45-60.

Koucky, F.L. and Bullard, R.C. 1974. The Geology of Idalion. in Stager, L.E. et al.:11-25.

Kozloff, B. 1974. A Brief Note on the Lithic Industries of Sinai. Museum Haaretz Yearbook 15-16:35-49.

Leblanc, S. 1971. An Addition to Naroll's Suggested Floor Area and Settlement Pattern Relationship. American Antiquity 36:210-211.

Le Brun, A. 1971. Cap Andréas prospection. MS.

Le Brun, A. 1974. Cap Andréas Kastros. Rapport préliminaire 1970-1972. RDAC 1974: 1-23.

Lechevallier, M. and Dollfuss, G. 1973. Nouveaux sites du VI^e millénaire en Haute-Galilée. Eretz-Israel 11:9-21.

Lehavy, Y.M. 1974. Excavations at Neolithic Dhali - Agridhi. Part 1. Excavation Report. in Stager, L.E. et al.:95-102.

MacArthur, R.H. 1967. The Theory of Island Biogeography.

Maier, F.G. 1969. The Cemeteries of Old Paphos. Archaeologia Viva 2, no.3:116-120.

Maier, F.G. 1973. Excavations at Kouklia (Palae-Paphos). Sixth Preliminary Report: Seasons 1971 and 1972. RDAC1973: 186-201.

Maier, F.G. 1974. Excavations at Kouklia (Palaepaphos) 1973 with appendix: the Kouklia sanctuary. RDAC 1974:132-146.

Manglis, C.P. 1953. Notes on Petrographic Examination of the Stone Objects. in Dikeios 1953:441.

Marks, A.E. 1971. Settlement Patterns and Intrasite Variability in the Central Negev, Israel. Amer. Anthropologist 73:1237-1244

McNutt, C.H. 1973. On the Methodological Validity of Frequency Seriation, American Antiquity 38:45-60.

Megaw, A.H.S. 1951. Archaeology in Cyprus 1949-50. JHS 71:258-260.
1952. " " " 1951. " 72:113-117.
1954. " " " 1953. " 74:172-176.
1955. " " " 1954. " 75:28-34.
1958. " " " 1957. AR 1957:43-50.

Meighan, C.W. 1959. A New Method for the Seriation of Archaeological Collections. American Antiquity 25:203-211.

Mellaart, J. 1964. Excavations at Catal Hüyük, 1963. Anatolian Studies 14:39-119.

Mellaart 1965. Earliest Civilizations of the Near East. LONDON.

Mellaart, J. 1974. Note on Cypriote Early Bronze Age Chronology. RDAC 1974:38-42.

Merrilees, R.S. 1966. Finds from Kalopsidha Tomb 34. in Astrom 1966:31-35.

Merrilees, R. 1974. Review of J.L. Benson, Bamboula at Kourion. The Necropolis and Finds. AJA 78, 3:302.

Milliman, J.D. and Emery, K.D. 1968. Sea-Levels during the Past 35,000 Years. Science 162:1121.

Mitford, T.B. 1939. Milestones in Western Cyprus. JRS 29:184-198.

Mitford, T.B. 1966. Three Milestones of Western Cyprus. AJA 70: 89-99.

Moores, E.M. and Vine, F.J. 1971. The Troodos Massif, Cyprus and other Ophiolites as Oceanic Crust: evaluation and Implications. Phil. Trans. Roy. Soc. A. 268:443-466.

Morrison, I.A. and Watkins, T.F. 1974. Kataliondas - Kourvellos: A Survey of an Aceramic Neolithic Site and its Environs in Cyprus. Palestine Exploration Quarterly Jan.-June: 67-75.

Mueller, J.W. 1974. The Use of Sampling in Archaeological Survey. Mem. Soc. Am. Arch. 28.

Myres, J.L. 1897. Excavations in Cyprus in 1894. JHS 17:134-173.

Myres, J.L. and Ohnefalsch-Richter, M. 1899. A Catalogue of the Cyprus Museum. NICOSIA.

Nandris, J.G. 1970. The Development and Relationships of the Earlier Greek Neolithic. Man 5,2:192-213.

Naroll, R. 1962. Floor Area and Settlement Pattern. American Antiquity 27:587-8.

Neev, D. and Emery, K.O. 1967. The Dead Sea. Geological Survey of Israel, Bull. 41. JERUSALEM.

Nicolaou, K. 1964. Anaskaphi taphon eis Marion. RDAC 1964:131-185.

Nicolaou, K. 1966. Archaeology in Cyprus 1961-6. AR 1965-6:27-43.
1969. Archaeology in Cyprus 1966-9. AR 1968-9:40-54.

Nicolaou, K. 1967. The Distribution of Settlements in Stone Age Age Cyprus. Kypriakai Spoudai 31:37-52.

Nicolaou, K. 1973. Archaeological News from Cyprus, 1972. AJA 77:425-433.

Noy, T., Legge, A.J. and Higgs. E.S. 1973. Recent Excavations at Nahal Oren, Israel. PPS 39:75-99.

Ohnefalsch-Richter, M. 1889. Ledrai-Lidir and the Copper-Bronze Age. Journal of Cyprian Studies I:1-9.

Osmond, D.A. 1954. Report on some Cyprus Soils. LONDON.

Ostlund, H.G. 1957. Stockholm Natural Radiocarbon Measurements I. Science 126:493-497.

Ostlund, H.G. 1959. Stockholm Natural Radiocarbon Measurements II. Radiocarbon I:43.

Ostlund, H.G. and Engstrand, L.G. 1960. Stockholm Natural Radiocarbon Measurements III. Radiocarbon 2:193-194.

Ottaway, B. 1973. Dispersion Diagrams: a new approach to the display of Carbon-14 dates. Archaeometry 15:5-12.

Pantazis, Th. 1967. Pleistokainikai Thalassiai Anabathmides tis Notiou Kyprou. Elleniki Geol. Etairia (reprint).

Peltenburg, E.J. 1972. Interim Report on the Excavations at Ayios Epiktitos Vrysi in 1969 and 1971. RDAC 1972: 1-14.

Pereira, H.C. 1973. Land Use and Water Resources. CAMBRIDGE.

Perrot, J. 1968. Préhistoire palestinienne. Supp. Dict. de la Bible 43. PARIS.

Perrot, J. 1969. Le "Néolithique" du Liban et les récentes découvertes dans la Haute et Moyenne Vallée du Jourdain. Mélanges de l'Université Saint-Joseph 45:135-145.

Phillips, P.J. 1971. Archaeological Survey in the Lower Yazoo Basins, Mississippi, 1949-55. Papers of the Peabody Museum 60.

Phillips, P.J., Ford, J.A. and Griffin, J.B. 1951. Archaeological Survey in the Lower Mississippi Valley, 1940-47. Papers of the Peabody Mus. of Am. Arch. and Ethnol. 25.

Quilici, L. 1971. Aghios Nikolaos: individuazione di un nuovo stanziamento calcolitico. Studi Ciprioti e rapporti di Scavo. SMEA. 173-192. (English Summary). ROME.

Raeburn, C. 1945. Water Supply in Cyprus. 2nd ed. NICOSIA.

Ralph, E.K., Michael, H.N. and Han, M.C. 1973. Radiocarbon dates and Reality. MASCA Newsletter 9:1.

Rands, R.L. 1961. Elaboration and Invention in Ceramic Traditions. American Antiquity 26:331-340.

Read, H.H. 1962. Rutley's Elements of Mineralogy. 25th ed. LONDON.

Redman, C.L. and Watson, P.J. 1970. Systematic Intensive Surface Collection. American Antiquity 35:279-291.

Renfrew, A.C., Dixon, J.E. and Cann, J.R. 1968. Further Analyses of Near Eastern Obsidians. PPS 34:319-331.

Ronen, A. 1973. New Radiocarbon Dates from Mt. Carmel. Archaeology 26:60-62.

Rowe, J.H. 1962. Stages and Periods in Archaeological Interpretation. Southwestern Journal of Anthropology 18:40-64.

Ruppe, R.J. 1966. The Archaeological Survey: a defence. American Antiquity 31:181-188.

Russell, R. 1881. Report on the Existing Water Supply of the Island of Cyprus. LONDON.

Sahlins, M.D. 1974. Stone Age Economics. LONDON.

Schaeffer, C.F.A. 1936. Missions en Chypre 1932-35. PARIS.

Schaeffer, C.F.A. 1962. Ugaritica IV. PARIS.

Schumm, S.A. and Lichty, R.W. 1965. Time, Space and Causality in Geomorphology. American Journal of Science 268:110-119.

Schwartz, J.H. 1974a. Excavations at Neolithic Dhali - Agridhi. Part 2. Faunal List. in Stager, L.E. et al: 103-118.

Schwartz, J.H. 1974b. The Human Remains from Kition and Hala Sultan Tekke: a cultural interpretation. Appx. IV in Excavations at Kition, I. The Tombs (by V. Karageorghis): 151-162. NICOSIA.

Sheckleton, N.J. 1968. The Mollusca, The Crustacea, the Echinodermata. In Evans and Renfrew 1968: 122-138.

Shawcross, W. 1969. Archaeology with short, isolated time-scale. World Archaeology I, 2:184-199.

Shotton, F.W., Blundell, D.J. and Williams, R.E.G. 1969. Birmingham University Radiocarbon Dates III. Radiocarbon II: 263-270.

Shotton, R.W. and Williams, R.E.G. 1971. Birmingham University Radiocarbon Dates V. Radiocarbon 13: 141-156.

Sieber, R. 1973. Art and History in Ghana. in Primitive Art and Society. (ed. A. Forge): 70-96. LONDON.

Singh, P. 1974. Neolithic Cultures of Western Asia. LONDON.

Stager, L.E., Walker, A. and Wright, G.E. edd. 1974. American Expedition to Idalion, Cyprus. First Preliminary Report; Seasons of 1971 and 1972. Supp. to BASOR no. 18. CAMBRIDGE.

Stanley Price, N.P. 1972a. A Prehistoric Survey of the Analiondas Region, RDAC 1972, 15-21.

Stanley Price, N.P. 1972b. P. Dikaios and the Development of Cypriot Prehistory. Kypriakai Spoudai 36:39-45.

Stanley Price, N.P. and Christou, D. 1973. Excavations at Khirokitia, 1972. RDAC 1973:1-33.

Stanley Price, N.P. 1975. On the Dating of Khirokitia in Cyprus. PPS 41:46-49.

Stekelis, M. 1961. The Flint Implements. Appendix 2 in Dikaios 1961a:230-234.

Stekelis, M. 1972. The Yarmukian Culture. JERUSALEM.

Stewart, J.R. 1957. The Melbourne Cyprus Expedition 1955. University of Melbourne Gazette 1[illegible], no.1:1-3.

Stewart, J.R. 1962. The Early Cypriot Bronze Age. The Swedish Cyprus Expedition, Vol. I, Part Ia:205-401. LUND.

Stewart, E. and Stewart, J.R. 1950. Vounous, 1937-8. LUND.

Stockton, E. 1968. Pre-Neolithic Remains at Kyrenia, Cyprus? RDAC 1968:16-19.

Strouhal, E. 1973. Five Plastered Skulls from Pre-Pottery Neolithic B Jericho. Anthropological Study. Paléorient 1, 2:231-247.

Symeonoglou, S. 1972. Archaeological Survey in the Area of Phlamoudhi, Cyprus. RDAC 1972:187-198.

Theocharis, D. ed. 1973. Neolithic Greece. ATHENS.

Thomas, D.H 1973. An Empirical Test of Stewart's Model of Great Basin Settlement Patterns. American Antiquity 38:155-176.

Trendall, A.D., Stewart, J.R. et al. 1948. Handbook to the Nicholson Museum. 2nd ed. SYDNEY.

Trigger, B.G. 1967. Settlement Archaeology - its goals and promise. American Antiquity 32:149-160.

Turner, W.M. 1971. Quaternary Sea-Levels of Western Cyprus. Quaternaria 15:197-202.

Vagnetti, L. 1974. Preliminary Remarks on Cypriote Chalcolithic Figurines. RDAC 1974:24-34.

Vayda, A.P. and Rappaport, R.A. 1963. Island Cultures, In Man's Place in the Island Ecosystem (ed. F.R. Fosberg): 133-142. HONOLULU.

Vita-Finzi, C. 1969. The Mediterranean Valleys. CAMBRIDGE.

Vita-Finzi, C. 1973a. Palaeolithic Finds from Cyprus? PPS 39: 453-454.

Vita-Finzi, C. 1973b. Recent Earth History. LONDON.

Waechter, J. 1953. A Comparison between the Flint Implements of Khirokitia and Erimi, Appx. 1A in Dikaios 1953: 414-415.

Wagley, C. 1969. Cultural Influences on Population: a comparison of two Tupi tribes. in Environment and Cultural Behaviour (ed. A.P. Vayda): 268-280. NEW YORK.

Waterbolk, H.T. 1971. Working with Radiocarbon Dates. PPS 37, 2: 15-33.

Watkins, T.F. 1969. The First Village Settlements. Archaeologia Viva 2, no.3: 29-38.

Watkins, T.F. 1970. Philia-Drakos Site A: Pottery, Stratigraphy, Chronology. RDAC 1970:1-9.

Watkins, T.F. 1972. Cypriot Neolithic Chronology and the Pottery from Philia-Drakos A. Proceedings of the 1st. International Congress of Cypriot Studies, Volume I. NICOSIA.

Watkins, T.F. 1973. Some Problems of the Neolithic and Chalcolithic Period in Cyprus. RDAC 1973:34-61.

Whallon, R. 1972. A New Approach to Pottery Typology. American Antiquity 37:13-33.

Willey, G.R. ed. 1956. Prehistoric Settlement Patterns in the New World. VFPA 23. NEW YORK.

Wong, H.K., Zarudzki, E.F.K., Philips, J.D. and Giermann, G.K.F. 1971. Some Geophysical Profiles in the Eastern Mediterranean Bull. Geol. Soc. Amer. 82:91-100.

Wright, G.A. and Gordus, A.A. 1969. Source Areas for Obsidian Recovered at Munhata, Beisamoun, Hazorea and El Khiam. Israel Explor. J. 19:79-88.

Zeuner, F.E. and Grosvenor,Ellis, A. 1961. Animal Bones. in Dikaios 1961a: 235-236.

Zohary, M. 1973. Geobotanical Foundations of the Middle East. Geobotanica Selecta, Vol. III. AMSTERDAM.

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- ○ aceramic site
- ● ceramic site
- ◉ aceramic and ceramic site
- ◓ rockshelter site
- ▲ cemetery
- ? exact location unknown
- s spring

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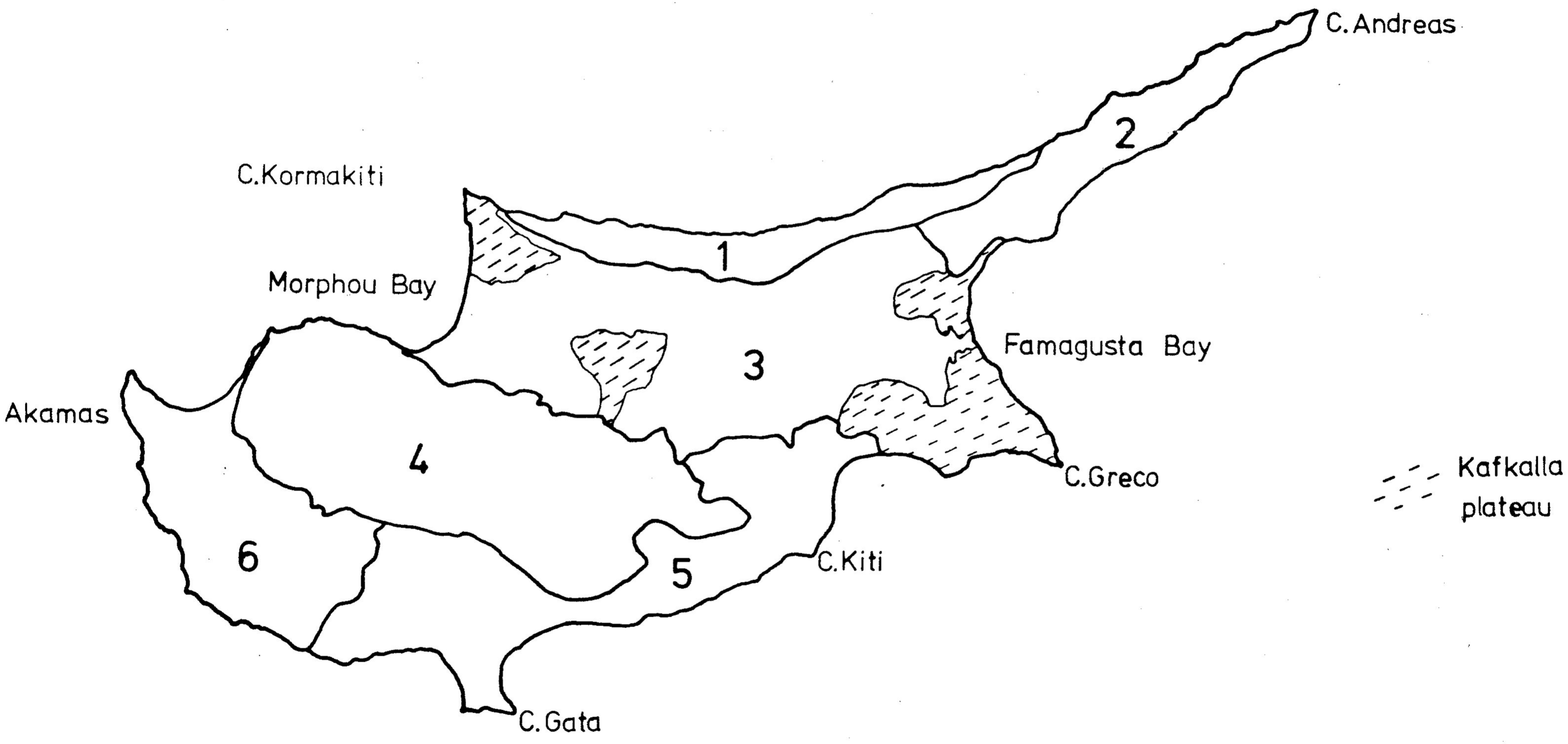
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In Rear Pocket:

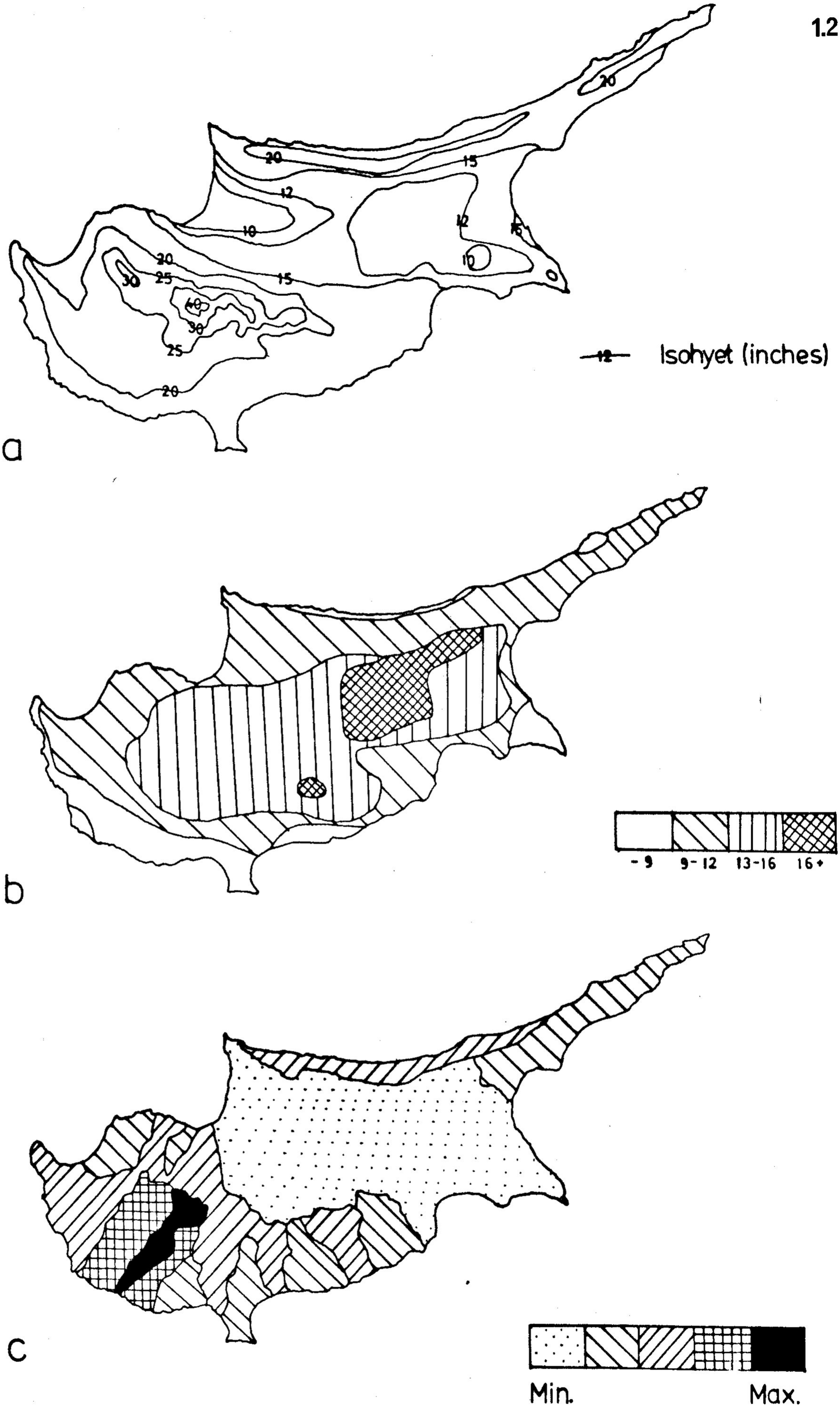
Folding Plan 1. Distribution of Neolithic Sites in Cyprus.

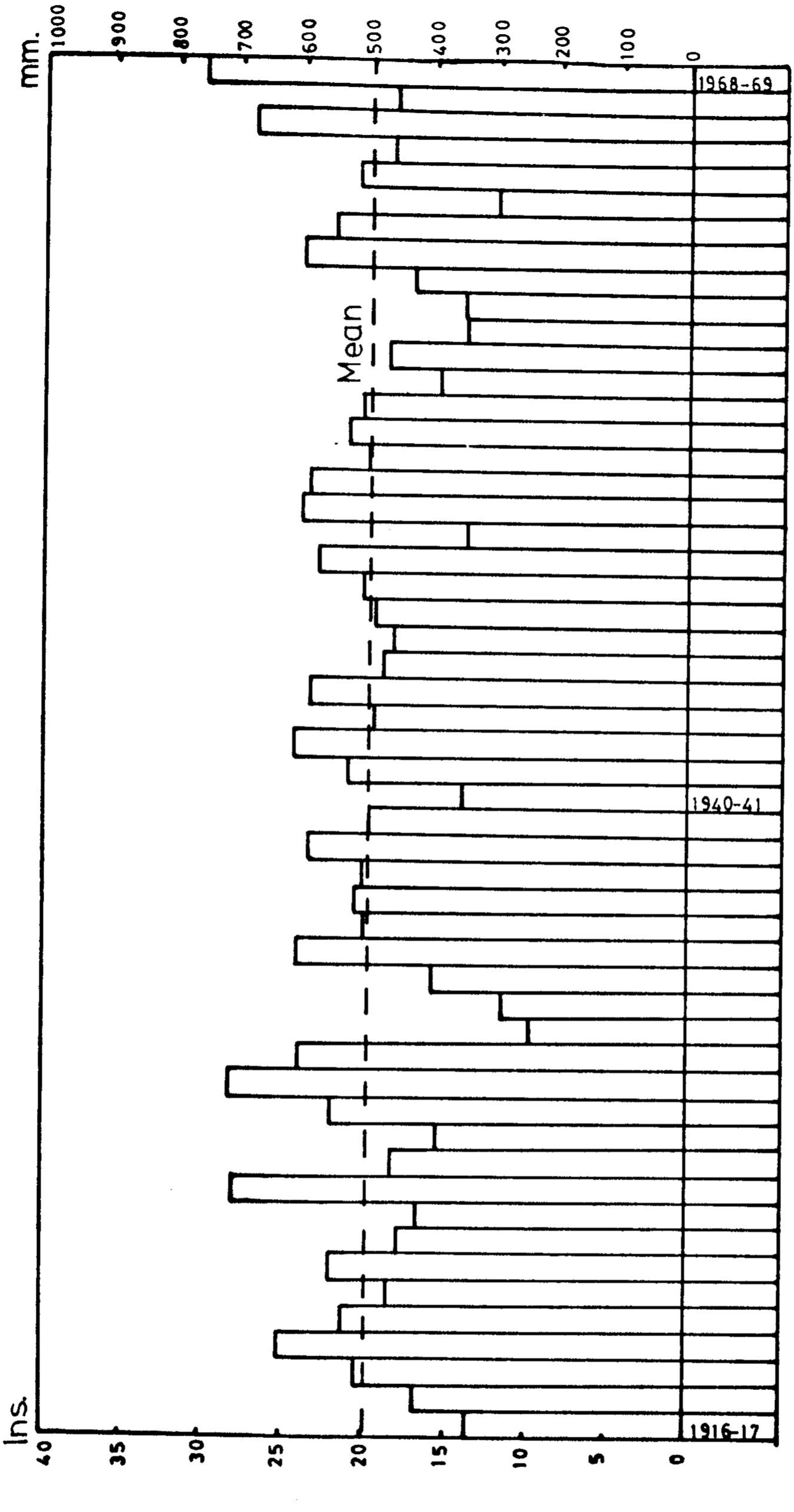
Folding Plan 2. Code for Material described in Catalogue.

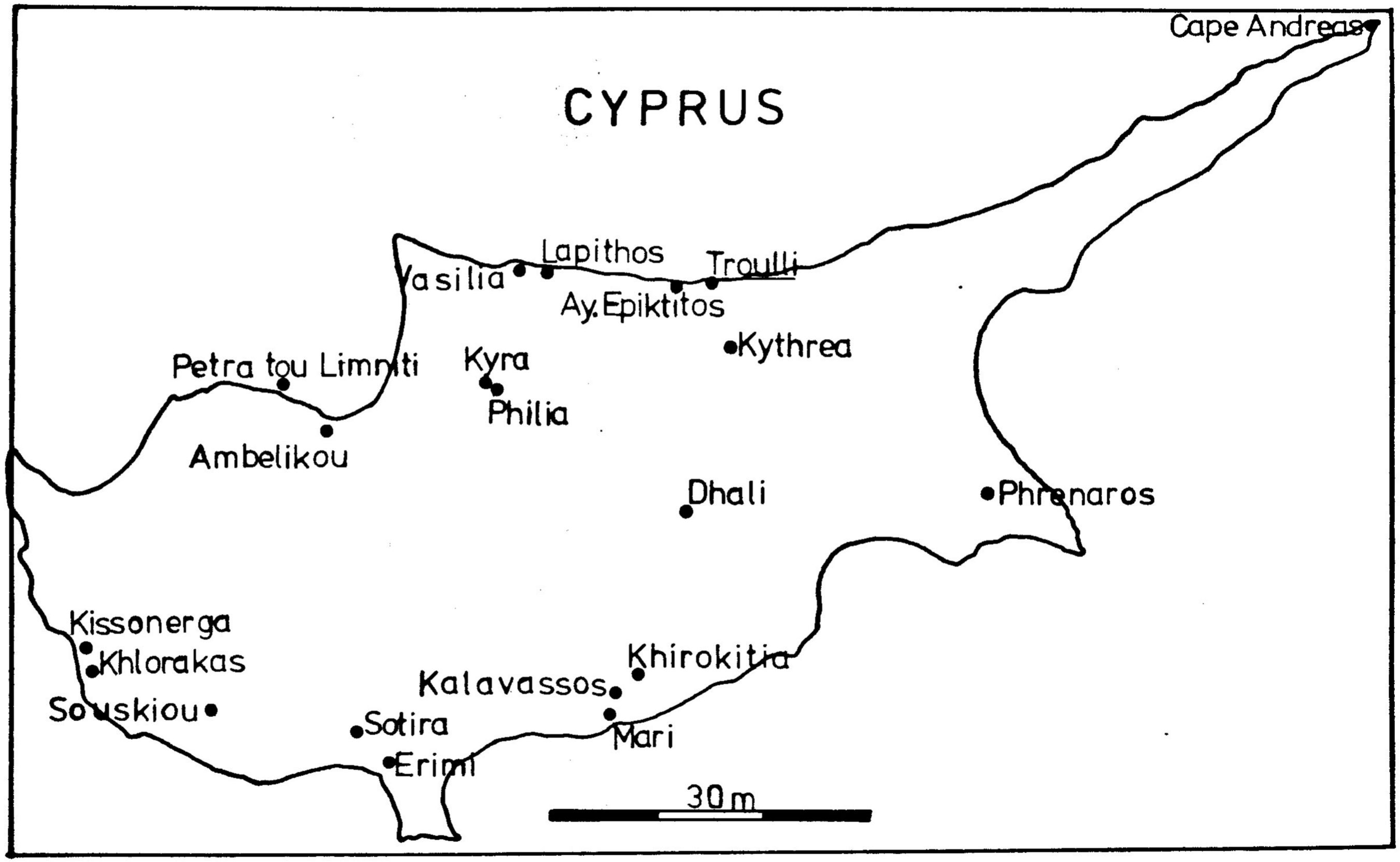
Overlay for Sotira Site Plans (Chapter 5).

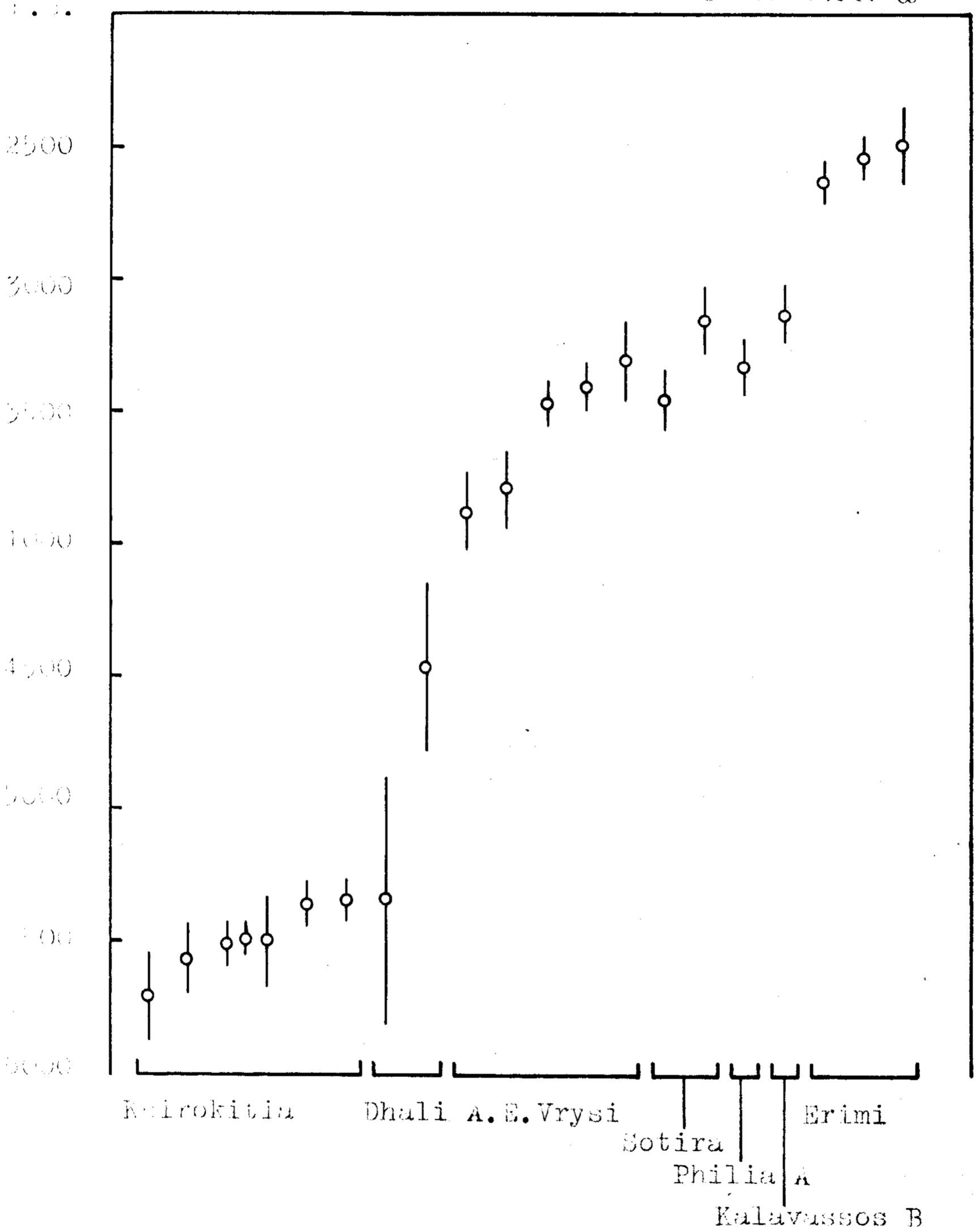

C. Andreas
C. Kormakiti
Morphou Bay
Famagusta Bay
Akamas
C. Greco
C. Kiti
C. Gata
1
2
3
4
5
6
Kafkalla plateau

1.1


20
20
15
12
12
10
10
20
30
25
15
40
30
25
20
12 Isohyet (inches)
a
- 9
9 - 12
13 - 16
16 +
%
b
Min.
Max.
C


mm.
1000
900
800
700
600
500
400
300
200
100
0
1968-69
Mean
1940-41
1916-17
Ins.
40
35
30
25
20
15
10
5
0


CYPRUS
Cape Andreas
Lapithos
Troulli
Vasilia
Ay. Epiktitos
Kythrea
Petra tou Limniti
Kyra
Philia
Ambelikou
Dhali
Phrenaros
Kissonerga
Khlorakas
Khirokitia
Kalavassos
Souskiou
Sotira
Mari
Erimi
30 m


St-338
St-202
St-202
St-419
Pirm-272
St-350
St-337
GU-455
GU-454
GU-453
Pirm-277
Pirm-I82
GX-2847A
GX-2815A
RM-222
RM-223
St-413
GU-352
MM-332
St-414
St-415
2500
3000
Dhali A.E. Vrysi
Sotira
Philia
A
Erimi
Kalavassos B

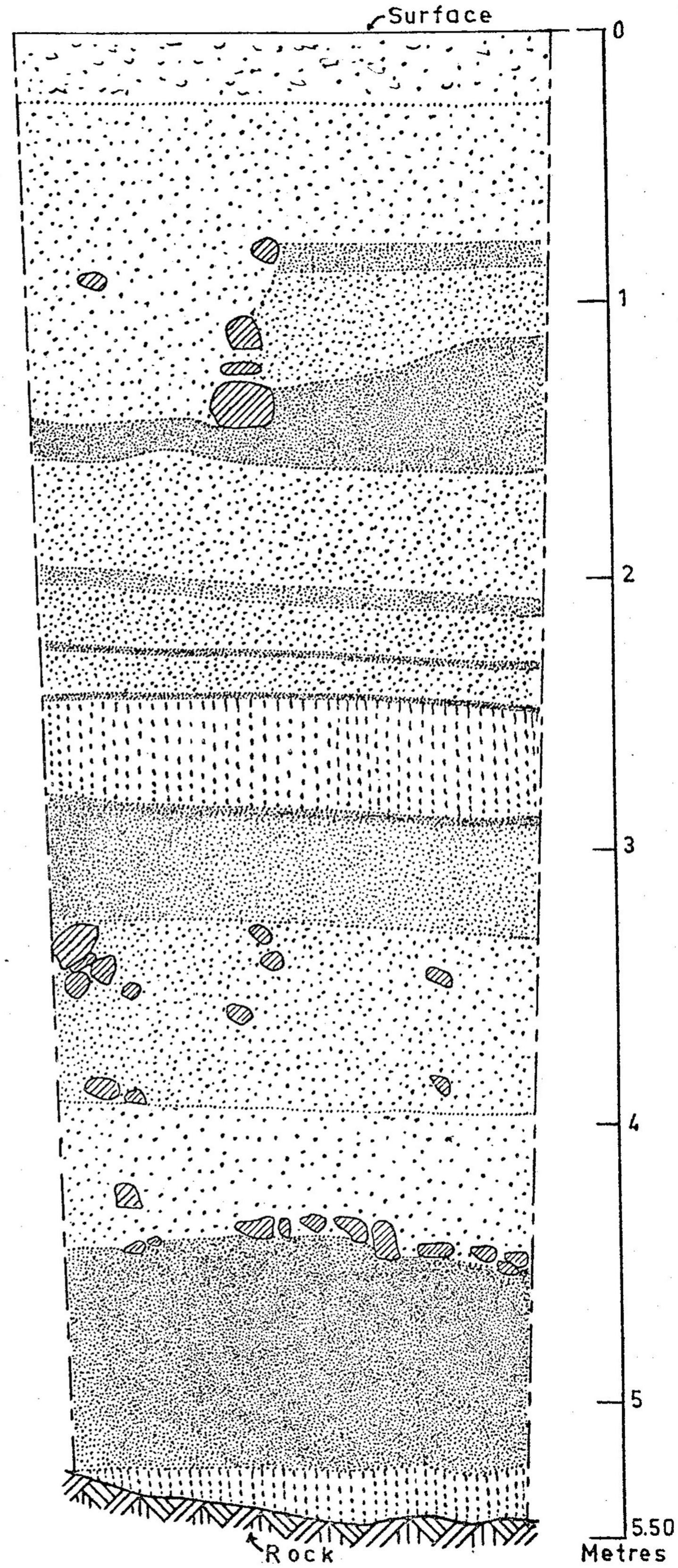
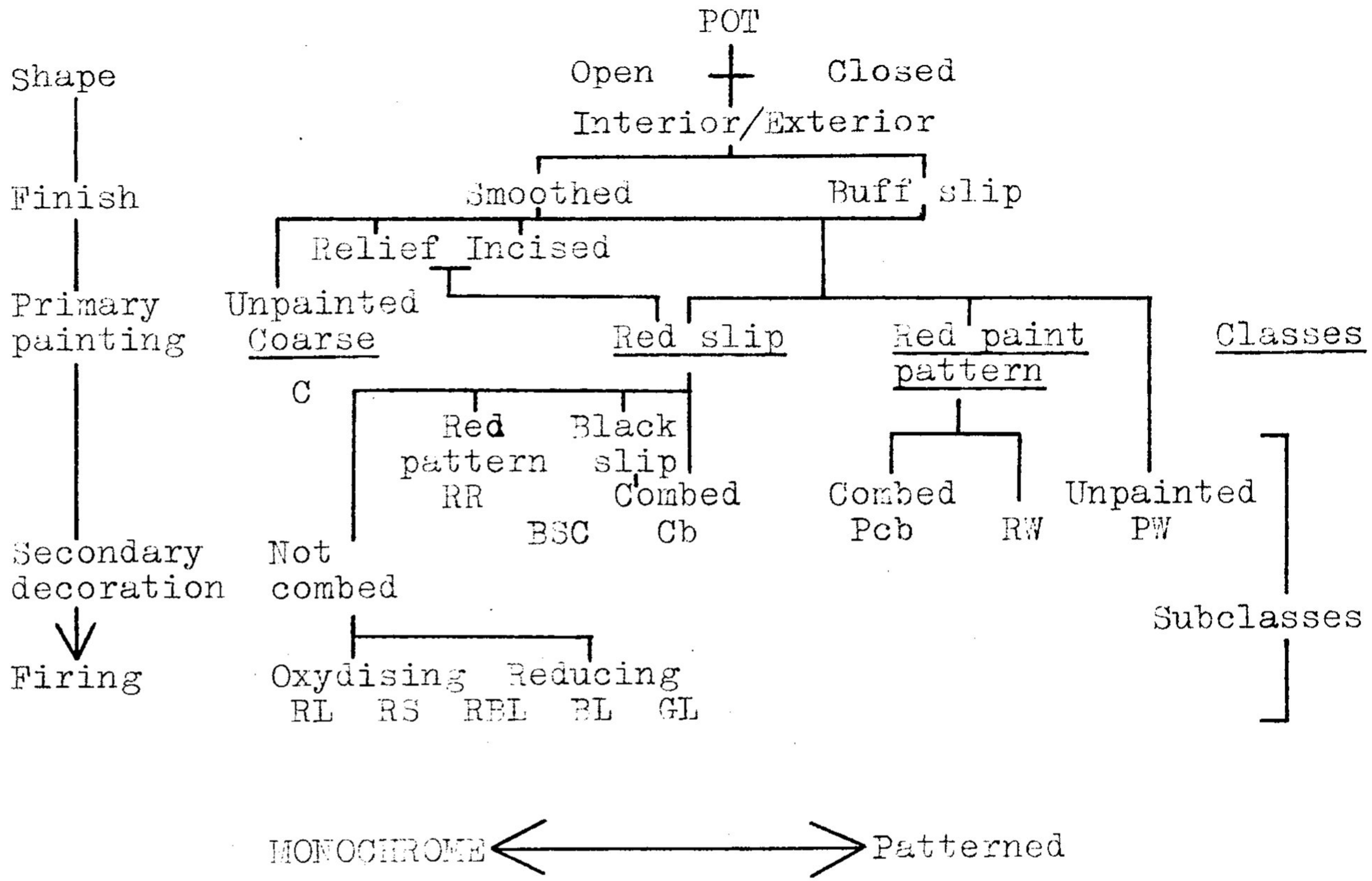
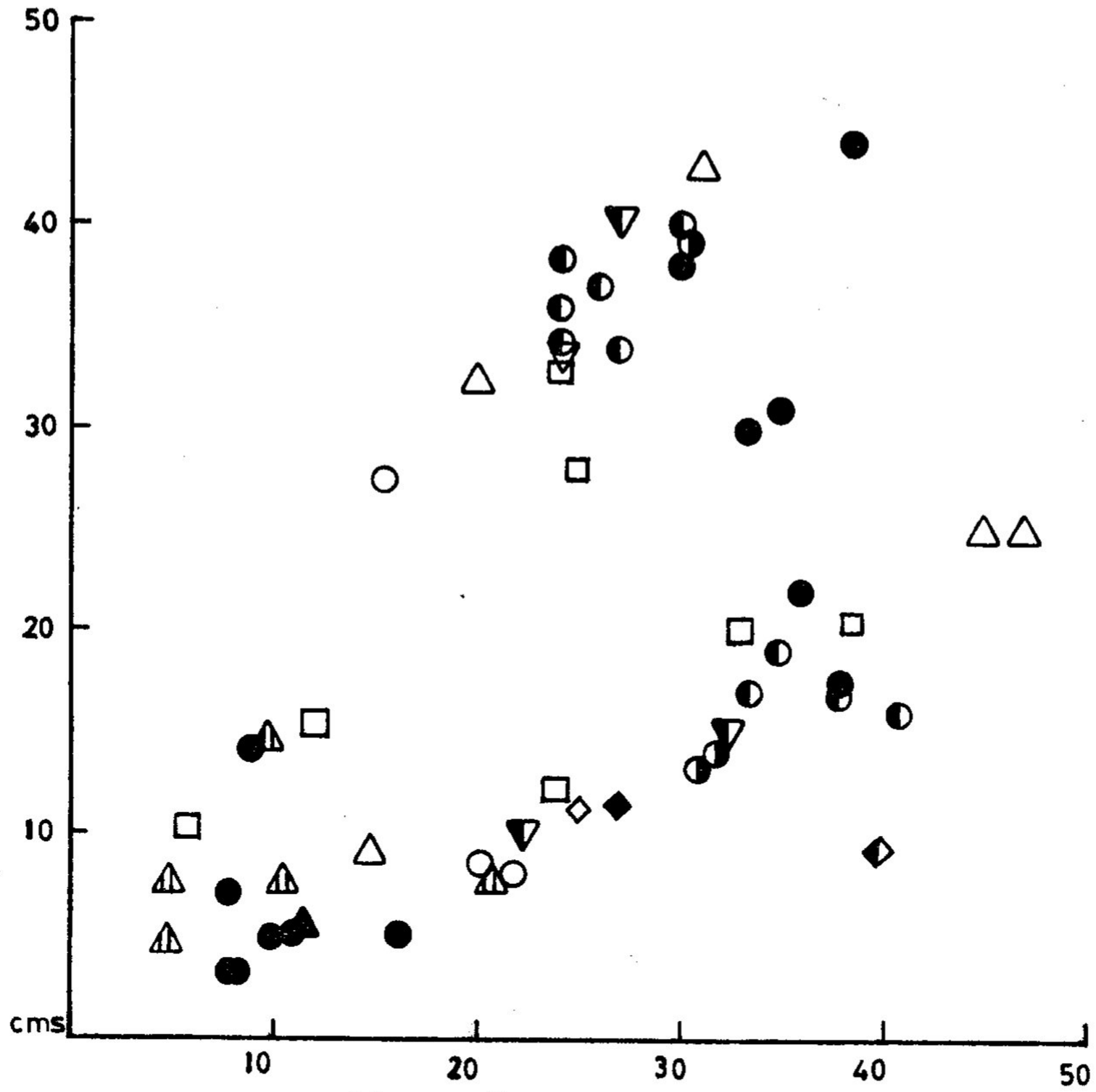
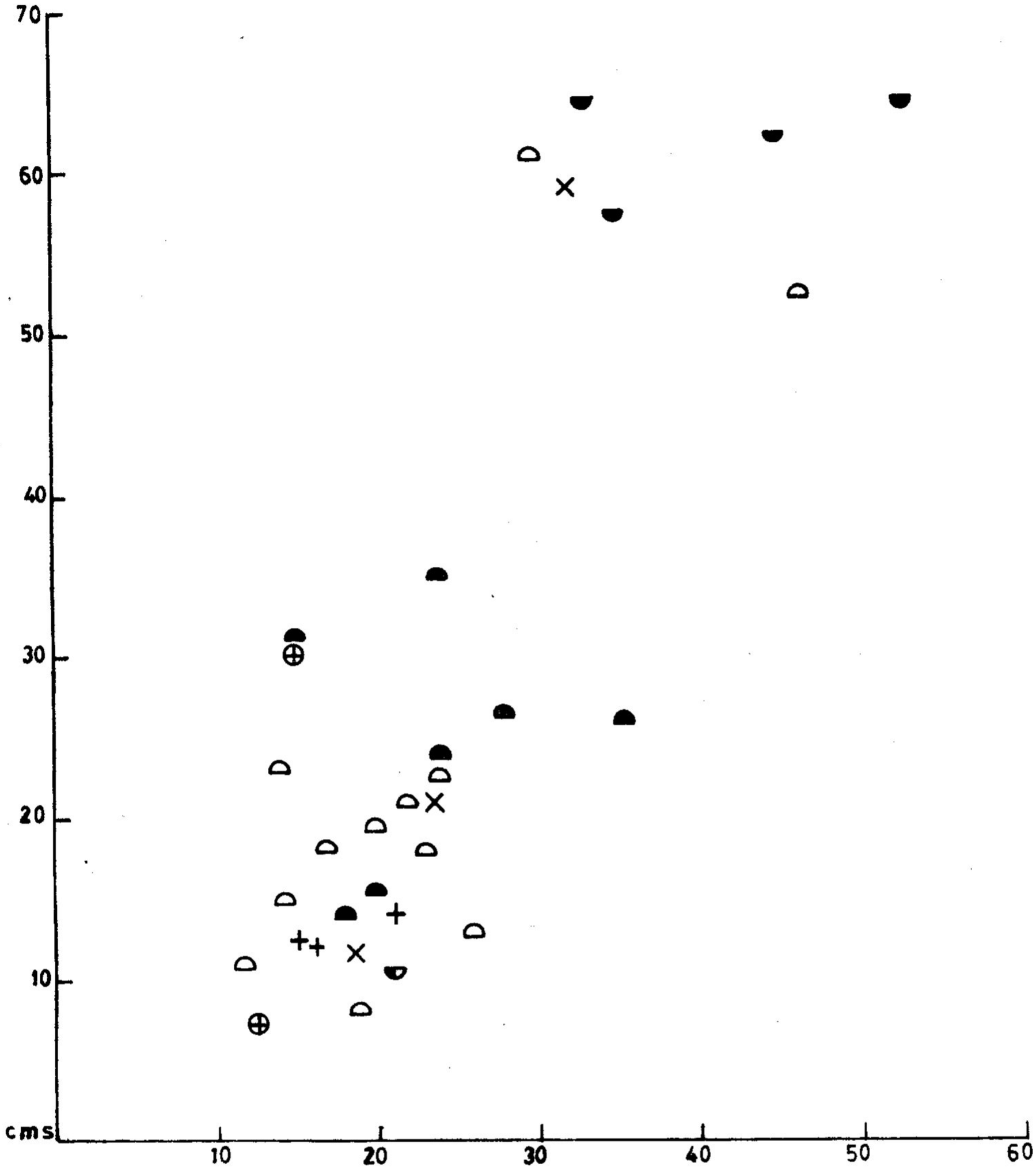


Fig. 34. Troulli. Section showing deposit in Pit A.



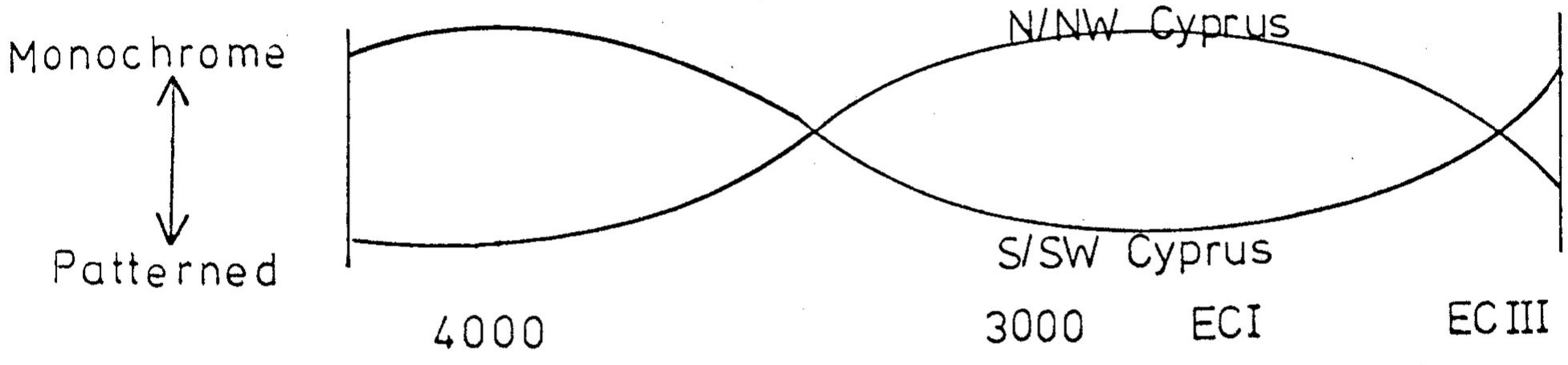
Stepwise classification of Dikaios' wares as variants within a single pottery tradition


50
40
30
20
10
Ht.
cms
10
20
30
40
50
Max. diam.
RW
RM
Pcb
Cb
DFBW
Sotira
A.E.Vrysi
Philia A
Khirokitia
Kalavassos A


Ht.
70
60
50
40
30
20
10
cms
10
20
30
40
50
60
Max. diam.
RW
RM
PW
Erimi
Kalavassos B
Kyra Alonia
Kythrea
Souskiou

	North coast	Central lowlands	South coast
	A.E.Vrysi	Philia Drakos A	SOTIRA
Time ↓	LAPITHOS WEST	AMBELIKOU	Erimi Phase 3
	VOUNOUS	PHILIA VASILIKO	(e.g. Souskiou)

PREDOMINANTLY MONOCHROME
Predominantly Patterned



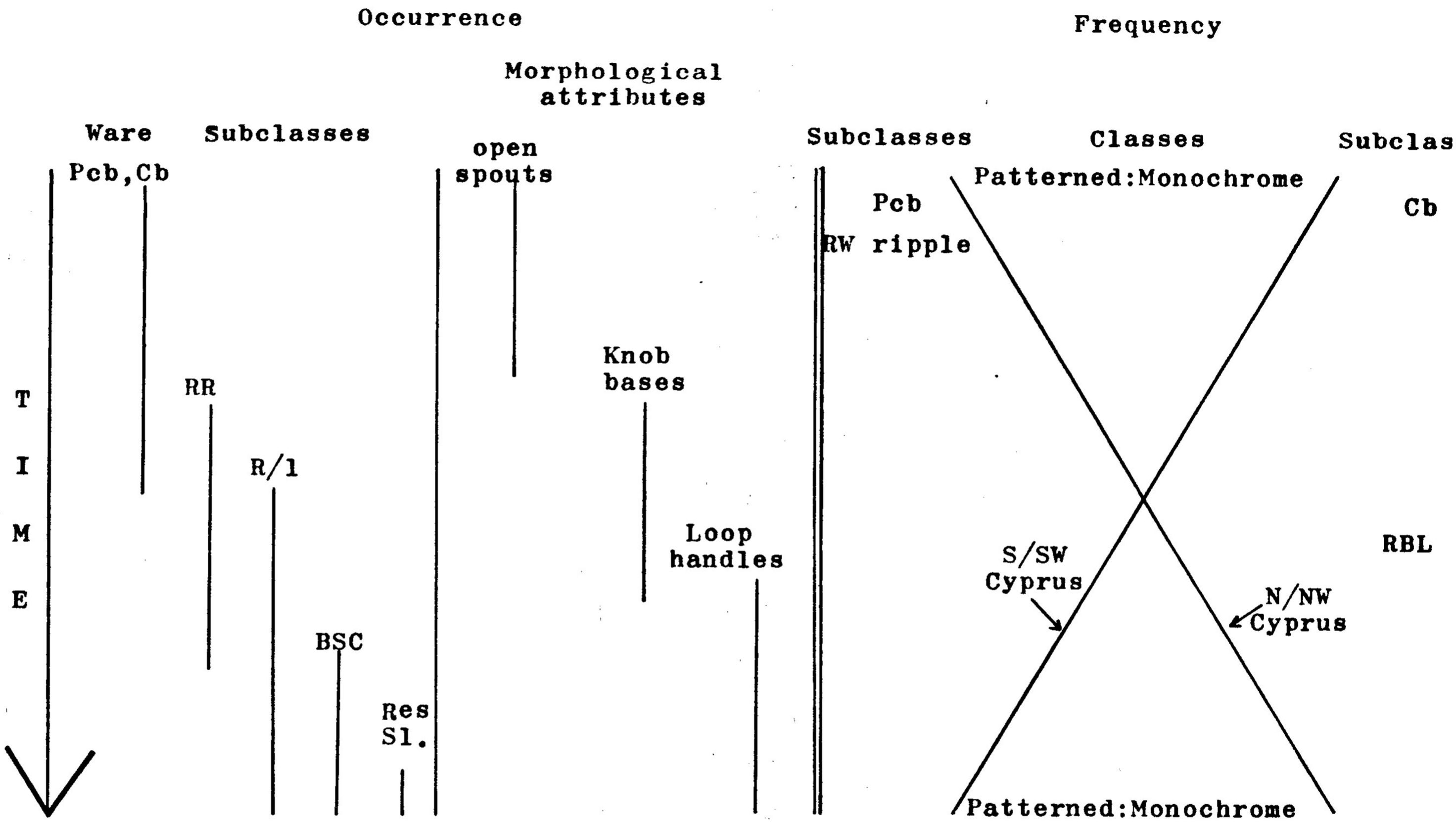


Fig. 3.7 Ordering criteria for ceramic sites

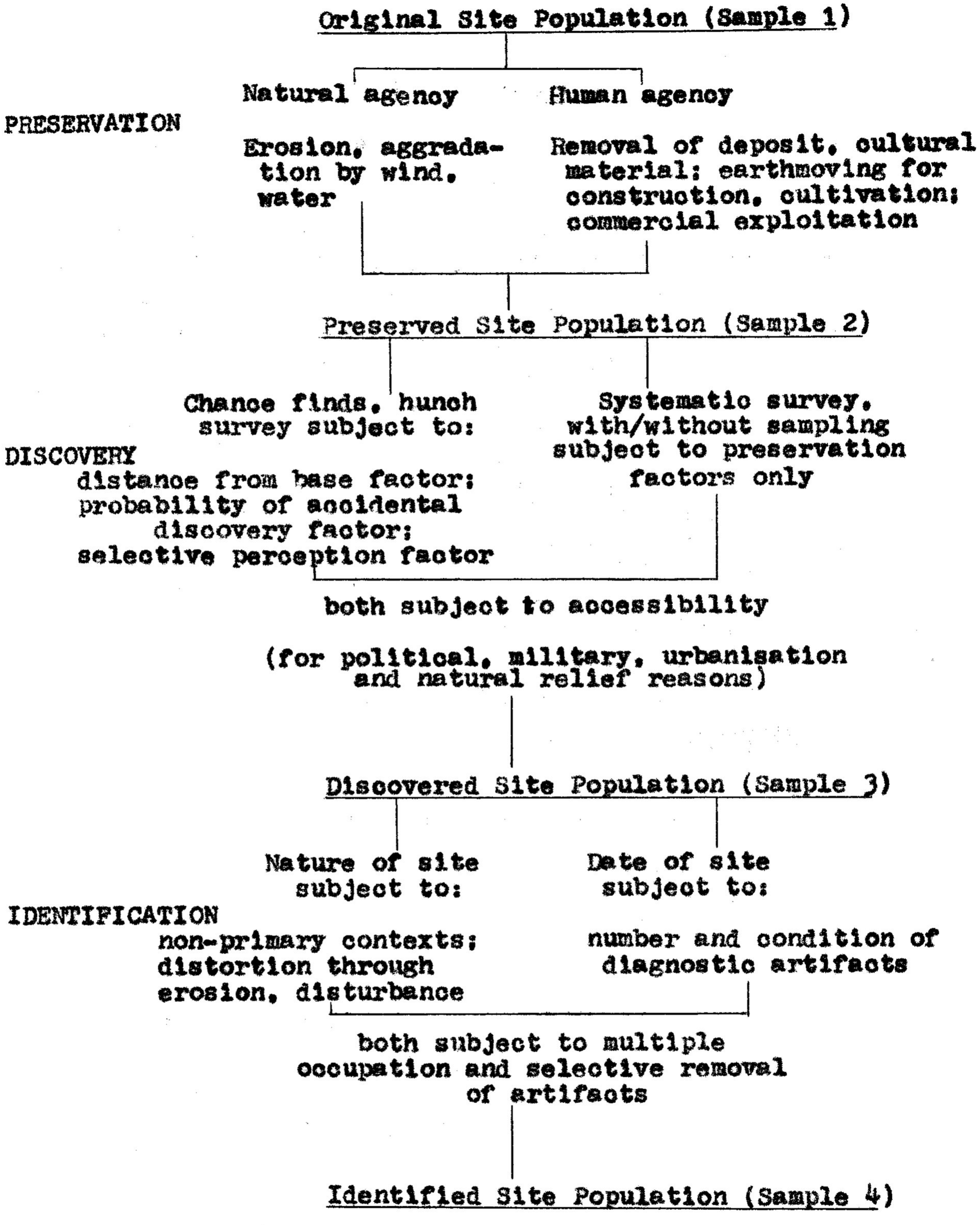


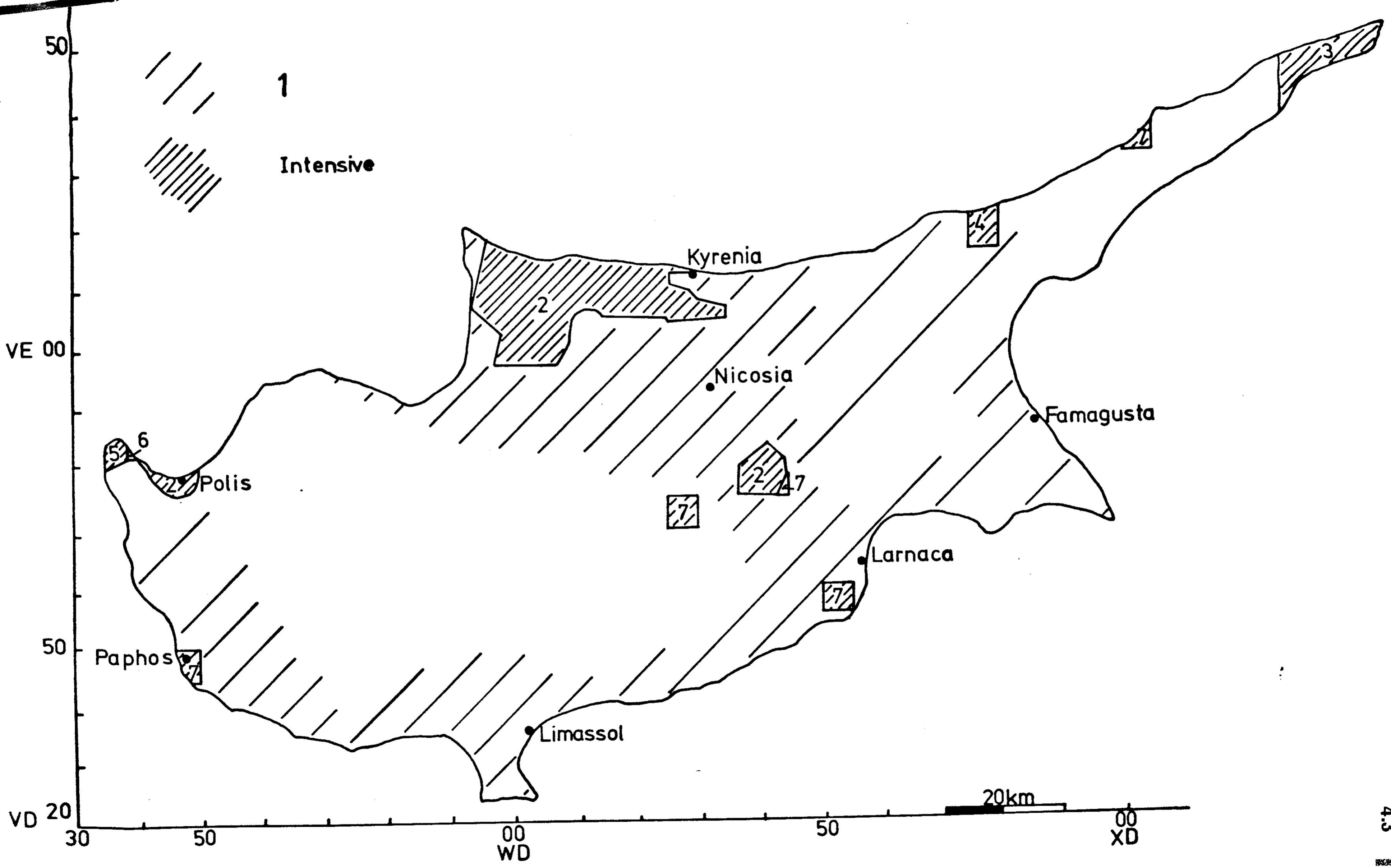
Fig. 4.1 Factors affecting the recorded sample of sites

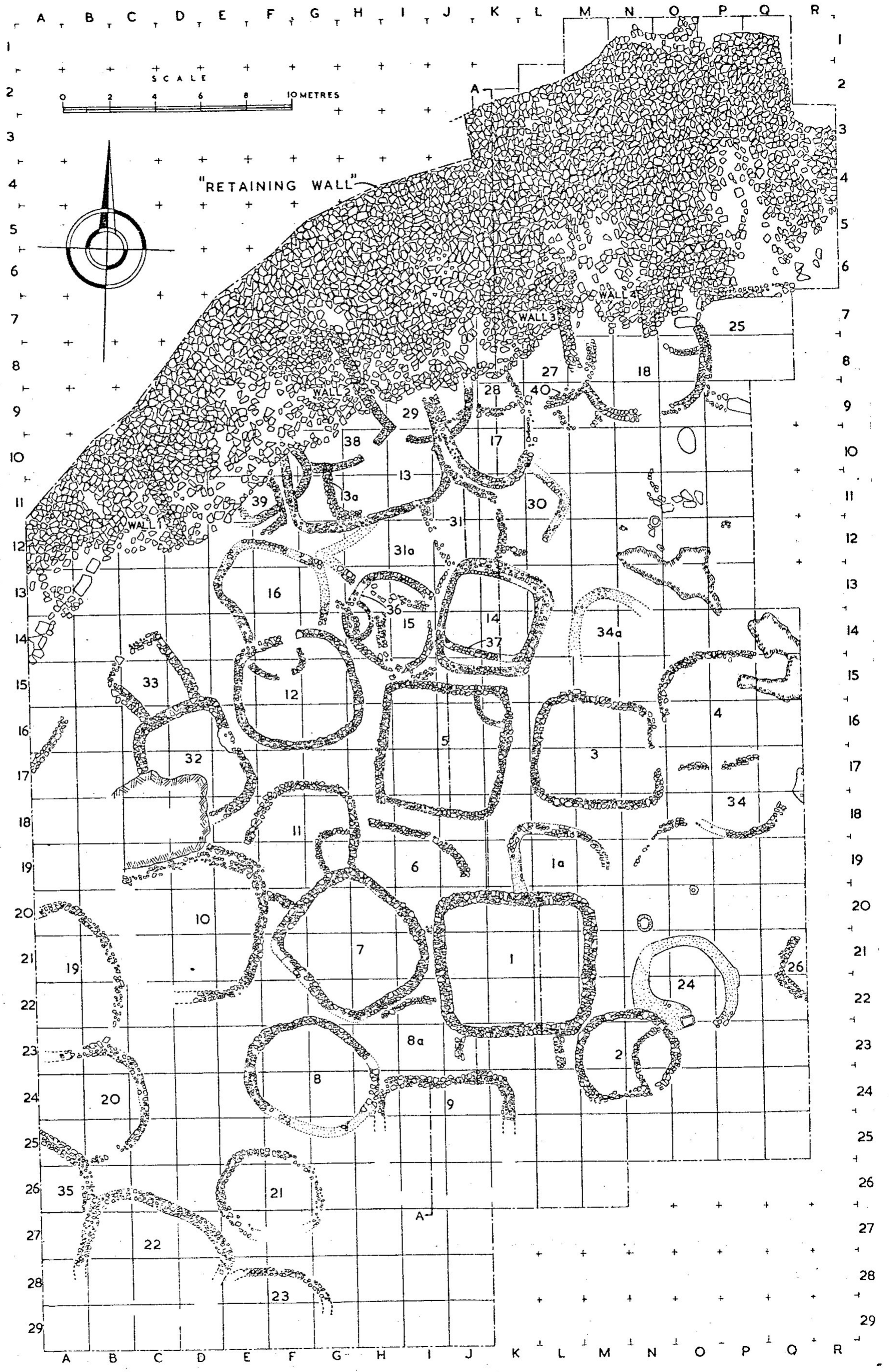
32KM

Igneous

Alluvium

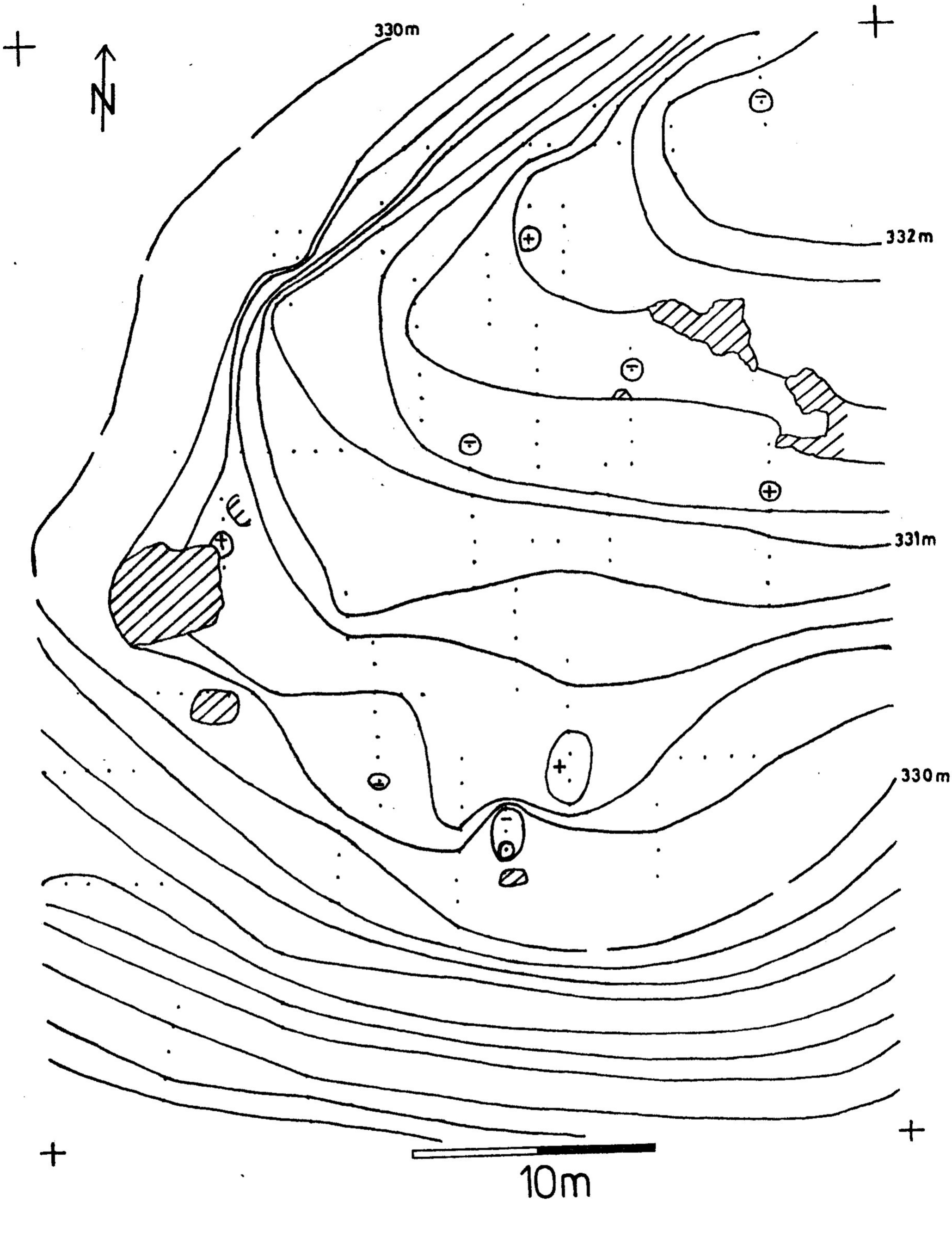
4.2

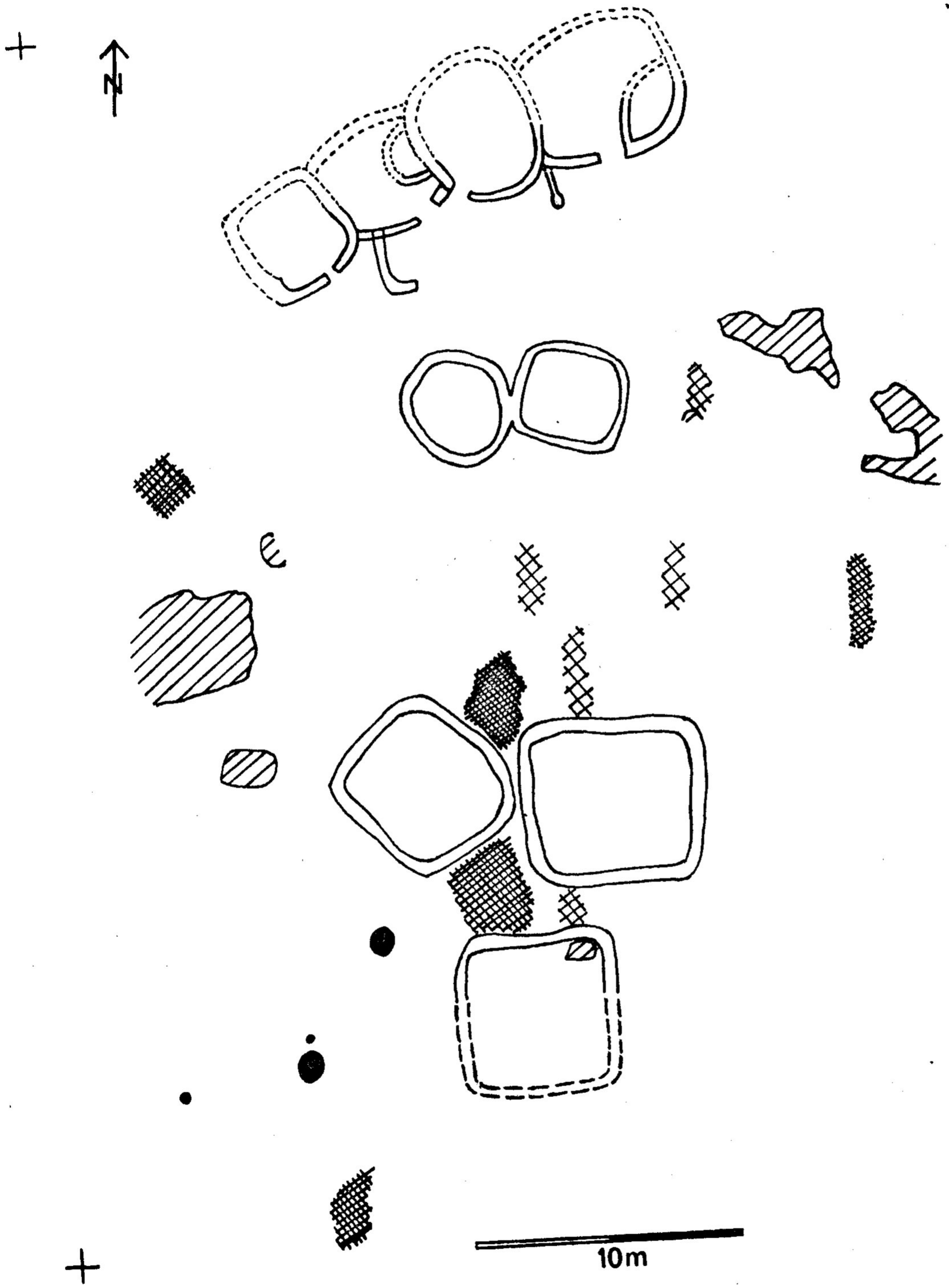

50
VE 00
50
VD 20
30
50
00
WD
50
00
XD
20km
1
Intensive
2
3
4
5
6
7
Kyrenia
Nicosia
Famagusta
Polis
Paphos
Larnaca
Limassol

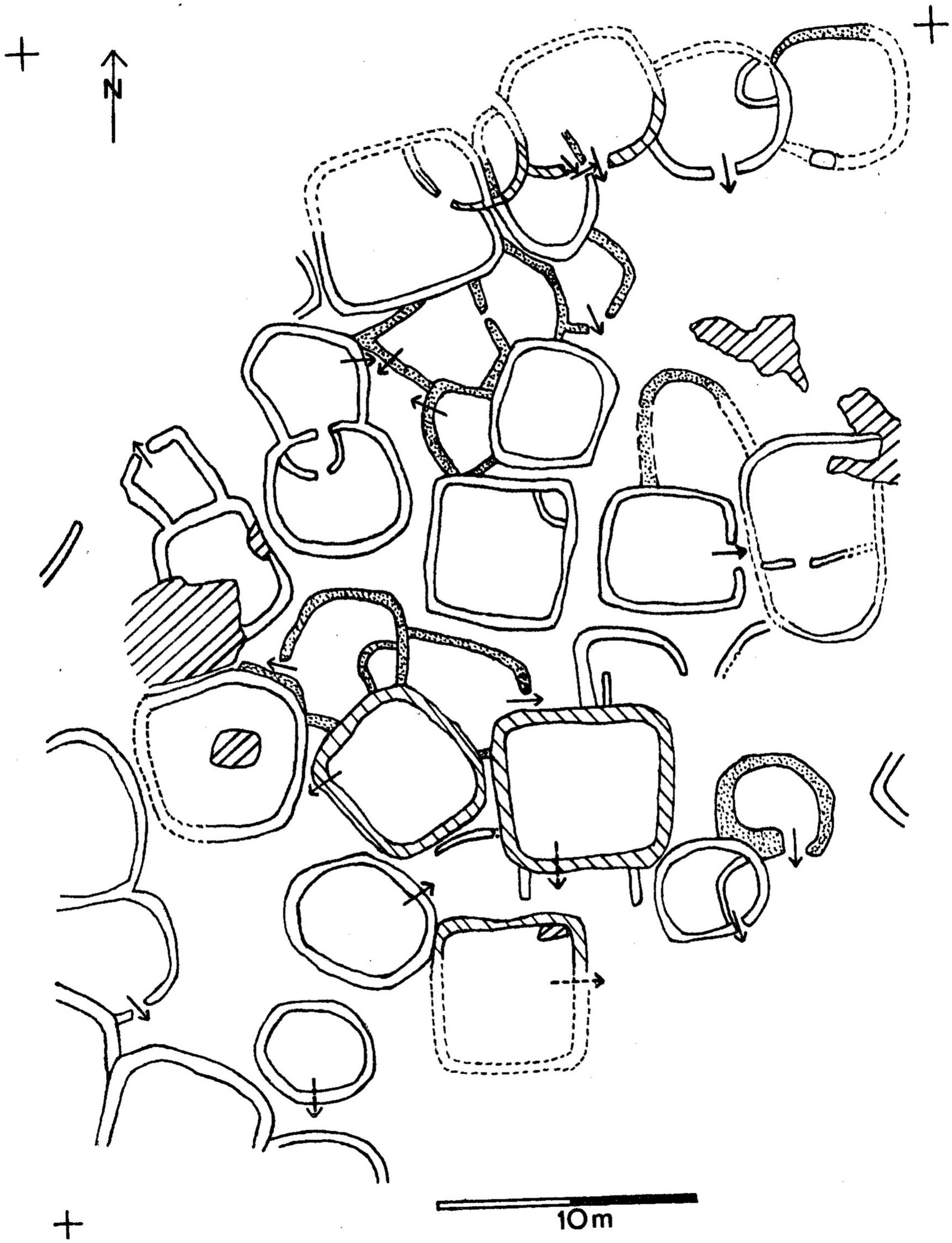


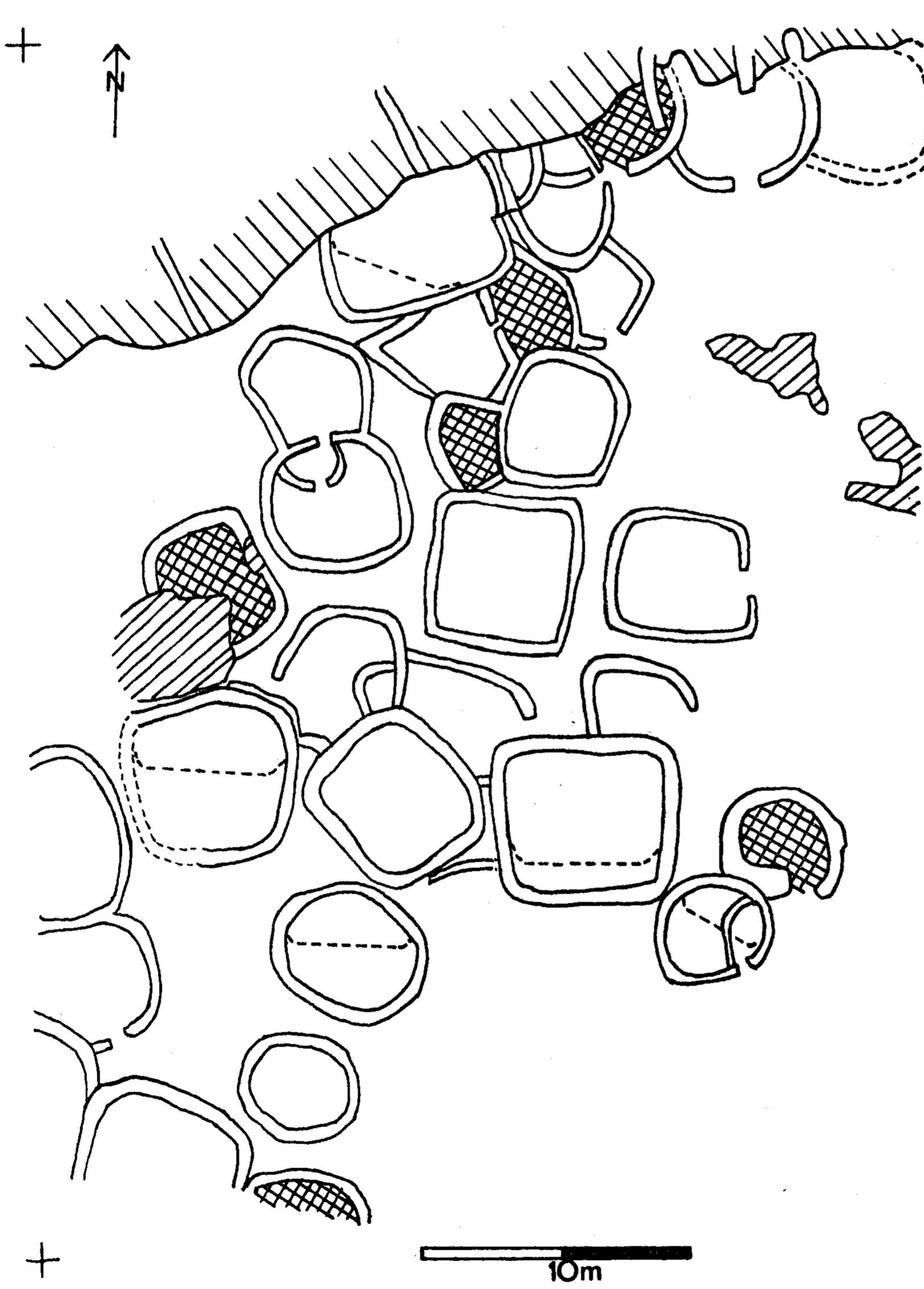
Area V: General Plan

Plate 8

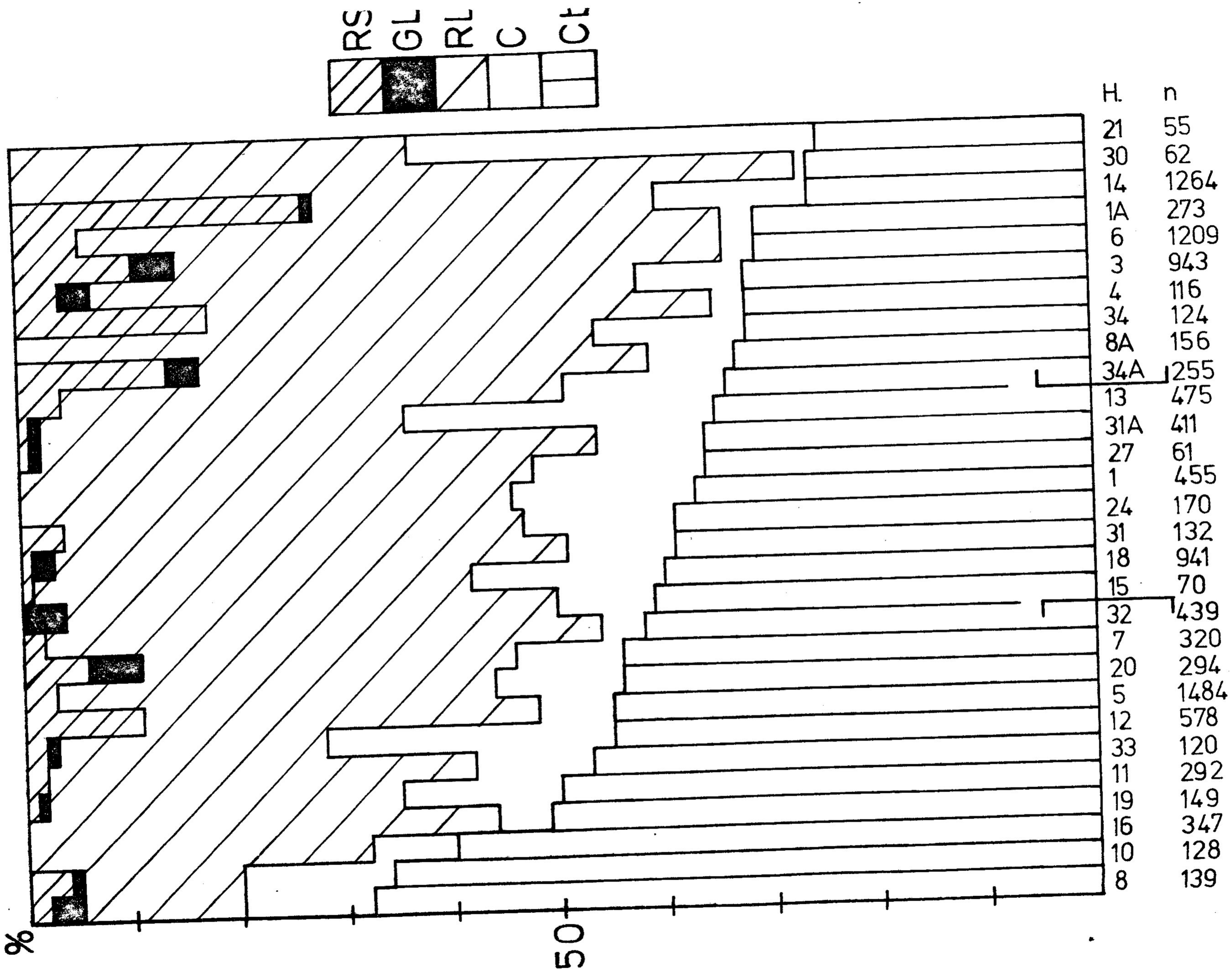

330m
332m
331m
330m
N
10m

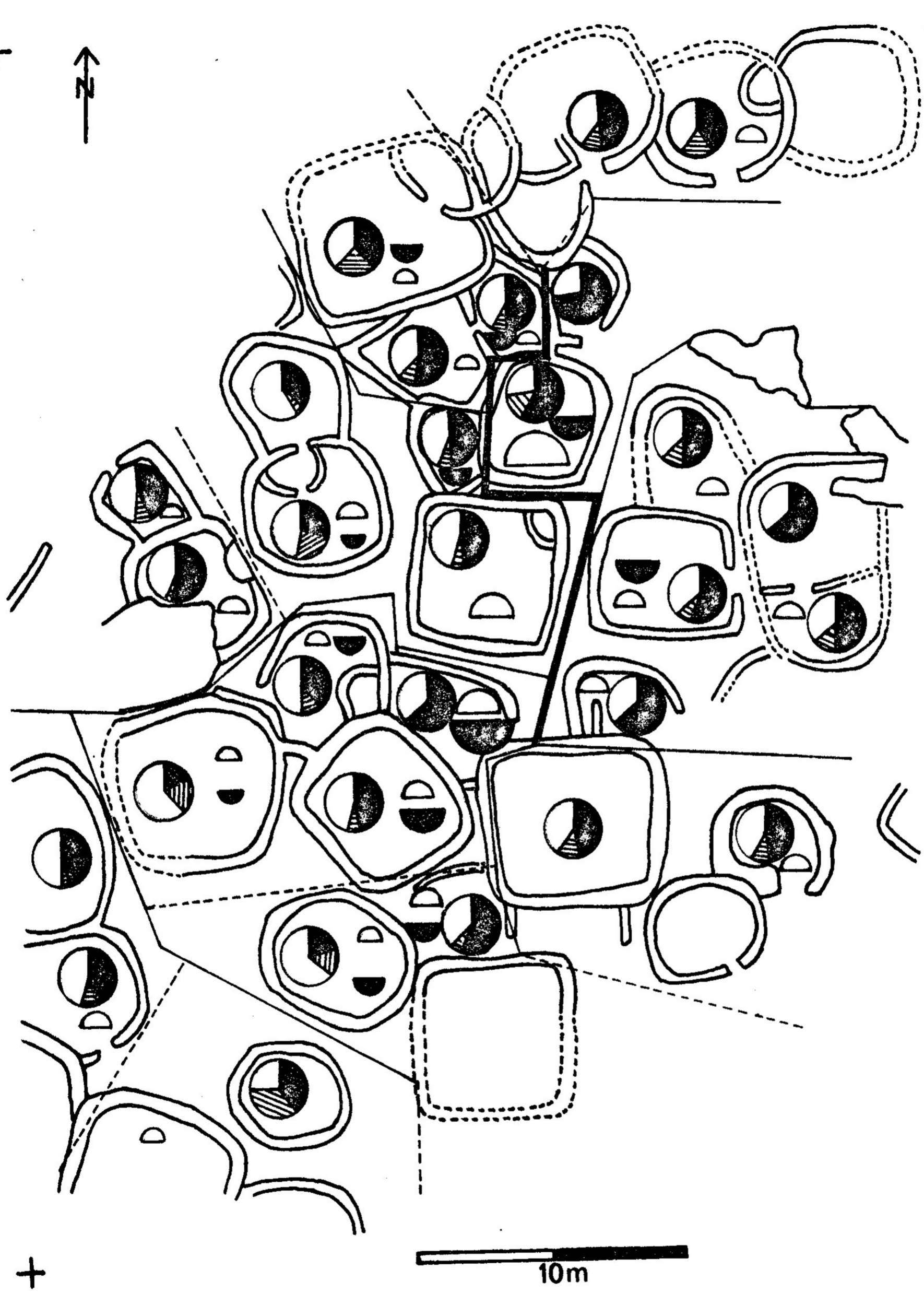

N
10m

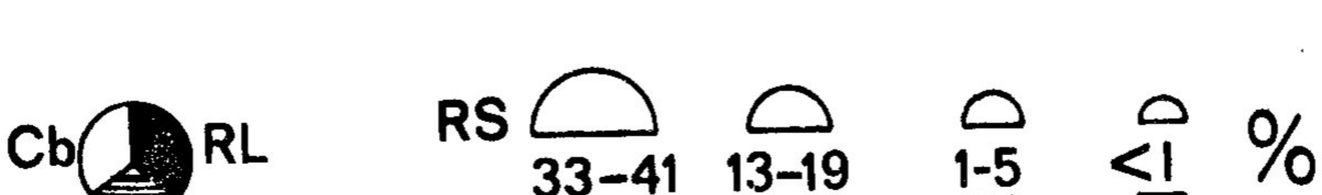

N
10m

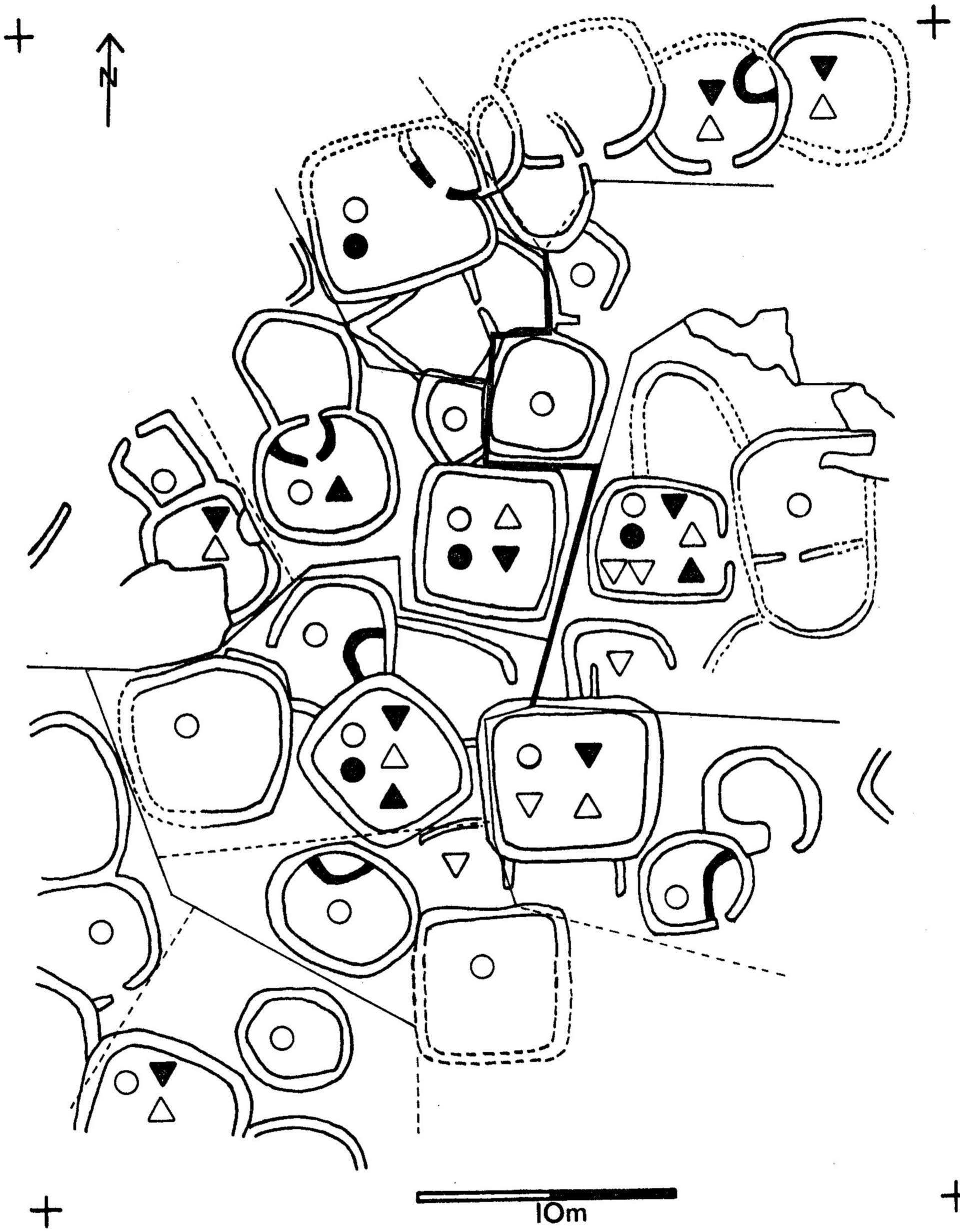

N
10m

5.6

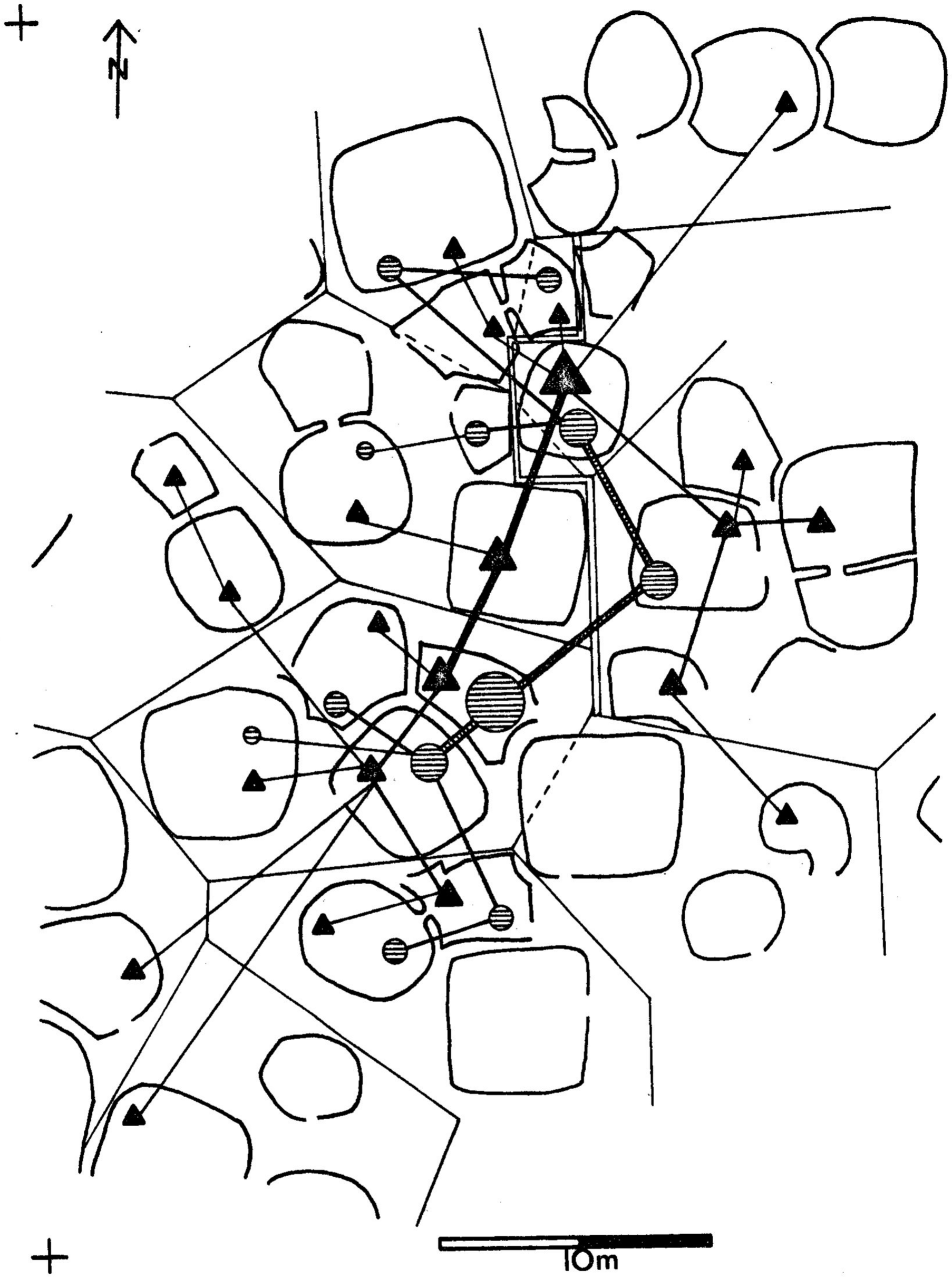

RS
GL
RL
C
Ct
H.
n
21 55
30 62
14 1264
1A 273
6 1209
3 943
4 116
34 124
8A 156
34A 255
13 475
31A 411
27 61
1 455
24 170
31 132
18 941
15 70
32 439
7 320
20 294
5 1484
12 578
33 120
11 292
19 149
16 347
10 128
8 139
%
50

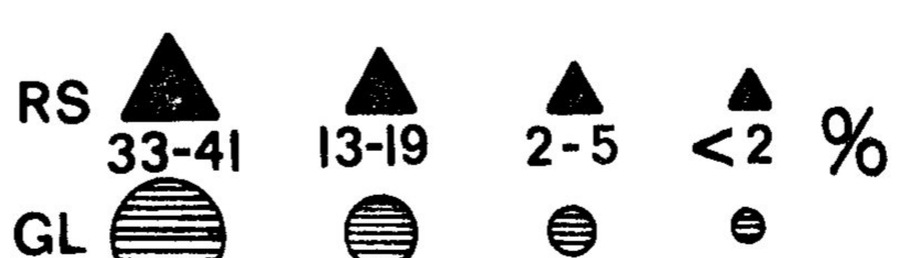

N
10m

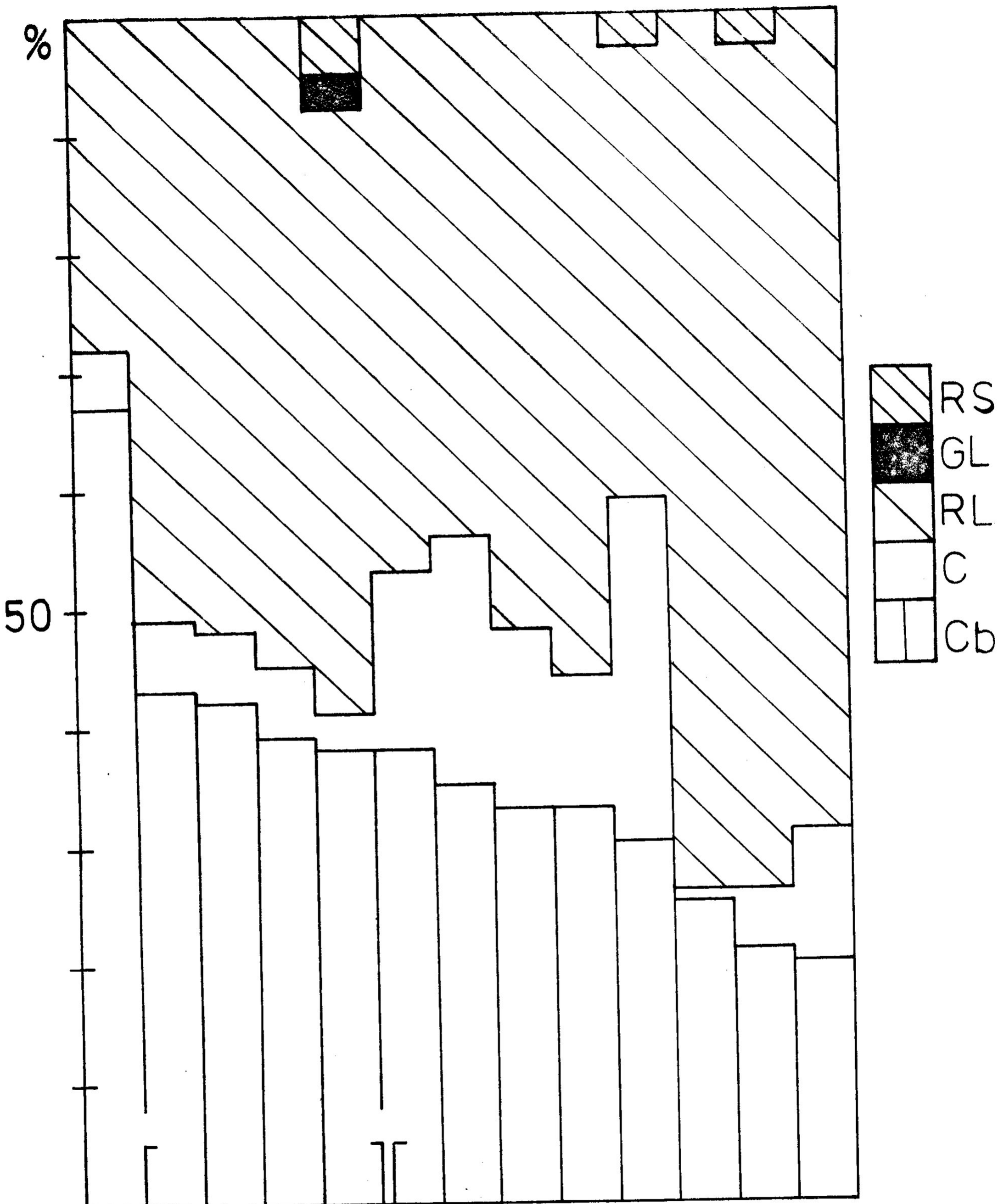

Cb
RL
C
RS
GL
33–41
13–19
1-5
<1
%

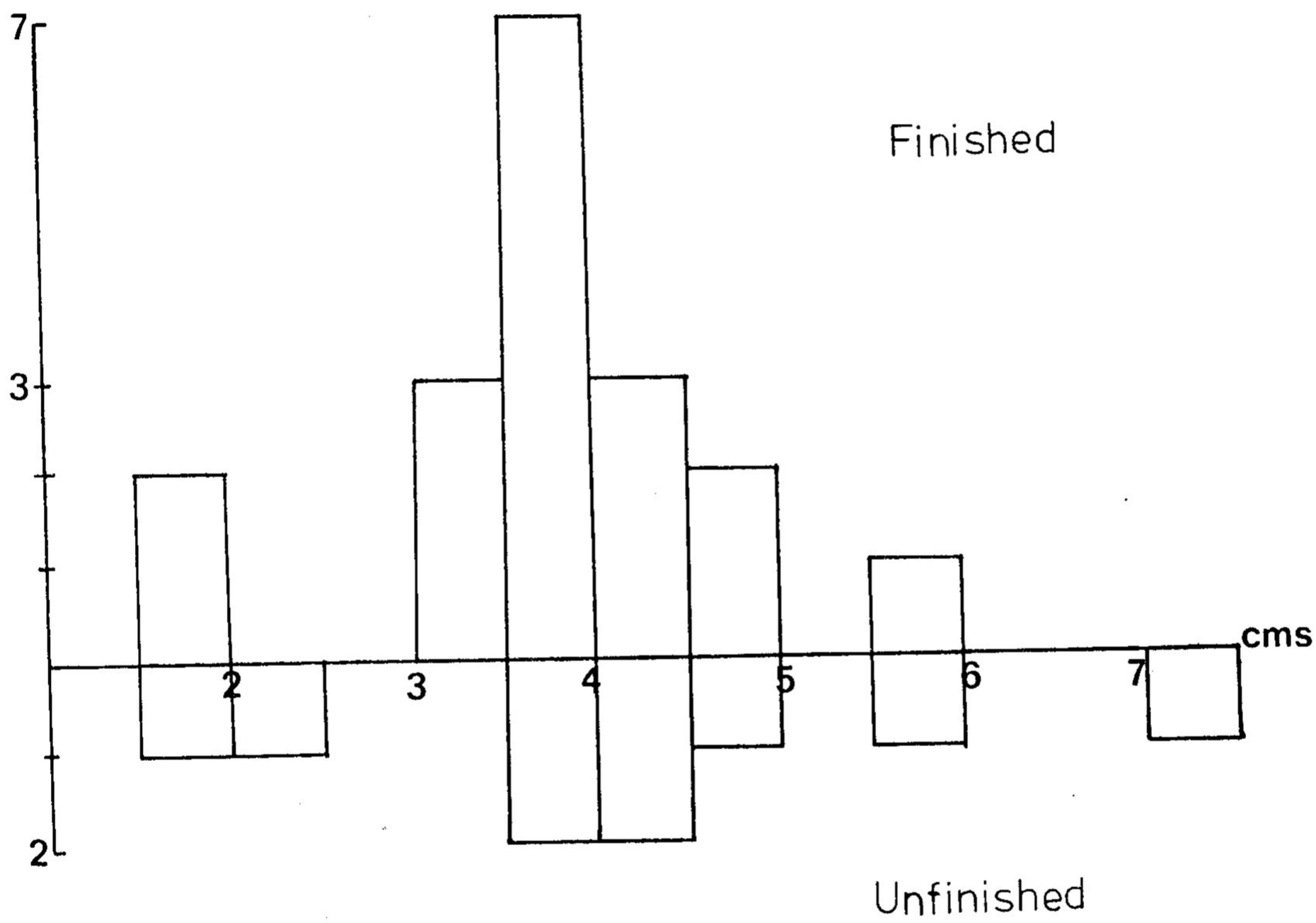


○ Large hearth
● Colouring material
▽ Burnisher
▼ Flint working
▲ Stone grinding
△ Picrolite working

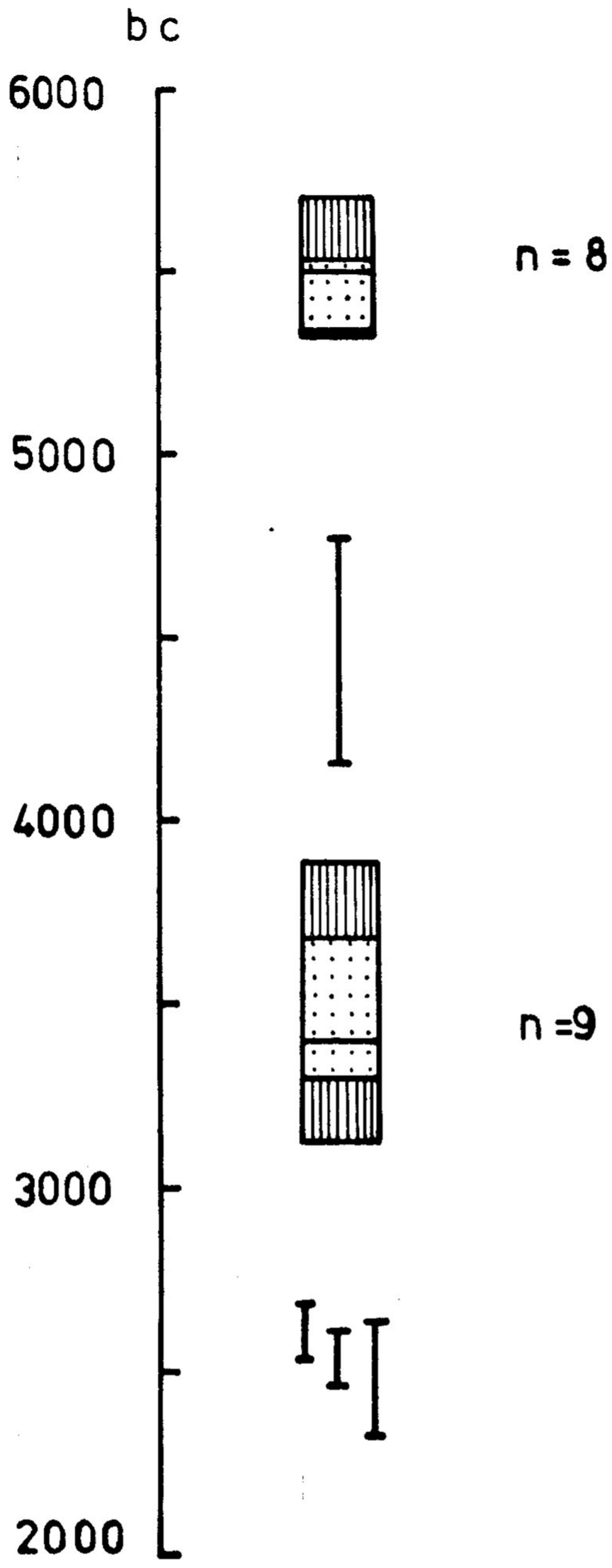

N
10m


RS
33-41
13-19
2-5
<2
%
GL

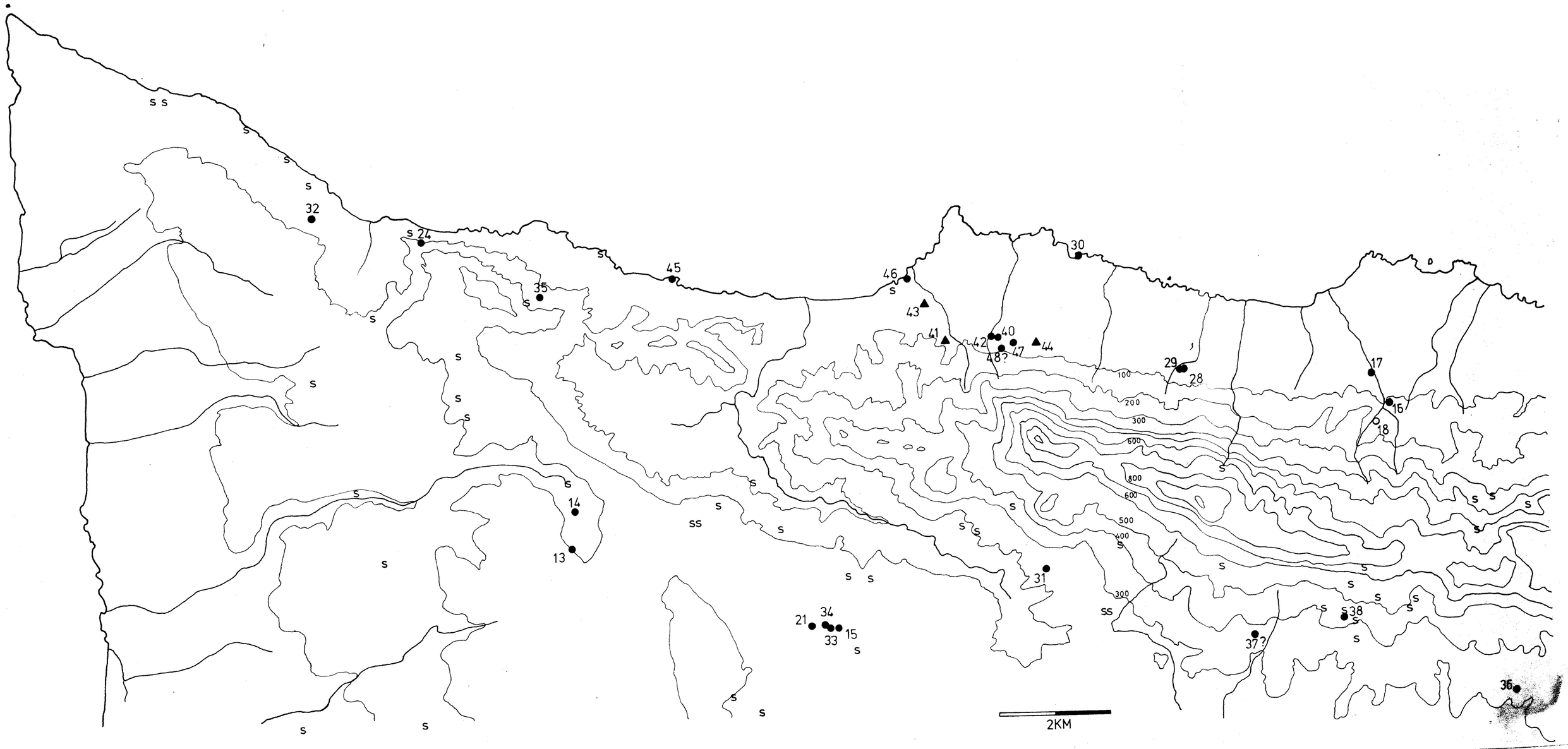

%
50
RS
GL
RL
C
Cb
H. 40 pre-5 pre-12 pre-33 7 13A 39 pre-13A 38 pre-16 pre-19 pre-17 29
n 58 79 52 487 151 64 436 108 63 160 89 119 74

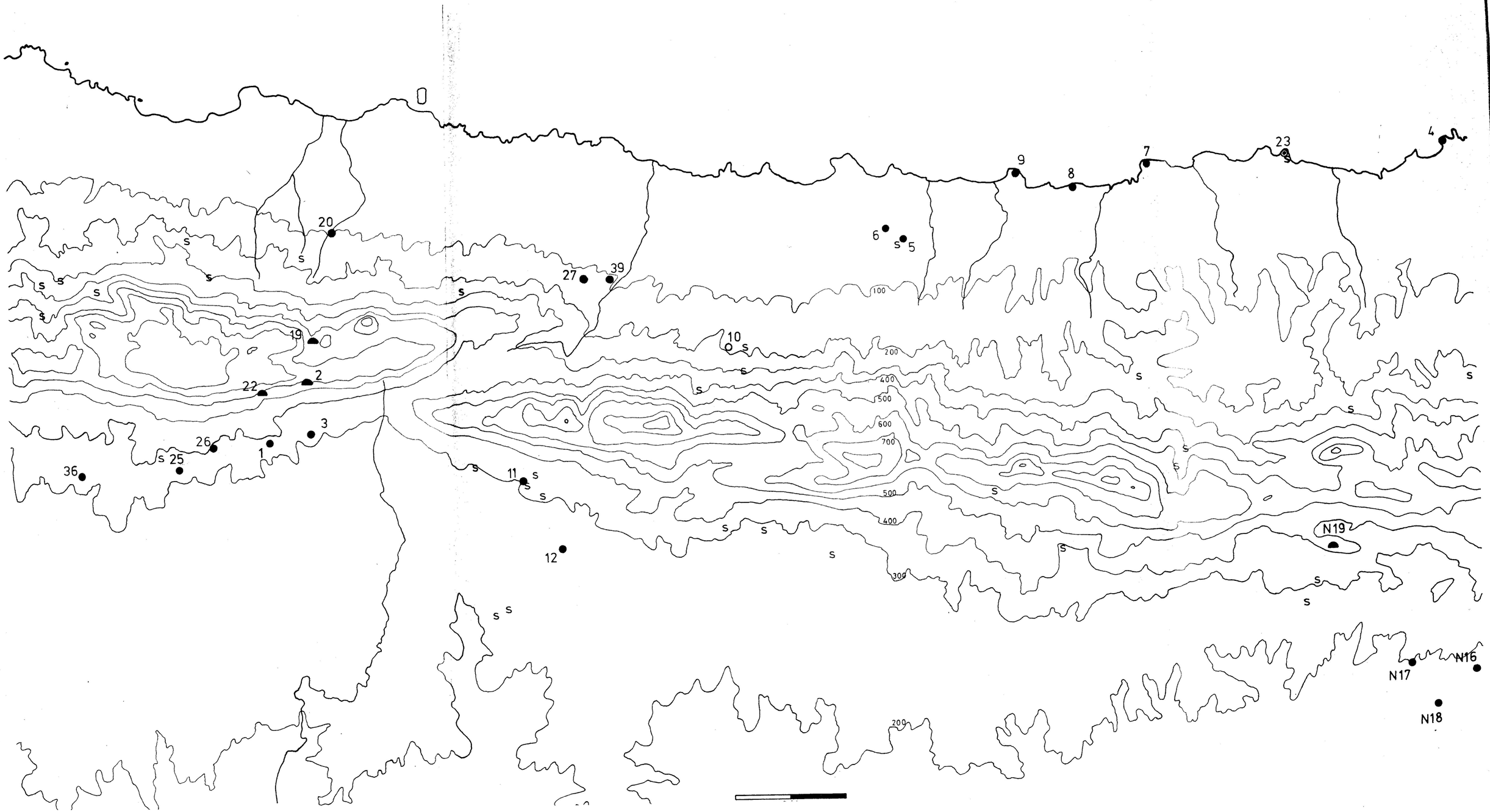


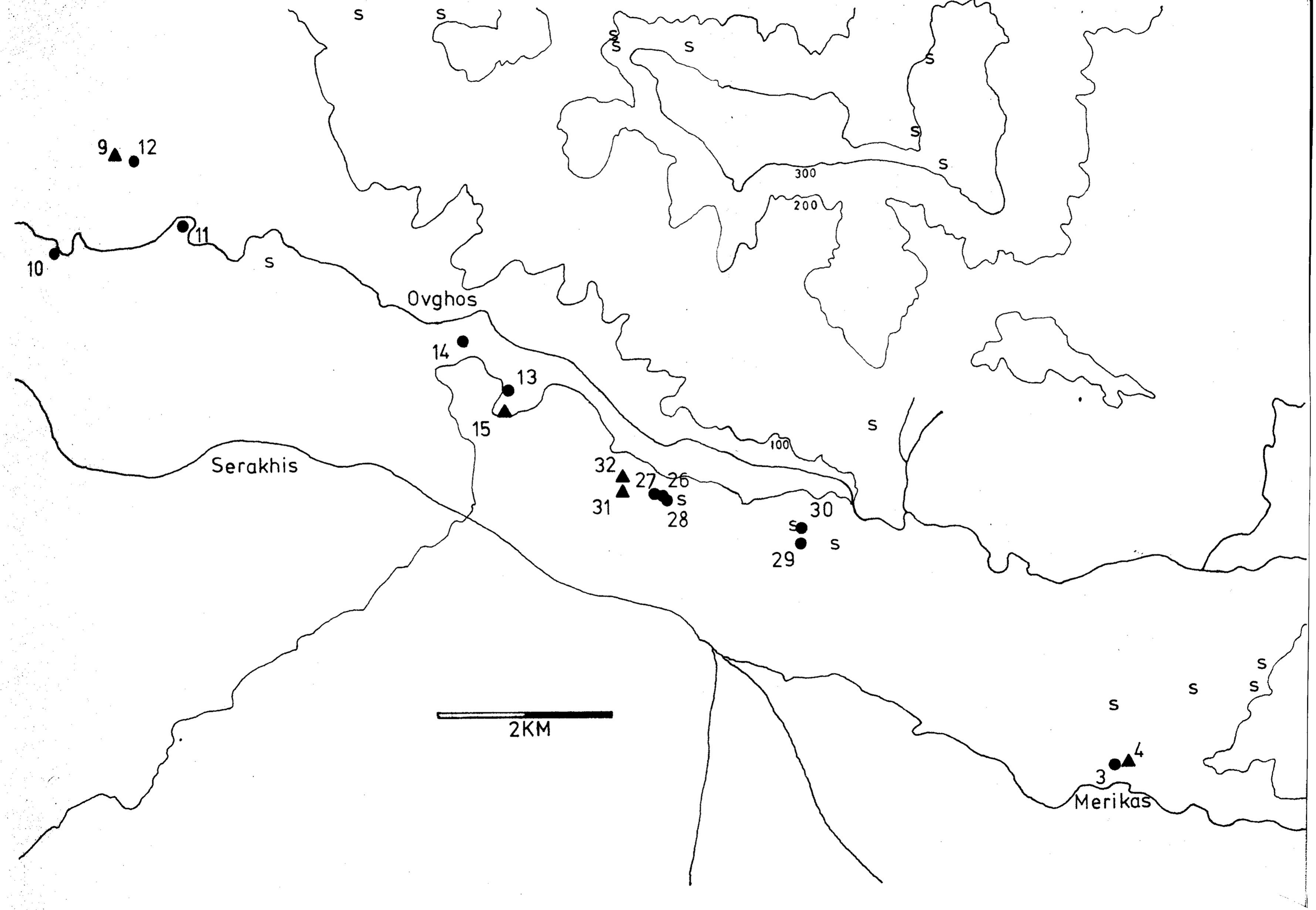
Size distribution of length of picrolite objects at Sotira

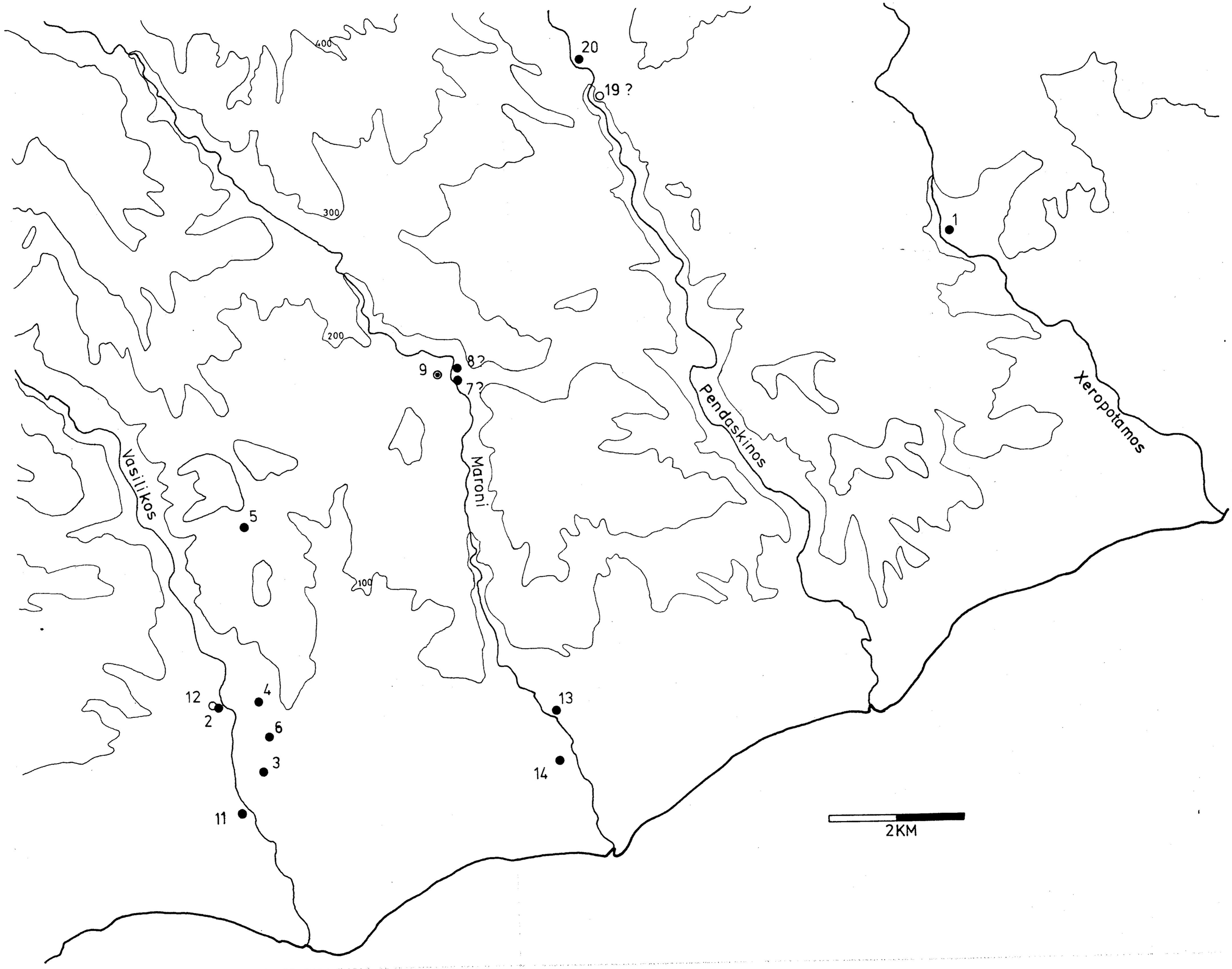

b c
6000
5000
4000
3000
2000
n = 8
n =9

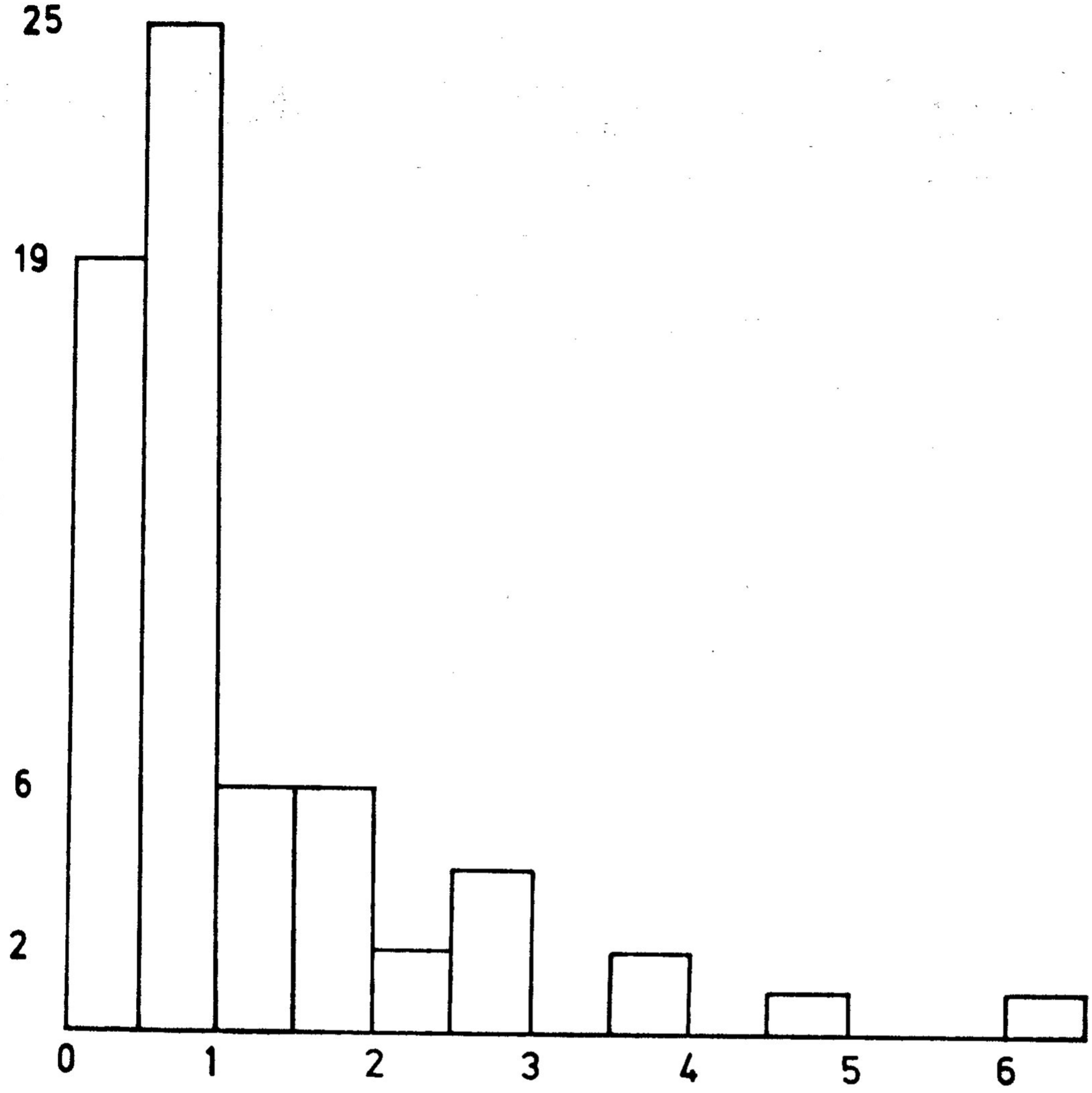
DATES
a
b
SITES
c
d
TIME

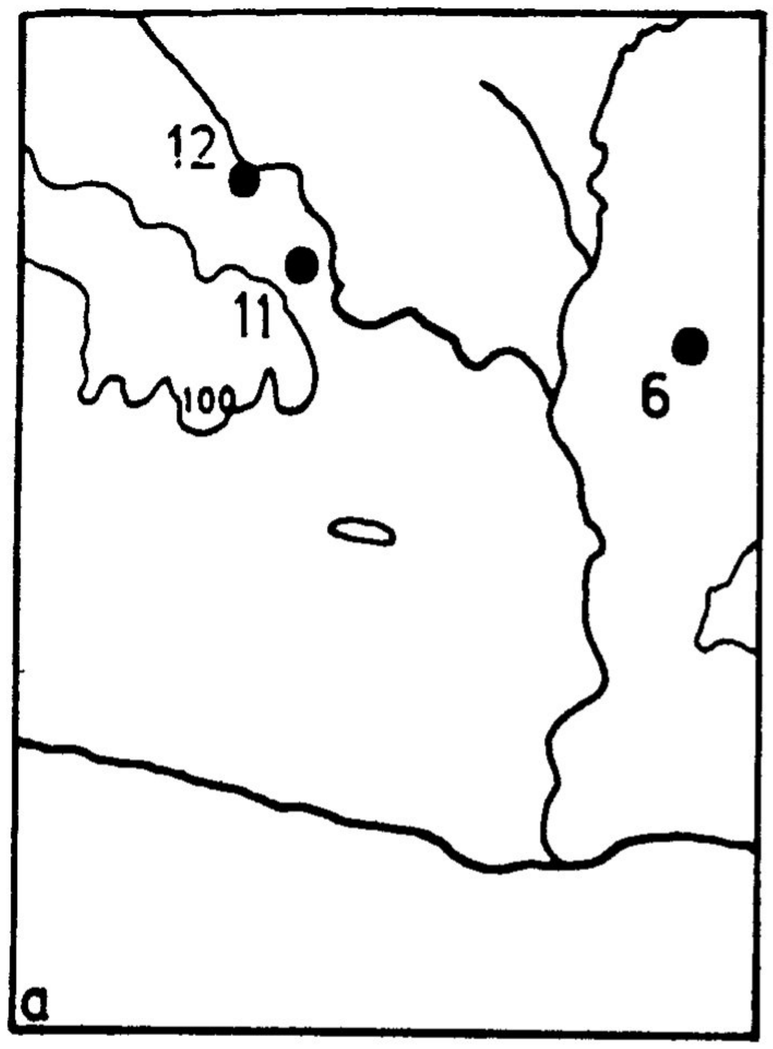

32
24
45
35
46
43
30
41
42
40
48?
47
44
29
28
17
16
18
14
13
31
21
34
33
15
38
37?
36
100
200
300
600
800
500
400
2KM

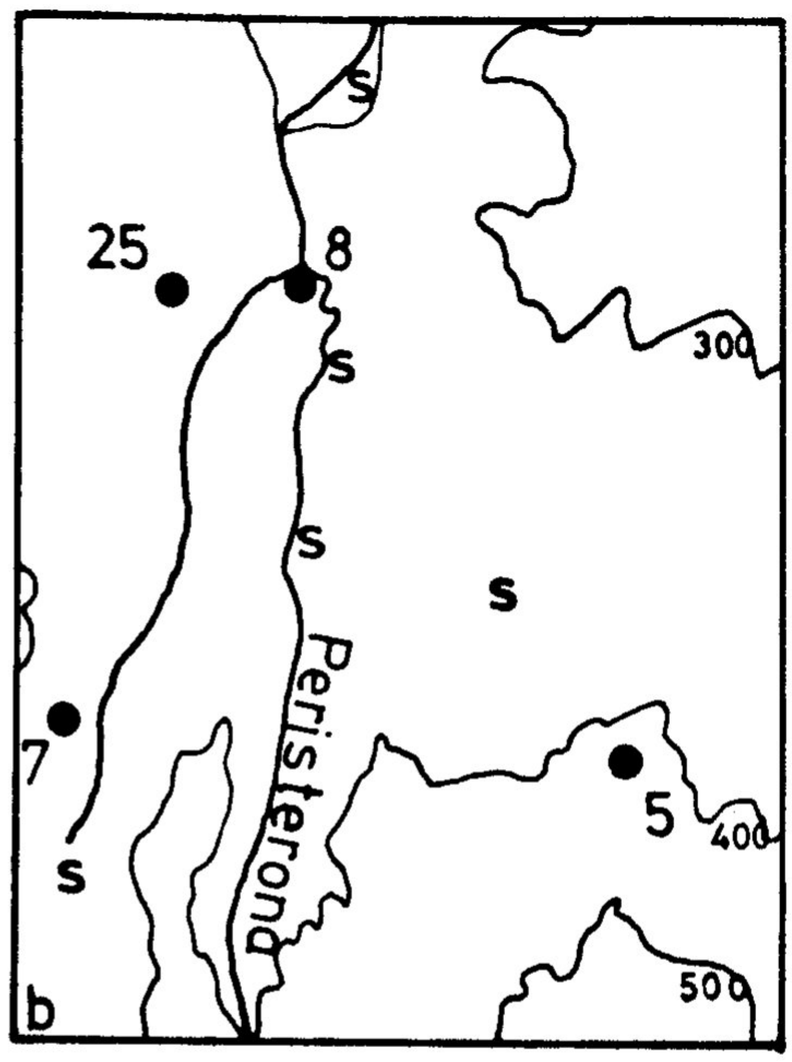

20
6
5
27
39
9
8
7
23
4
19
10
2
22
3
26
1
25
36
11
12
N19
N16
N17
N18
100
200
400
500
600
700
500
400
300
200

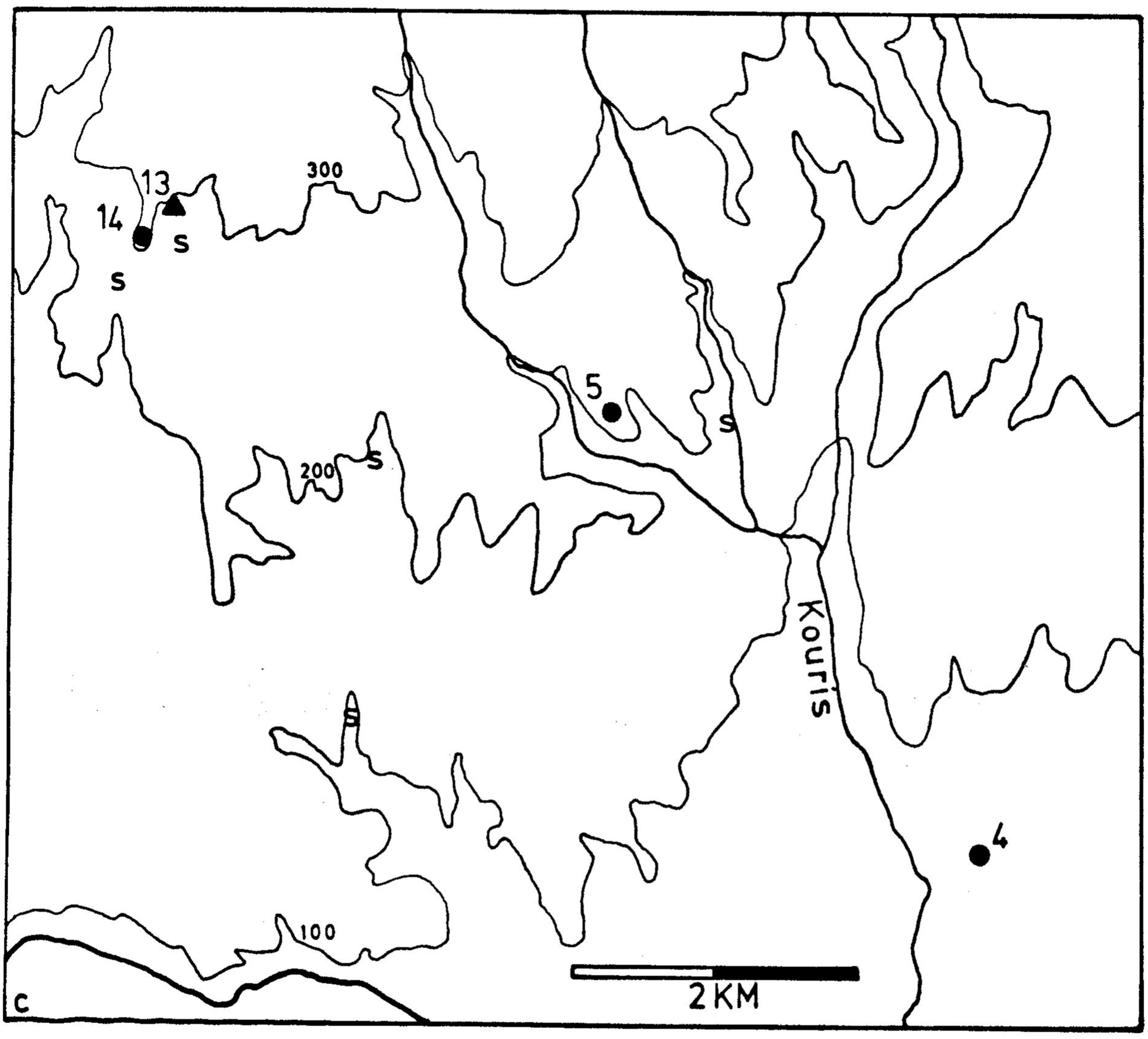

S
300
200
100
9
12
10
11
Ovghos
14
13
15
Serakhis
32
27
26
31
28
30
29
2KM
4
3
Merikas

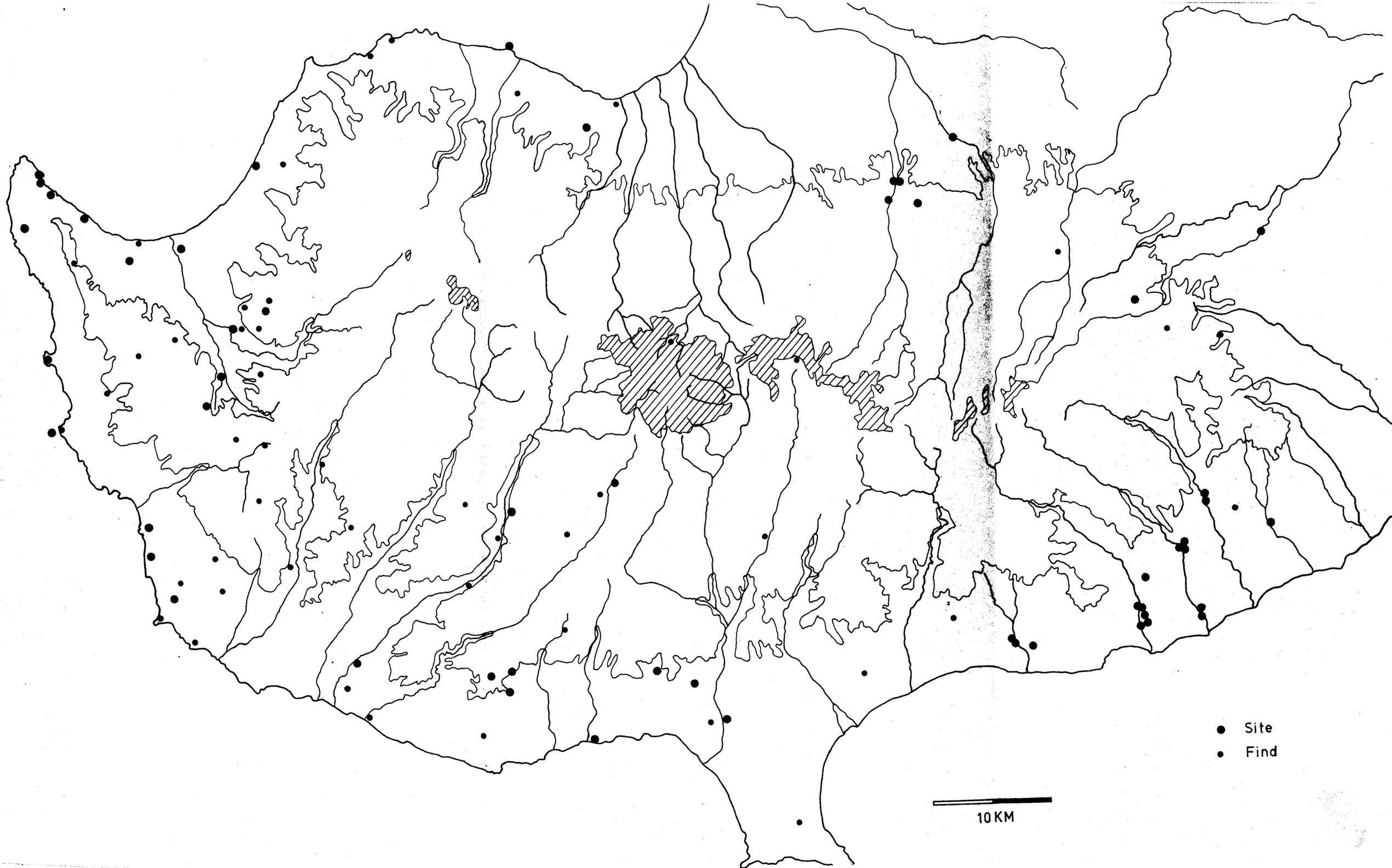

400
300
200
100
20
19 ?
1
9
8?
7?
5
12
2
4
6
3
11
13
14
Vasilikos
Maroni
Pendaskinos
Xeropotamos
2KM


25
19
6
2
No. of sites
0
1
2
3
4
5
6
Distance (km) to nearest neighbour


12
11
109
6
a


25
8
S
S
S
S
300
7
S
Peristerond
5
400
500
b

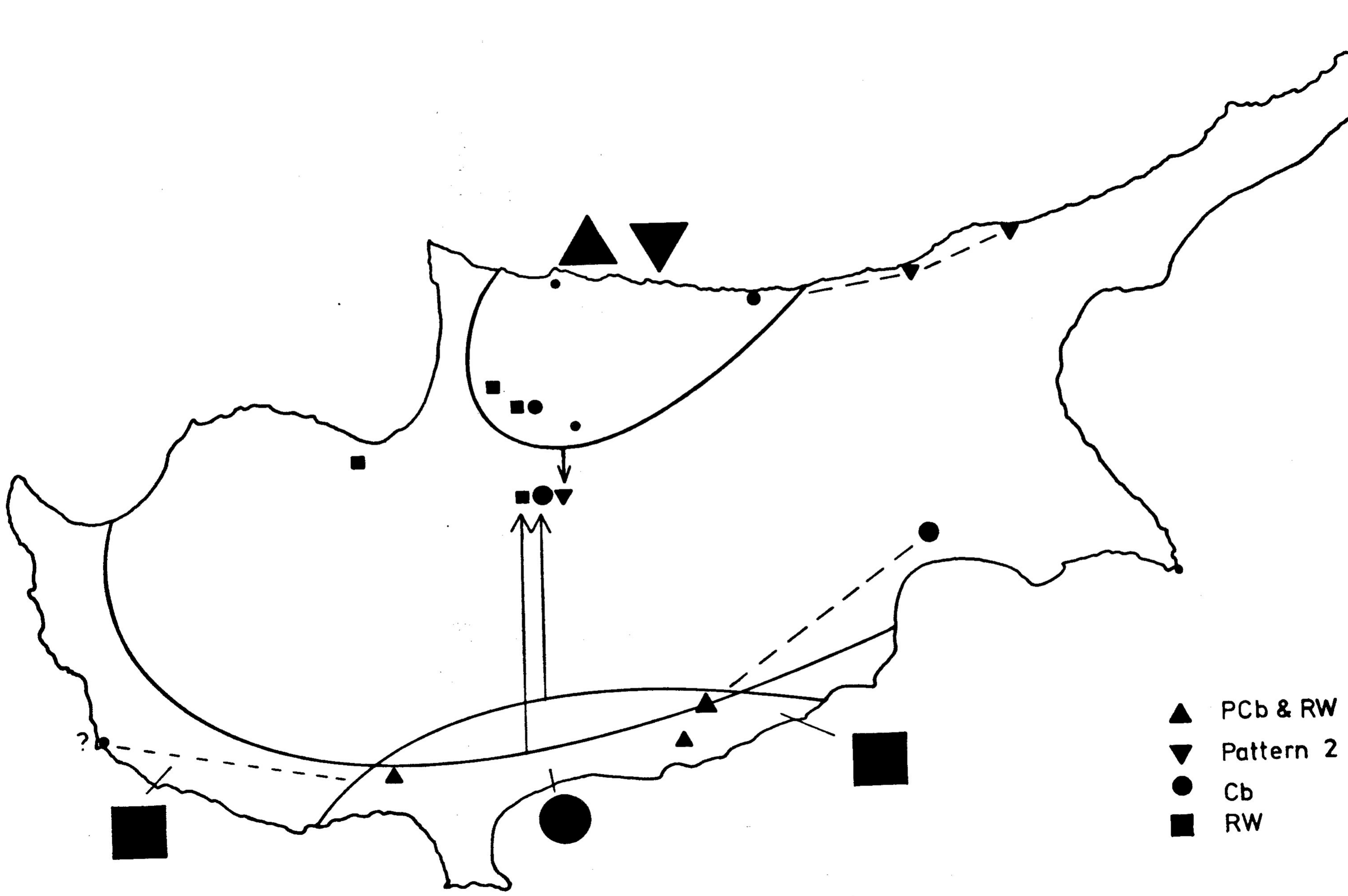

13
14
S
S
300
200
S
5
S
Kouris
4
100
2KM
c


Site
Find
10 KM

	1	>6
Figurines	△	△
Other	o	○

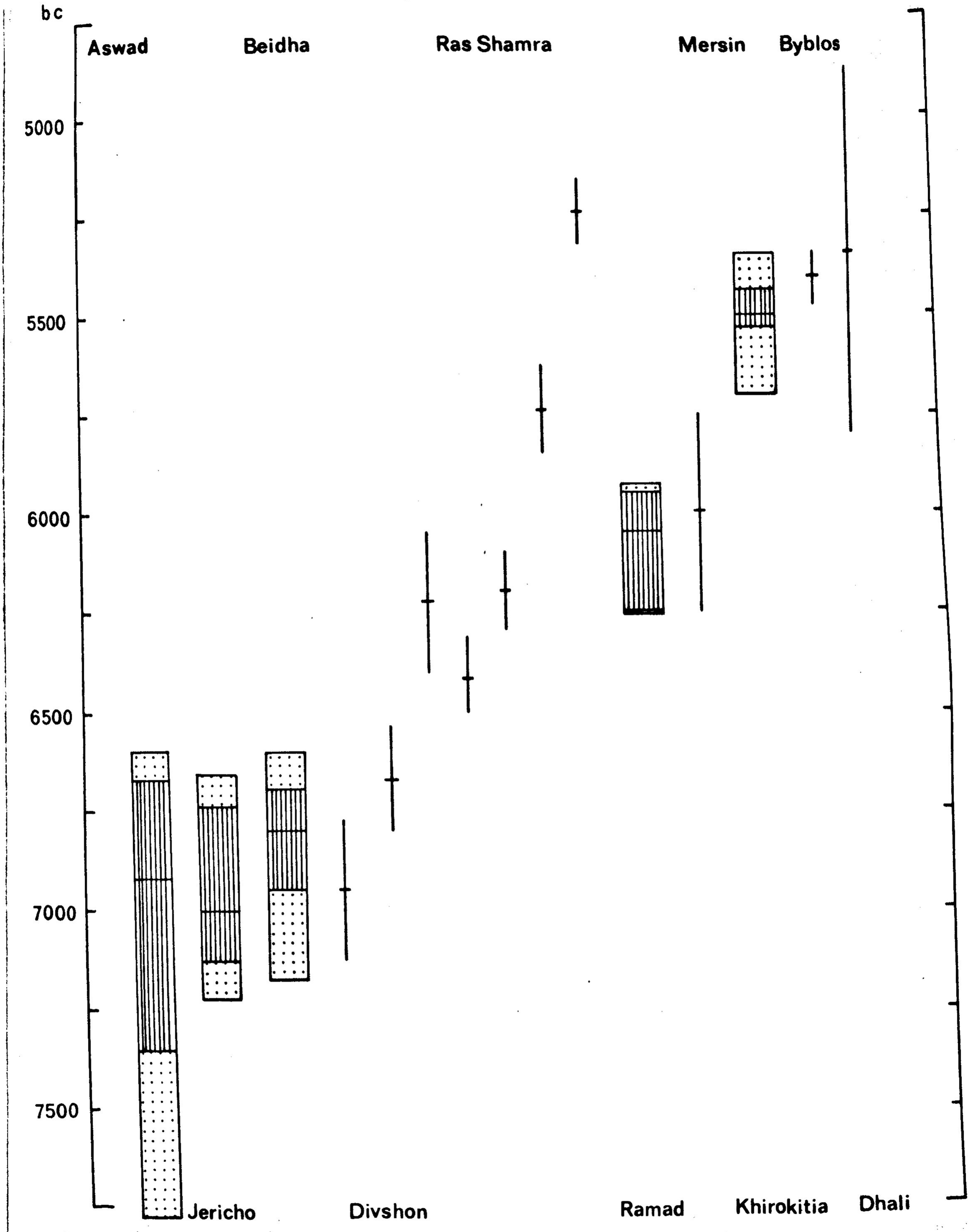
32KM

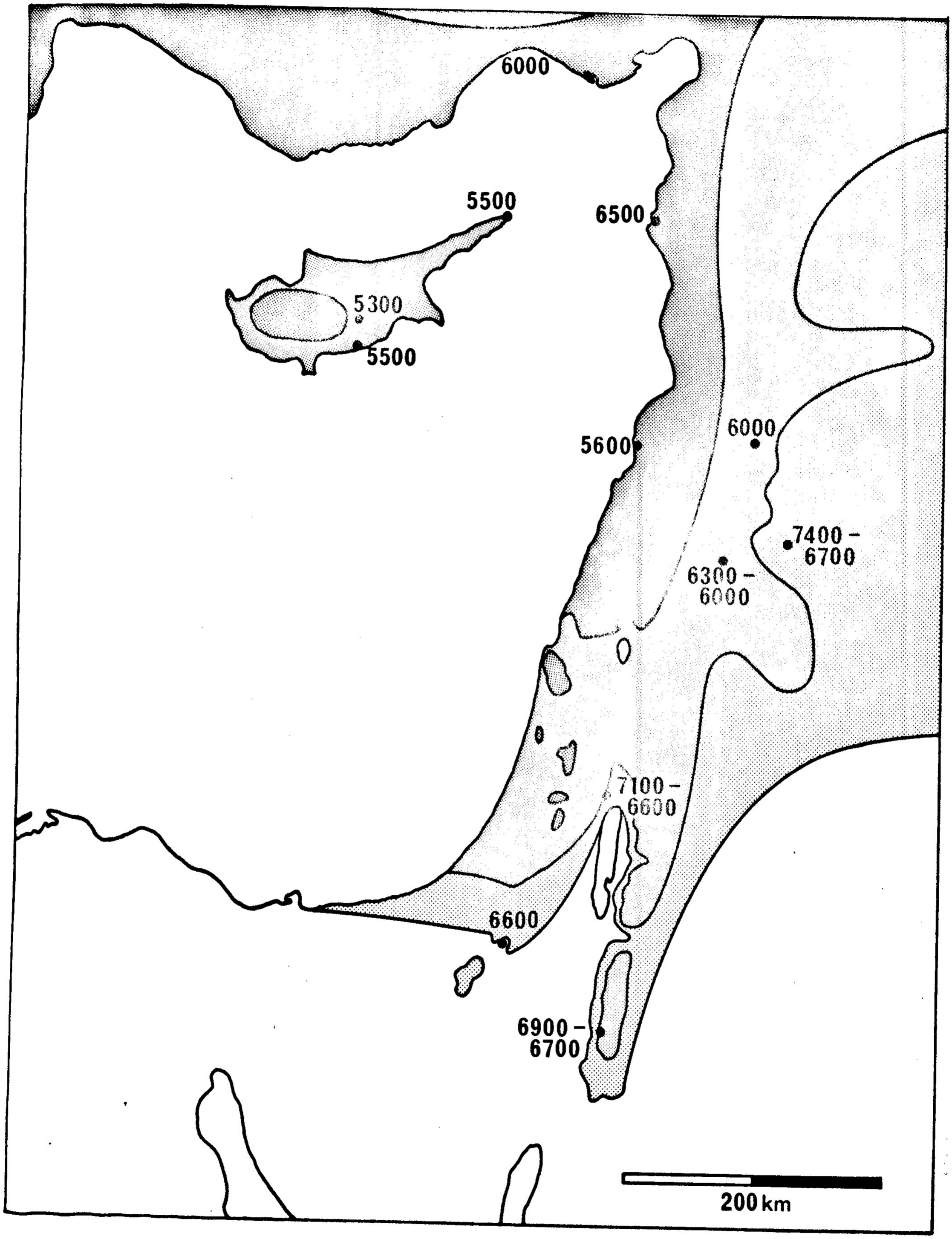
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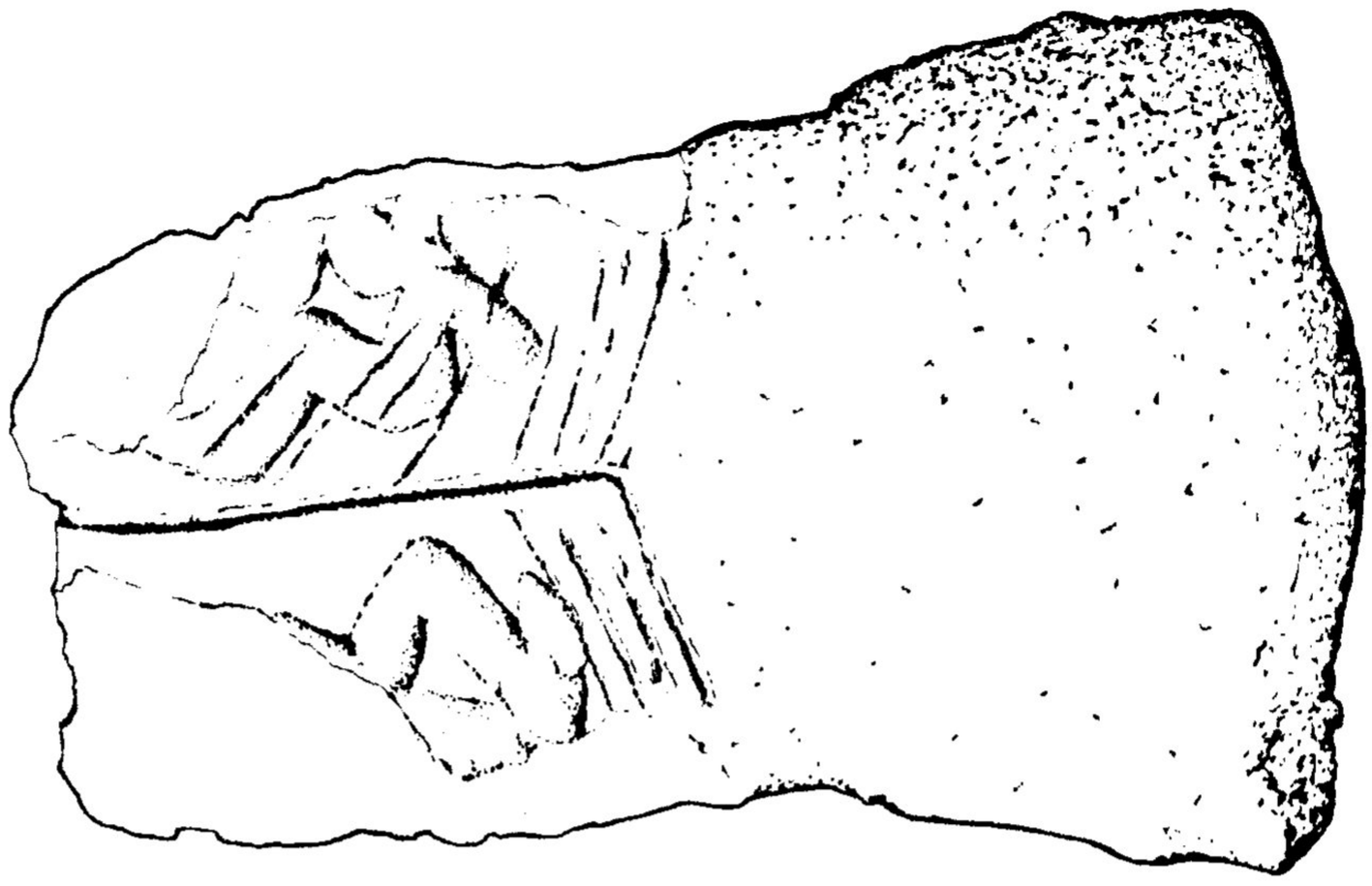

?
PCb & RW
Pattern 2
Cb
RW

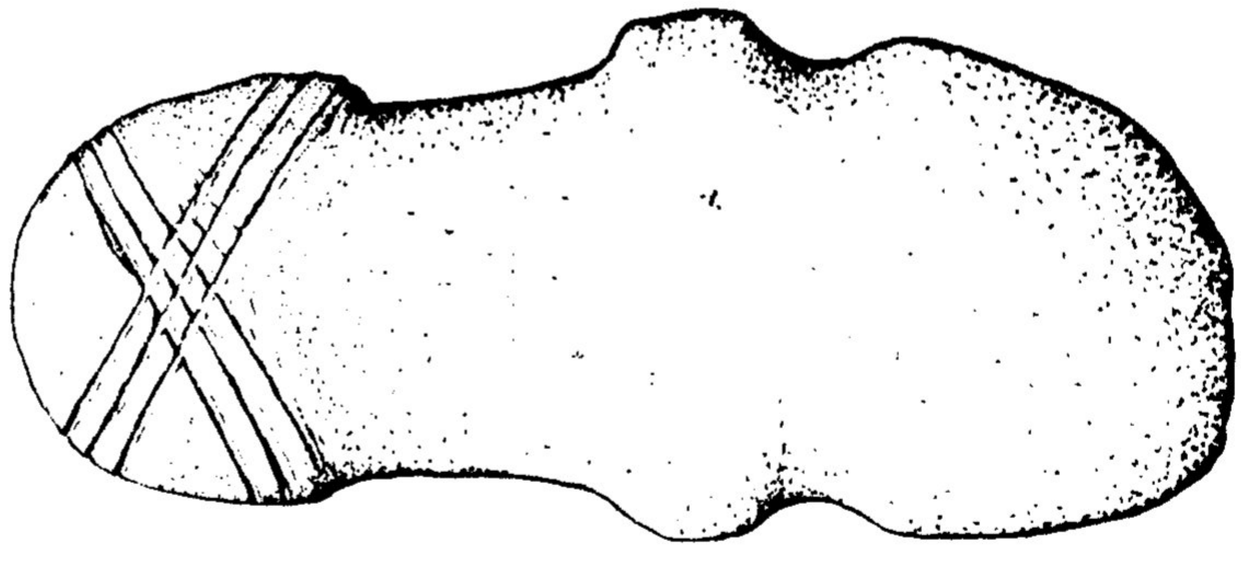


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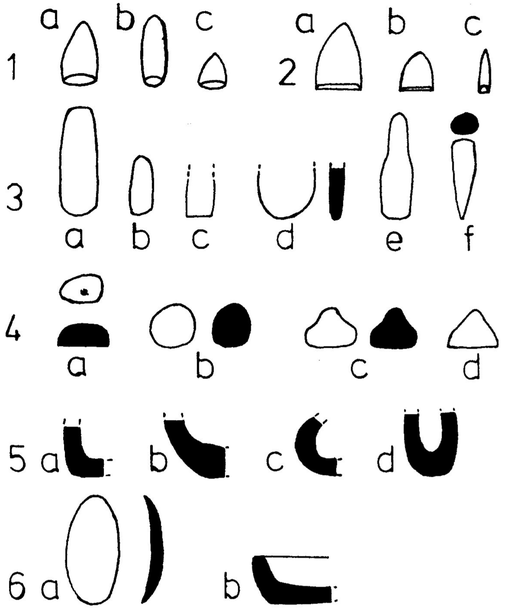

bc
5000
5500
6000
6500
7000
7500
Aswad
Beidha
Ras Shamra
Mersin
Byblos
Jericho
Divshon
Ramad
Khirokitia
Dhali
n
10
7
14
3
4
6
1
7
1
1


6000
5500
6500
5300
5500
5600
6000
7400 –
6700
6300 –
6000
7100 –
6600
6600
6900 –
6700
200 km

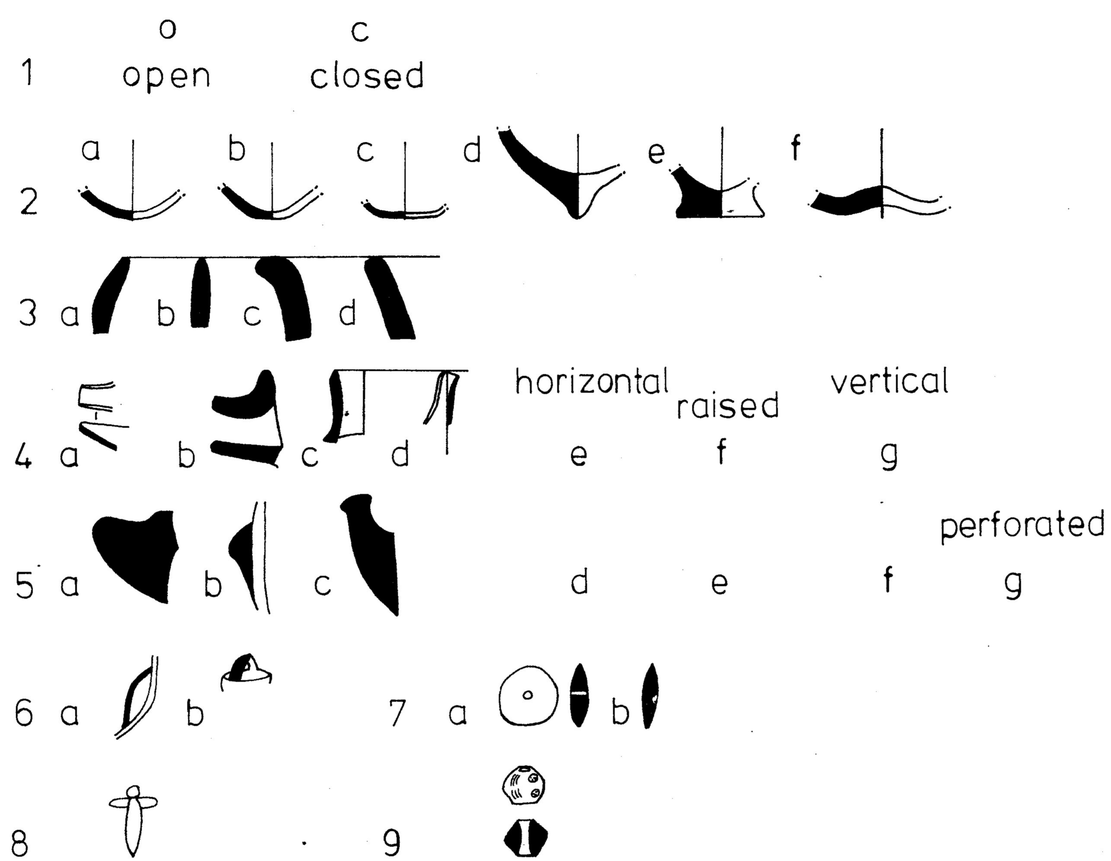




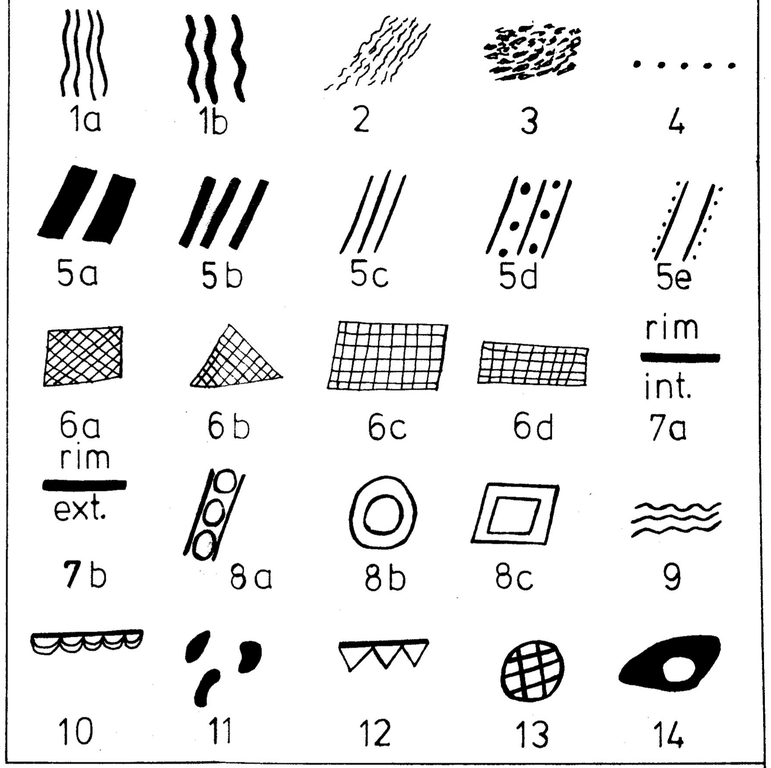
STONE



POTTERY



PATTERNS



FLINT

a flake
b blade
c chunk
d chip
e core
r retouch
u utilization

WARES

BSC	Black slip and combed
BP	Black polished
C	Coarse
Cb	Combed
CR	Coarse red
PCb	Painted and combed
PW	Plain white
RBL	Red and black lustrous
RL	Red lustrous
RP	Red polished
RR	Red on red
RW	Red on white

NOT TO SCALE

28 27 18 25

13 17

31 30

31A

16

15 14

34A

33 12

4

32 5 3

34

11

6 1A

10 7

1

19 24

8A 2

8

20

9

35 21

22

23

Overlay for numbering of Phase 2 structures


K32
K24
K35
K45
K46
K43
K41
K44
K30
K29
K28
K17
K18
K16
K9
K7
K8
K23
K6
K5
K20
K27
K39
K10
K19
K22
K2
K14
K13
K31
K21
K34
K15
K33
K37
K38
K26
K3
K1
K36
K25
K11
K12
N19
N9
N12
N10
N11
N14
N13
N15
N31
N30
N29
N3
N4
N24
N23
N20
N1
N22
P11
P10
P9
P13
P12
P1
P24
P16-19
N25
N8
N7
N5
N2
N21
P8
P6
N6
P23
P2
P7
P22
P15
Li7
P3
La20
La19
La1
P5
P4
La8
La9
La7
P14
La5
La12
La2
La4
La6
La13
La14
La11
La3
Li12
Li11
Li6
P20
P21
Li2
Li3
Li10
Li14
Li3
Li5
Li4
Li9
0
5
10
15
20
KMS


K46
K30
K43
40|2|7|8
K41
K44
K29
K28
K17
K18
K16
K20
K9
K8
K7
K23
K4
K6
K5
K27
K39
K10
K19
K22
K2
K3
K1
K26
K25
K36
K37
K38
K31
K21
K34
K15
K33
K11
K12
N19
N17
N18
N16
F1
F6
F2
F4
N13
32
N31
26|7|8
N30
N29
N3
N4
N24
N23
N22
N25
N8
N7
N5
N2
N21
N6
F7
F3
La17
La18
La16
La21
La10
La15
La20
La19
La1
La8
La9
La7
La5
La12
La2
La4
La6
La11
La3
La13
La14
Li12
Li11
Li6
0
5
10
15
20
KMS
TN GN MN
Land above 1000 feet
,, ,, 4000 feet

F9
F10
F8
F5
F1
F6
F2
F4
K9
K8
K7
K23
K4
N19
N17
N18
N16
F7
N2
La17
La18
La16
F3
La21
La10
La15
TN GN MN
20
Land above 1000 feet
" " 4000 feet