

CONTEXTUALISING NEOLITHIC CYPRUS: PRELIMINARY INVESTIGATIONS INTO CONNECTIONS BETWEEN CYPRUS AND THE NEAR EAST IN THE LATER NEOLITHIC

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Introduction

It is widely held that connections between Cyprus and the Levant ceased around 7000 BC when the expansive world of the Pre-pottery Neolithic B (PPNB) contracted and dislocated into a number of smaller ‘worlds’ during the later Neolithic period (all dates referred to in this paper are cal BC). In northern Syria and upper Mesopotamia, a dynamic and continuously changing, east/west sphere of influence can be documented through the post-PPNB/ Halaf /Ubaid traditions of the 7th to 5th millennia. Likewise, in the south a largely disconnected, east/west sphere of influence existed, beginning with the Yarmoukian around 6200 BC and continuing into the Wadi Rabah and Chalcolithic traditions of the 6th and 5th millennia. Between these two geographically delineated spheres of influence is the less well documented region of the central Levant, comprising the Syrian and Lebanese coastal zone, the Ansariyah, Zawiya, Lebanon and Anti-Lebanon mountains, the Homs Gap and the Beqa’ valley (Fig. 23.1). Archaeological research at the site of Arjouna (Parr 2003) and more recently at Tell Ezou and Tell al-Marj (Haïdar-Boustani *et al.* 2003–2004; 2005–2006) and Shir (Bartl, Haider and Nieuwenhuys 2006; Bartl, Hijazi and Haider 2006) is beginning to provide new insights into this poorly understood region. In addition, two sites further to the north, Tell Kurdu (Özbal and Gerritsen 2004) and Tell ‘Ain el-Kerkh (Tsuneki *et al.* 1998; 1999; 2000; Iwasaki and Tsuneki 2003) are supplementing and widening our understanding of the western Levant more generally.

My own examination of the disappearance of evidence for connections between Cyprus and the mainland in the aftermath of the PPNB resulted in a paper in 2003 in which I suggested that Cypriot social relations were structured by a general community-wide anomalousness, which in turn was manifested as a particular material culture repertoire

that was both internally homogeneous and lacking in any clear evidence of links with contemporary mainland cultures (Clarke 2003, 212). My view then was that “the absence of any evidence for external influences [in the Ceramic Neolithic period] appears to have been socially prescribed rather than any real absence of contact” (Clarke 2003, 215). As circumstantial evidence for contact between Cyprus and the mainland subsequent to the PPNB continues to accrue (Clarke 2007; see also Erikh-Rose 2004; McCartney 2007) it seems appropriate to return to the question of how Cyprus negotiated its relationships with the outside world and whether human agency, in the form of social identity, was the only factor shaping interaction.

Connections: What Connections?

In order for connections between Cyprus and the Levant to have continued beyond the PPNB expansionist period, there needs to have been a perceived benefit to one or both participants. Current evidence suggests that influence was unidirectional (in that Cyprus shows evidence of connections with the mainland, whereas to date the mainland shows no evidence of connections with Cyprus).

One way in which connections or contact with the mainland may have taken place, but would have resulted in very low archaeological visibility, is in the form of occasional sojourns to the mainland by Cypriots looking to replenish resources that might have, from time to time, become scarce on the island. This idea is based loosely on a model described by Horwitz, Tchernov and Hongo (2004) for the restocking of animals following initial colonisation during the PPNB. Horwitz *et al.* (2004, 40) argue that following the first introduction of domestic animals to

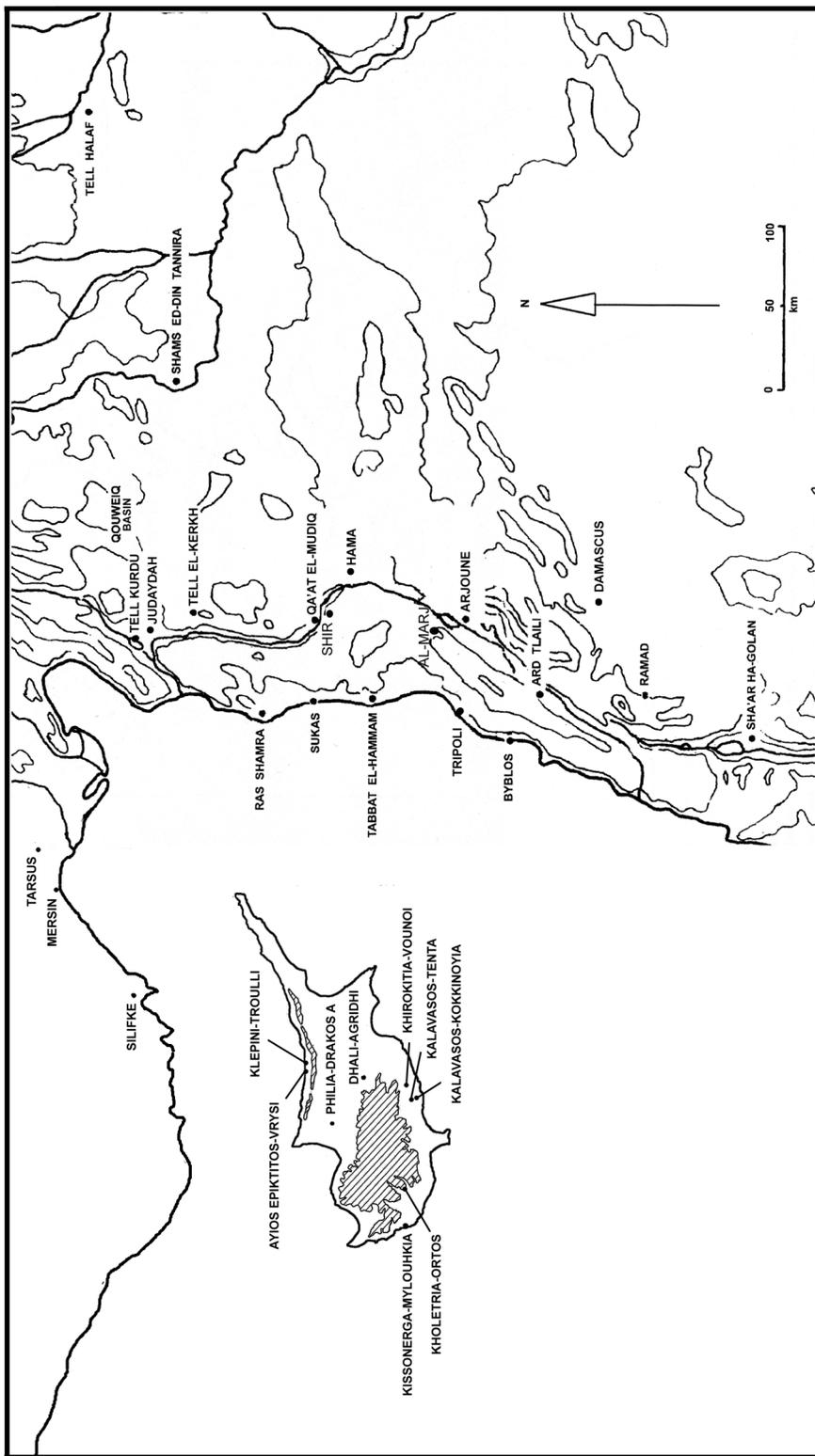


Fig. 23.1 Map of Syria and Cyprus showing 7th to 5th millennia BC sites mentioned in the text.

Cyprus in the PPNB, there may have been frequent trips to the mainland to restock depleted faunal populations in order to maintain founder herds.

At present there is no evidence for replenishment of depleted stocks of plants and animals after the PPNB, but it is unlikely that there would be if only existing species were involved. There is a degree of logic in this line of thinking if environmental conditions on the island are taken into consideration. Although population levels on Cyprus would have remained low throughout prehistory, which would inevitably have lessened pressure on resources, Cyprus lacks standing bodies of water and deep aquifers, and therefore would have been completely reliant upon adequate, regular rainfall (while there is ample evidence for well digging in the 8th millennium BC at Parekklisha-Shillourokambos and at Kissonerga-Mylouthkia, no later wells are known on the island). As happens today, if there are extended periods of drought then vegetation dies off quickly and even hardier trees, such as the olive, can suffer. Herds in these conditions would have been difficult to maintain as food would have become scarce. Broodbank states that “longer-range sea faring seems to correspond to hard, rather than halcyon times, and suggests that the perceived risks, both direct and indirect...long outweighed the benefits under all but the harshest circumstances” (2006, 218). Thus, when environmental conditions were harsh (and recent climatic research indicates that the mid-Holocene was not as benign as originally believed with at least two, and possibly three short arid intervals; see Brooks 2006), Cypriot communities may have assumed a greater degree of risk, including long-range sea crossings, in order to replenish resources. Therefore, although not reliant on the mainland, it is not hard to imagine instances when Cypriot communities made forays beyond their own borders.

Bolger (forthcoming) has considered the evidence for interaction between Cyprus and south-western Anatolia in the 3rd millennium BC, prior to the generally accepted appearance of external influences during the Philia Culture phase. Bolger argues that the limited nature of this interaction had less to do with isolation than with the island’s reception of foreign cultural elements. This argument is persuasive for the Late Chalcolithic period, when it was possible that ‘pioneering’ forays to Cyprus from the southern Anatolian coast could have begun many hundreds of years prior to full enculturation during the Philia Culture phase. However, the context for connections during the 5th millennium BC is clearly different from that of the Late Chalcolithic period as there is no evidence of increased interaction either prior to or following the Ceramic Neolithic period. Connections during the 5th millennium must be considered in light of the 1,000 year hiatus in the archaeological record that directly preceded it and the subsequent Early and Middle Chalcolithic periods, during which evidence for interaction with the mainland reaches an all time low. On this basis, the

inevitable conclusion should be that links with the mainland ceased with the demise of the Khirokitian, not to be renewed until the 3rd millennium BC. Yet the corollary of this is that the emergence of pottery on the island in the 5th millennium BC happened completely independently of the mainland, a conclusion that this writer is not yet reconciled with.

Direct Evidence for Continued Contact following the Pre-pottery Neolithic B

Probably the most convincing evidence in support of connections between Cyprus and the mainland following the end of the PPNB is the presence, in quantity, of incised flat and conical stones on both the mainland and in Cyprus (Fig. 23.2). Variations of these are found widely throughout the Levant, but the most common are those with incised vertical and horizontal lines, cross hatching, cruciform designs, chevrons and radiating lines (see Erikh-Rose 2004 for a comprehensive review). In Cyprus incised stones occur at three sites: Kholetria-Ortos (Fox 1988, fig. 6.2; Simmons and Corona 1993, fig. 7; Simmons 1996, fig. 2); Khirokitia-Vounoi (Dikaios 1953, pl. 138; Cluzan 1984, figs 97–99; Le Brun 1984); and as a surface find at the 5th millennium site of Kalavastos-Kokkinoyia (Clarke 2004, 59, fig. 3.3;

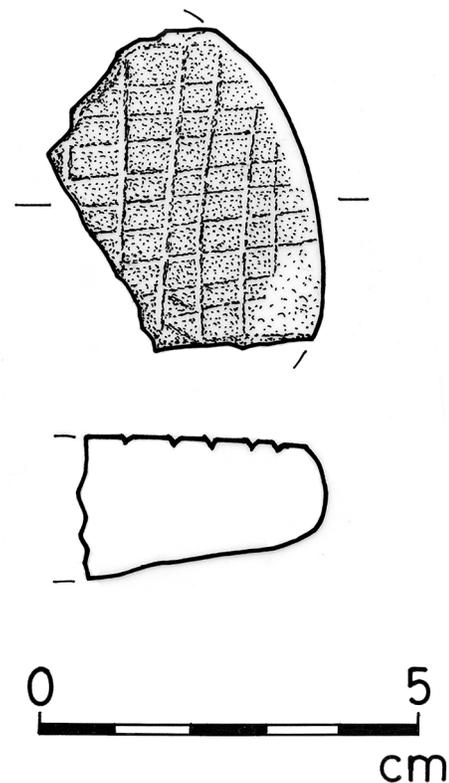


Fig. 23.2 Incised cross-hatched stone from Kalavastos-Kokkinoyia.

McCartney 2007, 78, fig. 6c). Incised stones from Cyprus share with the mainland many of the design preferences listed above. Erikh-Rose argues that they were an early coding system, as no two are alike in design and execution (2004, 159). They are often found in graves and so have a personal association, and they are partly contemporary with and go out of use not long after the introduction of true seals (2004, 159). Whether or not these stones were part of an early system of coding, or, as has been previously suggested, models of bread loaves (Dikaios 1953, 291), stamps (Cauvin 1972, 91), animal brands (Bar-Yosef and Belfer-Cohen 1989, 38), gaming stones, lunar calendars (Marshack 1972) or art representations (Stekelis 1972, 44; Gopher and Orelle 1996, 267), their widespread distribution on the mainland, and the relatively large numbers found in Cyprus, suggests that Cypriot communities had access to the information encoded in the markings on the stones and thus, were part of a wider cultural network that included both Cyprus and the mainland and in which these stones played a part. Their broad contemporaneity, the shared medium of stone and their similar form across the region as a whole tend to support a case for the circulation of shared cultural knowledge.

In addition to incised stones are forty carnelian beads and a 'butterfly bead' from Khirokitia-Vounoi (Dikaios 1953, 306), white marble stone ring fragments from Kalavassos-Tenta (South and Todd 2005, 305–308; Stanley Price 1977, 82–84; Todd 1986, 21; 2005) and the considerably depleted, but still present, obsidian blades found at many Khirokitian sites (McCartney and Gratuze 2003), including those very occasionally found at 5th millennium BC sites, such as the three blades from Kalavassos-Kokkinoyia and a nugget from Ayios Epiktitos-Vrysi (Peltenburg 1982, 101).

Following the Khirokitian, there is a break in the Cypriot archaeological record of approximately 1,000 years. During this time there is no discernable human activity or occupation on the island. This anomaly may be the result of poor archaeological visibility or inadequate dating, but the gap doggedly persists, irrespective of new research and excavation. Yet the incised stone and the three well-stratified obsidian blades from Kalavassos-Kokkinoyia suggest more than just chance finds or the possibility of the collection of 'heirlooms' and might instead suggest that connections between the mainland and Cyprus were either maintained through the long hiatus in the Cypriot archaeological record (for which there is no evidence) or were re-established for a short time in the 5th millennium BC.

Indirect Evidence for Continued Contact with the Mainland after the 7th Millennium BC

By the 5th millennium BC cultural divergences between Cyprus and the mainland were clearly apparent. While

intensification and specialisation were by this time features of both the northern and southern Levant, reflected in the way in which built space was organised, in the manufacture and use of pottery and stone tools, and in economic practices, on Cyprus, where pressures driving cultural change were largely absent, an early Neolithic way of life persisted.

In light of this it is important to examine how pottery might have emerged on Cyprus. Sherds of low-fired and unfired clay were discovered, along with an unbaked clay figurine, in the 7th millennium BC levels at Khirokitia-Vounoi (Dikaios 1953) and, more recently, Peltenburg (personal communication) has confirmed that low-fired pottery occurs in pre-Khirokitian contexts at Kissonerga-Mylouthkia. Yet the full-scale use of pottery did not take hold until the first half of the 5th millennium BC when it appeared in two ware types, a form of Dark Faced Burnished Ware (Cypro-DFBW, also known as Monochrome Burnished Ware) and a Coarse Ware, in the basal levels at Philia-Drakos A (Watkins 1972; 1973), at Klepini-Troulli (Clarke 2007, 99) and in Concentration A at Dhali-Agridhi (Lehavy 1989). Unusually, both Coarse Ware and Cypro-DFBW are manufactured from the same clay, found only in the lower reaches of the Troodos mountains (Clarke, Goren and Boness forthcoming). Although neither of these ware types appears to have had direct antecedents on the mainland, both exhibit broad technological similarities with the much earlier mainland Dark Face Burnished Ware while the restrictive use of clay suggests that potters aimed to create a specific vessel finish.

Cypriot Dark Faced Burnished Ware has been distinguished from later wares on the basis of fabric, shape, surface finish (Fig. 23.3). The most characteristic form is a dark, highly burnished surface with a very hard, dark, fine mineral tempered fabric. This can sometimes be found with embossed decoration, such as small 'nipple-like' protrusions, and wavy and straight cords. At the other extreme it can have a thin red, yellow, or buff-coloured burnished slip and a soft crumbly fabric with heavy vegetable temper, akin to Coarse Ware. Between these two extremes is a whole range of variations. The dominant shape in Cypriot Dark Faced Burnished Ware are small bowls with rim diameters rarely exceeding 20 cm. All are thin walled and usually highly burnished on both inner and outer surfaces and are almost always hemispherical, or less commonly, deep straight sided small buckets. Bowls usually have flat, *omphalos* and disc bases and flat or rounded rims. There is also a range of small flasks.

Within a very short space of time Cypriot Dark Faced Burnished Ware was replaced by decorated pottery, made from paler firing fabrics, and either painted in plain red monochrome or as red painted designs on a white ground; a design technique that also replaces monochrome wares and dark faced burnished wares on the mainland. By the last quarter of the 5th millennium, when combed decoration appears in the south-central part of the island, pottery technology in Cyprus is recognisably Cypriot and remains so

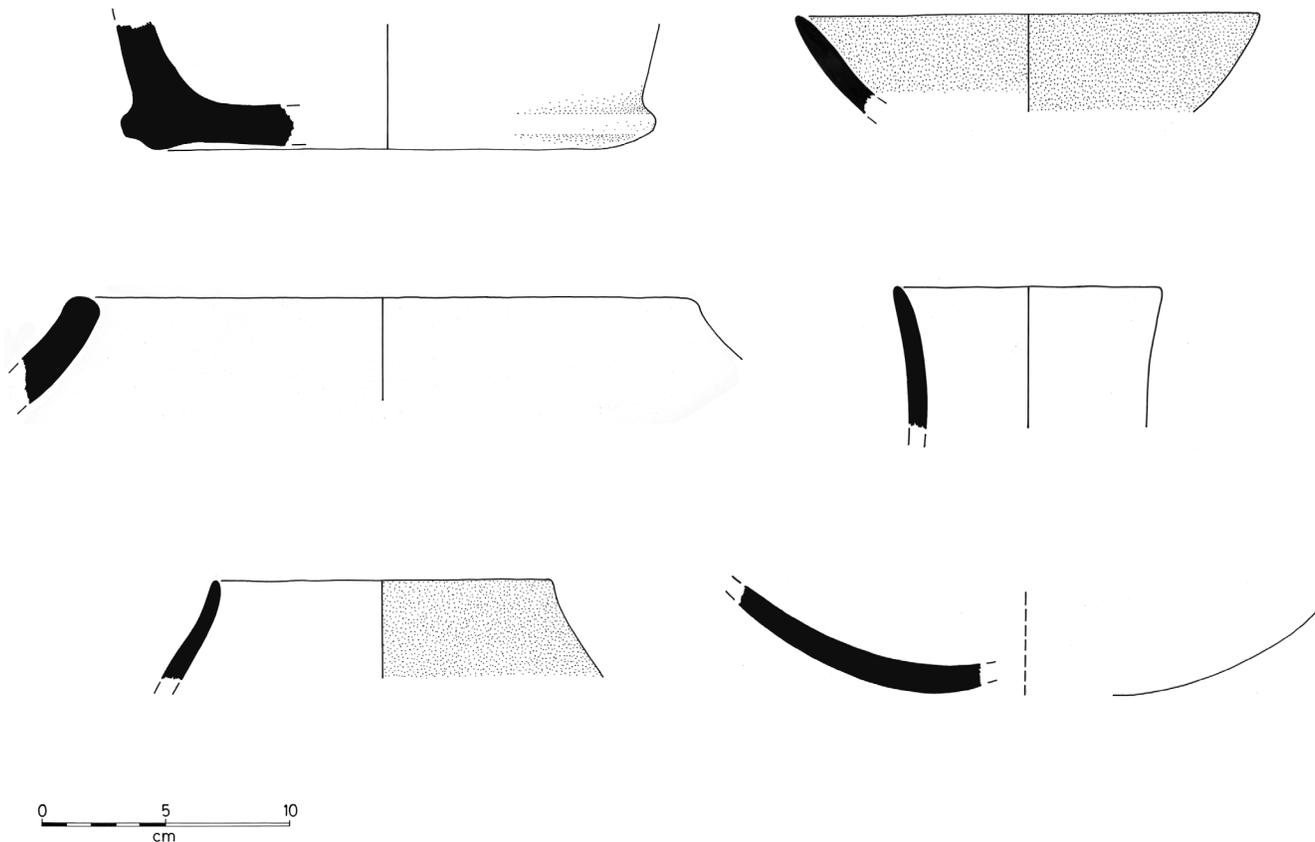


Fig. 23.3 Pottery from Trench VI at Arjoun, Syria (drawings by Graham Reed).

until the middle of the 3rd millennium BC when influences from southern Anatolia become evident in the local pottery assemblages in the west of the island (Bolger 2007).

Until recently, antecedents for the first pottery in Cyprus have been sought in southern Anatolia, Cilicia, northern Syria and the southern Levant; however, no direct parallels or imported sherds from these regions have been recorded in the Cypriot assemblages (Clarke, Goren and Boness forthcoming). However, the published pottery assemblage from Trench VI at Arjoun in central Syria produced a series of radiocarbon determinations placing it in the second quarter of the 5th millennium B.C. (Gowlett 2003, 27–29) and therefore contemporary with the beginning of the Late Neolithic period in Cyprus. Stylistically, this pottery provides the closest parallels yet with the earliest pottery of Cyprus, that is, at a point before it becomes distinctly Cypriot by diversifying into painted and combed varieties and consequently when mainland influences should still be documentable.

Arjoun is characterised by a series of pits, which in the 6th millennium BC appeared to be used as habitation or utilisation spaces due to the presence of floors, some of which were furnished with ovens (Marfoe, Parr and Phillips 2003, 18). In the 5th millennium BC, cultural material was

restricted to two large shallow pits that utilised natural depressions in the bedrock. Although there was little evidence to indicate how these features were used, at least one possible floor was identified which had a number of heavy stone artefacts lying on, or just above it (Marfoe, Parr and Phillips 2003, 20).

The 5th millennium BC pottery from Arjoun is dominated by burnished wares of a form and type that had long ago largely disappeared from most sites in the northern and southern Levant. Mathias notes that “virtually all the small and medium sized vessels, both open bowls and jars, are burnished. This is long after the very ancient tradition of Dark Faced Burnished Ware had ceased to be current in other parts of the northern Levant” (Campbell, Mathias and Phillips 2003, 37). Shapes are simple and confined to hemispherical bowls, holemouth jars and jars with short, wide, straight or flaring necks (Fig. 23.4), all found in Cypriot Dark Faced Burnished Ware repertoire. Yet, within this restricted repertoire are features, such as *omphalos* and flanged bases, flattened rims and applied decoration; features that are not common in contemporary Levantine assemblages but are characteristic of the earliest Cypriot pottery. Surface finishes, too, are very similar to Cypriot Dark Faced Burnished Ware. These are either slipped and

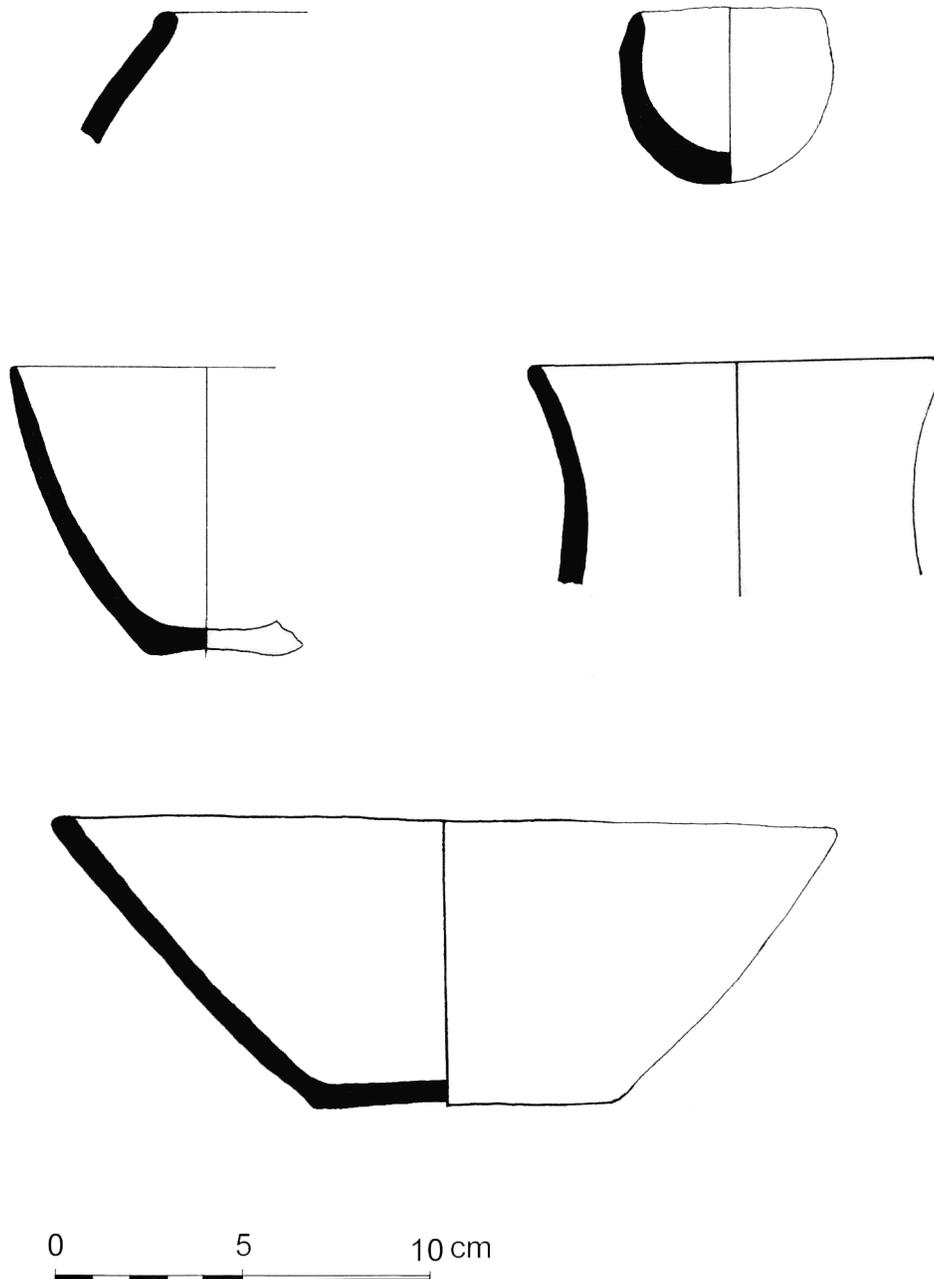


Fig. 23.4 Cypriot Dark Faced Burnished Ware.

burnished, or simply burnished and are found in a range of shades from black and dark reddish brown (Munsell colours 5YR 2.5/2 – 7.5YR 2.5/1 to 5YR 4/3). Out of a total of 3,943 sherds from Arjoun VI, only 17 had incised, impressed or punctate design and only six were painted in the style of pottery traditions found further to the north (Campbell, Matthias and Phillips 2003, 36).

The evidence from Arjoun suggests that in central Syria at least, there existed an independent local tradition that bore little resemblance to pottery traditions further to the

north and south. While most regions had adopted painted decoration by the 5th millennium BC, at Arjoun a form of Dark Faced Burnished Ware continued to be made. The similarity between, and contemporaneity with, the earliest Cypriot pottery may be an indication that whatever form contact with the mainland took following the PPNB, it shifted south from the northern to the central Levant. The line of reasoning maintained here is not that central Syria provided Cypriots with the skills and technology for pottery making, but rather that connections between Cyprus and

central Syria in the form of either resource replenishing expeditions or as exchange in perishables, exposed the Cypriot population to pottery making and enabled them to experiment locally and independently with the technology. Unlike the experimentation of the 7th millennium BC, this time it was a success, leading to the wide adoption of pottery across the island in a very short space of time.

A slightly different example, but relevant to this line of reasoning, is the late adoption of rectilinear architecture. On the mainland rectilinear architecture fully replaced continuous-walled curvilinear architecture by the beginning of the 5th millennium BC and was widely used from the 7th millennium BC onwards. Like pottery, rectilinear architecture was known of on Cyprus in the 7th millennium, but it was not widely adopted until the Bronze Age. Recently, a rectilinear building was uncovered at Khirokitia-Vounoi (Odile Le Brun, personal communication), but to date it is the only example pre-dating the 3rd millennium BC that this writer is aware of. The concept of rectilinear architecture, therefore, was occasionally tried out by Cypriot communities, but was not widely adopted until many thousands of years after it had fully replaced curvilinear architecture on the mainland. In this instance it is likely that Cyprus had not reached a level of intensification whereby the pressures driving cultural change on the island necessitated the adoption of rectangular architecture, but this does not negate the fact that the knowledge to create rectangular architecture existed.

In sum, although Cypriot communities had knowledge of ways of living and technologies emerging on the mainland in the 7th millennium BC, rarely were these adopted in preference to traditional ways of doing things. The reasons for this can no longer be argued to be due entirely to the construction of social boundaries as a way of marking identity although Cypriot communities certainly maintained a degree of anomalousness throughout prehistory (see Clarke 2003 for an account of this line of reasoning). Instead, they should be imagined as panoply of environmental, social and demographic factors, which together shaped Cypriot cultural development, including the way in which the island negotiated relationships with the outside world. Two contributing factors in addition to the maintenance of social boundaries, were most likely de-intensification (Wasse 2007, 62) and failed experimentation (Redding 2005, 42), which when considered in combination contribute to a fuller explanation of Cypriot cultural development following the PPNB and why evidence for connections with the mainland remained so limited.

De-intensification

In a comprehensive review of the environment and economies of Cyprus, Wasse has explained the development of Cyprus in bio-evolutionary terms as follows:

Within a few hundred years of the introduction of agriculture to Cyprus, during the latter half of the 11th millennium cal. BP, the focus on pigs ... seems to have died out.... This is not unexpected, as evidence from across the Levant points to a gradual replacement of earlier economic strategies by the new agricultural economies throughout the 10th millennium cal. BP (Moore, Hillman and Legge 2000, 422; Peters *et al.* 2005, 116; Wasse 2000 and 2002). However, it is at this point, with agriculture seemingly well on the way to becoming established on the island and offering almost unlimited scope for further intensification and specialisation, that the archaeological record of Cyprus begins to diverge from that of the Levantine mainland... The process of economic intensification, which had been gathering pace on the mainland since the beginnings of sedentism in the 15th millennium BP (and which, it could be argued, has continued unabated to this day), appears to have stopped prematurely in Cyprus at the stage it was at when agriculture reached the island during the second half of the 11th millennium cal. BP. This left Cypriot economies frozen in the far more typically transitional phase of the mainland Early PPNB, in which agriculture was practiced as a minor adjunct to hunting and gathering (Wasse 2007, 60).

Wasse (2007, 62) describes this phenomena as “de-intensification” whereby the evolutionary pressures driving cultural change on the mainland were absent on Cyprus. Population levels remained low and so did stress on land and resources. Thus, simply put, Cypriot communities did not need to innovate or indeed to adopt foreign innovations in order to survive; the island provided adequately for the needs of its population.

Experimentation

A second way of considering this might be from the perspective of a model recently advanced by Redding (2005) to explain why the faunal record at the transition from hunting and gathering to farming and herding on the mainland displays very little variation. Redding’s theory argues that shifts in human subsistence behaviour were characterised by failed experiments. As archaeologists we observe the successful experiments which go on to become fully-fledged subsistence strategies, the unsuccessful experiments, however, due to their small scale and transient quality, do not survive in the archaeological record (Redding 2005, 42).

Redding’s model can be extrapolated to the material culture record. Assuming Cypriot communities continued to be in contact with the mainland throughout the later Neolithic period, from time to time they clearly experimented with mainland economic practices, technologies and materials; yet in discarding these practices they become largely invisible in the archaeological record. The reason for this is because the scale and intensity of use is not detectable by the rather ‘broad brush’ approach of archaeological fieldwork.

Cypriot experimentation with pottery and with rectangular architecture in the 7th millennium BC exemplify Redding's model. Khirokitia-Vounoi has been continuously excavated since 1975, yet only in 2006 was a rectangular building uncovered. Had excavations ceased earlier, rectangular architecture would remain unknown in the Neolithic of Cyprus. Likewise, pottery dating to the 7th millennium BC has only recently been discovered at Kissonerga-Mylouthkia, and prior to this only a couple of fragments were known from Khirokitia-Vounoi. Low fired unburnished pottery is typically very friable and does not survive well in the archaeological record. It could therefore be surmised that much more of it existed than the few documented examples but the likelihood of recovery is limited.

Thus, not only did Cypriot communities not need to innovate, but when technologies were from time to time experimented with, they were not adopted until it became expedient to do so. The emergence of pottery in the middle of the 5th millennium BC probably happened because the skills needed to make good quality ground stone bowls had been lost during the long hiatus that followed the end of the Khirokitian. Ground stone bowls occur occasionally in Late Neolithic assemblages but quality and artisanship is greatly diminished.

Geographical Considerations

Arjoune is situated at the western end of the Homs Gap, an agriculturally significant zone allowing access between the Syrian hinterland and the coastal plain. To the north of the Homs Gap are the Ansariyah mountains, which separate the narrow coastal plain from the Syrian plateau and the *badia* to the east. To the south are the Lebanon and Anti-Lebanon mountains. In antiquity, as now, there were two principal routes for movement, a north/south route, along the coast, between the major maritime cities of Byblos, Tyre, Sidon and Ugarit, and a second, north/south route inland from Damascus, skirting east round the Anti-Lebanon mountains, along the Orontes River, through the Ghab depression and up to the Amuq Plain. It is no coincidence that many major archaeological sites are strung out along these north-south routes.

The view of the present writer is that Arjoune, its larger and more famous neighbour, Tell Nebi Mend, and the coastal site of Tabbat al-Hammam (Hole 1959) are key to elucidating the nature of Late Neolithic sea faring expeditions to and from Cyprus, because of their location in the Homs Gap, which is on approximately the same latitude as the southern coast of Cyprus and therefore offers the greatest expanse of Cypriot coastline for sea-faring vessels relying wholly on ocean currents and trade winds in order to reach their destination. Research on the Neolithic assemblages of Arjoune, Tell Nebi Mend and Tabbat al-Hammam is

underway as part of the Contextualising Neolithic Cyprus Project, one aim of which will be to determine whether the 6th and 5th millennia BC assemblages resemble those of other central Syrian coastal sites further north and south, or should be grouped within a separate central Syrian sphere of interaction, already identified for the 7th millennium BC, and includes the site of Shir (Nieuwenhuys in press).

There has been a glut of literature concerning the relative difficulty or otherwise of sea crossings between Cyprus and the mainland and this is not the place to discuss this issue again (but see Broodbank 2006; Held n.d.), but key to the debate is the relationship between crossing distance and target size, taking into consideration the anti-clockwise currents that circulate around the island. Some would argue that an embarkation point on the southern Turkish coast or on the Amuq Plain might entail a shorter sea crossing but it would be against the current and the chance of drifting past the island would be increased. Embarking from a point on the coast due west of Arjoune would certainly involve a greater sea crossing but the current would be working with the craft and the pan handle provides a relatively large target from a south-westerly direction. Thus, in the view of this writer, the central Syrian coastal region would have been as likely a point of origin for travellers from the Levant as would have been Iskenderun (Broodbank 2006, 216) or the region around Mersin or Silifki.

Conclusions

During the PPNB, Cyprus was colonised by people from the northern Levant, who brought with them a suite of subsistence practices and material culture elements extensively documented in the archaeological record of the 9th and 8th millennia BC. After the PPNB, evidence for links with the mainland became fewer and this has created the view that contact stopped. This position does not adequately explain the presence of incised stones and a number of imported objects in 7th millennium BC contexts from several sites in Cyprus. Evidence for links with the mainland are much more tenuous in the 5th millennium BC, but a recent preliminary consideration of the pottery from Arjoune suggests that interaction with the central Levant could have been possible. Interaction, although greatly diminished from the levels recorded in the PPNB, may have continued in the form of irregular visits by Cypriots to the mainland looking to replenish depleted stocks of either plants or animals following bouts of drought. Yet, because the pressures driving cultural change on the mainland were absent on Cyprus, there was no immediate requirement for the island's population to either intensify interaction, or to adopt mainland ways of doing things. Experimentation with foreign technologies and ways of doing things happened, but rarely led to the replacement of indigenous Cypriot behaviours and technologies.

After the PPNB, Cypriot communities became inward looking, but equally, so too did mainland populations even though the end of the PPNB did not mark the collapse of village life in the Levant. What led Near Eastern societies to become expansive and outward looking during the PPNB, and conversely, to become inward looking after the PPNB is a question that requires much further examination beyond the scope of this paper.

Acknowledgements

I wish to thank Peter Parr for allowing me to use the sherds from Arjoune stored in the Institute of Archaeology, University College London, in this paper. I would also like to thank Graham Reed for his illustrations of the Arjoune sherds. Most of all I wish to thank Eddie Peltenburg, without whom my research may not have ventured beyond the shores of Cyprus.

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NOTES TO AUTHOR

- 1) footnotes moved to text as Oxbow doesn't permit them
- 2) update Nieuwenhuyse in press if article has been published.