

**‘THROUGH A GLASS DARKLY’:
OBSIDIAN AND SOCIETY IN THE SOUTHERN AEGEAN
EARLY BRONZE AGE**

Tristan Carter

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TEXT and BIBLIOGRAPHY**

- ABSTRACT -

This thesis considers the social context of Southern Aegean lithic technology during the fourth - third millennia B.C., focusing on the socio-political significance accorded the production and consumption of obsidian blades from the later Neolithic - Early Bronze Age.

In **Section One** (*Chapters One-Five*) past work on Aegean obsidian is examined critically. Through drawing on data generated by recent surveys and excavations in the southern mainland, the Cyclades and Crete, it is argued that from the later Neolithic - EBII, the working of obsidian shifted from a community-wide basis to being located within a restricted number of settlements. These latter sites, due to their size and associated material culture, are suggested regional centres, acting as loci for skilled knappers and the dissemination of their products. This ability to influence or directly control such individuals is claimed to have played a role in the development of social inequality.

The central part of the thesis, **Section Two** (*Chapters Six-Nine*) discusses the appearance of fine obsidian blades within the EBI Cycladic burial record, arguing that this new mode of consumption provides a context where one can see the reconceptualisation and political appropriation of lithic technology. The regular association of obsidian blades with materials associated with body modification and personal display suggest their use in depilation and scarification: the physical manifestation of an individual's political identity. This role, however, has to be seen as largely symbolic, as microwear analysis shows that these blades were generally interred unused and in such fresh state to suggest that most were produced specifically for burial.

Finally, it is considered that the pan-Southern Aegean adoption of this funerary habit, from the late EBI onwards, was largely the result of social processes, namely the

long-distance voyaging that formed such an important factor in forging and articulating ideology and cosmology in the Early Cycladic world. The appearance of this burial practice beyond the Cyclades is investigated in the context of contemporary social-relations and a number of other variables that may have affected the act's meaning in regions such as the Mesara of Southern Crete.

Section Three (*Chapters Ten-Twelve*) deals with those sites where notably higher concentrations of 'Cycladica' have led to suggestions that something above and beyond trade and exchange was responsible for creating the archaeological record: that of physical movement and colonisation. Through my studies it has been recognised that a number of subtly different techniques were employed to produce the fine pressure-flaked blades from both domestic and mortuary contexts, some of which have quite specific temporal and spatial distributions. The chipped stone from the three cemeteries central to this controversy: Aghia Photia, Archanes and Manika, were analysed in the context of their relationship to contemporary lithic technology in the Cyclades. Detailed, holistic, contextual analyses have produced remarkably positive results, implying the presence of an immigrant population at the former site, whilst the material from the latter two communities can be largely explained through the adoption and manipulation of exotic social practices. As with every aspect of this thesis' work, these results are then discussed in the light of broader southern Aegean political issues.

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Time to get a job...

To MUM and DAD

A heartfelt Thank you

It's all punk innit...

- FOREWORD -

(i) - Introduction

This thesis is not about obsidian. ‘Obsidian’ is a geological term for a specific kind of natural glass, that due to its often excellent conchoidal fracture habit and sharpness, was frequently employed during prehistory for the manufacture of chipped stone tools. The material has no inherent value or meaning. These socially constructed attributes are arbitrary and dependent on context, be it temporal, spatial, or associational. What this thesis does concern is obsidian in a humanly altered state and as a medium for lithic technology. Obsidian forms the central, fixed variable that links material culture produced, exchanged and consumed within the southern Greek mainland, the Cycladic islands and Crete during the fourth and third millennia BC.

Such an opening statement may seem pedantic, but within Aegean prehistory stone tools studies have been concerned largely with raw material. Thus items with potentially different meanings, such as ‘natural resource’, ‘rough-out’ or ‘end-product’ have potentially been classified together on the basis that they are made from the same stone. A further point is that the development, dissemination, utilisation and value of lithic technology and stone tools has been perceived as primarily reflective of, and dependent on, the economic and political basis. However, it is my belief that ‘lithic technology’ (shorthand for technical knowledge and practice) and its products played an *active* role in the creation, maintenance and articulation of social relations, at both inter-personal, and corporate levels.

Therefore, the subject of this thesis is obsidian as material culture. It is employed as a lens (albeit one of black glass) to see the relationship between technology and society in the later Neolithic and Early Bronze Age (EBA) southern Aegean. First and foremost I wish to be considered an Aegean prehistorian who works primarily with

stone tools, not a lithic specialist who works in Aegean prehistory, or I will be doomed to write 'Appendix Z' for the rest of my career. Ergo, while the comments in this thesis may find resonance elsewhere, as indeed it is hoped that they shall, it will restrain itself to the area of chosen research and allow any further conclusions, to be drawn by the reader.

(ii) - Chronology and Cultural Geography

This shall follow the geo-chronological scheme established by Renfrew (1972), incorporating its subsequent refinements, as most recently summarised by Manning (1995; **Figure i**). The framework for studying southern Aegean prehistory has been established in the form of a culture-historical paradigm, with the definition of the Minoan, Helladic and Cycladic cultures essentially replicating present day Crete, the southern Greek mainland and the Cyclades (A. Evans 1906; Karstedt 1913; Wace and Blegen 1918; Blegen 1921). The terms Early Minoan (EM), Early Helladic (EH), and Early Cycladic (EC), have been employed for the best part of the twentieth century, oft criticised but never abandoned (Renfrew 1972: 53-55; Caskey 1978; Pullen 1985). The culture system is being gradually deconstructed, replaced by a series of interconnected regional narratives, thanks to the mass of data generated by intensive survey and materials' analysis (cf. Konsola 1984; Pullen 1984, 1995: 41-42; Attas, Fossey and Yaffe 1987; Wilson 1987; J. Davis 1992; Gale and Stos-Gale 1992; Rutter 1993: 747-58; Watrous 1994: 698; Wilson and Day 1994).

As this work is centred on the Cyclades and its neighbours within the third millennium BC, it is necessary to refer briefly to a few problems concerning the region's EBA sequence, i.e. that period from which the majority of the material studied in this thesis derives. The first point is that EC chronology is based almost entirely on burial assemblages due to the lack of securely stratified settlement deposits (Renfrew 1984a:

43-44). This imbalance should be redressed eventually with the publication of the excavations at Phylakopi on Melos, Akrotiri on Thera, Skarkos on Ios, the Zas Cave, Naxos and Markiani on Amorgos (Evans and Renfrew 1984; Marthari 1990; J. Davis 1992: 730-32, 752-53; Zachos 1996a).

For some islands, particularly the central and southern Cyclades, the EBI-EBII sequence is relatively assured, with distinctive ceramic assemblages termed the Pelos-Lakkoudhes and Keros-Syros Groups found one stratified beneath the other at Phylakopi and Akrotiri (Edgar 1904a: 82-87; Evans and Renfrew 1984; Sotirakapoulou 1986, 1990). As little or no material of the former group has been recovered for the northern Cyclades, it is now considered that there may be a temporal overlap between the Attic-Kephala Culture (commonly termed FN and represented on islands such as Kea) and that of the Pelos-Lakkoudhes Group. Thus the distinction between these two sets of material culture is more a reflection of different regional cultural practices rather than their date. There is also an awareness that some of the culture groups may have more of a social rather than chronological significance. For instance, Doulas sees the Plastiras Group as diagnostic of late EBI in the Cyclades, situated between the Pelos-Lakkoudhes and Keros-Syros groups (Doulas 1977: 16-25), but as it is defined by a 'set' of marble burial goods (Renfrew 1984a: 44), it may represent the prestige items of the EBI Pelos-Lakkoudhes Group. This issue, along with other related topics will be returned to in the course of this thesis.

(iii) The Socio-Political Context

A primary aim of this thesis is to locate the procurement, working, redistribution and consumption of obsidian within its socio-political context. It is therefore necessary to provide a brief outline of southern Aegean later-Neolithic and EBA society as seen over the past 30 years. Firstly, the cultures of the late fourth - third millennium BC have

more often than not been described and discussed in relation to the Aegean civilisations of the Middle and Late Bronze Age. Thus the southern Aegean EBA world, its settlements, material culture, technology, economic and social organisation, has become the intellectual battleground within which the origins of the Minoan and Mycenaean palatial systems are debated (cf. Renfrew 1972; van Andel and Runnels 1988; Watrous 1994).

In investigating this issue, it was Renfrew who produced the first and indeed one of the few major works that considered the archaeology of this period in its social totality, in his seminal work *The Emergence of Civilisation: The Cyclades and the Aegean in the Third Millennium B.C.* (Renfrew 1972). His basic approach was to question those who had argued, or inferred, that the Minoan 'civilisation' (and by extension the later Mycenaean state-system) was a political construct introduced from the more developed states to the south and east of Crete (cf. A. Evans 1921: 17, 1924; Xanthoudides 1924: 128-34; Childe 1925: 14-34). Instead, Renfrew argued that it was possible to see the bases for social complexity within the EBA cultures of southern Greece. The catalyst for development was allegedly provided indigenously through the interaction of a variety of innovations within these societies, including as technological advances, shifts in subsistence strategies and / or modes of redistribution (Renfrew 1972: 36-44). This is to get ahead of myself, for this section requires a basic introduction to the archaeology of the later fourth and third millennium southern Aegean.

Apart from a few exceptions, settlement in the period and area under discussion was dispersed, the population predominantly residing in small farmsteads or hamlets. In the later Neolithic the inhabitants of the southern mainland appear to have been involved in primarily pastoral regimes (cf. Demoule and Perlès 1993: 389), with a shift to more sedentary agrarian practices from the FN onwards, coinciding with large-scale

episodes of land clearance (van Andel and Runnels 1987: 76-77, 83-89). As on the mainland, Cycladic settlements of the EBA are commonly situated on hill-tops either directly overlooking the sea, or small interior plains in the larger islands such as Naxos and Melos (Doumas 1972). While faunal data is currently poor, it seems probable that amongst the coastal communities the exploitation of marine resources would have supplemented those gained from the land (Bintliff 1977a: 113-22; Gamble 1979). In Crete one can similarly adduce a preference for settlement along the coast and inland plains, plus the occupation of foothills and mountain valleys (cf. Blackman and Branigan 1975, 1977; Watrous 1982; Moody 1987).

This picture of dispersed small-scale communities has not always been the image associated with EBA settlement patterns, particularly on the mainland (**Figure ii**), for excavations throughout the earlier part of this century had revealed a number of settlements displaying what many considered to be urban, or proto-urban characteristics (cf. Renfrew 1972: 108; Konsola 1984, 1986). Intensive field survey has subsequently placed many of these sites into a broader context, making it apparent that communities such as Lerna, Agios Kosmas, Zygouries and Eutresis do not represent the norm (indeed their initial excavation arguably stemmed from their impressive scale and the potential of well-defined stratigraphy and rich finds), and thus provide evidence for the existence of settlement hierarchies (cf. Pullen 1985: 344-64; van Andel and Runnels 1987: 82-98, 1988: 238-39; Forsén 1992: 189-95).

Similar pictures have begun to emerge in the Cyclades and Crete, though due to these regions' rich EBA burial records there has been a far greater emphasis on the 'archaeology of death' for elucidating social complexity, often at the expense of investigating EC and EM domestic contexts (cf. Branigan 1970, 1991, 1993; Renfrew 1972: 370-83; Doumas 1977; Soles 1988, 1992; Dabney 1989; Georgoulaki 1995-1996). In terms of architecture and scale, there is at present little evidence for inter-settlement

differentiation in the Cyclades prior to the appearance of a few fortified sites in late EBII, followed by the emergence of a few nucleated centres of population in EBIII (Renfrew 1972: 176-78, 188-91; Barber 1987: 54-57, 74). This may be partly a reflection of the few EC domestic sites excavated, but it may also indicate that during the earlier part of the EBA, Cycladic power relations were created and contested elsewhere, as for instance within the burial arena. In simple terms, social inequality can be seen in the EC world, by the fact that the funerary rites of a few individuals per community involved the consumption of a far greater quantity and range of material culture than the majority of the population (Renfrew 1972: 371-78, 1984a; Doulas 1977: 58-63). While the amount of goods consumed may have helped create and / or maintain the social standing of those involved in burying the individual, the nature of the artefacts themselves offer an indication of other avenues to power and prestige. As obsidian forms a recurrent component of these burial assemblages, this matter will receive far more detailed discussion in a later part of this thesis (**Section Two**).

It is within the study of third millennium Crete that the intellectual background for many scholars' interest in this period comes most clearly into focus, for the island's EBA cultures are interchangeably described as 'Early Minoan', or 'prepalatial'. Crete's EBA settlement evidence is thus invariably contextualised through reference to the later Bronze Age palaces (cf. Renfrew 1972: 90), with particular attention paid to evidence for storage and redistribution within these early communities, features considered diagnostic of the Minoan and Mycenaean palatial 'systems' (*ibid*: 287-88).

It is also within the material culture of the third millennium material culture that scholars seek a link between the EBA and later Bronze Age socio-economic systems. The use of sealstones by the EBA cultures of the southern Aegean (cf. Heath 1958; Wiencke 1969; Renfrew 1972: 306; Yule 1981; Pullen 1990a; Sbonias 1995) provides one major focus of attention in this debate, for these objects supposedly demonstrate

that as with the palaces, these small-scale societies also administered production, ownership, consumption and redistribution of goods. By extension, this supposedly indicates 'production beyond subsistence', the generation of surplus goods to be diverted into non-subsistence activities such as trade, politically motivated conspicuous consumption and the maintenance of craft specialists (Renfrew 1972: 304-307).

The debate continues between those who see precocious forms of palatial civilisation in the archaeological record of the EBA southern Aegean and those who see the development of state society in late MBA Crete as the result of revolutionary changes in political superstructure, due to the awareness of, and contact with, the 'primary' states of Egypt and the Near East (cf. Cherry 1983, 1984; Watrous 1994, 1995). This thesis is not the place to dwell on these issues for any great length (they are raised briefly in *Chapter Twelve*), though it is necessary to briefly note the theoretical shifts in Aegean prehistory since Renfrew's work of 1972.

While the *Emergence* attempted to avoid the notion of a prime mover in the development of social complexity, many scholars focused on the importance that Renfrew accorded the adoption of Mediterranean polyculture (wheat, the olive and vine) in the later Neolithic / EBA Aegean, that supposedly coincided with an increase in population (Renfrew 1972: 280-87, 304-307, 480-82). Subsequent palaeobotanical evidence has challenged this correlation, suggesting that in the third millennium the olive and vine (plus their associated products of oil and wine), probably occupied a far more marginal niche with regard to EBA subsistence-bases (Runnels and Hansen 1986; Hansen 1988), though conversely this may have increased their social significance (cf. Renfrew 1972: fig. 15.7).

Different trajectories for development have therefore been forwarded, including those that emphasise the role of trade and exchange plus technological innovation. The latter argument is influenced largely by Sherratt's 'secondary products revolution' (A.

Sherratt 1981, 1983), where it is proposed that the introduction of the plough and traction animals into Aegean society would have meant the maximum exploitation of existing stock and the opening up of new lands, that in turn would lead to intensified agricultural production and the generation of ‘social surplus’ (van Andel and Runnels 1988: 242; Pullen 1992).

Trade and exchange indeed appears to have played an important role within the creation of EBA social distinction (its relationship with the rise of the palatial systems will not be considered here). Exotic goods and influences are concentrated at the largest sites of the period, those that also have the most important architectural forms (‘central buildings’), important objects such as sealstones and the greatest diversity of material culture. Furthermore, most of these communities were located on coastal, or near-coastal, positions. Given the probable maritime routes for traversing the Aegean and rounding its landmasses (Agouridis 1997), it has been argued that sites such as Lerna, Agios Kosmas, Manika, Chalandriani, Phylakopi and Mochlos (**Figure iii**) occupied nodal points in major exchange networks (van Andel and Runnels 1988: 238-40). Indeed, the ability to access and control the flow of goods, ideas and people within (and beyond) the Aegean world appears to have been so important, that certain communities’ were established in environments that offered little other benefits, “even at the possible expense of self-sufficiency in food” (*ibid*: 240). One such example is the site of Dhaskalio-Kavos on Keros in the central Cyclades, whose associated material culture indicates a precociously well-connected and rich community based on a “bleak” island that offers minimal arable land and no mineral resources (Broodbank 1993: 319).

The act of exchange and its material consequences has been seen in primarily economic terms, with van Andel and Runnels (1988: 243) describing these regional centres as “*emporía* accumulating wealth”, representing an “economic opportunity” for the emergence of local élites. Equally, while the flow of prestige goods is accepted, it is

presumed that most of the items displaced through maritime exchange were related to basic subsistence activities: salt, animal products, raw materials and finished implements (*ibid*). While such goods no doubt formed a staple component of EBA short- and long-distance exchange, it has to be questioned as to whether their transaction represented the primary *raison d'être* for these communities to undertake what must have often been risky or dangerous voyages?

Recent work by a few scholars, Broodbank in particular, has begun to raise the profile of the importance small-scale societies accord long-distance voyaging (and accompanying exchange) and its role in the creation and maintenance of prestige and corporate identity amongst and between communities such as those occupying the EBA southern Aegean (Broodbank 1989, 1993, 1995). Such work has also provided an important shift in how these cultures are approached, through concentrating on the context under consideration and not taking the modes of later Bronze Age social complexity as a datum point from which to extrapolate backwards (also cf. Nakou 1995). It is within this intellectual context that this work is located; it is a stance that should prove productive in the study of Aegean lithic technology. Hopefully this work can make a worthwhile contribution to this aim.

(iv) Aegean Interrelations Through Time

Interregional contact was a requisite part of Aegean life from the earliest times, for reasons such as necessary access to wider mating networks and the uneven distribution of mineral resources. The archaeological record provides evidence for periods of heightened awareness and directioned activity between regions that have consequence for how resources such as Melian obsidian was procured, distributed and valued.

In the FN, strong inter-regional contact between the communities of Attica, the northern Cyclades and the Saronic Gulf can be documented through their use of closely shared material culture (primarily ceramics), a criterion employed to define the Attic-Kephala culture (Renfrew 1972: 75-77; Coleman 1977: 98-108). Other ‘culture zones’ have been defined within the later Neolithic Aegean (cf. Phelps 1975; Zachos 1987; Papathanassopoulos 1996), suggesting that the movement of goods, such as obsidian, across these different social spaces cannot be assumed to have occurred within singular modes of displacement, or have had the same value.

While certain inhabitants of EBI Helladic and Minoan communities were aware of the Cycladic world, their interaction within this region appears to have been primarily as a geographical, or resource-laden phenomenon; i.e. they were exploiting the Cyclades for its obsidian, copper and silver (**Figure iv**), with little evidence for any contact between these peoples. At the end of EBI (an important period within this thesis) there was a dramatic change in how some (or much) of the contact between the Cyclades and the surrounding lands was articulated. It is at this juncture that clear evidence exists for cultural interconnections within the Aegean, with a range of ‘Cycladica’ (EC material culture, burial types and imitations thereof) recorded from north Crete, Euboea, Attica, the north-Aegean islands and western Anatolia (**Figures v-vi**).

In the early EBII period this movement and influence of EC artefacts and social practice expanded (**Figure vii**), continuing to suggest that Cycladic islanders were responsible for initiating and undertaking the long-distance contact and exchange that brought peoples of the southern Aegean into contact. It is this widespread distribution of shared technologies, material culture and social practices that Renfrew famously termed the EBII “international spirit” (Renfrew 1972: 451-55).

In late EBII there appears to have been a major disjuncture of previously established social networks, resulting in a more fragmentary picture of cultural

interaction. In the Cyclades, Euboea and parts of the western mainland, evidence indicates an increased contact with the islands of the north Aegean and western Anatolia (in particular the Troad), resulting in the appearance of new pottery types (**Figures viii-ix**), new technologies (including the fast-wheel and tin-bronze) and new settlement patterns (**Figure vii**). It is still debated as to whether these changes are a result of intrusive (possibly violent) elements in the Aegean, or due to indigenous élites creating new modes of power through establishing contact with different polities and employing new forms of symbolic expression. In contrast, most of the Peloponnese and all of Crete seem to lack these new ‘Anatolising’ features, and subsequently develop upon different trajectories.

To summarise, it is within these culturally defined, contested and re-aligned landscapes that the procurement, exchange, reduction and consumption of obsidian is examined. Before moving on to these issues, it is necessary to provide a brief commentary on the other major theme of this study: lithic analysis and how the study of obsidian in an Aegean context has been undertaken.

(v) Endnote: The Current State of Aegean Lithic Analysis

As will be described in *Chapter One*, the past 20 years has seen a great increase in the study of chipped stone within Aegean prehistory, yet it remains largely peripheral with regard to larger interpretative processes. A number of reasons can be forwarded as to why this element of Aegean material culture still occupies such a marginal niche.

(v.1) *Aesthetics and a hierarchy of material culture: The past as exotica?*

Firstly, it is apparent that a hierarchy exists within the study of material culture from the Aegean Neolithic and Bronze Age, with exotica and the aesthetically pleasing taking publication priority. Chipped stone is rarely if ever perceived as a medium for

artistic endeavour, an item of beauty, or rarity. We thus have a disproportionate and perhaps unhealthy amount of academic interest in marble figurines and vessels, metalwork and the fine and ornately decorated pottery that fill the museums and their catalogues, irrespective of their contextual integrity (cf. Gill and Chippindale 1993, after Thimme 1977; Dumas 1983; Getz-Preziosi 1987a; L. Marangou 1990, 1992; Renfrew 1991, *inter alia*).

In **Figure x** a selection of publications from prehistoric southern Aegean sites are analysed as to the layout of their contents. One immediately notes a recurring pattern of presentation, with the accepted scheme being pottery discussed first, followed by metalwork and marble, with obsidian either struggling in the lower half of the table, or the ‘relegation crisis’ of an appendix. In turn, lithic analysis has a pecking order of presentation, with unmodified debitage either ignored completely, or making up a poor second place to the cores, blades, points and their typological kin.

Despite the fact that the analysis includes reports written subsequent to the ‘new wave’ of lithic studies of the 1960’s - late 80’s, little appears to have changed. Discussion and documentation of chipped stone is somewhat fuller yet despite the acknowledged information such analyses can produce, the position remains the same. In those two reports where lithics were given primacy: Kitsos and Kouphovouno (Perlès 1981; Renard 1989), one could consider it a reflection of the sites’ early date (L/FN); but given the differential treatment of chipped stone from contemporary Saliagos (Evans and Renfrew 1968), it is probably due to cultural reasons, i.e. the heritage and high regard of lithic research within French academia.

Modern aesthetic, economic and intellectual value-systems have dictated research interests and thus spawned this hierarchy of presentation. For example, within the Zygouries report, the metal finds were presented as follows: gold first, then silver, bronze and finally ‘lack-lustre’ lead, a mirror reflection of modern economic values

(Blegen 1928: 180-185). This is not to deny a prehistoric aesthetic where exotic forms and media were valued, but arguably an interpretation based on contextual and functional analyses would be far more informative (cf. Broodbank 1992a).

I too must ‘come clean’, as stone tools exhibit qualities that are most pleasurable to my eye and none more so than the obsidian prismatic blades of the Aegean EBA. This is based partly on an appreciation of the technical accomplishment that they represent (Crabtree 1968; Knudson 1982: 341; Tixier 1984, *inter alia*), but also because of the raw material and the objects’ regularity and delicacy. Indeed, if one were to emphasise the skill inherent in their production, then it could be argued that a pressure-flaked prismatic blade is far worthier of awe than a marble figurine (cf. Oustinoff 1984), though to do so would be to fall once more into the trap of seeing the past as ‘same’, albeit through a different lens.

(v.2) - A *diachronic indifference*?

Temporal context also appears to influence academic interest in lithics, with an “artificial definition that draws the boundary of lithic studies proper around the flaked stone artefacts of *non-complex societies*” (Runnels 1985a: 102, my emphasis). In studying the Greek Palaeolithic the archaeologist obviously has limited material culture to work with beyond the lithic assemblage (cf. Sordinas 1970; Kourtessi-Philippakis 1986; Runnels 1988a). The appearance of ceramics, or the merest hint of metallurgy, is usually sufficient to initiate the trend of diminishing interest in chipped stone. For example, even though the excavator of EBA Agios Kosmas acknowledged that only three metal objects were found in contrast to the vast quantities of obsidian recovered, it still did not preclude the bronzework meriting discussion before all else save the ceramics (Mylonas 1959: 137).

Indeed, it can be argued that throughout the EBA, metals in the Aegean were restricted both in terms of those members of society who had access to them and their overall, utilitarian impact (cf. Nakou 1995). Also, given the differences between the properties of obsidian and copper alloys, it is probable that for many people and functional activities, obsidian remained the technological mainstay throughout the EBA. Furthermore, while stone tool production (including the skilled pressure-flaked blade manufacture) continued throughout the Bronze Age, there has been virtually no discussion of this craft's significance beyond the specialist literature (cf. Torrence 1986; Moundrea-Agrafioti 1990; Blitzer 1991, 1992 1995; Dierckx 1992, 1995; Evely 1993). In turn, the positive work that has been published should be highlighted, namely Torrence's excellent contextual analysis of chipped stone from the 'Mycenaean' cult centre at Phylakopi and Runnels' call for a more diachronic and holistic lithic analyses (Runnels 1982, 1985a; Torrence 1985).

(v.3) - *Familiarity breeds contempt?*

Imagine finding yourself one day in a rather dark room crammed full of boxes. A man standing next to you explains that the boxes contains over a million bits of chipped flint.....if you are of that breed of archaeologists known as "rock jocks" you are in a sort of dank dirty heaven. Your mission if you choose to accept it, is to explain what these chips of flint mean. (Chazan 1990).

In certain instances archaeologists have displayed an element of 'familiarity' when discussing lithic assemblages. Familiarity in this context can be examined on two levels. The first is reflected in the above quote from a review of the Franchthi Cave's second volume on chipped stone (Perlès 1990b), for in some Aegean assemblages one can be faced by a huge quantity of material. Within this mass, differences and developments are often subtle, often only seen through the application of statistical

analyses on large samples and the experience of a specialist (or ‘connoisseur’). This usually implies boring and repetitious work, involving a material that as has already been argued is not perceived by many as one of great interest in the first place.

The second level relates to the point that it was not too long before the recovery of obsidian from southern Aegean prehistoric settlements became something less than a novelty (cf. Mylonas 1959: 143), with some early twentieth century excavation reports simply noting the presence of obsidian, with the occasional illustration of a few fine blades and cores. A few accounts do not privilege us with even this information, such as the publication of Gonia, an EH settlement near Corinth (Blegen 1930). That no stone tools were discovered here is improbable given the mass of lithics recovered from the nearby contemporary habitations of Perdikaria, Zygrouries, Korakou and Corinth (Blegen 1920: 7, 1921: 104, 1928: 198; Shear 1930: 405; E. Smith 1955: 142-43).

(v) - Conclusions

The role of lithic studies in the Aegean today has a raised profile in terms of the length of specialist reports and the recent increased interest in Greece’s earliest prehistory (cf. Runnels 1988a), but the results of these often incisive and detailed analyses are rarely woven into the interpretative fabric of the site report when dealing with the epochs of pottery and metallurgy. It is hoped that through seeing lithics in a different manner this work may help to break down some of these artificial boundaries that have been imposed on how one reports and interprets an excavation and by extension the society that it hopes to explore. At the same time it is not proposed that it is only through adopting some of my theoretical perspectives that one can elevate and integrate the information generated through lithic analyses. That is dependent on the wider archaeological audience deconstructing their own attitudes towards the role technology played within past societies.

- CHAPTER ONE: BACKGROUND TO THE ENQUIRY -

1.1 - Aims

The aim of this first chapter is to present a critical appraisal of previous Aegean lithic studies within their historical and theoretical contexts. It will concentrate on the socio- economic significance attributed to the later Neolithic and EBA working and uses of obsidian. Firstly, it is necessary to present a brief discussion of the raw material central to this thesis and a short résumé of its exploitation up until the Early Bronze Age.

1.2 - Introduction: Obsidian in the Aegean

For many Aegean prehistoric communities, obsidian was the primary raw material employed to manufacture chipped stone tools, despite the fact that it only occurs naturally on three islands: Melos and Antiparos in the Cyclades and Giali in the Dodecanese (**Figure 1.1**). Limited evidence exists for the latter two sources' exploitation for *chipped* stone tool production, to the extent that prehistoric communities on both Antiparos and Giali imported Melian obsidian for such purposes (Evans and Renfrew 1968; Sampson 1988a). This is to be explained by the fact that Antiparian material is available in only small nodules (commonly less than 3cm in diameter), while the spherulitic inclusions of Giali obsidian impair its conchoidal fracture habit, though conversely it could be worked by abrasive techniques, enjoying a limited use for producing stone vases during the later Bronze Age (Warren 1969: 135-136). For these reasons, along with supplementary analytical corroboration (see below), it appears that Melos provided the raw material for the vast majority of obsidian implements recovered across the Aegean. Unless otherwise stated, it is thus assumed that all obsidian discussed within this thesis is of Melian origin.

1.3 - The Early Exploitation of Melian obsidian up to the End of the Neolithic

From obsidian recovered from the Upper Palaeolithic levels of the Franchthi Cave in the Argolid, the Melian sources of Sta Nychia and Dhemenegaki are known to have been exploited from as early as the eleventh millennium b.c. (Perlès 1979: 83, 1987: 142-45). The significance of this fact is two-fold. Firstly it provides indirect evidence for the earliest maritime travel in the Aegean, as even allowing for post-glacial changes in sea-level, a trip from the Argolid to Melos would have involved open-sea crossings of at least 25-35km (Cherry 1985: 15, fig. 2-2). Secondly, as there is no evidence for the Cyclades being permanently occupied until the LN (Evans and Renfrew 1968), and possibly none on Melos until the FN (Cherry and Torrence 1982; Carter *in prep a*), it has important ramifications for how the raw material was procured and distributed.

From the earliest Neolithic Melian obsidian was used on a more widespread basis (**Figure 1.2**), known from the aceramic levels at Knossos in Crete and a number of mainland sites, particularly in Thessaly, where obsidian commonly formed at least 50% of the chipped stone assemblage (Wijnen 1981; Perlès 1989, 1990a; J. Evans 1994). On the mainland, obsidian occupied a specific technological niche from the Early Neolithic (EN) onwards (no Cretan data for this period is currently available), exploited solely for the manufacture of pressure-flaked blades, a technology probably introduced as part of the 'Neolithic package' from Anatolia (Perlès 1988: 483, 1990b; Demoule and Perlès 1993: 364).

The LN period witnessed changes in the level of obsidian being consumed and how it was being procured and worked within the Aegean. Central to these developments was the increase in maritime activity at this time, including the colonisation of the Cyclades, that arguably led to a greater circulation of the material

(Torrence 1986: 13-15, 135-36; Perlès 1989: 13). For example, obsidian was far more plentiful in LN Corinth, compared to the EN-MN levels where chert implements were 6 times as common as those of obsidian (Lavezzi 1978: 407, 425-26). The increased access to obsidian enjoyed by southern mainland communities, is considered by some to be due to these people taking raw material procurement into their own hands, at the expense of their previous reliance on external specialists (see below). A suggested result of these changes was that more people in southern Aegean society were able to gain and work obsidian, with the emergence of a period of technological “de-specialisation”, with regions such as Attica and Euboea witnessing the innovation of obsidian blade-manufacture by indirect percussion, a less skilful mode of production than pressure-flaking, the technique it replaced largely (Perlès 1989: 12-13).

Technologically and typologically, the earliest lithic industries of the Cyclades are comparable to those of Attica, Euboea and the Argolid (cf. Evans and Renfrew 1968; Perlès 1981, 1994a). At the Cycladic LN type-site of Saliagos near Antiparos, the chipped stone assemblage was dominated by obsidian, where a flake- and (indirect percussion) blade-based industry existed in tandem (**Figures 1.3-1.4**). Blades continued to be manufactured by indirect percussion during the FN, as best represented by the assemblage from Kephala on Kea (Coleman 1977; **Figure 1.5**), with pressure-flaking making its first appearance in the Cyclades in “sub-Neolithic” Ayia Irini and the EBI (basal) levels of Phylakopi (Cherry and Torrence 1982: 20; **Figure 1.6**).

Many of these subjects will be returned to below. This section has served to quickly introduce the pressure-flaked blade-industry of the EBA Cyclades, a technology and associated products that are central to this thesis.

1.4 - Obsidian in the EBA: Melos, Phylakopi and the ‘Great Obsidian Workshop’

When considering the significance of lithic production in the EBA Aegean, an important starting point is the excavation and analysis of Phylakopi's 'great obsidian workshop' undertaken by members of the British School at Athens at the turn of the 20th century (Atkinson *et al* 1904). Phylakopi is the largest Bronze Age site on Melos, situated atop a low knoll on the north coast of the eastern half of the island, some 7km east and 5km west of the obsidian quarries of Sta Nychia and Dhemenegaki respectively (**Figure 1.7; Plate 1.1**). According to current chronological nomenclature it was established in the first part of the Cycladic EBA, where it formed one of a number of small settlements on the island (Cherry and Torrence 1982). By the end of the EBA it was Melos' primary nucleated settlement, becoming an important regional centre during the Middle and Late Bronze Ages, with the material and architectural hallmarks of being under the influence and / or direct control of the Minoan (Cretan) and then the Mycenaean (mainland) civilisations (Mackenzie 1904: 244-72).

The 'great obsidian workshop' was discovered within the fortification walls of the settlement's western end (**Figure 1.8**). It comprised of a mass of obsidian cores, blades and general knapping debris, some 20-30cm thick and spread over an estimated 100-150m² (Atkinson *et al* 1904: pl. 1; Bosanquet 1904: 218; Torrence 1986: 148). Though the deposit lacked direct structural association, it lay under a wall of Second City date and was thus assigned a *terminus ante quem* of EBIII (Bosanquet 1904: 218; Torrence 1986: 147-49).

As director of the excavations, it was Mackenzie's responsibility to provide a synthesis of the fieldwork's results. He was unequivocal about the relationship between the settlement and the island's most famous resource, stating that "already by the time of the early First City, the possession of this material and the working of it formed the chief source of prosperity at Phylakopi" (Mackenzie 1904: 244-45). Mackenzie believed this huge deposit to be the waste from a workshop manufacturing obsidian blades, that

were then traded to communities of the Greek mainland, Crete and the northern Aegean. He was also aware that the recovery of unworked nodules at Knossos indicated that not all blade production was Melian controlled (*ibid*: 245). Mackenzie was also of the opinion that the knapping-floors at Sta Nychia and Dhemenegaki were generated by workers “from the great emporium at Phylakopi”, describing the quarries as “dependent stations” of the “prehistoric capital of Melos” (*ibid*: 245).

It should be stressed that this was only one of two interpretations forwarded with regard to this deposit, for while Mackenzie was responsible for the publication’s overall conclusions, Bosanquet provided the specific discussion of Phylakopi’s obsidian, the quarries, and questions of technology, production and exchange in their Aegean context. Bosanquet’s conclusions were significantly different to those of his director, in an excellent report that represents the first detailed piece of work on Aegean lithics, drawing on ethnographic, archaeological and historical data to support his technological, economic and functional interpretations (Bosanquet 1904).

Both scholars did agree that as obsidian was being exploited prior to Cycladic colonisation (*ibid*: 228-29), the quarries during the Neolithic “were probably at first independent stations exploited directly from without”, with Phylakopi’s role in the raw material’s exchange only emerging much later (Mackenzie 1904: 246-48). It was on the nature of this role that Bosanquet proposed a quite different interpretation, arguing that Phylakopi’s importance was based, “not on natural wealth but on geographical conditions”, i.e. its dominance of the north coast’s best harbour (Bosanquet 1904: 218-20, 231). Bosanquet also argued that the ‘great obsidian workshop’ was generated by tool production for local consumption, as opposed to the manufacture of blades for pan-Aegean consumption (*ibid*: 219-20).

It is important to acknowledge the existence of these two pieces of work, the continuing validity of some of their arguments and their differences in opinion (*contra*

Torrence 1986: 100-101). While some of their assertions have subsequently been modified and / or refuted, the work has drawn some rather unfair criticism based on how some of the arguments were presented, particularly in reference to Mackenzie's use of the term 'markets', nomenclature that is now generally eschewed in discussing prehistoric exchange. To concentrate on the form rather than the substance of Bosanquet and Mackenzie's arguments does not do justice to these early pieces of work.

1.5 - Renfrew, the 'Supply Zone' and Embedded Procurement

Worked obsidian has been recovered all over the Aegean (albeit in varying quantities) as far north as Macedonia and Thrace, as far south as the Mesara plain of Crete and from Kephallinia in the Ionian islands to Aphrodisias in western Anatolia (**Figure 1.9**). Even though other sources on the periphery of the Aegean world were known to exist (**Figure 1.10**), it was commonly believed that this obsidian was Melian, ever since Fielder's rediscovery of the island's quarries and knapping floors in 1836 (Dümmler 1886: 25, 28; Bosanquet 1904: 218, 228-29; Dawkins 1904-05a: 268). Indeed, Bosanquet went as far as to suggest that obsidian found in Egypt and the coast of Asia Minor may have been from Melos, though he appreciated that petrological analyses were required before any such connection could be proven (Bosanquet: 216, 228-29).

During the 1960's Renfrew instigated such an analytical programme, using a variety of scientific techniques to discriminate the Aegean and other sources on the basis of their different chemical compositions (many obsidians cannot be visually discriminated [Cann and Renfrew 1964; Renfrew, Cann and Dixon 1965; Durrani *et al* 1971]). Renfrew's underlying interest in obsidian was to gain an image of later Neolithic and EBA cultural interaction and socio-economic complexity in relationship to the origins of the Cretan palaces at the end of the Middle Bronze Age. As such, this

work formed part of a broader study of the technology, economy and society in the southern Aegean EBA cultures as mentioned above (Renfrew 1965, 1967, 1972; Renfrew and Peacey 1968).

Prior to Renfrew, a number of scholars had argued that the advanced development of Aegean later Bronze Age society was due to the influence of the Egyptian and Near Eastern ‘primary’ states on the inhabitants of Crete (cf. A. Evans 1921: 17, 1924; Xanthoudides 1924: 128-134; Childe 1925: 14-34). For example, Childe asserted that Minoan metallurgy was based “entirely on Asiatic traditions” (*ibid.*: 19), while Mackenzie argued that Melian and Liparian (southern Italian) obsidian flowed via Crete to Neolithic and Early Dynastic Egypt, an intercourse he described as “important for the internal development of the Aegean” (Mackenzie 1904: 247). Similarly, Sir Arthur Evans claimed that white-spotted obsidian from the Minoan palace of Knossos, was ‘liparite’, thereby constituting the earliest evidence of trade between Italy and Crete, serving as a ‘fact’ to strengthen the theory that Crete was acquiring tin from Spain or Britain, contacts forged via the “old obsidian routes” (A. Evans 1921: 21, 87, 412).

Renfrew’s theoretical stance was markedly different to those of Evans and Childe. Following scholars such as Binford (1968) and D. Clark (1968), Renfrew argued that archaeology should move from a particularist, or historiographic paradigm to a more rigorous, explicit and logical basis, with debates approached through testable, or hypothetico-deductive models related to empirical data (Renfrew 1972: 56-57; Daniel and Renfrew 1988: 159-75). Concomitant with this paradigm shift was a move away from invoking external factors to explain cultural change, technological innovations and social development (migration, invasion, diffusion), to locating change within existing socio-economic organisation, initiated by indigenous catalysts (Renfrew 1972: 15-60; Daniel and Renfrew 1988: 157-75).

This is not to say that Renfrew specifically set out to disprove the early diffusionist models, but obsidian's properties provided an excellent avenue of research to elucidate the direction and nature of early trade and exchange to see if there was any basis for Evans and Mackenzies' claims. Regarding the first point, the characterisation programme found that the majority of obsidian artefacts analysed from Greek archaeological contexts were Melian (**Figure 1.11**), with the spherulitic material from EN and MM/LM Knossos originating not from Lipari but the previously little examined source on Giali (Renfrew, Cann and Dixon 1965: 235-37, 239-40; J. Evans 1994: 5). A few pieces of obsidian from the central Anatolian source of Açıgöl have been recognised from Knossos and Sitagroi in Macedonia, and moving in the opposite direction Melian obsidian has been recognised at Morali, Hacilar and Aphrodisias in western Anatolia (Renfrew, Cann and Dixon 1965: 235-39; Aspinall, Feather and Renfrew 1972: 334; Gale 1981: 49; Blackman 1989).

While these analyses negated some of the more far-flung claims for the exchange of Aegean obsidian, the question remained as to the organisation of early procurement and exchange and their relationship to emergent social complexity. As referenced above, Mackenzie considered obsidian to have been a valued traded commodity, a causal factor in Phylakopi's location and its subsequent development into a wealthy and powerful town (Mackenzie 1904: 244-72). In order to ascertain trade's role in the development of social complexity, Mackenzie's arguments had to be tested against the archaeological record. This was achieved through interpreting the distribution pattern produced by the characterisation studies.

Renfrew's study of exchange drew heavily on economic anthropology, particularly that of the substantivist school which advocates that economic behaviour is embedded within the institutional fabric of a society (cf. Sahlins 1974). The corollary for archaeologists is that different modes of production and exchange are considered to

have specific material consequences and distribution patterns (Daniel and Renfrew 1988: 170), that “can be used to identify the social structure of society” (Earle 1985: 106, after Polanyi 1957).

Figure 1.12 presents Renfrew’s graphic simulations of differential modes of exchange, expressed in terms of the quantity of obsidian in relationship to distance from source. Renfrew concluded that during the Aegean Neolithic, the fall-off rate of obsidian from Melos best replicated what one would associate with ‘down-the-line’ exchange (albeit with a few reservations). It was thus envisaged that a community having procured a quantity of the raw material would consume a proportion, exchanging the remainder to other villages on a reciprocal basis, a procedure that would be repeated by the recipients and so on, ‘down-the-line’ (Renfrew 1972: 442-43). It is a model favoured by a number of archaeologists considering exchange in similar contexts of presumed “relatively simple, egalitarian socio-political systems” (Torrence 1986: 107). During the period when Melos was uninhabited Renfrew (following the original excavators’ reasoning) argued that most consumers would have travelled directly to the quarries. For the period when Phylakopi / Melos was inhabited, the same combination of direct-access and down-the-line exchange was implied, though Renfrew countenanced the possibility that the Melians exerted some degree of control over the quarries (Renfrew 1972: 449).

The theory of ‘direct access’ did not necessarily mean that obsidian had no value, or a ‘cost’ related to the effort expended in its procurement. However, Bintliff subsequently argued that during the later Neolithic the procurement and distribution of obsidian was ‘embedded’ within other economic activities undertaken within the Cyclades, specifically the exploitation of tunny, whose migratory path went close to Melos (Bintliff 1977a: 117-22, 538-43). Gaining access to obsidian would thus have incurred little cost compared to procurement strategies that involved visiting Melos for

that purpose alone, though the supposed importance of this marine resource to later Neolithic economies has since been challenged (Gamble 1979).

Finally, alongside the proposed direct-access model, was Renfrew's definition of a 'supply zone' (Renfrew, Dixon and Cann 1968: 327). This was proposed as the area where obsidian represented the mainstay for stone tool production, arbitrarily placed at >80% of the assemblage, that Renfrew posited "may be the equivalent of the culture region", the area beyond being termed the 'contact zone' (Renfrew 1972: 465, 1975: 46).

1.6 - The Work of Torrence: Technology, Economy and Society

It was the work of Torrence that brought many of these issues together in a considered attempt to place the lithic industries of the Aegean later Neolithic and EBA into their technological, economic and social contexts (Torrence 1981, 1982, 1986). Torrence's processualist methodology essentially represented a continuation of Renfrew's, with the addition of her ex-tutor Binford's Middle-Range theory (Torrence 1986: 1-7, after Binford 1977, 1978). A major difference in her approach was that contrary to the substantivist position, Torrence made no assumption that the commercialism advocated by Mackenzie should be dismissed out of hand because she was studying material from a pre-state society. Instead a series of models were developed to test the conflicting interpretations forwarded on the 'obsidian industry's' socio-economic position (Torrence 1986: 109-10).

In a detailed and considered analysis, Torrence argued that it should be possible to elucidate common (and thus diagnostic) material and spatial attributes for both craft specialisation and commercial exchange through reference to examples from the ethnographic, historical and archaeological records. In turn these could be compared and contrasted with the evidence for the working and exchange of Melian obsidian. Her

study concluded that mass, a variable emphasised by the original excavators of Phylakopi, was not in itself sufficient evidence for craft specialisation, for specialised production should also display organisation and consistency, with regard to its location, the tools employed and the end-products' regularity.

Torrence's study also involved intensive fieldwork at the obsidian quarries and Phylakopi where she [re]excavated a small part of the 'great obsidian workshop', opening a sounding one metre square, producing 0.3m³ of material (*ibid*: 149) The 98.2kg of obsidian represented "tens of thousands of artifacts", dominated by pressure-flaked blades, nuclei and related debitage, the decortication and earliest stages of core-preparation having occurred elsewhere (*ibid*: 149 & Table 13; **Table 1.1**). While the mixture of associated pottery suggested that the material was not *in situ*, it was argued that the huge sample could still be considered an adequate representation of what Mackenzie had originally discovered.

Based on the average thickness and weight of the 1975 sounding, multiplied by the surface area of 150m² recorded by Bosanquet (1904: 118), the entire deposit's scale was calculated at 30m² and 7755kg (Torrence 1986: 154; **Table 1.2**). The next stage of the analysis was to estimate the time involved in generating such quantities of debitage and from this to consider the level of production it represented. This issue was approached through reference to the experimental work of Sheets and Muto (1972), who pressure-flaked 83 prismatic blades in 2½ hours, from a pre-formed core of 820g. As these blades comprised 91% of the core's original weight (746g), and provided 17.32m of working edge, the experimenters conclusions emphasised pressure-flaking's economising nature. While Torrence (1986: 154) accepted that the experiment had been undertaken only once, the results were considered "tentative means" of calculating the great obsidian workshop's total production. Thus it was estimated that some 25.5

million obsidian blades had been manufactured, representing c.300 person-years of time expended (**Table 1.3**).

While these were impressive figures, Torrence (1986: 155-56) argued that the time theoretically involved in generating the debitage was insufficient to suggest “the operation of a thriving industry throughout a year”, i.e. the ‘blade-factory’ envisaged by some of the original excavators (C. Smith 1896-1897: 8; Bosanquet 1904: 218). At the same time, Torrence admitted that this did not necessarily negate the possibility of part-time specialists operating within a commercial market economy (Torrence 1986: 155-57), though this too should be archaeologically visible through product efficiency and consistency (*ibid*: 157-60). With the recognition of 4 major types of core platform preparation and statistical analysis illustrating that end-products from the ‘workshop’ deposit showed no major difference from blades from domestic contexts, Torrence finally concluded that there was no evidence “for the presence at Phylakopi of industrial specialists producing artifacts for commercial sale” (*ibid*: 162). Nor, apparently, was the procurement of obsidian organised on a centralised, specialised and commercial basis, for Torrence’s studies at the quarries indicated that the extraction of obsidian and its initial reduction had been undertaken “in a very unsystematic and expedient manner” (*ibid*: 181-86).

1.7 - Obsidian as Valued Good?

As with her study of the socio-economic status of blade production at Phylakopi, Torrence’s study of obsidian’s exchange and worth took a formalist line. ‘Value’ was thus perceived as potentially visible through ‘economising behaviour’, i.e. was obsidian worked with greater efficiency the further it travelled from Melos, thus reflecting the ‘cost’ of procurement? Having studied a number of southern Aegean EBA assemblages **Figure 1.13**, Torrence found no evidence to support such a premise, with the

same technologies employed at each site producing blades of similar dimensions. Equally, the fact that production could be attested at virtually all of these sites was considered contrary to what one would have expected to see if there had been a commercial, directioned trade between Phylakopi and Aegean regional centres. It was thus argued that during the EBA direct-access continued to be the mode of procurement for communities within the 'supply zone', as it had been in the later Neolithic (*contra* Renfrew's suggestions), an argument originally forwarded by Bosanquet (*ibid*: 126-30; Bosanquet 1904: 218-20).

To summarise, Mackenzie saw obsidian as a valued good, traded from the Bronze Age onwards within a market economy and a causal factor in Phylakopi's location and development. Conversely, Bosanquet argued that obsidian was not the controlled or valuable good *per se*, but that special skills existed within the working of the material that potentially allowed the development of social differentiation (*ibid*: 217-18). For Torrence, obsidian was basically a utilitarian commodity, recovered from domestic middens and burials alike, with no evidence for economising modes of consumption, leading her to argue against the material having "any special social or economic significance", a position that was not seen to significantly alter "during the entire prehistoric era" (Torrence 1986: 97, 119).

1.8 - New Perspectives: Perlès, North Greece and the Neolithic Background

The most recent work to add to these debates is that of Catherine Perlès, through her numerous detailed studies of Aegean Neolithic chipped stone assemblages (Perlès 1973, 1981, 1984, 1988, 1990a, 1990b, 1994a, 1994b, *inter alia*). In contrast to Torrence's conclusions, Perlès has argued that strong evidence exists for specialised production of stone tools in Aegean prehistory. She has argued that up until the LN, the procurement, distribution and working of obsidian was probably in the hands of only a

few people, conceivably small groups of specialist itinerant craftspeople responsible for all of the above. Perlès' proposals are based partly on a consideration of material from Thessalian Neolithic settlements (**Figure 1.14**), whose subsistence economies and population thresholds were considered to have imposed too many constraints on each community to allow them to acquire obsidian themselves, not least the skill and knowledge required to construct a craft and safely undertake a return trip to Melos (Perlès 1989, 1992).

A further argument against these communities being self-reliant with regard to their access to and use of obsidian, lies in the nature of how the material was worked, i.e. the fact that it was being reduced within a pressure-flaked blade industry. This technique receives much attention later in this thesis, it is sufficient to state here that this form of blade production is a highly skilled craft, that is unlikely to have been wielded by many members of any community, even those with regular access to the raw material with which to practice it. Furthermore she has demonstrated that Cycladic colonisation had a limited effect on the movement and use of obsidian in these parts of Greece, with later Neolithic Thessalian communities continuing to rely on "trade with specialist groups" to procure pre-formed cores and manufacture pressure-flaked blades (Perlès 1989: 14-15, 1990a).

Perlès presents her conclusions not so much as a criticism of Torrence's thesis but as the provision of a new perspective from different eras and areas. Indeed much of Perlès work has added depth to that of Torrence, for instance, with regard to the 'supply zone'

1.9 - Conclusion to Chapter One: A Critique of Conceptions and Methodologies

The aforementioned work raise numerous issues, many of which will be discussed further in **Section One**; at this point it is necessary to focus on a few critical

insights. Firstly, on a general level, it is worth noting that despite Renfrew's assertion that the processual school had attempted to move archaeology away from being "first and foremost a matter of classification, of taxonomy" (Daniel and Renfrew 1988: 160), both he and Torrence essentially generated a series of typologies, through their attempted characterisation of obsidians, exchange mechanisms and socio-economic organisation. Secondly, it is worth examining Torrence's analysis of the 'great obsidian workshop'. While admitting that her sample was not a statistically valid representation of the overall deposit (Torrence 1986: 149), it is worth noting just how different the original components of the sample may have been prior to Torrence's excavations, particularly in reference to blade-cores that formed the basis of her estimated blade production.

When the German archaeologist Dümmler visited Phylakopi in 1885, he noted hundreds of blades and cores littering the surface of the site, the spoil of an illicit trench dug into the deposit c.1869, the proceeds of which were sold to an antiquities dealer in Athens (Dümmler 1886: 28; Bosanquet 1904: 225). In 1896, some 25 years after the robbing, Bosanquet reported that the dealer "still had in his possession some bushels of cores and flakes" (*ibid*: 225). In the intervening years much of the material was sold on the open market, a large quantity being bought by the British antiquarian Finlay and a von Heldreich whose purchases were later exhibited by the Berlin Anthropological Society. In a marvellous piece of critical analysis, Bosanquet demonstrated that obsidian bought *after* c.December 1871, that the dealer ascribed to a variety of locations (including Salagora, Corinth, Elis and Marathon), in fact most probably originated from Phylakopi's 'great obsidian workshop', the findspots falsified "to humour Finlay's ideas...as to the wide distribution of obsidian in Greece" (*ibid*: 225-26).

At a bare minimum the inventories of Finlay's collections documents 73 cores (*ibid*: 226), to which should be added 573 nuclei from a Copenhagen collection of

obsidian, formed in Greece soon after 1870 (Bosanquet 1904: 227; Danish National Museum 1950: 48). Similarly, Bosanquet and others provided a number of European Museums with material from Phylakopi (not necessarily all from the same deposit), including the National Museum in Athens (pers. obs.), the British Museum (pers. obs.), the Fitzwilliam in Cambridge (Thimme 1977: 372, figs. 465-66), the Ashmolean in Oxford (pers. obs.), the Liverpool City Museum (Mee and Doole 1993: 42-43, pl. 20), plus Zurich Museum and Blackmore Museum, Salisbury (Hussey 1973: 112).

One also has to contend with the unknown amount of erosion suffered by the deposit, with the original excavators commenting that much of the area had probably fallen away (Hogarth 1904: 11), and a notable reduction in the area between the excavations of the 1890's and 1970's (Torrence 1986: 148; **Plate 1.2**). The quantity of manufacturing debris may also be under-represented if the accumulation of knapping debris was periodically re-deposited elsewhere, most obviously into the sea. Torrence (*ibid*: 74), detailed such practices in one of her ethno-historical examples of chipped stone workshops (the manufacture of gunflints at Brandon), but did not entertain such a possibility at Phylakopi.

A further problem is Torrence's use of Sheets and Muto's experimental work as a basis for her production estimates. It is suggested that the uncritical use of their data, by more than one author, myself included, has been injudicious for a number of reasons (Torrence 1986: 154; Kardulias 1992: 429-30; Evely 1993: 120; Carter 1997). Firstly the experiment was undertaken only once and due to artificial core preparation, fine prismatic blades were produced from the outset. Secondly, the experiment replicated a Mesoamerican pressure-flaked blade industry, that involved a much larger core than those witnessed in southern Aegean EBA contexts, 12cm long compared to nuclei with average lengths of 5.5cm and 4.3cm from Phylakopi and Lerna (Bosanquet 1904: 220; Runnels 1985b: 361). Finally, there were also differences in how the blade-cores were

reduced in these industries. The replica core was polyhedral in form and worked around its entire circumference, whereas Aegean examples are typically tabular / semicircular in section, with only two-thirds of their margins reduced (cf. Hartmann 1978; Torrence 1979a; Van Horn 1980; Runnels 1985b: 363, fig. 4; Kardulias and Runnels 1995: 96, fig. 85). This combination of differential scale and technological mechanism makes it most improbable that southern Aegean blade production ever achieved anything near the 83 blades : 1 core ratio of the experiment, though nuclei of greater comparability to that worked in the experiment, have been found in some specific and restricted EC contexts which are discussed in *Chapter Six*.

To an extent the above rejoinders to Torrence's analyses are relatively unimportant, as her deconstruction of the 'workshop' in terms of the estimated number of nuclei and knapping events retains a heuristic usefulness. It is the interpretation of her data and her entire theoretical stance that I take issue with. Essentially it can be argued that Torrence merely succeeded in disproving *her* concept of craft specialisation and employed data and arguments inappropriate for considering stone tool production in a pre-state society, i.e. the EBA cultures of the southern Aegean. It is only through seeing the 'great obsidian workshop' and pressure-flaked blade production in their Aegean context that we can gain an insight into its contemporary significance.

Lastly, we shall return to the economic interpretative stance taken by most of the scholars working on the questions of technology, production and consumption in Aegean lithic studies. For instance, Perlès' argument that the emergence of the 'supply zone' led to more people being involved in the working of obsidian, with the changes in southern Aegean LN blade technology supposedly reflecting the period's "inferior craftsmanship" (Perlès 1989: 12-13). Thus the shift from pressure-flaking to indirect percussion is interpreted as the result of less skilled hands employing a new and 'inferior' technique resulting in obsidian being worked "in a less economical manner"

(*ibid*). Therefore, Perlès and Torrence's views of this technological innovation presuppose that those working obsidian perceived pressure-flaking as a primarily economising technological measure. Yet, given that the integral relationship between obsidian and pressure-flaking since the EN, surely this mode of production would have represented the technological 'norm', rather an innovative policy for maximisation of raw material exploitation? Instead it may be worth considering the innovation as reflective of social action by new corporate groups. While indirect percussion was already being employed by these communities to work more localised resources (Perlès 1989: 4), its adoption for obsidian blade manufacture represented an intentional shift away not only from existing technical strategies, but also a statement against established social structures.

Similarly, economic explanations have been offered for the change from indirect percussion to pressure-flaking witnessed in the Cyclades at the end of the Neolithic, a technical choice supposedly a reflection of new procurement 'costs' due to an increased demand for raw material. Arguably, the adoption of more sedentary economies in the EBA, meant that communities would have had to organise special purpose trips to Melos, rather than the proposed 'embedded procurement' of the later Neolithic (Torrence 1986: 136). Yet these technological changes, occur at a time (EBI) when there was a major increase in the settlement of the Cyclades (Cherry 1981, 1982a), which to follow Torrence's earlier arguments should have resulted in a further increase in raw material circulating, thus contradicting the proposed necessity for an economising mode of reduction to be adopted. Indeed, areas such as Attica and Euboea see an increased flow of obsidian at this time (cf. Keller 1985: 165-74), probably articulated through the social relations the colonists maintained with their ancestral homelands as a necessary survival strategy in such low-populated marginal landscapes (cf. Cherry 1981; Perlès 1989: 14).

None of this negates the idea that raw material may have been a valued resource, reduced and employed in an economical manner by those communities who were not directly involved in its procurement, but it is not accepted that the choice of different technological modes was based on such concerns. The next chapter will therefore consider production, consumption and craft specialisation as a primarily social phenomenon, rather than an economic one as propounded by scholars such as Van Horn, Torrence, Runnels, Kardulias and Perlès.

- CHAPTER TWO: PERCEPTIONS OF PRODUCTION -

2.1 - Introduction

This aim of this short chapter is to introduce some more of the problems and issues that have stemmed from the work reviewed in *Chapter One*. It is not intended to be an abstract discussion of craft specialisation and cultural perceptions of technology *per se*, but rather a consideration of some of the theoretical and practical approaches to these phenomena.

2.2 - Context Before Concept: Craft Specialisation and the Re-Mystification of Technology

Despite employing similar theoretical approaches, it is interesting that both Torrence and Runnels came to different conclusions as to the socio-economic status of pressure-flaked blade production during the southern Aegean EBA. In their ‘test for craft specialisation’ they both focused on product standardisation as a significant attribute. Torrence’s studies led her to argue against the existence of specialised obsidian blade production at Phylakopi, or anywhere else in the southern Aegean during the EBA (Torrence 1986: 157-62). Her reasoning was based, in part, on the different ways in that blade-cores were prepared and reduced, plus the end-product’s unfavourable comparison with material from Mesoamerican specialist blade workshops (e.g. standard deviation of blade width and breadth [**Table 2.1**]). Yet conversely, and using in certain instances the same data, Runnels argued that it was “[t]he standardisation of the lithics” (and other considerations) that suggested to him the existence of “craft specialisation and the possible export of blades to other sites” (Runnels 1985b: 388).

While Torrence rejected the “extreme” hypothesis that Phylakopi was the base for large-scale blade industry staffed by full-time craft-specialists, she was unable to come to any satisfactory conclusion as to what this deposit *did* represent (Torrence 1986: 155-56). Similarly, while Runnels acclaimed the “consistency and quality” of Lerna’s EHII blade assemblage and the “high level of skill” involved in their manufacture, he felt unable to comment on the craftspeople’s position within the socio-economic “continuum” of production, i.e. from part- to full-time employment (Runnels 1985b: 364-67).

Indeed, the whole concept of specialised production has become far more complex over the past few years, with Welbourn suggesting that there are areas of “haziness” in archaeologist’s application of the term ‘specialisation’ (Welbourn 1985: 125). This a point taken up by Clark and Parry (1990: 292), who eschewed its “unitary notion”, arguing instead for 12 “qualitatively different types” of craft specialisation, based on two main forms: *independent* and *attached* (also see Earle 1981: 230; Brumfiel and Earle 1987: 5-6). An independent specialist is a craftsperson who retains rights of alienation, whereas an attached specialist is sponsored by someone who will thereafter control the finished goods (*ibid*: 298-99; Earle 1981: 230). With these forms of production are a range of variants, including prestation, commercial, patronised and state-sponsored *inter alia* (Clark and Parry 1990: 299, Table 1), though as Clark has argued, a single craftsperson may participate in several of these types of specialised production, the status and social relations being fluid, not fixed (*ibid*: 298).

2.3 - From Economics to Politics

The inconclusive nature of Torrence and Runnel’s studies may be seen as a little disappointing, yet are perhaps not surprising given their perception of ‘craft specialisation’ in primarily economic terms (albeit with potential social ramifications).

As such, their work reflects how many archaeologists have perceived specialisation, with an emphasis on efficiency, standardisation, productivity and surplus (cf. R. Evans 1978; Rice 1981; Rosen 1989, *inter alia*).

This is not to deny that there are, or can be, attendant economic and material consequences that stem from production being organised on a specialised basis. For instance, it is generally accepted that a practitioner will increase their skill in their chosen craft if that craft is undertaken enough times. Thus if production is conducted above and beyond the requirements of the producer, it would be reasonable to suggest that the object of that craft would eventually take less time to manufacture and would be of a consistent size and shape, *if* she / he desired it to be so.

Conversely, product conformity is not exclusive to manufacture being organised on a specialised basis, or within stratified societies. Welbourn refers to several cautionary tales from the ethnographic record where standardised production occurred within a domestic setting, with no evidence for divisions of labour (Welbourn 1985: 124). She has also raised the point that social mores may be the driving force in manufacturing consistency, rather than technical accomplishment alone (*ibid*: 125). Clark and Parry have reached similar conclusions from their important cross-cultural study, defining craft specialisation as the “production of alienable, durable goods for nondependent consumption”, for which “[n]o particular scale of production or amount of time spent per year in production is implied” (Clark and Parry 1990: 297-98).

In the case of pressure-flaked blade production, the craft that forms the central concern of this thesis, one also has to make the point that one is studying a specialised technique from the outset, the nature of which is to generate regular end-products (Crabtree 1968; J. Clark 1982, 1985; Pelegrin 1984a 1984b, 1988; Thouvenot 1984). It is therefore distinct from those more ‘mundane’ crafts where someone may become specialised through an intensification, or more economising organisation of production.

Equally, pressure-flaked blade manufacture lends itself to a division of labour within society, for most members of a social group are unlikely to be able to perform the craft. Thus to search for consistency within the craft may be to miss the point. In turn, the 'politicisation' of this exclusive technology is not inherent, but a social construct, and it is only through moving from the product to the producer and the specific context within which they operated that one can hope to understand how this technique was perceived (cf. Welbourn 1985: 129).

2.4 - From Product to Producer

[t]he solution does not lie with cross-cultural analogy as it has generally been used in archaeology. Material culture can only have value or meaning with relation to the society within which it is used. (Welbourn 1985: 129).

Perlès' work on the obsidian pressure-flaked blade industries of EN Thessaly represents just such an analysis (Perlès 1989, 1990a). For her to suggest the existence of craft specialisation at such an early date was a radical departure from how this phenomenon had traditionally been perceived. Following the position advocated by Childe and the social anthropologist Service, Aegean scholars had previously tended to argue that craft specialisation could only develop and be sustained when certain social and economic thresholds had been surpassed. Thus, it was supposedly a feature of Bronze Age chiefdoms, a preserve of the Minoan and Mycenaean palatial economies (Childe 1950a; Service 1962: 143-48; Renfrew 1972: 4, 7, 339-45; J. Evans 1973: 53; Ventris and Chadwick 1973: 123-25). Perlès was careful to stress that she saw no evidence to suggest that the wielding of exclusive technical know-how was socially significant. Blade production was attested at each of the sites studied, indicating that each community had equal access to the craftspeople responsible (Perlès 1989: 11).

This work is highlighted because Perlès' argument for EN craft specialisation was based not on abstract economic theory, but integrally contextualised within current knowledge about the parameters of a specific technology and EN Aegean society. Previous discussions about pressure-flaked blade industries as evidence for specialised production had been divorced from the social context (cf. Bosanquet 1904; Mackenzie 1904; Runnels 1985b; Torrence 1986; Kardulias 1992). These studies had referred to the phenomenon in almost purely economic, or formalist terms: the level of production, the time and effort involved, the regularity and the efficiency of production. If one refers to the anthropological literature, it is apparent that a 'craft specialist', or a person who wields exclusive or secret technical knowledge, is rarely perceived in such terms. Nor does their social status tend to have been created / conferred and maintained by such considerations as material productivity (cf. Rowlands 1987).

One must ask how the status of 'specialist' was created and / or conferred within the small-scale societies of the pre-palatial Aegean. On what basis was a craft specialist's position perceived, legitimised and maintained? Was it dependent on a person's technical ability and their output, or through their privileged access to secret knowledge: the product of exclusive technical know-how and the means within which they could safely wield it? Furthermore, how was this knowledge acquired by the craftsperson: through lineage, kinship, gender or age? These are all questions that will be returned to throughout this thesis.

2.5 - From the Exotic to the Mundane

In their review of craft specialisation, Clark and Parry emphasised the political nature of craft specialisation (as opposed to economic), noting that the products of such industries often served as media for meaning or ideology (Clark and Parry 1990: 296). The emphasis of their analysis did, however, centre on 'socially meaningful goods',

often labour intensive material culture such as highly decorated pottery, or polished stone axes, not the type of 'mundane' artefacts produced within a mainstay chipped stone industry of the kind described in this thesis.

Indeed, where chipped stone has been considered to have enjoyed an active role within the socio-political or ritual domain of past societies, it has invariably been in the context of 'exotica', in terms of the objects' origins, form or association (cf. Grace 1990; Sievert 1990; Potter 1994). For example, a convincing argument has been proposed that on the basis of their context, form and technology, Mayan 'eccentric lithics' (intricately flaked artefacts of chert and obsidian), played an active role in the creation and maintenance of élites (Iannone and Conlon 1993). In a similar vein, it has long been accepted that within British Early Neolithic society, fine jadeite axes had a significance beyond their functional capabilities, probably due to their continental origin (cf. Clarke, Cowie and Foxon 1985: 58-61; Edmonds 1995: 48, 57). To propose that such remarkable pieces were of primarily symbolic significance is hardly a radical interpretation. Should it really be necessary to wait for the exotic or impractical before we allow ourselves to consider non-utilitarian roles for lithic technology? Equally, it may be unwise to distinguish between the functional and symbolic roles of (lithic) technology and material culture, for to do so only "reifies the rigid distinctions made in our own society between religious and mundane aspects of life." (Patton 1993: 65).

A pertinent study in this respect is Mark Patton's work on stone axe production and exchange in Neolithic Brittany. As all areas of Armorica possessed local supplies of workable stone, Patton argued that intra-regional exchange of axes made little or no sense in a functionalist / formalist framework (Patton 1991, 1993: 18-32). While not ignoring their utilitarian capabilities, it was argued that the axes' primary significance was symbolic, integrally related to the articulation of gender relations and megalithic ritual, possibly employed in bride-wealth prestation, thus explaining their widespread

distribution. Patton's study is important for its inclusive nature, not merely concentrating on exotic materials or contexts but integrally locating the 'mundane' within social relations.

2.6 - Seeing Prehistoric Technology as 'Other'

Arguably, one of the primary reasons that so little attention has been given to stone tools' potential role as mediators in social relations, stems from a modernising tendency in archaeologists' attitudes towards technology in pre-capitalist societies. For example, Torrence implicitly criticised Mackenzie's 'commercial trade' concept of prehistoric exchange, arguing that he and Bosanquet "had in mind a profit-oriented market economy resembling the present capitalist system of the developed world" (Torrence 1986: 101). Yet, within Torrence's own, primarily economic, analysis of craft production in the pre-state southern Aegean, she proceeded to take the same theoretical stance she had just criticised, with her continued regard to the issues of mass-production, person-hours and regularity of product. This is perhaps best illustrated with reference to her interpretation of the estimated scale of production represented by the 'great obsidian workshop' of Phylakopi, when she argued that:

In order to facilitate the interpretation of the scale of the industry which the figures represent, I have converted the estimated person-hours for Phylakopi into eight-hour work days and 300 day work-years. (Torrence 1986: 155).

Yet the danger of familiarity, perceiving the past and the role of its products empathetically, has long been a pitfall that archaeologists have been fully aware of (cf. Thomas 1990). Indeed, this awareness was partly the basis for both Renfrew and Torrence's use of economic anthropology and historical data as more relevant

interpretative tools than modern economic theory. Neither scholar followed this logical process through, both stopping short of considering the potential ‘otherness’ in the role or meaning of material culture, technology, production and tool use within pre-state societies, ignoring what the ethnographic record informs us about specialisation as a social construct.

2.7 - From Production to Perception: Lithic Technology and the Ethnographic Record

people “sometimes made exceptional efforts to obtain isotropic stone for purposes or reasons that had more to do with their sacred life than with more mundane considerations such as flaking or edge holding properties” (Gould 1980: 141, quoted in Davidson 1988: 24).

A major concern of this thesis is to challenge the prevailing perception that lithic technology was solely of economic concern within prehistoric societies. The archaeological literature continually concentrates on the processes involved in the production of the stone tool and its description. The role lithic technology fulfilled is ‘understood’ through reference to the floral and faunal evidence, an ultimately circular argument that denies any consideration of stone tools as dynamic components in the creation and maintenance of social relations. It is arguable that such an argument owes more to a modern (mis-)comprehension of technology’s role rather than a contextual appreciation of material culture, technical knowledge and social practice.

By turning to the ethnographic record to consider the social action and meaning behind stone tool production, one witnesses a range of different attitudes to those espoused by many modern students of lithic technology. For example, work by ethnographers and archaeologists in northern Australia, Arnhem Land in particular, have documented the underlying cosmological themes and power relations that may be

culturally ascribed to raw material procurement and the fashioning of stone tools (Davidson 1988: 25; Jones and White 1988; Taçon 1991). The landscape (and the quarries within them) is believed to have been created by the ancestral beings, so that exploiting these resources directly taps into their power and the totemic properties with which the raw materials are imbued. Stone in Arnhem Land, and many other parts of the world, is also considered an inherently 'male' substance, thereby rigidly structuring who may enter the ritually 'heavy' and potentially dangerous space of the quarry, and work the stone taken from it (White and Thomas 1972: 279; Hayden 1977: 183; White and Modjeska 1977: 34-35; Jones and White 1988: 56-58, 83; Taçon 1991: 194). The production and use of many stone tools is therefore a largely male domain, activities and material culture that serve to reinforce the male connection to creativity and thus legitimise contemporary power relations (Taçon 1991: 194).

Perhaps of greater concern to archaeologists working with stone tools, is how these implements are classified and perceived within many of these societies. Firstly, the stone picked for tool manufacture, or the blanks chosen for use, will often be selected on the basis of their totemic and 'mystical properties', their desirable qualities often described in metaphysical or aesthetic terms, such as 'brightness', or colour (Jones and White 1988: 61; Taçon 1991: 192, 197, 201, 204). Thus, an analysis of long blades / spear points considered 'good' by the knappers of Arnhem Land did not display tight metrical clustering in terms of their length and thickness, only the widths of these implements were relatively consistent (Jones and White 1988: 82). Similarly, in the flake-tool industries of the Papua New Guinea's Central Highlands, little correlation could be observed between the implement's shape, size and task and neither producer nor consumer made a distinction between flakes, cores or detritus (White and Thomas 1972: 278). There did appear to be some relationship between edge-angle and function

(*ibid*: 283-84), indicating some utilitarian notion to tool manufacture, even if the pieces are not perceived as such.

For those working in Mesoamerican archaeology there is a wealth of ethnohistoric documents and ethnographies that detail the production, distribution and consumption of obsidian tools (J. Clark 1989). There are also a series of ethnographic studies that have recorded the continuing manufacture and use of stone or glass implements that in many cases correspond to the pre-Columbian practices described in the written sources (*ibid*: 299, J. Clark 1978). Much of the data preserved within these documents is of the form that is “least likely to be recovered archaeologically” (J. Clark 1989: 299).

Of further interest here, is the fact that many of these sources document the production of pressure-flaked obsidian blades. Some of the technological insights are referred to within this thesis, but it is the attitudes towards technical knowledge, practice, raw material and end-products that provide the focus of interest for the moment. In the Aztec world certain levels of production appear to have been located within ritual behaviour, with fasting and prayer a prerequisite for the ‘master craftsmen’ of blade manufacture. Such practices were still observed this century by the Lacandon Maya group of the Chiapas Lowlands, who prior to the commercialisation of their craft for tourism, produced their stone tools not in their domestic space but in the village “god house”, or temple (*ibid*: 300, 305). The chanting to the flint that accompanied the production of stone tools may have been one method of transmitting technical knowledge, that otherwise tended to be passed on from father to son by observation. Thus the gaining and wielding of technical know-how in ‘pre-commercialised’ Mayan society can be seen as exclusive processes, both spatially and by gender; inside : outside :: male : female (*ibid*: 305-306).

The importance of the aforementioned data, both ethnographic and historical, is that a resource, technology and entire class of material culture that is often portrayed as mundane in the archaeological literature, is often in fact firmly part of these societies' fabric (cf. *ibid*: 300, 317). At the same time it would be unwise to infer that 'mainstay' lithic technology is a primary medium for the underwriting and expression of social relations, with many artefacts and resources circulating and being consumed as "more or less alienated commodities" (Edmonds 1995: 57).

This brings me on to a major distinction within stone tool technology that emerges from many of these studies, that which Taçon refers to as an opposition between "ceremonial" and "functional" stone tools (Taçon 1991: 205). To an extent we return to the distinctions made earlier between the 'exotic' and the 'mundane', where, perhaps unsurprisingly, it is almost entirely the former class that may serve as "active agents in the maintenance of complex social relations" (Gero 1989: 103). Thus, while one may concur with Gero's statement that all stone tools have social 'meaning', it is clear that some are more meaningful than others (*ibid*: 103).

It would appear that the stone implements that have the greatest potential for transmitting social information are generally those that involve technical complexity, restricted production, exotic raw materials and stylistic input. Conversely, those items that had a limited amount of technological expenditure and short lives, i.e. 'flake tools', tended to play "very minor roles in the general circulation and reiteration of social relationships" (Gero 1989: 103; White and Modjeska 1977: 28, 33). Unfortunately, the minimal symbolic projection of these implements is mirrored by a lack of interest by archaeologists and anthropologists, whose observations tend to concentrate on the "strange and arcane" (J. Clark 1989: 311). Yet these differences, probably have ramifications for the spatial and social context of production and those involved (Jones and White 1988: 51-52; Taçon 1991: 202-203). For instance, Gero's research has hinted

at a ‘background noise’ of female production and consumption of flake tools (Gero 1991: 170-72).

2.8 - Beyond the Callipers: Stone Tools and Society

The preceding descriptions are not intended to necessarily throw direct light on the social processes that lay behind the exploitation of Melian obsidian and those specific forms of technical and depositional consumption seen in the archaeological record of the EBA southern Aegean. Instead, it is a useful tool as Welbourn reminds us, to “stimulate one’s capacity for understanding the possibility of means of social organisation other than one’s own” (Welbourn 1985: 129).

This returns us to the immediate context of the consumption of pressure-flaked blade production in the southern Aegean during the EBA. As a mode of stone tool manufacture, pressure-flaking certainly embodies the complexity that Gero highlighted as a means of encoding social information. Equally, for the vast majority of people, obsidian represented a non-local, or ‘exotic’ resource, yet in parts of the southern Aegean, there was no ‘simpler’ industry with which this mode of production would have stood in opposition. Conversely, there are a great many areas where the combination of these two resources would have much represented the ‘other’, with all the potential for creating and articulating social relations, in particular those of distinction.

Even in those areas where pressure-flaking supposedly represented the mainstay chipped stone industry, it is doubtful that the technique, products and producer would have ever occupied a ‘mundane’ niche within the later Neolithic and EBA communities of the southern Aegean. Many reasons for this conclusion will be discussed in the course of this thesis, it is simply worth stating here that the perception of this industry would not have been based solely on the nature of the technology and the choice of raw material. The context of production and consumption are most influential in the

construction of meaning and value, for one can conceive of occasions and places where the enactment of the industry would have had far greater symbolic import.

To conclude, it is believed that obsidian blade production was always socially meaningful in the southern Aegean. In turn, this significance was accentuated through the industry's appropriation and reconceptualisation by certain corporate groups in the FN, resulting in some attendant material, depositional, spatial consequences.

- CHAPTER THREE: OBSIDIAN CONSUMPTION WITHIN THE SOUTHERN AEGEAN -

3.1 - Aims

The aim of this chapter is to offer a review of the location and level of obsidian blade production in the later Neolithic and EBA southern Aegean. The reasons for doing so are twofold. Firstly, it is to challenge some previously held beliefs with regard to the accessibility of obsidian and technical knowledge during the later fourth and third millennia BC and to thus consider the perception of blade manufacture over space and time. Secondly, this review forms a context for the burial material discussed in *Chapters Six-Nine*. As such, those regions with a concentration of funerary assemblages have received slightly more attention than others (Crete in particular), though it is hoped that this slight bias will not be seen as detrimental to the other areas under discussion.

3.2 - Deconstructing the ‘Supply Zone’: Regionalism in the EBA

A traditional starting point for discussing Neolithic and EBA procurement and exchange of Melian obsidian is the distribution map produced by the provenance studies of Renfrew and his colleagues (**Figure 3.1**). As this one image has been so influential, it would be a profitable point of departure to critically examine what was analysed and what the study purports to have told us.

The analytical basis was the characterisation of only 17 pieces of obsidian, 7 of which had no secure context, the remainder spanning Aceramic - LN in date, and from sites as far removed as Knossos and Nea Nikomedia (**Table 3.1**). By encompassing this tenuously related data-set with solid and dotted lines, a zone was figuratively created; it is suggested that it never existed. This is not to contest the widespread distribution of Melian obsidian, only the inherent assumptions of the ‘supply zone’, a



monolithic, reductionist and artificial construct encompassing material of different dates, contexts and modes of displacement. It also gives the impression that obsidian was equally distributed across space and time, whereas in fact there are demonstrable high- and low-points in its procurement, working and consumption, suggesting that the archaeological record is far more structured than has previously been credited.

Bloedow (1987: 102), has argued that the use of quantified data would present a clearer image of obsidian distribution, though Torrence had previously suggested that as this resource generally represented the sole raw material available to *southern* Aegean communities, it tended to form the basis of their chipped stone technology “regardless of distance from the source[s]” (Torrence 1986: 22). In fact Torrence’s statement is not entirely true, for there are numerous cherts, jasper, radiolarites, quartzes and rhyolites (admittedly of varying qualities) that were exploited throughout prehistory (cf. Jacobsen and Van Horn 1974: 305-308; Lavezzi 1978: 407; Séfériadès 1983; Moody 1987: 8; Renard 1989: 48; Blitzer 1991: 3-4, 1992: 713-15; Kardulias 1992: 432-34; Watrous *et al.* 1993: 223 *inter alia*). The fact that these lithic resources have received so little discussion is due partly to collection bias, but also reflects how analytical capabilities have influenced the debate, i.e. obsidian is far easier to characterise than the other materials (cf. Luedtke 1978, 1979, 1992: 117-22; Ives 1984).

Within this study, data is quantified wherever possible, the lack of detailed reports means that much remains impressionistic. Eventually it is hoped that the quality of recording at such sites as Phylakopi and the Franchthi Cave will provide a datum point for future comparative analyses (Torrence 1985; Perlès 1987; 1990b), but to ignore information from less well-recorded excavations risks throwing the baby out with the bathwater. This argument is based on the fact that however well the chipped stone has been excavated and recorded, the quality of data at any site will always be counterbalanced by a number of unknown variables: the percentage of site dug, its

duration, population and integrity of the deposits. Similarly, when considering survey data one cannot assume that the recovery of material culture was undertaken in directly comparable conditions, for variables such as vegetational cover, geology, erosion, light conditions and the experience of fieldwalkers are uncontrollable.

Finally, there are factors pertaining to the nature of lithic production, including the state of obsidian when imported, the technologies employed to reduce it and the intensity of that reduction strategy, all of which will influence the quantities of debitage generated. The point is simply that a statement such as: 'the entire Laconia Survey recovered 500 fewer pieces of obsidian less than were collected at site F32 in the Southern Argolid', serves a useful purpose illustrating the differential amount of obsidian being procured and worked in two areas of the Peloponnese.

3.3 - Maritime Technology and Cultural Geography

The maps that have been employed to illustrate obsidian distribution have tended to be simplistic, making little or no attempt to depict topography (cf. Renfrew 1972: fig. 20.1; Shelford *et al* 1982: fig. 15.4; Torrence 1986: fig. 26; Perlès 1990a: fig. 1-2), thus bearing no relationship to how these land- and sea-scapes were perceived and acted within during the pre-palatial period (cf. Broodbank 1994). The physical reality of the Aegean world cannot be ignored, nor the parameters that it imposed on settlement and the movement of people and goods.

With regard to the first point, the lands of the southern Aegean are dominated by coastal plains backed by mountains, interconnected by passes and penetrated by rivers that are rarely perennial (**Figure 3.2**). Therefore, prior to the introduction of pack animals in EBII-III (Renfrew 1972: 354-55; A. Sherratt 1981), and the limited construction of roads in the LBA (cf. Tzedakis *et al* 1989, 1990; Dickinson 1994: 162, fig. 3.4), long-distance movement of goods such as obsidian would have been primarily

waterborne. The water surrounding the mainland and islands should thus be seen as something that brought people together rather than kept them apart. Indeed, the archaeological record of the third millennium Aegean provides plentiful examples of these maritime cultural regions, many of which will be elaborated on in the course of this thesis. Nonetheless, certain routes through these waters would have been more favourable than others, influenced by the strength of currents, exposure to winds, access to protected harbours and resources such as fresh water (Agouridis 1997).

While topography is of great importance one cannot ignore social agency, which in this instance relates partly to contemporary maritime technology. Prior to the Bronze Age we unfortunately have only limited information on the type of craft employed along these routes (cf. Tzalas 1989; C. Marangou 1996). With no evidence for sailing craft before EMIII-MMIA, seaborne movement during most of the time considered in this thesis probably involved ‘tramping’, short-distance voyages following shore lines and island-hopping (cf. Agouridis 1997; Braudel 1992: 65-67). Images of paddled longboats appear in the EBII Cyclades both as lead models and two-dimensional representations on ceramic ‘frying-pans’ (Broodbank 1989). Similar miniature high-prowed craft are known from Mochlos in Crete, though the dating of these terracotta pieces is a little less assured (Davaras 1975a). There are also rock carvings of smaller boats from Korphi t’Aroniou on Naxos of presumed EBII date (Doumas 1967: fig. 49-50, 54-55), that may have been the more common vessel employed, given the longboat’s demographic and societal implications (Broodbank 1989).

A claimed shipwreck of late EBII date has been discovered off the small island of Dokos, near the south-eastern Argolid coast, though no structural remains have been reported, only the ‘associated’ cargo and two stone anchors (Papathanassopoulos 1976, 1990; Papathanassopoulos *et al.* 1992). Preliminary reports describe over 4000 objects, mainly pottery, along with a large quantity of obsidian blades and flakes. Apart from a

few Cycladic pieces, the pottery is primarily Helladic, specifically Attic and southern Euboean. With the recovery of a lead bar (probably from Lavrion), and numerous querns of probable Aeginetan origin (cf. Runnels 1981, 1985c, 1988b), it is suggested that the boat's route was from east to west, travelling via the Saronic Gulf towards the western Argolid and settlements such as Lerna (Papathanassopoulos 1990: 34-35).

3.4 - Sea-Routes and Settlement

That most of the important southern Aegean EBA settlements had a maritime perspective reflects the contemporary social significance attributed to long-distance sea-based contacts, with all its material and political rewards (cf. van Andels and Runnels 1988; Broodbank 1993; Manning 1994). As the following review will demonstrate, it is amongst these sites that the procurement, reduction and dissemination of obsidian was concentrated. In *Chapters Four* and *Five* the relationship between social distinction and differential access to resources such as raw materials and technical practice will be investigated. It remains here to briefly consider the primary sea-routes of the third millennium.

3.5 - The Southern Mainland and Euboea

3.5.1 - *The lands bordering the Euboean Gulf*

The Euboean Gulf represents the major sea-route linking the southern and northern Aegean, its tidal currents changing every 6 hours facilitating travel in both directions (Agouridis 1997: 9). Its importance is reflected by the numerous sites that border its protected waters, whose investigation has indicated that the Gulf's later Neolithic and EBA communities saw some of the greatest circulation of obsidian outside of Melos (**Figure 3.2**). From the earliest Neolithic onwards the Euboean

Gulf would have been the primary route taken by those procuring Melian obsidian for Thessalian communities from the Cyclades (cf. Wijnen 1981; Perlès 1989, 1990a).

The widespread distribution of 'Cycladica' from sites along these waters suggests that the Gulf formed an important medium for the articulation of EC initiated interregional contact (see *Chapter Eight*). It would be an injustice to suggest that maritime activity in the area was dominated by the islanders, as closely shared forms of pottery and burial practices indicates strong contact between those communities that inhabited the Gulf's shores (cf. Calligas 1984; Tzavella-Evjen 1984; Sapouna-Sakellarakis 1988-1989).

From the number of survey and excavation reports, it is the Euboean side of the Gulf that provides the greatest amount of information pertaining to later Neolithic and EBA activity along these waters (Theocharis 1959; Sackett *et al* 1966; Parlama 1979; Sampson 1981, 1985, 1988b; Calligas 1984; Keller 1985; Sapouna-Sakellarakis 1986, 1987, 1988-1989, *inter alia*). From the later Neolithic onwards the consumption of obsidian in Euboea rose markedly, almost certainly due to population moving into the south of the island, that coincided with (and was related to) increased activity and settlement in the Cyclades themselves (cf. Keller 1982, 1985: 165-74). For instance, excavations at Plakari on Karystos Bay have produced obsidian debitage including blade-cores in association with FN pattern-burnished pottery akin to material from Kephala on nearby Kea (Keller 1982, 1985: 168-69). The discovery of unworked nodules at Cape Mnima, the closest landfall coming from the Cyclades, provides evidence for a probable route through which obsidian was procured (Keller and Cullen 1991).

It is the upland L/FN site of the Skoteini Cave, Tharrounia, that provides us with the most detailed insight into the chipped stone industries of Euboea at this time (Sampson 1993a). In the LN its assemblage was dominated by obsidian (**Table 3.2**),

employed to manufacture blades by indirect percussion, a number of which were modified into points, end-scrapers and a variety of other retouched implements (**Figure 3.3**). In the FN, pressure-flaked blade manufacture appears alongside the former technology, with a continued reliance on obsidian as the primary raw material. The Skoteini material is thus technologically and typologically directly comparable to assemblages from contemporary settlements on the opposite side of the Euboean Gulf, including the Kitsos Cave, Nea Makri and Léondari on Makronissos (Theocharis 1956: 26, pl. 18; Lambert 1972a; Perlès 1981).

During the EBA, the procurement and working of obsidian appears to have been concentrated amongst fewer communities in the island. Surveys and excavations by Jacobsen and Sampson have recorded a number of coastal settlements where blade production was attested, including the EHI site of Linovrochi and the EHII sites of Manika, Khironisi, Aliveri, Avlonarion and Almyropotamos (Jacobsen 1966: 107; Sampson 1981: 168, pl. 168, fig. 135). To these should be added Porto Boufalo, sites of the Aliveri region of unknown EBA date, plus Eretria Magoula and possibly Amarynthos (Parlama 1979: 9, fig. 2; Sampson 1985: 95; E. Sapouna-Sakellarakis pers. comm.).

Dominating the Euripos Straits, it is the site of Manika that is by far the most important of the aforementioned settlements. Excavations have revealed a huge EBA settlement and a cemetery whose remains indicate a community that was accessing and consuming resources, material culture, knowledge and social practice from across the Aegean world (Theocharis 1959; Calligas 1984; Sampson 1985, 1986, 1988b, 1988c, 1993b; Sapouna-Sakellarakis 1986, *inter alia*). Pressure-flaked obsidian blades were produced at a number of loci within the site, with the quantity of cortical debitage indicating that much of the obsidian was imported as raw nodules (Sampson 1985: 93-105, 1988b: 103-104; Sapouna-Sakellarakis 1986: 228-34, fig. 84-87), evidence that

supports the long held belief that Manika served as an EBA emporium (Theocharis 1959: 303-304, Jacobsen 1966: 107). Indeed, production occurred almost certainly on a scale beyond the community's immediate needs, with pre-formed nuclei and / or finished products being exchanged with other settlements in Euboea or farther afield. One such site is Kaloyervrysi, a small inland community whose obsidian appears to have been procured in the form of ready-made tools, for its lithic assemblage is dominated by blades with a complete absence of flakes and nuclei (Sampson 1993c: 119-21, 154 fig. 77; Sampson pers. comm.). Manika's role in procurement, production and exchange will be returned to below.

On the Gulf's western border, quantities of obsidian are once more recorded at numerous later Neolithic and EBA coastal locations (**Figure 3.2**), but as so few of these sites have been investigated and / or published in detail, knowledge of their lithic industries' scale and nature is limited. For eastern Attica, pressure-flaked blade manufacture is recorded at the important late EHII fortified sites of Raphina and Askitario, plus the contemporary settlement of Koropi (Theocharis 1951: 92, fig. 21, 1952: 149, 1953: 117, 1954: 113, 1955a: 115; Kakavoyanni 1986, 1993).

Moving north into Boeotia, excavations at the EH settlements of Eutresis and Lithares generated substantial quantities of obsidian (Goldman 1931; Caskey and Caskey 1960; Tzavella-Evjen 1984, Tzavella-Evjen 1985). At Eutresis it was the excavators' opinion that the material was if anything "still more plentiful" in comparison to the "superabundance" of obsidian from Lerna in the Argolid (Caskey and Caskey 1960: 166). Situated on the south shore of Lake Hylike, the site of Lithares consists of 55 architectural units of EHII date, for which we have a rare room-by-room quantified and qualified description of the chipped stone (**Table 3.3**). Notable is the number of blade-cores recovered and their widespread distribution amongst domestic buildings and open spaces (**Figure 3.4**). The significance of this distribution will

only become apparent with Dr. Anna Karabatsoli's final report. Arguably, given the requisite knowledge to produce such nuclei, their proliferation reflects the individual, or familial ownership of blade-cores as valued and curated objects rather than evidence for the entire reduction sequence being organised on a household basis.

While situated a few kilometres inland (and in the case of Eutresis, equidistant from the Corinthian Gulf), these communities' material culture displays close links with sites such as Manika and contains a range of 'Cycladica', suggesting obsidian was probably procured through exchange networks operating via the Euboean Gulf (*ibid*: 166, after Blegen 1949).

Finally, it is worth mentioning two sites located to the north and north-east of the Euboean Gulf, albeit briefly, for they lie on the edge of the southern Aegean world and hence the arbitrary geographical boundary imposed on this thesis. The first is Pevkakia, an important LN-LBA settlement situated on the Pagasitic Gulf, whose excavations have generated considerable amounts of obsidian (Christmann 1996: 313-14, 319-20, pl. 158-61, 169-72). Pevkakia's status and scale in the EBA, and that of its predecessors, Dhimini and Sesklo, is no doubt a reflection of these communities' 'gateway' position, dominating the entrance to the great Thessalian plain.

The second is Palamari on Skyros, an important settlement dominating the only bay on the island's NE coast (Theochari and Parlama 1986; Theochari, Parlama and Hatzipouliou 1993). Established in EHIIA, the settlement was fortified in EHII B (Lefkandi I / Kastri phase), eventually covered c.10ha. by EHIII. Located opposite the Euboean Gulf's entrance, the site providing a stepping stone to the islands of the northern Aegean and the Anatolian littoral beyond. It therefore comes as no surprise that a survey of Skyros discovered the greatest amount of obsidian at Palamari (Theochari and Parlama 1986: 53; M. Theochari pers. comm.).

Given its material and architectural links with settlements such as Poliochni and Liman Tepe, Palamari appears to be a nodal point in the networks that linked certain Cycladic communities with those to the north and west. Recent work in the Izmir district of western Turkey are starting to recover quantities of what appear to be Melian obsidian, just one indication of the links between the two regions during the later Neolithic and EBA (pers. obs.).

3.5.2 - The lands bordering the Saronic Gulf

More a small semi-enclosed seascape than an elongated stretch of water, the Saronic Gulf is bordered by the eastern shores of the Argolid, the west coast of Attica and the Isthmus to the north (**Figure 3.2**). Located within its waters are two main islands, Aigina and Salamis, plus the large peninsula of Methana, in itself almost an island bar a narrow neck joining it to the eastern Argolid. While the medium for a great deal of inter-connectivity between the communities bordering its waters, the Saronic Gulf also provided the waterway that linked the southern Aegean and north-west Greece via the Isthmus and Corinthian Gulf beyond (see below). As with the movement of obsidian from the Cyclades to the Euboean Gulf, the likeliest route from Melos would have incorporated the so-called ‘western string’ of islands: Siphnos, Serifos, Kythnos and Kea, then on to Makronisos and finally the southern tip of Attica around the area of Sounion (cf. J. Davis 1979). From here to the Isthmus the easiest route would have been to hug the west Attic coast, or to paddle via Aigina or Salamis. Thus it is not surprising that evidence for contact with the Cyclades is concentrated amongst the ‘ports-of-call’ along these coastlines, with a number of sites producing quantities of obsidian equalling, if not surpassing those of eastern Attica (**Table 3.4**).

Little is published of the region’s later Neolithic period, the major deposits coming from the FN settlement around the Acropolis and under the Classical Agora of

Athens, plus Kolonna on Aigina (Levi 1930-31; Welter 1938; Immerwahr 1971). Typically for this region and period, the Athenian assemblage comprised an indirect percussion and pressure-flaked blade-based industry, with a range of retouched blanks including tanged points (Levi 1930-31: 472-78, fig. 66-67). New excavations in the so-called Euripides Cave on the island of Salamis will hopefully provide more detailed information in the near future.

West Attica's best known EH site is Agios Kosmas, whose material culture and burial practices indicate a community in close contact with the inhabitants of the Cyclades. Indeed, the excavator suggested that this late EBI-II site may have been established by Cycladic islanders as an emporium for trading obsidian, as cores, flakes and blades were found in abundance throughout the settlement and cemetery (Mylonas 1959: 155, 162-63, fig. 167a-b). From the nearby Pani Hill a further c.4000 pieces of obsidian were collected, plus a few hundred blanks from Trachones and Alimos close by (Geroulanos 1956: 75, pl. 2, 5-12), all apparently relating to pressure-flaked blade production, with Geroulanos illustrating 527 blade fragments from Pani on one page alone (*ibid*: pl. 6).

On the opposite side of the Gulf, there seems to be far less obsidian circulating during the later Neolithic and EBA, though admittedly little of this coastal region has been intensively investigated. The major exception to this statement is the survey of the Methana peninsula (described more fully in *Chapter Four*), which recovered no assemblages comparable in scale to those from the area of Agios Kosmas (Mee and Taylor 1997).

As one rounds the Southern Argolid (the western tip of the Saronic Gulf), one again enters a region where high amounts of obsidian have been recovered from later fourth and third millennium BC contexts. The Southern Argolid Exploration Project (A.E.P.) will, along with the Laconia and Methana Surveys, be discussed more fully in

Chapter Four. Work on and around the islands opposite this part of the mainland (the Ermionid) continues to recover substantial quantities of obsidian, relating to the fact that these communities straddled the major route from the Cyclades to the Argive Gulf and major sites such as Lerna, Tiryns and Asine (**Figure 3.2**). Survey, excavation and underwater exploration on and around Hydra, Spetses and Dokos have recorded “a dense network of sites” (Agouridis 1997: 12) with numerous traces of prehistoric activity (Kyrou 1990: 59), including the proposed wreck of an EHII boat off Dokos referenced above. On Spetses a major EHII harbour site has been recorded at Agia Marina facing the Cyclades, here obsidian was found in abundance along with imported EC ceramics (Theocharis 1971: 92; Kyrou 1990: 62-67). Agouridis also makes special mention of the island of Velopoula located between Melos and Spetses in the middle of the rough Myrtoon sea. Apart from representing a probable landing place en route between the Argolid and the Cyclades, there are also traces of metals on the island (Agouridis 1997: 12, after Kyrou 1990: 75-76).

3.5.3 - Corinthia and the Isthmus

While it was not until the 19th century AD that the Saronic and Corinthian Gulfs were linked by a canal, the easiest route linking the southern Aegean with north-west Greece would still have been to cross the 6km isthmus that separated the two waterways. Indeed, there is good historical evidence for the regular portage of vessels in order to avoid navigating the southern Peloponnesian coast and rounding southern Messinia (Sanders 1996), for as the Greek proverb states, “[h]e who sails past Cape Malea, must forget his homeland” (Braudel 1992: 72). With the island of Kythera, this eastern Laconian peninsula forms the passage between the island Aegean to the east and the “maritime Saharas” of the Ionian Sea to the west (**Figure 3.2**), a dangerous

enough voyage in a sailing vessel, let alone the paddled-craft of the fourth and third millennia BC (cf. *ibid*: 72-74).

It is therefore unsurprising that survey and excavation have documented an intensive EBA settlement of Corinth, the Isthmus and its environs, with obsidian reported from virtually all of them, though unfortunately the literature offers no qualified, or quantified descriptions of these assemblages (Blegen 1920, 1921, 1928; Shear 1930; Gebauer 1939; Kosmopoulos 1948: 71; E. Smith 1955; Broneer 1958; Protonotariou-Deilake 1971: 70; Lavezzi 1978). Over the past 100 years numerous sites have been investigated in these regions, of which Corinth, Zygouries, Korakou and Tsoungiza are probably the best known (Blegen 1921, 1928; Pullen 1986, 1990a). New survey data suggests that the first two communities may be atypical, probably representing regional centres of power, exchange and consumption (cf. Attas, Fossey and Yaffe 1987; Wright *et al* 1990).

Corinth's important role in Aegean exchange networks had been noted from an early date, with Kosmopoulos characterising the site's prehistoric finds as "exceedingly varied and eclectic", reflecting the community's location, straddling "the highways of human intercourse" (Kosmopoulos 1948: x, xiii). This material included obsidian from the earliest levels and imported EC pottery (*ibid*: 31, 71, fig. 7), although it is difficult to ascertain the exact nature of the site during at this time as Corinth's Neolithic and EBA occupation is seen largely through deposits revealed during the excavation of the Classical and later city (cf. Shear 1930; Gebauer 1939; Lavezzi 1978).

At Zygouries, evidence for social ranking is provided by the site's scale and architecture, plus a range of material culture of Cycladic, Minoan and Anatolian derivation (Blegen 1928; Rutter and Zerner 1984; Pullen 1986; Harrison 1995: 26-27). As at other large EH settlements an abundance of obsidian was reported, although the 'concentration' reported from House L only comprised of 23 blades (Blegen 1928: 198).

3.5.4 - *The lands bordering the Corinthian Gulf*

Relatively little is known of the EBA communities that bordered the Gulf between Perachora to the south-east and Mesolonghi at its mouth to the north-west (**Figure 3.2**), though a number of EH sites have been recognised bordering the shores of Lake Vouliagmeni, immediately to the north-east of the Isthmus. One trial excavation discovered a large deposit of obsidian (including nuclei), situated between a house and a possible circuit-wall dated EHI-II (Fossey 1969; Fossey and Morin 1986). Further to the east, two excavations at Galaxidhi produced a large quantity of worked obsidian, including both pressure-flaked cores and blades associated with EHIII pottery; and at Kirrha on the west Phocis coast, obsidian is reported as a common find within the site's EHIII levels (Mastrokostas 1956; Dor *et al* 1960: 105, pl. LXI, no.19; Daux 1963: 837-38; Vatin 1964: 567, fig,8).

The Aetolian Survey has substantially increased the number of prehistoric sites along the Gulf's northern coast, but its publications have disclosed minimal information on the region's chipped stone assemblages aside from a little obsidian reported from the site of Ancient Pleuron (Bommeljé *et al* 1987: 104). At the narrowing of the waterway that divides the Corinthian Gulf from the Patraikos Bay, the modern site of Patras is an obvious candidate for the location of an important EBA settlement on the north Peloponnesian coast, but little EH material is currently known from the town.

3.5.5 - *The North-West Peloponnese, Ionian Islands and Messinia*

The north-west Peloponnesian and Ionian populations were on the periphery of those social networks that resulted in the shared material culture, iconography and burial practices used to define the EH culture of the southern mainland and Euboea (Rutter 1993: 761). Bordering the protected coastal routes of Dalmatia, Elis and Messinia and

encircled by mountains, this region's socio-economic links has, throughout history, tended to have been with communities to the north and south (cf. Wardle 1972; Braudel 1992: 90, 95-96; Douzougli 1996).

The Ionian Islands occupy a slightly different space, for facing the entrance to the Corinthian Gulf (the Bay of Patras), they not only straddle the north-south maritime routes but also control access to the Helladic 'heartlands' and the southern Aegean beyond (**Figure 3.2**). Such a nodal position aided one EBA community on Leucas to procure and consume the rich and eclectic material culture recovered from the R-Gräben at Nidhri in the Steno Plain, an important group of material that will be discussed further in *Chapter Six* (Dörpfeld 1927).

During the later Neolithic, only very small amounts of obsidian are reported from this region's sites, including LN Choirospilia on Leucas, plus Skala and Same on Kephallinia, with Ionian, Epirote and Corfiote lithic technology based primarily on rich local siliceous resources (Velde 1913; Dörpfeld 1927: 330-38; Hammond 1931-1932: 136, 1967a: 316-18; Bulle 1934: 166-67; Valmin 1939: 70; Gallant 1982; Lidoboes 1983; L. French 1993: 25; Perlès 1994b: 71). EBA assemblages provide greater evidence for obsidian entering the region, though it remained rare, apparently concentrated amongst only a few communities. For example, at Platygiali, a late EHII settlement on the western Aetolian coast, the chipped stone assemblage was dominated by local flint with only 34 pieces of obsidian, virtually all in the form of blades ([Demetrios] Haniotes and Voutiropoulos 1996: 72-73, fig. 10 [**Figure 3.5**]).

There is a quantity of obsidian from the Finlay collection (see *Chapter One*) that supposedly originates from findspots in the northern part of this region, including Mesolonghi on the southern Aetolia-Akarnanian coast and the islet of Salagora in the Aorta bay off the coast of Epirus (Bosanquet 1904: 233). The latter 'assemblage' is a substantial one, consisting of 20 pressure-flaked blade-cores, but as with all material

bought after December 1871, these artefact's provenance should be questioned, though in the case of Salagora Bosanquet felt that:

[i]n all the tainted evidence which I have felt obliged to set aside, there are no names more plausible or that one would more willingly believe authentic than those of Salagora, the port of Arta, and Mesolonghi, places that might well have received cargoes of obsidian and transmitted it to the interior (Bosanquet 1904: 233).

Bosanquet's reasoning was based partly on Dörpfeld's recovery of obsidian from his excavations on nearby Leucas and a belief that it was being exchanged up the Adriatic coast. Yet it is now appreciated that the R-Gräben and their contents are far from typical and there is precious little evidence for Melian obsidian in Epirus, let alone any further north (cf. Hammond 1967a: 316; **Table 3.5**). It is also worth noting that on visiting Salagora, Hammond was convinced that no prehistoric settlement had existed here (Hammond 1931-1932: 136).

Finally, it has been suggested that some of the obsidian from this part of Greece may originate from Lipari (Caskey 1964: 23), thus representing an 'interface' of exchange networks between Aegean and Italian sources. This suggestion appears to have arisen because the region lays approximately halfway between Melos and Lipari, rather than the result of a considered appraisal of cultural contact between the regions during the later Neolithic - EBA. As yet only one piece of obsidian from the area has been analysed, a surface find from Kephallinia that proved to be of Melian origin (Renfrew, Cann and Dixon 1965).

In the NW Peloponnese, obsidian seems to have made a greater impact on chipped stone technology, forming the dominant raw material employed by the Elia EBA communities of Strephi and Olympia (Weege 1911; Dörpfeld 1935: 87;

Koumouzelis 1980). At Strephi, some 11km from the sea, rescue excavations revealed traces of early and late EHII domestic buildings plus the remains of two intramural pithos burials (Koumouzelis 1980: 35, 51). Obsidian was found in each layer, with a concentration in the EHIIA House V, where cortical blanks, cores and blades indicated an amount of localised production (*ibid*: 108-11, pl. 67-68, fig. 19-20).

Comparable to Strephi, is the hilltop settlement of Ayios Dhimitrios, 30km due south in Tryphylia (Zachos 1984, 1987). Occupied in the FN and again in late EHI Ib, obsidian was used in both phases to manufacture pressure-flaked blades, with a small amount of knapping debris found in EHII B House A (*ibid*: 147, 292). On the basis of such material the settlement was considered to have acted as a redistribution centre for the hinterland, though corroborative evidence is currently lacking (*ibid*).

Hopefully such data may become available from the Pylos Regional Archaeological Project (J. Davis *et al* 1997). Intensively surveying some 40km² of land around the Mycenaean 'Palace of Nestor' and a further 30km² extensively, the Project has recovered a "modest sample" of 1099 pieces of chipped stone (*ibid*: 414). Of this material (which includes some non-obsidian Middle Palaeolithic assemblages), obsidian only constituted 17% of the total (n=189). With 40% of this material, including all the survey's cores, coming from a single EHII coastal site, Romanou, *Romanou* (*ibid*: 414), this data provides further evidence of the uneven distribution of obsidian both within the 'Helladic' world, and its constituent regions.

As with the Ionian communities, the communities of Strephi, Olympia, Ayios Dhimitrios and those within the Pylos region, probably accessed obsidian (in whatever state) from exchange networks articulated via the Corinthian Gulf. At present the primary evidence for this claim lies with the pottery, for it is noteworthy that during both phases of occupation, the Ayios Dhimitrios ceramic assemblage demonstrates close

links with coastal sites further to the north, particularly those of the Ionian islands in Period IIb (Zachos 1987: 286).

3.5.6 - *The Argolic Gulf and East Peloponnese*

In contrast to the eastern Argolid, sites occupying the peninsula's western littoral and the plain bordering the Argolic Gulf have produced *substantial quantities of* obsidian (**Figure 3.2 & Table 3.6**). Lerna is the major EBA site of the Argive Plain, its importance manifold, not least its for its impressive architecture (including a fortification wall with bastions), and providing the material employed to define the southern mainland's EB II and III pottery sequence (Caskey 1954, 1955, 1956, 1957, 1958, 1959, 1960; Rutter 1995). The large obsidian assemblage indicates that the EBA community was procuring unworked nodules and reducing them in the production of pressure-flaked blades (Runnels 1985b). The EHII obsidian assemblage (Lerna III) is derived primarily from the 'House of the Tiles' (*ibid*: 386), the most famous example of a small group of late EBII monumental buildings, an association that will be returned to below.

Surveys have located a number of EH sites between Lerna and the southernmost tip of the east Peloponnesian coast (Faklaris 1990; Kyrou 1990). In most instances these small communities would have been self-sufficient in subsistence terms. In turn, through providing sheltered anchorage for craft travelling between the Argolid and southern Laconia (Agouridis 1997: 12-13), many would have been able to engage in the exogamous social and economic networks necessary for access to wider mating networks, exotic resources and other avenues of social distinction.

Just south of Lerna, the Cynouria Survey has recorded two sites either side of the Astros Bay (Nisi Paralio Astros and Cherronisi), both of which produced 150+ pieces of obsidian, along with EHII ceramics including fine wares and possible Cycladic imports

(Faklaris 1990: 40-46, 56-78). With three near-whole nuclei at the former site and two fragmentary examples at the latter, a limited amount of pressure-flaked blade production is indicated at both settlements (*ibid*: fig. 5-6, 16-22, pl. 5a-b, 6a-b, 12a-b, 13). Situated a little inland from the bay, 9 blade-cores were recovered the site of Koutri, along with a limited amount of EBA pottery (*ibid*: 121, fig. 67-69, pl. 44a-b, 45).

Towards this coastline's southern tip at Agios Phokas, obsidian has been recorded in 'abundance' (once more unquantified), along with considerable EHII pottery and a defensive wall that may suggest a date late in EBII (Kyrou 1990: 61). As the chipped stone included both cores and blades, it suggests that as well as representing a locus of procurement and consumption, this community may also have acted as a small production centre, operating within a network of exchange partners.

3.5.7 - *The Southern and Central Peloponnese*

The prehistory of Laconia and Arcadia in the central Peloponnese has recently received detailed attention, in the form of intensive field survey (Lloyd, Owens and Roy 1985; Cavanagh *et al* 1996; Forsén, Forsén and Lavento 1996), and the publication of excavation data, both old (Renard 1989; Forsén 1996), and new (Crouwel *et al* 1995). As elsewhere, it would appear that the production and consumption of obsidian blades was concentrated amongst the coastal communities of this region, the level of these activities *generally* diminishing as one moves inland.

During the LN and FN, the assemblage from the Alepotrypa Cave on the west coast of the Mani peninsula is currently one of the largest and most important groups of Laconian material (Papathanassopoulos 1971a, 1971b, 1971c; Lambert 1972b). For the EH period large surface concentrations of obsidian have been recorded at the site of Elaphonisos, Pavlopetri where underwater reconnaissance has revealed traces of an EHII settlement and what appear to be chamber tombs akin to those of Manika and Corinth (Harding, Cadogan and Howell 1969; Sapouna-Sakellarakis 1987: 258). Situated near the southern tip of the infamous Cape Malea, it lay on the other side of the peninsula to the EH site of Agios Phokas mentioned above. Facing the large island of Kythera this settlement obviously occupied a choice spot in maritime connectivity, with its finds including not only Cycladic raw materials but also imported pottery (Harding, Cadogan and Howell 1969: 133).

Moving northward, on the coast of the Lakonian Bay at the mouth of the River Evrotas, excavations at Agios Stephanos have discovered traces of a small EHII settlement beneath an inhabitation of Mycenaean date (Taylour 1972). Obsidian constituted 90.9% of the chipped stone assemblage (n=1068), its component parts indicating that this community was procuring in some, if not all instances, raw nodules that were then reduced on site in the production of pressure-flaked blades (Kardulias

1992; **Table 3.7**). Agios Stephanos probably played a role in the dissemination of obsidian from the southern Laconian coast inland during the EBA, though whether the Evrotas was ever navigable is doubtful (H.W.C. Catling pers. comm.). In turn, the limited evidence for social stratification within the settlement makes one wonder if the primary route that obsidian was procured by the people of central Laconia and Arcadia may not have been from the north via the Argive Plain and sites such as Lerna. In attempting to reconstruct the direction of inter-regional exchange, the chipped stone provides, at present, little help due to the data's often poor quality and low quantity. Instead, one may have to turn to ceramic provenience studies to provide this information (cf. Attas, Fossey and Yaffe 1987).

Turning to the interior, the data from the Laconia Survey is presented in *Chapter Four*, but it can be noted here that fieldwork recovered far smaller quantities of obsidian compared to surveys studying coastal regions, or areas further to the east (**Table 3.8**). Furthermore, one can note a dramatic fall-off in the quantity of obsidian found by the Asea Valley Survey, working in a region only c.30km north of that studied by the former project, with obsidian representing 96.2% of all chipped stone collected in Laconia compared to only 38% in Asea.

As shall be stressed throughout this thesis, geography cannot be seen as the overriding factor with regard to access to the material. A case in point is provided by Asea-Palaeokastro, the region's largest prehistoric (EN-MBA) site, that has produced large amounts of obsidian (Holmberg 1944: 128-29, fig. 120). Indeed, while obsidian commonly formed less than a third of the prehistoric chipped stone assemblages found by the Asea Valley Survey, it constituted 57% of the Asea-Palaeokastro assemblage (n=200), that in turn represented 64% of all obsidian recovered by the project (pers. obs.).

3.6 - Crete: A North-South Divide

Despite the numerous Neolithic sites investigated in Crete (cf. Treuil 1970; Sakellarakis 1973; Davaras 1996), the dearth of final publications means that little is known about the island's lithic tradition and its relationship to contemporary mainland technical, or procurement strategies. The sole detailed report on a Neolithic chipped stone assemblage comes from Nerokourou, a small open FN settlement near Chania in west Crete (Christopoulou 1989 [**Figure 3.7**]). Its 542 pieces of obsidian related to the manufacture of blades and bladelets by indirect percussion, with the small, amorphous and conical cores having entered the site in a pre-formed state (**Table 3.9**).

Indirect percussion appears to have been the predominant mode of blade manufacture in Crete at this time, having also been documented amongst surface assemblages from Kalathas and Tersana on the nearby Akrotiri peninsula (Moody 1987: 203), and the small LN settlement of Magasa, Palaikastro, at the eastern end of the island (pers. obs.; Dawkins 1904-05a: 265-66, pl. VIII.19-23). Unfortunately, the overall lack of data makes it difficult to locate the origin of pressure-flaking on the island, i.e. the technological mode responsible for blade production in EM Crete, though some FN assemblages, including Gortyn, Phaistos, Knossos and the Trapeza and Skaphida Caves (Pendlebury, Pendlebury and Money-Coutts 1935-36, 1937-38: 50; Vagnetti 1973: 4, 7; J. Evans 1964: 54, 1971: 114), contained blades considered “almost identical to EM examples” (Vagnetti and Belli 1978: 127-131, 153). Whether the technological differences between these assemblages and that from FN Nerokourou are due to chronological or social factors is currently difficult to ascertain. Preliminary results from the western Mesara survey do hint at an imbalance in the distribution of raw material and technological skill amongst the communities of later Neolithic Crete (Watrous *et al.* 1993).

Certainly Phaistos appears to have been a large settlement even in the FN (Vagnetti 1972-73; Vagnetti and Belli 1978: 127-31), so it may not be coincidental that while its chipped stone assemblage was dominated by obsidian, nearby contemporary settlements were far more reliant on local siliceous resources. For example, the chipped stone assemblage of site B7 (at the base of the Phaistos ridge), was comprised primarily of chert, and included multi-directional flake cores, plus modified blanks such as scrapers and piercers (Watrous *et al* 1993: 223).

EBA (EM) Crete presents a far clearer image, with excavation and survey indicating that the procurement, working, secondary exchange and consumption of obsidian was concentrated amongst a few north coast communities (**Figures 3.6-3.7**). These communities are also those with the clearest evidence for social differentiation, including: Knossos, Poros-Katsambas, Mochlos, Mallia, Chania-Kastelli and Phaistos (Van Effenterre and Van Effenterre 1969: 17-21; Warren 1972a: 393-94; Tzedakis and Hallager 1983: 6-7; Soles and Davaras 1992: 424; Dimopoulou 1997: 433-34). Given that most of these sites were located on, or near, the seaboard that boats travelling between Melos and Crete would have arrived and departed, one could perhaps have predicted the rapid fall-off of obsidian as one moved southward. Concentrations of obsidian from the important EM settlements of Phaistos and Archanes (Pernier 1935: 88-89, 117; Carter *in prep*, b), do suggest that while a maritime perspective enabled access to important long-distance sea-borne contacts, it was social agency, rather than geographical location that constituted the prime mover in the creation and maintenance of EM power structures. Furthermore, as most of these sites subsequently became centres of power and exchange within later Minoan palatial society, it sharply brings into focus the debated relationship between EBA political organisation and later Bronze Age social inequality.

While the suggested link between EM and LM society forwarded by some scholars (cf. Warren 1987; Branigan 1988a), is a much contested view (cf. Cherry 1983, 1984; Watrous 1994), the fact remains that excavation and survey have indicated the existence of a few EM communities that were notably larger and possessed a wider range of material culture, craft activities and other supposed aspects of social differentiation than the majority of settlements at this time (cf. Whitelaw 1983: 336-37; Soles 1988). If the area covered by Pre-palatial deposits can be related to scale of population, Whitelaw has argued that EM Mallia, Knossos and Phaistos would have surmounted “some major organisational thresholds”, involving the emergence of social inequality within a society perceived as otherwise consisting of “small-scale, egalitarian communities” (Whitelaw 1983: 337-40). The nature of these social developments and the role played by skilled and restricted technologies such as pressure-flaked obsidian blade-manufacture will be discussed in greater detail in *Chapter Four*.

3.6.1 - Knossos

Founded in the late eighth / early seventh millennium B.C., Knossos occupies a unique position within Crete’s settlement [pre]history, in terms of its scale, longevity and social status: from a “Neolithic ‘super-site’” (J. Evans 1994: 19), to the pre-eminent Minoan palace of the later Bronze Age. It thus comes as no surprise that the manufacture of obsidian pressure-flaked blades is attested at Knossos in the EBA (Warren 1972a; Evely 1979: 217-19, 1993: 132-34). Ascertaining the nature of EM Knossos is problematic as the Kephala tell was levelled in late MMIA for the construction of the First, or Old Palace (MacGillivray 1994: 46-49), so that “no other period of the Minoan settlement is so poorly preserved”, with information entirely derived from “scattered fill deposits and fragmentary architectural remains” (Wilson 1994: 23).

Even from the relatively limited assemblages available, it is clear that EMIIA Knossos was an impressive community with regard to size (**Figure 3.8**), architecture and external relationships, though the paucity of EMI data makes it difficult to tell whether this period was one of marked change, or represents a continuous trajectory of social development from the Neolithic (*ibid*: 35-36; Broodbank 1992b; Whitelaw 1992). Most data for EMIIA Knossos comes from the traces of two substantial buildings, one to the south of the later Royal Road and the 'West Court House' (Warren 1972a; Wilson 1984, 1985).

Ceramics from these deposits indicate a strong link between Knossos and communities in the Mesara and east Crete, the former probably taking the form of prestige-good exchange of fine pouring and drinking vessels between local élites (Wilson and Day 1994: 85). It is also in EMIIA that Cycladic material culture is first recognised at Knossos, with the recovery of both fine-wares and containers suggesting that the exchange of island produce was as much a part of Cyclado-Minoan relationships as were objects of high status (Wilson 1994: 39-41). Finally, EMIIA levels have also produced fragments of an obsidian vase and a hippopotamus tusk, possible indications of contact with Egypt (Warren 1972a: 394; Krzyszkowska 1983: 166).

Beyond the widespread socio-economic networks that members of this community were participating in, there is further evidence for Knossos' level of development provided by hints of a large-scale reorganisation at the site in late EMIIA. This is the date when the West Court House was remodelled, with the use of structural terracing and the levelling of the building's upper floors (possibly for the provision of an open public space), arguably pointing to the work of "a strong central authority" (Wilson and Day 1994: 85).

It is within this general social context that we have evidence for an obsidian 'workshop' situated within the large building from Trench F, south of the Royal Road

(Warren 1972a). Measuring c.5 × 2m, the single room uncovered was roughly rectangular and constructed from unworked stone and mudbrick, internally faced with a thin layer of white clay plaster (*ibid*: 393). From the lower EMIIA level, alongside one of two fire hollows, came a mass of c.3000 pieces of obsidian. Preliminary reports relate the debitage to the final stages of preparing unipolar faceted nuclei and the removal of pressure-flaked blades (*ibid*: 393; Torrence 1979a: 77-78; 1986: 151-55; Evely 1993: 132-34, pl. 29; **Table 3.10**).

Drawing on the experimental work of Sheets and Muto described in *Chapter One*, Torrence argued that the 5.4kg of debitage could have been produced from 23 cores in 57.5 hours, thus demonstrating the ‘workshop’s’ “relatively low intensity of use” (Torrence 1986: 151-55). Even allowing for the problems in using the Mesoamerican analogy, Torrence’s demystification of the assemblage’s *size* remains a fair comment, yet while it cannot be described as a ‘workshop’ in terms of blade production within the Aztec state, one has to note that this is easily one of the largest deposits of worked obsidian in Crete after those from Poros-Katsambas and Tomb / Building N at Mochlos (**Table 3.11**). Indeed this assemblage contained more debitage than most EM sites have produced in total and compares favourably with the largest known deposits from the southern mainland, including those from Lithares and Agios Kosmas (**Table 3.3**; Mylonas 1959: 144]).

3.6.2 - Mallia

Despite being one of Whitelaw’s anomalously large EM settlements, Mallia has currently neither a sizeable prepalatial building, nor any particularly rich assemblages from the community’s EBA graves (cf. Demargne 1945; Van Effenterre and Van Effenterre 1963: 60-62; Van Effenterre 1980: 232-35). Numerous Mesaran imports indicate that Mallia was actively participating in inter-regional exchange networks, as

does the Cycladic folded-arm figurine recovered from an EMIII context (Farnoux 1989: 771; Wilson and Day 1994: 18; Karantzali 1996: 56).

As at Knossos, there is also a supposed obsidian workshop at Mallia, the EMIIA-B ‘atelier des tailleurs d’obsidienne’, situated in the NW quarter of the later Minoan palace (Van Effenterre and Van Effenterre 1969: 17-21). Contextually it is quite different to the Knossian example, the small knapping floor situated in an oval building described by Evely as a “shack” (Evely 1993: 128-32). The assemblage consisted of c.20 prepared nuclei, c.50 blades and debitage and detritus representing a sequence of knapping events from the decortication of raw nodules to pressure-flaked blade manufacture (Torrence 1979a: 77, 1986: 150-53). From the relatively small size of the deposit Torrence argued that it should be considered a ‘working’ or ‘activity’ area rather than a workshop *sensu strictu* (*ibid*), though the fact remains that from the associated finds and the number of prepared or curated blade cores, this locale represents something above and beyond the level of production one might associate with a household.

3.6.3 - *Phaistos*

Situated in the fertile Mesara plain of southern central Crete, EM Phaistos is one of the few communities located away from the north coast with a significant level of obsidian blade production, albeit without any large deposits comparable to the Knossian and Mallian examples (cf. Pernier 1935: 88-89, 117, fig. 31 & 50). With the EBA site covering c.1.13ha, and over a dozen EMI-II domestic buildings plus an estimated population of 300-450, Phaistos is unlikely to be representative of Mesaran communities in general (Whitelaw 1983: 338-39; Branigan 1993: 114-15, fig. 6.9).

Beyond the settlement’s impressive scale, the domestic evidence unfortunately offers little clue to the early community’s nature beyond its strong links with Knossos

and to a lesser extent, east Crete (Branigan 1988b: 31; Wilson and Day 1994). Conversely, the nearby burial deposit of Ayios Onouphrios provides some indication of the status attained by some members of prepalatial Phaistos, as the grave goods included goldwork, stone vessels, bronze daggers, bone and ivory sealstones, plus two Cycladic marble pyxides and parts of two folded-arm figurines of probable EMII and EMII-III dates (A. Evans 1895; Branigan 1971: 61; Renfrew 1972: 200, pl. 6).

3.6.4 - The North coast communities of Palaikastro, Pseira and Chania

Leaving Mochlos aside for a while, deposits from Chania-Kastelli, Pseira and Palaikastro provide further candidates for EM centres of obsidian procurement and blade production.

In Herakleion Museum are 16 prismatic pressure-flaked obsidian cores from the early British School excavations at Palaikastro (**Plate 3.1–3.2**). There is no explicit reason to assume that they derived from an EM context, nor that they necessarily form a coherent group. With the large number of blades from Palaikastro's EM burial record (*Chapter Eight*), and the small amount of obsidian (particularly nuclei) recovered by recent excavations of MM and LM levels (R.D.G. Evelyn pers. comm.), it does remain possible that these cores came from a prepalatial deposit[s], possibly the lower levels of Delta 35, or block X (Dawkins 1903-04). Palaikastro's EBA scale and status is little known, but at c.65 × 90 feet one EMII building is comparable in size to contemporary structures from Knossos and Phaistos (Branigan 1988b: 43). Equally, EM burial deposits indicate that this community was accessing and appropriating materials and social practices from the Mesara, Cyclades and other distant regions (*Appendix Four*).

In east Crete's Bay of Mirabello a harbour-based settlement was established on the small island of Pseira during the FN, flourishing into a large and rich trading site of

c.4 hectares by LMI (Betancourt and Banou 1991). Early excavations produced an unquantified amount of obsidian, including a 'hoard' from square K11, Room 1, associated with sherds of probable EMI-IIA date (Seager 1910: 10, 16; Betancourt 1983: 34; Dierckx 1992: 44-45). A selection of this supposed group is in the University of Philadelphia's museum, totalling two cores and 27 blades of a pressure-flaked technology (*contra* Hartmann 1978: 36). Relatively little is known about EM Pseira, though disturbed prepalatial burials produced gold- and stone-work akin to material from the House Tombs of nearby Mochlos (Betancourt and Davaras 1990).

Dominating the eponymous gulf on west Crete's north coast, the settlement of Chania dates back to at least the FN. On the Kastelli hill, a sounding through Room E of House 1 in the Plateia Aghia Aikaterini produced 60 pieces of obsidian, including cores, flakes and blades from an EMII level (Tzedakis and Hallager 1983: 7, fig.3). Unfortunately there are currently few other Chaniote EM contexts with which to contextualise this material, but as will become apparent below, it is a sizeable group of material when contrasted with pre-palatial assemblages elsewhere in the region. Finally, it is worth noting that in the western part of the same plateia MM domestic levels (with mixed EMIIIB material) produced over 700 pieces of obsidian (Hellström and Styrenius 1971).

Further confirmation of Crete's north coast concentration of obsidian comes from the island's many surveys, including two projects in the plains bordering the Mirabello Bay, that recorded their greatest amounts of the material on sites closest to the coast (cf. Hayden, Moody and Rackham 1992: 339). These included two large EMII settlements near Sphoungaras and Pacheia Ammos, potential intermediaries that the copper and obsidian recovered from nearby Vasilike may have been accessed (Watrous 1994: 709). Similarly, 53% of the obsidian collected by the 171km² survey around Chania (n=791), came from just 10 sites on, or within 2km of the seaboard (**Table**

3.12-13), with the greatest concentration on the Akrotiri peninsula (Moody 1987: 202-204, fig. 6.4, 298).

In contrast, central and southern Crete generally produces little obsidian. An impression of this is provided by the Sphakia Survey on the south coast of western Crete, where an FN/EM site that produced 8 pieces of obsidian was deemed worthy of mention in a preliminary report (L. French 1993: 81). It is not merely a question of smaller quantities of obsidian circulating in Crete below the northern littoral, for often assemblages from the interior contain a more limited range of debitage. Once more this provides clear evidence that such communities were essentially dependent on the 'big sites' not only for their access to the raw material but moreover the technical ability required to reduce it.

The Lasithi Plateau of central Crete provides evidence to support the argument that obsidian and skilled knappers were concentrated at a few north coast sites. While obsidian was certainly available to the region's EM communities, the 'plentiful' amount collected from EMI-II Katsoucheiriu constituted only 16 pieces and the absence of cores was emphasised by the excavators of the Skaphida Cave and Kastellos hill (Pendlebury, Pendlebury and Money-Coutts 1937-38: 50; Watrous 1982: 64, pl. 19c).

3.6.5 - *The 'big sites' in context*

It has been suggested that during the EBA certain Minoan communities had privileged access to exotic raw materials and technical knowledge. In order to demonstrate this more clearly, it is necessary to place their chipped stone assemblages into a broader context. For instance, it could be argued that this image has been generated through research bias, i.e. there is more EM obsidian from these sites simply because they have received the greatest amount of attention. Indeed, these deposits have generally been located in the process of examining the impressive Middle and Late

Bronze Age sites that the history of Minoan Crete has been written. Thus it is necessary to compare and contrast these assemblages with material from sites away from the northern littoral and deposits derived sites with no major MM or LM overburdens.

Myrtos Fournou Korifi is a site that fulfils both criteria, being situated on the south coast of east Crete and with its inhabitation restricted to EMIIA and EMIIIB (Warren 1972b). The settlement is important for its detailed publication that provides the single most informative set of EBA data from the southern Aegean, with the interpretation of its socio-economic status providing the focus for much debate over the relationship between EM and later Minoan society (*ibid*: 263-68; Branigan 1970: 114-25; Whitelaw 1983; Tenwolde 1992). It also provides an important counterbalance to the north Cretan chipped stone assemblages, for the entire excavation produced only 181 pieces of obsidian (Jarman 1972).

The predominance of pressure-flaked prismatic blades (**Figures 3.9-3.10**), with only one definite blade-core, suggests that the community generally procured these implements ready-made. Ultimately, they were probably produced by craftspeople based at, or controlled by communities such as Mochlos, that Fournou Korifi's ceramic assemblage displays a close link in EMIIIB (Warren 1972b: 267).

Turning to west Crete, excavations at Debla, a small agricultural community in the foothills of the White Mountains, produced only 51 pieces of obsidian from three EMIIA buildings (Warren and Tzedhakis 1974). With the assemblage comprised almost entirely of pressure-flaked blades (n=43, 84% [**Figure 3.9**]), it appears that as at Fournou Korifi, the population of Debla procured their tools ready-made. The origin of these tools' manufacture is almost certainly amongst the communities of the coastal plain below, either Chania-Kastelli or one of the Akrotiri peninsula sites (Moody 1987). If seasonally occupied as suggested (Warren and Tzedhakis 1974: 336), then Debla's occupants may simply have brought their tools with them when moving from

the coast to their summer pastures. Alternatively, the procurement of such exotic resources may have been embedded within the social relations that were necessarily established for the survival of such a small community (*ibid*: 332-33, 336; Moody 1987: 299).

Finally, once one moves beyond Phaistos, one sees a similar pattern of limited circulation and consumption in the Mesara. As with the later Neolithic assemblages, the chipped stone technology associated with the western Mesara Survey's EM sites was also based on local cherts (Watrous *et al* 1993: 223-24; Watrous 1994: 698). Further to the south, in the upland Ayiofarango valley and the coastal plain below, two field-surveys discovered a number of EM farmsteads and the occasional hamlet (Blackman and Branigan 1975, 1977), yet obsidian was noticeable by its virtual absence, interestingly only ever being recovered in association with disturbed burials (*Chapter Eight*).

One of the region's few excavated pre-palatial settlements (apart from Phaistos) is Ayia Triadha, where extensive late EMI-IIA deposits have been revealed in the Piazzale del Sacelli and two EMIIA-B domestic buildings are known c.100m south-east of Tholos A. The site's scale and material culture is reminiscent of Myrtos Fournou Korifi, and while numerous obsidian blades are mentioned, there appears to be little evidence for their on-site manufacture (Laviosa 1969-70: 411, 1972-73: 509; H. Catling 1988: 67).

Thus it appears that most Mesaran communities, were entirely reliant on others for their access to obsidian, generally relying on local siliceous resources for stone tool production (cf. Watrous 1982: 11, 38-66; Watrous *et al* 1993: 223-24). In turn, nowhere in Crete has a pressure-flaked blade industry utilising local chert or flint been documented. This could reflect these materials' inferior flaking properties, though it may simply confirm that just as the procurement and consumption of obsidian was

restricted to the regional centres (i.e. Phaistos, or perhaps further to the north at Archanes and / or Knossos), so was the technical knowledge required to work it into fine prismatic blades.

3.7 - Endnote

As this review has demonstrated, the image of the ‘supply zone’ cannot be substantiated for the EBA (the later Neolithic will be discussed in *Chapter Four*), for it is apparent that obsidian procurement and reduction had an unequal distribution across the southern Aegean at this time. A basic point to make, is that obsidian is concentrated amongst those communities that bordered the waters closest to and opposite the Cyclades. The resource’s highest consumption occurred in Attica and the sites along the Euboean Gulf, this seems to be the real ‘hot-spot’ during most of the third millennium BC and includes the communities of Agios Kosmas, Manika and slightly further inland, Lithares and Eutresis (**Figure 3.11**). One also gets the impression that the amount of obsidian being procured and worked at some of the Argive and Isthmian sites may have also attained these levels, though there is a rapid fall-off as one moves north, or westwards into the Peloponnese. In Crete the only sites that seem comparable to Agios Kosmas, Lerna and their ilk, are Mochlos plus Knossos and its harbour-side community, Poros-Katsambas, that appear to have had *far* greater access to obsidian compared to other EM populations.

To return to the first point, simply arguing that a maritime perspective was the primary factor with regard to accessing Melian obsidian during the EBA would be to do the evidence an injustice. Important exceptions are represented by the non-coastal communities of Knossos, Archanes and Phaistos in Crete, Asea in Arcadia, F32 in the Argolid, Zygouries in Corinthia, plus Lithares and Eutresis in Boeotia. In order to examine further the relationship between the craft of obsidian pressure-flaked blade

production and social differentiation, the following chapter will discuss two projects in detail: the Laconia and Melos Surveys.

- CHAPTER FOUR: THE RECONCEPTUALISATION OF PRODUCTION-

4.1 - Introduction

This chapter will present a radically different conclusion to that reached by Torrence, suggesting that from the later Neolithic obsidian blade production was politically appropriated, with technology, the producer and products taking on a new meaning within southern Aegean society. This reconceptualisation of lithic technology can be seen most clearly in the EBA with the restriction of raw material procurement and blade manufacture and the emergence of new modes of consumption, specifically the regular inclusion of prismatic blades in burials. The latter phenomenon receives detailed discussion in **Section Two**.

This is based on the study of both new and old data, the former generated primarily by regional surveys. Some of this material has been discussed in the previous chapter, but we shall now turn to two new sets of material whose publication is my responsibility: the Laconia Survey and the 1989 Melos Survey (Carter and Ydo 1996; Carter *in prep* a). One important aspect of these data sets is that both regions fall within the proposed 'supply zone', so that any conclusions must be directly considered in the context of Torrence's models. This is to be contrasted with Perlès' arguments concerning northern Greek assemblages, that were presented as additional and complementary rather than contradictory evidence (Perlès 1989, 1990a).

4.2 - Cores and Periphery: Obsidian and the Laconia Survey

The increased use of intensive field survey can be seen as one of the most significant developments in Aegean archaeology over the past 20 years (**Figure 4.1**). In part a response to the restriction of excavation permits and the prohibitive costs of mounting large-scale digs, these field projects were established to investigate

previously unknown regions and place existing data into broader geographical and temporal contexts (cf. Keller and Rupp 1983; Cherry 1994). For example, the Laconia Survey was developed as a logical extension of the British School's archaeological and topographical fieldwork in central Laconia (cf. Wace, Thompson and Droop 1909; Woodward 1923-25; H. Catling 1976-77). Thus it served to contextualise information from the excavations at Sparta and the Menelaion, while simultaneously gaining a diachronic perspective on a rural region's settlement history and economy (Cavanagh 1995; Cavanagh *et al* 1996).

From the c.70km² intensively surveyed by the project (**Figures 4.1-4.2**), some 1638 pieces of chipped stone were recovered from 179 findspots. Approximately a third of this material came from a single site E48(80), dated to the LN (n=520), with only 12 other locations providing more than 20 pieces (**Table 4.1**). The vast majority of the chipped stone was obsidian (n=1575, 96.2%), the remainder a variety of *silex*, the origins of which are currently unknown (n=63, 3.8%).

4.2.1 - The later Neolithic material

No assemblage could be dated earlier than the LN, with most assigned to the later Neolithic or EH (**Figure 4.3, Table 4.2**). Indeed, apart from the Plakia cluster (E48(80), E77, E78, E81), all Neolithic sites were recognised solely on the basis of their chipped stone assemblages containing diagnostic pieces paralleled in stratified contexts from excavations at the Franchthi, Kitsos and Tharrounia Caves, Ayios Dhimitrios and Kephala *inter alia* (Perlès 1973, 1981, 1994a; Coleman 1977; Zachos 1987). While typology played a role in chronological and cultural assignments, the central tenet of the study of the chipped stone was a more holistic, contextual analysis of technology and reduction sequences over time and space: the *chaîne opératoire* (cf. Pelegrin, Karlin and Bodu 1988; Edmonds 1990; Inizan, Roche and Tixier 1992: 11-26). The analytical framework employed for describing and comparing these assemblages was based (both descriptively and graphically) on a system developed by Perlès (1989, 1990a) on Greek mainland Neolithic assemblages, with each lithic artefact assigned to only one of 9 categories, component parts of various stages of reduction from raw nodule to end-product (Carter and Ydo 1996: 142-57). From the Laconia Survey's relatively limited data it was possible to reconstruct in some detail the knapping sequences present on a number of sites and distinguish notable differences between these assemblages, both at a diachronic and synchronic level (**Figure 4.4**).

The Plakia site, E48(80), c.5km NNW of Sparta, was the largest LN settlement discovered, with 572 pieces of chipped stone including the material from its nearby cluster of 'sites': E77, E78 and E81 (n=520, 27, 0 and 14). At E48(80) the material culture covered 1.5ha, that even allowing for down-slope movement and other erosional processes still represents an extensive settlement. The site overlooks and commands probable drovers' routes, with easy access to water from the River Evrotas 50m below (Cavanagh *in prep*; Shipley 1996: 339-40). The combination of the hill-top location (E77 is on the opposing ridge), poor surrounding soils plus the lack of querns and ards is

considered to indicate that the community had a primarily pastoral economy (Carter and Ydo 1996: 181). E48(80) was thus typical of the Survey's later Neolithic sites.

E48(80)'s chipped stone assemblage provided evidence for the production of obsidian blades by two different technological modes: indirect percussion and pressure-flaking. As with all the Survey assemblages, the minimal amount of cortical debitage indicated that the raw material was introduced into these communities as roughly prepared nodules or pre-formed cores. At Plakia the first recognisable on-site activity was the final shaping of the nucleus to facilitate the removal of a primary series of blades: the preparation of 'striking' platform, core margins and the creasing of a ridge (**Figure 4.4**).

Of the 11 cores recovered from the site, 4 were conical, the remainder of undiagnostic form. The sole complete example was a small conical pressure-flaked nucleus ($2.73 \times 2.00 \times 1.73\text{cm}$), with a single faceted platform, worked around three quarters of its circumference, with 11 parallel blade-scars visible (**Figure 4.5,a**). The first series of blanks removed were slightly thicker and somewhat more irregular than those produced from the main run, the *plein temps de débitage*: fine prismatic blades with straight, sharp cutting edges (cf. Perlès 1994a: 23). Some blades were selected for modification by retouch, producing points, end- and side-scrapers, backed pieces and piercers (**Figure 4.5,b**). While the intensity of retouch means that it is not always clear from which technology the modified pieces derived, it seemed probable that only blanks manufactured by indirect percussion were chosen, a phenomenon paralleled at the contemporary Kitsos Cave (Perlès 1981: 158).

A number of other pieces allow a tentative reconstruction of the final sequences of core reduction and blank production. A bi-polar flake from the site suggests that in at least one knapping episode, a blade core had been so intensively reduced that in order to remove further blades it was necessary to reverse the nucleus and prepare a new

platform opposite the original one (**Figure 4.5,c**). It is thus tempting to interpret the number of ‘undiagnostic’ cores recovered as representing the waste product from this final episode of a single knapping strategy; i.e. they were originally blade cores but having been exploited in such an intensive and ultimately *ad hoc* manner, they are no longer recognisable as such (purely flake-based obsidian industries are apparently unknown from the mainland Neolithic).

As noted above, differences could be discerned between the later Neolithic chipped stone assemblages (**Figure 4.4, Table 4.3**). Some, such as the distinctions between the material collected from around the Plakia site have been interpreted as probably representing separate but related activity areas within a single extended community (Carter and Ydo 1996: 160). Arguably, of greater significance is the difference in the average size of end-products from the blade industries of E48(80) and two other later Neolithic sites, B111 and B116 (**Table 4.4**). The reasons are technological, for at E48/80 blades were manufactured by both pressure-flaking and indirect percussion, whereas the regularity of the material from B111 and B116 points to the former technological mode being exclusively employed.

The difference between the E48(80) and B111 industries may also be chronological. For instance, despite B111 and B116’s proximity, their common blade technology and absence of ceramics, the latter’s assemblage is typologically more comparable to that from E48(80), whereas B111 only has a single point (**Table 4.5**). It is therefore tempting to assign the B111 assemblage to the FN/EHI period, a phase defined in ceramic terms at the nearby Aleopotrypa Cave in southern Laconia (Phelps 1975: 296).

The remaining loci of later Neolithic chipped stone are a little more difficult to interpret due to their lack of pottery and low on-site density of material. Given the pastoral regimes these communities probably practised, they may represent seasonal or

single-event activity areas rather than permanent occupations (cf. Demoule and Perlès 1993: 389; Sampson 1993a). Indeed, Cavanagh (*in prep*), has gone as far to suggest that most, if not all of these later Neolithic sites were dependent partly, or wholly, on a larger centre of population elsewhere (possibly Kouphovouno south of Sparta), concluding that for these central Laconian communities “there was never a period of Neolithic self-sufficiency”. While the necessity to assign these sites such a degree of external dependency is contested, it remains that even if each of these loci represents separate communities, their scale suggests that they would have had to be involved in wider social networks for marriage partners and access to non-local resources such as obsidian. This is a point that shall be returned to below.

4.2.2 - The EBA material

The wholesale shift in settlement pattern and increased number of central Laconian sites between the LN and EBA periods suggests a rise in population from the end of the fourth millennium BC (**Figure 4.6**). Both phenomena probably relate to a change in these communities’ economic base, for sickle-elements and saddle querns make their first appearance EH assemblages, implements commonly associated with an agrarian regime (Carter and Ydo 1996: 157, 177-78). Concomitantly, important differences can be discerned between the region’s later Neolithic and EBA chipped stone assemblages.

The first point to be made, is that in spite of the supposed increase in population the quantity of obsidian in circulation decreased, with the 66 pieces from site R287 the largest EH assemblage recovered (**Table 4.1**). Of greatest significance is the shift in both how and where obsidian was worked. At the expense of indirect percussion, pressure-flaking became the sole technological mode employed to manufacture obsidian blades, with the near complete cessation of secondary modification, developments that

are paralleled across the southern Aegean at this juncture (cf. Robinson and Weinburg 1960: 251-52; Cherry and Torrence 1982, 1984). Also, at some time before the start of EHII, each community's ability to readily access obsidian and have control or influence over its reduction ceased.

If one accepts for the later Neolithic that E48(80), B111, B116, N363, U487 and U489 were the major sites, with all other loci of L/FN material as dependent activity areas, then it is noticeable that (based largely on the presence of cores) most of these communities were influential in their access to raw material and its subsequent on-site reduction, acting both as centres of procurement and loci of production (11, 3, 0, 1, 1, and 0 nuclei respectively [**Figure 4.4**]).

This situation changes in the EBA, for only 2 out the c.45 recognised EH sites have evidence for on-site core preparation and reduction (P284 and R287), with no more than a single nucleus at each (**Figure 4.7**). While cores are by no means the sole indication of on-site knapping (a subtle but important distinction from a previous argument [Carter 1994: 134]), the fact remains that these assemblages reflect a differential access to lithic technology amongst the regions' EBA communities. The distinction lies between settlements where one can merely attest on-site production, and those that represent a focal point for blade manufacture on a larger and / or more regular scale.

An example of the former model is provided by Perlès' detailed analysis of the assemblage from the L-FN Skoteini Cave in Euboea. Obsidian was shown to have been introduced to the site as pre-formed blade-cores, that after limited reduction were removed to be further exploited at another location (Perlès 1994a: 35). This example is to be contrasted with those settlements where nuclei or pre-forms once procured were not thereafter diverted, being worked on-site by a craftsman over whom that community had some degree of control or influence, with the end-products being

consumed by the resident populace, or exchanged with other groups. These distinctions are believed to have socio-political significance, for reasons that will be described in the following sections.

4.2.3 - Cores as transferrable goods?

The notion that cores could be individually owned resources to be moved around the landscape in a curated form is not untenable given the arguments for other production strategies involving itinerant craftspeople during the Neolithic and EBA (cf. Wiencke 1989: 506). The question remains as to why cores should necessarily have been valued above and beyond obsidian in a purely raw state? The answer is dictated in part by practical considerations, for to reduce a nucleus completely in one ‘sitting’ would produce a large amount of fragile blades requiring careful storage unless they were for immediate consumption. It is far more credible that pre-formed nuclei were transported between communities and activity areas, with blades removed when required (cf. Holmes 1900: 414; Perlès 1994a), as opposed to the *regular* redistribution of blades as finished products.

Of greatest significance is the nature of the lithic technology employed at this time. Much has been made of pressure-flaking’s inherent skill and its potentially uneven distribution within a society, both in the prehistoric Aegean and further afield (Runnels 1985b: 367; J. Clark 1987; Perlès 1989; Carter 1994: 137-38). In fact, the most important and skilled part of the knapping process is not actually the end-removal of blanks, albeit a “difficult, and demanding practice, that requires an extensive knowledge of rock-flaking properties as well as good neuro-muscular coordination” (Perlès 1989: 11-13), but in the careful shaping and preparation of the nucleus itself (Crabtree 1968: 451; Pelegrin, pers. comm.). Indeed, as early as 1904 Bosanquet had commented on the probable differential access to technical knowledge in blade production within Melian /

southern Aegean society. He argued that “the knack of dislodging flakes from a properly prepared block could be acquired by practice, but the formation of that block out of the original nodule demanded a degree of experience and manual dexterity which the ordinary purchaser was not likely to possess” (Bosanquet 1904: 217-18).

4.2.4 - Laconia in context

Typologically, the Laconia Survey's later Neolithic chipped stone parallels contemporary southern Aegean assemblages, but technologically there are discrepancies, with indirect percussion apparently not making the same impact as it did in the Argolid, Attica and the Cyclades. This is problematic for these central Laconian communities fall within the 'supply zone' as previously defined. Theoretically the inhabitants of this region should have enjoyed greater access to obsidian after Cycladic colonisation, no longer being dependent on external specialists for procuring and working obsidian, resulting in the adoption of a less economising mode of blade production, indirect percussion (Torrence 1986: 13-15, 135-36; Perlès 1989: 13).

The reason for the limited adoption of indirect percussion in central Laconia may be explained with reference to Perlès' work on north Greek L/FN assemblages as outlined in *Chapter One*. Firstly, the population of this inland region would have lacked immediate access to, or working knowledge of the Aegean, making it improbable that marine resources would have played a major role in these communities' economy. Secondly, a primarily pastoral lifestyle would mean that the time, labour, knowledge and skill required to journey to the coast and construct a boat to undertake the voyage to Melos, would simply not have been available (cf. Perlès 1989, 1990a; Broodbank 1989). Finally, if these resources had been available it might have been reasonable to expect the Survey to have recovered more obsidian.

Appreciating the quantity of obsidian that was recovered is problematic, but it is apparent that far less material was being consumed in central Laconia than in other parts of the southern mainland such as Euboea, Attica, Corinthia and the Argolid. For example, site F32 of the Southern Argolid Exploration Project produced 530 more pieces than the Laconia Survey collected in total (n=2106; **Table 4.5**), though admittedly it was one of the region's "major EBA settlements" (Kardulias 1992: 435; Kardulias and Runnels 1995).

Given their restricted access to obsidian, it is therefore improbable that inhabitants of central Laconian EBA communities could have gained and maintained the requisite skill to work obsidian by pressure-flaking. Indeed, a general conclusion of the Laconia Survey was that throughout time the settlements of this rural, inland region of the Peloponnese were largely, or wholly, dependent on external centres for access to exotic resources (Cavanagh *in prep*). Torrence had considered the potential difference between coastal and inland areas with regard to the procurement and exchange of obsidian, admitting that different strategies may have operated for land-locked regions such as central Laconia (Torrence 1986: 137). These communities are not the only ones within the 'supply zone' that continued to rely on external contacts for access to obsidian and technical knowledge. Perhaps more damaging to the entire 'supply zone' model is the fact that pressure-flaking was also the predominant mode for blade manufacture at FN Ayios Dhimitrios, for this community was located on the Messinian coast (Zachos 1987: 147).

4.2.5 - Conclusions from the Laconia Survey

The central Laconia data is considered to reflect the changing social perceptions towards obsidian blade production from the later Neolithic - EBA. During the former period it is argued that this region's communities were reliant on non-local

‘independent’ itinerant specialists for procuring and probably also working obsidian (at least that reduced by pressure-flaking), a model following closely that proposed by Perlès for northern Greece at this time (Perlès 1989, 1990a). By EBII, the procurement, ownership and regular on-site reduction of pre-formed cores was undertaken as more controlled and directioned strategies, created and maintained by a small number of regional élites. Arguably the limited quantity of debitage recovered from these central Laconian EH sites could still represent the product of a few individuals who had no permanent base in the region. Yet given the regionalism witnessed in southern Aegean EBA lithic technology it is unlikely that there were peripatetic, ‘full-time’ (*sic*) knappers covering such extensive areas as proposed for the Neolithic (cf. Perlès 1989: 14).

As *Chapter Three* has already documented, the Laconia Survey also helps to illustrate that the suggested equal distribution of raw material and technical knowledge amongst southern Aegean communities can no longer be substantiated. As a final nail in this theory’s coffin, we shall now return to the obsidian source to see how the material was perceived and consumed at the source of the raw material, the island of Melos.

4.3 - A Return to Melos: The 1989 Survey

In the light of his own studies on the prehistoric Cyclades, Renfrew initiated new work at Phylakopi in the 1970’s to corroborate, refine and expand on the results of the original investigations at the site (Renfrew 1985: 5-7, 1965, 1972). The excavation formed the centre-point of a multi-disciplinary, diachronic analysis of the island’s archaeology and natural resources from the Upper Palaeolithic to the modern day. The study included an intensive field survey of approximately a fifth of the island and the creation of a gazetteer of all known archaeological sites (Cherry 1982b; **Figure 4.8**), proving to be a landmark in landscape studies when promptly and handsomely published (Renfrew and Wagstaff 1982). While comprehensive in terms of its research

design and position within contemporary archaeological method and theory, the project was not without its critics. In particular, it was noted that apart from Torrence's work on the obsidian quarries and lithic technology, there was a nigh-total lack of collection, description and publication of the material evidence on which many of the project's important theses were based (R. Catling 1984).

In 1989 a new survey was undertaken to provide an insight into the island's material culture and to tackle some of the issues raised by the first project (Annual Report 1988-89: 24-25). Its aims were to define the size and date of certain known sites and to consider synchronic and diachronic inter- and intra-site variability. This was achieved through intensive survey, involving quantifying artefact distribution, mapping and photography. Finally, diagnostic material was collected both by means of areal 'grab samples', plus a series of systematic samples usually in the form of a 100% pick-up within a square metre.

While the EBA, the Geometric - Archaic and the late Roman - Medieval eras were the primary focus of research, most of the 34 rural sites displayed traces of multi-phase activity, so that the final report will necessarily discuss all periods from the later Neolithic onwards. Those sites of the fourth-third millennium BC that formed the central part of my own study are listed below (**Table 4.7**).

4.3.1 - *Melian lithic technology: Previous research*

Before presenting the results of the new Melos survey, it is necessary to briefly outline earlier discussions of the island's chipped stone industries. Torrence's detailed work at the quarries at Dhemenegaki and Sta Nychia (Torrence 1979b, 1982, 1986 *inter alia*), will not be considered here as it has been referred to earlier and it is the settlement evidence that is of greatest relevance to this chapter.

Three major sets of data have been generated subsequent to the pioneering work of Bosanquet at the start of the century. The first was produced by Renfrew's surface collections in the 1960's (Renfrew 1972: 507-25), the second by his stratigraphic excavations at Phylakopi and the third from the more systematic surface survey by Cherry and Torrence (1982, 1984). Initial studies had made a basic distinction between the island's later Neolithic and EBA chipped stone industries primarily on the basis of their different blade industries. Thus the site of Agrilia was dated to the LN because its assemblage comprised blades manufactured by indirect percussion and a range of retouched implements, both of which are diagnostic elements of the LN material from Saliagos (Belmont and Renfrew 1964: 399; Evans and Renfrew 1968: 75). In contrast, the island's EBA blade industries were characterised as pressure-flaked, based on the debitage from the Trench Pi-c basal levels at Phylakopi that was recovered in association with EBI Pelos-Lakkoudhes Group pottery (Cherry and Torrence 1982: 31, 1984: 20).

The first Melos survey proceeded to recover a great many more assemblages akin to those detailed above, along with a few groups of material described as "transitional", as they contained what had previously been considered diagnostic elements of both later Neolithic and EBA lithic traditions (*ibid*: 20). Given that in some instances these assemblages were found in association with EBI pottery (e.g. Areti, Trion Hierarchon and Stous Dekatesseres), it was argued that they reflected the technological shift from percussion to pressure-blade technology (Cherry and Torrence 1982: 31). As a term of "convenience" (*ibid*: 20), the word 'transitional' usefully indicates the existence of assemblages that typologically lie between the percussion blade industries, with a wide range of retouched pieces and those dominated by pressure-flaked debitage lacking secondary modification. Whether such a shift in technological *mode* should be seen in such a manner is debatable.

4.3.2 - *The later Neolithic sites*

The 1989 survey failed to recover any ceramics pre-dating the FN, thus broadly confirming earlier results (*ibid*). There were a number of aceramic sites whose chipped stone assemblages were comparable to those from the Cycladic later Neolithic settlements of Saliagos and Kephala. One such assemblage came from Mavrogremna, a small hill overlooking and eroded by the southern extent of the great bay of Melos (**Figure 4.9**). The site was defined by an impressive scatter of worked obsidian and rhyolite spreading down the northern slopes of the hillock, along with a few eroded and undiagnostic coarse-ware body sherds and a spherical greenstone bead of probable EBI date (cf. Tsountas 1899: pl. 10,26). As was the normal procedure, surveying the site took the form of establishing a base-line transect oriented through what was perceived to be the original site centre (96m long in total), with two pairs of transverse transects established at 28m and 68m respectively (**Figure 4.10**). Along these lines at 4m intervals, all material culture within a 1m² area was recorded. The 73 samples produced 233 pieces of obsidian at an average of 3.19 per m², with the highest single count of 25. In order to record in greater detail what was noted as a higher concentration of material, a supplementary transect was walked north from the 48m mark, with all material from the 1m² recording units collected to augment the general grab sample. From these 20 units 130 pieces of chipped stone were recorded, at 6.5 per m², with 23 being the highest count.

The vast majority of obsidian debitage related to blade manufacture by indirect percussion. Cores were of Torrence's 'flat' or 'conical' type (Cherry and Torrence 1984: fig. 1, i-j), rarely longer than 5.5cm and predominantly unipolar. They had plain platforms, occasional lip removal by flaking or abrasion and were usually worked around two-thirds of their circumference. The blades commonly had sub-parallel

margins and sub-parallel, irregular, single or convergent dorsal ridges; a number had also been retouched (**Figure 4.11, a-c**). Technologically and typologically the assemblage resembles most closely that from the north Cycladic FN site of Kephala on Kea (Coleman 1977), and sites such as Areti, Mandrakia, Trion Hierarchon and Stous Dekatesseres discovered by the first Melos Survey (MS #3, 13, 74 and 79 [Cherry and Torrence 1982]).

4.3.3 - *The EBI sites*

As with the Laconia Survey, EBA sites were recognised and dated primarily by their pottery. Dating to EBI is the site of Pelos Pyrgaki (**Figure 4.12**), located on a rocky knoll overlooking the Chora Plain (Ayiasmata Basin) and the famous Pelos cemetery some 400m away and at a lower level (the type site of central and southern Cycladic EBI [Edgar 1896-97; Renfrew 1972: 141-42, 146; Doumas 1977: 16]). On the knoll is a modern sheep-fold that a local inhabitant informed us was built of stones taken from the ancient walls that had originally lain there (over an area of c.4-5m²), but the area produced virtually no prehistoric material. The site had suffered recent disturbance, most notably the cutting of a turning circle on its northern side (for vehicles serving the large quarry that encroaches on the lower western slopes), that has exposed a c.1m layer of soil from which quantities of pottery were eroding. The trackway culminated in a short terrace bulldozed into the hillock's western side and it is here that the highest density of material culture was found (**Figure 4.13**).

The site was subdivided into 6 areas for recording and collection (MS 89 #38A-F), with a 26m base-line transect aligned east-west along the bulldozed terrace (Area C). A series of 7 north-south transects were established every 4 metres so that both hillock and lower slopes towards the quarry were surveyed. Recording of 1m² units took place every 4m along the base-line and every 2m along the perpendiculars, with material

culture sampled by area, including the collection of all feature sherds and the majority of the chipped stone.

The ceramic assemblage's homogeneity suggested a single period occupation, the heavily burnished coarse wares paralleled in the lowest levels at Phylakopi (cf. Evans and Renfrew 1984: 64). The predominant shapes were deep and rolled-rim bowls (some with a tubular lug), and collared jars (**Figure 4.14, a-f**). Sherds from the recently disturbed areas were in excellent condition (C and F), with the lustrous burnished surfaces ranging in colour from black, brown and dark green through cherry-red and pink. Fine wares included a cylindrical, straight-walled burnished pyxis, some of the collared vessels and a single large rim sherd of a cup or possible sauceboat. The latter piece is enigmatic given that it is a form typically associated with EBII assemblages, but while its fabric was different to all the other pottery recovered from Pelos Pyrgaki, it also had no direct comparison to sauceboats from later settlements. Most pottery was made from of the same fabrics as those vessels from the Pelos cemetery kept in the British School at Athens' museum (based on the comparison of 9 macroscopic attributes), thus strengthening the case that the two sites were related.

While the pottery was typical of central and southern Cycladic EBI (Pelos-Lakkoudhes Group), the lithic assemblage displayed technological and typological traits that up until now have been commonly described as later Neolithic. Fifty-seven pieces of obsidian were counted from the 49 recording units, an average of 1.16 per 1m² (the highest single count of 8). Of the 179 pieces of chipped stone collected, obsidian formed the vast majority (n=175, 98%), the remainder produced from local rhyolites (n=4, 2%). Although dominated by flakes, the material related to blade production by indirect percussion, with the quantity of cortical debitage suggestive that all, if not most of the reduction sequence occurred on-site (**Table 4.8, Figure 4.15**). The 5 cores recovered were comparable to the Mavrogremna examples (albeit shorter), i.e. conical

in form, unipolar with plain platforms and often worked around the majority of the margins (**Figure 4.16**).

A fifth of the blades had received secondary modification (n=9, 19.56%), with backed pieces, notches and two 'slugs', plus two ovate mini-bifaces and a scraper made from blanks of unknown original form (**Figure 4.11, e-f**). The combination of these retouched pieces amongst an indirect percussion blade industry recalls the FN chipped stone from Kephala, Paoura and Ayia Irini on Kea, with the lack of tanged points making the first assemblage the closest parallel (Coleman 1977: pl. 25, 69-70, 95; Torrence 1991).

Two other sites provided us with pure, or predominantly EBI assemblages, Agios Panteleimon and Kato Komia. The former site is comparable to Pelos Pyrgaki in a number of respects, with the pairing of a small EBI cemetery (Papadopoulou-Zapheiroulou 1966), and a settlement c.150m away on a knoll overlooking the Chora Plain, this time on its eastern edge (**Figure 4.12**). The ceramic assemblage also largely replicated that of Pelos Pyrgaki, with burnished rolled-rim bowls, flat-rimmed bowls, collared and straight-sided jars, plus fragments of a 'cheese-pot', a ceramic form known from FN and EBI contexts across a wide area of the Aegean world (Sampson 1988a: 261-62). Unfortunately only 23 pieces of obsidian were recovered, mainly flakes (n=19), 7 of which retained some cortex. There were no nuclei and only 4 blades, at least three of which were manufactured by indirect percussion.

A similarly limited amount of chipped stone was recovered at Kato Komia on the east coast of Melos (n=17), associated with Pelos-Lakkoudhes Group domestic pottery spread in front of a small collapsed rock shelter. While the fact that 8 of the 13 flakes were cortical suggests that obsidian was worked on-site, only three blades were found, almost certainly the product of indirect percussion.

4.3.4 - The EBII sites

Technologically, the chipped stone assemblages from most EBII Melian sites replicated those of the EBI, as for example at Agios Theodoros, 2km south of the Dhemenegaki obsidian quarry (**Figure 4.12**). The site was defined primarily by a large scatter of chipped stone across a gentle inland hillslope of grey volcanic soils. Due to heavy erosion the on-site visibility was excellent but for the same reason little pottery remained and the lithics were worn and battered. Only three coarse-ware sherds were found, including a slashed-handle diagnostic of a Keros-Syros Group pithos (cf. Doumas 1965: 46, pl. 33b; MacGillivray 1980: 41-44, pl. 20), though a wider range of EBII ceramics was collected by the first Melos Survey (Cherry 1982b: 300). From the 6 random samples (100% pick-up in 1m²) 135 pieces of chipped stone were collected, at an average of 22.5 per m². A further 72 blanks were picked up in the general grab sample, making a combined total of 207. The lithic assemblage was dominated by debitage pertaining to the on-site production of blades by indirect percussion, though no nuclei from this process were recovered. The distal tip of a prismatic blade-core and a single blade were also found, almost certainly products of a pressure-flaked industry, though interestingly no other related pieces were recognised.

Comparable material came from the small sites of Provatas and Spathi on the island's south coast (**Figure 4.12**). At the former, EBA finds spread over a wide modern terrace backed by a high range of hills (Area C), some 250m from the seashore. At Spathi the material was recovered from abandoned terraces on a large hill overlooking the south-east coastal plain. The pottery places both within the Keros-Syros group, the assemblage dominated by plain coarse-ware bowls, jars, plus loop- and slash-handled pithoi. While fine-wares were absent from Provatas, Spathi produced some painted material supplementing the original survey's recovery of *urfirnis* sherds (Cherry

1982b: 301). There was evidence at both sites for the manufacture of blades by indirect percussion, a few of which had been retouched into backed pieces, notches and scrapers.

Agios Nikolaos was the major EBA site from western Melos to be revisited by the 1989 project, its finds distributed over a few terraces at the base of a ridge overlooking a fertile valley and coastal plain beyond (**Figure 4.17**). A large and varied EBA ceramic assemblage was collected, with forms, fabrics and decorative techniques diagnostic of both Pelos-Lakkoudhes and Keros-Syros groups. While domestic wares predominated, the upper two terraces (Area A) produced 8 non-joining sherds from a green, burnished cylindrical pyxis with incised herringbone decoration (**Figure 4.14, h-j**), a shape restricted to Pelos-Lakkoudhes group burial assemblages (cf. Edgar 1896-97: 45, fig. 16). As so little other material was recovered from this area (though one has to acknowledge downslope movement) these sherds are possible evidence for a destroyed tomb situated a few metres above the main settlement.

Forty-four pieces of chipped stone were collected from the main concentration of EBI-II pottery (Areas A and B), all obsidian except for one non-cortical flake of rhyolite. Once more the assemblage was dominated by blades produced by indirect percussion, with a single bi-polar core recovered from the lower terraces (Area B), similar in size and form to examples found at Pelos Pyrgaki. Apart from one possible burin and at least one retouched flake, there were notably fewer modified blanks than the aforementioned assemblages. One or two fine prismatic blades were collected but if they were true pressure-flaked products there was no evidence that they had been manufactured at Agios Nikolaos.

4.3.5 - The EBII settlements of the north coast: Kaminia and Mandrakia

A radically different picture emerged to that described above when the two north-coast sites of Kaminia and Mandrakia were surveyed (**Figure 4.12**). Kaminia

easily produced the largest EC assemblage studied, not only in quantity but also the area that it covered. The finds spread northward from a modern trackway across a gently sloping set of terraced fields, then over a large area of bare rock towards the water's edge; in total a distance of over 200m (**Figure 4.18**). The EBA finds were concentrated upon the sheet-eroded sandy rocks north of the fields, with the pottery's excellent condition suggesting that material continues to be displaced from unstable soil deposits. A base-line transect of 148m was laid south-north from the fields to the beach running through this part of the site (denoted Area C, north of the field walls), with 6 perpendicular transects denoting subsidiary concentrations (usually as a result of localised erosion), leading to the site being subdivided into 5 areas for sampling.

The ceramic assemblage contained the widest variety of EC shapes, decorative techniques / styles and fabrics recovered by the survey, including a number of imported pieces. Finds including part of a lid from a fine cylindrical pyxis and heavily burnished coarse-wares suggest that the settlement may have been established at least as early as EBI. The final study of the ceramics should serve to clarify this matter, for soundings at Phylakopi demonstrate that many 'EBI' coarse-wares such as roll-rimmed bowls continued into the subsequent period (Evans and Renfrew 1984: 64). Assignable to EBII are the slash- and loop-handled pithoi, closed and straight necked jars, basins and baking pans, saucers, footed cups, plus a great many sauceboat fragments (**Figures 4.19-4.20**). Decoration and finishes include vessels with raised bands, *urfirnis* cups and sauceboats, plus a few fine-wares with dark-on-light painted linear designs (**Figure 4.20, a-b**) comparable to material from Phylakopi, Chalandriani, Dhaskaleio-Kavos and Ayia Irini (*ibid*: 64, fig. 1(b); Tsountas 1899: pl. 8; Caskey 1972: 363, pl. 77; Zapheirou 1975). Most pottery seems to be local, but a few examples of marble-tempered and talc wares represented obvious imports (cf. Vaughan and Wilson 1993), with some of the *urfirnis* and red-slipped and polished sauceboats are

tentatively identified as mainland in origin, a claim that is currently being tested petrographically and chemically (Annual Report 1991-92: 29).

A considerable amount of obsidian was recorded from the site, with a notable concentration spread across bare rock at the end of the main transect. The count steadily rose from south to north along this base-line from an average of 2.77 pieces per m² for the first 36m, to 12.37/m² for the northernmost 32m of Area C. From the 147 1m² units recorded 295 pieces of obsidian were counted (average 2/m²), with the highest single count of 20. It was not only the quantity of obsidian that made Kaminia's chipped stone assemblage noteworthy but the nature of the lithic industry it represented. There was plentiful evidence for pressure-flaked production of fine prismatic blades, with crested, primary and secondary series blades, preparation and rejuvenation pieces, along with three complete and 20 fragmentary nuclei (**Figure 4.21, a, d, f**). Area C also produced 5 multi-polar flake-cores and a 'slug', that may suggest a later Neolithic, or Melian EBI lithic tradition (it is here that the heavy burnished material is concentrated), though equally it could represent a contemporary, parallel industry.

The recognition of two types of primary series blade, those with cortex on part of the dorsal surface and those with remnant cresting scars (**Figure 4.21, e, h**), indicates the existence of two different reduction strategies within the same technology. The former blade type is one that has been initiated from a nucleus whose margins remained partly cortical, probably exploiting a nodule's natural ridge, or edge. In the latter instance, the core was largely de-corticated before an artificial arris was prepared to facilitate the removal of the first (crested) blade. Subsequent reduction would gradually remove the remnant cresting scars from the core's face, that would then be visible on the dorsal surfaces of the blades (my B2/3 [cf. Van Horn 1980]). In contrast to those EBA assemblages described above, most end-products were unmodified, though a few notched or backed pieces were noted.

The second of the two north-coast sites is that of Mandrakia, occupying a flat spur and terraces overlooking a small bay 2km west of Kaminia (**Figure 4.22**). The range and nature of the ceramics and lithics recovered from the two assemblages are very similar, though the fact that far fewer objects were found at Mandrakia is probably due to its more stable soil matrix (it was being cultivated in 1989). The main transect of nearly 200m ran from the trackway bordering the lower terraces (Area A), to the top of the site (Area B). The EBA material was concentrated in the central 100m, with 54 pieces of obsidian counted in its 25 recording units, an average of 2.16/m², 12 being the largest count.

The pottery included collared jars, loop-handled pithoi, bowls and pyxides (**Figures 4.19–4.20**). The lack of heavily burnished material, the few rolled-rim bowls and the overall quality of coarse-ware fabrics, suggests that unlike Kaminia there is no reason to date the site any earlier than EBII. A notable range of fine-wares were collected, including sauceboats, cups and saucers, some with *urfirnis* and painted detail, including another sherd with dark-on-light decoration. Imports were noted, specifically 4 pieces of talc ware, along with other fine-wares of apparent non-local origin.

As at Kaminia, the obsidian debitage pertained to the on-site processing of pressure-flaked blade-cores, with the recovery of 4 complete and 12 fragmentary nuclei (**Figure 4.21**). Similar reduction strategies were recorded, with a reliance on cresting to initiate blade removal from primarily unipolar nuclei, that were worked around most, but rarely all of their circumference. Again, while pressure-flaking was the primary mode of blade-manufacture, two indirect percussion blade-cores were also found (4.15 and 4.83cm long).

4.3.6 - Conclusions from the 1989 Melos Survey

In accord with the results from the original survey, it seems that throughout the later Neolithic and EBA, small-scale Melian communities (individual households or hamlets), were self-sufficient with regard to their procurement and processing of obsidian. The new survey has also demonstrated that the introduction of pressure-flaking into Melian society is as much, if not more a social phenomenon, rather than a chronological one.

During the later Neolithic Melian communities employed indirect percussion for obsidian blade production, the same technological *mode* as witnessed elsewhere in the islands at this time. In the EBA the picture became more complex. Originally it had been argued that the appearance of pressure-flaked blade technology was a diagnostic feature of the EC period, reflecting a pan- southern Aegean adoption, or re-adoption of this technical *mode* at the end of the FN (Torrence 1979a: 72-73, 77). As mentioned above, the supposedly clearest evidence for this came from the basal levels at Phylakopi where pressure-flaked debitage was associated with central Cycladic EBI domestic ceramics (Cherry and Torrence 1982: 31). It is now apparent that beyond Phylakopi and a couple of other north coast communities, indirect percussion remained the primary *mode* of blade manufacture in Melos during the EBA (albeit occasionally supplemented with products of the 'newer' technique). These assemblages, termed 'transitional' by the original Melos survey in fact can only be seen as direct descendants of later Neolithic knapping traditions and bear little resemblance to pressure-flaked industries. Indeed to claim otherwise, is to diminish the important technological accomplishment that a shift from percussion to pressure represents. Thus the new Melos Survey has now shown that once held pressure-flaking :: EBA correlation cannot be substantiated. It also serves as a warning that the recovery of indirect percussion blades and modified blanks cannot always be assumed to be of L/FN date in the Cyclades, especially where erosion may have rendered a site 'aceramic'.

In contrasting the three sites of Phylakopi, Kaminia and Mandrakia with contemporary settlements elsewhere on the island, we now have clear evidence for intra-community differentiation within EBA Melos (*contra* Wagstaff and Cherry 1982a: 251-52). These sites are notably larger, their assemblages contained the preponderance of fine and imported wares and all were occupied until *at least* the EBIII / Phylakopi I phase (Kaminia has MBA finds and Phylakopi was settled throughout the Bronze Age [Figure 4.20,i-j]).

An important conclusion from the Melos Survey and this thesis in general, is that the location of pressure-flaked blade production amongst these communities is one part of how power was created and maintained not only in Melos but over large parts of the southern Aegean as well. Furthermore, it is proposed that this survey categorically illustrates that if lithic technology is to be considered significant in EBA society, then it was organised on the restriction of practice: the manipulation of technical know-how, rather than access to raw material. Both the Melos and Laconia surveys demonstrate clearly the necessity to move from simply referring to ‘obsidian’, to attempting to differentiate between ‘obsidian-as-resource’ (raw material), ‘obsidian-as-potential-product’ (pre-formed cores) and ‘obsidian-as-product’ (blades), and to consider their potential differences in perception, meaning and value.

4.4 - Supporting Arguments: The Southern Argolid and Methana Surveys

Concerning the suggested uneven distribution of technical skill in EBA society, the Laconia and Melos survey results may be corroborated by data from other surveys, in particular that generated by the Southern Argolid Exploration Project (A.E.P. [Kardulias 1992; Kardulias and Runnels 1995]). Most EBA sites from the survey area were tiny and yielded few finds, being interpreted as small farms, field stores or shepherd’s huts (van Andel and Runnels 1987: 83). There were also a few notably larger

sites whose material assemblages contained the greatest quantity and variety of ceramics, ground stone implements and small-finds and were thus considered more important (Pullen 1985: 348, 1995: 40; van Andel and Runnels 1987: 90; Jameson, Runnels and van Andel 1994: 353-54). Four of these loci produced rooftiles, that in themselves are not necessarily indicative of major buildings, although at the Fourni Focus of sites (centred around Petres [F32]), their 'association' with 20 fragments of decorated terracotta hearth-rims is possible evidence for a corridor house (Pullen 1985: 353-56).

With regard to obsidian, while blades were recovered from most EH sites, there was little or no evidence for their manufacture in the immediate vicinity, with 51 of the 62 nuclei recovered by the A.E.P. coming from the Fourni site complex (van Andel and Runnels 1987: 91). Indeed, more obsidian was collected at F32 than at all the other Bronze Age sites of the Erimionis combined (**Figure 4.24, Table 4.9**), suggesting a "centralised control" of procurement, production and secondary dissemination within the region (*ibid*: 90; Runnels, Pullen and Langdon 1995: 143).

A similar pattern, albeit on a much smaller scale, was recorded by the Methana Survey (Mee and Forbes 1997). Situated on the Argolid's east coast, the Methana peninsula lies directly opposite the island of Aegina in the Saronic Gulf (**Figure 4.25**). EBA activity was generally located in the coastal plains, where 95.5% (n=1191) of the survey's obsidian was recovered (Mee and Taylor 1997: 42, 47). The settlement pattern appeared to be one of smaller sites clustering around larger ones suggested the "a rudimentary settlement hierarchy", with 4 possible villages of EHII date, the remainder households or farmsteads (*ibid*: 42, 50). **Significantly**, these 4 sites produced over 70% of the ceramic fine-wares with obsidian blade-cores recovered from two of them (*ibid*: 50-51).

4.5 - Conclusion

The preceding survey data demonstrate clearly that during the EBA pressure-flaked blade production was geographically restricted. From the scale and associated material culture of the sites where pressure-flaking is attested on a notable scale, it is also apparent that this technology was socially restricted, generally located at the most important settlements of a region. These communities are often coastal and by dint of their estimated population size and attendant socio-political organisation (cf. Whitelaw 1983: 336-37; Broodbank 1989), were arguably either capable of procuring the obsidian themselves, or could access the resource via exogamous kinship, or patron : client relationships.

The secondary dissemination of obsidian from coastal 'emporia' and regional centres has long been suggested, with probable candidates including Agios Kosmas, Manika, Lerna, F32 and Mochlos (Mylonas 1959: 155; Caskey and Caskey 1960: 166; Jacobsen 1966: 107; Warren 1972b: 267; Runnels 1985b: 369, 388). From the quantity and range of debitage recovered from some of these larger EBA sites, it can be suggested for the first time that the persons responsible for obsidian pressure-flaked blade production had become fully integrated members of individual communities.

- CHAPTER FIVE: CRAFT SPECIALISATION AND SOCIO-POLITICAL DEVELOPMENT -

5.1 - Introduction

Craft specialisation's relationship with social complexity is a subject that has received a great deal of discussion in the archaeological literature (see Costin 1991 for references). Some scholars have argued that the emergence of specialised production was dependent on a "minimal level of socio-political complexity" (J. Clark 1987: 273). Such a broad statement may no longer be seen to be tenable, both with regard to the use of the term 'complexity' when referring to pre-state societies and the fact that exclusive craft practice now appears to be phenomenon that has a long heritage. For instance, in the Aegean craft specialisation is arguably now recognised from the earliest Neolithic, an argument based on the technical prowess and standardisation witnessed in the manufacture of certain types of pottery, stone tools and personal ornamentation (Vitelli 1993a: 216-17, 1993b; Perlès 1989, 1990a, 1992; Demoule and Perlès 1993: 382-83; Miller 1996).

Through refining the idea of craft specialisation, some have now proposed that it is specifically *attached*, or patronised specialists (Brumfiel and Earle 1987: 5-6), which are a concomitant "of the evolution of complex societies" (Rosen 1989: 107, after Childe 1951a: 35; 1951b: 24). Production on a specialised basis was thus perceived to be dependent on external factors, such as the concentration of resources by redistribution, metallurgical innovation, increased population and agricultural produce, all features most commonly associated with the emergence of urbanism (cf. Renfrew 1972: 476-504). In contrast, Clark has presented a convincing argument that attached specialisation may in fact have been "instrumental in the emergence of chiefdom, or rank, societies", a conclusion based on an analysis of numerous ethnographic and

historical examples (Clark and Parry 1990: 290). It remains to elucidate the role played by these crafts in the construction and articulation of social inequality.

For instance, why and how should control or influence over pressure-flaked obsidian blade production have become an element of southern Aegean EBA power structures when in parts of the southern mainland this craft had a heritage spanning millennia during which it apparently had no such significance? Detailed answers to this question will be provided in the following chapter. In turn, it should be admitted that to suggest that certain technologies only became important in the EBA may be a slightly misleading, or even false proposition.

Previously I have quoted Pullen and Perlès' arguments that craft specialists need not necessarily have been important people within prehistoric Greece (Carter and Ydo 1996: 169, after Pullen 1985: 267-68; Perlès 1989: 13). In hindsight, it is doubtful whether craft specialists, or processes involving material transformation ever occupied a 'mundane' niche in the Neolithic Aegean. Perlès' image of obsidian blade knappers' importance (or lack thereof) in northern Greece was based partly on the fact that the manufacture of pressure-flaked obsidian blade production was so widely attested (Perlès 1989: 18-19). Yet the geographical restriction of practice is only one way in which something's 'value' may be created. One might, for example, consider the *intra*-site contexts of production at this time.

Many of the reservations about craft specialisation's supposed position within Aegean Neolithic society are based on reference to studies documenting the cross-cultural importance accorded to those who have experienced foreign and exotic lands, and those with special, or secret knowledge that they employ in transformative processes, all of which pertain to those craftspeople described by Perlès (cf. Helms 1988, 1993; Budd and Taylor 1995). It is therefore proposed that the new position occupied by certain crafts, craftspeople and their products in the EBA, was due to an

ancient technology being attributed new meanings by certain corporate groups, a process that formed one of a number of avenues to power at the start of the third millennium BC (cf. Broodbank 1993: 331; Nakou 1995).

5.2 - The Context of Blade Production: Inter- and Intra-Community

From the reviews presented in *Chapter Three* and *Four* one can conclude that during the EBA pressure-flaked blade production was a geographically and socially restricted practice. It remains to consider specific contexts of production, the intra-site loci where blade-manufacture is attested. From considering these locales it may be possible to understand how technology, products and producer were perceived on a regional, or even community basis.

The published record makes it apparent that there is no striking pattern in the archaeological record, with EBA pressure-flaked blade production enjoying a variety of architectural and material associations. Thus, while it has been suggested that direct influence or control over this craft was an element of these small-scale communities' political economies, it is interesting that blade production was only occasionally located in what might be considered 'élite' contexts.

5.3 - Blade Production in the 'Helladic' World

For instance, in the southern mainland there does not appear to be a particularly strong relationship between blade manufacture and EBII 'monumental architecture'. The most notable exception to this statement is the evidence from the House of the Tiles at Lerna (Runnels 1985b), the best known example of a small group of late EHII monumental buildings also known from Akovitika, Thebes, Zygouries and Kolonna on Aegina (**Figures 5.1–5.2**; Caskey 1955: 36-41; Vermeule 1972: 34-35; Themelis 1984; Aravantinos 1986; Felten 1986; Konsola 1986; Shaw 1987, 1990). While the

scale and architectural complexity of this two storied building is generally accepted as indicative of social ranking within the community, its role within the creation and expression of power, both at Lerna and elsewhere, remains debated (cf. Renfrew 1972: 389-90; Wiencke 1989: 503-509; Rutter 1993: 761-63).

One reason for the difficulty in interpreting these buildings (not that they need represent a single architectural / social phenomenon [Felten 1986]), is because the House of the Tiles, our best documented example, had been largely stripped of its contents prior to its destruction by fire. Its finds did include the recovery of a number of pithoi with seal impressions on their handles, plus some 150 clay sealings that had originally been attached to boxes and baskets (Heath 1958, Wiencke 1969). This material is central to the debated existence of storage and redistribution systems in the southern Aegean EBA (Heath 1958, Wiencke 1969, 1989: 505; Renfrew 1972: 464; Pullen 1994).

For both the EHII and EHIII periods (Lerna III and IV) obsidian entered the site in the form of small raw nodules (**Figure 5.3**) that were subsequently reduced to form unipolar pressure-flaked blade-cores (Runnels 1985b: 359-61). Prismatic blade production was the primary industry represented at late EBII Lerna, though Runnels emphasised the quantity of flakes generated within this process that would have provided many useful *ad hoc* implements (*ibid*: 363). Typically for a southern Aegean EBA assemblage few blanks (>10%) had received secondary modification, including a few denticulated pieces, scrapers and trapezes made from truncated blades (*ibid*: Table 11). Subtle differences existed between the late EBII and EBIII assemblages, with blades apparently not the main output of the industry in the latter period (*ibid*: 375).

Possibly this could be a reflection of the differential nature of the deposits excavated, for much of the late EHII assemblage came from the House of the Tiles. As 93% of the blades from this context displayed no traces of use-wear (*ibid*: 367), it

suggests that they were curated resources rather than discarded implements, an interpretation that further strengthens the case that this building was a nodal point in an Argive or wider redistributive economic network. It would be interesting to consider further the relationship between EH corridor houses and pressure-flaked blade production, but apart from the House of the Tiles details on the obsidian recovered from these buildings is either negligible (Walter and Felten 1981: 102, pl. 128), or non-existent (Papathanassopoulos 1970; Themelis 1970; Karagiorga 1971; Aravantinos 1986).

As stated above, while commonly located within the largest settlements of the EH world, the enactment of this craft was usually associated with one of the community's 'lesser' buildings. For example, the only notable concentration of obsidian recorded at Zygouries was in House L (Blegen 1928: 198), as opposed to the House of the Pithoi, the settlement's proposed corridor house (Pullen 1986). At Agios Kosmas the largest incidence of obsidian reduction, a 'workshop' of 23 blade fragments and 215 flakes, is recorded from the innermost room of House F (Mylonas 1959: 30-34, drawing 8). The debitage was recovered along with a few animal bones, three vases, a quern fragment, two celts, a stone hammer and a terracotta zoomorphic stand. Apart from the latter object this building and its contents are relatively unimpressive, with the large free-standing House L the best candidate for the community's 'big-man' (**Figure 5.4**), a building that contained a minimal amount of obsidian (Mylonas 1959: 44, 151; Harrison 1995: 29). In turn it may be unwise to see 'domestic' contexts such as House F's 'workshop' as symbolically mundane. Indeed, if one considers the practical implications of having razor-sharp debris lying in a household space, then the locus could be seen as an accentuation of the technique's restriction, the creation of a private : public opposition, further mystifying the technology, product and surroundings of its

origin (Carter 1994: 139). In turn, this may be to overlay the evidence and it may simply be enough to state that production correlates with settlements of this nature.

5.3.1 Arenas of Production?

While blade production was generally undertaken within domestic spaces, there are a few interesting exceptions on the mainland, including an alleged obsidian ‘workshop’ from Manika, the subterranean chambers of Koropi and the ‘Sanctuary’ at Lithares.

As at Lithares, Manika’s inhabitants enjoyed widespread household ownership and consumption of obsidian blade-cores, but excavations have also found ‘thousands of pieces of obsidian’ within an early EHII building in Sector V on the settlement’s southern edge (Sampson 1985: 93-105, fig. 25a; **Figure 5.5**). A post-framed construction (**Figure 5.6**), the wooden super-structure covered a paved space upon which was recovered the debris from blade production, including a great many cores. The building technique’s rarity and the quantity and nature of the obsidian was considered by the excavator to be an indication of its “specialised function” (*ibid*: 93-94, Sampson 1986: 48).

This structure’s location is interesting for it appears to be deliberately removing the knapping from a truly domestic context, though contemporaneous blade manufacture did occur within the settlement at the Zousis Plot, albeit organised on a different basis, in terms of its scale and potentially the meaning associated with both act and product (Sapouna-Sakellarakis 1986: 228, fig. 84-87). One may perhaps refer to the liminal position of Sector V’s ‘workshop’, both spatially and socially, with nearby traces of metalworking (Sampson 1986: 48), a craft that is also considered to have involved restricted knowledge and exclusive practice (Nakou 1995). Beyond the general issue of access to technical know-how, the removal of this act from the domestic arena also has

ramifications for the cross-section of society who may have witnessed it. It could be argued that where blade manufacture is located within domestic buildings, there is the possibility that the craft would have been visually demystified to male, female, young and old alike, in the form of a familial group. This may be of consequence for we know from the ethnographic record that one of the primary modes through which knowledge is transferred is by observation (cf. J. Clark 1989: 305-306). By situating production within a non-domestic space arguably allows the learning and enactment of technology to be organised on different bases, with potential exclusion by age, gender, corporate or kinship affiliation.

At Koropi in Attica, 5 subterranean chambers of late EHII date produced a great many obsidian cores, blades and flakes (**Figure 5.7**). The features also produced debris from lead and copper working, plus a ceramic and faunal assemblage entirely related to the preparation and consumption of food and drink (Kakavoyanni 1986, 1993). Notable amongst the finds, were a jug of possible Cycladic origin, a sealstone and a number of human and animal figurines. While a fascinating combination of material culture and activities, the original or primary role of these features remains unknown. As some of the bones are possibly human their use as burial chambers cannot be excluded, though they are notably larger than contemporary rock-cut tombs from Manika and Athens and would be unique in terms of their secondary function (Pandelidou 1975: 113-15; Sampson 1985, 1988b).

At early EHII Lithares there is evidence for a limited degree of blade manufacture within the 'Sanctuary of the Bulls', so-called because of the 16 terracotta zoomorphic figurines recovered from around the room's near-central hearth (Tzavella-Evjen 1972, 1984: 21-22, pl. 81-84). The room is the largest within a 4 unit building (House Z), rectangular in plan with a door opening onto the settlement's primary road (**Figure 5.8**). Alongside the 4 obsidian blade-cores, 43 blades and a 'quantity' of

flakes found, the enclosed space also contained a range of pottery, including cups, skyphoi, pyxides and 43 sauceboat sherds (*ibid*: 22). While an association between blade production and cultic activity can be suggested, it may be unwise to overemphasise this evidence given the far larger quantities of blades, cores and debitage recovered from nearby domestic spaces (**Table 3.3**).

A further interesting context for blade manufacture has been recognised at the Attic site of Agios Kosmas, where a discrete group of material indicates the reduction of a blade-core within the cemetery (Mylonas 1959: 106, 112; fig. 109 and 167A; drawing 48-49). For reasons that will become apparent as this thesis develops, it is suggested that this act represented something above and beyond the ‘exclusive’, or ‘mystic’ articulations of technical practice as possibly indicated by the Manika, Koropi and Lithares examples outlined above. This assemblage thus forms a focus of discussion later in this dissertation.

5.4 - Blade Production in the ‘Cycladic’ World

Unfortunately, there is currently little data available on the intra-site context of blade production in the EBA Cyclades. This is largely because the islands’ burial record has received the greatest archaeological investigation, but even in settlements chipped stone tends not to have received the same detailed appraisal as other aspects of material culture, such as architecture, pottery and metalwork (**Table ii**). Beyond Phylakopi’s contextually problematic ‘great obsidian workshop’ (Bosanquet 1904), obsidian has at best received cursory documentation (cf. Plassart 1928: 33, fig. 31; Tsountas 1899: 126), with little or no information about the material’s precise context. Hopefully, the future publication of the remarkably well preserved site of Skarkos on Ios will go a long way to rectifying this problem (cf. Marthari 1990: 100, fig. 9).

5.5 - Blade Production in the ‘Minoan’ World

Perhaps it is within the Minoan world that we find clearer evidence to challenge Torrence’s assertion that obsidian and its use in the southern Aegean was of no “special social or economic significance” (Torrence 1986: 119, 133). The supposed EMIIA workshop context at Knossos has been briefly referenced above (*Chapter 3.5.1*), it is now profitable to describe the context and its contents in more detail.

As well as the two hearths, the ‘workshop’ was furnished with two low benches, the eastern one having a row of pots placed in front of it (**Figure 5.9**). The room’s ceramic assemblage contained a quantity of fine-ware products, many exotic in origin, including a number of small lentoid pyxides more commonly known from the Mesara tholoi (Warren 1972a: 394: fig. 2-6; Wilson and Day 1994: 11, 34). Dominant were vessels for consuming food and drink, again many of Mesaran origin where their common recovery in the ancillary rooms of tholos tombs has led some to see them as part of libation, or ‘toasting’ ceremonies (Walberg 1987; Branigan 1993: 77-80). Of greatest importance was the recovery of between 5 to 8 *urfirnis* sauceboats (combined total from Trench F and nearby E), imported from the Argolid, or the central Cyclades (Warren 1972a: 394-95, fig. 7-8; Wilson 1994: 40). While these fine vessels are type-fossils of the EBII mainland and Cyclades, they are very rare in Crete making this a remarkable assemblage (Rutter and Zerner 1984: 75, 81; Wilson 1994: 39-40).

Whatever the eventual interpretation attributed to this building, domestic or otherwise, the location of obsidian blade production amongst such exotic paraphernalia and social practice is significant. Arguably, this context provides a clear association between restricted and exotic resources, material culture, knowledge and practice. The ability to bring together such a combination of exclusive resources would have served as an expression of legitimacy on behalf of the person[s] who controlled access to the

building. In turn, it would have instilled cultural value in the technical acts and material culture located within it.

While Mallia's 'atelier des tailleurs obsidienne' generated far less exotic material culture (**Figure 5.9**), imported pottery was present in the form of a few pieces of Mesaran Fine-Grey Ware plus east Cretan Vasilike Ware (Van Effenterre and Van Effenterre 1969: 18; Wilson and Day 1994: 18). It also contained animal bones associated with burning that once more links the enactment of this craft with food consumption, though it may be unwise to overemphasise the parallels between the Mallia and Knossos deposits. Indeed, it would be wrong to argue for a singular spatial or conceptual niche for obsidian blade production in EM Crete (let alone the southern Aegean as a whole).

While the full details of context and associated material culture are still awaited, the location of the small knapping area within the Plateia Aghia Aikaterini, Chania-Kastelli also raises some interest. Firstly, one half of the area where the obsidian was recovered was covered in an ash-layer from a small oven or hearth, for this reason the room is thought to have been used for "industrial purposes" (E. Hallager pers. comm.). Secondly, the other items from this locus included 2 pieces of copper, a raw material noteworthy for its rarity in EBA west Crete (Warren and Tzedhakis 1974: 338). At this juncture one may be able to argue that here blade manufacture was located in what seems unlikely to have been a 'domestic' space, but to take the interpretation further would be putting too much weight on too little data.

The east Cretan site of Mochlos provides an apposite rejoinder to the argument that one should not attempt to search for singular meanings behind blade production within a single cultural area (*sic*), for here the main evidence for knapping is located within the prepalatial cemetery (**Figure 5.9**). The function of 'Building / Tomb N' is currently little understood, but at 11,888 flakes, blades and cores (**Table 5.1**), it is

not only one of the largest single obsidian assemblages in Crete but also the Aegean generally (Soles and Davaras 1992: 424; Soles 1992: 110; **Table 5.2**). Evidence for pressure-flaked blade manufacture does exist within the contemporary settlement (see below), but this context's significance lies in its exclusiveness.

The prepalatial necropolis at Mochlos is located on the islet's western slopes, reached by walking uphill from the lower southern area where the Early-Late Bronze Age settlement was located directly opposite the mainland. Today the burial-ground is reached by a track that starts just to the northwest of where the present excavations end (**Figure 5.10**). It is probable that this contour, or one immediately above or below it, formed the main route through the cemetery during the EBA. For the majority of this path one is flanked, above and below, by eroded burials until one eventually reaches the House Tombs situated on a small terrace at the upper and most western part of the necropolis. The location of these well-built and richly furnished burial chambers was surely deliberate, for they are invisible from the settlement, situated at the furthest point in the necropolis and can only be accessed from one route. Their exclusive position, with the potential to further restrict their access through myth and taboo, makes it clear that the landscape was employed to mimic and help legitimate social order, the 'journey' from settlement through the world of the ancestors locating the person in their social world.

'Building / Tomb N' is situated within the latter parts of the necropolis, a little while before reaching the House-Tombs (**Figure 5.11**). The deposit has yet to be fully analysed but from a preliminary counting and sorting of the material it is apparent that all stages of obsidian pressure-flaked blade manufacture are represented, from the decortication of raw nodules, through core preparation to blade removal (pers. obs.). The sole underrepresented class of debitage, is that of the end-products themselves, suggesting that once produced the blades were disseminated either amongst the

community below, or farther afield. Whether the material is in primary, or secondary context has yet to be ascertained, nor has an exact date been attributed to the strata within which the obsidian was recovered. An EMII date seems probable for some, if not all of the material, with a number of the nuclei of the same distinctive form as those from an EMIIIB assemblage discussed below.

While the deposit's study is only preliminary, it is clear that its location within the community's necropolis must have been a deliberate choice by those manufacturing the blades, or those who had influence over these craftspeople. One could at least state with some certainty, that situating this craft within the upper reaches of the cemetery would have served to associate both technology, product and producer with the élite echelons of this community and *vice versa*.

5.6 - Regionalism

From the reviews presented in the preceding two chapters it has hopefully been demonstrated that there is no pattern in the archaeological record that would allow one to talk of a 'Helladic', 'Cycladic', or 'Minoan' mode of procurement, consumption and valuation of 'obsidian'. Indeed, while the socio-political appropriation of technical knowledge is a central theme within this thesis, so is the notion of regionalism.

While regional variation in the procurement and consumption of obsidian no doubt existed from the earliest exploitation of the Melian sources, these differences became further accentuated with the colonisation of the Cyclades in the LN. As previously described, it has been argued that the permanent inhabitation of the islands resulted in a wider access to obsidian, with the material being disseminated in a variety of manners and in a range of forms (nodules, pre-formed nuclei and end-products). A suggested outcome of the more loosely bounded procurement and exchange networks that emerged from the LN onwards, was the emergence of more regionalised bases for

how technical knowledge was shared, learnt and enacted (cf. Perlès 1989). Furthermore, it can be argued that associated with the appearance of these subtle regional differences in blade production, was the development of different perceptions of pressure-flaking and its products.

5.6.1 - Regionalism and Chipped Stone Production: From Technological *Mode* to Technological *Mechanism*

During the southern Aegean EBA obsidian blades were produced primarily by pressure-flaking, i.e. there was a common technological *mode* (after Newcomer 1975) employed by mainland, Cycladic and Cretan communities. Furthermore, the comparable form and scale of the blades and blade-cores from *domestic* contexts, suggests that these regions' knappers were also employing similar reduction strategies and tool kits. By analysing a number of variables it is possible to discern subtle differences between the technological *mechanisms* employed, both regionally and occasionally at a community-specific level. As will hopefully be demonstrated in the following sections of this thesis, these differences have ramifications for how technical knowledge was acquired and consumed in EBA society and how the craft was organised and perceived.

In reference to the shared features of southern Aegean pressure-flaked blade manufacture, most nuclei were worked from a single prepared platform (i.e. unipolar), with blades removed from a half to two-thirds of their circumference. Blades were initiated from both edges working in sequence towards the centre of the core's face, at that point the process would be repeated (**Figure 5.12**). The remaining face either retained its cortical surface, or was summarily reduced, often displaying the remnant scars from the cresting of either corner (**Figure 5.13**). It is presumed that blades were not removed from this surface because it was obscured by the device employed to stabilise the nucleus during pressure-flaking. For example, 492 of the 573 cores from

Phylakopi in the Copenhagen collection had blades removed from only one side, as were 20 of the 22 cores recovered from EHII Lerna (Bosanquet 1904: 227; Runnels 1985b: 361). The same form of blade-core is known across the southern mainland and Euboea, at Agios Kosmas, Asine, Eutresis, Manika, Petres (F32), Zygouries and sites from the Asea Valley, Cynouria and Laconia surveys (Blegen 1928: pl. XX.24; Goldman 1931: 206, fig. 277; Frödin and Persson 1938: 243; Mylonas 1959: 143-44, pl. 67; Theocharis 1959: 303-304, fig. 26; Faklaris 1990: 42, fig. 5, pl. 6a; Kardulias and Runnels 1995: 94, fig. 85-86; Carter and Ydo 1996: 145, Ill. 18.2, Ib; pers. obs.). They are also recorded from EM assemblages, including the Knossian 'obsidian workshop', Mallia's 'ateliers des tailleurs d'obsidienne', Pseira's alleged 'hoard' and the Palaikastro 'assemblage' (Van Effenterre and Van Effenterre 1969: 19, pl. IV; Hartmann 1978: fig. 2; Evely 1993: 132-34, pl. 29; pers. obs. [**Table 5.3**]). The same holds true for nuclei from EC settlements, such as Kastri on Syros, Phylakopi on Melos and those collected by the Melos Survey from Kaminia and Mandrakia (**Table 5.4 & Figure 4.21**).

In the latter assemblages some nuclei had 100% of their circumference reduced; such cores are known from other sites albeit always in a minority (cf. **Table 5.4**). While these cores may reflect a more intensive reduction strategy, analysis shows that they were not reduced like this in a singular knapping process. All of these pieces (from *settlement* contexts) were originally worked in the manner described previously, with the increase from two-thirds to all of the margins only occurring *after* a process of rejuvenation. This involved the preparation of a new platform, turning the core through 180°, re-clamping it and only then the removal of blades from what was originally the obscured ventral surface.

As mentioned at the start of this passage, contemporaneous differences in technological *mechanism* can be discerned in the archaeological record. This is not an entirely new argument, for Blegen in 1928 stated that blades from Zygouries in

Corinthia tended to be “distinctly smaller” than Cycladic examples (Blegen 1928: 198). Although there are elements of truth in this statement, in reality the matter is more complex.

5.7 - Doing it for themselves: An Independent Mochlos?

The importance and wealth of EM Mochlos has long been appreciated since the excavation of the ‘House Tombs’ on the islet’s western rocky slopes (Seager 1909, 1912). Their rich and varied grave goods have formed the basis of claims for the existence of a social hierarchy within the community and by extension southern Aegean society in the EBA (Renfrew 1972: 378; Branigan 1974: 150-51, 1991; Davaras 1975b; Soles 1988, 1992). Situated on what was originally a short peninsula extending into the Mirabello Bay, the settlement would have dominated two sheltered harbours, a position that has been considered as a causal factor in the community’s development into a regional entrepôt (Seager 1909: 274). The “distinction and quantity” of certain artefacts found at Mochlos, including goldwork, stone vases and obsidian, has furthermore suggested on-site working of local and imported materials (Warren 1969: 129-30). The community’s funerary practices certainly consumed much of this, but a large proportion must have been re-distributed across eastern Crete (Warren 1972b: 267; Branigan 1991: 100-103). Recently Branigan has attempted to add depth to previous theories about the site’s socio-economic position, terming it a ‘gateway community’ in reference to similar phenomena recorded in the ethnographic record (*ibid*, after Hirth 1978).

Since 1989 Greek-American excavations have aimed to gain a clearer understanding of the site’s history, including contextualising the EM cemetery through investigating the contemporary settlement (Soles 1978; Soles and Davaras 1990, 1992, 1994). Amongst the various EM chipped stone assemblages generated by the new work

two of are of particular note, both for their scale and how they were produced, including the huge EMII deposit from 'Building / Tomb N' referred to above (5.5).

5.8 - The EMIIB Structured Deposit

From the north corner of locus 8627 (trench 8600, east of the cemetery), excavations recovered a large number of obsidian pressure-flaked blade-cores in the midst of which was a small Vasiliki Ware jug (**Figure 5.14**). The obsidian was located in a triangle of earth (8609.10), where the north wall of a Byzantine building (8602), met the back wall and stairway leading to the third storey of the LMI 'villa' (8607). Obsidian was in fact recovered in large quantities from the end of locus 8609.9 from a depth of 8.24m (**Table 5.5**), though the greatest concentration occurred at the elevation of the jug (8.33m), the deposit situated in an enclosed area of uneven bedrock measuring 0.85 E-W x 0.40m N-S. The only other finds were a stone pestle and a small piece of carbon.

In total, 271 obsidian cores were found along with a few other blanks (**Figures 5.15–5.16**). These nuclei are important for a number of reasons, in particular their small size, averaging only 2.52cm long, 1.3cm wide and 0.68cm thick, notably smaller than contemporary cores from Minoan domestic contexts (**Figure 5.17**). Their scale is due to the Mochlian obsidian workers using a different method of preparing their blade-cores. Firstly, a cortical cobble (usually fist-sized or smaller) was broken into a number of thick flakes, from which a rather cursory platform would be defined and in place of an artificial arris, or crest, a natural edge would be employed as the leading ridge for blade removal. From the recovery of a few nuclei where blade initiation has only just commenced, it can be seen that the size of the cores at the start of blade removal were not much larger than those that appear to have been discarded in an

exhausted state. It would therefore be more appropriate to refer to this as a 'bladelet' industry. Furthermore, one gets the impression that from the size of the core platforms (virtually none were rejuvenated through bipolar reduction), it may have been possible to only remove a single series of blades from the core's face before the platform simply became too thin to exploit further (**Figure 5.14, CS.289.13**).

Aside from their scale and the mechanism by which blade removal was initiated, some similarities can be seen between these cores and those elsewhere in Crete and the wider southern Aegean at this time. Firstly, as the majority of nuclei had either half or two-thirds of the circumference reduced in bladelet manufacture, it seems probable that they were immobilised in a manner not dissimilar to that used in other pressure-flaked blade industries. From their small size it is doubtful that a particularly developed form of clamping mechanism would have been required in this instance, indeed the bare hand would have sufficed. Equally, one imagines that a quite simple and small hand-held pressure-flaking tool was used to remove the bladelets (cf. Pelegrin 1988: 41, fig. 2). Certainly, to employ anything as long as a shoulder or chest crutch would have made the task unwieldy, risking the application of too great a force and leverage, thus increasing the chance of the blade plunging, or hinging on removal.

This brings us to what the assemblage may represent. From considering a number of variables, including platform width, the presence / absence of hinge fractures or plunging on the worked face, or a heightened irregularity in blade removal, an attempt was made to ascertain the state of the nuclei on their deposition. It is concluded that most were exhausted when deposited, for in most instances it would have been difficult, if not impossible, to remove any further bladelets without rejuvenating the core, a practice for which there is little evidence (pers. obs.). Even allowing for this interpretation one cannot see this assemblage simply as the result of accumulative discard practices; the careful association of similar items around and alongside the

Vasilike Ware jug has to be seen as a structured deposition. Similarly, if one were to propose that this deposit represented the detritus from blade production (where the end-products were being consumed elsewhere), then one would expect to see a far wider range of knapping debris; the 11 other pieces of obsidian collected do not constitute such material.

This assemblage is important for a number of reasons, firstly for providing an excellent rejoinder to the formalist mode of thought espoused by many students of Aegean lithic technology. For despite this community enjoying an almost unrivalled access to obsidian, here we see one of the most intensive reduction strategies known in the EBA Aegean. A further discussion of what this deposit specifically represents will have to wait until another paper, for at this juncture it is the nature of the blade production witnessed here that will be concentrated on.

From the published record and my own fairly widespread experience with EBA material from the southern Aegean, I have come across no parallels to this industry. The only comparanda that I am currently aware of are a few cores from the aforementioned huge deposit within the prepalatial cemetery at Mochlos. Thus what we appear to have here is a community-specific technological *mechanism*, indeed given the temporal and spatial clustering of this group can we not here begin to allow ourselves to consider the prehistoric individual? So how should this divergence within EM technical practice have come about?

One factor in this technique's development must have been the sheer quantity of obsidian being procured by this community compared to its neighbours. For such amounts of obsidian to be worked it would mean that either a greater than usual percentage of the resident population had access to the requisite technical and social means to do so, or that the community held a more fixed influence over a craftsman, i.e. an *attached* specialist. Obviously it is not as simple as there being so much work that

the blade-knapper did not have the time to ply their craft elsewhere. Rather it may have been more of a social restriction on their movement, or how their knowledge was permitted to be consumed.

It remains that throughout much of Crete blades were manufactured by a similar technological *mechanism* (pers. obs.). Given the low quantity of obsidian circulating in some of these regions (such as the Mesara), it is almost inconceivable that each small-scale community was self-sufficient in their ability to produce obsidian pressure-flaked blades. The widespread conservatism seen within the craft is thus due almost certainly to few people at any one time being able to employ it, with the knapper or their products moving over relatively large areas. The model essentially equates with Perlès' perception of how the material and technical ability were disseminated in EN Thessaly (Perlès 1989, 1990a).

As has been argued above, the organisation of production and exchange within these small-scale communities may have been largely embedded within the creation and maintenance of social relations. Thus, where one may be able to see differential social organisation within the archaeological record (and in this instance within the contemporary and supposedly homogeneous geo-political construct of the EM 'world'), then one may also be able to note that crafts, exchange and consumption were also organised and expressed on alternative bases (and *vice versa*). It is this theory that holds the key for the development of an 'in-house' technological *mechanism* at EMII Mochlos, for it reflects the different sphere that the community's power-brokers were operating within at this time.

As has been mentioned earlier in this thesis, the archaeological record indicates that during the earlier part of the Cretan EBA (late EBI-IIA), there was a notable level of inter-cultural contact between the Cycladic and Minoan worlds. Evidence for this contact, as represented primarily by a range of imported and imitated EC material

culture, is concentrated amongst the more important sites of Crete's north coast, i.e. those communities that bordered the waters that bore the traders and raiders of EC society (Renfrew 1964; Carter 1998). A striking anomaly in this picture is the apparent complete lack of evidence for 'Cycladica' at Mochlos. Once more, this thesis is not the place to discuss fully the differential organisation and outlook of this important EM community, though a few points are worth making.

Given the wealth of exotic raw materials, iconography and technical practice that were drawn on and consumed within the Mochlos burial ground, including Cycladic resources such as silver, lead and obsidian (cf. Stos-Gale 1985; Stos-Gale and Gale 1990), it is inconceivable that members of this community did not have the means to enter into social relations with islanders and access EC material culture. It is argued that it was partly through the deliberate eschewing of these social networks and their associated benefits, that Mochlos created its own identity and political structure. Arguably this community was instigating its own sphere of maritime interaction and exogamous, long-distance kinship networks, an undertaking that was largely, if not entirely, existing in parallel to those established and maintained by the owners and paddlers of the Cycladic longboats. The fact that longboat iconography is only known from Mochlos and Chalandriani on Syros at this time is of the greatest significance. Broodbank has argued that within the EC world it is only the community from Syros that provides evidence for the requisite demography and level of social organisation to undertake such long-distance voyages (Broodbank 1989). Many of the points made about Chalandriani can easily be made about Mochlos, as for example with regard to the estimated scale of inhabitation (though ascertaining the cemetery population at the site is problematic).

To draw too close a parallel between these two nodal communities within the dynamics of southern Aegean EBA society may be to do a disservice to the general tenet

of this argument. For there are obvious differences in how the privileged access to exotic knowledge, experience and material benefits provided by long-distance voyaging were perceived. A simple point to make is that at the cemetery of Chalandriani there is little obvious trace of those distant lands the privileged members of this community visited, no EH, EM or western Anatolian ceramics, figurines or metalwork. It thus seems that in EC society the gains of such voyages were experience and knowledge (Broodbank 1993). Conversely, at Mochlos there is ample trace of the material benefits of long-distance contacts, whether borne by members of the north-Cretan settlement, or not (Seager 1912; Branigan 1991).

To conclude, it seems probable that along with Chalandriani, Mochlos was also instigating and maintaining its own political world through maritime activity. It was thus able to exploit Cycladic resources such as obsidian, perhaps in this instance approximating a mode of procurement not too far removed from that of Renfrew's 'direct access' (1.5). By circumventing the social relations that engaged some of the most important EM and EC communities, Mochlos also 'bypassed' the attendant pool of knowledge (including technical skill) that could be exchanged, shared and consumed by those few who had privileged access to the benefits of the world they inhabited.

5.9 - Endnote and Conclusions

This chapter has aimed to highlight the significance attributed to and represented by pressure-flaked blade production in southern Aegean EBA society. There is no suggestion that one can attribute a singular meaning or value to the craft or its products. There are notable differences across and within the EC, EH and EM worlds in how the technology was enacted (technological *mechanisms*), in the context of its consumption and how it was perceived. Equally one cannot assume a consistency in action and meaning over time. For example, in late EBII there are a number of cases where blade

production occurred alongside metal-working, at Manika (Sector V), Raphina, Koropi and possibly Ayios Dhimitrios, plus Kastri in the Cyclades (Tsountas 1899: 124-26; Theocharis 1952: 129; Kakavoyanni 1986: 37-38; Sampson 1986: 48; Zachos 1987: 214-15, 295-96). These associations may be far from coincidental as both involved the procurement of exotic resources and the access to and wielding of specialised technical knowledge in the context of transformative processes.

This chapter has described changes in obsidian blade production, with regard to the technology employed and its geographical and social context. Although offering a commentary on these changes, i.e. the claimed appropriation of lithic technology and the new perceptions accorded both product and producer, it has not explained the processes involved in this transformation. The following chapter will investigate one mechanism through which these changes may be seen.

- CHAPTER SIX: BLADES AND BURIALS -

6.1 - Background to the Enquiry

The original aim of this thesis was to approach a number of issues within later Neolithic - EBA southern Aegean society through functional analyses of selected chipped stone (obsidian) assemblages (Carter 1991). Such a study proved problematic as the original microscopic traces of use-wear may often be masked by accidental or post-depositional damage, a product of the raw material's fragility. Working on a related topic I came across a reference to small groups of obsidian blades from 8 EC cemeteries on Naxos, Paros and Syros (Doumas 1977: pl. LI). These contexts seemed to provide data appropriate for my studies for two reasons. Firstly, the small stone-lined graves should have been relatively stable environments, thus ensuring minimal post-depositional modification, and secondly the funerary assemblages' similarity hinted at a non-utilitarian significance within EC lithic technology, contrary to contemporary functionalist perceptions. Indeed, the sole reference to this material within the 'new wave' of Aegean chipped stone studies described the blades as "probably part of the normal equipment of the occupant rather than as a ritual offering" (Torrence 1986: 133).

It was this material, along with my work on the 1989 Melos Survey, that represented the basis for this thesis. From that point onwards much of the research took the form of 'archaeologist-as-detective', undertaking an extensive survey of EBA burial records in order to place the aforementioned assemblages into a wider framework and to ascertain whether there were sufficient comparable data-sets to render a detailed analysis of funerary material worthwhile.

6.2 - Southern Aegean Fashion Victims

A preliminary report suggested the existence of a structured burial practice involving the deposition of fine obsidian prismatic blades and cores, enacted by communities across the southern Aegean throughout the entire EBA (Carter 1994, **Figure 6.1**). Subsequent research has centred on studying a number of these assemblages first-hand and placing them into a finer chronological framework, for the original distribution map took no account of the temporal dimension. The following discussion of this material will continue to argue that an underlying notion to the burial practice existed, irrespective of space or time. This is not to suggest that there was ever a singular meaning attached to the funerary consumption of fine obsidian blades, with all interpretations of this social practice based, first and foremost, on the context of the material being considered.

6.3 - Early References and Thoughts

The earliest recording of obsidian from an EC tomb dates to 1771, when Dutch sea captain Graf Pasch van Krienen discovered 'stone blades', marble bowls and figurines, within the so-called 'Homer's Tomb' on Ios (Arnott 1990: 2-3). The numerous EC cemeteries excavated in the later 19th and early 20th centuries produced regular reports of obsidian grave goods, though discussion of the material was usually of limited scope (cf. Ross 1855: 53-54; Bent 1884: 52-53; Koehler 1884: 160; Dümmler 1886: 18-19, 28; Edgar 1896-97: 43; Stephanos 1905: 223). Equally, only a few excavators seemed to be aware that these objects' burial formed part of a pan-Cycladic phenomenon (Blinkenberg 1896: 53; Tsountas 1898: 150-51; Bosanquet 1904: 220).

From a relatively early date comparable material was also recorded from EBA burials in Crete, Euboea and the southern Greek mainland (cf. Bosanquet 1901-02; Papavasileiou 1910; Xanthoudides 1918; Blegen 1928), yet only rarely was it acknowledged that the practice had a significance beyond the cultural area being

investigated (cf. Bent 1884: 53; Sapouna-Sakellarakis 1987: 255). Some did consider the funerary use of these obsidian blades as indicative of Cycladic contact, but these arguments rested primarily on the origin of the glass, rather than perceiving the objects as elements of EC material culture or social practice (Doulas 1976; Sapouna-Sakellarakis 1987: 255, 258; Sampson 1988b: 113-119).

Overall, there has been little consideration of what these lithic deposits may have signified. They have been overshadowed by other grave goods whose greater quantity, scale or modern aesthetic value has led to their dominance of the published record (cf. Thimme 1977; Doulas 1983; Getz-Preziosi 1987a, 1987b; L. Marangou 1990, 1992; Renfrew 1991), irrespective of whether their context merited such discussion (Broodbank 1992a; Gill and Chippindale 1993). One theory has been repeatedly forwarded, namely that these blades were intended for depilatory purposes, or tattooing / scarification (Bent 1884: 52; Blinkenberg 1896: 54; Bosanquet 1896-97: 56, 1904: 221; Dörpfeld 1927: 296), a function they are eminently suited to (Carter 1997), and one with numerous historical and ethnographic precedents (cf. Maccurdy 1900; Radcliffe-Brown 1933: 483; Fletcher 1976; J. Clark 1978, 1989: 311-12; Gallagher 1977). No reasons have been proposed as to why such objects should have been interred with the dead.

6.4 - Issues, Aims and Methodology: A Contextual Analysis

The aim of this chapter is to interpret a recurrent social practice, inferring meaning from the 'material reality' of stones, bones and tombs. While the study's fixed variable is the association of obsidian implements with human remains, there is no assumption that a singular significance underlies the act. Indeed, one only has to consider the diverse burial practices employed by 'Early Helladic' communities to appreciate how unwise it would be to even assume that a unified concept of death

existed during the third millennium BC (cf. Pullen 1985: 88-156; Cosmopoulos 1991: 30-36).

Thus the various interpretations attributed to this practice are based on detailed contextual analyses, having considered a number of potential influential factors in how both material culture and act would have come to be perceived. Context is, of course, a multi-layered concept. One commences from the immediacy of the tomb group, with the interrelationship of age and gender of the individual and any other grave goods (cf. Bossert and Erhardt 1965; Goodison 1989), to the wider framework of the cemetery and associated settlement, to regional and finally southern Aegean perspectives. Not all the assemblages studied lent themselves to such in-depth analysis. For example, the Zygouries data, where only a single blade came from 5 multiple burials (Blegen 1928: 43-47), or those grave groups of uncertain date, or incomplete publication, including Moutsounas and Karvounolakkoi, Naxos, or Ayiasmata, Melos (Zapheiropoulos 1965: 505; Zafiropoulou 1969; Fotou 1983: 38). There is also notably less discussion of data from the southern Greek mainland, a reflection of the far fewer EBA cemeteries from this region compared to the Cyclades and Crete.

The results of this study are presented in chronological order though this was not always found to be an entirely satisfactory approach, particularly in the case of material from the Mesaran tholoi of southern Crete. The obsidian deposits from these burials are considered together within the early EBII section (a purely arbitrary decision), because only rarely could chronologically pure deposits be elucidated from these multiple inhumations.

6.5 - The Data-Set

A number of burial assemblages were studied in order to examine whether a pattern exists in the archaeological record (**Table 6.1**). Each obsidian artefact was

measured, described and occasionally illustrated, the results being presented in the following sections with full details in *Appendices 2-4*.

6.6 - Material Culture, Social Biographies and Use-Wear Analysis

It has long been recognised that certain classes of southern Aegean EBA material culture are restricted almost exclusively to funerary contexts (Tsountas 1898: 180-81; Mylonas 1959: 150; Renfrew 1972: 153-57; Wilson 1987: 40-41). In the Cyclades these include decorated pyxides, necklaces, marble figurines and the ceramic vessel called a ‘frying pan’ (**Figure 6.2**). As many of these artefacts have traces of use, breakage and in some instances repair, it suggests that they were not necessarily produced specifically for burial (Doumas 1977: 62; Sapouna-Sakellarakis 1987: 255). In Crete the emphasis is slightly different. While grave goods are often of the highest quality, there are only a few ‘special’ objects such as zoomorphic vessels and stone vases that may have been produced specifically for ritual and / or funerary rites; for sealstones, jewellery, daggers and toilet kit all clearly enjoyed “a working life” (Branigan 1988b: 170, 1993: 67-75).

Conversely, there are some classes of material culture that are restricted to domestic contexts. In the Cyclades for instance, rolled-rim bowls, pithoi, cooking wares and querns are absent from the funerary record (Doumas 1987: 17). Thus obsidian blades are anomalous in that they regularly occur in both settlements and cemeteries in *apparently* identical form. Yet are we justified in classing this material together? While these products look the same, there may have been important differences in their perception, manufacture, use and time in circulation.

Some of these issues can only be dealt with in a wider interpretative framework; but one of this study’s main innovative approaches has been the attempt to elucidate information pertaining to the life histories of these artefacts, by employing *use-wear*, or

microwear analysis (cf. Keeley 1980; Lewenstein 1981, 1987; Juel-Jensen 1988; Mansur-Franchomme 1988; Grace 1989; Hurcombe 1993). Using high-powered microscopy (50-200× magnification), obsidian grave-goods were studied for wear concordant with utilisation, as opposed to damage from handling or post-depositional factors (**Plates 6.1-6.3**). This is not the first use of microwear analysis in Aegean prehistory (Diamond 1974; Christopoulou 1979; Vaughan 1981, 1990; Perlès and Vaughan 1983), though its application has been rare and biased towards large scale, intra-assemblage analyses, with limited results and little continued involvement by the original practitioners (though see Christopoulou 1989). My analyses' primary aims were to see simply whether an implement had been used prior to interment.

6.7 - Refitting

Chipped stone offers an excellent opportunity to reconstruct both site formation processes and social practice. Thus wherever a grave produced more than one piece of obsidian, an attempt was made to ascertain their relationship through differential wear patterns and refitting (cf. Cahen *et al* 1980), to see if the products were manufactured contemporaneously, or brought together as a result of their, or the individual's, movement around the landscape. To my knowledge, no considered programme of refitting has been undertaken in the Aegean, apart from a single example from Agios Kosmas, discussed below in *Chapter Seven* (Mylonas 1959: 112; fig. 167A).

Unfortunately, this is a time-consuming analysis with each three-faceted blade offering 6 options of joining with another blade of similar form. Equally, the repetitive nature of the artefacts studied, usually lacking cortex, or differential coloration, means that apart from a number of the smaller grave groups it was not possible to undertake an exhaustive analysis on all the assemblages, or between grave groups.

6.8 - Integrity of the Data

A large number of obsidian blades and cores litter the south slope. Although none was reported by Seager, it is likely that all were originally associated with the tomb deposits on the slope. (Soles 1992: 84).

If my arguments are to mean anything then data integrity is crucial. For example, is the absence of obsidian from EBA graves in certain areas of the southern Aegean indicative of regional differences in social practice, or a reflection of incomplete publication, as illustrated by Soles' above quote? Certainly some excavators appear not to have considered obsidian as an item worthy of burial, with Taylour (1972: 211) proposing that a blade on the skull of an EH inhumation at Agios Stephanos in Laconia, was "probably fortuitous" due to obsidian's prevalence at the site.

It is also possible that the practice's alleged material coherence is due to publication bias. Until recently it has been common in Aegean prehistory to represent a site's chipped stone industry solely through the complete and photogenic, concentrating on cores, blades and retouched pieces (cf. Blegen 1928; Goldman 1931; Frödin and Persson 1938; Valmin 1938; Mylonas 1959, *inter alia*). To counter any such challenge a comparative analysis of the 'public' and 'private' face of the Aghia Photia obsidian will be presented, one of the largest Cretan burial assemblages.

The cemetery has yet to be published fully, but 30 of the "several hundreds" of obsidian blades found are illustrated in a preliminary report (Davaras 1976: 210-11, fig. 120). These blades, along with a further 63 pieces, are now displayed in the Agios Nikolaos and Siteia museums (**Plates 6.4-6.5**). By comparing these objects with the remainder of the assemblage (from the former museum's storeroom [**Plate 6.6**]), one can appreciate that those objects visible to the public are the finest examples from the site. They are predominantly complete, derive from the *plein temps de débitage* and are on average the longest and most regular (**Figure 6.3**). While the stored material

is more fragmentary and includes a few blades from the earlier part of the reduction sequence, the two groups of material are otherwise essentially the same. Therefore, as far as the impression one can gain from publications and museum visits goes: what you see is what you get.

A related concern is that of collection bias and disturbance. A few reports such as those of Zygouries and Aspri Petra note the sieving of burial deposits (Blegen 1928: 42, footnote 1; Xanthoudides 1918: 15), but in most instances such information is not forthcoming, hence can we assume that all material was recovered? To investigate this the material from Ayia Kyriaki and Archanes Tholos C are compared, two EM tholoi where sieving was employed during excavation, though the former deposit had been robbed prior to its archaeological investigation (Blackman and Branigan 1982; Sakellarakis and Sakellarakis 1991). Despite their different states the two assemblages were eminently comparable in form, dominated by pressure-flaked prismatic blades (**Figure 6.4**). The only notable difference was that all of the Ayia Kyriaki material was broken (averaging only 1.83cm long), a reflection of the deposit's disturbed condition. The fact that such small pieces were being collected, as they were at other cemetery excavations (*Appendices 2-4*), gives me faith in my overall data-base. It seems perverse to think that an excavator would have gone to the trouble to keep such small objects but conversely removed any non-blade material.

Finally, it should be stated that my distribution maps and appendices probably under-represent this practice. For example, obsidian is recorded from *every* EC cemetery on Naxos (**Figure 6.5**), being 'absent' from only those that had been robbed, or were excavated by Stephanos who dug hundreds of tombs but did not publish a single complete assemblage (Papathanassopoulos 1961-62; Fotou 1983).

6.9 - Death and Burial in the Early Cyclades

The archaeology of death plays a prominent role in the study of EC society, due to the plethora of cemeteries discovered over the past 150 years. These burial grounds are usually situated close to the associated settlement (where recognised), probably serving a small group of families, often containing as few as 15-20 tombs in EBI, with only a few EBII cemeteries attaining any notable scale (Doumas 1977: 31). Throughout EBI-II, burial was usually in the form of crouched inhumation placed in a small trapezoidal cist grave (**Figure 6.6**), the major exception being the small corbelled tombs at Chalandriani on Syros (Tsountas 1898, 1899; **Plate 6.7**). Multiple burials are occasionally recorded (cf. Edgar 1896), though usually only the last burial is articulated, with just the skulls of the previous inhumations retained, their long bones having been removed. Indeed, EC burial practices paid particular attention to the head, occasionally provided with a stone 'pillow', and it was usually in front of the skull that any grave goods were deposited (Doumas 1977: 29-64, 1987, 1990a).

There are indications that some graves were marked (Zapheirpoulou 1983: 85, fig. 15), with their occasional re-use further suggestive of their visibility in the landscape. Similarly, there is some evidence for tombs serving as foci for 'ritual' activity, such as a concentration of 'hat-like' vases on a stone platform in the Ayioi Anargyroi cemetery Naxos (Doumas 1977: 100-103). There is also evidence to suggest that intra-community status and kinship links were in part reflected through the funerary record, tomb size and the clustering of graves (*ibid*: 29-64).

6.10 - Origins of the Practice: The EBI Evidence

There is clear evidence to show that the funerary consumption of obsidian originated in the EBI Cyclades, the practice's distribution reflecting the pattern of EBI settlement in the islands as currently known (**Figure 6.7**). It is apparent that this act of deposition was carefully structured, for almost every implement recovered was a

pressure-flaked blade from the *plein temps de débitage*, the description of a small crescent-shaped piece from Tomb 4, Pelos, being the exception to prove the rule (Edgar 1896-97: 41).

Initially the practice appears to have been a modest one, both in terms of the quantities of blades that were deposited and the number of individuals who were accompanied by such goods. In part this reflects the general rarity of grave goods in the ECI burial record. For instance, Tsountas records that out of the 190 predominantly EBI burials he excavated on Paros, Antiparos and Despotikon, 50 contained no artefacts at all, and this did not include the tombs opened at Mnimouria and Drios, excavations he halted prematurely due to a total absence of finds (Tsountas 1898: 150-51). Of the 131 tombs that were not empty or looted, obsidian blades were recovered in only 21 (16%).

Alternatively, one can propose that in certain cemeteries, the non-appearance of obsidian blades may be indicative of inter-community differences in social practice. As with any instance where one is faced with drawing conclusions from negative evidence, the interpretative process is problematic. For example, despite the numerous EBI burials known from Amorgos, there is currently no record that any of the graves contained obsidian. This apparent omission of obsidian from early Amorgian funerary practice is probably due to the fact that most of these sites were investigated in the late 19th century and that none were fully published. Instead, the archaeological literature merely presents us with the excavator's more 'interesting' and wealthy finds, i.e. the figurines, metalwork and pottery (cf. Ross 1855; Kohler 1884; Dümmler 1886; Wolters 1891). Almost certainly obsidian blades came from some of these tombs, but they were simply never reported. Indeed, it was recorded that Tsountas' 1894 excavation of 20 Amorgian graves produced many blades and a core (Blinkenberg 1896: 52, footnote 3), yet his eventual publication of the Kapsala, Stavros, Dokathismata and Kapros cemeteries, documented the nucleus and only 4 blades (Tsountas 1898).

Conversely, there does seem to be a genuine lack of obsidian from some of the cemeteries in the Despotikon-Antiparos-Paros chain (a single island at the time [Morrison 1968]), with Tsountas explicitly stating that blades were absent from the 38 tombs at Galana Gremna and Glypha in Paros (Tsountas 1898). Furthermore, Bent noted that “there was not a trace of volcanic glass implements” from his excavation of an EBI cemetery at (?)Krassadhes (Renfrew 1972: 516), in contrast to an EBII burial ground where “obsidian flakes or knives were very common” (Bent 1884: 52; Tsountas 1898). Only a single blade was reported from subsequent excavations at the site (*ibid*). Finally, no obsidian was recorded in the 20 published grave assemblages from Pyrgos, Vathy and Zoumbaria, though here one must be a little wary, for Tsountas fully described only 57 of the 131 graves containing artefacts. This leaves many assemblages to be accounted for (probably constituting single objects), amongst which may have been the 10 unnamed burials from the Paros region he recorded as having obsidian (*ibid*; Doulas 1977: fig. 44-47).

6.10.1 - *Depositional practices: quantity, associations and life histories*

Through the associations of these blades, both positive and negative, the burial reports do provide us with some idea of these artefacts' role in EC social practice. Firstly, it seems a fair conclusion that the social 'norm' was to deposit only 1 blade per inhumation (**Table 6.2**). Where found with other grave goods, it was usually alongside a collared jar, or more commonly, cylindrical or spherical pyxides (flat-based lidded containers), though given that these two ceramic forms were the most common offering in EBI burials, it may be unwise to over-emphasise these relationships (cf. *ibid*: 150-51). Two assemblages associating obsidian with pyxides are worthy of note. The first is a cylindrical and decorated example in the Apeiranthos museum, that contains a mass of blades and flakes from a robbed Pelos-Lakkoudhes cemetery of east / south

Naxos (exact location unknown). The second is a Cycladic spherical pyxis from an EBI-II tomb at Agios Kosmas in Attica, again filled with obsidian (Mylonas 1959: 76, fig. 141, drawing 64). Conversely, and pertaining to my earlier comments about certain communities eschewing obsidian in funerary rites, while 9 tomb groups from Pyrgos on Paros contained pyxides, none were accompanied by blades (**Table 6.3**).

Continuing this analysis of structure and ‘appropriateness’ in EC funerary practice, one may note other contexts where obsidian blades are notable by their absence, including those individuals who were accompanied by marble figurines (**Table 6.2**). By extension this also means that obsidian was not a feature of the small group of ‘wealthy’ tombs recognised in the ECI burial record, i.e. those containing larger and more varied assemblages (**Table 6.4**). Finally, in two graves obsidian was recovered alongside items of personal display, specifically stone beads and necklaces (cf. Tsountas 1898: 151), an association that developed further in subsequent periods.

Undoubtedly some of the patterns seen in the archaeological record reflect gender-and age-related practices. Unfortunately, the burials themselves have provided little insight into these matters due to an almost complete lack of skeletal analysis, a result of poor preservation (Doumas 1977: 55), and inadequate publication (cf. Stephanos 1905 *inter alia*). Burial in the early Cyclades seems to have been the preserve of the adult population; children are rarely found, a notable exception being the necropolis of Kambos tis Makris on Naxos (Stephanos 1906: 87). One study by physical anthropologists has been published, that of two crouched inhumations from the EBI cemetery of Zoumbaria, Despotikon. One, a female, was accompanied by a cylindrical pyxis, the other, a male, was buried with a collared jar (Bossert and Erhardt 1965).

Interestingly these ceramic forms appear to be mutually exclusive in the EC burial record (Doumas 1977: 82-96; **Tables 6.2-4**), though it should be noted that if jars and pyxides were gender-specific, obsidian was recovered with both. Equally,

while some have interpreted pyxides as early jewellery containers, implicitly suggesting a female association (Blinkenberg 1896: 51-54; Televantou 1990: 57), it is debatable as to whether personal adornment was a female preserve (see below).

Returning to the obsidian, for the most part it seems that the blades chosen for burial were not dissimilar to those recovered from domestic contexts, albeit the former were the finest products of their time. While there is currently no ECI settlement assemblage with which to compare the Pelos-Lakkoudhes burial material, one can ascertain from later EBA deposits (including Phylakopi [Bosanquet 1904: 220]) that the grave goods represent a deliberate choice of the longest and most regular pieces from the reduction sequence (**Table 6.5**). At over 8cm in length the blade from Kambos tis Makris is anomalous, hinting at something slightly different within the burial practice, a matter discussed further in *Chapter Seven*.

Finally, out of what is already a small data-set, it was only possible to analyse 4 blades under the microscope. The material derived from graves in the Akrotiri and Lakkoudhes cemeteries on Naxos, and none displayed any traces of having been used prior to interment (*Appendix Two*). While it is unwise to rely on an illustration, the piece from Kambos tis Makris does appear to have damage along its right margin, though it is impossible to say whether this is from utilisation (Papathanassopoulos 1961-62: pl. 73c).

6.10.2 - Blades and burials in the EBI Cyclades: An FN origin?

In studying this burial practice, an obvious question to start with, is why should it have emerged in Cyclades at this time? The first point to make is that these tombs and their contents define the origins of the EC culture, so in one respect everything represents a new phenomenon. This is not to say that this is the earliest evidence for

human burial in the islands, for the Pelos-Lakkoudhes tomb groups are preceded by those of the FN Attic-Kephala Culture.

During the fourth millennium BC parts of the southern Aegean witnessed a important shift in burial habits, with a shift from primary and secondary inhumation in caves, to the establishment of extra-mural cemeteries (cf. Jacobsen and Cullen 1981; Sampson 1988a, 1993a). The only such burial-ground currently known from the Cyclades is represented by the 40 stone-built tombs of Kephala on Kea. Situated on the island's north coast (facing Attica and the entrance to the Euboean Gulf), the small community of Kephala is also notable for its procurement and processing of copper (Coleman 1977). Its ceramic assemblage displays strong links with sites in nearby Attica, southern Euboea and the Saronic Gulf, a sphere of interaction termed the Attic-Kephala Culture, confidently assigned to the Aegean FN (Renfrew 1972: 76).

Many parallels can be drawn between the funerary practices seen in the Kephala cemetery and those witnessed in the ECI burial grounds. These include: the placing of single crouched inhumations in stone built tombs, the provision of a stone pillow for the skull, the lining of graves with pebbles, the partition of tomb groups by low walls and the construction of stone platforms as depositional loci (Coleman 1977: 44, 48 pl. 21, 36; Doumas 1977: 34-36, 56-57).

Conversely, the Kephala grave goods bear little resemblance to those from Pelos-Lakkoudhes tombs, with no pyxides or collared jars, no use of the distinctive incised herringbone and spiralforn decoration, nor any parallels for the schematic marble figurines. Equally, the EBI cemeteries provide no comparanda for Kephala's graveside deposition of clay anthropomorphic figurines (Coleman 1977: 8; Talalay 1991), but three of Kephala's tombs did contain chipped stone.

In Grave 35 a male inhumation was accompanied by an imported flint spearhead, a recognised prestige good of the later Neolithic and an object unknown from ECI

burials (cf. Carter and Ydo 1996: 164-65). Graves 12 and 13 produced near complete obsidian blades of 7.00 and 6.10cm long, both associated with adult females (Coleman 1977: 61-62, 87). With their sub-parallel margins and dorsal ridges, and proximal overhangs removed, these blades were probably produced by indirect percussion. The former example also had traces of retouch and / or use-wear along part of one margin (*ibid*: pl. 68.172, 69.100-101). It is also worth noting that two fragments of an obsidian blade came from Tomb 6, in the FN cemetery of Tharrounia, Euboea (Sampson 1993a: 239).

While there are links between the Kephala and Pelos-Lakkoudhes mortuary practices, I would hesitate to suggest that the EC funerary consumption of obsidian blades originated within the former's burial customs. Such a statement may seem perverse given the above descriptions, but there are technological differences between those blades from the Keian cemetery and those from the EBI tombs.

6.10.3 - *Political change and technological innovation in the FN - EBI Cyclades*

It has been stressed that the blades from the Pelos-Lakkoudhes tombs all appear to have been manufactured by pressure-flaking, a technological mode that makes its first appearance in the Cyclades during the later fourth millennium BC. It shall be argued here that this funerary practice constitutes part of how this new technology was introduced into Cycladic society and its value created.

It was argued in *Chapter One* that previous formalist models for this technology's appearance are flawed (cf. Torrence 1979a; Perlès 1989, 1990a). There is no evidence for a significant shift in economy from the LN-EBA (Gamble 1979), nor any reason to adopt a more 'economising' mode of blade production at a time when increased activity in the islands should have placed more obsidian into circulation than ever before. Equally, incipient metallurgy cannot be seriously considered as having

major functional ramifications for obsidian blade production, though one must certainly bear in mind a potential symbolic tension between the two crafts (cf. Shennan 1995).

Recent research into technological change has focused on social rather than economic factors, considering such issues as where and how these transformations were located within existing political systems (cf. Renfrew 1984b; Torrence and van der Leeuw 1989; Lemonnier 1993; Shennan 1995). It is argued that such an approach will form a productive means of understanding both the *raison d'être* for pressure-flaking's introduction into Cycladic society and how the reconceptualisation of blade production was achieved.

Previously, pressure-flaking was perceived as a techno-cultural index of the Cycladic EBA, having been recorded from the basal levels at Phylakopi in association with pottery of the Pelos-Lakkoudhes culture (Cherry and Torrence 1984: 20). Two sets of evidence now challenge this correlation. Firstly, the Melos Survey data demonstrates that indirect percussion remained the primary mode of blade manufacture for many Melian communities up to and including EBII (*Chapter Four*). Secondly, at the Zas Cave on Naxos, pressure-flaking first appears *during* the FN (Zachos 1990: 31). Given the duration of the FN (Warren and Hankey 1989: 120), it could be argued that the Zas Cave assemblage simply represents a transitional phase postdating Kephala's FN date and preceding the EBI of Phylakopi 0. Recognised differences between Cycladic FN lithic and ceramic assemblages have certainly been interpreted in chronological terms before now (Manning 1995: 42-43, after Caskey 1972; Coleman 1977; Hadjianastasiou 1988; Torrence 1991). Alternatively, it can be proposed that the location of pressure-flaking at the Zas Cave is of primarily social, rather than, temporal significance and that from the nature of this location the technological change was a product of political rather than economic factors.

In *Chapters Three to Five* it was argued that in the EBA a correlation existed between social distinction and the ability to have influence over the consumption of pressure-flaked blade production, a restricted form of technical knowledge. In the Cyclades the politicisation of obsidian blade production can be witnessed in two contexts, the first and earliest represented by the Zas Cave, and the second being the tombs of the Pelos-Lakkoudhes culture.

It would be too simplistic to argue that the Zas Cave was a later Neolithic cult-centre, though the site did provide a focus for the consumption of a wide range of exotic and prestige goods, and shares many other features that resemble the form of cave-based ritual seen across Chalcolithic southern Europe (Whitehouse 1990; Demoule and Perlès 1993: 404-405; Nakou 1995: 21-22). The later Neolithic horizons include several objects of arsenical bronze, spondylus ornaments, plus a gold strip and flint spearheads with exact parallels from the contemporary Gumelnitsa Culture of northeast Bulgaria / southern Roumania (Zachos pers. comm., 1990, 1996b; Nakou 1995: 6-7; Carter and Ydo 1996: 164-65). It is suggested that by situating pressure-flaked blade production at the Zas Cave, the technology would have been associated with the characteristics of secrecy and ritualised knowledge at possibly the most important location within later Neolithic Cycladic cosmology (cf. Whitehouse 1991; Nakou 1995). In turn, the technology's perceived 'otherness' would have further served to mystify the locale and empower those who controlled it.

If we are to see this as a deliberate appropriation of lithic technology, why was it necessary to remove production from the public gaze of the domestic arena? In part one could consider it a matter of certain individuals simply exploiting an existing mechanism for the construction and maintenance of social distinction by aligning themselves and the new technical practice with the Zas Cave, but it is also worth considering this technology's physical nature. In truth, the similar scale of the blades

manufactured by indirect percussion and pressure-flaking suggests that there was not a major difference in the strength or tools required to produce them. Equally, while the motor habits and application of force would have been distinct (pressing versus striking the obsidian), the new technique will have provided little change in terms of the visual impact of blade production. We know from later Neolithic Aegean society that power relations were not only defined through the ability to initiate and access long-distance exchange networks (cf. Weißhaar 1982; Demoule and Perlès 1993: 403), but also via visible social action, specifically the construction of male power through such performative activities as hunting and warriorship (cf. Comsa 1983; Carter and Ydo 1996: 164-65). It is doubtful that blade production in either mode would have offered much of a spectacle, certainly not compared to the potential sensory arousal (and magical connotations) provided by the crafts of a potter, or the more exotic metalsmith: the sights, sounds and smells of pyrotechnology. For obsidian blade production to occupy the niche that it did by EBII, the new technique of pressure-flaking had to be presented and perceived in a different manner to that of indirect percussion. Thus as an integral part of pressure-flaking's introduction into Cycladic society in the latter part of the FN, was its association with secrecy and exclusivity, attributes that enabled obsidian blade manufacture to gain a radically new socio-cultural status.

It is primarily on the above definition of *exclusive* knowledge and practice that southern Aegean EBA pressure-flaked blade manufacture is defined as a 'craft specialisation', with no reference to the formalist conception based on economy of raw material, or the scale, volume, standardisation or intensity of production (cf. Runnels 1985c; Torrence 1986; Brumfiel and Earle 1987: 5; Kardulias 1992). The position of a 'stone tool specialist' would have been conferred and legitimised by divine access to secret knowledge (through association with cosmologically potent locales, such as the Zas Cave [cf. Rowlands 1987]), and transferred by lineage, rather than an individual's

ability or willingness to put in an 8 hour day. Furthermore, this episode of technological innovation and associated re-working of blade production's meaning appears to have been one of the mechanisms through which certain corporate groups overturned existing power bases towards the end of the fourth millennium. Given the importance of chipped stone technology for providing some of the most basic accoutrements of warriorship and hunting, it is noticeable and to my mind not coincidental, that contemporary with the adoption of a pressure-flaked blade industry, was the complete cessation of spear- and arrowhead production.

While the Zas Cave (and possibly sites like it yet to be discovered), represented a locus for the legitimisation of social inequality and the creation of a new lithic technology's value, it is within the burial grounds of the EBI Pelos-Lakkoudhes group that we see the renegotiation and maintenance of the craft's new value on a more widespread and recurrent basis. Talalay (1991) has argued that these small cemeteries served as focal points for an early (and transitory) population, serving to locate and legitimise the settlers' place within their new worlds via a reified ancestry. The inclusion of pressure-flaked blades within these contexts may be seen as a similar phenomenon, situating and normalising a new technology within the origins and fabric of society. This leads to the question of where pressure-flaking came from and the background to its arrival.

Although the archaeological record suggests that the 'FN' and 'EBI' Attic-Kephala and Pelos-Lakkoudhes culture groups may have enjoyed some temporal overlap (Renfrew 1984a: 43), their exclusive settlement distribution suggests to many that the Cyclades witnessed a major settlement shift in the latter part of the fourth millennium (Cherry and Torrence 1982: 34; J. Davis 1992: 703). This may indicate a hiatus in the inhabitation of all, or some of the islands at this time (*ibid*: 703), followed by a period of island [re]colonisation, with an influx of population from Euboea, Attica

and the Dodecanese, the Pelos-Lakkoudhes culture group representing a fusion of these populations and cultural traditions (Keller and Cullen 1991; Broodbank 1992c, 1995). For instance, EBI Cycladic non-funerary ceramic assemblages typically contain rolled-rim bowls and 'cheese-pots', vessels known from FN contexts, both to the north and the east (Sotirakopoulou 1986: 300-303; Sampson 1988a: 261-62).

It is the Greek mainland that had a heritage of pressure-flaked obsidian blade production and it seems most plausible that it was from this area of the Aegean that the technology was introduced into Cycladic society, conceivably brought by Attic or Euboean colonists. This is not to explain this craft's significance in EC society, nor its ritualised consumption in EC funerary rites, for neither have a mainland precedent. The re-working of blade production's meaning, as an element of creating new modes of distinction, was a change born from the contemporary social conditions, that allowed both flux and fusion: of populations, material culture, technical practice and social action.

6.11 - Endnote

The funerary consumption of obsidian blades in EBI Cycladic tombs cannot be reduced to the introduction and legitimisation of new modes of technology and social organisation. Their burial signified a complex range of meanings, dependent on context and the members of society involved in the act. For instance, their form and context provides an overt functional symbolism, the burial of an implement, possibly a razor or some other fine cutting tool. While microwear analysis suggests that the vast majority of these blades had not been used prior to interment, this is not to say that these items do not serve to signal an important social significance attached to body modification and personal imagery. There is also the consideration that they represented valued goods, for their production and circulation appears to have been restricted.

It is important to appreciate the polysemic nature of this social practice, with the potential for meanings to have been contested and renegotiated. At the same time it is their embodiment of exclusive technical know-how and its relationship to contemporary inequality that represents the underpinning theme, linking this practice as it developed from its Cycladic origin into new cultural regions in late EBI.

- CHAPTER SEVEN: OBSIDIAN AS ‘CYCLADICA’ AND THE ‘NECROLITHIC’ -

7.1 - The Genesis of the ‘International Spirit’: Obsidian and Burial in Late EBI

The late EBI/EBII phase was a watershed in the EC world; a period defined in the islands by the material culture of the Plastiras and Kampos Groups (Doumas 1977; Renfrew 1984a; Zapheirópoulou 1984). The chronological status of the former is not entirely assured, as it is defined by a small range of marble goods (**Figure 7.1**), that are rarely if ever recovered in domestic contexts, suggesting that they could represent the prestige goods of the Pelos-Lakkoudhes Group. Conversely, Kampos Group material is recorded from a number of settlements, although no stratified deposits have yet been published (Renfrew 1972: 527-28; Sotirakópoulou 1990: 43; J. Davis 1992: 753; Manning 1995: 45-48).

Aside from representing the transitional phase between the Pelos-Lakkoudhes and (EBII) Keros-Syros groups, Renfrew has argued that the Kampos Group’s importance lies in the fact that its graves represent the context where Cycladic metallurgy first becomes regularly archaeologically visible (Renfrew 1984a: 51). Certainly the impact of metallurgy within its burial record is “striking”, both for “its bi-metallic nature, and for its relatively high frequency” (*ibid*). Although metalwork is virtually non-existent in EBI tombs, there is now considerable evidence for the use and manufacture of metal goods in the Cyclades from as early as the LN (cf. Zachos 1990, 1996b). Thus Nakou has argued instead, that the Kampos Group’s significance is in its reflection of a radical shift in social attitudes towards metallurgy, witnessed through changes in depositional behaviour (Nakou 1995: 2).

A further hallmark of the period, seen in both Plastiras and Kampos group grave assemblages, is the emphasis Cycladic society placed on personal image and display.

The late EBI burial record thus provides us with necklaces of silver and greenstone, bracelets and pins of silver, lead and copper (cf. Renfrew 1967), plus pigments, palettes, pestles, needles, pins and awls, whose associations suggest the practice of body painting and tattooing (cf. Bosanquet 1896-97: 66).

7.2 - Obsidian and Death in the late EBI Cyclades

The burial of obsidian continues as a feature of late EBI mortuary practice (**Table 7.1**), albeit with a number of developments, that may be seen as integrally linked with contemporary changes in Cycladic society. Firstly, the number of funerary assemblages containing obsidian that are assignable to this period is far larger than associated with (earlier) EBI tomb groups (**Figure 7.2**), its increased inclusion in burial rites reflecting a general increase in the provision of grave goods at this juncture. Indeed, apart from the spectacularly rich burials of EBII Aplomata, Naxos (and possibly Kavos on Keros), more material culture appears to have been consumed in the Plastiras and Kampos groups' mortuary habits than at any time in the EBA Cyclades.

In order to document further the changes in late EBI society, three tomb groups will be referred to in order to illustrate the 'spirit of the age' and by extension locate the role of obsidian within these shifting social structures:

- Tomb 56, from the cemetery of Panagia in south-west Paros (**Figure 7.2**), was a cist grave containing a single inhumation and a number of artefacts of the Plastiras Group (Tsountas 1898: 156-57). Placed between the skull and the tomb's front left corner, were 4 blades and two cores of obsidian, a red stone bowl and a schist palette. Around the area of the hand-bones came 4 stone beads and 4 pieces of copper wire, presumably the remains of bracelets. By the skeleton's feet was a third obsidian core over which was an inverted marble bowl, the interior stained with red colorant.

Finally, in another group was a further obsidian blade, a sea-shell, a pebble, a lump of red pigment and a marble palette. The assemblage is noteworthy for containing the earliest copper jewellery from an EC tomb and the fact that there is no record of any other grave producing more than a single obsidian core. The three nuclei were all conical in form and between c.7.00 - 8.98cm long (Papathanassopoulos 1981: pl. 46), one having also been used as a pestle (**Plate 7.1**), no doubt for the preparation of the pigments in the marble bowl that it was found under (Ekschmitt 1986: 32 pl. 3). The 5 complete, fresh and unused blades were of high quality, ranging between 9.24 - 15.00cm long (**Plate 7.2**).

- Tomb 26 from Louros Athalassou in south-western Naxos (**Figure 7.2**), was one of the assemblages used to [re]define the Kampos Group (Renfrew 1984a: 47-48). It contained 7 'Louros Type' marble figurines, a necklace of 200 silver beads (plus 1 of stone and 4 of shell), 3 copper or bronze awls, 5 miniature aryballoi containing blue pigment, a decorated 'frying pan', 2 spherical pyxides, a marble deep cup, 14 fragmentary obsidian blades and a conical core (Stephanos 1904: 58; Papathanassopoulos 1961-62: 132-37, pl. 66-70). Once more, obsidian was associated with material culture relating to body modification, with the assemblage including what appears to be 'a complete tattooing kit' (Fotou 1983: 41). The nucleus (length 8.73cm) had also been used as a pestle (**Plate 7.3**), but unlike the Parian tomb-group a number of the blades *had* been used prior to burial. A minimum of 5 blades were represented, three of which were complete / near complete, measuring 9.48, 11.15 and 12.42cm long, each having traces of being used in a linear cutting motion employing short angled strokes (*Appendix 2*). While it is impossible to know exactly what was being worked, the nature and distribution of edge-damage is

compatible with slicing through a soft to medium-soft substance, probably an organic material such as hair, flesh or cloth (**Plates 7.4-7.5**).

- A little farther to the north of Louros Athalassou, is the Kampos Group cemetery of Ayioi Anargyroi (**Figures 7.2-7.3**). Nine of its 21 tombs were notably larger and of more careful construction than the others, containing what the excavator considered to be rich assemblages by EC standards (Doumas 1977: 100-101). It is noteworthy that the obsidian blades from this site were concentrated within these 9 burials, missing from only three, of which two had been plundered (*Appendix 2*). Tomb 5 is worthy of note due to its rich and varied assemblage, with the single inhumation accompanied by a small marble beaker, a marble bowl with traces of red pigment, a bronze needle, a small bronze awl with a greenstone haft, a necklace of biconical greenstone beads, a greenstone ‘spoon’ and a complete obsidian blade of 6.81cm long (*ibid*: 107-108, 1990: 96-98, pl. 91-97). Though it is not the sole feature of the assemblage, body imagery once again plays a prominent role, with the awl and bowl with pigment found together, suggesting the latter’s function as an applicator of colorant, or possibly as a tattooing needle. The obsidian blade also had traces of use-wear (**Plate 7.6**) concordant with having been used to make short-stroke linear strokes, cutting a medium-soft material[s].

7.2.1 - *Something old, something new...*

One can immediately appreciate some of the differences between these tomb groups and those of the EBI period, not least the deposition of more than one blade per grave and the appearance of cores. At the same time a number of communities continued to only provide one blade per inhumation, as for example at Ayioi Anargyroi, Naxos (**Table 7.2**), and the type of blades chosen for burial remained constant,

specifically the finest pieces from the *plein temps de débitage* (**Figures 7.4–7.5**). It will be suggested that the changes witnessed in this period represent not so much a complete shift in social practice but more of a divergence, with some of the innovations being witnessed in quite specific social and geographical contexts.

In the Cyclades this burial habit appears to have been enacted on a more widespread basis in late EBI, with its first *recorded* appearance in Amorgos (Tomb 17, Kapros) and a new concentration of assemblages from southern Naxos and the northern Erimonisia (**Figure 7.2**). It is within the latter region that some of the period's most notable developments are seen, including some of these islands' colonisation and the emergence of a strong local tradition in ceramic forms and burial practices, what one might term as the Kampos Group's 'heartlands'. To investigate some of these developments more closely we shall discuss the burial material from Agrilia on Epano Kouphonisi, a small island off the coast of south-eastern Naxos.

7.2.2 - Agrilia, Epano Kouphonisi

Agrilia is the largest Kampos Group cemetery in the Cyclades (**Figure 7.6**), with c.90 graves, 72 of which were excavated (Zapheirou 1970a, 1970b, 1971, 1983, 1984). The tombs are different to those of the earlier EBI, being rock-cut pits of trapezoidal or crescentic form, separated into two halves by an upright slab. Where present, grave goods were usually placed in the 'antechamber', only rarely accompanying the crouched inhumation and then only those items the excavator considered most valuable: bronze daggers and needles, marble objects and obsidian (Zapheirou 1983: 81). The large ceramic assemblage was more varied than the Pelos-Lakkoudhes funerary repertoire (**Figure 7.7**), dominated by pyxides, but also containing deep cups, pedestalled bowls, piriform vases, mini-aryballoi and frying pans (Zapheirou 1984: fig. 1-3; Dumas 1990a: 163). Of the few stone artefacts

published, noteworthy are a marble kandila of the Plastiras Group (cf. **Figure 7.1**), a marble palette, beads and the unique rendition of a Louros-type figurine in relief on a stone plaque (Zapheirpoulou 1983).

Although the site has only received preliminary publication, the excavator, Dr. Ph. Zapheirpoulou has kindly allowed me to study the chipped stone assemblage for this thesis. Obsidian blades were probably one of the most common grave goods interred (**Table 7.3**), with 236 pieces recovered from at least 32 of the 72 excavated tombs (44%). The assemblage was typically dominated by pressure-flaked blades produced during the *plein temps de débitage* (n=213, 91%; **Figure 7.8**), having been initiated from unipolar, faceted cores, of which two examples were recovered from the cemetery, one from disturbed fill, the second from Tomb 59.

The cemetery included both single- and multiple-blade deposits (**Figure 7.9; Plate 7.10**), the latter providing us with an insight into taphonomy, technology and social practice. The general impression gained from studying these groups of material, was that many of the blades because of their similar dimensions, dorsal scar-patterns, longitudinal curvature, flow-bands and freshness, were related, almost certainly coming from the same nucleus. Surprisingly this intuition was rarely borne out by refitting, with only 4 Agrilia tomb groups containing blades that conjoined one another (**Table 7.4**). Instead, it appeared that one or more intermediary blanks from the blade-run were missing from these assemblages, for reasons that will be considered below.

It was noticeable that of those assemblages with conjoining pieces, none of the blades had been used or had suffered any damage from long-term storage and handling, suggesting that their manufacture occurred only a short while before their deposition, probably as part of the accompanying burial rites. Functional analysis did reveal that

15% of the overall assemblage had been utilised (n=35, including *possible* use; **Figure 7.9**), though interestingly over half of these implements were concentrated in 4 graves: Tombs 2, 6, 45 and 63 (**Table 7.5**). Even allowing for use-wear, these implements were still very fresh in appearance, with 4 of the Tomb 2 and two of the Tomb 6 examples still complete. At a delicate 7.08 - 10.06cm in length, this suggests that either the blades were the property of careful owners, or, that as with the refitted pieces, only a short time encompassed their production, use and deposition. In a number of other instances is it possible to discern these 'sets' of related and used blades, including the aforementioned Louros Athalassou assemblage, where at least 5 of the blades had been used (**Plates 7.4-7.5**), with the two longest examples conjoining (11.15 and 12.42cm [NAM 6204.8.2 & NAM 6204.8.1]). Given that cemetery based ritual has been recognised at contemporary sites such as Ayioi Anargyroi, it suggests that these blades use probably occurred within funerary ritual, rather than being the utilised tools of the individual that they accompanied. Whatever the interpretation, these used blades represent an important development from the purely symbolic role these objects appear to have played in EBI.

Finally, while none of the obsidian from Agrilia has been characterised, there are two pieces that do not appear to be Melian in origin. From Tomb 65 came a small nodule of lustrous jet-black obsidian (c.0.78cm in diameter), unworked but lacking cortex, that on the basis of visual comparison seems to be from Antiparos. In only one other recorded instance has this material been recovered from an EC burial, that of an early EBII tomb at Apantima (or Agios Sostis) on Antiparos itself, less than 2km from the Soros Hill source (Bent 1884; Renfrew, Cann and Dixon 1965: 232, 239).

The second exotic piece comes from Tomb 69, the proximal section of a fine prismatic blade flaked from a translucent glass with a purple-grey tinge (NM8424), that bears no resemblance to obsidian from Melos or Antiparos. It appears to be made from

the same glass as two other prismatic blades from Platanos B, a tholos tomb in the Mesara of southern Crete (discussed below), whose origin has been suggested as the central Anatolian source of Açıgöl (*ibid*: 239). Significantly, out of an assemblage of at least 7 blades, it was the only one that bore traces of having been used, with heavy scarring along both margins and both faces, suggesting that it had been owned and had moved around the landscape prior to burial.

7.2.3 - The ‘necrolithic’: A technology for the dead

One of the most striking aspects of the Agrilia material, and Plastiras / Kampos Group assemblages as a whole, is the length of some of the blades, often notably longer than examples from Pelos-Lakkoudhes tombs and certainly far larger than blades from EC domestic contexts. For example, the 5.5cm average core-length from Phylakopi’s ‘great obsidian workshop’ appears representative of EC settlement material, yet of the 76 complete blades studied from late EBI/II burials, 75 were over 5.5cm, with 9 examples twice this length, the longest at 15cm from Tomb 56, Panagia (**Figures 7.10–7.11; Table 7.6; Plate 7.2**).

In contrast to the interpretation attributed to the Pelos-Lakkoudhes burial material, these products cannot be explained in terms of choosing the best products from an existing blade-industry. It is suggested that these blades were manufactured by a completely new technological mechanism, one that was developed for and restricted to the burial-ground, that I have decided to term the ‘necrolithic’ (I acknowledge Professor I. Sakellarakis for coming up with this dreadful but eminently suitable pun). The production of this material represents the apogee of Aegean blade technology, culminating with an early EBII assemblage from Aplomata, Naxos, where one published blade is 21cm long (Televantou 1990: 76, pl. 63).

7.2.4 - *The technical background*

It has already been argued that pressure-flaked blade production was a restricted act in the southern Aegean EBA, but to produce blades of the lengths described above would have required greater skills than usual. It is here that the experimental work of Sheets and Muto (1972) becomes far more relevant to Aegean prehistory, for the 'necrolithic' mechanism of pressure-flaking is a much closer approximation of Mesoamerican blade technology (cf. Crabtree 1968; J. Clark 1989; Thouvenot 1984). To start with, nodules would have required much more careful preparation, particularly with regard to cresting and initiating the process, for the further a fracture wave has to travel before a blade is detached, the greater the risk that it will diverge from the desired path. While a difference of only a few centimetres in core length may not seem much, experimental lithic technology suggests that it implies differences in the tool kits employed, the motor habits and co-ordination involved in working the core, the methods in stabilising it and to a lesser extent the strength needed to remove a blade (Crabtree 1968; Sollberger and Patterson 1976; J. Clark 1982, 1985; Pelegrin 1984a, 1984b, 1984c, 1988).

For example, while a short flaking implement, either wielded by hand or shoulder crutch, may offer greater accuracy in positioning the tool's tip on the platform (**Figure 7.12**), it would be impossible to generate sufficient leverage to remove a blade of 15-20cm length and would probably risk hinge-fracturing the nucleus in the process. Conversely, it is equally improbable that a knapper reducing cores of 5-6cm (i.e. those from EC settlements) would already be employing a pressure tool capable of removing blades in the region of 11cm long. The application of too great a force on a small block would risk crushing the core's lip, thereby impairing or ruining completely the flaking angle. Similarly, as the angle of initiation may be more difficult to judge at a

‘distance’, there is an increased chance that the blade would plunge on removal taking the distal tip with it.

While experimental archaeology can provide us with some of the technical parameters in the production of such blades, our best evidence for reconstructing the technique comes from the blade cores themselves, that significantly make their first appearance in the burial records of the Plastiras and Kampos groups (**Figure 7.13**). On studying these pieces one immediately appreciates that it is not only their size that distinguishes these nuclei from those derived from contexts such as the ‘great obsidian workshop’, but the manner in that they were worked. As documented previously (**1.9**), cores from EC domestic contexts (and the southern Aegean generally) tend to be rectangular-to-semicircular in plan, worked around a half or two-thirds of their circumference, probably the result of how they were immobilised during reduction, either clasped in the hand or clamped in a small vice (cf. Pelegrin 1984b, 1988). Occasionally 100% of their margins were reduced, but this was not a unified process, for in these instances the proximal ends of the blade scars are invariably missing on one face, having been removed by platform rejuvenation. Such actions would have become necessary when the flaking angle became too obtuse, or where the blade run came to a premature end, with core reduction being re-initiated by turning the core through 180°, creating a new platform opposite the old one and then knapping what was originally the ventral surface (**Figure 7.14**).

In contrast, all of the blade-cores from EC burials were worked around their entire circumference resulting in a circular cross-section and conical form (**Plate 7.8**), a process that was initiated from the outset (**Figure 7.15**). This indicates a different mode of stabilising the core, for the nucleus was obviously being continually turned as it was worked, though the reconstructed blade-scar-runs indicate that this was not in a regular clockwork, or anti-clockwork rhythm. From experimental work Clark

has argued that a vice is neither necessary nor desirable when working such large cores around 100% of their margins (J. Clark 1985). Instead, he has argued that a skilled knapper can employ their feet to immobilise and revolve the nucleus thus retaining the knapping rhythm, as opposed to the 'stop-start' nature of having to periodically loosen a vice and turn a core by hand.

The experiments of Crabtree (1968), J. Clark (1982, 1985), Texier (1982) and Pelegrin (1984a, 1984b, 1984c, 1988) also suggest that the kind of flaking tool required *to detach blades of the length produced by the 'necrolithic' technique*, would mean that the knapper occupied a different stance to that adopted in the more common mechanism of blade-manufacture witnessed in domestic contexts. For the latter technological mechanism a shoulder, or even hand-held pressure-flaking implement would be most suitable for removing blades of 6cm or less (Pelegrin 1988: 41-42, fig. 2-3). In order to control the direction and force applied, the nucleus was probably held close to the body around the level of the stomach and crotch, or perhaps resting on the upper thigh. As such, the process is inward looking in terms of the force applied and the knapper's attention and vision. It would also be a cramped procedure with the action of leverage and blade removal concentrated in a fairly small space, providing little visual impact for any observers, particularly anyone standing at a distance from the knapper.

Conversely, the leverage required to remove blades with the length and fine form of the 'necrolithic' type involves a flaking implement of some size. The force generated by the knapper would be directed and transferred through a much longer flaking tool (**Figure 7.12**), probably involving the use of body-weight, rather than relying on arm-strength alone (cf. *ibid*: 46; Inizan, Roche and Tixier 1992: fig. 22, 4-6). The process would be far more 'flamboyant' in terms of its enactment and 'grandiose' with regard to the space within which the knapper, flaking tool and nucleus interacted,

providing an audience with a far greater and more open visual stimulus than the technological mechanism previously described.

7.2.5 - Arenas of consumption?

Unfortunately, we currently have little idea as to where the ‘necrolithic’ was being enacted; we have the end-products but few instances where it may be possible to discern an actual place of manufacture. In part this may reflect our generally limited knowledge of chipped stone assemblages from EC settlements, but from the Melos Survey data and the figures quoted by Bosanquet concerning average blade / core length from the ‘great obsidian workshop’, it would appear that the ‘necrolithic’ was not a feature of domestic production. There are a few exceptions to the rule, with a single nucleus of c.8.7cm long from Phylakopi in the Finlay collection (Renfrew 1972: 579, pl. 26,6), and Bosanquet (1904: 220) favourably compares a 9cm blade from the same site to the Tomb 56, Panagia assemblage. This evidence will be returned to shortly.

Perhaps then it is to the cemetery itself that we should be looking for manufacturing debris related to the ‘necrolithic’ phenomenon. One possible locus is the cemetery at Agrilia, where obsidian was collected from the surface of the excavation. The form and weathered condition of this material suggests that these pieces are not simply grave goods disturbed by recent tomb robbing (unlike one of the site’s cores), but the assemblage requires further study before its relationship to the tomb’s ‘necrolithic’ blades can be fully ascertained.

It may not be coincidental that the sole context where this technological mechanism has been documented *in situ* comes from within a funerary context, albeit outside of the Cyclades, at the site of Agios Kosmas in Attica (**Figure 7.16 & 7.20**). The appearance of such material in non-Cycladic contexts will be discussed shortly, but for the moment it is merely necessary to describe the spread of obsidian

recovered from an area of the North Cemetery denoted 'Area O' (**Figure 7.17**). Situated between Graves 25 and 30 was an area c.0.40 × 0.30m, over which lay a total of 89 flakes and blades placed "around a beautiful obsidian core" (Mylonas 1959: 106, 112; fig. 109 and 167A, drawing 48-49). Despite being broken the blades' edges were sharp and seemed unused, suggesting that they had been produced specifically for burial, an argument further strengthened when J. Geroulanos managed to refit a number to the core thus demonstrating that they had been manufactured at this spot (*ibid*). The quantity and form of the non-blade debitage is unfortunately not provided, thus it cannot be ascertained whether the nucleus had been brought to the burial-ground specifically pre-formed for the production of grave goods, or whether the entire process was initiated and completed in one event.

The most striking aspect of this assemblage is the size of the nucleus and its associated products (**Figure 7.18**). The blades averaged 9cm long and the core 8.5cm, but with a number of blades refitted it was just over 11cm (*ibid*: fig. 167A) and thus similar in scale to those from contemporary Cycladic burials. To put this into context, the excavator also illustrated a number of other blades and cores from Agios Kosmas, none of which were as long as those from 'Area O', indeed many were notably smaller (*ibid*: fig. 167A).

There are some differences between the Agios Kosmas nucleus and those from EC burial contexts, for the example from 'Area O' is tabular in form not conical, having been only worked around two-thirds of its circumference with a posterior crest remaining. It is thus a much larger version of the type of nucleus commonly found on EH sites (cf. Van Horn 1980), but it would have necessarily involved a different pressure-flaking tool to generate and control the requisite force to remove such long and fine blades. It therefore seems to represent a fusion of cultural traditions and technological mechanisms.

7.2.6 - Technology as performance

Throughout the discussion of the ‘necrolithic’, the themes of aesthetics, style and visual impact have been referred to, inferring the concept of technology as performance, or social gesture (cf. Schlanger 1990: 20-25, after Mauss 1927, 1941 *inter alia*; Leroi-Gourhan 1964). In part this relates to the proposal that the ‘necrolithic’ was enacted within the funerary arena, in marked contrast to where pressure-flaked blade manufacture was usually located in the southern Aegean EBA, situated within enclosed spaces, domestic or otherwise. In the previous chapter it was argued that the removal of technological practice from the public gaze may have been one of the methods through which the knowledge, act and resultant products were accorded value. Arguably, a major reason for doing this was certain people’s wishes to mystify a *mode* of producing obsidian blades (pressure-flaking) that offered little visual distinction from that *mode* it was aiming to supersede (indirect percussion).

Admittedly obsidian knapping will always have lacked much of the sensory arousal associated with the pyrotechnics of contemporary ceramic production, or the far rarer practice of metallurgy, but the ‘necrolithic’ *mechanism* of pressure-flaked blade manufacture provided a far greater spectacle than blade production had ever previously offered in the Aegean. It remains to discuss why this should be of significance.

7.2.7 - Craft hyper-specialisation and conspicuous production

The innovation of a technological mechanism designed to produce such long blades may be compared in one sense to Broodbank’s observations on the scaling-up of EC marble folded-arm figurines (in EBII), that he suggests may be the outcome of “status-driven competitive emulation - of a species of Peer Polity Interaction” (Broodbank 1992a: 544). There is also the fact that these implements have limited

functional capabilities, though conversely, in the funerary context some of these blades do bear witness to having been employed, albeit briefly, prior to their burial (see above). Thus, the ‘necrolithic’ technique and its products conform to what Malinowski termed “hypertrophy”, a form of accentuated craft specialisation or productive practice, resulting in an “economic monstrosity” of limited utilitarian value (Clark and Parry 1990: 293, after Malinowski 1934: 193). Referred to by Firth (1959: 183) as a “superutility”, such objects are considered to be “aptly suited for resolving problems of legitimisation because of their high value and stylistic elaboration” (Clark and Parry 1990: 293). There are also suggested socio-political correlates for hypertrophic products and the technology responsible for their manufacture. In the ethnographic record such goods are usually associated with rank and chiefdom societies, for they tend to be sponsored (they are not a ‘naturally occurring’ phenomenon), meaning by extension that the producer tends to be *attached* (Clark and Parry 1990: 293, 319; Gero 1989: 95).

For a number of reasons, it will be argued in the following section that the ‘necrolithic’ was indeed undertaken by patronised craft specialists in the early Cyclades. The question remains as to who these people were? Are they to be seen as the self-same knappers who for the most part were manufacturing blades in settlements utilising the ‘simpler’ technological *mechanism*, only performing the ‘necrolithic’ at context-specific times and places, a form of ‘party-trick’ for the dead? Or, was this form of “craft hyper-specialisation” (Clark and Parry 1990: 293), restricted to fewer members of society than were commonly involved in pressure-flaked blade production? One can approach this question through considering the distribution of the ‘necrolithic’, both in terms of the end-products and the indirect evidence for production represented by the blade-cores.

The first point to make is that the large nuclei are in fact very rare in the archaeological record. This is perhaps contrary to the impression gained from the literature, that in hindsight now appears to be the product of publication bias, i.e. they

were considered more interesting than those blades regularly found in tombs, so they tend to have been illustrated more often (Dümmmler 1886: pl. 1, A3; Tsountas 1898: pl. 8, 10; Papathanassopoulos 1961-62: pl. 68a, 1981: pl. 46; Ekschmitt 1986: pl. 3; Devetzi 1990: pl. 60, 64; Renfrew 1991: pl. 11, *inter alia*). In total, I have come across only 22 examples from the literature, museum cases and unpublished assemblages (**Table 7.8**). This includes the core from Phylakopi without context (EC tombs next to the site had been robbed as well as the ‘workshop’), but excludes the aforementioned piece from Agios Kosmas. These figures it should be noted also include all nuclei recovered from later contexts as well, for while the ‘necrolithic’ makes its first appearance in the late EBI Cyclades, it remains a strong feature of early EBII (Keros-Syros) burial practice. Thus, while the products of the ‘necrolithic’ *mechanism* had a fairly widespread distribution, it is apparent that the blade-cores were far more precious items in terms of their removal from circulation.

Naturally, this technological mechanism’s nature means that a far higher proportion of blades to nuclei would have been produced; one recalls Sheets and Muto’s ratio of 1 core : 83 blades (Sheets and Muto 1972). It remains true that they were obviously valued objects in EC society, having been recovered from a number of late EBI and early EBII rich tomb groups (in terms of the nature, quantity and variety of material culture deposited). These include the Panagia and Louros assemblages referenced above (**Table 7.9**). The preliminary reports detailing a core from the early EBII cemetery of Aplomata on Naxos, suggest a further rich assemblage to be added to the aforementioned burials (Kontoleon 1970a, 1970b, 1972).

In *Chapter Four* it was argued that during the EBA, it was the pre-formed nuclei that represented the most valued product of the pressure-flaked blade industry, due to their embodiment of the most skilled aspects of an already demanding craft. Given the ‘necrolithic’ *mechanism*’s accentuated technical prerequisites, one can propose that in

the working of obsidian during the third millennium, it was this technique's prepared cores that represented the most treasured object.

Beyond the value these nuclei gained through what they represented in terms of skill and technical accomplishment, they would have been valued through their histories of association with their makers, reducers and owners (cf. Kopytoff 1986). Certainly, given the size of the 'necrolithic' blades and cores it would not have been necessary for an individual to have seen their (hyper-restricted) manufacture in order to appreciate how different, or 'special' they were. By extension, their distinctiveness would have enabled the formation and transmission of cultural biographies, recording their place of production, associated event and knapper involved in their production. It is this concept that lies at the heart of the 'necrolithic', with regard to both its emergence and significance in EC society.

Certainly, given the rarity of 'necrolithic' cores, probably few of these nuclei were in circulation at any one time. Furthermore, with their concentration amongst the burial grounds of the central and southern Cyclades, in particular Naxos (**Figure 7.13**), it suggests that this hyper-restricted technology may have only been performed by knappers residing in this region. In turn, one could argue that this distribution is merely an indication of those communities (of members thereof) who were capable of gaining access to the nuclei on a permanent basis, i.e. those who could remove the blade-cores from circulation through consuming them in burial rites.

Alternatively, intuition makes me consider Melos and the community of Phylakopi as the likeliest home of this craft, despite the fact that we currently have no provenanced 'necrolithic' burial material from the island's (admittedly limited) burial record. This is partly due to the large core mentioned by Bosanquet that may have been recovered from the settlement (see above). It is also the case that if anyone had the opportunity to develop a *mechanism* that involved an increased "number of production

stages and steps to create more technologically complex or elaborately decorative items” associated with attached specialists (Gero 1989: 95), it would have been the Melians.

Wherever the origin of the knappers wielding this craft, the evidence suggests that this technological *mechanism* did not merely represent an element of every blade-knapper’s repertoire to be performed on special occasions (the ‘party-trick’ model). Instead, this technique was probably only known by a very small number of people *living within the islands* at any one time, probably organised on a direct lineage or kinship basis. To clarify my arguments, a tentative reconstruction of how the technique was employed shall now be offered.

7.2.8 - The ‘necrolithic’: A reconstruction

To summarise, there are a number of reasons for believing that the ‘necrolithic’ blades were produced only a short while before they were buried (primarily their freshness, unused or otherwise). It also seems probable that the technical performance involved in their manufacture was of some consequence. It is suggested that the sponsorship of the knapper who wielded this skill (or at least the event within which the blades were produced), can be seen as a form of social currency in the EC world, another potential mechanism through which ‘bigmanship’ could be both created and maintained (cf. Clark and Parry 1990: 322-23). How this was achieved in practical terms probably relates to the nature of social action within the funerary contexts of these late EBI communities.

Ethnographic and ethno-historical records describing small-scale island societies recurrently document the prestige attributed to those individuals who have experience of foreign lands and the esoteric and powerful knowledge that they are perceived to have gained in the process (Helms 1988). Thus, in the EBA Cyclades, one means of achieving status would probably have been to undertake ritualised and politicised

voyages beyond their homelands and on return to their regale their communities with the gains offered by the contact with distant lands and people (Broodbank 1993). In turn, the maintenance of any social standing accrued from such experiences may have relied on that individual's ability to retain their link with the esoteric and exotic. A primary mode of achieving this would have been through that person / corporate group's establishing exogamous social relations, such as the exchange of spouses and entering into trade-partnerships (cf. Kaeppler 1978; Irwin 1983; Hommon 1986; Spriggs 1986).

The funeral of an important member of an EC community would have formed a recognised context for kinship members and trading partners to be brought together. It would have permitted the reconfirmation and renegotiation of social relations and *provided an opening for junior members of the community* to participate anew in these processes of creating individual and corporate identity. Thus one can imagine that the head of the host group would have attempted to draw to the burial-ground as many of their contacts as possible (kinship and political ['economic']), both as social necessity and as a show of power and influence. The knapper and their 'necrolithic' craft would have formed a part of this ritualised display of social inequality, though what relationship they had to the power-brokers of EC society is unclear. It seems improbable that the knapper would have been a prestige figure *per se* (cf. Helms 1993), instead perhaps occupying a more liminal space within society (cf. Budd and Taylor 1995). Their status would have related partly to their esoteric knowledge and practice but also that of all obsidian workers they probably enjoyed the greatest movement amongst the Cyclades and beyond, with experiences that others could only imagine.

One can perhaps imagine the knapper as a renowned figure of wonder, summoned by a patron to the cemetery to perform their craft, the 'conspicuous production' of fine and long blades for not only the dead but also the living. As with any burial rites, the events surrounding an inhumation would have been of as much

significance to the living as they were for the dead. Symbolically there was much to be gained within this context, much being achieved through the manipulation of material culture, its transferral, accumulation and consumption, not only below ground through the burial of grave goods, but also above ground. Here we return to the anomaly of the 'missing' pieces from the multiple-blade assemblages of Agrilia and elsewhere. Breakage alone is an insufficient explanation as to why so few blades conjoined where more than one were found together, for the late EBI burial record occasionally included blades that had snapped during, or soon after, removal from the nucleus. It is suggested that the intermediary blanks were missing for a good reason, for they had been distributed amongst the living as part of the funerary rites, a 'one for you, one for the dead' model.

One also has to explain why in a number of these multiple-blade assemblages the evidence suggested the use of more than one core in their production (as indicated by blade length, curvature, colour and banding [pers. obs.]). A good example of this is the group of material from the aforementioned Tomb 56, Panagia (**Plate 7.2**), for a 6.02cm difference exists between the longest blade and the longest of the cores (15.00 - 8.98cm). Naturally any nucleus will diminish in length as it is reduced, a process that may be accentuated by platform rejuvenation, but it is unlikely that so much of a core could have been lost without irreparably altering the flaking angles (Pelegrin 1984a: fig. 2).

Assemblages such as this one may indicate that more than one knapper was involved in the burial rite, as one can imagine that the ability to draw on more than one of these 'hyper-specialists' would have conferred great renown on the event's patron. Alternatively, it could suggest that a single knapper was responsible for working more than one nucleus that had either been brought to the cemetery already prepared, or were provided by the sponsor, or those who had come from afar to attend the burial rites.

Returning to the issue of these artefacts' potential for accumulating cultural biographies, in most instances this would not have been realised (as far as the blades are concerned). The majority were consumed in burial rites only a short while after their manufacture, enjoying limited ownership and movement, though a selection appear to have remained above ground having been presented to certain members of the audience. Conversely, the 'necrolithic' nuclei would have enjoyed considerably longer lives prior to their burial, experiencing a number of production stages from raw nodule, via rough-out to fully prepared article, stages in their lives that one need not necessarily have equated with either a single craftworker, or owner. Indeed, the initial preparation of these nuclei may have been sponsored by an individual, kinship group, or community who at the relevant time would call on the knapper (or their offspring over time), to present them with the core to remove a certain quantity of blades. A slightly different interpretation would see the owner[s] of the nucleus taking it with them to the island where the funeral was to be held, to offer some of its body to the host[s] as part of the burial rites, with the core then either returning home, or being passed to another individual as a gift (or their turn to keep it), or being taken completely out of circulation through its burial.

All the above scenarios are possible given the nature of EC society as we currently understand it. The underlying theme that serves to link all three interpretations is that in the process of their preparation, reduction, movement and various associations, these cores will have come to embody (past) events, people and social relations. Thus, in enacting the 'necrolithic', the knapper would have been 'peeling off' blades that contained the fabric and history of their society (and this is not to broach the subject of what the raw material may have symbolically conveyed cosmologically, a subject briefly alluded to in *Chapter Two* [cf. J. Clark 1989: 317; Taçon 1991]).

In this light one can perhaps appreciate the extraordinary nature of the assemblage from Tomb 56 Panagia that contained not only 5 blades of the highest quality and length, but also three cores. If the 'necrolithic' nuclei are to be seen as embodying such a depth of social relations and EC history, their consumption through burial marks an important end in a series of narratives. Therefore, such acts may have been more concerned with terminating a series of inter-personal and inter-group relationships rather than underwriting them, though by extension this leaves them to be renegotiated and contested anew. The 'necrolithic' can therefore be seen primarily as a mechanism for social reproduction (cf. Clark and Parry 1990: 293-94).

Thus in the Panagia individual's burial, we possibly have the closure of numerous social and historical narratives. Interestingly, the interment of more than one core is paralleled by the 'doubling up' of other meaning-laden objects in the grave, including the copper bracelets and pigment preparation sets (stone vessels and colorants). These objects pertain to another mechanism for relaying and embodying social relations, that of personal display and body modification, a subject that will shortly become the focus of discussion. It does serve at this point to remind us that there would of course have been other vehicles for the constitution of society, of which the marble figurines are some of the most obvious candidates (cf. Broodbank 1992a).

7.2.9 - The 'necrolithic', the body and late EBI Cycladic society

A further important aspect of the 'necrolithic' phenomenon, is that it formed an integral feature of the forging and expression of a person's identity in the EC period through its role in body modification. It has already been argued that on the basis of form and cross-cultural parallels, the fine obsidian blades from EC tombs served as implements for depilation, tattooing and / or scarification, albeit symbolically given that most were buried unused. It is within a number of Plastiras and Kampos group burial

assemblages that these implements are first provided with a material context that emphasises the practice of body modification, including their association with pigments, metal jewellery and marble figurines with traces of painted designs on face and body.

The interpretation gains further weight in EBII due to these blades' regular occurrence alongside bronze tweezers and other bronze implements with long fine edges, described as 'cosmetic scrapers' and 'razors' (Branigan 1974: 31-34; **Figure 7.19; Plate 7.9**). There are also contemporary representations of the human form provided by the Cycladic marble figurines, that through their painted detail indicate aspects of EC coiffure, adornment and direct body alteration (Getz-Preziosi 1987b: 55, fig. 29; Renfrew 1991: 117-22, fig. 7, pl. 78). Indeed, although most of these figurines are now of a pure white form, study has revealed that many, if not most originally depicted "head and pubic hair, lycanthropic eyebrows and staring almond eyes, densely tattooed dots or vertical gashes over most of the face, and necklaces and bracelets at throat and wrist" (Broodbank 1992a: 544). While females are commonly shown with long flowing hair, the few male figurines have short hairstyles that "would have required the use of a sharp razor-like tool to maintain" (P. Getz-Gentle, pers comm), and have no indication of facial growth, presumably because the face was clean-shaven (Blinkenberg 1896: 54). Finally, obsidian blades have been recovered in a Geometric (Iron Age) tomb group at Praesos, east Crete, associated with recognised toilet equipment (Bosanquet 1901-02: 251, 1904: 232). It is possible that these blades were ancient products collected by someone who appreciated their potential use as razors and employed them as such. Alternatively, they may have been recognised as depilatory implements on the basis of folk-memory, or perhaps the blades were produced for such purposes, continuing a practice of Bronze Age origin (cf. Runnels 1982: 364-65). Even if the EC blades could be positively identified as razors by microwear or residue analysis (cf. Loy

1989; Hurcombe 1993), it remains to be explained as to why it was deemed appropriate to place them alongside the dead.

Returning to the issue of the ‘necrolithic’ and its integral relationship with the process of body modification, one now turns to the appearance of obsidian ‘core-pestles’ in the Cycladic late EBI burial record. Unknown from burials of the Pelos-Lakkoudhes Group, a small number of blade-cores are documented from Plastiras and Kampos group grave assemblages. It is no coincidence that all of these nuclei (where published and / or seen first-hand), relate to the ‘necrolithic’ technique, none are of the form usually seen in domestic spaces. All of the examples studied were unipolar and predominantly conical in shape, a result of the reduction strategy described above (7.2.5). Furthermore, a large proportion of these cores had their platforms ground flat (**Table 7.8; Plate 7.1 & 7.10**), a feature that I previously suggested may have related to core preparation to facilitate fracture-initiation (Carter 1994: 131, after Lawn and Marshall 1979: 66; J. Clark 1985: 9-12, 1989: 299-300). Subsequent study of these nuclei has shown that the proximal ends of the blade negatives had been obliterated by the grinding, proving that the trituration occurred *subsequent* to blade removal. In a number of instances these nuclei were recovered from tombs that contained colorants and artificial stone surfaces on which to prepare them (palettes, bowls, saucers), including (once more), the Tomb 56 Panagia and Tomb 26 Louros Athalassou assemblages (Ekschmitt 1986: 32, pl. 3). Furthermore, there are a few examples where pigments have been recorded as adhering to the core’s ground surface, including an example from Ios in the British Museum (pers. obs.) and one from Amorgos in the Ashmolean Museum (now unfortunately mislaid). In both instances the colour was red, with the piece from Ios currently being analysed to ascertain the material employed (Carter *et al* in prep).

From their form, context and occasional residues, it is apparent that the smoothing of the platform was due to these nuclei being employed as pestles. It is also

important to note that in terms of blade manufacture none had been exhausted prior to their being employed in their secondary function. The fact that many more blades could have been removed, suggests an intentionality in the production of these ‘core-pestles’, with the knapping process deliberately ceased at the point when the core was conical in form with its platform circular in plan. One gains the distinct impression that aesthetic, or stylistic considerations played a not inconsiderable role within the ‘necrolithic’ *mechanism*.

While a strong case can be made to suggest that the ‘necrolithic’ blades and cores were inherently related to body modification, it remains to comment on why there should have been such an increased emphasis on physical alteration and personal display in late EBI Cycladic society.

7.3 - Discussion: Body Modification and Political Structure in the Late EBI Cyclades

Anthropologists and sociologists have documented the cross-cultural habit of employing the body as a medium to project a person’s status, gender, individual and corporate identities (cf. Blacking 1977; Ellen 1977; Poole 1982; Layton 1989; Shilling 1993; Synnott 1993; Gell 1993; Mageo 1994, *inter alia*). Hair provides one potent symbolic medium for such purposes, as for instance in Aztec society where most people shaved their heads (coincidentally with prismatic pressure-flaked obsidian blades), because only the clergy, nobility and army were allowed to have long hair (Maccurdy 1900: 421; J. Clark 1989: 311-12). Similarly, a strong case has been forwarded that within Minoan iconography, hairstyles and facial hair expressed both status and “stages of maturation” associated with ‘rites de passage’ (Koehl 1986: 100). For example, a bearded male seems to have signified priestly status (N. Marinatos 1986: 43), a shaved

scalp indicated youth, and flowing, carefully styled locks symbolised adulthood and aristocracy (Koehl 1986; Karageorghis 1990).

Although the concept of the face as a window into personal identity and the soul is a Western construct from the Renaissance (Magli 1989), one cannot help but note the attention given to the face and head in the EC world and its near neighbours. It is the skull that is carefully retained in multiple tombs, while the rest of the skeleton is removed to make space for the new inhumation (Mylonas 1959: 72-75, pl. 55; Doulas 1977: 29-64; Koumouzelis 1989-1991: 226, pl. 92g). Equally, the individual was often provided with a stone or pottery sherd 'pillow' and it is usually in front of the face, or around the head that the grave goods were deposited (Tsountas 1898: 151; Stephanos 1905: 218; Doulas 1977: 63; Fotou 1983: 42). One can also note the change in EC figurines at this juncture, with the 'schematic' idols of the Pelos-Lakkoudhes Group replaced by far more stylised variants in the Plastiras and Kampos group (Renfrew 1969). Of note is the new emphasis on depicting the head and face, a number of which have traces of having been decorated (cf. Doulas 1977: 99).

So why should such an increased emphasis have been placed on the body at this time? Firstly, it should be noted that body modification was not a new phenomenon within Aegean society. The stone beads and necklaces of the Pelos-Lakkoudhes burials have been referenced in *Chapter Six* and there is plentiful evidence for the exploitation of pigments, plus tattooing and body painting from the Upper Palaeolithic onwards (cf. Koukoule-Chrysanthake and Weisgerber 1996; Talalay 1993: 70-72). Instead, the late EBI period witnesses a deliberate and radical break within an existing tradition, with a recognised mode of expressing image and identity re-worked not only to express political structure but also an important element in its creation.

The idea of reconceptualisation is an important one, for the late EBI sees the creation of certain new modes of structuring and displaying inequality, but most of these

acts and the contexts of their performance already existed, albeit in different forms. The case of body modification is a case in point, as is the extreme development of pressure-flaked blade production, an already significant technical act, into the hypertrophic craft of the 'necrolithic'. It is another context of social distinction that we must now turn to before returning to the question of the late EBI 'body politic', that of long-distance voyaging and EC contact with its outside world.

7.4 - Beyond the Cyclades

As stated at the beginning of this chapter, the late EBI/EBII period is an important one in Aegean prehistory for providing the earliest secure evidence for *cultural* contact between communities of the Cyclades and the surrounding regions. Material culture of the Plastiras and Kampos Groups has been recovered in Crete, Euboea, Attica, islands of the northern Aegean and the west Anatolian littoral (**Figure 7.20**), arguably representing the 'genesis' of Renfrew's EBII 'international spirit' (Renfrew 1972: 451-55). As with the EBII period, the displacement of 'Cycladica' across the Aegean is thought to have been instigated by members of Cycladic communities, the contemporary significance of which has been argued to be more political than economic (Broodbank 1993). For example, the material recovered beyond the Cyclades appear to be high-status goods and comes from primarily funerary contexts (cf. Renfrew 1972: fig. 10.5), while conversely very few Helladic, Minoan, Anatolian or northern Aegean imports have been recognised in the islands (cf. Warren 1984; Karantzali 1996).

It is suggested that in certain instances the movement, working and consumption of obsidian should be considered part of this process, for coterminous with the appearance of 'Cycladica' at these communities, is their use of the material in burial practices in apparently identical form to that seen in the Cyclades.

7.4.1 - Crete

From Crete, fine obsidian prismatic blades have been recovered from a number of later EMI burial grounds (**Figure 7.20**). Three of these deposits also contained Kampos Group ceramics: Aghia Photia on the north coast of east Crete (Davaras 1971; **Plate 7.11**), plus the Pyrgos and Kyparissi Caves in central Crete (Xanthoudides 1918; Alexiou 1951). The Aghia Photia assemblage is in fact dominated by EC style material culture and burial practices, prompting some scholars to argue that the community represents a Cycladic colony, an issue that will be discussed in detail in *Chapter Ten*. A further burial assemblage of this period containing obsidian comes from Ayia Kyriaki, a small robbed tholos tomb in the Mesara (Blackman and Branigan 1982).

In each case the burial groups essentially replicate those from contemporary Cycladic tombs, for they are predominantly comprised of unused pressure-flaked blades manufactured during the *plein temps de débitage* (**Figure 7.21**). Differences do exist between the EC and EM burial groups, most notably in the fact that the ‘necrolithic’ technological *mechanism* is virtually unknown from Crete (**Table 7.5**). Blades from EM tombs are of the same scale and form as those from their contemporary domestic assemblages (cf. Van Effenterre and Van Effenterre 1969). Ascertaining how the obsidian blades were consumed in EM burial rites is a little more difficult, in part due to data remaining unpublished, or the material lacking specific contexts (as in the case of the cave sites). Evidence for a deviation from EC social practice is provided by a group of late EMI-IIA material from the Ayia Kyriaki tholos, recovered from a suggested ‘foundation deposit’ rather than the burial chamber proper (*Level L6* - Blackman and Branigan 1982: 16, fig 5). The significance of this deposit and the relationship between Cycladic and Mesaran funerary practices are discussed in far greater depth in *Chapter Eight*.

7.4.2 - *The Mainland and Euboea*

On the mainland at this time one may see a similar image to that provided by the Cretan data, with obsidian being buried in manners not entirely concordant with those seen in the islands, distinctions that once more presumably related to more immediate constructs. Though material culture of the Plastiras and Kampos groups has been recovered from the EH cemeteries of Agios Kosmas, Tsepi and Manika (**Figure 7.20**), a combination of mixed deposits and incomplete publication means that it is only at the latter site that the burial of obsidian can be dated to this period with any confidence (Mylonas 1959: 152-56; S. Marinatos 1970a, 1970b, 1970c; Sampson 1988b: 113-19, 1988c).

A range of evidence exists for contact between the community of Agios Kosmas and the EC world, with the cemetery producing quantities of both late EBI and early EBII 'Cycladica'. This includes fragmentary marble bowls and figurines, a few of which seem to be true imports rather than imitations (Mylonas 1959: fig. 163-65). The community's mortuary practices display many similarities with those of the Cyclades, including the interment of crouched inhumations in slab-built cists, the head often being provided with a stone 'pillow' and a reverence shown to the skull when a new burial meant the disturbance of the old. Conversely, differences may be noted in terms of the numbers interred in the Agios Kosmas tombs, with multiple inhumation the norm, including at least 9 individuals recovered in the late EBI-II Grave 7 (*ibid*: 66). Furthermore, unlike the Cyclades, grave goods rarely accompanied the dead but were instead placed around the tomb's edge, often in a space defined by low walling (**Figure 7.22**).

Obsidian was recorded from three of the 4 tombs at Agios Kosmas whose material culture dated primarily to the late EBI/EBII: graves 1, 7 and 10 (*Appendix 3*).

While the assemblages retained the central element of Cycladic practice, i.e. the consumption of fine prismatic blades, they also included a quantity of general flaking debris and a higher incidence of nuclei. For instance, 5 blades, 19 chips and 2 cores came from around Grave 7, though unfortunately it is impossible to ascertain how many individual deposits these assemblages represent, or with whom or what they were associated (Mylonas 1959: 84-87). Notably, this tomb, the largest of the North Cemetery, also produced a decorated frying pan that has an almost exact parallel from Agrilia on Epano Kouphonisi (*ibid.*: 85, fig. 146; Zapheirou 1984: 37, fig. 3a). Also, from the area outside the grave where the obsidian was recovered, came a pestle and two marble palettes smeared with red pigments, plus three mini-aryballoi, one of which contained traces of blue colorant and had stamped spiral decorations on its shoulder, closely recalling examples from Agrilia, Louros Athalassou and Ayioi Anargyroi (Mylonas 1959: 86, drawing 61; Zapheirou 1984: 36, fig. 2b).

The association of obsidian with this latter group of material cannot be seen as coincidental, for its emphasis on body modification provides an exact parallel to contemporary Cycladic mortuary practice discussed above. Indeed, there is considerable evidence for the use of pigments at Agios Kosmas, with both red and blue colorants have been found in both settlement and cemetery, either in ceramic containers, or smeared over palettes and pestles (Mylonas 1959: 106, 143).

That the people of Agios Kosmas were in direct contact with members of Cycladic communities is beyond doubt. From the manner that obsidian and other aspects of EC material culture were consumed in their mortuary habits one can furthermore suggest that these people were also aware of, and adopting components of Cycladic social practice. In turn one may also see differences, or rather additional elements in how obsidian was ritually consumed at this site, that may pertain to more local social constructs. It is tempting to see these distinctions in how funerary rites involving

obsidian were expressed, somehow relate to the fact that Agios Kosmas was obviously an important centre in the procurement, working and re-distribution of Melian obsidian at this time. Having not studied these assemblages first-hand, it would be doing the material an injustice by attempting to take this analysis much further.

7.4.3 - Iasos and Western Anatolia

Along with a number of other ‘Cycladic’ features, the recovery of three Plastiras Group marble vessels from the cemetery of Iasos in Caria (Pecorella 1977: 72, fig. 5), has been interpreted by some scholars as the traces of a migrant island population (cf. Doumas 1977: 67-68). While these objects indicate some form of contact between the two regions in late EBI (Renfrew 1972: 166, fig 10.4-5; Doumas 1977: 16-18, fig. 5, 67-68), most grave goods show no affinity with EC material culture. Similarly, although the cist-graves parallel closely island tombs, it is equally important to acknowledge western and central Anatolian comparanda (Wheeler 1974: 417-18).

A small amount of obsidian was recovered from the cemetery, primarily in the form of small blade fragments from Tombs 44, 61 and 65 (Pecorella 1984: 112-14, figs. 13, 15-16 & 18). Given the material’s extreme rarity at the site, the obsidian was probably procured through the same modes of contact that resulted in the marble prestige goods entering the community. The fragmentary nature of the material interred and the traces of retouch and / or use-wear on one of the pieces suggest that while an ‘original’ Cycladic practice was being adopted, the end-result was a localised interpretation of an exotic social practice.

7.4.4 - The North Aegean Islands: Poliochni on Lemnos

While the site currently has no burial evidence for the period under consideration, Poliochni, on the northern Aegean island of Lemnos (**Figure 7.20**),

provides some of the best evidence for the movement, use and consumption of obsidian being located in political rather than economic context. Firstly, it is noteworthy that the first appearance of obsidian dates to late EBI (Periodo Azzuro / Poliochni Blue), a period that also sees strong links between elements of this community's ceramic repertoire and that of the Kampos Group, specifically evident in the pedestalled bowl, or 'fruitcup' (Warren 1984; Manning 1995: 77-79; **Figure 7.7**). The evidence for direct cultural contact between Poliochni and the Cyclades is further strengthened when one notes that obsidian is only present in the form of blades (c.12 examples), suggesting that the community was procuring finished items rather than raw material for its own purposes (Bernabò-Brea 1964: 612, pl. CV,30-36). Furthermore, the obsidian had been worked by a different technology to that employed to alter locally available lithic resources, that suggests a reliance on outsiders for the manufacture and provision of these pieces.

7.5 - Endnote: The Late EBI Cyclades and the 'Body Politic'

The late EBI period sees the emergence of a different southern Aegean, with heightened cultural interaction, much apparently instigated and undertaken by members of Cycladic communities. This new form of voyaging is considered to have been of great social importance, involving the permanent and impermanent (cyclical) displacement of people and material culture. At one level one can see that the movement, exchange and consumption of obsidian in the form of the 'necrolithic' cores and blades, would have formed an important element of this process. One may also imagine that obsidian in less hyper-restricted forms may also have accompanied such expeditions (as raw material, or pre-formed nuclei), disseminated through lower-level social intercourse (cf. Leach and Leach 1983). Equally, obsidian would continued to have been distributed in a number of other manners, procurement strategies beyond the

politicised voyages of the EC 'bigmen', including no doubt some element of direct access by other Cycladic islanders and conceivably members of certain communities beyond the islands. Each form of movement and consumption would have involved different sets of meanings, values and social significance.

It has also been shown that a new symbolic emphasis on the body can be shown to coincide with these activities in EC society. Arguably body modification not only reflected these changes in society but also formed part of how they were created. With regard to the first point, the body provides a powerful medium through which new individual and corporate identities could be expressed. Obviously other media would have been employed for much the same purposes, but a hallmark of this era is that there was a great importance to the movement of people and coming into contact with the 'other' (and the creation of new contexts within which to conduct social intercourse), leading to a heightened self- and group-awareness. Thus we have a new importance accorded the visual projection of identity, status, origin and location within the newly contested social relations, employing a range of striking and powerful techniques, including painting, tattooing, scarification (though this tends to be a more equatorial phenomenon as the best results are seen on dark skin), coiffure and adornment.

The actual undertaking of the body modification was also of consequence, with the implements and raw materials employed further helping to create and sustain the 'body politic'. Whether the process was permanent, such as tattooing related to *rites de passage*, or impermanent modes such as body-painting, pertaining to perhaps more cyclical and / or inclusive events, the items chosen for splitting, piercing, daubing or adding to the body were far from mundane.

If one considers the nature of these objects, the 'necrolithic' blades (razors / tattooing implements) and 'core-pestles', the silver and bronze jewellery, they are all products of restricted technologies and raw materials. For instance, the blue pigments

that make their first appearance at this time, have been shown, where analysed, to be the copper compounds azurite or malachite. As such, their exploitation was related almost certainly to the prospection and procurement of metals proper. Furthermore, some of the red pigments at this time may in fact be cinnabar (cf. Higgins 1972), as opposed to ochre as was commonly assumed (cf. Renfrew 1969: 23; Blomqvist 1990: 240). The significance of this discovery is that the latter colorant is relatively common in the Aegean with a proven exploitation of many millennia (Honea 1975; Cullen 1995: 282; Koukoule-Chrysanthake and Weisgerber 1996), yet cinnabar is considered to be very rare and as a mercuric sulphide it also has interesting properties.

This thesis does not unfortunately allow further discussion of these matters, but it is suffice to state that these artefacts' role in the construction and expression of power in late EBI society should not be seen as passive. For these implements and materials in themselves represented 'bodies of knowledge', whose procurement, ownership and manipulation all contributed to the creation and maintenance of the owner's social being.

- CHAPTER EIGHT: OBSIDIAN, DEATH AND EARLY EBII INTERNATIONALISM -

8.1 - The 'Internationalism' of the Early EBII Southern Aegean

Defined by the Keros-Syros Group in the Cyclades, EHIIA on the southern mainland and EMIIA in Crete, this period witnessed an expansion of the Cycladic-instigated inter-cultural contact and exchange that had originated in late EBI. For the first time, goods and practices of EC origin or imitation are seen in the Argolid, Corinthia, the southern and western Peloponnese plus southern Crete. Indeed, early EBII is Renfrew's original period of the 'international spirit', where certain ceramic, metal and stone artefact-types were produced over much of the southern Aegean (Renfrew 1972: 451-55; **Figure 8.1**).

The nature of 'Cycladica' circulating at this time also changes, for whereas the evidence for late EBI cultural inter-connectivity is attested primarily through a flow of élite objects consumed in the recipient's funerary rites, the early EBII period saw a wider range of EC goods making an equal impact on both settlement and burial contexts. For instance, the movement of storage vessels alongside fine wares, suggests that the transport of produce had become embedded within what had originally been a primarily socio-political phenomenon (not that this is to diminish the significance of foodstuffs and / or liquids). Fragments of the distinctive Keros-Syros slash-handled pithoi have been recovered from coastal sites around the Aegean and the waterways leading from it (such as Manika and Eretria Magoula on the Euboean Gulf), including the southern Laconian coast and Kythera (Pavlopetri and Kastri), plus Knossos in Crete and Tigani on Samos (Milojčić 1961: pl. 16: 3; Harding, Cadogan and Howell 1969: 133; Coldstream and Huxley 1972: 80, pl. 17; Wilson 1985: 359, pl. 58; Sapouna-

Sakellarakis 1986: 206, fig. 68, pl. 42a, 1988-1989: pl. 14; Sotirakapoulou 1991: 151-52, pl. 302-308).

The early EBII funerary consumption of obsidian in non-Cycladic contexts essentially replicates the expanded distribution of 'Cycladica' (**Figure 8.2**) and is once more considered to be an integral part of the same phenomenon responsible for the dissemination, adoption and imitation of the more accepted forms of EC material culture and social practice. Before moving on to the description of these lithic assemblages it is first necessary to provide an outline of developments within island society at this time.

8.2 - The 'Trader Sites' and Power in ECII

The settlement pattern of the early EBII Cyclades displays some important changes from the preceding period, with the colonisation of more marginal islands such as Keros and Pholegandros and the emergence of a few well-connected communities displaying all the hallmarks of regional centres of power. Based on a combination of site size, estimated population, diversity and wealth of material culture, Broodbank (1989, 1993, 1995) has identified 5 such settlements, or 'trader sites', namely Chalandriani on Syros, Ayia Irini on Kea, Phylakopi on Melos, Palati-Grotta on Naxos and Dhaskalio-Kavos on the small island of Keros (**Figure 8.3**).

Situated in NE Syros, Chalandriani appears to be a new-founded community of early EBII date with no evidence for an EBI predecessor, as does Dhaskalio-Kavos on the small island of Keros between Naxos and Amorgos. The latter site does essentially represent a continuity in the importance of the southern-Naxos - Erimonisia region, with an apparent shift of power (and population?) from the earlier site of Agrilia on Epano Kouphonisi, an island that has only limited evidence of EBII activity (cf. Renfrew 1972: 520-21).

Phylakopi's importance in the EBII period as the pre-eminent Melian community may represent a continuity of a role in negotiating and participating within long-distance exchange networks forged in the EBI period (cf. Cherry and Torrence 1982). The same may be argued for Palati-Grotta (and its associated cemetery at Aplomata), where remains indicate a later Neolithic and EBI predecessor to the community (Karo 1930: 132; Kontoleon 1949, 1950, 1951; Hadjianastasiou 1988), the site acting as a nodal point in the cultural sphere that encompassed the land- and sea-scape of NW Naxos and NE Paros. Equally, Ayia Irini's strong links with Attica and Euboea follows the cultural perspective established by the inhabitants of north-west Kea from the FN onwards (Renfrew 1972: 75-77, 535-38; Coleman 1977).

Broodbank (1989: 327) has argued that these communities were of insufficient size to suggest the existence of any "advanced degree of organisational stratification", suggesting, by analogy with reference to similar small-scale societies in the ethnographic record, that power was probably based either on lineages of greater or lesser rank, or the creation of 'big-men' on the "grounds of individual merit" (*ibid*: 321). Some of the mechanisms through which power was created and maintained in EC society have been discussed in *Chapter Seven*, but the Chalandriani assemblage provides far clearer evidence for one practice in particular, that of the significance accorded long-distance voyaging. A relatively common object amongst this cemetery's well-endowed grave assemblages was the ceramic 'frying pan' (Coleman 1985). Depicted on one surface of a number of these vessels were high-prowed longboats, associated with maritime and celestial imagery, occasionally accompanied by the representation of female genitalia (**Figure 8.4**).

8.2.1 - Chalandriani, longboats and prestige

Broodbank (1989: 330-32) has made an argument for seeing the emergence of these elongated wooden craft as an “unusual and highly specific development” in EC society given the estimated size of the crew required to propel them and contemporary island demography. It therefore represented a politically potent mode of transport, for quite simply, very few communities in the EBA Cyclades would have been able to provide sufficient paddlers for such a vessel and cope with so many of its members being away, possibly for weeks at a time. It is therefore no coincidence that the vast majority of longboats within EC iconography came from Chalandriani, a cemetery of over 600 tombs, easily the island’s biggest necropolis and by extension the largest known population of the early EBII Cyclades (*ibid*; Hekman 1990: 19-20; **Table 8.1**).

While not considered “a cult vessel *per se*” (Broodbank 1989: 335), any long-distance voyage undertaken within such craft would have bestowed great prestige on those participating. Conversely, this need not imply that these boats did not fulfil a practical role in the transport of people and goods, albeit subsumed (or ‘embedded’) within a new, formalised and ritualised mode of movement through the Aegean waters,.

8.3 - Obsidian and Death in Early EBII

Returning to the funerary consumption of obsidian, it is clear that the funerary habits described in the preceding chapter continue largely unaltered into early EBII, centred primarily around the burial of fine, pressure-flaked prismatic blades (**Figure 8.5; Plate 8.1**). Once more, the conical, unipolar blade-cores are rarely documented, examples recorded from a select few EC cemeteries including the rich cemetery of Aplomata on Naxos (**Figure 7.12 & Table 7.7**). It also appears that the inclusion of one blade per inhumation continued as the ‘social norm’, along

with occasional multiple-blade assemblages akin to those of certain Plastiras and Kampos group burials (**Plate 8.2**).

A similar pattern may be seen in these implements' life histories, for microwear analysis indicates that the vast majority of blades continued to be deposited unused (**Figure 8.6**). From Keros-Syros graves in the cemeteries of Chalandriani on Syros, Agios Sostis / Apantima on Antiparos, plus Spedos, Avdheli, Ayioi Anargyroi, Akrotiri and Lakkoudhes A on Naxos, a sample of 67 blades were analysed, of which 62 pieces (93%) displayed no traces of use-wear (*Appendix 2*). If anything, a decrease can be seen in the number of pieces with use-wear, but this may be a reflection of the dominance of single-blade assemblages in the sample, for as with the Kampos Group material, one notes a correlation between used implements and multiple-blade deposits. Of the 4 pieces that were utilised prior to their burial, one came from the assemblage of 10 (possibly 14) blades from Agios Sostis / Apantima (Carter 1994: 132, fig. 2; **Plate 8.2**), the remaining three from Tomb 21, Spedos that contained 10 blades in total (Papathanassopoulos 1961-62: 120, pl., 51a; **Plates 8.3-8.5**). At some stage it would be most informative to include the data from the Aplomata cemetery to see if this pattern is reproduced elsewhere.

The largest group of blades comes from Chalandriani (**Table 8.2; Figure 8.7; Plate 8.1**), with obsidian recorded in 12 of the grave assemblages published (Tsountas 1899), and indications of further deposits via individual finds of no context from the Syros Museum (pers. obs.; Hekman 1991; *Appendix 2*). Indeed, the excavator described obsidian as a 'frequent' find from Chalandriani and the nearby contemporary burial ground of Ayios Loukas (Tsountas 1899: 100), recovered from c.50 of their combined total of c.700 graves (c. 7%). While this may not appear to be a large quantity of material, these figures must be seen in light of the fact that most burials were

unfurnished, thus obsidian blades were probably one of the most commonly interred artefacts, alongside the small semi-fine conical bowls / cups (cf. Hekman 1991).

Conceivably the lack of grave goods at Chalandriani and Aphenika (the largest early EBII Naxian necropolis [Stephanos 1910: 270-72]) could represent a change in social practice from the regular consumption of material culture in late EBI. Yet one can also recognise a few burial grounds of this time that witnessed an intense consumption of a wide range of material culture, most notably Aplomata in NW Naxos, plus what appears to be the remains of a very rich but badly looted cemetery at Kavos on Keros (Kontoleon 1970a, 1970b, 1971, 1972; Zapheiroulou 1968a, 1975; Lambrinoudakis 1976; Getz-Preziosi 1982; Broodbank 1995). Therefore, the early EBII period provides further evidence for differential social practice and funerary rites within the EBA islands, reflecting in part the inter-community and regional differences seen amongst Plastiras and Kampos group communities. This indication of differential social practice within the ‘cultural zone’ of the early Cyclades will be returned to below.

Finally, from their scale, it seems probable that these blades were produced by the ‘necrolithic’ mechanism, the longest example being 10.90cm long (**Figure 8.7**), with an average of 7.24cm (*Appendix 2*), Tsountas having previously noted that blades from Chalandriani and Ayios Loukas ranged between 5 and 9cm in length (Tsountas 1899: 100).

8.3.1 - Obsidian and social identity

The Keros-Syros tomb groups indicate a continuing significance accorded to body modification, with previous modes of altering one’s appearance being augmented by a range of implements described by some as a EBII ‘toilet kit’ (cf. Branigan 1974: 31-34). This commonly associated package of artefacts includes decorated bone pigment containers (that replace the mini-aryballoi), bronze tweezers, razors, scrapers and pins

(**Figure 7.19; Plates 7.9 & 8.6**). Blue and red pigments continue to be represented on figurines and smeared over stone pestles, palettes and bowls alike.

The élite nature of body modification is perhaps witnessed most clearly at Chalandriani, where it forms the overriding theme of the material culture consumed in the 32 'richest' burial assemblages published by Tsountas (Tsountas 1899; Doulas 1977: fig. 48). Three of the best examples are described below:

- Tomb 355 - a single inhumation associated with one pressure-flaked obsidian blade, bronze tweezers, a bronze 'scraper', a bone tube; 'pigment-containers'; a bone pin, a 'frying pan', 3 small marble bowls, 3 collared jars and a sea shell (Tsountas 1899: 112-13).
- Tomb 356 - a single inhumation accompanied by 3 obsidian blades, bronze tweezers, a bronze 'scraper', 2 bone tubes; 'pigment-containers'; 2 bone pins, a stone palette and pestle, plus a 'frying pan', 3 small bowls (2 marble), a collared jar and a scallop shell (*ibid*: 113). The frying pan bore the image of a longboat in its centre and female genitalia at the junction of body and handle (Coleman 1985: 208).
- Tomb 472 - single inhumation with 3 pressure-flaked blades, including one of 10.9cm in length; 4 bronze tweezers; 2 bronze pins; a bronze 'scraper'; 2 collared jars; a footed bowl; a marble spouted vase and a shell (Tsountas 1899: 115; **Plate 8.7**).

As in the late EBI assemblages, the contextual association of obsidian blades suggests their continued (symbolic) role as razors or implements for tattooing and / or scarification. For instance, in 5 of the Chalandriani graves they were recovered alongside bone tubes (**Figure 7.19**), an association also seen in Tomb 21 Spedos

and at Notina, Amorgos (*Appendix 2*), with the likelihood that a similar correlation will be documented at Aplomata when fully published (Kontoleon 1972: 153, pl. 144b). The assemblages from Tombs 356 and 472 are also interesting for their number of obsidian blades, for usually only a single example accompanied the dead at this necropolis (**Table 8.2**). It may thus be possible to suggest a “doubling of the power and attribute” of these pieces (Broodbank 1989: 328), a theme also expressed through the duplication of tweezers, bone tubes and pins.

As alluded to above, the evidence does indicate the existence of differential funerary habits amongst these communities, in particular between that of Chalandriani and the two sites of Aplomata and Dhaskalio-Kavos. Firstly, the nature of burial at Chalandriani is somewhat different, with the dead placed in small corbelled tombs rather than the more common cist-graves (**Figure 8.10; Plate 6.9**) a grave type that appears to be peculiar to Syros (Doumas 1977: 47-49). With regard to the treatment of obsidian, the data from the early EBII burials of the Southern Naxos - Erimonisia region indicates a large degree of continuity of social practice from the late EBI. For example, from Spedos Tomb 16 there is the combination of a multiple-blade deposit and a conical core employed as a pestle, directly comparable to Kampos Group deposits from nearby Louros Athalassou and Agrilia on Epano Kouphonisi. Chalandriani seems to operate within a slightly different sphere, geographically and in terms of social practice.

From its grave goods it is apparent that the Syran community's cultural perspective had a much more 'northerly' direction, sharing close links with Ayia Irini and Manika. This is not to say that much of the material culture consumed in Chalandriani's burial practices cannot be paralleled in the central Cyclades, but there are some notable differences. Firstly, in comparison to sites on Naxos, Ios and Keros, Syros has produced only a few of the marble folded-arm figurines. In part this may reflect the

lack of marble on the island (unlike the others), yet at the same time a quantity of other marble objects, such as bowls, have been found in the necropolis (cf. Hekman 1991). Turning to obsidian, the complete lack of ‘core-pestles’ is particularly surprising given the emphasis placed on the burial of material culture related to body modification and the recovery of pestles made from other materials (Tombs 322 and 356 [Tsountas 1899: 111, 113, pl. 10, 35-36]). Whether this reflects a general lack of access to raw material and technical skill is difficult to ascertain, for if we understand the temporal relationship between the Keros-Syros and Kastri Groups correctly, then Chalandriani has a yet to be discovered settlement (Hekman 1990, 1991), implying that we lack the ‘domestic’ contexts where blade production (‘necrolithic’ or otherwise) may have occurred.

8.3.2 - *Aplomata: Contesting ideologies*

The wealth of the Aplomata cemetery probably indicates the existence of another ‘trader site’ at Palati-Grotta in north-west Naxos, yet here one sees a different burial record to that of Chalandriani. Excavations investigated a total of 28 tombs (none intact, due to later intrusions), mainly of pit-type, often quite deep and part-lined with short stone-built walls (Fotou 1983: 23-25). In contrast to Chalandriani and many other early EBII Cycladic burial grounds, each of the single inhumations was accompanied by grave goods, with many of the assemblages of notable wealth. This included the consumption of a significant quantity of marble (yet conversely, little pottery), in the form of folded-arm figurines, both standing and more rare seated variants, plus an array of vessels such as bowls, pyxides and two ‘frying pans’ that are known elsewhere only as a ceramic type (Kontoleon 1970a: pl. 216-20, 1970b: pl. 192b-193a-b). Also recovered was a number of steatite and metal items (including silver and lead bangles plus a seal), and a quantity of red and blue pigments, both loose and in bone tube containers (Kontoleon 1972: 153, pl. 144β).

While a certain amount of these grave goods shows that body modification was an important element in the creation and legitimisation of social differentiation within this community, the inclusion of so many stone vessels and figurines indicates that here (as opposed to the power brokers of NE Syros) social organisation was expressed on slightly different bases. The obsidian from this cemetery provides further evidence for the differential modes of social development and behaviour witnessed between these two communities. While it is not possible to precisely document the quantity and distribution of obsidian amongst the graves, preliminary reports have inferred that a large amount was recovered, including many blades and some cores in all graves dug in the first season (Tombs I, II, IV, V and X [Kontoleon 1970b: 152]; **Table 8.3**). Obsidian was also reported from Tomb XII and a great quantity of blades and cores in the third season in Tombs XII, XIII and XIV, and finally ‘a quantity of obsidian’ including cores and blades up to 17cm in Tomb XXVII (Kontoleon 1971: 178, 1972: 154; Lambrinoudakis 1976).

Indeed, the Aplomata lithic assemblage provides us with the pinnacle of Aegean pressure-flaked blade technology, for these tombs have produced a few blades of outstanding length and quality, with the longest examples of the ‘necrolithic’ technological *mechanism* seen since its emergence in late EBI (**Table 7.6**). Three of the blades published are: 13.20, 13.70 and 21.00cm long, the latter some 6cm longer than any other example currently known (Televantou 1990: 76 no.’s 61-63). These remarkable products represent the work of a highly skilled knapper (the nuclei in the Naxos Museum are also of high quality in terms of the regularity of blade removal [pers. obs.]), and on a purely subjective basis, are ‘at home’ within the rich and varied contexts provided by Aplomata’s tomb assemblages.

Structurally, it appears that the assemblages when fully published will show greatest similarities with those from Southern Naxos and the Erimonisia, with multiple-

blade assemblages and a number of nuclei, including some 'core-pestles' (cf. Televantou 1990: 76, pl. 64). The inclusion of the latter articles is, as already noted, another feature at odds with the Chalandriani assemblages, but paralleled in contemporary Naxian burials at Spedos, possibly Karvounolakkoi, plus 4 other examples from illicit or unpublished cemetery excavations in the east and south of the island (**Figure 7.12 & Table 7.7**; Papathanassopoulos 1961-62: 120, pl. 51a; Televantou 1990: 76, pl. 60; pers. obs.).

8.4 - Beyond the Cyclades: Euboea and the Southern Mainland

Quite a large number of graves containing obsidian have been documented from early EBII burial grounds on the southern mainland (**Figure 8.2**), enlarging the distribution pattern of late EBI, but retaining its maritime bias (*Appendix 3*). There is a concentration of assemblages from sites bordering the Euboean Gulf, the Corinthian Isthmus, plus a few outliers situated on the coasts of Laconia and Elis. The largest groups of material come from Agios Kosmas and Manika, two communities known to have enjoyed strong cultural links with the Cyclades from late EBI (*Chapter Seven*). Indeed, the quantity of 'Cycladica' from these sites has led some to argue that they were established as trading colonies by migrant islanders (Mylonas 1959: 155, 162-3; Sapouna-Sakellarakis 1987; Sampson 1988c). The funerary consumption of obsidian forms an important element of the adoption and articulation of EC practice and can thus help to enlighten the issue of these communities' cultural identity. Having studied the Manika material at first hand, this question will be discussed in greater detail in **Section Three** (*Chapter Eleven*). The case of Agios Kosmas will be turned to shortly.

The funerary consumption of fine prismatic obsidian blades was only one part of EC social practice adopted by mainland and Euboean communities, for evidence suggests that certain people were also cognisant of the significance accorded body

modification in the Cyclades, employing it for themselves. Indeed, it is probably safe to say that the adoption of this symbolism (and the ‘appropriate’ items with which to express it), indicates those other participants of élite social practices in the early EBII Aegean. Evidence for this is provided by the aforementioned pigments, palettes and pestles from Agios Kosmas (Mylonas 1959: 106, 143), plus a number of bone tube colorant containers from Manika, Lerna, Palamari on Skyros, Poliochni on Lemnos and Troy (Schliemann 1880: 425-26, fig. 522-26; Caskey 1954: 27; Bernabò-Brea 1964: 666-67, pl. CLXXVIII, 12; Parlama 1984: 112-14, fig. 25, pl. 54; Sampson 1985: 314-15, fig. 71, 33-34; Cosmopoulos 1991: 98). The Manika example is notable for its association with an obsidian core and 6 blades, though the publication makes no reference to the nucleus having been employed as a pestle (Sapouna-Sakellarakis 1987: 243, pl. 41,c; *Chapter Eleven*). Similarly, bronze tweezers and razors of similar forms to those seen in EC grave groups are found alongside obsidian blades at Agios Kosmas and at Agios Stephanos (Mylonas 1959: 78; Taylour 1972: 211).

8.4.1 - *Agios Kosmas*

The west Attic community of Agios Kosmas was referred to in *Chapter Seven* due to its burial ground containing material, including obsidian, that indicated close contact with late EBI Cycladic culture. Most of the cemetery and settlement in fact spans the late EBI - early EBII period, with the latter (EHIIA) contexts producing further evidence for the access to, and manipulation of, EC material culture and social practice.

The site publication suggests that obsidian was not only a regular component of this community’s funerary rites, but also that substantial quantities were consumed in the process (**Figure 8.11**). For example, amongst the numerous objects recovered around the late EBI-II Grave 3, was a mass of obsidian, totalling 94 blades and 200 chips from an area of only 2m² (Mylonas 1959: 73-78). Furthermore, amongst a group

of 20 vessels found *in situ* was an impressive stamped and incised pyxis of possible Cycladic origin, filled with an unrecorded number of obsidian flakes, blades and nuclei, before being inverted and placed next to the tomb (*ibid*: 76). Admittedly this appears to be a remarkable assemblage even by the standards of Agios Kosmas, but large amounts of blade and flake material were recovered alongside at least a further 6 early EBII tombs and in a number of other areas within the cemetery (**Table 8.4**). Two contexts are worth mentioning in greater detail.

Situated to the north of Graves 25 and 30 was an interesting group of features denoted Areas 'V', 'O', 'A', and the 'Area of the Extended Skeleton' (*ibid*: 105-12; **Figure 8.12**). 'Area V' constituted an irregularly paved area on which 47 vessels were packed (including 2 cups containing red colorants), 30cm to the south of which was 'Area O', the arena of 'necrolithic' production described in *Chapter Seven*. To recap, some 89 chips and blades were recovered around a single core of 8.5cm long, with some of the blades conjoining to the nucleus. 'Area A' (immediately to the east of 'V') appeared to be a flat, open space where a number of bodies had been laid, to the north of which was the 'Area of the Extended Skeleton' (*ibid*: 107). The individual was in a supine position, with an obsidian core wedged under its right elbow, and a blade resting on its right femur and a group of 10 blades and chips placed beyond the left ankle. This is one of the few burials in the southern Aegean where we are (currently) privileged with such contextual detail in terms of how obsidian may have accompanied the dead. Unfortunately, there is no detailed description of the core, nor any of the other notably common nuclei from the burial ground. From its context and the nature of blade production at nearby 'Area O', one wonders if this nucleus and blade assemblage had also been produced by the 'necrolithic' technique. In turn, with the graves producing a number of pestles, palettes and pigments, it would be interesting to see if any of the

cemetery's nuclei had been modified as a grinding implement, akin to contemporary Cycladic examples.

To conclude, the organisation and context of the Agios Kosmas deposits suggests that while this community's funerary consumption of obsidian owes a great deal to Cycladic social practice. Conversely, there are elements that are distinct to those being expressed within contemporary EC funerary habits, possibly pertaining to the manipulation of restricted and socially significant resources (i.e. raw material and technology).

8.5 - Crete

As with the mainland data, Crete provides an expanded group of burial assemblages containing obsidian in EBII, with the context of its consumption suggesting that in most instances its role in funerary rites followed closely that of the preceding period. Once more, apart from one notable group of material, the distribution of this burial practice is concentrated amongst coastal sites, specifically those of the northern shores facing the Cyclades (**Figure 8.2**). Compared to the mainland and Cyclades it is a little more difficult to elucidate purely early EBII deposits, as opposed to those of generic EBII date, due to the far higher incidence of multiple inhumation in EBA Crete, whether in 'House Tombs', caves or tholoi.

In east Crete fine obsidian prismatic blades have been recovered from Zakro and Palaikastro, the latter a stone-built ossuary spanning early and late EBII (EMIIA-B, primarily the former), a different form of burial to those of the contemporary Cyclades, yet the material is directly comparable, the deposit being described as "numerous obsidian razor blades" (Bosanquet 1901-02: 291). Stored in Herakleion Museum, the assemblage consists of 94 pieces, comprising 89 blades, of which 76 had been derived from the *plein temps de débitage* or later in the knapping sequence (**Figure 8.13**;

Plates 8.8–8.9; Appendix 4). Equally, the majority of blades had been deposited in a fresh and unused state, albeit with a slightly higher incidence of utilised blanks than commonly seen in the Cyclades and greater non-use damage, a result of taphonomy. Furthermore, the longest blade of the 11 complete examples measured 9.25cm long, the single longest piece from Crete after the Aghia Photia assemblage and directly comparable to the Cycladic ‘necrolithic’ material (**Table 7.6**). It is improbable that the entire assemblage was manufactured employing this technique, with some notably smaller examples (the range being 3.99–9.25cm, average 6.48), but the few pieces over 7cm long are certainly of significance given their context.

One of the best dated contexts is the EMIIA basal level from Tholos E, in the Phourni necropolis, Archanes, in central Crete, a few kilometres south of Knossos (Sakellarakis and Sakellarakis 1991: 126–27). While situated north of the Mesara, it shares many of the features associated with the tholoi of that region. It receives more detailed discussion in *Chapter Twelve*, but at this point one can note its assemblage’s direct comparability to Ayia Kyriaki material described in the previous chapter and by extension many of the traits seen in contemporary Cycladic burial groups. The deposit was comprised entirely of prismatic blades (n=28), all except two deriving from the *plein temps de débitage*, the majority of which had not been used prior to burial (**Figure 8.14**). Conversely, the size of the blades consumed was notably shorter than those from EC tombs (the 6 complete examples ranged between 3.30 and 6.66cm), and a far closer approximation to Mesaran material and products from EM domestic contexts (**Figure 8.25**).

Finally, it remains to turn to the Mesara proper, where numerous tombs are recorded as containing obsidian. Unfortunately it is difficult trying to glean purely EMIIA deposits due to reasons alluded to above. It has thus been arbitrarily decided to discuss this data in this chapter, though in truth many of the assemblages probably

incorporate material that spans late EBI-EBIII (or later). From the number of Mesaran deposits we are offered an opportunity to make an in-depth analysis of this burial practice in a non-Cycladic context, a test case of the appropriation and manipulation of exotic material culture and social practice in the southern Aegean EBA.

8.6 - 'Cycladica' in the Mesara: A Test Case of the Adoption and Appropriation of Exotic Social Practice

Ever since the early discoveries of rich burial deposits at Ayios Onouphrios (A. Evans 1895) and the numerous excavations by Xanthoudides (1924, Xanthoudides 1918), the small stone-built circular tombs of south-central Crete have played a large part in defining the EM period, in terms of material culture, social practice, demography and to a lesser extent chronology (cf. Branigan 1970, 1978, 1993 *inter alia*; Bintliff 1977b, 1989; Whitelaw 1983; Belli 1986; Petit 1987; Walburg 1987). These stone-built circular tombs (**Figure 8.15**), often used over hundreds of years, are considered to be clan or community ossuaries, perhaps serving to locate contemporary power structures through the veneration of the ancestors. When not robbed, though unfortunately many of them have been (Watrous 1994: 703), they have produced vast quantities of grave goods, primarily ceramics, along with stone vases, metalwork, jewellery and in numerous instances obsidian (cf. Xanthoudides 1924; Branigan 1970, 1993).

While Cycladic cultural influence on EBA Crete has long been acknowledged (cf. Xanthoudides 1924: 130-31; Renfrew 1964), debate about these relations has concentrated primarily on the more prolific evidence from the north and centre of the island (Doumas 1976; Sakellarakis 1977a, 1977b). Yet the archaeological record of the late EMI and EMIIA Mesara does contain material culture indicating contact with the Cyclades as a cultural entity, to which (arguably) one can add aspects of EC social

practice (Carter 1994: 128). In any consideration of this evidence an important consideration should be to determine how these material and symbolic elements of the EC world were introduced into Mesaran society.

This is an important consideration given that ‘Cycladica’ tends to be concentrated on those coastlines that either face the Cyclades, or line the waterways that lead from them (**Figure 8.16**). While the Mesara and its people were removed from the waters that bore the traders and raiders of EC society, southern central Crete can hardly be seen as a backwater with regard to long-distance inter-regional contact and exchange. The Mesara tholoi have produced a number of goods from the lands to the south and south-east of Crete (Egypt, Syro-Palestine and beyond [Branigan 1988b: 180-95; Yule 1987]), though it is difficult to know how much of this contact was developed during late EMI-IIA, i.e. the period of strongest EBA Cyclado-Minoan relations. The minimal evidence for EM occupation at the important harbour town of Kommos may be of relevance here (Betancourt 1990: 26-27; Shaw 1992), though a bone scarab allegedly came from the basal, EMI [late] level at Yerokambos 2, and three ivory sealstones are recorded from an EMII context in the adjoining tholos, Yerokambos 2a (C.M.S. II.1 no. 201; Warren 1970: 31-32; Manning 1995: 118). Perhaps surprisingly, this is one of the few tholoi in the *southern* Mesara where such exotica have been recovered, the vast majority having been consumed by communities north of the Asterousia watershed (Branigan 1993: 112).

Is it at all possible that some of the communities bordering the Libyan Sea were responsible for procuring material not only from lands to the south of Crete but also the Cyclades? Can we envisage that certain inhabitants of the Mesara were participating in the kinship and exchange networks responsible for the spread of ‘Cycladica’ across the southern Aegean (not necessarily mutually inclusive questions)? Or is what we see in

this area of southern Crete merely the result of down-the-line movement of raw materials, goods and knowledge from the north coast's 'front-line' communities?

Purely on the basis that 'Cycladica' in the Mesara are located away from the southern shoreline, the first point seems a little unlikely, though as with the exotica from Egypt and the Levant, this may be more indicative of consumption habits than ports of entry. Unfortunately little is known about these EM coastal sites, for although a number have been recognised (Blackman and Branigan 1975; Vasilakis 1989/90; Watrous *et al* 1993), few have been excavated and / or published in any detail (cf. Vasilakis 1989).

It may therefore be more productive to move from considering the distribution of 'Cycladica' toward examining the material's context, form and use as an indication of how aware Mesaran society was of the EC world.

8.6.1 - Evidence for 'contact'

The clearest evidence for Mesaran contact with Cycladic communities (by whatever mechanism), is provided by a small quantity of imported material culture (**Figure 8.17**). From the probable tholos deposit at Ayios Onouphrios came two marble 'spool' pyxides, and from Koumasa, a folded-arm figurine of the Spedos type, objects with exact typological parallels from early EBII burial contexts in Keros, Syros and Naxos (Renfrew 1964: 123, pl. ST',3-4; 1969: 20-21; Kontoleon 1971: 178, pl. 210a-b). The evidence remains inconclusive as to Cycladic influence on EM metalwork (cf. Renfrew 1964: 121), though Branigan sees the islanders as possibly providing the technological inspiration for EM copper-working and the origin of his Type II long-daggers, that in the Mesara are known from Koumasa, Platanos, Marathokephalo and Lebena (Branigan 1968a: 12-13, 55).

Turning to the pottery, it is interesting to note that with the exception of a jug from the Marathakephalo tholos and a cup from Lebena (Branigan 1988b: 186; Zervos

1956: pl. 128), there appear to be no EC ceramics from the EMI-II Mesara. This is in stark contrast to the quantity and range of imported pottery from both burial and settlement in northern and central Crete at this time (Wilson 1994: 39-41; Karantzali 1996). At the same time certain design elements are shared between late EMI-IIA Mesaran fine grey ware and contemporary Cycladic vessels (triangular-stamped infilling and herring-bone bands), though there is currently no reason to suggest that the former were necessarily derived from the latter (Wilson and Day 1994: 79). One further potential link between this Mesaran ware group and the Cycladic region is the suggestion that its blue-grey colour may be partly imitating silver vessels (*ibid*: 79; Betancourt 1985: 40), for we know that the majority of silver goods circulating in Crete in this period were made from Siphnian ores (Stos-Gale 1985).

Finally, there are also objects with clearly 'Cycladic' traits, yet from the viewpoint of typology, raw material, or distribution, they are considered close imitations rather than imports. Most notable amongst this group of artefacts are the Koumasa variant of the folded-arm figurine, with examples from the eponymous tholos, Platanos and Lebena (Renfrew 1969: 18-20; Branigan 1971: 61-63).

8.6.2 - *Obsidian as 'Cycladica'*

The recovery of Melian obsidian in Crete is commonly presented as evidence for contact with the islands (cf. Xanthoudides 1924: 131; Branigan 1970: 74; Sakellarakis 1977b: 145-56). As has been continuously argued in this thesis, this need not imply awareness of, or contact with, the Cyclades as a *cultural* entity. The same applies to the use of other Cycladic raw materials employed by EM communities: copper, silver and lead, amongst others (cf. Branigan 1968b; Gale 1990). Furthermore, in most instances these resources were physically and culturally transformed, from the 'raw' Cycladic to a 'cooked' Minoan: the use of Siphnian lead to manufacture double-axe pendants for

example, or Kythnian copper to produce Type II triangular daggers (Branigan 1968a: 21-22, 56; Stos-Gale 1985: 366-68, pl. hTH; Gale 1990: 75-76, fig. 3-4).

In the Mesara, obsidian appears primarily as the debitage and detritus of a pressure-flaked blade industry, yet as previously argued, this information provides us with little idea as to the act's cultural association: Minoan [Mesaran], or Cycladic? Arguably, an analysis of the technological *mechanisms* employed in core-reduction and blade removal would be most informative, but unfortunately only limited evidence for this craft's enactment in the EM Mesara exists, with the data that does exist having received only preliminary publication (cf. Pernier 1935: 88-89, 117; Vasilakis 1989: 54, 56). Thus when considering the implications for Cyclado-Minoan relations that obsidian represents in the Mesara, it may be profitable to shift one's enquiry from analysing modes of production in domestic contexts, to studying modes of consumption in the burial-ground.

8.6.3 - *Blades and burials*

As Branigan (1970: 66), has noted, obsidian is recorded from approximately a third of the Mesara tholoi (**Table 8.5 & Figure 8.18**), though with full publication of these tombs this figure will probably increase to well over half (**Figure 8.19**). Where described, the material is always recorded as present in the form of 'blades', only occasionally accompanied by flakes and / or cores (Carter 1994: 128-32; **Plate 8.10**). Nuclei have been recovered from Marathokephalo II, Koumasa, Platanos B, and Yerokambos II (Xanthoudides 1918: 18-20, fig. 8, 1924: 21 & 105, pl. XXIII; Warren pers. comm), but none of these cores, nor any others from EM tombs (Mochlos [Soles 1992: 81]), bear any resemblance to those from EC burials (**Plate 8.11**). Each nucleus was of the form typically seen in domestic contexts throughout the

southern Aegean and while none of them appear to have been exhausted prior to deposition, there was no evidence that they had been modified in any way subsequent to blade removal. Thus they cannot be related to the EC 'core-pestles' and by extension the *central* concern of body modification and social statement that the 'necrolithic' technique fulfils.

From studying a number of the burial assemblages (**Table 6.1**), it can be demonstrated that in terms of form and 'life histories' they mirror EC blade deposits. Each group of material was comprised almost entirely of fine pressure-flaked blades (the majority derived from the *plein temps de débitage* [**Plates 8.11–8.12**]), that microwear analysis shows were predominantly deposited unused, and in such a fresh state as to suggest that they had enjoyed a minimal time in circulation (**Figure 8.20–8.22**). This suggests, that as in the Cyclades, these blades were manufactured especially for burial, as opposed to having been owned and used by the individual that they accompanied (*contra* Branigan 1988b: 170). At the same time, there are differences in how these artefacts were treated in the Mesara that makes one question whether the burial practice was adopted wholesale and by extension whether the act shared the same underlying meaning[s]. In order to examine these issues further it is profitable to turn to one data-set in particular.

8.6.4 - The case of Ayia Kyriaki

The excavation of Ayia Kyriaki, a small tholos tomb in the Ayiofarango Valley, produced 66 broken obsidian blades (30 from stratified contexts), their fragmentary state the result of EM social practice and the burial's disturbance by modern looters (**Figure 8.23 & Table 8.24**; Blackman and Branigan 1982: 16, fig. 5). The contextual detail provided by the publication makes this an important body of material when comparing and contrasting the funerary consumption of obsidian in a Cycladic and

Mesaran context. It is also currently the only Mesaran tholos where a pure late EMI deposit containing obsidian blades can be discerned (**Table 8.6**), i.e. the first period of EC contact with its Cretan neighbours (*Chapter Seven*), contemporary with the Kampos Group (cf. Warren 1984: 58-60; Zapheirpoulou 1984: 38-39; Manning 1995: 45-48).

Typologically and technologically the Ayia Kyriaki assemblage is identical to those from other Mesara tholoi (irrespective of date), and by extension those from EC burials (**Figures 8.20 & 8.22**). Equally, microwear analysis has demonstrated that most implements had not been utilised prior to their deposition (**Figure 8.21**), contrary to the excavators' expectations (Blackman and Branigan 1982: 16). The scale of the assemblage on the other hand is very small (assuming that obsidian was not high on the tomb robbers' list), certainly in comparison to the remains of at least 1050 cups, 370 jugs, 200 bowls and 120 jars recovered (Branigan 1993: 27-32). On the basis of the number of proximal sections there are conceivably as few as 19 blades represented, from a tholos that was employed for between 800-1000 years. The assemblages from most other tholoi are not dissimilar in scale to that from Ayia Kyriaki (**Table 8.7**), implying that the inclusion of these blades in Mesaran burial practices can only ever be seen as sporadic, though in turn this may have heightened the act's significance. This is to be contrasted with the Cyclades where in the late EBI (and to a lesser extent the early EBII) these implements were some of the commonest grave goods interred (*see above*).

Unfortunately, Ayia Kyriaki provides us with little idea as to how many blades were consumed within individual acts of burial, for as with most tholoi the deposits were both mixed and disturbed. At present the only assemblage that provides us with such information comes from a tomb situated to the north of the area under discussion: Tholos C from the Phourni cemetery, Archanes (Sakellarakis 1977b: 152, fig. 147). Sealed beneath Sarcophagus 4 and dated to EMIII, were 21 complete and 5 fragmentary

prismatic blades that refitting has shown to be a contemporary deposit (*Chapter Twelve*). This is a far larger assemblage than commonly seen in Cycladic tombs, where for most of the EBA the social ‘norm’ was to inter only one obsidian blade per inhumation (cf. Doulas 1977: 100-20, fig. 41). While one must be careful of assuming that the burial practices witnessed within this central Cretan necropolis directly reflect those of communities to the south, it has to be considered that the Mesaran assemblages could also have been generated by a few large deposits, rather than the small but regular rate of blade consumption witnessed in the Cyclades.

While it seems a fair assumption that blades from inside the Ayia Kyriaki tholos were originally interred with specific individuals as they were in Cycladic burial practice, there is one instance where these artefacts’ deposition pertained to different forms of funerary ritual. Six of the 23 blade fragments from late EMI-IIA contexts came from a pit dug in front of the primary burial chamber (level L6 [**Figure 8.24**]). Measuring c.1m² and 0.6m deep, this undisturbed feature is probably associated with the extension of the tholos complex at the end of EMI, or beginning of EMIIA, and contained a mass of 277 sherds, a loom-weight and the obsidian (Blackman and Branigan 1982: 9, 23, 54-55). While most of the sherds from the pit were small and probably residual from earlier activity at the site, the fill also produced substantial fragments of between 10 to 15 freshly broken vessels. These included from 4 to 8 Pyrgos ware chalices, along with 3 or 4 round-bottomed bowls and an askos of Ayios Onouphrios ware, i.e. the remains of a late EMI-IIA drinking set (*ibid*: 23-24, fig. 7, E18-26; Branigan 1993: 24). As the ritualised consumption of liquids is a common feature in Mesaran burial contexts (*ibid*: 77-79; Walberg 1987: 55-56), it has been proposed that this pit’s contents relate to communal “toasting” ceremonies, a “foundation deposit” associated with a period of renewed tomb construction (Branigan 1993: 24).

It is unsure whether the obsidian from this deposit can be directly related to these activities, as microwear analysis discerned no traces of use-wear (**Figure 8.21**). Given their surface freshness and lack of post-depositional wear, it is improbable that they represent redeposited material in a secondary context. These blades' role within funerary ritual may still be unclear, but the fact remains that the consumption of obsidian in this manner has no clear parallel from the Cyclades.

Finally, the blades from Ayia Kyriaki (and Mesaran tombs in general), are demonstrably shorter, narrower and thinner than those from EC burials (**Table 7.6 & Figure 8.25-8.27**). At the least this indicates that the products from the Mesara tholoi had been manufactured by people whose habit was to prepare smaller cores from raw nodules than those produced by craftspeople in the Cyclades. Furthermore, it is also because the knappers responsible for producing the blades for consumption in the Mesara tholoi were not employing the 'necrolithic' technological *mechanism* that forms such an important feature of EC burial practice, suggesting that there were important differences in how blades were prepared and probably how they were perceived in EC and EM funerary contexts. Furthermore, the close similarity of the Mesaran blades with those from the Archanes tholoi (that will be discussed in *Chapter Twelve*), and domestic contexts in Mallia (*Chapter Four*), suggests the existence of a technological *koine* that embraced central and southern Crete throughout the EBA.

8.6.5 - Broadening the context

In considering the significance of this burial practice amongst the different regions where it was enacted, it has been profitable to consider the level of access the various communities had to obsidian (in whatever form), and the technical knowledge required to pressure-flake blades from it. In *Chapter Three* it was described how in EM Crete the procurement, working, consumption and secondary exchange of obsidian

occurred primarily via those communities with the clearest evidence for social differentiation, including: Knossos, Poros, Mochlos, Mallia, Chania-Kastelli and Phaistos. The major exceptions to this rule (and thus an argument for social agency over geography in the creation and maintenance of EM power structures) are the concentrations of obsidian from Archanes and Phaistos. As previously noted, from what we know about the size of EM Phaistos and its probable level of social organisation (Whitelaw 1983: 338-39), the evidence for pressure-flaked blade production at the site cannot therefore be taken as representative of craft activity in the Mesara as a whole. Indeed, survey data suggests that beyond Phaistos there was little obsidian circulating within this region during the EBA. Studies of the upland Ayiofarango Valley and the coastal plain below recovered almost none and the impression gained from the western Mesara Survey's preliminary report is that the region's chipped stone technology was based primarily on local cherts (Blackman and Branigan 1975, 1977; Watrous *et al* 1993: 223-24). The fact that these resources were not used to manufacture pressure-flaked blades is of consequence, for while this could be a reflection of these materials' inferior flaking properties, it probably indicates that just as obsidian was exotic to these people, so was the skilled craft of pressure-flaking.

It thus appears that for the majority of EBA Mesaran society obsidian was a scarce resource probably procured in the form of finished products, either from Phaistos, or the north-coast communities. Almost certainly the movement of these objects would have been embedded within those socio-economic networks responsible for indigenous ceramic exchange (cf. Wilson and Day 1994), that were necessarily established to maintain the social fabric between and amongst the small-scale and transitory communities that inhabited the prepalatial Mesara.

This is not to say that blade production was unknown within these villages and it is conceivable that certain members of society gained access to blade-cores as prestige

objects. Given the technical parameters and requisite knowledge involved in the preparation and reduction of these nuclei (cf. Pelegrin 1984a, 1984b; Perlès 1989: 11-13), it is doubtful that these acts were undertaken by the inhabitants themselves. Instead, any blade production that took place amongst these Mesaran communities may have been more concerned with technology as a social gesture, or spectacle (cf. Schlanger 1990: 20-25, after Mauss 1927, 1941 *inter alia*; Leroi-Gourhan 1964), perhaps accompanying those previously recognised aspects of ritualised consumption in Mesaran funerary practice. For someone to draw on a skilled knapper, or at least the products of such a craftsman, would have signified their ability to access or control exotic and esoteric knowledge and resources, i.e. the trappings of status and power in the EBA southern Aegean.

On procuring such rare objects a large proportion were diverted into funerary ritual without having ever had a utilitarian existence. For example, in the Ayiofarango Valley no obsidian was recovered from any of the 10 EM settlements discovered, yet it was associated with each of the three tholos tombs investigated by the survey (**Table 8.8**). In short, pressure-flaked obsidian blades fulfilled a primarily symbolic role within Mesaran communities, whereas in the Cyclades, their production and consumption was concentrated within domestic spaces (albeit with a regular inclusion in burial practice).

8.6.6 - Conclusion: Interpreting distance and difference

So how is the Mesaran adoption of an EC burial practice in EBI-IIA to be explained and how can its different articulation be accounted for? Was ‘Cycladica’ accessed via those north Cretan communities who had entered into direct contact with their Cycladic counterparts? In that case, is the differential treatment of obsidian in Mesaran funerary contexts due to a non-comprehension of the true role and meaning of exotic material culture and social practice, because these people had only a distanced

awareness of the Cycladic world, a view further distorted by the cultural filter of northern Crete?

Alternatively, do we empower these EM communities by suggesting that having adopted EC social practice they deliberately manipulated it to reflect their own socio-political mores? While much of the Cycladic material and influences to reach the Mesara came through the north-coast communities via Knossos, Archanes and Phaistos, the region was certainly not impoverished by its distance from the islands. For instance, a far greater quantity of Kythnian copper was consumed in the Mesara tholoi compared to the contemporary burial grounds of north and central Crete (cf. Branigan 1968a: 224; Gale 1990: 313). Admittedly this 'north-south divide' could be a reflection of cultural differences in modes of consumption (cf. Nakou 1995: 6-8), yet it remains true that a strong independent copper-working tradition existed in the EBA Mesara that drew on the Cyclades for its raw materials and possibly its technical know-how (Branigan 1968a: 55-56; Gale 1990).

In sum, 'Cycladica' in the Mesara can be seen as a reverberation of the 'international spirit'. While the consumers of these exotic objects may have been removed from the maritime sphere of social interaction that existed between the Cyclades and Crete, it would be unfair to see them as a world apart. From the obsidian burial assemblages of the region's tholoi it is apparent that members of these communities were all too aware of EC social practice, incorporating it as an irregular but notable element of their own funerary rites. While retaining the central element of the burial practice: the consumption of the finest, freshly made, unused pressure-flaked blades, the act's overt significance may have been different from those meanings expressed in a contemporary Cycladic context. For instance, there may have been more importance attached to the consumption of raw material and technology in the Mesara, for here they both occupied a far more rarefied niche than in the Cyclades.

Conversely, these artefacts were largely divorced from one of the primary contexts they occupied in the EC world, for the Mesaran burial record indicates that body modification was not such a central theme in the creation and expression of social distinction. This is not to say that 'toilet implements' were absent from the tholoi (cf. Branigan 1993: 74, 1968a: 33-42), but it is generally accepted that amongst the communities of southern Crete it was the wielding and consumption of daggers and sealstones that 'maketh the man' (Xanthoudides 1924: 133; Renfrew 1972: 320; Whitelaw 1983: 343; Nakou 1995: 9-13).

8.6.7 - Endnote

It would be unwise to overemphasise the role played by 'Cycladica' in the Mesara, for they formed only one element of exotica that these small communities were procuring and consuming in the creation and maintenance of identity and social relations. While many of these processes were played out in the burial-ground, it is to the domestic world that we should now be looking. There are huge gaps in our knowledge of EM society in the Mesara, and surely it is time to investigate the small settlements that accompanied the plethora of tholoi that have received so much attention. Equally, we need to understand better the external relations articulated via the south coast settlements. Is there evidence for the products of long-distance contacts being procured through this area of EM Crete, or was everything channelled through, and controlled by, Poros and Knossos? Until these issues have been approached we can never truly appreciate the Mesaran participation in the processes that spawned the late EBI - early EBII internationalism of the southern Aegean.

8.7 - Résumé

The early EBII sees the greatest level of inter-Aegean cultural, technical and symbolic connectivity, much of which was instigated by communities of the Cyclades. This is the apogee of Cycladic influence, indeed many would say of the EC culture itself, for the subsequent period witnesses a radical break in southern Aegean 'society', with the introduction of new technologies, new modes of occupying the landscape and new means of creating and expressing social inequality. To what extent these changes were at the expense of existing social dynamics is a matter of debate.

- CHAPTER NINE: CHANGE AND CONTINUITY IN THE LATE EBII SOUTHERN AEGEAN -

9.1 - Introduction

In the Cyclades, Euboea and the eastern Greek mainland the later EBII is defined primarily in ceramic terms, through the appearance of a range of pottery displaying strong links with the northern Aegean and Anatolia, termed the Kastri and Lefkandi 1 Groups (**Figures 9.1-9.2**) after the eponymous sites on Syros and Euboea (Rutter 1979). Other developments at this juncture include the advent of wheel-made pottery and true tin-bronze, innovations that are also commonly linked with Anatolia and the east (*ibid*; Gale and Stos-Gale 1984: 268-71). There were concomitant developments in the technology of warfare, with hilltop fortifications constructed in these regions at this time (with an outlier at Pelikata on Ithaca [Heurtley 1934-35]; **Figure 9.3**), plus the adoption of slingstones, and Anatolian-type spearheads (Bossert 1967: 65-67; Papathanassopoulos 1981: 130, fig. 59; Doumas 1990b).

Some have drawn these pieces of evidence together to argue for an aggressive incursion of populace from the north-east Aegean, possibly involving the community based at Poliochni on Lemnos (Doumas 1988). Others have suggested that these changes may have been the result of Cycladic maritime powers shifting their attention to new regions and social networks, accessing different exotic goods, materials, technology and social practices as part of a process of creating anew modes of social distinction. For instance, these changes involved the adoption of a new set of vessels for élite drinking and feasting (Rutter 1979; Mellink 1986; Manning 1995: 54-55; Nakou 1995: 19).

Whatever processes were involved in the appearance of these new techniques and social practices, its impact was limited to certain regions within the southern

Aegean. For example Anatolian features such as the *depas amphikypellon* and one-handed tankards are virtually unknown west of the Argolid and are notable by their absence in Crete (Renfrew 1972: fig. 20.5; Rutter 1979; **Figure 8.1**). Indeed, this may be the juncture where the beginnings of divergent trajectories in social development can be seen amongst the Aegean ‘cultures’, with certain communities in Minoan Crete locating themselves more intensively in socio-economic networks with the more ‘developed’ states of Egypt and the Near East (Watrous 1994, 1995; Manning 1995: 50-63).

9.2 - Obsidian and Death in Late EBII

Despite these not unimportant changes in Aegean society, the tradition of including obsidian as an element of funerary practice continued, witnessed amongst communities from essentially the same regions as seen in early EBII, albeit with far fewer Cycladic and southern mainland examples than before (**Figure 9.4**). Conversely, this burial habit makes its ‘first appearance’ (in the archaeological record) in the Ionian islands (Dörpfeld 1927; Heurtley 1934-35), and in south Thessaly, where an assemblage from Pevkakia may be dated to this phase (Weißhaar 1979).

Once more, the emphasis was placed on the burial of non-cortical pressure-flaked prismatic blades (**Table 9.1**), with Manika again providing the exception to the rule, with the sole lithic assemblage assignable to this period (Tomb 60) consisting of many flakes and blades (Sampson 1985: 170). The Pevkakia assemblage provides the only reference to the inclusion of cores, with two large examples found in a grave under a house associated with Trojan pottery, *terminus ante quem* early EBII (Weißhaar 1979: 387; Halstead 1984: 177).

9.3 - The Cyclades

It is important to appreciate that despite the appearance of new forms of pottery and all the other material, architectural and technical innovations of the late EBII Cyclades, Euboea and eastern mainland, there is a strong element of continuity within social practice. This is seen most clearly in funerary activity, for where new types of material culture were adopted they were invariably introduced into existing material and symbolic structures. For instance, Kastri Group material has until now always been recovered in tombs in association with artefacts typical of the Keros-Syros group, never as a separate unity (Renfrew 1984a: 45).

The consumption of obsidian within Kastri and Amorgos Group burials offers another example of this process (the latter group being a southern and central Cycladic variant of late EBII material culture [Renfrew 1972: 534-35; Manning 1995: 50-51]). Only a few graves with late EBII material have been recognised in the Cyclades, of which 6 are recorded as containing obsidian (**Table 9.2**). With tweezers, needles, pins and pigments recovered from three of these assemblages, it appears that body modification continued to represent a socially meaningful phenomenon. For example, two obsidian blades, plus tweezers, stone-bead necklace and a shell containing powdered azurite came from Tomb 142, Akrotiraki (Tsountas 1899: 75; Papathanassopoulos 1981: 104, fig. 88).

Similarly, the quantity of material interred compares to Keros-Syros Group assemblages, with two blades alongside two burials in a grave at Agios Pavlos on Amorgos, suggesting a continuation of the (predominant) 1 blade : 1 individual ratio. The lengths of the Agios Pavlos blades (not longer than 8cm) and that from Akrotiraki of 9.91cm, also suggests that the 'necrolithic' technique continued to be performed as an important element of funerary ritual. To contrast this material with blade production in contemporary domestic contexts we have a group of 12 relatively well dated cores from

the late EBII settlement of Kastri, Syros (cf. Tsountas 1899: 126), none of which was longer than 6.89, averaging only 5.58cm (**Table 9.3; Plates 5.3-5.4**). Of the three blades and a flake studied under the microscope (from Tomb 4, Rhodinadhes, Naxos and Tomb 142, Akrotiraki, Siphnos), the blade from Akrotiraki displayed both macro- and microscopic traces of utilisation, concordant with sawing a material of medium resistance (*Appendix 2; Plate 8.1 & Plates 9.1-9.2*).

9.4 - Euboean and Mainland Data

Despite a number of graves at Manika containing 'Anatolising' material, obsidian could only be directly associated with such objects in Tomb 60 (Sampson 1985: 170). Here a female adult was accompanied by a single blade, plus a beak spouted ewer, a one-handled tankard, a high-necked vase and a shallow bowl, all probable imports from the north-west Aegean or western Anatolia (Sampson 1993b). The only recognised late EBII (Lerna IIIc-d) mainland assemblage comes from Asine in the Argolid, where a child burial was provided with three shallow bowls, one of which contained 4 blades (Frödin and Persson 1938: 338-39, fig. 230; Pullen 1990b: 10).

9.5 - The Ionian Islands

Further to the west are two burial grounds from the Ionian islands that produced obsidian, Pelikata on Ithaca and the R-Gräben of Leukas (Heurtley 1934-35: 6-8; Dörpfeld 1927: 296). At the former site a number of disturbed pithos burials and human remains were found amongst a group of domestic buildings, 'Area A' (*Appendix 3*). a number of objects were clearly related to these inhumations, including pottery, two fragmentary terracotta bulls, a little bronze and gold, a variety of other 'small finds' and 38 blades, 30 of obsidian, the remainder of flint (Heurtley 1934-35: 37, pl. 9).

It is the R-Gräben with their rich and eclectic finds that provoke the greatest interest. The burial ground consists of a number of stone-filled circular platforms (c. 3-10m in diameter) probably covered by low earthen tumuli and containing cist and jar burials, with other individuals interred in smaller attached chambers (**Figures 9.5-9.6**). While the central cist is a common EBA grave-type, the architectural elaboration surrounding these burials is unique for this date in a southern Aegean context. Equally, it appears that the dead were partially cremated on these platforms before being interred and it is on these raised surfaces that the majority of the grave goods were recovered. The combination of impressive tombs and rich grave goods has made the site a focus in the debated existence of stratified societies in the pre-state Aegean (cf. Renfrew 1972: 378-81; Branigan 1975).

The architecture and finds of this cemetery are considered to indicate this community's collection and appropriation of material culture and social practice from such diverse regions as the southern Greek mainland, the Cyclades, Crete, the Troad and possibly the southern Balkans and Italy (Hammond 1974; Branigan 1975). As such the burial ground eminently reflects the community's nodal position within the land- and sea-scape of north-western Greece described in *Chapter Three*. It is within this context that we must see the funerary consumption of fine obsidian blades at this site (**Table 9.4**).

Blades were recovered from 5 graves and 4 of the funeral pyres, most commonly in small quantities akin to the amounts deposited in EC tombs. There were two notable exceptions, with 18 blades having been consumed in R1 and 30 found in the pyre of R22. The first assemblage is one of the wealthiest from the EBA mainland (**Figure 9.6**). It contained a gold necklace, a silver bracelet, a copper (or bronze) scraper, plus a variety of ceramic vessels including a sauceboat and a form of footed cup that may be a

skeuomorph of contemporary metal vessels (as known, for example, from Troy Treasures A and B [Antonova, Tolstikov and Treister 1996: 36, 97]). Finally, two other assemblages are worthy of note, that of R15b where the burial was accompanied by 2 blades, a gold necklace and 3 gold hair-rings and the pyre associated with R4, that produced 2 blades and 11 fragments of an EC bone tube container (an association noted in *Chapter Eight*), along with a gold necklace and earring, plus a silver bracelet (**Figure 9.7**).

From the size of the burial (9-10m in diameter), the clustering of other tombs around it, plus the grave goods' wealth and origin, R-Gräben 1 has been described as a chieftain's burial (**Figure 9.8**), specifically that of a woman (Renfrew 1972: 381; Branigan 1975: 42-49). However one interprets this impressive tomb and its contents, it certainly involved the consumption of a wide range of exotica including, if my theories are correct, elements of EC social practice. The inclusion of fine obsidian blades in this grave group can possibly be seen as part of a bodily display and modification theme, as expressed perhaps more obviously by the metal accoutrements, the necklace, bracelet and scraper. As such the assemblage mirrors EC funerary deposits, with a stronger link provided by the association of blades and a scraper, a pairing well documented at Chalandriani on Syros (*Chapter Eight*). Further evidence for this community's awareness of EC modes of expressing social organisation come from the blades and pigment containers from the pyre of R4, again an association known from Cycladic burials of early EBII date and in this instance actually employing material culture that probably derived from the Cyclades themselves.

In turn, differences may be noted in terms of how the obsidian was employed within the cemetery compared to its contemporary consumption in Cycladic mortuary practices. For instance, a large proportion of the R-Gräben's obsidian blades came from the burial platform rather than the burial proper (Dörpfeld 1927: 296), a result of the

body's preparation for burial through its partial cremation, a practice unknown in the EC world. Equally, while there are examples of multiple-blade assemblages from the Cyclades, none approach the scale of that seen in R1, or the deposit from R22's pyre. Furthermore, while there was an apparent adherence to the construct of only employing blades from the *plein temps de débitage* (*ibid*: pl. 63,c), the length of these pieces, ranging between 6.1 and 7cm long, does not suggest that they were products of the 'necrolithic' technique.

When considering the significance of the inclusion of fine obsidian blades within this community's funerary rites, one recalls the burial material from the Mesara, for in both instances these people were located on the fringes of the processes that spawned the 'internationalism' of the EBII Aegean, enjoying far less contact with the Cycladic world than those living, for example, in southern Attica, or the north coast of Crete. For instance, there appear to have been only limited quantities of obsidian circulating within NW Greece and the Ionian islands at this time (*Chapter Three*). On Leukas itself, a survey covering two of the island's coastal plains recovered little or no such material (Gallant 1982), though one has to contend with the considerable colluvial and alluvial deposition that left the R-Gräben and Syvros EBA burials covered with sediment from 1-6 metres deep (*ibid*: 77; Andreou 1975).

Thus, while the burial practice retained its central feature in terms of form and context, one must again acknowledge the heightened importance that was probably accorded the raw material and the technical know-how responsible for transforming it into prismatic blades. Furthermore, it is not inconceivable that the Nidri community's access to obsidian (perhaps procured as ready-made implements) occurred within the same mechanisms of élite exchange that resulted in their access to other exotic forms of material culture, not least the EC pigment containers with all their associated meanings and modes of consumption.

Finally, one other possible grave group containing obsidian is known from this region, for two fine prismatic blades were recovered from amongst an eroded group of cist graves near Vasiliko, on the SE coast of Zakynthos (Benton 1931-1932: 215-16, fig. pl. 38, 40b, 7,8). Unfortunately, the material and context are impossible to date, though cist graves are a feature of this region's EBA burial tradition (cf. Andreou 1975; Koumouzelis 1980).

9.6 - Lacunae and Appropriation: The Practice in EBIII

There has been considerable debate as to what materially constitutes the EBIII period in the Cyclades, with some believing that it is represented by the Phylakopi I Group (Barber and MacGillivray 1980), while others consider this material as early MBA (through its relationship with the mainland and Cretan sequence), in which case the Cyclades would have been virtually deserted for perhaps as long as 100 years (Rutter 1983a, 1984). These issues are largely irrelevant to this thesis as there are few known burials containing Phylakopi I material, let alone any recorded as containing obsidian (cf. Barber 1987: 140). Equally, few EBIII tombs are documented from the mainland, though an EBIII burial at Lerna (Grave 8, Lerna IV) produced a single obsidian blade that had been placed underneath a contracted infant (Blackburn 1970: 32).

Conversely, Crete has numerous burial deposits containing EBIII material, though as they often derive from multiple-period tombs, it is only occasionally that obsidian, where present, can be assigned to that phase in particular (**Figure 9.4**). From the Ta Ellinika site at Palaikastro, "obsidian knives" were recovered from Tomb III, a stone built rectangular ossuary also containing 41 EMIII east Cretan White-on-Dark Ware vases (Dawkins 1904-05b: 268-72; Soles 1992: 183-84). While the type of vessels indicated the continuing importance of liquid consumption within Minoan funerary practice, the obsidian blades and marble palette may have been related to body

modification, though the evidence is admittedly slim. At Myrsini / Galana Charakia c.2km along the coastal plain from Mochlos, a number of obsidian blades came from what is the most easterly example of an EM tholos tomb (Hood 1955; Platon 1959; Daux 1960). Dated EMIII-MMIA (Branigan 1993: 148) it contained approximately 85 burials either placed directly on the floor of the tomb, or in pithoi and larnakes; unfortunately the exact context of the chipped stone is not recorded.

The best evidence for this period comes from the Phourni necropolis at Archanes, where 55 blades came from an EMIII level in Tholos C and over 1000 fragments were recovered from the associated 'Area of the Rocks' (Sakellarakis and Sakellaraki 1991: 118, 135). This material is discussed in detail in *Chapter Twelve*.

The Mesara is more problematic, primarily because of the nigh-total lack of EMIII ceramics from the region, suggesting to some that EMIII is primarily an east Cretan ceramic style, at least partly synchronous with pottery deposits termed MMIA in central and southern parts of the island (Betancourt 1985: 53). The matter is a contentious one, and it would be inappropriate to discuss the issue further here. It is worth noting that virtually all of the Mesara tholoi where obsidian grave goods are recorded were in use during MMIA, therefore it has to be considered that some of this material may be dated to this period, particularly as it has been recorded from pure MM contexts at Kamilari and Archanes (see below).

9.7 - The Middle Bronze Age and the End of the Practice?

While much rarer, the inclusion of obsidian within southern Aegean burial practices can still be seen in the MBA (*contra* Carter 1994: 133). While no examples have been published from the (admittedly small) Middle Cycladic burial record, obsidian blades have been recorded from a few Minoan tombs of the later third and early second millennium, including a single piece from the MMIA-II tholos tomb at

Kamilari in the Mesara (Levi 1961-62: 104), and a quantity from the post-EMIII funerary buildings at Phourni, Archanes (**Table 9.5**). From Lerna in the Argolid, some 27 graves of MHI date contained obsidian (Blackburn 1970), usually a single blade per individual, though in three cases arrowheads were also included, a practice that will not be discussed here (**Table 9.6**). At Agios Stephanos, flakes and blades were recorded from two MH graves (30 and 31), and from a burial dated to the LHI period, 35 blades, a flint scraper and bone pin were placed next to the feet of an adult, who also had a pair of bronze tweezers and a dagger placed on their chest (Taylour 1972: 218-19, fig. 11, pl. 41e).

9.8 - Endnotes

In 1994 I argued that there were noticeable gaps within the distribution of grave assemblages containing obsidian (including Messinia, Arcadia, Achaia and west Crete), that perhaps reflected the current lack of knowledge about the EBA funerary practices of these areas, as opposed to inter-regional differences in social practice (Carter 1994: 128). To an extent this remains true. For example, despite the amount of fieldwork undertaken in Arcadia, we still have little information about the region's EBA mortuary habits (Howell 1970; Lloyd, Owens and Roy 1985; L. French 1991: 26; Forsén, Forsén and Lavento 1996). In west and north-west Greece a few cist graves have been attributed to the EH period, but few of these sites are reported in any great detail (cf. Hope Simpson and Dickinson 1979: 159-60), though a small EBA burial ground at Kalamaki in Achaia with pit graves akin to those of Manika has recently received preliminary notice (Vasilogambrou 1995). For west Crete it appears that caves continued to be used for burials throughout the prepalatial period, though once more their unpublished status permits minimal consideration of the burial practices or material culture (cf. Faure 1956, 1964). A single small corbelled tomb at Nea Roumata near Chania provides an

interesting exception, closely comparable to the tomb at Krasi Pediados in central Crete and by extension the graves at Chalandriani on Syros (Tsountas 1899; S. Marinatos 1929a), but it produced no obsidian (Godart and Tzedakis 1992: 58-59).

Turning to different matters, an obvious omission from this burial practice's discussion are the issues of age and gender. With regard to the first point, the nature of the skeletal data from southern Aegean EBA burial contexts makes this a difficult matter to approach. In the Cyclades this is due primarily to adverse soil conditions and thus the poor survival of human remains (Doumas 1977: 55), in combination with poor publication, perhaps saddest of all in the case of Stephanos who was a physical anthropologist by training (cf. Stephanos 1903, *inter alia*). The rarity of child burials has led some to suggest that a different mode of disposal was employed for infants, perhaps in large jars or pithoi, whose sherds are occasionally found on the surfaces of these cemeteries (Tsountas 1898: 153; Doumas 1977: 55). Alternatively, the nature of EC society described above may indicate that social being may only have been created through certain actions and achievement (such as voyaging), so that if a child died before taking part in such activities they may not have been considered a true, or full, member of the corporate group and thus denied a formal burial. Beyond stating how unlikely it seems that the funerary consumption of obsidian was a feature of child or juvenile mortuary rites, the data does not allow us at present to say anything positive about the relationship between age and this social practice in the EBA Cyclades.

With the mainland and Crete one is once more faced (in certain instances) by the problems of poor survival and publication of skeletal material, but far more problematic is the question of multiple and mixed burial making it difficult, if not impossible to associate grave goods with specific individuals. At Agios Kosmas, for example, this problem is exacerbated by the fact that it was common practice to place most objects around the edge of the tomb rather than inside it (Mylonas 1959). Once more, there is

little evidence prior to the MBA for the regular inclusion of sub-adults in Cretan and southern mainland burial grounds (Angel 1959: 169-70; Soles 1988: 253-54; Branigan 1993: 88). Naturally, exceptions exist, including an EHIIB rock-cut tomb from Asine that contained a single child accompanied by three shallow bowls and 4 obsidian blades (Frödin and Persson 1938: 338-39, fig. 230; Pullen 1990b: 10).

The subject of gender is one that admittedly has not been done justice to, as it is an area of archaeological and anthropological interest that I have come across at too late a stage in this (present form of the) work to properly include, i.e. as an integral part of the analytical framework, rather than simply as an endnote. Briefly, as regards biological sex, one returns to many of the data-oriented problems referenced above. Sex has been ascertained in a few instances, but no pattern has emerged with regard to the funerary consumption of obsidian.

Many have espoused the belief that EBA 'toiletry' was a female preserve (cf. Dörpfeld 1927: 296; Sampson 1985: 230), but apart from Bossert and Erhardt's use of osteological data to claim that the bone tube was 'a feminine article' (Bossert and Erhardt 1965), one tends to get the impression that this interpretation owes more to western traditional concepts of gender and body adornment and modification, rather than a considered appraisal of the archaeological data. Indeed, the projection of the 'body politic' through depilation, tattooing and scarification could be argued to be of equal concern to both male and female in the EC world. Furthermore, in the case of the rich tomb groups in Chalandriani and their probable relationship to high-status individuals involved in long-distance voyaging, then these obsidian blades and their associated implements for piercing the skin and cutting the hair, were probably 'male' objects. It is worth noting here the EHII burial from Agios Stephanos in Laconia mentioned above, for here the single obsidian blade was found on the skull of an adult male, with a pair of tweezers placed on his chest (Taylour 1972: 211). Furthermore, a

recent publication of a late prepalatial (MMIA) deposit from Funerary Building 19 in the Phourni acropolis, Archanes, indicates clearly that obsidian blades were an element of adult male grave goods (Maggidis 1998: 91, fig. 6.5).

Conversely, one of the negative relationships that may be noted in the Cyclades is between obsidian implements and daggers (also seen in the R-Gräben, Leukas), that from cross-cultural references are invariably considered the property of men. One need not see this as contradictory evidence, for this may be a reflection of differential chronology and social practice. In the Cyclades it would appear that many of the daggers can be dated to the late EBII period, an era that sees a radical shift in how some members of Cycladic society were constructing and maintaining power. Hence, at this juncture of EC 'history' there may have been more than one mechanism of expressing status and 'maleness'.

9.9 - Résumé

As stated from the outset, **Section Two** represents this thesis' centre-point, conceptually as well as physically. Its aim was to bring social issues to the forefront of lithic studies in Aegean prehistory. It could be argued that the burial-grounds of the EBA southern Aegean represents a rare deviation from the primary contexts within which chipped stone production and consumption occurred throughout the millennia: settlement and quarry. This would be to miss the point of my work, for the burial practice merely represents an overt example of how stone tools may have mediated in social relations. Indeed, the basis of *Chapter Five* was to demonstrate that domestic contexts were not the mundane spaces that they are often assumed to be and that by extension nor should any products of a related chipped stone industry be considered insignificant. In turn, this is not to argue that all stone tools were equally symbolically potent, for there is a great difference between the end-products and technical /

ideological basis of the ‘necrolithic’, compared to those blades being produced in the ‘workshops’ of Phylakopi or Manika, with many implements circulating and being consumed as “more or less alienated commodities” (Edmonds 1995: 57).

In more specific terms this Section has intended to describe the emergence, development and dissemination of a particular burial practice, that must be seen as an integral part of EC political symbolism, its adoption embedded within the social relations that were created and maintained across large areas of the southern Aegean. The widespread adherence to the basic tenet of the practice, the consumption of pressure-flaked blades from the *plein temps de débitage*, is quite remarkable. Yet at the same time there are important deviations from those funerary habits enacted within the Cyclades (though such a statement does a disservice to intra-island differences). In part these ‘non-Cycladic’ features may be due to a process of distantiation, both real and symbolic, between the communities involved and the EC world, i.e. an incomprehension, or misreading of a foreign way of doing things. While such an interpretation may contain some truth, it risks establishing the idea that levels of mutual cultural comprehension can be distinguished through how ‘properly’ this practice was performed. This would be to deny social agency in the adoption and manipulation of exotica, be they material culture, technology, or social practice, as a means of expressing more localised concepts.

Indeed, it is worth recalling that after the EBIII period it is generally agreed that the Cycladic culture lose much of its distinctive character, coming under greater influence from external powers, first the Minoans, and then the Mycenaeans. Yet there are groups of burial material from Crete and to a lesser extent the mainland that post-date the EBI-II flourish of EC culture, suggesting that the practice of consuming obsidian in burials has to be seen less and less as ‘Cycladic’. It is also important to note that the ‘necrolithic’ is not seen anywhere after the late EBII period, the entire technological

mechanism being an integral feature of EC culture, just as much as folded-arm figurines, bone tubes and the dark-on-light pottery of the Keros-Syros group.

- CHAPTER TEN: THE QUESTION OF THE 'CYCLADIC COLONIES' AND THE CASE OF AGHIA PHOTIA -

10.1 - Introduction

The distribution of 'Cycladica' across the EBA Aegean world is an integral feature of the 'international spirit'. With notably higher concentrations at a few sites, some have argued that population movement and colonisation have to be considered alongside inter-cultural contact and exchange to explain the archaeological record. The aim of **Section Three** is to concentrate on the three sites with the strongest claims to being 'Cycladic colonies': Aghia Photia and Archanes on Crete, plus Manika on Euboea (**Figure 10.1**).

10.2 - The Controversy: Population Movement in Aegean Prehistory

The cultural affinities of the above sites has been the topic of lively and contentious debate (Doumas 1976, 1979; Sakellarakis 1977a; Sampson 1988b: 113-119, 1988c), with current opinion tending to eschew the notion that migration was responsible for the accumulation of 'Cycladica' at these three communities, preferring instead the idea of extended cultural milieu, or intensive exchange links established between regional emporia. One could relate this reluctance to infer population movement in the archaeological record to the theoretical shift in archaeology during the 1960's and 1970's, away from what were often perceived as rather simplistic diffusionist models, towards those that saw change and innovation as much more complex phenomena and often the result of largely autonomous developments (cf. J.G.D. Clark 1966; Brodie 1994: 3-5). One of the first and most important of these works, was Renfrew's *The Emergence of Civilisation*, that proposed an indigenous origin for the palatial societies in Minoan Crete and the Mycenaean mainland (Renfrew

1972). This volume's continuing influence on Aegean prehistory should not be underestimated, though it should be noted that the author does entertain migration as a viable explanation for other changes in the archaeological record (Renfrew 1987: 168-89), including the belief that the necropolis of Aghia Photia may indeed represent the traces of a Cycladic colony (Renfrew 1991: 29).

Yet, if one considers the nature of small-scale island societies inhabiting the third millennium Cyclades, one appreciates that their homelands offered a "precarious, restricted and threatened life" (Braudel 1992: 115), where communities were dependent on each other and the outside world for their survival and cultural development (Cherry 1985; Broodbank 1989; Purcell 1995; *contra* J. Evans 1973). Indeed, from the first colonisation of the Cyclades, we have ample evidence to infer episodic population movement both to and from the islands, with the Aegean, or the "Archipelago Sea" as it was once known (Braudel 1992: 74), providing a set of maritime stepping stones, that have aided and structured this flow of people, ideas and materials, a process that continues to this day.

From the Late Geometric and Early Archaic periods, Cycladic colonies were established in Caria and the north Aegean littoral, with population entering the Cyclades with the Athenian invasion and settlement of Melos in 426 and 416BC and the Arab raids of the 9th century AD (Sparkes 1982; Wagstaff 1982; Wagstaff and Cherry 1982b). Finally, it is worth noting the comments of the British antiquarian and explorer James Theodore Bent, who travelled extensively around the Cyclades in the late 19th century, making the most of an excellent opportunity to study the modern Greek "in his most primitive form" (Bent 1884: 44-45). Having declared that the islands' inhabitants "have purer blood in their veins", Bent continued, with no trace of irony, to describe how northern Andros was "exclusively Albanian", in Naxos how most of the "best

families are of Italian origin” and many of other islands contain refugees from “the Turkish dominions, Crete, the Peloponnese” and Asia Minor (*ibid*: 45).

10.3 - Geography and Ethnicity: Ours or Theirs?

‘Cycladic culture’, with its geographical and ethnic implications is a modern construct (Karstedt 1913), one that bears a close resemblance to the modern Nome. It is this framework that has created the issue of the ‘colonies’, through the recovery of what archaeologists have defined as elements of ‘Cycladic’ culture, in parts of the Aegean described as ‘Helladic’ or ‘Minoan’. The question is whether this bears any relationship to contemporary constructions of cultural geography (Broodbank 1994).

For example, through typological and materials’ analyses of EBA material culture, we are now aware of fluctuating interaction between communities both within the archipelago and beyond it. A close relationship seems to have existed between the peoples of southern Naxos and the Erimonisia, evidenced through the distribution of carved plaques bearing images of spirals (**Figure 10.2**). Of greater relevance to this chapter is the high level of interaction between the northern Cyclades, Attica and Euboea, that has led some scholars to describe the area in terms of a homogenous cultural sphere (Childe 1925: 51; Renfrew 1972: 535-38; Wilson 1987).

In this instance, it thus appears that there was far closer contact between the EC community of Ayia Irini on Kea and the EH inhabitants of Raphina, Askitario and Manika, than there was between the Keian site and communities such as Markiani on Amorgos, that lies within the same cultural zone but is situated at the southern end of the archipelago (J. Davis 1992: 752-53). In travelling to eastern Attica, a region that after all was visible from Ayia Irini, would members of the Keian community have perceived themselves as moving into another cultural realm? By interacting with an

Attic or Euboean populace would they have been dealing with the 'other'? Where did *their* Cyclades begin and end? How was their self perception and ethnicity constructed?

Similarly our conceptual framework has influenced how we define or problematise migration itself. We know for instance that the colonisation of the Cyclades was not a singular event, with the archipelago gradually filled out over time, as population 'budded off' from primary settlements to establish new sites elsewhere (Broodbank 1989: 321). For example, evidence suggests that the Erimonisia were largely uninhabited before the later EBI, with islands such as Sikinos and Pholegandros populated possibly as late as EBII (Renfrew 1972: 507-25). Yet these incidents of colonisation are given scant attention, in part because they represent movements over short distances, but because they primarily occur within, rather than beyond what we have defined as a cultural region.

Finally, if the Cycladic colonies existed, it is necessary to consider what kind of population movement they represent, along with their 'causes' and 'effects'. Many different issues and factors can be subsumed within a single monolithic term as 'migration'. For a start we should distinguish between colonisation of virgin territory, such as the settlement of Crete and the Cyclades in the 7th and 5th millennia BC respectively (Cherry 1981, 1990; Broodbank and Strasser 1991; J. Davis 1992: 702-706; Zachos 1996b), and emigration to an already inhabited landscape. Similarly there is a difference between large-scale displacement of an indigenous population caused by negative factors such as warfare, crop-failure or disease, compared to the periodic travel of a select few to increase social status through voyaging to distant and exotic, or mythical lands (Helms 1988), though of course the former reasons could be perceived in the form of the latter.

As it currently stands, the interpretation of Aghia Photia offered by some is that of the colonisation of virgin territory (cf. Davaras 1975b: 107), while the excavators of

Manika and Archanes have made it explicit that they believe their sites' Cycladic component was a minority within an already established community (Sakellarakis 1977a: 114-15; Sapouna-Sakellarakis 1987: 260-62), what Branigan has respectively referred to as 'settlement' and 'community' colonies (Branigan 1981, 1984).

10.4 - Material Culture and Ethnicity: A Brief Review

Aegean prehistory is regularly punctuated with innovative features, be they stylistic, technological, or linguistic (Crossland 1973; Morpurgo Davis 1986; Renfrew 1987). Many have sought migrations as the causal factor for these developments in pre-palatial society, such as Anatolian invasions in the late EBII and incursions from the north to explain the introduction of tumulus burials and Minyan Ware in the late EH period (Hammond 1967b, 1974; Hood 1973, 1986; Stos-Gale, Gale and Gilmore 1984; Caskey 1986; Sakellariou 1986; Doulas 1988). In turn, for many, if not all, of these phenomena, alternative interpretations have been forwarded that do not draw on population movement from outside of Greece (cf. Renfrew 1972, 1987; D. French 1973; Rutter 1983b).

Decoding the relationship between material culture and ethnicity and the ability to recognise population movement from the archaeological record are hardly new issues, nor ones restricted to Aegean prehistory (cf. Childe 1950b; Rouse 1986 *inter alia*). What has generally been lacking in the debate on the Cycladic colonies, is a considered approach to how one could recognise that migration was responsible for shaping the archaeological record, as opposed to exchange and / or emulation, an issue that has progressed much more fully with regard to the proposed 'Minoan Thalassocracy' of the later Bronze Age (cf. Branigan 1984; Wiener 1984, 1990; Melas 1988). The issues of artefact style and quantity have dominated the debate, with little consideration as to whether the 'Cycladica' recovered from these sites had been produced and used in a

manner compatible with those island communities from whence they had supposedly derived. The intention of this chapter is to remedy this situation by presenting a detailed contextual analysis of this material from each of the suggested colonies in relationship to their contemporary Cycladic counterparts.

Comparable debates have indicated that it may be profitable to consider more 'mundane' aspects of the archaeological record, such as cuisine and technological practices to elucidate changes in a community's ethnic profile (cf. Wiener 1984, 1990). Certainly if one considers the nature of the 'Cycladica' from Aghia Photia, Manika and Archanes, much of it is of precisely the fine, non-domestic type that one could envisage being employed in élite gift-exchanges, and by extension, the sort of objects for conspicuous consumption through funerary ritual (Manning 1994: 226-227; 1995: 47-48). Unfortunately, two of the sites (Aghia Photia and Archanes), are represented solely by their cemeteries, so that one cannot appreciate the overall level of Cycladic influence within these communities. Thus, this study is based primarily on a detailed comparative analysis of the chipped stone from the three burial grounds, with particular reference to the manner of their production, use and discard in relationship to relevant contemporary Cycladic assemblages.

For many the answer may ultimately lie beyond the realm of 'cultural-historical' archaeology, residing in the studies of palaeo-anthropology and genetics (cf. Angel 1971; Musgrave and Evans 1981; Hill and Serjeantson 1989; Brodie 1994; Fagan 1990). Certainly Archanes has a wealth of skeletal remains, though whether a major difference between the Minoan and Cycladic populations should have existed at this time is another matter (though see Warren 1973; Hood 1990), nor of course are race and ethnicity necessarily synonymous.

I believe that one can, and should, attempt to read ethnic inferences from the archaeological record. There is of course no single marker that one may look to, for any

one ethnic group's mode of expressing political and / or ideological structure may be drawn upon by another, be it their iconography, material culture, technology, burial habits or culinary traditions. The final interpretation is therefore invariably subjective, based on the weighting that one attributes to the common traits shared between the homeland culture and the alleged colony, perhaps getting no further than what Rouse termed 'strong inference' (Rouse 1986). At the same time, while recent attempts to bring an analytical rigour to problems in Aegean prehistory are commendable (the hypethetico-deductive models [cf. Renfrew 1985; Torrence 1986]), the basis of this analysis has to be context-specific. Therefore while elements of my approach may be of use to others, it is by its aim, Aegean-centric, continually trying to locate the data in its 'historical' context: the whys and wherefores of population movement involving one particular group of people moving to one particular region over a *relatively limited* period of time (it is not attempting to define historical events).

10.5 - Approaches to Ethnicity: *Modes, Mechanisms* and Motor Habits in Lithic Technology

The most important development from the aforementioned work has been the emphasis on looking at structure rather than content. For example, recent comparative analyses of LBA frescoes from Crete, the Cyclades, and Egypt have noted that while they share central iconographic themes and conventions, differences may be discerned concerning their constitution and technique (Morgan 1985; Manning *et al.* 1994; S. Sherratt 1994), including differences in the preparation of the surfaces on which the images were rendered (E. Davis 1990). This attention to the idiosyncrasies of a product and the motor habits in its manufacture, as opposed to overt form or design, is of course the essence of attribution studies, the recognition of 'masters', 'hands', or 'schools' of production, as pioneered in art history by such scholars as Morelli and Beazley amongst

others (cf. Cherry 1992; Morris 1993; Gill and Chippindale 1993; *contra* Getz-Preziosi 1987b, *inter alia*).

Any potential that lithic analysis may offer the study of hands, or schools of production, or the analytical individual (Redman 1977), has received little attention in Aegean prehistory. Cherry has commented that refitting may well open such avenues, though this requires a combination of rare archaeological contexts and detailed recording, two variables that are unfortunately often lacking (Cherry 1992: 59). Arguably, other methods may be applied in stone tool studies that may be equally profitable, specifically the detailed analysis of a generic industry, to see whether one can elucidate contemporary micro-regional differences in how it was enacted. This is the distinction between studying the technological *mode* and the technological *mechanism* (Newcomer 1975), which in the case at hand is an attempt to recognise geographical (or cultural?) differences within the pressure-flaked blade industries of the southern Aegean EBA.

The successful removal of pressure-flaked blades involves a carefully structured process that will have been clear in the mind of the craftsperson from the outset. It would have required certain steps to be taken, such as the provision of a ridge running down the face of a nodule, from the 'striking' platform to the distal end, through which the force exerted by the pressure-flaking tool will preferentially flow, resulting in the removal of the linear blank referred to as a blade. Within this process it is often considered necessary to prepare the platform of the nucleus so that the tip of the flaking tool will not slip at the moment when exerting downward pressure, something that could damage the core and thus impair the ability to successfully remove blades.

While there is a linearity in these activities, i.e. certain events have to take place before others can occur (cortex removal before platform preparation for example), this is not to say that these provisions necessarily have to take on specific forms. Both the

core's ridge, or 'arris' and the methods of stopping the pressure-flaking tool from slipping can be achieved in slightly different manners. In the latter case, this could be achieved by abrading the platform, a technique that has the added benefit that the resultant micro-fracturing aids fracture initiation (cf. Lawn and Marshall 1977; J. Clark 1982, 1985). Alternatively, small cup-like flakes could be removed to provide the tip of the flaking implement with a hold, a technique common to Aegean pressure-flaked blade-cores from the later Neolithic onwards, possibly coinciding with the adoption of copper-tipped flaking tools (Torrence 1979a: 72-73; Van Horn 1980; Perlès 1984). These examples of differential platform preparation techniques within a single technological *mode* (pressure-flaked blade production), may be referred to as distinct technological *mechanisms* (Newcomer 1975).

Different *mechanisms* in Aegean pressure-flaked blade production have already been documented; for instance, Torrence recognised a number of different techniques within core platform preparation in her analyses of the chipped stone from Phylakopi's EBA 'great obsidian workshop' and Mycenaean 'shrine' (Torrence 1986: 160, 1985: 470). Similarly, Perlès' diachronic analyses of blade production at the Franchthi Cave revealed major changes in the *mechanisms* employed during the Neolithic (cf. Perlès 1984). On a broader geographical basis, she was also able to discern distinct regional stylistic variations in later Neolithic pressure-flaked blade production, considered the result of "unconscious" processes, a matter of the knappers' "'knack' and 'tricks of the trade'" (Perlès 1992: 139). As only lithic technology displayed any radical changes during this time, the technical innovation is seen in the context of emergent metallurgy, rather than as evidence for a change in population (Demoule and Perlès 1993: 394-95).

In certain instances changes in lithic technology could be seen as indices of cultural, or ethnic, discontinuity. In Perlès' study of chipped stone technology either side of the Mesolithic / 'preceramic' Neolithic interface, she was able to make a strong case

that in parts of Greece, specifically Thessaly, the process of ‘neolithisation’ appeared to have involved the arrival of new groups of people, rather than through the adoption of new socio-economic practices by a resident population, as proposed for the Franchthi Cave (Perlès 1987, 1988). It is important to acknowledge that Perlès’ never accorded her data-set with an interpretative primacy, locating her conclusions within the context of equally marked changes in settlement patterns, base economic practice and innovations in other technologies such as bone and antler working. As with the work of Wiener (1990), it is Perlès’ holistic approach to these issues that is to be applauded (cf. Perlès 1992) and a methodology that will be pursued in the following chapters.

In practical terms, this involved trying to glean as much information as possible from both cores and end-products, recording a wide range of attributes from which it was hoped that one could differentiate *mechanisms* of production that were bound closely in time and space. The work of French lithic specialist Binder on variability within the ‘debitage systems’ of blade production has been influential within this study (Binder 1984; 1991). He demonstrated how differential reduction strategies may be reconstructed from an analysis of the stratigraphic relationship of the blade-scars (or blade-scar run), for as Maccurdy noted nearly a century ago, “the life history of a nucleus may be read in these minute markings, the presence and disposition of which reveal the relative ages of the flake-scars” (Maccurdy 1900: 419; **Figure 10.3**).

This form of analysis has been discussed on a number of occasions within this thesis, specifically in reference to the definition of the ‘neolithic’ *mechanism* of EC mortuary habits and the recognition of an apparently unique blade manufacturing tradition within EMIB Mochlos. It is debatable whether these distinctions between *mode* and *mechanism* can be seen as synonymous with the conscious and unconscious act (cf. Chippindale and Gill 1993: 58; Hill 1993: 57). In truth we may never know if these subtle distinctions in core preparation and reduction represent the knapper’s motor

habits, or processes that were taught as integral elements of the craft. Obviously the larger the assemblage, the greater the potential for discerning ‘hands’, as opposed to ‘schools’, though in terms of the questions being asked in this thesis, these issues may be largely irrelevant if one can still recognise that certain aspects of blade production had distinct spatial and temporal distributions. It is also important to appreciate that the significance of these different technological *mechanisms* can only be understood through contextual analysis. For example, in the case of the context of the EMIIB ‘core deposit’ from Mochlos we may be dealing with the ‘analytical individual’. In turn, the temporal and spatial distribution of the ‘necrolithic’ technique may be indicative of a ‘school’, or ‘tradition’, that given its geographical, social and demographic context, may in turn equate with a specific kinship group.

To summarise, the central tenets of this study are as follows. Through both archaeological and experimental data, we know that within blade production different technological *mechanisms* can exist within an overall technological *mode* (Newcomer 1975). Within southern Aegean EBA pressure-flaked obsidian blade production it is possible to recognise such differential mechanisms, that imply the existence of parallel craft traditions employed at individual, community, or potentially in this instance, regional and ‘cultural’ levels. The mechanisms involved in the production of the chipped stone from the Aghia Photia, Archanes and Manika cemeteries have been studied in the light of their relationship to contemporary techniques represented by pressure-flaked blades consumed in contemporary Cycladic burial grounds, the results and their potential ethnic implications will be presented here.

10.6 - Comparing Assemblages: Temporal Context and Methodology

Firstly, it is necessary to emphasise the different periods of time and contexts that these sites occupied. The ‘colonies’ have generally been discussed all together, that

tends to imply a simultaneous phenomenon of colonisation, whereas in fact the three burial assemblages span late EBI-EBIII. Therefore, in order to place each site into its relevant context, it is necessary to draw on different Cycladic data-sets for comparison.

The lithic assemblages from Aghia Photia, Manika and Archanes will be described in detail, referring to a range of individual and group attributes, including context and life histories. These three groups of material will then be compared and contrasted with contemporary funerary deposits from the Cyclades and those from their 'cultural hinterland', be that 'Minoan', or 'Helladic'. The attributes considered include:

1. Typology - the qualitative description of the assemblage
2. Scale of individual components - the size of the main forms in each assemblage, expressed as:
 - (i) length - range, in cm. where complete
 - (ii) width - range, in cm. where complete
 - (iii) thickness - range, in cm. where complete
3. Technology and motor habits - the technical description of the assemblage
4. Depositional practices - quantity deposited; the position and association of material within a tomb; life histories - the state of the material and the proportion of the assemblage utilised prior to deposition.

10.7 - Aghia Photia and Late EBI Cyclado-Minoan Relations

The site of Aghia Photia (Siteia), is situated on the gently undulating clifftop of Kouphota, on the north coast of east Crete, 5km east of modern Siteia (**Figure**

10.1). Discovered in the early 1970's, the preliminary publication describes the largest known EBA cemetery on Crete, with 252 graves excavated and at least a further 50 previously disturbed (Davaras 1971, 1972; **Plates 10.1–10.2**). Unfortunately, fieldwork has failed to recover any trace of the associated settlement, and is therefore presumed to lie under the modern village of Aghia Photia, a few hundred metres to the SW of the prehistoric necropolis (Tsipopoulou 1988, 1989, 1992).

The graves, cut into the natural rock, included a few examples of a simple pit type (**Plate 10.3**), but were predominantly small chamber tombs, the antechamber divided from the burial proper by a blocking stone (**Plate 10.4**). Burial was always restricted to one half of the tomb (lain on a floor of sea-pebbles), that would also contain the vast majority of the grave goods (C. Davaras pers. comm.), with the often paved antechamber usually remaining empty, though occasionally a Pyrgos chalice was placed on its flooring (Davaras 1971: 394, fig. 1).

The quantity and quality of material culture recovered was impressive, not least due to its largely complete and undisturbed state, a rarity in southern Aegean EBA burial records. It is the overwhelmingly 'Cycladic' nature of the material assemblage and its mortuary practices, that has led so many to believe that of all the candidates, this is the strongest claim for an actual colony (Davaras 1975b: 107; Doumas 1976: 80, 1977: 68–69; Zapheirou 1984: 37; Hood 1990: 157; Renfrew 1991: 29), though there are some who disagree (Sapouna-Sakellari 1987: 261; Sampson 1988b: 114; Dickinson 1994: 210–11).

10.7.1 - Contextualising Aghia Photia

In order to see just how 'Cycladic' or 'Minoan' the material culture from Aghia Photia is (specifically the lithic component), it is necessary to compare and contrast it with relevant assemblages from the islands and Crete. Unfortunately, there is little

known about the site's immediate context, east Crete in the EMI period. This gap in the archaeological record can be hardly blamed on a lack of research in the region, as survey and excavation have recovered substantial evidence of FN and EMII activity (Betancourt 1985: 46; Watrous 1994: 699-717). This has led Betancourt (1985: 26), to suggest that eastern Crete may have only been "sparsely inhabited" at the start of the EBA, echoing beliefs that it was only with the 'budding off' of population from the large central Cretan centres of Knossos and Phaistos into east Crete at the start of the EBA, that such important communities as Mochlos became established in the EMII-III periods (Seager 1912: 94; Warren 1972b: 268, 272).

Alternatively, Haggis (1993) argues that it is our chronological nomenclature that has created an EMI settlement lacunae for this region, employing inappropriate terminology derived from other areas of the island. It is his opinion that one can in fact see a continuous development in nucleated settlement in eastern Crete from perhaps as early as the later Neolithic, with sites such as Gournia, Vasiliki, Pseira and Priniatikos Pyrgos being founded in EMI at the latest. Even allowing for this important and convincing argument, we are still left with precious few securely stratified assemblages contemporary with Aghia Photia. Thus, the comparative data-base has to be drawn from a broader geographical context, encompassing EM material from central and southern Cretan sites.

10.7.2 - *The burial type: Origins and comparanda*

The small rock-cut chamber tombs of Aghia Photia have neither a contemporary Minoan parallel, nor any Neolithic precedent, with burials of these periods in east and central Crete being usually placed in caves; indeed human remains alongside FN material were discovered in the Kouphota cave in the cliff immediately below the Aghia Photia cemetery (Tsipopoulou 1992: 68, after Platon 1959; other caves, cf. Hogarth

1900-01; Hazzidakis 1912-13; Xanthoudides 1918; S. Marinatos 1929b; Alexiou 1951; Platon 1964: 351; Haggis 1993).

In the Cyclades the Aghia Photia tombs with their antechambers and blocking stones, find an exact parallel at the Agrilia cemetery on Epano Kouphonisi (Zapheirópoulou 1984: 37). The link between the two sites is all the more striking when one considers that the type of grave seen at this necropolis is also unique within its EC context (*ibid* 1983: 81), with Cycladic burial grounds of this period usually consisting of cist-graves (Doumas 1977: 37-49). The paved, or pebbled floors of the Aghia Photia tombs are another feature common to late EBI burials of the Cycladic, including those of Kampos on Paros, Livadhi on Dhespotikon and Ayioi Anargyroi on Naxos (Davaras 1971: 397; Doumas 1977: 44-45, 56, figs. 22 & 26).

10.7.3 - *The material culture and its affinities: Ceramics and metals*

A remarkable quantity of pottery was recovered from this site, over 1800 vessels albeit of an apparently limited repertoire (Davaras 1972: 649). Many of the most common forms, such as the conical and globular pyxides, piriform bottles, fruitstands, deep cups with vertical lugs, 'frying pans' and 'spool' pyxides find exact parallels in the EC burial record, specifically that of the late EBI-EBII Kampos Group (Davaras 1971: 395 fig. 11, 1972: pl. 603z, st; Warren 1984; Zapheirópoulou 1984). As ever, the closest links for the Aghia Photia material are with the cemeteries of Agrilia on Epano Kouphonisi (Zapheirópoulou 1970a, 1970b, 1971 *inter alia*), plus the Naxian sites of Louros Athalassou and Ayioi Anargyroi (Papathanassopoulos 1961-62: 132-37; Doumas 1977: 100-120).

While Aghia Photia's ceramics appear to be predominantly Cycladic in style, Minoan forms are also present, as are a small range of vessels whose limited distribution suggests they may have formed part of the community's own ceramic repertoire. The

former material includes jugs and jars of Ayios Onouphrios Ware and Pyrgos Ware chalices (Davaras 1976, fig. 80, n.d. pl. 2; *comparanda*: Hazzidakis 1912-13: fig. 3a & b; Xanthoudides 1918: fig 8, 42-45; Alexiou 1951: fig. 1,5; Alexiou 1960: 227, pl. 20 top centre; Blackman and Branigan 1982: 29-32, fig. 11, 93-95). The latter forms consist of scoop-like decorated bowls and elliptical pyxides that are, to my knowledge, only seen at one other site, the Pyrgos Cave in central Crete (Davaras 1972, pl. 603h, Davaras n.d. pl. 8; *comparanda*: Xanthoudides 1918: fig 12, 107, pl. a, lower right). The relationship between Aghia Photia and this EM community, along with that of the Kyparissi Cave, will be discussed further below. Finally, there are that are forms derived from the Cyclades, but have a distribution peculiar to Aghia Photia, including conical and globular pyxides raised on feet, occasionally in multiple forms as 'kernoi' (Davaras 1972: pl. 603c, n.d. pl. 4).

The small but variable amount of metalwork published, including daggers, a spearhead, a knife, fish hooks, 4 axe-adzes, a pendant, a bangle and a zoomorphic figurine (Branigan 1974: 207), also have close Cycladic parallels (Stos-Gale 1989: 287), not only in style but also in one instance regarding how an implement was discarded. From Tomb CCXVII, came a single-ribbed, riveted dagger of Branigan's Type I, bent in half prior to its interment (Davaras 1971, fig. 10, far right; Branigan 1974: 175). Two other examples of 'killed' daggers are known, one from the cemetery of Alonistria Chousouri, Epano Kouphonisi (Zapheiropolou 1971: pl. 478b), the second from an EMI-MMI tholos tomb at Siva (North) in the Mesara (Paribeni 1913: 27, fig. 22). Metallurgical analysis also demonstrates that most of the Aghia Photia objects were consistent with Cycladic copper sources, mainly that of Kythnos (Stos-Gale 1989: 287-88, fig. 31.23).

10.7.4 - The material culture and its affinities: Obsidian from Aghia Photia

Obsidian made a sizeable contribution to Aghia Photia's burial record, with the recovery of "several hundreds" of blades (Davaras 1971: 397, 1976: 211-12, fig. 120). This is the first detailed report that this material has received. Indeed, their occurrence in 175 of the 263 tombs (67%), indicates their recurrent role within this community's funerary practices (**Table 10.1, a-e**). With 958 pieces, Aghia Photia is the second largest grave assemblage known, second only to that from the 'Area of the Rocks', Archanes, where more than a 1000 pieces were recovered (Sakellarakis and Sakellaraki 1991: 135).

10.7.5 - Comparable assemblages

As noted above, the number of secure obsidian assemblages from later EBI burials in Crete and the Cyclades is relatively small (**Figure 7.2**). From the recent excavations at Agios Andoni, east Crete, only a single fragmentary blade was recovered and that was a surface find (Haggis 1993: 15, fig. 5). Equally, while the obsidian from the Pyrgos and Kyparissi burial caves was associated with predominately late EMI material, they also produced some EMIIA, EMIII and later finds (Xanthoudides 1918: 166, fig 15; Alexiou 1951: 282, fig. 7). The former assemblage of 44 blades is presented here for the first time (**Plate 7.11**), while the latter material has yet to be studied by myself and has only 4 blades illustrated in the publication.

The Mesara is represented by a single assemblage from Ayia Kyriaki, a small tholos tomb in the Ayiofarango Valley. Despite having been robbed, it provides us with a data-set of greater contextual detail than any of the other published sites dealt with here. Of the total assemblage of 66 pieces of obsidian, 30 came from stratified contexts (*Appendix 4*), of which two groups of material can be assigned to the late EMI period, Levels *K8* and *L7* (n=6), with a further two sets of late EMI-EMIIA, Level *L6* Room 2, Level *Z4* (n=17). The final assemblage to be considered in this comparative analysis is

that from the lowest levels of Tholos E at Phourni, of EMIIA date, a group of material that also gains its own detailed discussion in *Chapter Twelve*.

Finally, while many of the EC burials assignable to this period are of considerable interest to this study (e.g. Louros Athalassou Tomb 26), only Agrilia and Ayioi Anargyroi provide a sufficient quantity of material for any analysis to be statistically significant. The former site in particular represents a sizeable sample (n=235), though its current state of publication does not provide us with the contextual information of the latter (n=16).

10.7.6 - *Comparing assemblages: Style, structure and significance*

Typologically, the Aghia Photia assemblage is remarkably homogenous, consisting almost entirely of fine prismatic blades (**Table 10.2**), a feature shared with both contemporary Cycladic and Minoan burials (**Figure 10.4**). By looking in more detail at the blades employed at Aghia Photia, some differences can be discerned between this assemblage and many of those documented above. While the vast majority of these blanks were derived from the *plein temps de débitage* (**Table 10.3 & Figure 10.5**), 87 pieces were related to the initiation and primary series of blade production (CB, B1/2, B2/3's).

This use of wider range of blade products appears to be unique to this site, though perhaps a slight resonance may be found within the Agrilia assemblage (**Figure 10.5**). Most deposits did conform to the general habit of interring only the finest and most regular blades, with 125 of the 175 grave assemblages (71%), solely comprised of blanks from the *plein temps de débitage* (**Plates 6.4-6.6**). It is noticeable that the remaining 'less regular' blades, have an uneven distribution, with 37% of their total concentrated within only 6 graves, including Tombs LXII and

CCXXIII, the two largest deposits from the cemetery (**Figure 10.6; Table 10.4; Plate 10.5**).

10.7.7 - Comparing assemblages: Depositional practices

Obsidian blades are a recurrent feature of Kampos Group tomb material, being the most common grave good at Ayioi Anargyroi (Doumas 1977: 105), present in half of the Agrilia burials and two-thirds of those at Aghia Photia (49% and 67% respectively). In turn, while the Ayioi Anargyroi grave groups are typified by one blade per individual, there was a far greater range in the quantity of material being deposited at the latter two sites, even when one allows for multiple inhumation (**Figure 10.7**). In those graves that contained more than one blade, many of the individual pieces appeared to be related (**Plates 10.6–10.7**), not only due to their similar form and scale but also because in a few instances they could be refitted, positively demonstrating their concurrent manufacture and deposition.

This difference in the amounts of blades being consumed reflects the divergence in Cycladic social practice seen at the end of the EBI (*Appendix 3*). As at Ayioi Anargyroi, certain communities adhered to the practice witnessed in Pelos-Lakkoudhes Group tombs, where inhumations would usually only be accompanied by a single blade. Alternatively, in Plastiras and Kampos Group burials there are instances when certain burials were ‘privileged’ with a larger number of products, as previously noted in Panagia Tomb 56 and Louros Tomb 26 and it is this form of the act that is commonly seen at both Aghia Photia and Agrilia (*Appendix 2*).

The quantity and apparent regularity of deposition at Aghia Photia seem to be in contrast to Mesaran burial practices, where despite their regular occurrence in tholoi, their impact on the burial record appears to be low. In the context of the tomb’s duration, a total of only 66 blade fragments from the EMI-MMI tholos of Ayia Kyriaki

is a case in point, though the recovery of 29 of the 30 stratified pieces from EMI-IIA levels shows that one cannot assume an equal rate of deposition over time (Branigan 1993: 27).

Unfortunately there is only a limited amount of information that can be gleaned regarding the associations of obsidian grave goods, mainly due to the preliminary status of the Aghia Photia and Agrilia publications, and the fact that the reports on the Pyrgos and Kyparissi Cave material provide no contextual detail beyond their recovery from the burial deposits. We do know that at Aghia Photia and Agrilia the obsidian was treated differently to other classes of material culture, placed with the burial proper and not in the antechamber (Davaras pers. comm.; Zapheirou 1970a: 429). Obsidian was also directly associated with the dead at Ayioi Anargyroi (Doulas 1977). At Ayia Kyriaki, as indeed in most EM tholoi (though see Maggidis 1998: fig. 6.7-6.8), we have little proof positive that grave goods were deposited with a specific individual, though it can at least be noted that obsidian was recovered mainly from the primary burial chamber (Blackman and Branigan 1982: 23, 54-55).

Finally, regarding the state of the assemblages, it seems clear that there was little difference between how each community was treating the material. It is apparent that at each of these cemeteries the blades were interred as complete as possible, their often fragmentary recovery a result of their delicate nature and subsequent disturbances (**Figure 10.8**). At Aghia Photia 473 whole blades were recovered, with a further 49 examples missing just the smallest parts of their proximal or distal sections (the latter often break during manufacture). Breakage of the remaining pieces could have occurred either as a result of tomb collapse, subsequent burial activities, or during excavation and storage. With the Aghia Photia and Cycladic tomb groups it was relatively easy to recognise broken segments from the same blade and conjoin them for recording purposes. The Aghia Photia data compares favourably to that from all the other sites,

with the exception of Ayia Kyriaki where the combination of structural development, secondary deposition and tomb robbing has resulted in the breakage of all blades and the loss of many segments, so that no complete examples could be reconstructed.

Similarly, the evidence suggests that at all sites the habit was to use mainly fresh, unused implements for burial (**Figure 10.9**), with microwear analysis demonstrating that only 33 blades from Aghia Photia (3%), displayed traces of utilisation (**Plates 10.8–10.9**), with 897 bearing no trace of wear at all (94%). There is nothing particularly noticeable about those implements with definite or possible use-wear (n=62), except where complete, it would seem that the blades being utilised were on average slightly longer than those that were not (7.37cm compared to 6.72cm long, from a sample of 36 whole blades).

10.7.8 - Comparing assemblages: Scale, technology and motor habits

All the blades discussed in this section are related technologically, in that they all bear the diagnostic traits associated with having been pressure-flaked from unipolar, faceted cores. Distinctions can be made between the respective assemblages by reference to the differential size of individual products, relating to the manner how they were manufactured.

For reasons outlined above, much of the grave material was broken, therefore it was difficult to generate large samples of complete pieces to compare blade-lengths. Concentrating purely on products from the *plein temps de débitage*, Aghia Photia and Agrilia have produced a lot of complete blades (412 and 59 respectively), with a further smaller samples from all the other sites (except Ayia Kyriaki), plus a single Kampos Group grave assemblage, Tomb 26 from Louros Athalassou, Naxos. The sizeable difference in the size of the data-sets meant that only the comparison of the Aghia Photia and Agrilia material was worth presenting graphically (**Figure 10.10**).

While the above results suggest that the differences between the Aghia Photia material and the EM samples are fairly insubstantial, it can be argued that the figures at face value are misleading. If one considers mean blade-length alone (6.72cm at Aghia Photia) then the products from the Pyrgos and Kyparissi Caves (6 and 5.56cm respectively), are closer than the Cycladic samples, that are at least 1.73cm longer on average (Agrilia, 8.45cm). However, there is an important factor to consider, namely the range of blade-lengths within these assemblages.

As demonstrated in *Chapter Seven* the late EBI Cyclades saw the emergence of a funerary-specific technological *mechanism*, the products from which attained spectacular lengths compared to material from contemporary domestic contexts. There was no such development in EM blade technology, with blades from Cretan burials rarely over 7cm long. Furthermore, no appreciable difference in scale exists between material from EM tombs and that from contemporary settlements, suggesting that there was a single blade manufacturing technique responsible for both domestic and funerary production.

It is therefore of the greatest significance that the Aghia Photia assemblage contains blades of such a large size. For example, the longest blade from the site measures 12.43cm, some 5.17cm longer than the largest piece from either the Pyrgos or Kyparissi Caves (7.26cm - Pyrgos Cave), and 4.98cm longer than the other single largest blade currently known from a Cretan burial context (7.45cm from Lebena; **Table 7.6**). Indeed, if one takes the biggest blade from the Pyrgos Cave as an arbitrary benchmark, then a third of the Aghia Photia sample are longer (n=134, 32.5%). If one then turns to contemporary Cycladic grave material, then one sees that virtually all the blades are larger than the Pyrgos example, with 80% (n=47) of the Agrilia assemblage over 7.26cm (**Figure 10.11**).

In comparing these burial assemblages, the data-set is considerably enlarged when blade thickness and width is taken into account (again concentrating wholly on products of the *plein temps de débitage*). Here the comparative analyses demonstrates that the Aghia Photia material has a much closer relationship with the Agrilia assemblage, is markedly different to the tholos tomb material, with the Pyrgos and Kyparissi Cave material falling somewhere in the middle (**Figure 10.12-10.13**).

The lithic assemblages from all of the sites discussed above conform to an underlying principle, namely that only non-cortical, complete, fresh, unused and regular blades should be associated with human burial. At the same time, it is possible to note some differences between these communities in how this practice was enacted. Firstly, all the Cretan assemblages, with the exception of Aghia Photia, are comprised of blades that are to all intents and purposes the same as those seen in contemporary Minoan domestic contexts, albeit those selected for burial tend to have been the longest and most regular. This does not exclude the possibility that blades were specifically produced for burial purposes in EM Crete, but it remains true that the scale and form of these products suggest that a single technological mechanism existed for producing all blades, irrespective of whether they were intended for domestic or funerary consumption.

In the Cyclades and at Aghia Photia the practice was conducted on a different footing, with the ritualised consumption of products from an entirely different mechanism of blade manufacture to that responsible for domestic production. While in form the blades from Aghia Photia parallel those of other Cretan burials, its corpus includes examples up to 12.43cm in length, produced by a technique that was argued in *Chapter Seven*, has a remarkably restricted distribution, in terms of geography, time, context and the members of society who had access to the requisite knowledge and skills.

Therefore, not only did the community of Aghia Photia dispose of their dead in a manner only otherwise seen on Epano Kouphonisi and employ a wealth of 'Cycladic' material culture as grave goods (**Table 10.5**), they also employed a *mechanism* of blade production that is otherwise almost completely unknown outside of EC burial contexts.

10.8 - Conclusion: Aghia Photia a Cycladic Colony?

To conclude the first and perhaps most important part of this study, it is through a contextual analysis of the numerous shared social and technological practices between the community of Aghia Photia and those in the south central Cyclades, in particular Agrilia on Epano Kouphonisi, that one can make an excellent case that the necropolis of Aghia Photia indeed represents the material remains of island émigrés: a Cycladic colony. Due to the close relationship of their burial records, the Erimonisia and southern Naxos can be indicated as the probable origin of these settlers.

While there may now be greater justification in considering Aghia Photia as the largest assemblage of Kampos Group material known (cf. Broodbank 1989: 323), there are a few notable differences between these grave deposits and those known from the contemporary Cyclades. While the final publication may alter this impression, there does appear to be a lack of items concerned with body modification and imagery, such as necklaces, pins, bracelets, palettes, pigments and pestles (including obsidian 'core-pestles'), important features of late EBI Cycladic funerary assemblages (*Chapter Seven*).

One also has to consider the site within its Cretan setting, as there is a strong relationship between the assemblages of Aghia Photia and the Pyrgos and Kyparissi caves in central Crete, the former in particular, with hints that the less well published assemblages from the Eileithiya and Archalochori burial caves, may also contain comparanda (Hazzidakis 1912-1913; Xanthoudides 1918; S. Marinatos 1929b; Alexiou

1951; Karantzali 1996). The Pyrgos Cave's possible Cycladic imports have long been acknowledged, specifically its piriform, or Kampos Group, bottles (Varoucha 1925-26: 104; Renfrew 1972: 201; Sakellarakis 1977b: 145, fig. 133), though it also contained many of the other Cycladic forms seen at Aghia Photia and a folded-arm Figurine, an object apparently not found at the east Cretan necropolis (**Table 10.5**).

There is a further link between these three assemblages when one considers their non-Cycladic material culture. Branigan (1993: 40) has noted the striking similarities between the late EMI pottery of the Pyrgos and Kyparissi Caves and the Mesara tholoi, notably Lebena, Ayia Kyriaki, Kaloi Limenes A and Koutsokera. The shared forms include red-painted spouted jugs and two handled cups, bowls and jars of Ayios Onouphrios Ware and Pyrgos Ware chalices, that are precisely the same range of vessels recovered at Aghia Photia (Davaras 1972: pl. 603a & e, 1976: fig. 80). These 'drinking sets' are a recurrent phenomenon of the Mesara tholoi, interpreted as elements of a funerary related practice of consuming liquids, or 'toasting', (Branigan 1993: 24, 27), and are also represented at Aghia Photia, suggesting that this community did not merely enjoy a casual contact with its Minoan hinterland, but that the east Cretan community was aware of and appropriating a specific element of Mesaran ideology. Direct contact between Aghia Photia and this region is improbable, with access to 'exotic' material culture and social practice probably gained through a number of exchange / social networks that incorporated such north-central Cretan communities as Knossos, and those represented by the Pyrgos and Kyparissi cave burials (cf. Wilson and Day 1994).

While there are strong links between the material culture of Aghia Photia and the Pyrgos and Kyparissi Caves, important differences remain, particularly with reference to the disposal of the dead. There is also the matter of the varying amounts of 'Cycladic' material culture at these communities, for while quantified data is currently unavailable it is obvious that there were far larger amounts in circulation at Aghia Photia.

10.9 - Discussion

Finally, it is necessary to offer some brief thoughts regarding the reasons behind the suggested Cycladic emigration to Aghia Photia and its overall implications within a late EBI southern Aegean context. Many people have seen migration as being largely, if not wholly, determined by adversity. Causal factors are invariably related to economic and environmental parameters, where overpopulation, crop failure, disease or invasion forcibly displace an indigenous population to ‘pastures new’ (cf. Rouse 1986: 12-13; Renfrew 1987: 124-41). For instance, Broodbank has argued that in order to minimise the threat of crop failure in such insular and marginal environments, it is probable that such small-scale communities would fission “well before the carrying capacity of the inhabited area had been reached” (Broodbank 1989: 321). Unfortunately, while the considerable rise in the number of sites from the EBI - EBII certainly suggests an increase in Cycladic demography (Renfrew 1972: 509-525; Wagstaff and Cherry 1982b: 136-140; Broodbank 1989: 321), it is currently impossible to gauge what socio-economic parameters might have constituted overpopulation at this time. Thus we are presently able to state whether an alleged emigration from the Cyclades to northern Crete was a result of being ‘pushed’, rather than ‘pulled’.

One could forward a more economically based argument, where the settlement of Aghia Photia was established as a result of expansionist maritime activities by a Cycladic trading / raiding power. It may thus have acted as a ‘beachhead’, or ‘gateway community’ in Cyclado-Minoan exchange networks, akin to the later role of Mochlos (Branigan 1991). Taking this theory to its most extreme, the people of Aghia Photia could be seen as pivotal in the establishing and articulating those modes of contact that brought Minoan communities, such as those represented by the Pyrgos and Kyparissi burial caves, into contact with Cycladic material culture and island-based resources such

as Kythnian copper and Melian obsidian. Aghia Photia would have provided at least a suitable resting place on arrival and point of departure for boats travelling along the north Cretan coast (Agouridis 1997: 9-11).

This theory certainly has merit, but arguably much of this activity was located in a primarily political, rather than economic context. If a small group of individuals ‘budded off’ from an established community and migrated to the north Cretan coast, it would have had important repercussions for both émigrés and the original populace. As such, we return to those issues discussed in *Chapter Seven* and *Eight*, and the significance that many societies attribute to voyaging and the “authority of distant knowledge” (Helms 1988: 131-71).

Given contemporary maritime technology and the probable restricted mobility of early Cycladic society, the voyage from island homelands to Aghia Photia would have represented a considerable feat, both practically and symbolically. In terms of geographical distance, it involved travelling much further than was required to move amongst the islands of the archipelago, or from the northern Cyclades to Attica or Euboea. Even when leaving from Akrotiri on the south coast of Thera, the point closest to the north Cretan coast (ceramics suggest the existence of a contemporary settlement [Sotirakopoulou 1990: 43]), it would still involve a voyage of 135-140km across open sea. Also, if one considers Broodbank’s approximated speed of the oar propelled longboats (Broodbank 1989: 333), the trip would take over 24 hours continuous paddling, that in practical terms probably represents at least a couple of days travelling. Indeed, given that depictions of longboats are restricted to Keros-Syros Group contexts, there is no reason to assume that these were the vessels involved and therefore the trips may have taken even longer. Furthermore, Broodbank (1989: 332), has argued that such vessels would in fact be unsuitable for the transport of bulk items such as livestock, that

one presumes would be a necessary aspect of colonisation (not that Crete was an uninhabited landscape).

The fact remains that the voyage between the Cyclades and Crete involves one of the longest seaborne journeys we can refer to in Aegean prehistory, albeit one undertaken as early as the seventh millennium BC, as Melian obsidian from EN Knossos proves (Renfrew, Cann and Dixon 1965: 237-38). Even so, with no sail, this journey would have remained one of the most challenging and dangerous voyages undertaken at that time, for there would be no recourse to island-hopping and coast-hugging, the method of 'tramping' that enabled later crews to reach such destinations as Manika, Poliochni on Lemnos and Troy.

Regarding the symbolic implications of this possible emigration, if, as seems plausible, the voyagers' homelands were the land and seascape of the northern Erimonisia and southern Naxos, then with north Crete not even visible from this region, the journey would have involved travelling to the edges of their world. The ethnographic record provides numerous cross-cultural references to the effect that to transgress such cosmological boundaries may invoke contact with dimensions of a temporal, sacred or mystical nature, such as past worlds of ancestors and mythical origins, or lands inhabited by the gods or dangerous beings (Helms 1988: 20-65). The meanings that island societies' accord the distant conjunction of sea and sky has been taken up by Broodbank (1993), applying the work of Helms, amongst others, to the emergence of a powerful mixture of maritime and celestial iconography in the late EBI-II Cyclades. Broodbank argues that such voyaging would have been primarily non-mercantile in nature, instead forming a core element of political and cosmological structure (Broodbank 1989, 1993).

Therefore, a migration from the central Cyclades to the periphery of their known world, with all the associated practical and metaphysical dangers it would have

involved, is exactly the kind of act that might bestow prestige on individuals. If we can assume that someone was influential in structuring this emigration, perhaps an ambitious junior member of the community, then it would be through such a process that this individual's status could be elevated: the creation of a 'big-man'. Maintenance of this power would be another matter.

Once established, the community of Aghia Photia would have probably occupied a liminal position within the world perspective of those based in the central Cyclades. Therefore the nature of social relations between the settlers of the north Cretan coast and their ancestral homelands would have irrevocably altered, with the émigrés perceived as imbued with all the mystical knowledge and powers of their distant lands. Indeed, their liminal situation could be seen as twofold given their probable relationship with the indigenous Minoan population. Conversely, for the inhabitants of Aghia Photia, the articulation of these social relations, as for example through established or re-negotiated kinship and trading links, would not only once more involve the kind of socially meaningful journey previously described, but perhaps one perceived as travelling back in time to the land of their ancestors? There is no direct evidence that such relationships were maintained, for if contact resulted in a two-way flow of not just information but also of material culture, then there are precious few EM products entering the Cyclades at this time (cf. Zapheirou 1983: 85-86, fig. 16; Warren 1984). Even if one were proposing that there was a Cycladic-bound flow of bulk perishable goods such as textiles or agricultural produce, one would in the latter instance expect to find traces of their containers, such as the Keros-Syros slash-handled pithoi, that have been recovered beyond the Cyclades at Manika and Knossos for example (Wilson 1984: 301-302; Sapouna-Sakellari 1986: 205-13, fig. 68-71). This lack of evidence for imported goods holds equally true for other long-distance contacts that the crews of Cycladic longboats are supposed to have initiated, the suggested conclusion is that as with many

cultures, voyaging was of a primarily “*political, ideological or intellectual* nature” (Helms 1988: 31).

It is therefore suggested that, as “associations with distant phenomena may be expected of or attributed to élites as validation of their status” (*ibid*: 132), the entire act of emigration from central Cycladic homelands to Aghia Photia, may eventually have served as a mechanism for mutual political legitimisation.

Whatever niche this area of Crete provided the settlers, be it ecological, economic, or metaphysical, it was ultimately a failure, lasting a few generations before being abandoned sometime in the early EBII period. One could wonder if by this period Aghia Photia had become marginalised. Certainly the establishment of new sites at Chalandriani on Syros and Dhaskalio on Keros, along with the resettlement of Ayia Irini on Kea in early ECII, suggests that power bases were shifting within the islands. It is also notable that there appears to be a virtual cessation of activity on Epano Kouphonisi around the same time. Similarly, while we know that Cyclado-Minoan social networks were maintained, in that vessels imported from the islands were recovered from EMIIA Knossos amongst others (Wilson 1994: 40-41), the concentration of ‘Cycladica’ north of the Cyclades, in EHIIA contexts of the southern mainland, Euboea and beyond, hints at expanded interests in other regions.

It may also be significant that at this time Mochlos, situated c.30km to the west, shows signs of increasing status with the construction and use of at least 4 of the impressive ‘House Tombs’, I, II, IV and VI in EMIIA (Soles 1992: 43-60), its ‘wealth’ and power no doubt based to a large degree on its maritime links, not least with the Cyclades. At the same time, it has already been argued that there is little indication of *cultural* links between Mochlos and communities of the archipelago (*Chapter Five*), that one might consider surprising if it were to be proposed that the site may have incorporated population from Aghia Photia. It will be interesting to see when published,

what Cycladic links, if any, are present at Petras, close to Aghia Photia, where recent excavations have recovered traces of late EMI - EMIIIB inhabitation (M. Tsipopoulou pers. comm.).

- CHAPTER ELEVEN: THE CASE OF MANIKA -

11.1 - Manika and the Cyclades: An Introduction

Manika's location on a headland dominating the Euripos Straits must have been influential in both the establishment of the settlement and its pivotal role in the exchange networks that connected the southern Aegean to the north and beyond (**Figure 11.1**). While its situation and range of imports makes it on one level comparable to the 'trader sites' of the Cyclades and Crete (Broodbank 1993; Branigan 1991), excavation has also shown it to be the largest EBA site known in the Aegean world and one displaying proto-urban characteristics (Sampson 1985: plan 2, 1986).

The lack of any substantial post-EBA overburden has allowed extensive exploration of the EH levels, revealing a remarkable site. It has been estimated that the settlement may have covered up to 80 hectares, with evidence of dense, planned inhabitation, and possible zoning of craft activities, including an 'obsidian workshop' and bronze smelting in Sector V (Sampson 1985: 93-106, 1986: 48 & endnote 15). The associated cemetery is located to the settlement's south and south-east (**Figure 11.2**), covering 5-6 hectares, and with nearly 200 tombs it is the second largest Aegean EBA necropolis after Chalandriani on Syros (**Plate 11.1**). The cemetery's limits remain unknown, with many more graves probably laying undiscovered between those areas already investigated, with one excavator suggesting that there may have originally been up to 4000 tombs in total (Sampson 1987: 19).

Evidence for Manika's external contacts are provided by a plethora of material culture originating from the Cyclades, mainland, north Aegean, plus west and southern Anatolia (Mellink 1986; Sampson 1988b: 113-19, 1988c, 1993b). It is the quantity of 'Cycladica' witnessed at the site that has led some to propose that Manika's population was either wholly, or partly, consisted of Cycladic colonists.

11.2 - Contested Theories: Manika, Euboea and the Cyclades

Strong links between Euboean communities and the Cyclades existed from the later Neolithic onwards, with large amounts of obsidian recovered from numerous locations around Euboea's southern and western coastline. Furthermore, material culture of EC form and style are documented from a number of sites, again with an emphasis on a coastal distribution (**Figure 11.3**), though some artefacts have been found in the hinterland at Agios Georgios and the apparently wealthy cemetery of Makrikapa (Calligas 1984: 88; Sampson 1985: 366; Sapouna-Sakellarakis 1988-89). By far the largest quantity of this material comes from Manika itself (Sampson 1988b: pl. 19).

The question of Cycladic influence on the community of Manika has a long history, with Schachermeyr and Theochares presenting the most extreme viewpoint by interpreting the site as a fully-fledged trading colony (Doulas 1977: 68). It would be fair to say that subsequent work has modified this viewpoint and talk of colonisation has been largely abandoned. Most archaeologists now discuss Cycladic influence on Manika and the surrounding region in terms of intense interregional contact involving the flow of materials, goods and information between a 'network' of high-status trading communities such as Ayia Irini and Chalandriani (cf. Broodbank 1989; 1993).

A major development in this debate was the excavation of contemporary domestic contexts at the site (Theocharis 1959; Sampson 1985, 1988b; Sapouna-Sakellarakis 1986), an opportunity currently not available to the other two suggested Cycladic colonies of Aghia Photia and Archanes. It is now apparent that there was a marked difference in the treatment of 'Cycladica', as opposed to Cycladic raw materials, with the vast majority of the former concentrated within Manika's burial record, a depositional pattern also noted at Styra, Marathon and Agios Kosmas (Sampson 1988c: 8; Pullen 1985: 235). In turn, while EC pottery is known from the settlement (cf.

Sapouna-Sakellarakis 1986: 208-12), the ceramic assemblage is dominated by forms and styles shared between Manika and communities on the nearby mainland, particularly those of Eutresis, Lithares and Thebes in Boeotia, plus Agios Kosmas in Attica (Sampson 1985: 125-46, 1988b: 20; Sapouna-Sakellarakis 1986: 260-65). Therefore, the vast majority of Manika's material culture was probably produced locally, prompting some to see the community as simply part of the EH "cultural koine" (Sampson 1985: 380). Given that the first excavations at Manika by Tsountas and Papavasiliou were located within its cemetery (Papavasileiou 1910), we can perhaps better appreciate why early studies may have emphasised Cycladic influence and / or presence at the site.

In contrast to the 'colony' theory, Gordon Childe saw Euboea as part of a north Cycladic cultural unity, encompassing Syros, Siphnos and Andros (Childe 1925: 51). His viewpoint has found favour with many, particularly in the light of subsequent excavations at Ayia Irini on Kea, one of the most northerly Cycladic islands, whose material culture finds many parallels in the Manika assemblage (Sapouna-Sakellarakis 1986: 140-211, 236). In a similar vein Renfrew defined an EBII Attic-Cycladic *Mischkultur*, that Wilson took further still, specifying a "Keian-East Attic group" due to the close relationship between material culture from Kea and the nearby mainland, perceiving the community as a "cultural and economic bridge" between the two regions (Renfrew 1972: 535-38, fig. 11.5; Wilson 1987: 35; Broodbank 1989: 325). Such a paradigm shift has important ramifications, for if modern geographical constructs are negated (cf. Broodbank 1994), then for relationships between these communities, the terms 'import' and 'colonists' become redundant.

The imposition of such constructs are unsatisfactory, as they often subsume intra-regional and inter-site differences, as of course the culture-historical paradigm does in general. Indeed, while Wilson and others have attempted to infer social organisation and human action from the archaeological record, by moving "beyond

pottery typology”, their detailed analyses of ceramic forms, surface treatment and fabrics have actually only presented a more thorough re-working of the traditional Childean concept of culture as “a consistently recurring assemblage of artefacts” (Childe 1929: vi). If we accept that material culture can express social organisation, then arguably a more important consideration would be to consider how these comparable forms were being produced, utilised and discarded in these different locales. Also subsequent fieldwork tends to dilute rather than reinforce these constructs, as with the Attic-Kephala culture, elements of which (ceramics) have now been recovered throughout the Cyclades and across southern Greece as far west as Ayios Dhimitrios in Messinia (Zachos 1987, 1996a).

A different argument has been forwarded suggesting that the notable presence of ‘Cycladica’ at Manika and sites bordering the Euboean Gulf in general, was purely the result of intensive interaction through trade and exchange, accentuated by a custom where exotic goods were buried alongside high-status individuals (Sampson 1988b: 126). Certainly Manika occupied a important point along one of the most important sea-routes of the third millennium (Calligas 1984: 88), so that it would not be surprising if members of this community were able to draw on exotic goods and influences from throughout the Aegean world. As such Manika represents one of a number of nodal communities who were instigating, and benefiting from, the socio-economic processes that spawned the EBII ‘international spirit’. While one should be wary of overstating geography as a factor in the development of social inequality, one may note that accumulations of equally cosmopolitan material culture may be witnessed at Ayia Irini and Chalandriani / Kastri at the southern end of the Gulf’s north-south route, at Pevkakia in Thessaly at the northern end and finally at Palamari on the NW tip of Skyros, a ‘stepping stone’ on to the northern Aegean and the Anatolian littoral (Tsountas 1899; Bossert 1967; Caskey 1972; Weißhaar 1979; Calligas 1984; Wilson

and Eliot 1984; Parlama 1986; Wilson 1987; Theochari, Parlama and Hatzipoulou 1993; Manning 1995: 95).

Calligas and Sampson thus interpret Manika's concentration of 'Cycladica' and other exotica as a reflection of the site's central place within short- and long-distance exchange networks (Renfrew 1972; Calligas 1984; Sampson 1988b: 113-19, 1988c), to which certain individuals in the community had preferential access, with the material products of these contacts being consumed primarily in funerary rites. Indeed, it is important to note that material culture of northern Aegean or Anatolian origin were treated in much the same way as 'Cycladica', and by extension emphasise the breadth of Manika's external relations, for until recently this discussion has been predominantly 'Cyclado-centric' (Sampson 1988c: 5, 1993b). This does not preclude Cycladic seafarers as having acted as intermediaries in the procurement of the 'exotica' seen in Manika's burial record, but the fact remains that the Cyclades were not the sole source of cultural influence within this community.

Finally, Efi Sapouna-Sakellarakis (1987) another of the site's excavators, has continued to argue in favour of interpreting Manika as a Cycladic colony, though she has argued against colonisation as the single explanatory model for the site's existence and nature (cf. Branigan 1981, 1984). She argues that at Manika the evidence suggested the arrival of a small group of Cycladic émigrés, who lived and traded alongside an established community, adopting local practices such as burial custom (Sapouna-Sakellarakis 1987: 260-62)

In summary, varying interpretations have been offered to explain the presence of Cycladic traits at Manika. While theories of a large-scale influx of population from the archipelago no longer find favour, differences in opinion remain. In order to throw light on this controversy it is necessary to present a brief review of those Cycladic elements at the site and the position and relevance of the lithic component within this phenomenon.

11.3 - Contextualising Manika: Three Phases of ‘Internationalism’

Briefly, Manika’s settlement history can be divided into three major phases. The earliest ceramics from both the settlement and cemetery are classified as transitional EHI-II, termed by one of the excavators ‘Manika 1’, contemporary with Phase A at Agios Kosmas in Attica (Mylonas 1959: 15-20; Sampson 1985: 381, fig. 6). The assemblage from Tomb 7 (81) of the Beligianne Plot (Sapouna-Sakellaraki 1987: 239-42, 245), demonstrates that from the outset this community was gaining access to goods from around the Aegean, for it includes material assignable to the Cycladic Kampos Group (*ibid*: 253, pl. 39f-g).

As with the southern Aegean generally, it is within early EBII (EHIIA / Manika 2), that EC contact and influence reaches its peak. Much of Manika’s ‘Cycladica’ from this period demonstrate a strong link with material from Chalandriani, with bone tubes, frying pans, marble vessels and a wide variety of metal artefacts (tweezers, scrapers, spatulas, chisels and pins [Calligas 1984: 92; Sampson 1985: 230; McGeehan Liritizis 1988; **Figure 11.4**]). At the same time one must be wary of placing an undue emphasis on evidence from Syros, as we lack the contemporary cemetery at Ayia Irini on Kea and the Keros burial record is heavily disturbed. Goods also continued to be procured from other areas, including ceramics known from sites such as Troy, Thermi, Lesbos and Emporio in the northern and western Aegean (e.g. pyxis - Sapouna-Sakellaraki 1986: 148, 249, fig. 20.37, after Weinberg 1947: 170, fig. 4; after Lamb 1936: pl. VIII no. 249; Hood 1981-82: 443, fig. 199, 1658).

The last phase of the site’s EBA occupation dates to late EBII (EHIIIB / Manika 3), and is typified by ceramics of an ‘Anatolising’ style, most notably one-handled tankards, high-necked vessels, incised spherical pyxides and beaked ewers, objects commonly found in Poliochni on Lemnos, and sites of the west and southern Anatolian

littoral, including Troy, Iasos and Tarsus (Mellink 1986; Sampson 1993b). This shift towards an “internationalism heavily laden with western Anatolian traits” (Rutter 1984: 102), is similarly witnessed at other sites in Euboea, Boeotia, Attica and the northern Cyclades, most famously the Phase 1 assemblage from Lefkandi, only a few kilometres south of Manika and the Kastri material from Syros (Tsountas 1899; Bossert 1967; Popham and Sackett 1968; Rutter 1979; MacGillivray 1980; Wilson and Eliot 1984).

11.4 - Manika and the Cyclades: Reassessing Cultural Influence

The significance of Cycladic culture has been exaggerated, because its originality and splendor have awed the archaeologists for several decades. (Sampson 1988c: 9).

While it has been claimed that approximately a quarter of the site’s tombs contained objects either directly derived from the islands, or influenced by EC material culture (c.45 / 189, after Sapouna-Sakellarakis 1986-87; Sampson 1988b: pl. 19), when one examines Manika’s burial record closely, it contains remarkably few Cycladic artefacts; certainly less than one might have perhaps believed given the amount of discussion this material has received (**Table 11.1**). The majority of tombs were furnished with artefacts not seen in the islands and one can take issue with the claim that a third of Manika’s tombs contained Cycladic goods (Sapouna-Sakellarakis 1987: 260). Indeed, it is worth noting that there are actually more imports from the northeast Aegean and Anatolia than there are from the Cyclades, and contained within far fewer graves (**Table 11.2**), yet as Sampson notes, no-one has proposed the existence of an Anatolian colony (Sampson 1988c: 5; 1993b). The most common grave goods of all appear to have been closed vessels, in particular spherical pyxides, thus replicating what is seen across the Gulf in Boeotia at the EH cemetery of Lithares (Papavasileiou 1910:

pl. A, bottom row; Spyropoulos 1969: 39-40, pl. 39a-b; Sampson 1985: 268, fig. 65a: 54, fig. 98-99).

The largest single class of material culture with alleged Cycladic links is the 'frying pan', though given their appearance in EHI contexts at Perachora, Palaia Kokkinia and Eutresis amongst others, the origins of this form remain controversial (Theocharis 1951: 111, fig. 26a & g; Caskey and Caskey 1960: 144, no. IV,14. pl. 46; Fossey 1969: 63, fig. 5, 1 & 2; Coleman 1985: 212-16). About 40 frying pans were found in the necropolis (though admittedly many others may be represented in the sherd material), yet only two bear typically Cycladic decoration. Interestingly, a number of these vessels were used as receptacles for human bones, a burial habit apparently unique to this site (Sapouna-Sakellaraki 1987: 264).

Similarly, with regard to marble figurines, seemingly the embodiment of EC culture given their pre-eminence in the literature (the 'splendour' referred to above by Sampson), only three of Manika's 11 anthropomorphic figurines bear a close resemblance to Cycladic examples (Sapouna-Sakellaraki 1991: fig. 2). Of these three, one is a miniature bone figurine with features recalling the late EBI-II Plastiras and Louros figurines, but has no exact parallel from the islands (Sapouna-Sakellaraki 1987: 249, pl. 42a-b). A folded-arm type from the excavations of Papavasileiou has been considered by another of the site's excavators to be a local product (Sampson 1988b: pl. 19, after Papavasileiou 1910: 4, fig. 2), leaving only the head of another marble folded-arm figurine that appears to be a genuine Cycladic product (Sampson 1988b: 31, fig. 106-107).

Admittedly the above figures are based on subjective stylistic criteria (Sampson 1988c: 9), but they do serve to indicate the small quantity of 'Cycladica' recovered, given that they come from 192, tombs the majority of which contained multiple inhumations. Taking marble pyxides as a case in point, if we calculate the population of

the necropolis, assuming a reasonable figure of two burials per grave, the resultant ratio is one pyxis per 55 people. Of course quantity alone is not a reliable indication of cultural influence and while these figures clarify the impact of 'Cycladica' on the burial record, it conversely suggests that such rare objects were highly prized, particularly as the majority could be described as "luxury goods" (Calligas 1984: footnote 14).

Furthermore, it should be recalled that some of these items are equally rare in Cycladic contexts (*Chapters Seven-Eight*), as in many of the larger cemeteries of the Keros-Syros Group (e.g. Chalandriani and Aphendika), most individuals were buried without grave goods, and when they were, it was usually only a single object, most commonly a pot or an obsidian blade (Fotou 1983: 42, after Stephanos 1910: 270-72). It is therefore noteworthy that much of the 'Cycladica' recovered at Manika shares an equally restricted distribution amongst the burials of the vast necropolis of Chalandriani (**Table 11.3**), where bone tubes, frying pans, bronze scrapers and razors were concentrated within only 32 burials, out of a cemetery of over 600 tombs (Hekman 1991: 19).

In order to better appreciate the rate of these exotic artefacts' accumulation, one must also ask how often did the exchange of these prestige goods occur and in what contexts? For instance, these objects probably represented tokens of politically motivated exchange, such as the establishment or reaffirmation of kinship links and rights. Certainly, if modes of consumption are a reliable indicator, then the exchange of the aforementioned élite objects probably occurred within a different context to that which resulted in the inhabitants of Manika gaining access to EC 'slash-handled' pithoi and painted sauceboats (cf. Sapouna-Sakellarakis 1986: 205-13, fig. 68-71). This need not equate with separate maritime expeditions, though it may represent different mechanisms of exchange. Though I am not suggesting a direct parallel, it is worth noting that alongside the prestige orientated Kula exchange network of the Massim,

large quantities of more “utilitarian trade in essential and luxury resources” was conducted during the canoe-borne visit, though to the participants it was considered “conceptually and behaviourally separate from kula exchange” (Leach 1983: 4-5).

One also has to wonder just how often such voyages were taking place? Here one differentiates between the movement by longboat that was obviously of great social significance in the early Cyclades, and those short-haul trips involving a smaller-scale craft. The former, which probably played a central role in the politics of island society, may have only ever occurred a few times in a person’s life, the event situated within an established cosmological cycle. Broodbank (1989: 333), has calculated that seasonal / economic constraints may have only permitted a period of a few weeks per year within which longboat voyages could be undertaken, and of course they need not always have had the same destinations.

Perhaps it is only when the issue is ‘humanised’ that it becomes more obvious that interregional contact could have existed on radically different bases, with the community of Manika interacting with the Cyclades either as a *geographical* entity, or alternatively as a *cultural* entity, an inhabited landscape. As stated before, there is no reason to assume that Cycladic resources (of which obsidian is the most prolific and conspicuous example) need represent Cycladic cultural contact and influence, an argument that has long been forwarded with the concept of direct access (cf. Torrence 1986). Of course this has particular relevance for Manika, for if our theories about which EBA communities had the potential to undertake such voyages are correct, then despite lacking the maritime symbolism of Chalandriani and Mochlos, the Euboean community certainly had the human resources to undertake such voyages and access to rich supplies of timber with which to construct their craft (Calligas 1984: 89).

11.5 - The Cemetery and Obsidian

At least 48 of the 192 graves published from Manika contained obsidian, some 25% of the total (**Table 11.4**). In truth this figure may be much higher, as suggested by a recent publication of excavations at the Papastamatiou and Beligianne plots, where 14 out of the 26 burials were recorded as containing obsidian (Sapouna-Sakellarakis 1986-87, 1987). Rather than an area of differential accumulation, this may be simply a reflection of the publication record, as the storerooms of Chalkis Museum contain a number of lithic assemblages from graves which have no *published* record.

While Cycladic influences are recognised within late EHI-II tomb groups at Manika, it is only in early EBII (the main period of the cemetery's use), that we have the first irrefutable association of obsidian with burials (**Table 11.4**). Whether this is a reflection of social practice or the published record is unknown; for instance, obsidian is documented from late EBI burials at Agios Kosmas (Mylonas 1959). In only one instance can an assemblage with obsidian be positively identified as dating to the later EBII / Manika 3 period: Tomb 60 of the Beligianne Plot (Sampson 1985: 170, fig. 43). This medium sized tomb contained a single adult female, associated with a 'Type 1' beak-spouted ewer, a one-handled tankard, a high-necked vase, a shallow bowl along with many fragments of obsidian blades and flakes (*Appendix 3*). All of the ceramic forms (except possibly the bowl), are probable imports, with parallels from Troy, Poliochni and Iasos amongst others (Sampson 1993b).

11.6 - The Burial Type: Origins and Comparanda

The cemetery at Manika consisted of rock-cut chamber tombs of trapezoidal or circular form (**Figure 11.5; Plate 11.1**), with the entrance sealed and dromos back-filled after the burial was interred (Sampson 1985: 384, fig. 42, 1988b: fig. 42-45). Chamber tombs are one of three main types of burial employed by the EBA communities of Euboea and the nearby mainland (alongside simple pit-tombs and cist

graves [**Figures 11.6–11.7**]), and bear little resemblance to contemporary Cycladic grave types. Most graves contained multiple inhumations, though only occasionally was it possible to ascertain exact numbers, in part due to poor environmental conditions but also because the act of burial often involved the disturbance of previous inhumations (Fountoulakis 1987: 29). In turn this has meant that it is not always possible to associate grave goods with a specific individual.

Child burials are documented in a number of cases, a rare occurrence in EC tombs (Sampson 1987: 21; Sapouna-Sakellarakis 1987: 248). Some of the larger and richer tombs appear to have been grouped together (Sampson 1985: 384), a habit that has also been noted in some EC cemeteries, most notably Ayioi Anargyroi on Naxos (Doulas 1977: 100–101). Finally, evidence for funerary ritual is provided by the recovery of animal bones, some with cut marks and some burnt, both in and around a number of tombs, interpreted as the remains of ‘ritual feasting’ (Fountoulakis 1985: 457).

With regard to links with Cycladic mortuary habits, the placing of the body in a foetal position (in spite of the available space), is reminiscent of island practice (Sampson 1985: 384; Tsountas 1899: pl. 88), though crouched burials are also recorded throughout the EBA southern Aegean (Sampson 1987: 21). The importance given to burial posture is emphasised by the recognition of cut-marks on many skeletons, in positions concordant with *post-mortem* cutting of tendons, presumably to facilitate the positioning of the body during rigor mortis (Fountoulakis 1985, 1987). Again in many Cycladic graves the contracted position of the body is considered forced, the suggested result of binding by ropes, or weighing down with stone slabs (Doulas 1977: 54–55). At Manika it has been suggested that some of these operations could have been undertaken using obsidian tools (Fountoulakis 1985: 454). Indeed implements with traces of heavy use-wear, concordant with a longitudinal cutting motion on a medium to

hard substance have been recognised (**Plate 11.2**), though unfortunately none were from tombs where skeletons with cut marks have been observed (**Figure 11.8**).

Other features common to Manika and Cycladic burial practice include the provision of pebbled flooring, the use of stone ‘pillows’ on which the skull rested and the habit of placing grave goods by the head (Doumas 1977: 44-45, 54, 56; Sampson 1985: 384-85; Sapouna-Sakellarakis 1986-87: 7-13).

11.7 - Obsidian From the Manika Necropolis: Style, Structure and Significance

The 48 graves listed above (**Table 11.4 & Figures 11.8-11.10**) contained obsidian assemblages of varying size and composition, three of which will be described in detail to illustrate what seem to be three different modes of deposition.

11.7.1 - Tomb VII of the Beligianne Plot

The first assemblage, from Tomb VII (57) of the Beligianne Plot, is representative of most of the deposits studied in Chalkis museum and of those published from the Papastamatiou Plot in that it bears only a limited resemblance to EC funerary assemblages. Considered a rich grave by the excavator due to its size and contents (Sampson 1985: 166, fig. 40), it actually contained two groups of obsidian, one from the chamber and one from the dromos. In the burial chamber a single adult female was accompanied by 10 pieces of obsidian and a Cycladic footed marble vase that has an exact parallel from the Aplomata cemetery, Naxos (Kontoleon 1970b: 151, pl. 192b; Sampson 1985: 62a:17, fig. 104). From the tomb’s entrance passage, or dromos, came a second deposit of obsidian, numbering 42 pieces.

The former group included two complete blades from the *plein temps de débitage*, the biggest just over 6cm long, neither of which had been used (**Plate 11.3**). The rest of the material was a mixture of flakes of varying form and condition

(**Figure 11.11**). The dromos deposit recalls that from the burial chamber, with only 2 out of the 42 pieces being fine prismatic blades, the remainder flakes from various stages of core preparation, including cortical material from the shaping of raw nodules (**Plate 11.4**). Few of these pieces seemed to directly relate to one another. Furthermore, while none have traces of use-wear, there is a discrepancy in their overall condition, some being fresh in appearance, but many others bearing traces of post-depositional damage, while some have been smoothed by long-term contact with water (*Appendix 3*).

This latter group represents a deliberately interred deposit as do all those assemblages from tomb dromoi. The surfaces of the cemetery area were generally devoid of obsidian (Sapouna-Sakellarakis pers. comm.), so that the worn or damaged condition of much of this material cannot be simply explained by surface material falling into an open dromos. Many of these assemblages could be in secondary context in that they may represent material cleared out from the tomb chamber when new burials were interred. Sherd material is mentioned from dromoi with equal prominence, but never complete artefacts (cf. Tomb VI, Sampson 1985: 166). Secondary deposition may go a *little* way to explain the state of the obsidian; but as has been seen in other cases, such as the Area of the Rocks, Archanes, surprisingly little damage appears to have occurred, even to the most delicate of pieces (*Chapter Twelve*).

11.7.2 - Tomb 100 from the Frangou Plot

The second example of depositional practice resembles more closely contemporary Cycladic tomb groups, albeit with some important contextual distinctions, and is represented by a number of the Manika assemblages. Tomb 100 of the Frangou Plot is one such example. This large tomb contained at least 7 burials, including a juvenile and two adults (one female and one male), plus 21 objects recovered in a single

group against the chamber's western side (Sampson 1985: 196-99, fig. 53e, fig. 68-69; Fountouakis 1985: pl. 16). This is Manika's largest single group of grave goods, and includes a complete frying pan (and the fragments of two others), a further 10 ceramic vessels, two of which were miniature closed forms, 4 marble bowls, a bone palette, and a clay spindle-whorl (Sampson 1985: 68b-e, 106-13, 121-22). Only a single obsidian blade was deposited, but given its rich context, it is surely fitting that at 10.3cm long, it is the longest recorded from the necropolis, comparable to some of the finer pieces from contemporary Cycladic graves.

Virtually all of the objects are considered local products, including the marble bowls and frying pans (Sampson 1988b: pl. 19). arguably this assemblage represents a fusion of local and Cycladic social practice and stylistic endeavour. Therefore, while the use of a single, fine prismatic blade is consistent with contemporary grave assemblages from the islands, its context is overwhelmingly non-Cycladic. The use of the marble bowls and frying pans similarly draws on EC cultural influence, but were located within non-Cycladic symbolism, an expression of local social constructs.

11.7.3 - Tomb 8 (82) of the Beligianne Plot

It will be argued that the final assemblage, from Tomb 8 (82) of the Beligianne plot, represents a third mode of deposition that approximates most closely that of contemporary Cycladic practice (Sapouna-Sakellarakis 1987: 242-43; Sampson 1988b: 24-25). This large circular tomb contained between 2-3 individuals, with the associated material culture spanning the late EBI to late EBII, suggesting that the burials may have been separated by considerable periods of time (*Appendix 3*).

It is Burial 1 that concerns us, the tomb's most clearly defined body, lying in a foetal position along the western half of the chamber with its head to the west and accompanied by 7 pieces of obsidian (**Figure 11.12**; Sapouna-Sakellarakis 1987:

243, 247, fig. 8). An obsidian core and 6 blades, plus a bone tube were placed next to its skull, with a pyxis and a sea-shell alongside its right-hand side. Unfortunately as this material was not available for study, no further details are currently available. The bone tube that contained a blue pigment, possibly azurite, is a typically Cycladic artefact with an exact parallel from Tomb 356, Chalandriani (Tsountas 1899: 113, pl. 10,5; Sapouna-Sakellarakis 1987: 243, pl. 41,c). The small black lenticular pyxis is a rare form, with only a few others known from Manika itself, with a few similar examples recorded from a chamber tomb in Corinth and burials on Melos and Syros (Heermance and Lord 1897: 321, 328, fig. II 3; Bosanquet 1896-97: 53, fig. 2; Tsountas 1899: pl. 9, 22; Sapouna-Sakellarakis 1987: 243, fig. 8). Finally shells are another regular component of EC grave assemblages, particularly at Chalandriani (*ibid*: 105).

The association of the obsidian with a bone pigment container is an important one, surely derived from Cycladic burial practice. Many such associations are known from Chalandriani, Spedos on Naxos and Notina on Amorgos (*Chapter Eight*). The position of the material, placed in front of the face / head, is also of great significance as it is a trait regularly described in EC cemeteries (Tsountas 1898: 151; Stephanos 1905: 218; Zapheirou 1968b: 381; Dumas 1977: 63, *inter alia*).

In structure and material association, this burial would not be out of place in an island context, Syros in particular. It is merely the tomb form and the geographical location that makes it non-Cycladic.

11.8 - Comparable Assemblages

As the majority of southern Aegean EBA burials containing obsidian are dated to the earlier EBII period, there are numerous relevant assemblages to compare and contrast the Manika material. Although no other EH burials containing lithics are reported from Euboea itself, there are deposits from EH cemeteries across the Euboean

Gulf at Lithares in Boeotia, plus Agios Kosmas and Markopoulo in Attica (**Figure 11.1**; *Appendix 3*). From the Cyclades there is a wealth of evidence, with Chalandriani on Syros (Tsountas 1899) and the Naxian cemeteries excavated by Doumas (1977) being particularly relevant.

11.9 - Comparing Assemblages: Technology and Motor Habits

Due to the notable discrepancy between many of the burial assemblages from Manika and those from contemporary Cycladic sites, the question of differential technological practice and motor habits diminishes in importance compared to the Aghia Photia analysis. All blades were pressure-flaked, and where more than one existed in a tomb group, none conjoined with another. Cortical debitage, primary and secondary flakes, given their accentuated bulbs of percussion and ripples, were produced by either direct percussion, or hard hammer indirect percussion. Tertiary, or non-cortical flakes were generally finer products, with traits indicative of having been initiated by indirect percussion and in certain instances pressure-flaking.

11.10 - Comparing Assemblages: Discussion

In general, most groups of material from Manika are considerably larger and much less regular than contemporary Cycladic burial assemblages (**Plates 11.5–11.13**). It can be proposed that our reductionist description of this material as the ‘lithic assemblage’, subsumes two separate acts of deposition, that have little or no relationship with each other beyond the fact that they both involved the ritualised consumption of obsidian.

The first, centred on the association of fine, unused prismatic blades with a specific individual, had its origins in Cycladic social practice. Furthermore, in keeping with Cycladic tradition, a number, if not all of these blades were taken from specially

prepared and designated cores, notably larger than those manufactured in the settlement. Twenty-three complete blades are recorded from the Manika tombs, ranging between 4.34 and 10.30cm long. They are all from the *plein temps de débitage* and on average are some 2cm longer than products from the settlement (**Figure 11.13**).

Not only are the products from the necropolis notably larger than those from the settlement but they also compare favourably to blades from contemporary Cycladic burial assemblages, including Chalandriani, Spedos, Lakkoudhes 'A' and Avdheli (**Figure 11.13**). Unfortunately, the dimensions of all except three of the blades from the cemetery had to be taken from the publication that only documented their lengths, it was therefore not possible to take these comparative analyses any further regarding blank width and thickness.

Sampson also noted that these long blades were relatively rare, occurring mainly in what were considered wealthy tombs and furthermore suggested that in the eastern part of the necropolis (Tombs 57, 60 and 61) they were associated with female burials (Sampson 1987: 23). This offers a tantalising insight into gender-specific social practices, albeit one that is unfortunately difficult to corroborate through the published record (**Table 11.5**).

Arguably these pieces relate ultimately to Cycladic social practice, employed as part of an accepted set of implements dedicated to the projection of image and identity through body modification. Yet they were often located within a purely local material context (e.g. Tomb 100, Frangou Plot), suggesting that this significance may also have been in part appropriated and reconstituted. As such, these tomb groups find a resonance in the burial records of many other southern Aegean communities from the late EBI onwards (*Chapters Seven-Eight*), as the nearby (admittedly poorly documented) burial assemblages from Markopoulou and Lithares attest (Theocharis 1955b; Spyropoulos 1969: 41; Pullen 1985: 129-30).

How then should this apparent fusion of social practice to be interpreted? By seeing the use of 'Cycladica' outside of their usual referential material and symbolic context (cf. Hodder 1986: 47), are we just seeing a 'garbled' mixture of Cycladic metaphor and a material representation of 'Euboean' social practice, or do we acknowledge the primacy of the immediate context, in which case we can argue that meaning had been renegotiated and was thus an entirely intelligible act of deposition?

Firstly, that there was direct contact between these two groups of people is almost certain. As such, it seems probable that this led to members within the Euboean community becoming aware of, and adopting, elements of Cycladic social practice. Furthermore, the EC objects seen in Manika's cemetery, in particular the marble pyxides and bone tubes, are items that were probably produced and owned in the islands prior to their burial, each having a heritage that was added to in the act of bringing them to Euboea. It therefore seems probable that those inhabitants of Manika who were able to procure such items, would have been all too aware of these items' histories and their significance in a Cycladic context. Indeed, retaining an awareness of an object's 'original' meaning may have been of great importance, though this is not to say that the 'Cycladica' could not then have been accorded other meanings specific to the corporate group who had gained them.

One also has to wonder who was producing the longest obsidian blades, for as yet we have no core of sufficient scale in the settlement from whence they could have derived. This merely goes to remind us that the grave is only the last framework of reference, both then and now. Therefore, just because these Cycladic objects were not being used, or consumed in the same way that we often see in synchronous island burial assemblages, this is not to say that its 'original' meaning was not acknowledged, through the experience, knowledge or folk memory of the people involved.

Existing in tandem with the practice described above, it is possible to define a second funerary tradition, one that bore no relationship to Cycladic mortuary habits, presumably owing its origin and significance to the community of Manika itself. These assemblages could be almost described as the structural antithesis of the first practice described. Instead of a single, or a few fine prismatic blades, these deposits are typified by substantially larger quantities of obsidian (though often we have no idea of how this material was distributed amongst burials), incorporating a far wider range of debitage, including many flakes of uneven form, size and condition (**Plates 11.3-11.13**). While this material relates to pressure-flaked blade production, few if any end-products are represented, and between most of the individual pieces there is no obvious relationship. Though the internal logic of these assemblages may be less obvious than those of 'Cycladic' form, it should be stressed that they too should be considered structured deposits.

Alongside the dromos deposit from Tomb VII described previously, a further good example of this local funerary tradition is provided by the 30 pieces of obsidian associated with Burial 2 in Tomb 4 (73) of the Beligianne Plot (Sapouna-Sakellaraki 1987: 238-39, pl. 37,d; Sampson 1988b: 23). Given that the individual was also accompanied by two bronze scrapers, part of a shallow marble bowl and a clay spindle-whorl (*ibid*: 238-39: pl. 37a-b), one might be tempted to consider the obsidian as part of a Cycladic-inspired depilation kit, given the relatively common co-occurrence of blades with scrapers at Chalandriani (*supra*, **Table 11.8**). By considering the form and condition of the lithic component, a more complex depositional history emerges (**Plate 11.14**).

Of the 30 pieces of obsidian one was a primary series blade with 50% cortical cover, with a further 4 blades from the *plein temps de débitage* (3 proximal, 1 distal [Appendix 3]). Although it may have been justifiable on the basis of their form to

associate these artefacts with the bronze scrapers as part of a 'Cycladic' depilatory kit, functional analysis has shown that one of the prismatic blades was very worn, possibly as a result of water-action. This demonstrates that these blades were certainly not contemporary in terms of their production and in turn it is unlikely that they represented a coherent, select group in terms of their deposition, not that this necessarily divorces all the blanks from an association with the scrapers.

The remainder of the assemblage consisted of cortical and non-cortical flakes from various stages of core preparation and reduction (**Figure 11.14**). Interestingly, from the similar nature and state of their cortex, it was apparent that 8 of the 10 secondary flakes (cortex <80%), were closely related, originating from the same nodule and reduction sequence, though none of them actually conjoined. The flake material is also of varied condition, for which the alkaline nature of the soil must bear some responsibility (just as it damaged the skeletal remains), with many pieces of obsidian having a calcified layer on those surfaces that were in contact with the floor of the tomb (**Plate 11.14**). Although this resulted in dulling or totally obscuring either dorsal or ventral features, the opposing surface retained its original condition. While most non-cortical flakes were fresh in appearance others had surface scratches and dulling indicative of long-term exposure to the elements, again including two with water-rolled abrasion (**Plate 11.15**). It is also worth noting that the extent of this damage often renders it visible to the naked eye without recourse to microscopy.

The location and nature of wear also provides a good indication of an implement's life history, though within this second mode of deposition I would be most wary of attributing significance to any individual piece. For instance, on many of the pieces bearing traces of wear (apart from the Tomb 4 (78) assemblage), damage is usually located on raised areas of a blank's topography, namely dorsal ridges and the ventral bulb, areas that one does not commonly associate with functional capabilities.

Similarly abrasive striae are often seen in the middle of a blank's surface rather than at the edge, once more suggestive that wear was not as a result of tool utilisation but of other factors, most probably exposure on the ground-surface (**Plates 11.16-11.17**).

In only one instance was the damage on a tertiary flake's surface suggestive of use-wear. Obviously this piece and others from the cemetery with similar traces (**Figure 11.15**), are of particular interest given that obsidian tools were possibly responsible for the skeletal cut-marks mentioned above (Fountouakis 1985: 454). The traces of utilisation on a tertiary flake from Tomb X of the Papastamatiou Plot (X No. 14), in the form of invasive flake-scars on the left ventral surface, are obscured partly by notable post-depositional surface modification (**Plates 11.16-11.17**). As it is most unlikely that this degree of damage could have occurred to the blank within the tomb, it suggests that the tool had been used some time before it was deposited in the grave and therefore had no relationship to any associated funerary rites beyond its inclusion in the burial record. This is not to say that some of these assemblages do not include implements that had been used for the cutting of tendons, but one cannot assume that a tool bearing traces of utilisation was necessarily employed in mortuary practices.

In terms of form and condition, the assemblage from Tomb 4 (78) is representative of virtually all of the burial assemblages studied (**Figure 11.14**), and allows me to reconstruct a hypothetical series of events leading up to their deposition. One event concerned the careful production and selection of a few fine blades that, still unused, were interred alongside an individual, in accordance with an (originally) exotic social practice. We can also envisage a separate event, where someone scooped up a handful of obsidian from a location beyond the cemetery. Wherever, or whatever, this original deposit was, be it a knapping floor or a dump of some kind, the material was certainly not created specifically for funerary purposes. This group of material was then

taken to the burial ground, where it too was interred in a grave, either directly on the floor of the chamber, or that of the tomb's dromos, possibly as an act of opening, or closing, the burial rite and chamber. It is only rarely that these assemblages are described as being associated with a specific individual (cf. Sapouna-Sakellarakis 1987: 238-39).

Therefore one must question whether these 'mass' deposits of obsidian represented grave goods at all. Perhaps instead we should see this material as forming an integral part of the tomb's *structure*. For example from Tomb K of the Papastamatiou Plot the excavator describes the chamber floor as covered by a 'sea of sherds, obsidian and a few burnt bone fragments' (Sapouna-Sakellarakis 1986-87: 11). Understanding the formation processes involved in shaping these deposits is of the utmost importance if we are to appreciate their significance. For example, it would be most useful to undertake a comparative use-wear and refitting analysis between the obsidian from these tombs and another component of the floor deposits, particularly the sherd material (cf. Schiffer 1987). Could one discern a parallel act, where unrelated ceramic detritus was also being deposited as a symbolic act, or do they represent whole objects broken through ritual activities or post-depositional factors? (Sampson 1985: 385).

If my theory is correct, these 'irregular' deposits of obsidian are only associated with an individual in as much as the tomb is, i.e. it is something that a burial was located *within*, rather than provided *with*. Their deposition appears to have been associated with either the construction and opening of the tomb, or possibly its closing, in those cases where obsidian has been recovered from the dromos. As such we move from an emphasis on the individual to one reflective of the community. The tomb is a manifestation of the community, or perhaps more specifically a family, or kinship group, in terms of communal effort that was required to cut these chamber-tombs out of the

hard natural limestone (Sampson 1987: 19-20), and provided them with a important focal point through acts of burial, or commemoration.

The question remains as to what was the meaning behind these deposits, the use of obsidian as part of the tomb's fabric? Perhaps, considering the sheer quantity of obsidian Manika was gaining access to, and the community's role in procurement, production and redistribution, we may in this instance allow ourselves a somewhat reductionist interpretation, with these mass assemblages representing 'obsidian-as-resource', as opposed to a group of individual artefacts. Arguably, prestige and status would have been conferred on those individuals who had access to, and the control, over the requisite knowledge and skills for procuring and working this exotic resource. Although there may have been exclusion in production, the proliferation of nuclei across the site hints at communal access to 'obsidian-as-potential-product', with an implied access to and sharing in the constitution and articulation of meaning for both product and debitage.

One can possibly discern a resonance between these Manika burial assemblages and those from two other major regional centres of obsidian procurement and consumption: Agios Kosmas and Mochlos, in terms of their overall scale and form being markedly different from contemporary Cycladic practice. While it is not suggested that a community's privileged access to obsidian, and the skills to work it, determined the quantities and significance involved in burial deposits, but opportunity existed at such sites for differential developments in terms of not only how the material was worked, but also how the resource and product were perceived.

This chapter's conclusions are not based on artefacts alone, and it is for this reason that a third, context-specific mode of symbolic behaviour can be witnessed. The divisions are admittedly arbitrary, but while most occurrences of 'Cycladica' are located within localised material and symbolic contexts, there are a few graves such as Tomb 8

(82) described earlier, that contain a concentration of material culture, including obsidian, that is not only Cycladic in origin but was also used in a manner entirely concordant with contemporary island social practice (**Table 11.6**). Burials such as Tomb 157 with the association of two complete prismatic blades, a bronze scraper, two bronze tweezers, a bronze chisel and two marble bowls, would not be out of place in Chalandriani (e.g. Tombs 351 and 356 [Doumas 1977: fig. 48]).

Indeed there are a few general correlations between the Manika and Chalandriani assemblages, both in terms of the respective impact certain classes of material culture made on the burial record, in particular frying pans (the question of their origin perhaps thereby becoming less important), and an equally strong relationship between obsidian blades and bronze scrapers at the two cemeteries (**Table 11.7–8**). There are also some discrepancies, notably the apparent low correlation between tweezers and obsidian at Manika and a number of assemblages where, from a Cycladic viewpoint, one may have expected the recovery of obsidian blades (**Table 11.9**). Cases in point include Tombs 71 and 110 of the Beligianne and Elaiotriviari Plots, that both contained bronze scrapers along with a bone tube in the first grave and tweezers in the second. To be fair, it should be noted that not all of the Chalandriani grave groups with copper-alloy depilatory implements and pigment containers included obsidian (e.g. Tomb 359 [*ibid*: fig. 48]). In the light of the occasionally questionable integrity of some of the Euboean data and in some cases the problems in ascertaining the exact associations of certain grave goods, these figures should perhaps only be taken as a rough indication, albeit one that hints at some interesting distinctions between these communities' social practices.

So should all the above facts be subsumed into Sampson's theory that the community heavily favoured exotic material culture for burial (Sampson 1988c), with the ritualised consumption of 'Cycladica' extended as far as appropriating the actual burial habits of island societies, right down to the last detail? What are the alternatives?

Broodbank has argued that the early Cyclades, like many small-scale island societies, would have had to practice exogamy, with great importance probably attached to the movement of high-status women (Broodbank 1992a: 543). Therefore, if much of the 'Cycladica' from the necropolis at Manika represent the result of politically motivated exchange, then could we not see human transferral as part of the same process? (cf. Macintyre 1983: 375-76). One could also argue that another driving force in the negotiation and reaffirmation of kinship links between island communities and Manika was to ensure mutual safety of passage around the southern Aegean. In particular, one could say that for the major figures in Cycladic society, a primary benefit in establishing links with their equals amongst the Euboean community, would be to guarantee a safe passage through the Euripos Straits that Manika dominated.

While these functionalist interpretations of necessary exogamy and mutually beneficial protection alliances make perfect sense, this is not to say that this was how the relationship was perceived primarily by the respective 'power brokers'. In many small-scale island societies, prestige and power are constituted through the ability of an individual to draw on social relationships and knowledge from far away, organised on the basis of the experience from travel and the instigation of kinship and exchange, with an emphasis on geographical distance as "...a more efficient mechanism for generating competitive prestige than alliances with external groups closer at hand" (Leach 1983: 7; see also Friedman 1981; Kirch 1986; Helms 1988). For example in Hawai'ian society "hypergamy was a major chiefly concern", with a survey of 319 high-ranked chiefs in Hawai'ian society showing that over half "...were within one generation...of a marriage between individuals identified with different islands" (Hommon 1986: 57). A similar emphasis was placed on wider marriage links for chiefs in southern Melanesian societies, with delayed reciprocity in the exchange of partners serving to guarantee

continuity and longevity of social relations (Sahlins 1974: 185-86, 223; Spriggs 1986: 13).

As evidence suggests that Chalandriani was one of the Cycladic power bases, or 'trader sites' of the early EBII (Broodbank 1989), perhaps it should not be surprising that the 'Cycladic' traits seen at Manika demonstrate such a close link with the community from Syros. Furthermore, the iconographic association between longboats and female genitalia on a number of the frying pans from the tombs at Chalandriani (Papathanassopoulos 1981: 173, pl. 96; Coleman 1985: 196, Ill. 4), suggests that not only may the 'big-men' of Syros have exerted coercive control over inter-regional trade (Broodbank 1989: 336), but perhaps more significantly also over mating networks (I acknowledge G. Nakou for suggesting this latter point, also cf. Irwin 1983: 47; Spriggs 1986: 13). Therefore the relationship between Manika and Chalandriani may not so much be a product of their geographical proximity but a reflection of how power in these communities was in part created and maintained, the participation in various types of social interaction with the emphasis on geographical exogamy and class endogamy (cf. Hommon 1986: 57).

11.11 - Conclusion

While the large amount of obsidian bears testimony to a high level of contact with the islands, the archaeological record does not necessarily shows a "*particulièrement intense*" relationship between the respective *populations* of Euboea and the Cyclades (Sapouna-Sakellarakis 1991: 3). Nor is it correct to talk of an Euboean-north Cycladic cultural *koine*, despite the recognised adoption of certain elements of Cycladic social practice at Manika. The lithic technology and burial habits witnessed at Manika are predominantly local, suggesting that this community was in control of its own destiny.

Much of the 'Cycladica' present at Manika reflects a local value-system that merited the consumption of prestige goods (Sampson 1985: 391), accessed through relatively long-distance exchange networks with other Aegean 'trader sites'. In turn, this should not preclude some of Manika's population were islanders (Sampson 1988c: 5-8), though it is believed that the movement of people from the Cyclades to Manika (and *vice versa*), occurred only episodically and was of a nature that would have made only a low impact on overall community composition.

- CHAPTER TWELVE: THE CASE OF PHOURNI, ARCHANES -

12.1 - Archanes: Introduction

The Phourni cemetery at Archanes, situated 5-6km south of Knossos in central Crete (**Figure 12.1**), is one of the most remarkable sites of the southern Aegean Bronze Age. The remains of 26 funerary buildings have been uncovered on this small hill overlooking the modern day and prehistoric settlement of Archanes to the south-east and overshadowed by Mount Juktas to its west. Meticulous excavations over the past 30 years have demonstrated that the necropolis was in use for over a millennium, with burials ranging in date from EMIIA to LMIIIC (Sakellarakis and Sakellarakis 1991: 66-67).

Of significance to this study are three EBA deposits, Tholoi E and C, and the so-called 'Area of the Rocks' (**Figure 12.2**). From each of these contexts have been recovered a number of items of either EC provenance or derivation, including marble figurines, jewellery and obsidian. This has led the excavators to argue that there were a "number of temporary, if not permanent, indigenous Cycladic people in the area" (*ibid*: 10).

12.2 - Contextualising Archanes: Crete and the Cyclades in the Later EBA

In many regions of the southern Aegean, the late EBII period is one of marked changes, with the Cyclades, eastern mainland and Euboea becoming influenced by elements of northern Aegean and western Anatolian culture, as best represented by the Kastri and Lefkandi I ceramic groups (Rutter 1979). While Crete appears not to have been directly affected by these changes (Cadogan 1986), the nature of Cyclado-Minoan contact seems to have drastically altered at this juncture. For while Minoan communities continued to exploit a range of Cycladic mineral resources, including Melian obsidian

and metals from Siphnos and Kythnos (Stos-Gale 1985; Stos-Gale and Gale 1990), their procurement was no longer accompanied by EC material (cf. Wilson 1994).

In chronological terms it is the succeeding period in the Cyclades that presents a great many difficulties, with a debate over what constitutes EBIII in terms of material culture and settlement history. The clear stratigraphic hiatus between late EBII and Middle Cycladic levels at each of the major sites (Barber 1978: 368), has led Jeremy Rutter (1983a, 1984), to argue for cultural discontinuity in the EBIII Cyclades, a hiatus of some 100-150 years, the so-called 'Rutter Gap'. It is this theory of settlement abandonment and population displacement that has been taken up by others to offer an historical explanation for the appearance of notable concentrations of Cycladic material culture in Crete at this time (EMIII). Both Barber (1987: 137) and Watrous (1994: 728), accept the excavators of Archanes' interpretation that Cycladica from the EMIII burial deposits represents the material remains of an intrusive island population, refugees escaping the turmoil in their homelands. Watrous (1994: 728), goes further still, suggesting that there is much evidence to show that not only at Archanes, but also many other settlements along the north Cretan coast including Zakros, Pseira, Sphoungaras and Malia, received island and eastern immigrants at the start of MMIA.

Thus the excavators of Archanes have been careful to emphasise that in this context colonisation would not have resulted in a pristine transferral of Cycladic material culture and social practice (*contra* Doumas 1977: 69), but a gradual 'fusion' of their culture with that of the existing local population (Sakellarkakis 1977a: 114-15; Sapouna-Sakellarakis 1987: 263). To critically examine these contrasting theses, it is now necessary to consider the two Archanes assemblages central to this debate: Tholos C and the Area of the Rocks, deposits that are assigned to the EMIII period and contain a notable range of 'Cycladica'.

12.3 - Tholos C

Tholos C (Area 1 + 2), is of great importance for a number of reasons, not least of which is the fact that unlike many of the Mesara tholoi it has not suffered the ravages of tomb robbing (**Figures 12.2-12.3; Plate 12.1**). It is the first example of a prepalatial tholos tomb where we know the number of burials (Sakellarakis and Sakellarakis 1991: 114), a question of vital importance if we are to understand the relationship between demography and social complexity in the EBA (cf. Bintliff 1977b, 1989: 87-93; Cherry 1979: 37-43; Whitelaw 1983: 332-340; Branigan 1987a, 1993: 81-95; Broodbank 1989: 320-27).

This vaulted tholos had two periods of use, the lowest undisturbed level representing human interment during the EMIII period, the uppermost containing much later LMIIIA funerary offerings (Sakellarakis and Sakellarakis 1991: 118). The EM deposit comprised 45 burials, 18 of which had been placed in 11 clay larnakes and a pithos placed in the centre of the tomb (*ibid*: 114, pl. 91-92). The remaining inhumations had been subsequently laid on the ground between the sarcophagi and in the tholos' entrance. A total of 269 artefacts were recovered from the tomb chamber, entrance and dromos, 164 of which were situated under the larnakes and pithos and 95 sealed by the surface burials. These included ceramic and stone vases, 80 sea-shells, 11 ivory seals, 3 bronze daggers and jewellery in the form of necklaces, amulets and beads made from a variety of exotic materials including gold, silver, ivory, bone and faience (Sakellarakis 1972: pl. 284-90; Sakellarakis and Sakellarakis 1991: 116, pl. 89). Finally, some 15 figurines of Cycladic type, in complete or fragmentary state, along with 55 pieces of obsidian were also recovered (*ibid*: 116-18, pl. 93-96). It is primarily this material that has generated the debate being discussed in this chapter.

12.4 - The 'Area of the Rocks'

Situated in the south-western part of the necropolis (**Figure 12.2**), between the (later) Funerary Buildings 18 and 19, and behind Tholos C, is an area of large slab-like rocks broken up by natural fissures, that was used throughout the prepalatial period for funerary activities (**Plate 12.2**; *ibid*: 134-35, pl. 40). Large numbers of human remains along with a variety of offerings have been recovered from the northern part of the area in particular.

It has been argued that much of this material represents the secondary deposition of burials originally interred in one of the nearby structures. In particular, it has been suggested that the material from west of Funerary Buildings 18 and 19, originated from Tholos C due to the affinities shared between a number of artefacts present in both assemblages (*ibid*: 134). From the former deposit came a further 8 fragments of marble folded-arm figurines, another cylindrical gold bead with incised decoration, plus over 1000 pieces of obsidian blades, the single largest funerary assemblage known in Aegean prehistory (Sakellarakis 1977a: 100-101, fig. 8-10; Sakellarakis and Sakellarakis 1991: 135).

12.5 - The Burial Type: Comparanda and Origins

It is important to note that the EMIII burials at Phourni are thoroughly Minoan in form. Tholos tombs are a defining feature of the EM period in the Mesara Plain of southern Crete, dating back as early as the EBI (Branigan 1993: 33). Indeed, there is a precedent within Phourni itself, with Tholos E constructed in EMIIA (**Plate 12.3**), though it was apparently abandoned at the time of the construction and initial use of Tholos C (Sakellarakis and Sakellarakis 1991: 126; Lachanas 1994: 36-37). Similarly larnax and pithos burials have many parallels in Crete from the EMIII period onwards (Branigan 1993: 65). Neither the tomb type, nor such containers, are known in the early Cyclades.

12.6 - The Material Culture and its Affinities: Ceramics, Marble and Metals

In contrast to burial assemblages from the Mesara (cf. *ibid*: 67), Tholos C contained remarkably few ceramic vessels, only 5 in total, though many more came from the Area of the Rocks (Sakellarakis and Sakellarakis 1991: 116, 135). All of those published are of Minoan form and style, though opinion is split as to whether they should be assigned to EMIII or MMIA (Sakellarakis 1972: 348-49, pl. 290b; Watrous 1994: 725, footnote 236), a reflection of a larger chronological / terminological controversy of the later prepalatial period (cf. Manning 1994: 63-65). The nomenclature of the excavators shall be retained: EMIII.

The two EMIII contexts produced a quantity of 'exotica', both in terms of raw materials employed and their cultural origins and influences. These included a total of 25 figurine fragments (15 from Tholos C), all of the Cycladic folded-arm type, though not necessarily all imported from the islands. All except one were made of white marble. The exception, a miniature figurine, is unique in that it was rendered in ivory, a raw material that has yet to be found in an EC context (Krzyszowska 1983; Cosmopoulos 1991: 100-101; Sakellarakis and Sakellarakis 1991: 118. pl. 94). Beyond this remarkable piece, a number of others can be considered non-Cycladic on typological grounds. Where fragments have retained sufficient detail, the figurines have been classified according to the systems proposed by Renfrew (1969) and Branigan (1971), with 9 examples assigned to the Spedos type, 1 each of the Dokathismata and Agios Onouphrios variants and 2 of the Koumasa type, the latter two forms generally accepted as Minoan products imitating Cycladic originals (Sakellarakis 1977a: 100, fig. 1-10). Therefore, at least 10 of the 15 pieces from the tholos are considered to be island imports (Sakellarakis and Sakellarakis 1991: 118). The excavators themselves (Sakellarakis 1977b: 150) do note that while many of the heads are most similar to the

Spedos type, they are provided with carved lips, a feature never seen on figurines from the Cyclades (*ibid*: fig. 142; Sakellarakis 1994: 63; Renfrew 1991: 142). One can therefore concur with Doulas' opinion that the majority of the 'Cycladic' figurines from EMIII Phourni were in fact produced in Crete (Doulas 1976: 80).

It is also worth considering the point that apart from two examples that had been carefully deposited in a niche in the tholos, all figurines were in a fragmentary condition, apparently deliberately broken as part of the "tomb cult rituals" (Sakellarakis and Sakellarakis 1991: 118). While the use of the niche has Cycladic parallels (Doulas 1977: 63, after Tsountas 1899: 84; Stephanos 1904: 58), the remaining pieces have to be seen as substantially different in their treatment, compared to depositional practices seen in island contexts. Although incomplete or damaged figurines are known from EC burials, a consequence of their use and movement in island society (J. Davis 1984; Renfrew 1984c: 25-26; Broodbank 1992a: 543-44), the vast majority were interred as near to whole as possible (Renfrew 1991: 102). The fact that in some instances figurines had been mended, further confirms this point and the difference between the use of those pieces at Archanes and in the Cyclades (Doulas 1977: 62-63; Getz-Preziosi 1981).

The Archanes assemblage does find close parallels with objects recovered from the Cycladic settlements of Phylakopi and Ayia Irini on Kea (Bosanquet and Welch 1904: 194-95, pl. XXXIX; Caskey 1971). Both site produced a number of marble figurines, virtually all broken and primarily from post-EBA contexts, suggestive of their non-funereal usage and long period of use (and damage) prior to final deposition, intentional or otherwise (J. Davis 1984). The recovery of Cycladic folded-arm figurines stylistically dated to EBII, from Minoan contexts of a few centuries later has been a matter of some intrigue. The state of the Tholos C / Area of the Rocks assemblages may go a long way to clarify the issue, as they suggestive that these objects had spent a

considerable amount of time in circulation above-ground (resulting in wear and breakage), prior to their accumulation and deposition in EMIII.

The above discussion highlights one of the major themes of this thesis, that we cannot assume that a single significance, or 'meaning' was attributed to specific artefact types, transcending an object's context, use and discard. Even within an area as geographically restricted as central Crete and the Mesara, with shared burial types and material culture, we may be able to distinguish differential social practice regarding the use of 'Cycladic' figurines in burials. Though the pieces from Koumasa, Platanos, Aghios Onouphrios, Yerokambos and Tekes, amongst others, are not necessarily contemporary, it is notable that in contrast to the Archanes material the figurines from these sites were generally near complete, including two examples from Koumasa that had been repaired (A. Evans 1895: 124-35, figs. 124-31; Xanthoudides 1924: 22-24, pl. XXI: 122-127; 121, pl. XV: 224; S. Marinatos 1933: 301-302, pl. 9-12; Alexiou 1960: 226, fig. 8).

Other artefacts from Tholos C and the Area of the Rocks of EC character include a marble bowl, a fragment of an incised steatite vase, three bronze mid-ribbed daggers and some of the personal ornaments (Sakellarakis 1977a: 101, fig. 12, 1977b: fig. 135; Sakellarakis and Sakellaraki 1991: 116-18; for the latter cf. Tsountas 1898: pl. 8, 18, 26, 39 & 41). Equally, there is a large quantity of small finds that have no Cycladic counterparts (Sakellarakis 1977b: 152). These include objects made from raw materials never seen in the islands during the EBA, such as ivory and faience, and much of the jewellery has its closest parallels from sites of the northern Aegean, the Peloponnese and Mesopotamia, including gold beads that recall those from 'Priam's Treasure' of Troy IIg (*ibid*: 152-53, fig. 148; Sakellarakis and Sakellaraki 1991: 116, pl. 89).

The 'hybrid nature' of these deposits, mixing Cycladic and Minoan elements, is stressed by the excavators. For example the assemblage from under Sarcophagus 4 in

Tholos C (**Figure 12.5**) included 27 obsidian blades, a head of a 'Cycladic' figurine, a head of an ivory schematic figurine, two of the daggers, three gold beads, a silver pin, a stone 'teardrop' shaped bead and finally what appears to be a Minoan foot amulet made from sheet gold (Sakellarakis 1977b: 151-152, fig. 147).

12.7 - The Material Culture and its Affinities: Obsidian from EMIII Phourni

Large quantities of fine prismatic obsidian blades were recovered from both EMIII deposits. These blades have been interpreted as yet another element of Cycladic influence on the burial practices of this community, though the argument has derived primarily from the Melian origin of the obsidian, rather than from considering the form and use of the material as Cycladic (Sakellarakis 1977a: 100-101; Sakellarakis and Sakellarakis 1991: 118; though see Sapouna-Sakellarakis 1987: 260). In order to see just how comparable the Phourni assemblages are to those from Cycladic and Minoan funerary contexts, a detailed presentation of the material is required.

12.8 - The Obsidian from Tholos C

Fifty-five pieces of chipped stone came from the tholos (**Figures 12.5-12.10; Plate 12.4**), the majority fine obsidian blades along with a small amorphous core of blue-grey chert (obs 44). The obsidian came from three areas, 46 from the chamber proper and 4 from both dromos and tomb entrance (**Figure 12.3, Table 12.1**), within which it is possible to discern a number of discrete deposits.

It is a remarkably coherent group of material, with all except three of the pieces of obsidian (obs 5, 26, and 43), being pressure-flaked blades from the *plein temps de débitage* (**Table 12.2**). The majority are fresh in appearance, with only two blanks displaying traces of possible use-wear (obs 8 - dromos and obs 5 - interior), one of

which was the only cortical piece from the assemblage, a secondary flake (obs 5). A fair proportion of the blades were recovered whole, the longest example being 5.67cm long (obs 35 [**Figure 12.7**]).

12.9 - The Obsidian from the 'Area of the Rocks' and its Relationship to Tholos C

From studying the material, some 924 pieces of chipped stone can so far be assigned to the Area of the Rocks (**Table 12.3**), of which 918 (99%), were obsidian, most probably of Melian origin (**Tables 12.4-12.5**). The remaining 6 pieces of chipped stone are cherts, the origins of which are currently unknown. Two are of a brown colour (obs 90.13; 130.03), two are black-grey (obs 142.44; 102.60), one is grey-brown (obs 9), and one is white (obs 7.03).

12.9.1 - *Technology*

The obsidian from both deposits was related to the production of pressure-flaked blades. Indeed 95% of this material (n=875), can be classified as the end-products of such an industry, typified by their fine forms, with parallel edges and dorsal ridges, slight longitudinal curvature, a small bulb and bulbar scar (**Plate 12.5**). Based on the number of proximal sections present, a minimum of 295 blades were deposited in this area.

The remaining pieces of debitage include 38 undiagnostic flakes, two chunks, and what appears to be a small piece of an exhausted blade core (obs 123).

12.9.2 - *The obsidian blades*

As with the material from Tholos C, it is evident that the obsidian assemblage has been carefully and deliberately constructed, with virtually all the blades present

manufactured during the *plein temps de débitage* (**Figure 12.11, Table 12.6** - B5 onwards: 96%, n=841). Reconstructing the technological processes responsible for blade manufacture is a little problematic given the huge bias in the assemblage, missing the most diagnostic elements of the lithic reduction sequence, with few flakes and only a single, much reduced core fragment. From a variety of blade attributes a number of points can be made, pertaining to both assemblages. Firstly, all blades had been produced from unipolar, faceted cores. Secondly, the preponderance of distal segments with square terminations, along with the blades' slight longitudinal curvature, suggests that these cores were relatively flat-faced with a rectangular cross-section. The relevance of this conclusion will be discussed below.

12.9.3 - *Retouched pieces*

As is the norm for southern Aegean EBA obsidian assemblages, the Archanes material is dominated by unretouched blanks. From the two assemblages only 3 pieces had traces of deliberate modification (obs 19, T.C.; obs 110.64; 143. 18; 143.64, A.O.R.), all of which can be classified as 'trapezes' (**Plate 12.6**). These small trapezoidal blanks are formed by truncating a B5 blade, taking the medial section which is 'backed' on three margins, leaving one sharp working edge (cf. Inizan 1984; Inizan, Roche and Tixier 1992: fig. 24, 7-10). This relatively rare form has been previously noted from settlement assemblages in the southern Aegean, for example small quantities came from Lerna, periods III-V (EHII-MH - Runnels 1985b: 372, Table 11, fig. 6c), with a few in Bronze Age assemblages of the Argolid Exploration Project (Kardulias and Runnels 1995: 95, fig. 78,3, 80,2, 89, 9), and one from an EMIIIB context at Myrtos Fournou Korifi (Jarman 1972: 326, fig. 128,35). Of greater relevance are the previously unrecognised comparanda from other funerary assemblages studied during this research.

Other Cretan examples come from the EM tholoi of Lebena / Papoura I (n= 10), and Platanos (n=3), including from the latter site, one example made of fine yellow chert (**Plate 12.7**). Finally, beyond Crete, two come from Tomb 16 at Akrotiri on Naxos, dated to the early EBII / Keros-Syros Group (Doumas 1977: 91-2, pl. LIe, NM2013g & d - *Appendix 2*).

12.9.4 - Social practice and taphonomy

From the entire Area of the Rocks assemblage, only 13 implements bore definite traces of having been used, and a further 10 showed possible signs of use-wear (**Plates 12.8-12.10**). It is therefore obvious from this study that the practice here as with Tholos C, was to deposit unused material (**Figure 12.12; Plate 12.11**), probably produced for just such a purpose. Indeed, the overall freshness of both sets of material argues against the implements having had an extended time above ground, as handling and movement prior to interment, given the fragility of these artefacts (and material generally), would have resulted in some 'wear and tear'. Yet only 16 pieces, notably all from the Area of the Rocks, had traces of edge-damage (as opposed to wear from use), with just 6 of these being of any great degree (obs 11, 12, ?30.01, 135.30, 143.12, 144.10). This small amount of damage is perhaps a little surprising in the context of the overall fragmentary state of the latter assemblage. None of the 874 obsidian blades were whole, (the longest piece measuring only 3.47cm), in contrast to 48% of the blades from Tholos C that were recovered complete (**Figure 12.13**). Such differences between the two assemblages have taphonomic implications for the Area of the Rocks deposit. It is noteworthy that of the 25 complete blades recovered from Tholos C, all except two came from a primary sealed context, protected beneath Sarcophagus 4 (**Table 12.1**).

Three possible interpretations can be forwarded to explain the presence of obsidian from the Area of the Rocks. Firstly, that it represents the knapping area where blades were produced for deposition in the tombs. Each time a new corpse was brought to the necropolis, obsidian was worked here, with those blades that broke as they came off the core, or those considered 'unsuitable' discarded, resulting in a sizeable assemblage accumulating over time. In a second scenario, the obsidian could be seen as a component of burial practices, being interred in a more 'natural', albeit equally meaningful space within the cemetery, rather than the funerary buildings. Finally, the assemblage could be in a secondary context, comprising grave goods cleared out of funerary buildings, specifically Tholos C, as originally suggested by the excavators (Sakellarakis and Sakellaraki 1991: 135).

While there is an archaeological precedent for the first hypothesis, with blade production recognised within the EBA cemeteries of Mochlos in eastern Crete and Agios Kosmas in Attica, the theory bears little scrutiny (Scales and Davaras 1992: 424, pl. 91; Mylonas 1959: 106, 112; fig. 109; drawing 48-49). Phourni certainly lacks any other candidates for suitable loci of blade production, but there is only a very small quantity of debitage from the Area of the Rocks, that could be classified as 'waste' or preparatory material, as opposed to 'end-product' (**Table 12.7**). Also, there are few pieces from the initial stages of blade production: crested blades, or those with cortex or remnant cresting scars on their dorsal surface (CB, B1/2, B2/3's - **Table 12.6**).

Even if one were to propose that obsidian was coming into the cemetery as already prepared, or partly worked, nuclei, it would be reasonable to expect larger quantities of flakes from the manufacture of the c.300 blades recovered. One could note for example the experimental work of Sheets and Muto (1972), who in pressure-flaking 83 blades from a single *prepared* nucleus, also generated a quantity of debitage in the process, representing some 6% of the core's original mass. Therefore, these blades were

manufactured either at an as yet undiscovered location within or just outside the necropolis, or alternatively the material was produced within the settlement of Archanes.

Just such evidence comes from an EMIII deposit in Room 2 (level 83) of the Agios Nikolaos site, Archanes (Carter, *in prep.* b). The constituent parts of this assemblage make it almost diametrically opposed to those from Phourni (**Figure 12.14**). It is dominated by cortical and non-cortical flakes from the earliest stages of pressure-flaked prismatic blade manufacture, with few end-products and no cores. Here raw nodules of obsidian were shaped, removing the outer cortical material, the '*dégrossissage et le décortilage du nucleus*' (cf. Perlès 1994a: 18), along with subsequent preparation and initial reduction using a combination of indirect percussion, and pressure-flaking, the latter represented by numerous delicate flakes from faceting the platform and cresting.

The recovery of a few blade-blanks, albeit all but one broken (**Figure 12.14**), indicates that some blade production occurred here. This did not apparently continue to the point of core exhaustion, for we are missing those blades from the end of the manufacturing sequence (B5/6's), and have no fragmentary or exhausted nuclei. This would suggest that after blade manufacture had commenced both the products and unfinished nuclei were taken elsewhere for the remaining stages of production and ultimate usage. The pre-forming of cores and initial blade removal occurred in one place, with final production in another and possibly use and discard of the blades in another one still - such as deposition in the Phourni necropolis.

The second theory is that the obsidian represents the grave goods associated with primary burials placed in the natural rock fissures. The excavators have noted that throughout the life of the Phourni cemetery, many primary and secondary burials were placed outside of the tombs (Sakellarakis and Sakellaraki 1991: 134). In this particular instance, but such an interpretation seems relatively unlikely. Obviously information

regarding the articulation of the skeletal material will be of great importance for understanding this deposit. If we are to consider the possibility that at least some of this material was in its primary context, then it is slightly worrying that not one complete blade was recovered.

Finally, we must consider the suggestion that there was a direct relationship between the material from the Area of the Rocks and Tholos C. The periodic clearing out of the Mesara tholoi is well documented, the act seen in largely functional terms, to provide space for new burials, albeit undertaken within structured, ritualised practices (Branigan 1987b: 44-45). Branigan (*ibid*) has defined 5 different ways that skeletal remains were ritually manipulated, namely: clearance to ‘dumps’ within or outside of tombs; fumigation or cleansing by fire; selective grouping of bones; selective removal of bones and finally intentional breakage of long-bones. He goes on to list 27 tholoi where examples of such ‘ritual interference’ have been recognised (*ibid*: Table 1). Tomb ‘clearance’ includes a series of acts, ranging from pushing material to one side of the chamber, as at Kamilari I (*ibid*: 47, after Levi 1961-62: 28-31, fig. 24-27), through regular, small scale removal of tomb contents, to what has been interpreted as wholesale clearance and fumigation at Platanos A (Xanthoudides 1924: 93).

The repositories of such deposits have been recognised at a number of sites. It is thought that many of the ancillary buildings adjoining the main tholos chambers, were wholly or in part employed for just such a purpose (Branigan 1987b: 47; Petit 1987; **Table 12.8**). While these antechambers may therefore have functional similarities to the Area of the Rocks, even closer structural parallels exist. Next to the tholos of Porti an artificially created walled trench, was found to be “filled to the brim with bones”, with further examples recognised at Platanos and, of greatest relevance, an apparently similar usage of a natural rock-cleft at Skoutoumeno Kharakas in the Ayiofarango

Valley (Branigan 1993: 121-22, after Xanthoudides 1924: 56-57, 93; Blackman and Branigan 1977: 51).

In comparing the two assemblages, the form and scale of their component parts, one appreciates that aside from the quantities involved, the two sets of material are remarkably similar (**Figures 12.15-12.18**). The only major difference between the two assemblages is the fragmentary state of the blades from the Area of the Rocks, probably the result of post-depositional factors relating to their movement as new burials were interred and old ones were swept aside, eventually collected and redeposited outside. Therefore, it is my opinion that it is this final hypothesis, as originally posited by the excavators that is the probably interpretation (Sakellarakis and Sakellaraki 1991: 135). It should be emphasised that we should not see this act in purely functional terms. The material was not simply swept out and discarded in an *ad hoc* manner, as the Area of the Rocks is actually to the west of the tholos, whereas the tomb's entrance is in its eastern face. The tomb contents were therefore collected, and then carried around behind the tomb to be placed in the natural rock crevices, not so much a casual 'clear out' as a structured redeposition. Equally, while one cannot rule out the possibility of *sporadic* lithic production at the Area of the Rocks, its primary use of has to be seen as a burial ground.

12.10 - Comparable Assemblages

Due to the problems in defining contemporary Cycladic assemblages, there has to be a greater emphasis on considering the similarity or dissimilarity of the Phourni material with 'local' assemblages (in contrast to the studies of the Aghia Photia and Manika material). Such a proposition is in itself problematic, in part due to the controversy over the dating of these deposits (Watrous 1994: 725, footnote 236; *contra*

Sakellarakis 1977a, *inter alia*), and secondly because of the ever-present difficulty of elucidating 'chronologically pure' deposits from EM communal burials.

Virtually all of the Mesara tholoi containing obsidian grave goods were in use during the later prepalatial period, including three of the Lebena tombs: Papoura IB, Yerokambos II and Zervou (Alexiou 1992), along with Haghia Triadha A, Kalathakiana K and Platanos (Xanthoudides, 1924: 81-84, 88-125; Banti 1930-31). Betancourt (1985: 53) notes that EMIII is missing from all of the Lebena tombs and goes as far as to say that it has not been found in any of the Mesara tholoi, arguing that the chronological term may only be relevant in eastern Crete. This is obviously an important statement in the context of the arguments of Watrous (*supra*), though subsequently there have been reports of EMIII material from Moni Odigitria in the Ayiofarango Valley (Vasilakis 1989/90, 1992). From all of these deposits, only a single piece of obsidian from Ayia Kyriaki can possibly be assigned to the late prepalatial period (blade 49, early MM - Blackman and Branigan 1982: 16), though full publication of the Lebena tholoi may well enlarge the data-set.

Turning to burials in eastern Crete, obsidian has been recovered from a range of tombs containing EMIII material, including Palaikastro, Mochlos, Pseira, Krasi Pediados and the metal-rich deposit of Myrsini (Dawkins 1904-05b; S. Marinatos 1929a; Platon 1959; Soles 1992: 84 and *Appendix 4*; Betancourt pers. comm.). Once again, only in a few instances can lithic assemblages be securely attributed to the period in question, including those from the tholos at Myrsini and Tomb III at Palaikastro / T Ellinika. While the former site spans EMIII-MMIA, the latter, a rectangular ossuary, with its 41 vases of EMIII White-on-Dark Ware, is the most securely dated assemblage we currently have (Dawkins 1904-05b: 268-72; Daux 1960: 821; Soles 1992: 183-84). The Myrsini tomb, one of the most easterly tholoi known (Branigan 1993: 10), with burials placed in pithoi and larnakes, or laid directly on the ground surface, sometimes

in shallow pits, provides a lithic assemblage relevant to this analysis given its obvious comparability to the funerary practices at Tholos C. Unfortunately, neither the Myrsini nor the Palaikastro obsidian was studied first-hand, with the result that only the brief descriptions from the literature can be drawn on.

While it is currently impossible to assemble a large quantity of obsidian from the Mesara tholoi specifically dating to EMIII (or MMIA) to compare with the Phourni assemblages, the material that is available from these sites may still be relevant. This is due to the demonstrable coherence in these burial groups, regarding the form and scale of individual blades and their overall amount of usage (*Chapter Eight*). It is therefore reasonable to employ these groups in this comparative analysis, including the EMIIA material from Tholos E at Phourni.

12.10.1 - *The obsidian from Tholos E*

Tholos E (Area E), is the earliest known tomb at Phourni, built in EMIIA, with a diameter of 4.3m and a single doorway on its eastern side (Sakellarakis and Sakellarakis 1991: 126-27; Lachanas 1994: 36-37; **Plates 12.3 & 12.12**). The quantity of offerings suggests that during the tomb's early history there had been many burials, but levelling during the MMIA period makes it impossible to ascertain the exact numbers involved (*ibid*: 126). The EM deposit included 117 artefacts, of bone, bronze, clay, gold, gypsum, ivory, obsidian, quartz, schist, and steatite.

The obsidian assemblage from the EMII level (level 6), comprised entirely of blades (n=28), a minimum of 17 originally, with 6 complete examples ranging between 3.30 and 6.66cm in length (**Figures 12.19-12.21; Plate 12.13**). As with the EMIII material, the blades were produced from faceted, unipolar cores of square, rather than conical distal profile. All except two examples (obs 30, 41), are pressure-flaked blades from the *plein temps de débitage*. The majority of the material had not

been used before burial (n=24), with only one piece definitely utilised (obs 38), and three others with possible use-wear (obs 26, 30, 40).

As with Tholos C, the blades come from a series of small-scale deposits (**Table 12.9**). In comparison to the later assemblage, a far smaller proportion of the blades were recovered whole, probably due to the levelling of the EMII burials, that in turn means that we cannot be certain that individual pieces were necessarily related to each other. The two largest groups of material come from beneath Sarcophagi 17 and 19. The former deposit comprised 6 blades, only one of which was complete (obs 24), along with two proximal and three medial sections (obs 22-23, 25-26, 39), a minimum of three implements originally. The latter assemblage is of a comparable size, containing three proximal and one medial blade fragments (obs 13-14, 31-32, 40).

12.10.2 - Comparing assemblages: Typology

Whenever obsidian is recorded from Mesara tholoi and other EM tombs, it is always fine prismatic blades that are described and illustrated, though a single crested blade is shown in a group of 13 pieces from Koumasa (Xanthoudides 1924: pl. XXIII, 4th from right). Cores are recorded from a few burials including Marathokephalo II, Koumasa, Platanos B, and Yerokambos II, though once more, none can be specifically dated to EMIII or MMIA (Xanthoudides 1918: 18-20, fig. 8, 1924: 21 & 105, pl. XXIII; Warren pers. comm). Flakes are reported from a few sites, for example Marathokephalo II and Koumasa (*supra*), though never in the same quantity as blades (only two are reported from Megaloi Skinoi IIIb - Blackman and Branigan 1977: 40). These reports, and one always has to be wary of selective publication, were borne out by the study of material from Ayia Kyriaki, Papoura I, Yerokambos II and Platanos (**Figure 12.22**; *Appendix 4*). It is therefore clear that the practice of depositing regular prismatic blades

in tombs remains constant throughout the prepalatial period in central Crete and the Mesara (**Plates 8.10–8.12**).

Typologically, the material from Tholos C and the Area of the Rocks reflects this pattern, that by extension means that the EMIII Phourni material is also eminently comparable to assemblages from EC burials (*Chapters Six-Nine*). A further link between the Archanes material and that from the Mesara is possibly provided by the ‘trapezes’. They are very rare as grave goods outside of Crete, with only two known from a Cycladic burial, yet there are a combined total of 13 pieces from Lebena and Platanos alone (**Plate 12.7**). In the absence of secure dating for these latter examples, it would be unwise to overstate the case, but it is tempting to see a localised variant in the construction of funerary assemblages, shared by communities in southern and central Crete.

12.10.3 - Comparing assemblages: Scale of products

The following analyses only comprise products from the *plein temps de débitage*. Complete blades of any type are rarely found in the tombs of central Crete and the Mesara, due to the post-depositional factors described above (all blades from Krasi Pediados and Ayia Kyriaki were already broken when excavated [S. Marinatos 1929a: 123; Blackman and Branigan 1982: 16]). Therefore, blade-length can rarely be drawn on as a comparative attribute, with only Papoura I providing a sample of any meaningful size (n=36) to contrast the 24 examples from Tholos C. The latter group of blades are of similar size, 22 of the pieces between 4.36 and 5.67cm long, not surprisingly perhaps, as the majority were from the same context (underneath Sarcophagus 4) and probably come from the same core (Sakellarakis 1977a: fig. 11). While there is a greater distribution in the measurements of the Lebena sample (no doubt a result of the

assemblage being a cumulative deposit), both sets of blades are of comparable length (**Figure 12.23**).

The data-set can be enlarged if we include cores from EM contexts. Of greatest relevance to the Phourni material are a single nucleus from Lebena / Yerokambos II, that measures 5.39cm long and a plunging blade from Platanos of a similar scale despite missing its proximal tip (4.67cm). The context can be broadened further still, by including material from 'domestic' assemblages such as the 'atelier des tailleurs d'obsidienne', Malia and material from Bosanquet's excavations at Palaikastro (Van Effenterre and Van Effenterre 1969: 17-21; *Chapter Three*). The former deposit contained 14 complete cores along with a further 5 fragmentary examples (from which a representative sample of 5 whole nuclei were measured), the latter comprising 16 complete prismatic blade-cores (**Plates 3.1-3.3**). The results presented below convincingly demonstrate that across large areas of EM Crete, blade production was being undertaken in a manner that resulted in products of similar scale (**Figure 12.23, Tables 12.10-12.11**).

At the same time, both sets of blades are notably shorter than those from EC burials (*Chapters Seven-Eight*). Dating to the late ECII period (Kastri Group), Tomb 142 of the Akrotiraki cemetery on Siphnos provided two blades (Tsountas 1899: 75), the largest example being 9.91cm long, much larger than any example from Phourni, or any other tomb in central or southern Crete for that matter. Similarly blades from Amorgos Group tombs at Agios Pavlos, Amorgos, were recorded as 7-8cm in length (L. Marangou 1994).

By considering blade width and thickness, the data-set is substantially enlarged. Comparative analysis further demonstrates that individual products from EMIII Phourni are closely related in scale to those from the Mesara, irrespective of date (**Figures**

12.24-12.25). In contrast, blades of the same type from the Cyclades are notably wider and thicker (**Tables 12.13-12.14**), for example those from Phylakopi's 'great obsidian deposit', *terminus ante quem* ECIII (Renfrew 1982: 223; Torrence 1986: 147-50).

12.10.4 - Comparing assemblages: Technology and motor habits

The Phourni assemblages were produced by pressure-flaking, the same *mode* of production as that responsible for obsidian blade manufacture throughout the southern Aegean in the EBA. While the mode may have been the same, differences can be noted in the technological *mechanisms* employed. As stated previously, the selective nature of the assemblages from Tholos C and the Area of the Rocks, means reconstructing this process is difficult, though not impossible.

The best evidence is provided by the 26 obsidian blades found beneath Sarcophagus 4 in Tholos C (**Figures 12.3 & 12.26**). The material was found grouped in two distinct deposits, with 16 pieces under the western end of the clay larnax, the remaining 11 to the east. It was possible to refit a number of these blades to one another, with one set of 4 proving to be of particular significance. Firstly, the conjoining of two of these blades (obs 23 and obs 33), one from each of the respective deposits, demonstrated that the two sets of material were related and had been interred at the same time, making it one of the largest individual funerary assemblages known.

Secondly, these blades provide an insight into the motor habits of the knapper. Together they form part of a core's face, with one blade flanked by one to the left and two more to its right (**Figure 12.27**). By looking at how they relate to each other 'stratigraphically', we are able to reconstruct not only the sequence in which they had been removed from the nucleus but also the series of blanks preceding them, in total the production of 10 blades. The rhythm of blank removal is one of the core being worked

in opposing directions, proceeding from somewhere near the centre of the core's face towards the two margins, from where it is presumed the process was initiated by opposing crests. The technique probably indicates that the nucleus was immobilised, resulting in part of its face being covered and left unworked, with blades removed from the remaining half to two-thirds of its circumference.

This flaking mechanism can be compared to how cores were worked in the 4 assemblages discussed above, Yerokambos II, Platanos, the 'atelier des tailleurs d'obsidienne' at Malia and Palaikastro. Both cores from the Mesara tholoi were of the same form and scale as the nucleus responsible for those blades found under Sarcophagus 4. In each case they had been worked around their entire circumference, though it is apparent that only two-thirds of the Yerokambos core had been worked initially, employing the flaking mechanism described for the Phourni material (**Figures 12.28-12.30**). Only when the reduction of the front of the core became problematic (the final blade removal was unsuccessful resulting in a hinge fracture), was there an attempt at rejuvenating blade production, by turning the core upside down and initiating a blank from the previously unworked ventral surface of the nucleus, having first created a new platform opposite the original one. This was only partially successful as a single wide blank was removed, albeit much wider than usual.

Again with the Platanos piece, it seems that the last blade negative, that is notably wider than the others, represents the reduction of a part of the core's face that originally had been protected by whatever had been employed to stabilise the nucleus, either the knapper's hand, a clamp or a similar device (cf. Pelegrin 1984b, 1988). The flaking mechanism is slightly different to that of the Archanes and Yerokambos examples, though it does retain some of the elements described.

Turning now to the assemblages from Malia only a brief study was possible, concentrating on how the nuclei had been worked. All were unipolar, with the platforms

either fully or cursorily faceted and have square, or squarish distal profiles (**Table 12.10**). All 14 had been reduced using the knapping rhythm described above for the Tholos C material, working from both margins into the centre (**Figures 12.29-12.30**). Eleven had been worked for about two-thirds of the margins, with the remaining three nuclei worked around their entire face by simply repeating the process of blade removal as a mirror image of the first run.

The Palaikastro examples were a product of the same technological mechanism, with all cores worked from a single platform and have a rectangular - semi-circular cross-section and a square distal end (**Table 12.11**). The majority retained a flat back that although decorticated, had not been reduced in blade production.

It is therefore apparent that the blades from EMIII Phourni were produced in the same manner as they were in many parts of Crete, regarding both technological *mode* and *mechanism*. This has ramifications for the dissemination of technological knowledge in the EM period, but space does not permit a fuller discussion of this issue. Furthermore, this technique of pressure-flaked blade production appears to have enjoyed a long history of use in Archanes, as two nuclei from post-EBA buildings at Phourni demonstrate (**Figure 12.31**). The first came from the upper, MMIA levels of Tholos E, (obs 2, level 2), the second from Room 1 of Building 4 (dated to LMIA), the only non-funerary structure on the site (obs 8, level 15).

12.10.5 - Comparing assemblages: Depositional practices

In Tholos C obsidian appears to have been directly associated with individual burials, either placed alongside or underneath the corpse (**Figure 12.3**). By extension the material from the Area of the Rocks is also presumed to have been related

to specific individuals before their removal from the primary burial chamber and subsequent redeposition.

The placing of blades alongside the body parallels Cycladic burial practice, though the association is somewhat 'distanced' with those burials placed in a sarcophagus, as grave goods remained outside. In turn, it also seems to be the norm in Minoan mortuary practice to have deposited obsidian alongside the corpse, though the disturbed contexts usually means that we can only record the blade's presence in the main burial chamber, as for example reported at Platanos and Moni Odigitria (Xanthoudides 1924: 105; Vasilakis 1992: 213). There are some suggestions of differential social practice, such as the aforementioned late EMI-IIA 'foundation deposit' from Ayia Kyriaki (*Level L6* - Blackman and Branigan 1982: 16, fig 5; *Chapter Eight*).

The consideration of material association is once again problematic as there are so few assemblages revealing comparable contextual detail from central and southern Crete to compare the Phourni data. Albeit without reference to obsidian, some notable differences may be discerned between the ritual acts associated with Tholos C / the Area of the Rocks and contemporary tombs in the Mesara, the differential treatment of 'Cycladic' figurines referred to above being just one such example of this. Similarly Tholos C is missing two major components of material culture that one commonly associates with burial assemblages to the south. Firstly there are remarkably few stone vessels from EMIII Phourni and secondly it is lacking the ceramic repertoire associated with ritual consumption of liquids, either as libations or within a 'toasting' ceremony (Branigan 1993: 77-80; Walberg 1987).

With regard to the Cyclades the problems are accentuated further still, as apart from a few tomb groups on Melos and at Arkesine on Amorgos, there are no contemporary assemblages from the islands (Papadopoulou 1965; Renfrew 1972: 189;

Dümmler 1886). It is worth noting that during the (preceding) late EBII Cyclades there appears to have been a negative relationship between daggers and obsidian in tombs, and generally between daggers and marble figurines, yet at Archanes all three were found together amongst the group of objects placed beneath Sarcophagus 4 (*supra*).

Finally, the results of the microwear analysis provide no clear indication as to which cultural tradition the Phourni assemblages should be linked with, for the burial of primarily new and unused blades was central to both Cycladic and Minoan mortuary practice (**Figure 12.32**). Of course this need not imply that the removal of these items from circulation would have necessarily had a shared significance amongst these disparate peoples, as there are many other considerations that had bearing on the significance of the act. The overall construction and perception of meaning and act for the community of Archanes, are issues that will be discussed in more detail below.

12.10.6 - Comparing assemblages: *Quantity and distribution*

While obsidian blades have been recovered from numerous Minoan burials, we have little idea of the quantities involved in individual depositional episodes, or the rate of deposition over time. Tholos C offers a rare insight into social practice, as the contextual detail for each blade found illustrates how some of the material culture was related to separate inhumations. As noted above, the assemblage from beneath Sarcophagus 4 is one of the largest single burial deposits currently known, given that the quantities of material from the late EBI graves at Agrilia and Aghia Photia were conceivably associated with more than one person (*Chapters Ten-Eleven*).

In the light of the number of individuals represented in southern and central Cretan burials and the duration of tomb use, it would be fair to say that obsidian was not a particularly common offering, certainly in comparison to ceramics, stone vessels, daggers, jewellery or seal-stones (Branigan 1993: 67-76). Furthermore, the 'rich' deposit

from under Sarcophagus 4 in Tholos C means that one has to consider the possibility that many of these burial assemblages could have been generated by a few acts, as opposed to the relatively small-scale but regular rate of deposition seen in Cycladic burial practices. Indeed, higher concentrations of obsidian blades can be noted amongst a few tombs of these regions.

Branigan has argued that there is firm evidence of social differentiation between communities in the Mesara. Funerary assemblages containing the preponderance of exotic materials, display-orientated items, or those requiring specialist or time-consuming manufacture, are situated to the north of the Asterousia watershed, including Platanos, Koumasa, Haghia Triadha and Agios Onouphrios (Branigan 1993: 112-14). As products of a skilled craft, an uneven consumption of obsidian pressure-flaked blades can also be considered an indication of social distinction in the region (*Chapters Three and Eight*). It is thus noteworthy that the largest burial assemblages of blades also come from north of the Asterousia mountains, although the second largest deposit after the Area of the Rocks / Tholos C assemblages, comes from Papoura I at Lebena on the south coast (**Table 12.15**). Further discussion of this material can be found in *Chapter Eight*.

12.10.7 - Comparing assemblages: Conclusion

It is apparent that while a number of parallels may be drawn with Cycladic material and practices, the obsidian from Phourni has a far closer affiliation to assemblages from the tholos tombs of the Mesara and sites such as Krasi Pediados in central Crete, albeit involving rather larger deposits than is usual at these sites.

Furthermore, the assemblages from Tholos C and the Area of the Rocks can be seen as continuing long established social and technological practices, as witnessed in the late EMI deposits from Ayia Kyriaki and the EMIIA obsidian of Phourni's Tholos E.

Indeed, at Archanes the deposition of obsidian in funerary contexts has a long history, appearing in a similar form through to the MMIA-IIB periods, as the material from Funerary Building 19 illustrates (**Table 12.16**).

12.11 - Conclusion: Was Archanes a Cycladic Colony?

Firstly it is necessary to emphasise that the inclusion of ‘Cycladica’ in burial practices at Phourni was not a feature new to EMIII social practice, as the material from the EMIIA levels of Tholos E all too readily demonstrates. While the latter assemblage is essentially comparable to those from the Agios Onouphrios and Koumasa tholoi in the Mesara (A. Evans 1895; Xanthoudides 1924: 21-24), generally reflecting the nature of Minoan contact with the islands during the EBII period, the accentuation of Cycladic traits in the assemblages from Tholos C and the Area of the Rocks poses a more problematic interpretation.

While the deposits at Phourni display an increase in ‘Cycladic’ material culture and social practice in EMIII, most Minoan communities conversely show a notable decline in contact between the two cultures. As stated earlier, raw materials from the archipelago, including metals and obsidian, were still being procured by the Minoans, but there is a marked reduction in ‘Cycladica’ recovered from those north Cretan sites where notable concentrations had been found in late EMI-IIA contexts. With particular reference to ceramics, there is an almost complete lack of Cycladic material culture in Crete dating to EMIIIB and EMIII (MacGillivray 1984: 73-74; Wilson 1994: 43-44), yet conversely it is from these contexts that many of the folded-arm figurines have been recovered (Childe 1925: 49).

The evidence from Knossos and Tekes may illustrate differential deposition practices at this time, between settlement and mortuary contexts. While there is no evidence for imported Cycladic produce from the settlement (pottery and by extension

its contents), figurines were deposited in a nearby burial (S. Marinatos 1933: 298-304). One figurine has been recovered from an EMIII 'domestic' context at Malia (Farnoux 1989), and it will be interesting to see whether the Phourni assemblage, by far the largest single group of 'Cycladic' figurines from any period in Crete, will be replicated in the contemporary settlement below.

Theoretically, the increase in Cycladic influence in the burial record of EMIII Phourni could have been the result of closer contact with island culture due to the arrival of colonists. Alternatively, this study has conclusively demonstrated that while many artefacts from EMIII Phourni have Cycladic counterparts and / or origins, the lithic component offers no evidence to suggest any changes at this juncture that might be associated with an influx of population from the islands. Regarding the technical *mechanism* employed, the scale of the end-products and the manner of their deposition, the assemblages from Tholos C and the Area of the Rocks bear little or no resemblance to Cycladic lithic technology and social practice, but instead form part of a technological and ideological *koine* that embraced central and southern Crete.

If the theory of Cycladic colonists is to be discounted, the question remains as to why Archanes, in particular, was accentuating the 'Cycladic' elements within its burial rites, at a time of apparently declining cultural contact between Crete and the islands?

12.11.1 - *The same but different: Archanes in its Minoan context*

The centre of gravity shifted definitely to Crete which now for the first time came to desire the primarily mineral wealth of the Cyclades as well as their dominant position in the transit-trade. (Sakellarakis 1977b: 153).

If, as it now seems probable, Cretan communities from EMIB onwards took a far more active role in procuring and distributing those resources from, or only

attainable via, the Cycladic islands (e.g. metal ores from Attica), then we return to those issues discussed in *Chapter One* concerning the question as to which communities in the southern Aegean had sufficient resources to organise and undertake such voyages. Of course not all foreign contacts before EMIB were necessarily articulated through a Cycladic medium, suggesting that differentially aligned procurement and exchange stratagems existed in tandem. Nor, as has been argued for Mochlos, were all Minoan communities necessarily in contact with Cycladic ‘traders’ (*Chapter Five*, after Carter and Nakou 1995). The fact remains that the onus in EMIB-EMIII appears to have been on the Minoans to orchestrate contact between Crete and the archipelago.

Although this represents a fundamental change in how raw materials and goods were procured from the Cyclades, it is not the “zenith” of EBA Cyclado-Minoan relations, as described by Sakellarakis (1977b: 152), given the level of inter-cultural contact during late EBI and early EBII. Sakellarakis’ interpretation was based on the wealth of Cycladic elements at EMIII Phourni and Tekes, yet he also emphasised the distinctive nature of these deposits in their Minoan context and that his belief that this period was the “logical preface” of the new relationship between these regions, i.e. the foundations of the ‘Minoan Thalassocracy’ (*ibid.*: 153).

It is surely at this point that the importance of Archanes can now be fully appreciated. The fact that at Agios Nikolaos and Phourni in Archanes we have a significant level of lithic manufacture and consumption demonstrates that unlike most loci of procurement and production in EM Crete, the control of a harbour site on the coastline closest to the Cyclades was not the determining factor in gaining access to Melian obsidian, or other raw materials and goods from a number of regions beyond Crete (Sakellarakis 1994).

It is frustrating to know so little about the size of the EM settlement, for this prevents us from assessing whether Archanes had reached that ‘organisational

threshold' that would have enabled it to directly procure this range of exotic materials (cf. Whitelaw 1983: 340). Of course if members of this community had established long-range kinship links and exchange networks, they need not necessarily have undertaken the procurement and movement of the goods themselves, but could have achieved this through the coercion or exertion of influence over others, such as within patron : client relationships. Also, as with the issue of craft specialisation and social development, we need not assume that it was only after the emergence of settlement hierarchies that certain communities undertook such voyages. It may well have been the ability to draw people and resources together that permitted such ventures to be achieved and made a long-term contribution to the development of both individual and community status (cf. Broodbank 1989, 1993).

What is apparent, is that Archanes was an important settlement in its own right, with distinctive traits in material culture and social practice. Although on many levels there are clear links between the burial practices and material culture of southern Crete and Phourni, it would be an injustice to subsume Archanes into an Mesaran cultural milieu. Nor indeed should Archanes be seen as a satellite of Knossos, despite its ceramics displaying equally strong connections to this site as it does to the Mesara (Lachanas 1994; Warren 1994). Neither influence is surprising considering Archanes' situation, straddling the main north-south route through which the Knossos - Mesara exchange network must surely have operated (cf. Wilson and Day 1994).

12.11.2 - '*Politics and prismatic blades*'

Though the impetus that started it may have come from outside, the civilisation that thus took form in the island struck root and bore fruit that was a true product of Cretan soil. It was in the Later Minoan age that this fruit was to attain to its perfection. (Xanthoudides 1924: 134).

While in many respects a continuation of the depositional practices seen in the earlier Tholos E, the EMIII period at Phourni sees the consumption of these unused, exotic and exclusive items reaching unparalleled extremes, at a time when we no longer have evidence for Cycladic ‘middlemen’, or any form of cultural contact between the Minoan and Cycladic worlds. It has to be seen as an overt signal of power from the élite of Archanes, an act located within the realm of the dead but the overriding theme being the legitimisation of the living.

Beyond the significance of restricted raw material and skills involved in the production of these artefacts, we can see it as directly drawing on Cycladic social practice, both adopting and subsequently manipulating the exotic. A perfect parallel to the lithic component from Phourni is the Koumasa type figurine (**Figure 12.33**). In both instances foreign symbolic paraphernalia are adopted, but the actual objects are manufactured and utilised in a Minoan context. As such it can be suggested that the obsidian from EMIII Phourni provides an excellent metaphor of the rise and importance of Archanes at this period and perhaps, by extension, developments within Crete as a whole. It is surely through such acts as these that one can search for the origins of social differentiation, the ultimate expression of which were the palaces, for whatever model one advocates for state formation in Crete, this relatively obscure period of EMIII is of crucial importance.

Over the past few years, there has been a shift in certain circles, from the model of indigenous development of the Minoan palatial system (Renfrew 1972; Warren 1987; Branigan 1988b *inter alia*), to one positing a strong correlation between state formation and contact with foreign powers, specifically those of Egypt and the Near East (Cherry 1984; Watrous 1987, 1994: 728-36, 752, 1995). This latter work does not so much represent a pendulum swing back to the diffusionist arguments that preceded the work of Renfrew and others (cf. A. Evans 1924; Childe 1925), but makes a strong case that

Minoan social development has to be seen through a 'world systems' perspective (cf. Gledhill and Rowlands 1982; A. Sherratt 1993).

A number of exotic features may be documented in late prepalatial Crete, with the importing or imitation of a wide range of foreign goods, including Egyptian stone vases, Near Eastern seals and a variety of ceramic forms, as well as the range of Cycladica referred to above (Warren 1965: 34-39; Watrous 1987: 67; Branigan 1993: 113). Beyond material culture, there have also been claims for the non-Cretan origins of elements in funerary and domestic architecture, along with such major innovations in Minoan society as kingship, palaces, writing, representational art and peak sanctuaries (Watrous 1987, 1994: 728-36, 752, 1995). Of course it remains to contextualise these exotic customs and materials within this social transformation (cf. Shanks and Tilley 1987: 175-85), for to merely "demonstrate the existence of external exchange at a period of rapid sociopolitical change is hardly to explain that change" (Cherry 1984: 38). While this thesis is not the place to discuss the why's and wherefores of state formation in late prepalatial Crete, one can at least emphasise a notion of social agency, one of the most important issues alluded to in the comments of Cherry above.

To my mind, one of the best examples illustrating social action in this period is provided by a tiny group of obsidian artefacts from Tholos B at Platanos. Within this rich assemblage were two blades and a core that the excavator considered worthy of particular mention, due to their being made of a volcanic glass of translucent purple-grey, rather than the usual black (Xanthoudides 1924: 105-106, pl. LIV; **Plate 12.14**). Despite not having been analysed, they are almost certainly not of Melian origin and possibly central Anatolian (Renfrew, Cann and Dixon 1965: 239),

What is important about these few pieces, is that here a Minoan community had obtained a raw material from beyond the Aegean (possibly central Anatolia), that was then used to manufacture products of a form seen throughout Crete and the southern

Aegean (but not in Anatolia at this time), finally employing them in a depositional practice influenced by Cycladic models. Conceptually, the closest parallel to the Platanos material would surely be the unique miniature ivory folded-arm figurine from Tholos C, Phourni (**Figure 12.33**). From a Minoan funerary context, we have an object of Cycladic form, produced from an Egyptian or Syrian raw material, and incorporating an iconographic element (holes bored in the pubic triangle) seen on contemporary Mesopotamian and Anatolian figurines (cf. Canby 1965; Renfrew 1969: 31, pl. 3c; Höckmann 1977: 158, fig. 151).

Arguably both the above examples give strength to the argument that certain elements of Minoan society were active in the creation of a new political structure and innovative symbolic behaviour. In part this was achieved through their reconceptualisation of links with cultures beyond Crete, and the manipulation of the products of those contacts.

12.11.3 - *Watershed*

Tholos C presents clear evidence for these ‘revolutionary’ changes in Minoan social history. First and foremost, is the fact that at the same time as the shift in burial custom Tholos E was abandoned and a new tomb constructed: Tholos C (Sakellarakis and Sakellaraki 1991: 126). Secondly, the adoption of pithos and larnax burials in EMIII has been suggested to represent the break-up of the previous social fabric, from a society organised on intra and inter-clan relationships, to one based on the “nuclear family and the individual” (Branigan 1995: 38-39). Yet this important shift was undertaken within an existing medium; a dialectical relationship between emphasising the individual - the larnax - placed within the architectural embodiment of the community: the tholos.

Indeed, it is important to acknowledge elements of continuity from the earlier prepalatial period (cf. Cadogan 1986; Warren 1987; Branigan 1988a, 1995). The past

was not so much negated, but reworked, with accepted sets of symbols and customs employed in new ways, to express new ideologies. It is for these reasons that I do not align myself with the position implicitly taken by Watrous, that in order to advance a theory for the emergence of Minoan palatial society based on contact with the 'pristine' states in EMIII-MMIA, it is necessary to negate all evidence for social stratification in the EMII period. This is to reject, with little or no reasoning, Crete's accepted position at the forefront of social, economic and technological achievement within the EBII southern Aegean as a whole (cf. Renfrew 1972; Hägg and Konsola 1986; Soles 1988; Broodbank 1989, *inter alia*).

Again the EMIII Phourni material reflects this emergence of new modes of perceiving and expressing social distinction. The cosmopolitan nature of the objects from beneath Sarcophagus 4 illustrates an increased consumption of exotica (particularly objects from distant sources such as Egypt) at a time when contact with the outside world may for the first time largely have been in the control of the Minoans themselves. We also have hints from beyond Archanes of changes affecting late prepalatial society, including violent coercion and settlement dislocation, that may have resulted in increasing population size at sites such as Phaistos (Cadogan 1986: 158-59; Branigan 1993: 139-41). One major indication of these changes and their location within major shifts in cosmology, was the foundation of a peak sanctuary on the summit of Mount Juktas at Psili Korfi in MMIA (Watrous 1994: 731). With the settlement of Archanes overshadowed by Juktas and the necropolis of Phourni on a hill between the two, it seems probable that the mountain was always of great significance to this community, just as we know it was from the MBA onwards (Sakellarakis and Sakellaraki 1991: 136-56). Indeed there is evidence both at Psili Korphi and surrounding sites, that activities of some kind had taken place on the mountain in

preceding periods (*ibid.*: 136-37; Watrous 1994: 731), but the important difference is that from the MMLA period social action was being articulated in a radically new mode.

- CHAPTER THIRTEEN: CONCLUSIONS -

13.1 - Introduction

The aim of this concluding chapter is to review the issues discussed in this thesis and to suggest avenues of future research. There is no grand statement with regard to the study of obsidian in the later Neolithic and EBA southern Aegean, except to stress the multiple ways that it was procured, distributed, worked and consumed, plus the variant perceptions that these activities may have been attributed. It is therefore suggested that terms such as ‘the obsidian industry of the EBA mainland’ are virtually meaningless. Only through detailed, context-specific analyses can themes such as production, exchange and value be tackled. This is not to ignore one’s responsibility to providing a ‘bigger picture’, nor to deny the ability to make *some* general statements, but one’s study should commence from an assemblage’s location and meaning within the site at a certain moment in time, working upwards via regional to broader perspectives.

It is equally important to appreciate that the exploitation of obsidian did not occur in isolation and should not be studied in a vacuum. Similarly, one cannot divorce one’s studies from their socio-political context, for there is no reason to assume that a technology, product, craftsman and consumer would have enjoyed a common meaning and value irrespective of time, or place.

13.2 - Conclusions From Section One

13.2.1 - *The later Neolithic*

Although a variety of interpretations have been accorded the ‘obsidian industry’ of the pre-palatial Aegean, one can note an underlying structure to the debate, with the colonisation of Melos seen as a watershed in the organisation of the material’s procurement and dissemination. It is generally accepted that prior to the islands being

inhabited, obsidian was taken directly from the quarries (Mackenzie 1904: 246-48; Renfrew 1972: 449; Torrence 1986), though there is less consensus as to how the material was then distributed across the Aegean. For the pre- later Neolithic period this thesis offers little comment, though it will be interesting to see how the issue develops in the next few years following new evidence for Mesolithic activity in the Cyclades (Sampson 1998: 20-21).

According to Torrence (1986), the colonisation of the islands led to greater quantities of obsidian being put into circulation, with procurement and manufacture becoming a far more inclusive phenomenon for the inhabitants of the southern Aegean. In conjunction with this alleged ease of access to raw material (and the supposed creation of a 'supply zone' [Renfrew 1975: 46]), was the adoption of a less skilful and less 'economising' mode of blade manufacture, indirect percussion (Torrence 1979b). Subsequent work by Perlès provided an insight to the existence of parallel modes of dissemination and production at this time, with northern LN-FN communities continuing to be reliant on outside specialists for their access to obsidian and the technical ability to transform it into pressure-flaked blades (Perlès 1990a).

The picture becomes more complex still, when one factors in the data from the Laconia Survey and Agios Dhimitrios (Zachos 1987: 147; Carter and Ydo 1996), whose obsidian blade assemblages are technologically at odds with what one would expect from Torrence's model for southern Greece. This suggests that there is more than a north-south divide with regard to demarcating differential 'zones' of economic strategies and technical practice. Instead, it is becoming apparent that during the later Neolithic there were a variety of ways that obsidian was circulating and being consumed within the Aegean. Eventually patterns should emerge as the data is published in greater detail and considered more closely, hopefully permitting us to discuss 'blade

production', or 'the exchange of obsidian', in regional terms as Perlès has managed with her Thessalian material.

Alongside the adoption of context-specific frameworks of reference for interpreting a chipped stone assemblage, it would also be beneficial to consider obsidian alongside the movement and consumption of other resources and material culture. From studying exchange networks involving metalwork, ceramics and ground stone (cf. Runnels 1985c; Demoule and Perlès 1993: 395-96, 403; Zachos 1996), it has been possible to denote certain LN-FN centres of procurement, production and redistribution (including obsidian), such as the Alepotrypa and Franchthi caves, plus Knossos (van Andel and Runnels 1988: 236, fig. 1; J. Evans 1994: 19). These sites tend to have only been described (as 'emporia'), rather than accounted for in social terms (though see Broodbank 1992b; Whitelaw 1992), and there has been little consideration of the role that preferential access to obsidian may have played in their development. The admittedly limited data suggests that it would be wrong to propose that these sites controlled production, for blade manufacture by indirect percussion and pressure-flaking seems to be relatively widespread at this time (cf. Perlès 1989, 1990a; Carter and Ydo 1996).

One can also discern inter-regional variability in the levels of obsidian being consumed in the later Neolithic (contrary to the image of the 'supply zone'), with communities in southern Euboea, Attica and the Argolid procuring higher quantities than those of the central, northern and western Peloponnese. The reasons for this unequal distribution has received little attention. Admittedly, those areas and sites with privileged access to the raw material do border the waters that link the mainland with the Cyclades, but one also has to consider social agency. Unfortunately, such an approach is problematic due to our poor understanding of later Neolithic society in

southern Aegean, a reflection of the research bias that has concentrated on the cultures of Thessaly and Macedonia.

Turning briefly to the social worth attributed to the working, distribution and consumption of obsidian during the fifth and fourth millennia BC, we are faced once again by the lack of insightful intra-site recording that might aid such an investigation. The supposed ease of access to obsidian and technical know-how led Torrence (1986) to see the implements and their production as 'utilitarian' and of negligible socio-economic value. Even in north Greece, where obsidian was much rarer and reduced by the skilled technique of pressure-flaking, the fact that blade manufacture was attested at each site led Perlès (1989: 11) to claim that neither the raw material, technology, nor the craft-specialists who wielded it, had any major significance in Thessalian society. Exclusivity is, of course, only one of many ways that something may be attributed value; it would be interesting to investigate the intra-settlement context of production.

A probable method of achieving status at this time was through hunting and warfare (cf. Carter and Ydo 1996: 164-65). Obsidian, along with a variety of other siliceous materials, featured in this practice through its use for making arrowheads. The elaboration of some pieces suggests that certain implements became media for expressing social information in their own right (cf. Perlès 1981), though given the aforementioned range of raw materials used it would be inadvisable to focus on the role obsidian played alone.

13.2.2 - *The Early Bronze Age*

The EBA data provides clearer evidence for the variant forms and ways that obsidian circulated throughout the Aegean. As in the later Neolithic, there is an uneven distribution of the resource, with a select group of coastal sites acting as nodal points in long-distance exchange networks and regional centres, including Manika, Agios

Kosmas, Lerna, Dhaskalio-Kavos, Mochlos and Poros-Katsambas. Moreover, alongside this unequal consumption of obsidian was a restricted access to the technical knowledge employed to work it (pressure-flaking now the primary technology for blade production). It is suggested that this privileged exploitation of exotica and skill was an element in the creation of social distinction in the southern Aegean EBA

Rather than negating Torrence's claim that direct access was the mode of procurement responsible for disseminating obsidian in the EBA, one should accept that there were a number of ways that the resource was accessed, operating in tandem. Whilst variables other than community size were influential in structuring the archaeological record, it is worthwhile considering a variety of sites as an insight to the various means that people procured obsidian during the third millennium.

At one end of the settlement hierarchy are the small hamlets and farmsteads recognised in large numbers by survey (van Andel and Runnels 1987: 83) but seldom excavated (though see Tzedhakis and Warren 1974; Sampson 1993c). These sites tend to produce little obsidian (irrespective of location) and usually lack evidence for on-site blade manufacture, suggesting that these communities were reliant on outsiders for their access to raw material and the ability to pressure-flake it. The larger, better connected villages generate more diverse assemblages, due to a number of factors including geography and their position in wider exchange systems. In general, the greatest consumption of obsidian correlates with the major communities within any one region, though not all central places procured obsidian in the same form. A limited amount of on-site manufacture was evidenced at the Laconia Survey's large EH sites, the raw material accessed as decorticated nodules or pre-formed blade-cores, the products being consumed 'in house' and probably traded out to the smaller sites (Carter and Ydo 1996). A similar assemblage is recorded from Geraki in southern Laconia, despite the fact that excavation has produced tentative evidence of a large late EBII structure, suggesting that

the existence of an important community (pers. obs.; Crouwel *et al* 1995). In contrast, the major EBII sites in Euboea, Attica, the southern Argolid, and Crete, were procuring obsidian as raw nodules, the entire reduction sequence attested at Manika, Agios Kosmas, Lerna, Mochlos and Poros-Katsambas (*Chapters Three-Five*).

With this notion of a hierarchy of sites and related levels of consumption of raw material, one might perhaps be able to employ the fall-off studies first used by Renfrew. Instead of considering the variable of distance as a simple linear reading of kilometres from Melos, one might investigate the amount of obsidian at a settlement in relationship to those around them. Such an approach should result in the generation of a series of Christaller type hexagons documenting the intra-regional dissemination of the resource (cf. Moody 1987). This should aid the reconstruction of inter-community relationships, though it would be imperative to factor in information other than quantity. Specifically, one would wish to compare the reduction sequences represented in each site's chipped stone assemblage.

For example, if it were to be proposed that Mochlos supplied Myrtos Fournou Korifi's obsidian on the basis of the material's north to south fall-off in eastern Crete, then one would not expect to find cortical debris at the latter site if it were absent at the former. A further level of analysis would be to contrast the technical *mechanisms* represented in their pressure-flaked blade industries, for any claimed inter-relationship may collapse if it was shown that the Myrtos assemblage fell within a central-southern Cretan technological *koine*.

The Mochlos case study of *Chapter Five* is noteworthy for providing data that suggests a community directly accessing obsidian from source, or at least deliberately avoiding taking cultural product of their encounters with the Melians. Mochlos thus stands as an anomaly, for there seems to have been a high level of inter-connectivity between the Cycladic islanders and their surrounding world in EBII. This is not to

assume that by extension all the obsidian accessed by major communities on the mainland, Euboea and Crete (and by extension the sites dependent on them), was embedded within inter-regional social relations, though it would be perverse to propose that the procurement of obsidian completely bypassed these channels of communication.

In reality one does not have to make a decision between ‘direct access’ and ‘Cycladic trade’, as obsidian flowed from Melos in a variety of contexts. In some instances the transferral of obsidian probably occurred at socially meaningful and relatively infrequent occasions, in small amounts and specific forms as tokens of contact from long-distance voyagers, a gift that both affirmed and embodied a relationship between the individuals, or corporate groups involved.

A different type and level of distribution is suggested by Phylakopi’s ‘great obsidian deposit’. Even allowing for the difficulties in elucidating the time-depth involved in its accumulation, the scale of the associated settlement and the level of blade production at any one time, it remains that in an Aegean context this is a massive deposit. It therefore seems probable that the knappers were manufacturing more than was required for immediate consumption, with a percentage of the products, be they pre-formed nuclei or blades, disseminated to sites in Melos, the Cyclades and farther afield.

Another picture altogether is presented by the material from the late EBI - early EBII levels at the Sanoudakis Plot, Poros-Katsambas, north Crete (Dimopoulou 1997: 433-34; **Table 3.11**), whose ceramic assemblage indicates a community in close cultural contact with the Cyclades (Day, Wilson and Kiriati 1998: 144, 147). Preliminary analyses indicate that most, if not all of the obsidian entered the site as raw nodules, reduced in the manufacture of pressure-flaked blades in a manner not dissimilar to that witnessed elsewhere in central and southern Crete at this time (pers. obs.). Significantly, the nodules were smaller than those employed to prepare blade-cores at Phylakopi. Therefore, whilst Cycladic products in the form of pots and their

contents were imported to the site, it seems improbable that the Melians were responsible for collecting and exporting nodules of a size inappropriate to their way of doing things.

Returning to the social worth accorded the 'obsidian industry', it has been suggested that preferential access to technical know-how was an element of authority in the southern Aegean EBA, with core-production restricted to the major sites of the period. The degree of exclusivity and by extension the value attributed pressure-flaking would have varied from region to region. For instance, the ability to wield this technique was quite prevalent within the larger communities of Attica, western Euboea and Boeotia. Therefore, it may not be coincidental that there is little evidence of a further restriction of the practice to élite buildings within these sites, suggesting instead that their heightened consumption of technical skill and exotic resource merely formed part of the fabric of large, well-connected settlements at this time. Conversely, we might expect that blade manufacture to have been undertaken in quite special contexts in regions such as the Mesara, where raw material and technology were considerably rarer, their consumption potentially helping to legitimise and enhance the status of village 'big-men'.

13.3 - Conclusions From Section Two

It has been proposed that the inclusion of fine obsidian blades in Cycladic mortuary practices was one way that a new technology (pressure-flaking) was introduced into island society, a phenomenon with parallels when considering innovation and adoption more generally (Renfrew 1984b; Lemonnier 1993; Shennan 1995). From these implement's context and life-histories, they also provide us with an insight to the potential social and cultural value of products and crafts usually considered mundane (cf. Torrence 1986: 97, 119).

The development of this practice also reveals that more than one meaning may be attributed to these blades' burial. By the late EBI obsidian blades are one of the most commonly included items in the islands' burial record (Doumas 1977: 19). In a few tombs these blades form part of a 'toilet-kit', related to a new socio-cultural consequence accorded body-modification. Moreover, a new highly skilled and display-oriented technological *mechanism* (termed the 'necrolithic') was developed specifically to produce blades for consumption in funerary rites. The act of manufacture was allegedly a form of social currency, with influence over this hypertrophic technique an avenue to power amongst the island's small small-scale communities, where authority was otherwise probably based on lineage, age and experience (Broodbank 1989). Thus, as with most of the other materials and implements used to adorn and modify the body, these blades (and their use for depilation and / or scarification) helped to both express and create an individual's position in society.

This funerary habit also provides an example of how social practices, alongside material culture and technical knowledge, could be transferred to (and adopted by) different cultures and political structures as part of the Aegean's EBI-II 'internationalism'. Fine prismatic obsidian blades make their first appearance in the burial record of Attica, Euboea and Crete at the same time as other forms of 'Cycladica', seemingly part of the same late EBI phenomenon. There is the suggestion that this practice in certain areas became part of an élite phenomenon, performed by social groups whose political bases were quite distinct from Cycladic society, as for example within the large proto-urban settlement of Manika.

13.4 - Conclusions From Section Three

The study of the 'Cycladic colonies' through their chipped stone assemblages illustrated the potential that lithic analysts have to approach questions beyond their usual

remit of qualification and quantification. This potential may only be fulfilled if the detailed study of motor habits, life histories and taphonomy that such assemblages allow, are contextualised through reference to other associated data-sets. Therefore, whilst the obsidian from Aghia Photia was virtually identical in form, scale and structure of deposition to contemporary grave assemblages in the central Cyclades, the argument for colonisation becomes more convincing still, when one considers tomb architecture, burial layout, pottery and metalwork.

From the Manika data, one sees a more complex set of activities and cultural practices being articulated through the burial of obsidian. At one level the Euboean community was clearly adopting a Cycladic mortuary habit, with the structured consumption of long blades in contexts comparable to some of the richer tombs at Chalandriani. In other instances, the basic tenet of the islander's practice was borrowed but then enacted within otherwise quite local contexts (in terms of material and meaning). Finally, one can reconstruct an activity involving the deposition of obsidian into tombs, that bears no resemblance whatsoever to contemporary Cycladic practices. Here we possibly see a ritual that pertains to the Euboean community and its relationship with obsidian as a raw material and what the preferential access to that resource represented to these people. It may not be coincidental that the closest parallel to this act may be witnessed in the cemetery at Agios Kosmas, another great obsidian 'emporion'.

At Archanes we have a different situation again, both with respect to the arguments advanced for colonisation and the nature of the burial-ground's lithic component. The form and condition of the obsidian from the tholoi and their environs parallel those recovered from EC tombs, albeit using a *mechanism* of production also witnessed in contemporary domestic contexts. In turn, the Phourni assemblages are also eminently comparable to funerary deposits from the Mesara, indeed more so when one

factors in scale of the individual blades. It is through looking at the context and association of the Archanes material that one comes to appreciate the differences with island social practice and the traits that relate to the ideas of this central Cretan community at an important period of Crete's history.

13.5 - Future Avenues of Research

Beyond those topics referenced above, it is worth signalling gaps in our knowledge and some of the leads that could be taken from this thesis. One of the most necessary short-term requirements is for a study of Cretan later Neolithic chipped stone assemblages, to see how they relate technologically and typologically to contemporary material in the Cyclades and mainland. Closer to 'home', there is a great need to throw light on Cycladic material of the fourth and third millennia, for there is an implicit assumption that the islands were awash with obsidian and that it is only through moving beyond the archipelago that one encounters trade and exchange. The little data we have from the Kea and Naxos surveys contradicts this image (Torrence 1991; Érdar-Cerceau *et al* 1993).

It would be most beneficial to see if fall-off patterns can be witnessed within and between islands, and by extension perhaps be able to discern routes through which obsidian was moved to communities beyond the Cyclades. A greater understanding is also required of EBI-II Cycladic domestic production, particularly the late EBI material so that the origins and nature of the alleged 'neolithic' phenomenon may be comprehended more clearly. Similarly, there are other parts of the Aegean where we have little insight to domestic technology and the quantities of obsidian being exploited, not least the west and north Peloponnese, Ionian islands and Mesara. There are also biases with regard to chronology, for instance our poor understanding of obsidian consumption in northern Greece and the Dodecanese during the third millennium and

the paucity of reports concerning MBA assemblages in general. There is also a need to build up better regional perspectives, both diachronically and synchronically, with particular reference to non-coastal sites, the farmsteads and hamlets.

The working of obsidian should, furthermore, be investigated in the context of chipped stone production specifically and craft activity generally. Would a knapper have worked all raw materials, or was there a separation between 'obsidian workers' and those exploiting more localised resources? Similarly how was knapping organised and perceived in relationship to pottery production and metallurgy over space and time?

In some ways the case studies of burial assemblages and the topic of the Cycladic colonies have served to take the subject of 'obsidian studies' to an opposite extreme to those whose interpretative framework is constructed on the premise that stone tools are mundane and relatively meaningless. There is a middle ground, occupied by the majority of debitage generated and consumed by the peoples of the fifth-third millennia BC. This material still needs to be placed within broader contexts, to consider what roles the knappers, material and products had within everyday social relations, crafts and interaction with the outside world. Perhaps most importantly, the study of 'obsidian' should be conceptually revised, with analyses becoming not only part of the interpretative fabric of archaeological reports but also a recognised research tool in its own right and capable of taking an intellectual lead.

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