SHILLOUROKAMBOS AND THE NEOLITHIZATION OF CYPRUS: SOME REFLECTIONS

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Abstract

There is evidence of human presence in Cyprus as early as the ninth millennium B.C. Mesolithic “visitors” have been attested on the site of Aetokremnos. Their role in the extinction of endemic species, in particular, the dwarf hippopotamus, is much debated. The hiatus, contemporaneous with PPNA in the Near East, should be filled by future research. During the second half of the ninth millennium, the island was populated by populations already engaged in the process of Neolithization, as on the neighboring mainland, with probable agriculture and animal species in the course of progressively being cultivated. The site of Shillourokambos, then founded, precisely reveals the dynamics which contributed to increased anthropic pressure on environment in the Near East. A whole set of features uncovered on the site (buildings on wooden posts, enclosures with palisades, wells, and architecture of earth and stone) indicates the eco-cultural choices that were at the origin of these diverse structures. In parallel, the main evolutionary lines of the chipped stone industry throughout the millennium 8400–7500 BC are presented: three phases are distinguished, contemporaneous with Early and Middle PPNB in the Levant.

INTRODUCTION

This paper offers a contribution to the reflection on the Neolithization of the Mediterranean island environments from the particular case of Cyprus. The problem concerning the relations between the island and the mainland was discussed in a recent book (Peltenburg and Wasse, 2003). We will not address that problem here, but rather bring to this question the data from our own work. It is useful to be reminded that Cyprus was frequented, as early as the tenth millennium cal BC, by groups of hunter-gatherers whose presence is attested today in a unique site: Aetokremnos. As far back as the middle of the ninth millennium BC, settlements used for “farming activities” were founded. They represent the earliest manifestations of the Aceramic Neolithic that had exceptional longevity on Cyprus (ninth to tenth millennia BC). Only the early stages, which can be compared to Early and Middle PPNB of the Levant, will be addressed in the present paper (from the end of the ninth to the middle of the eighth millennium BC). The site of Shillourokambos, inhabited between about 8400 and 7000 BC (then re-occupied during the fifth to fourth millennia BC), will constitute the basis of our discussion. It must be remembered that this site is a settlement made up of numerous structures (wells, pits, post holes, trenches for enclosures, remains of buildings, hearths, granaries, etc.), and that it is today the largest example uncovered by excavations on the island (4,000 m² excavated, of which about 2,500 m² belong to the early stages). To make a comparison, we will also use the sites of Mylouthkia (however, only the studied well –well 116 – attributed to the phase we are interested in, see Peltenburg et al., 2000), and Tenta. As for the latter, the level contemporary to the phase dis-
discussed here has been recognized only in small areas in the western summital part of the site and in a set of post holes or pits observed in the area of the southern slope (Todd, 1987:28–29).

PRELUDE: AKROTIRI-AETOKREMNOS

The earliest traces of human occupation are found in a site located 40 m above sea level, at the tip of the Akrotiri peninsula, in the southern zone of the island: Aetokremnos (Fig. 1). The stratigraphy of this site shows, on top of the substratum, an impressive concentration of dwarf hippopotamus bones (as well as some rare dwarf elephants mixed with a few lithic remains) (layer 4), surmounted by a sterile level (layer 3) and then by another layer (2), which contains lithic industry. According to A. Simmons, thumbnail scrapers could be the most diagnostic elements of the latter; together with a stone weight with cruciform-shaped groove and a few ornament pieces (Simmons et al., 1999). All these elements are made out of local materials. The associated fauna then comprises birds (in particular Otis tarda, the great bustard), shells (mainly Monodonta turbinata and Patella caerulea, the limpet), remains of batrachians and reptiles. The impression in this case, is that a Mesolithic human group came to exploit the marine resources (essentially molluscs, although, oddly enough a unique fish—the gray mullet—has been identified), avifauna and some of the land species of the island.

This apparently logical evolutionary scheme is not supported by the excavator himself, who believes that a part of the large fauna was butchered and consumed by the users of the lithic industry of layer 4 and who were thus responsible for the extinction of the endemic species. The 31 radiocarbon dates obtained for the site have been carried out on hippopotamus bones, sediments, shells and charcoal. They globally range from 11720 ± 240 BP (Beta - 40380) to 9040 ± 160 BP (TX - 5976 A), the center point being about the beginning of the tenth millennium BC (9825 Cal BC) (Simmons, 2003). In fact, these analyses do not make it possible to clearly separate the two main groupings (2 and 4) identified by stratigraphy; there is an overlap in the dating.

Whilst the great majority of the lithic industry has been found in level 2, 12% of the pieces have been discovered within the underlying level with hippopotamus bones. Are they in situ remains or the result of vertical migrations? A. Simmons favors the first assumption and considers any mixing as improbable, even if the materials used (essentially chert from the formations of Lefkara) have the same local origin in the two main layers considered here (2 and 4). The remains from layer 4 would demonstrate that humans could have been contemporaneous with the endemic animal species and that they contributed to their disap-
pearance. The idea that there would be a layer at the base, corresponding to a "natural cemetery" for Pleistocene species, surmounted, after a barren phase, by an occasional occupation by human groups with a "Mesolithic" economy turned toward birds and small game hunting, and molluscs collecting, is dismissed by the excavator. A. Simmons puts forward other arguments: how could those great animals reach this shelter from the top of the promontory or the foot of the cliff without any human intervention? Why are there no anatomical connections between the bones, when natural death should have favored this type of preservation?

At Aktokremos, the absence of any butchering marks on hippopotamus bones is also something that cannot be overlooked (see Binford, 2000) but cannot provide a conclusive argument. Moreover, A. Simmons places the emphasis on the fact that 29% of faunal remains are burned, which could demonstrate an anthropic origin and would relate to bones discovered in the heart of the lower level. That is how he answers his critics who consider that those fire-altered hippopotamus bones were caused by contacts with hearths subsequently lit during the human occupations of the later phase (layer 2).

The presence of various remains of Sus, which were probably domestic, raises another question about the site since domestic suids are not documented on the mainland as early as that. Thus, there is still some doubt as to whether those remains are contemporaneous with those of the Pleistocene fauna.

All this highlights the difficulties of interpreting the site of Aktokremos: is the extinction of extinctions species in Cyprus due to a natural process or is it due to human pressure? Were the hippopotamus and people contemporaneous? Or was there a subsequent Epipaleolithic presence shortly after the final presence of relict fauna? Two elements are nevertheless irrefutable: first the human presence and secondly the interest that mainlanders attached, from then on, to the island, which was certainly occasionally or regularly visited, with the intention of exploiting some of its resources (various materials, hunting, fishing or, more simply, at the beginning at least, due to satisfaction of curiosity and pleasure of exploration). A comparable pattern was recently put forward for Corsica (Costa, 2004) and might be extended, mutatis mutandis, to other Mediterranean Islands. Human presence in some of the Mediterranean Islands (Cyclades: Melos, Kythnos; Sporades: Oura) could corroborate this assumption.

THE PPNA “HIATUS”

The foundation of the Shillourokambos settlement, probably around 8400 – 8300 BC, thus in parallel with the Early PPNB in the Levant (cf. Djedé; Coqueugniot, 2000), leaves an empty period of a millennium without any anthropic evidence. Two hypotheses can best explain this “hiatus”. First, we can assume that, after the reconnaissance of the island during the tenth millennium, some expeditions conducted by groups from the neighboring mainland (probably from various regions) led, more or less regularly, to visits to the island. Rather long-term occupations aimed at using the potential of Cyprus (acquiring materials, food resources) should not be discounted. Secondly, we may consider that there was an interruption of humans frequenting the island before the Neolithic “colonization”. There are documented cases on some western islands, for example (Corsica, Sardinia), but also in some western Mediterranean regions (Catalonia, Andalusia), where the "Final Mesolithic" is badly represented, or even missing sometimes. Is this lack due to incomplete research, erosive phases responsible for the destruction of possible sites, or an authentic interruption in human visits? The question remains unanswered and the reasons for these hiatuses – which may vary according to the cases – still have to be thoroughly studied (Guibine, 2005a).

As regards Cyprus, we however give preference to the first hypothesis. The reasons for this choice are varied and result from the analysis of more recent sites. One of them is speculative – in Shillourokambos, during the early phase A of the

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1 The domestication of Sus proposed by M. Rosenberg at Hallan Çemi (Turkey) at tenth millennium B.C. was contested (Vigne, 2000, p. 150).
site (ca. 8400 – ca. 7900), suids were represented by two distinct populations: a managed and modified domestic population, and a feral one showing wild features (Vigne et al., 2003). Acquiring those latter spontaneous features probably was a long process, which implies that the species could have been introduced prior to the founding of the settlement. The pig bones found in Aetokremnos could support this idea.

Other reasons are archaeological ones: a survey led by the Mission Française d’Amathonte revealed a high density of sites dating back to all phases of the Neolithic in the Amathus hinterland. In some of them, the same raw material was heavily used – a translucent flint originating from the local calcareous formations of Lefkara, which characterizes the early phases of Shillourokambos. They can therefore fit into the same period as the latter, but they may also be earlier. Two sites, Throumbovounos and Klimonas, are the most representative and significant examples of that possibility. They also have the particularity of presenting new forms in their industries, still unknown within Cyprus, which could place them at a chronological stage preceding the first phases of Shillourokambos (Briois, Petit-Aupert, Péchoux, 2005). Debitage of unidirectional small blades on conical or prismatic cores with a secondary opposed platform and a very large number of burins of different types are typical of the first site. On the mainland, comparisons could be proposed with the phase II of Mureybet (Syria) (Abbes, 2003). The industries of Klimonas maintain certain traits of this technical tradition to which the first forms of really bi-directional core technology are added and associated with projectile points with a short tang of Early PPNB type. If we take these criteria into account, we can assume that the chronological succession of those sites could be articulated as follows: Throumbovounos 1\(^{2}\)/Klimonas/Shillourokambos early A. If we give credit to such a pattern, the first two sites could be earlier.

The observation of Shillourokambos early phase A, characterized by an architecture of wooden posts, allows us to distinguish at least two

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\(^2\) A later stage, already identified, of occupation and exploitation with an industry of large blades made on opaque chert is marked in another location of this site (Throumbovounos 2; Stanley-Price, 1980).
Fig. 2. Shillourokambos: Map of a part of Sector 1 with many postholes (detail). Early Phase A. The lines show possible connections between postholes. Drawing by P. Gerard.
SHILLOUROKAMBOS EARLY STAGES

The Early Phase A architectures (8400–7900 BC): enclosures and wells

The first buildings of wooden posts identified on the site, probably made using the cob technique, were either sub-circular “buildings” or enclosures with rows of posts (see above). The development, shortly afterwards, of large enclosures which were remodelled several times, where foundation trenches also punctuated with posts remain, constitutes one of the originalities of the settlement (Fig. 3).

Attention must be drawn to the importance of the two main enclosures, in a site of relatively limited size. The first, in the west, where a trench has been followed over 30 m, was fitted with two narrow doors and must have covered a wide space. The other, in the east, shows that two complexes are superposed: a circular one, which is rather small with a diameter of about 20 m and another, sinuous and originally much larger (Fig. 4).

These enclosures are usually considered as places devoted to penning animals, but there is no reason why we should not interpret them as redivided spaces where certain domestic activities could also be carried out. Whichever hypothesis we go for, the general impression for this precise phase seems to indicate that these large complexes were probably under collective management.

The presence of wells is attested as early as the foundation of the site and is not devoid of interest. Does it indicate a choice made for the location of settlements around watering sources? This know-how implies a form of social change (water-resource exploitation, relationship between consumers). In fact, instead of using water from the neighboring thalwegs, which were maybe already intermittent, the Shillourokambos community, as the Mylouthkia one, dug wells through havara or sharp and hard rocks from the very beginning of their settlement (Peltenburg 2003). Their depth varies according to the accessibility to groundwater: 5 or 6 m deep in Sector 1 (see wells 2, 224, 341), 4.50 m in Sector 3 (well 310; Fig. 5). First, it is important to note that those sub-surface features, with an aperture of less than 1 m in diameter, represent the earliest features of that type known in a wide geographical space ninth millennium). On the site, this well pattern has never been questioned. Wells were dug throughout the Early Phase B (wells 117, 181, 433), and also through the Middle Phase (well 238). During this latter period, some well volumes were widened to be used as “cisterns” (well 227). Moreover, some of them might have been

Fig. 3. Shillourokambos: View of a part of fence trench Sector 1. Early Phase A. Photo by J. Coularou
periodically reactivated. Were those wells an answer for the newcomers to the environmental problem — already! — of water procurement? Or were they an introduced technical process? In fact, we hardly know any earlier wells on the mainland. The rare identified examples are located in the Southern Levant, such as the one of Atlit-Yam (PPNC), but they date to, at least, a millennium later than the first Cypriot features (Galili et al., 2003).

This obviously limited documentation raises the question of a possible social division. We are not inclined to believe that the data at our disposal for the site would indicate that wells were intended for the use of “family units”, even if the hypothesis of a water procurement for the use of “neighborhood units” cannot be dismissed. However, the word neighborhood should be interpreted with caution, if we consider the extent of the site: 2 ha at the very most. Digging these wells
into havara strata or sometimes very compact, hard rock, necessarily supposes either collective work or in any case shift work between the diggers. Moreover, we cannot help noticing the certain regularity of the wells, in spite of the differences of compactness between the strata the diggers went through. Apertures are regular, with a perfect diameter, always narrow (less than 1 m in general); some of these features, partly preserved, provide evidence that walls or copings probably protected these apertures, but it is nevertheless true that these wells are more recent (wells 227 and 238).

**Early Phase B architectures (7900–7600 BC)**

Research carried out in Sector 1, as well as in Sector 3 of the site shows that the inhabitants built circular houses made out of earth and/or stones from the beginning of the eighth millennium onwards. Only short sections or walls that collapsed during the following occupations remain. This observation could suggest at least the use of “heavier” materials, if not a more stable population level. The presence of a sort of stone bed in Sector 1 must be noted: preserved over 250 m², it may represent the foundations of house floors, but only short portions of the walls of these houses remain.

A curious circular building, of 3 m in diameter (St. 268), of which we have found the stone foundations, is represented by thick walls (of about 1 m) that enclose a particularly narrow inner space (1 m in diameter; Fig. 6). Test excavations underneath the building suggested that it had been erected on flat ground. It was not a well copying either. What function can we assign to such building, of so massive appearance, which encloses a so limited space? Was it a loft? Let us add that this construction, similar to others in the site, was surrounded by a line of pebbles arranged in a circle in a very regular way all around the building. This construction is dated to the end of the Early Phase B (US 600).

We know of circular houses from the prior phases, middle (7500–7200 BC), and late (7200–6900 BC), made of earth and/or stones. They will become classic features of the Khirokitian Period.

**THE CHIPPED STONE INDUSTRY**

We will only deal here with the question of the chipped stone industry. The other studies of the macro-stone tool industry (T. Perrin) and of the stone vessels (C. Maran) are in progress. In 1992 already, a test excavation at Shillourokambos (S 2) showed according to the stratigraphic observation a partition between Aceramic lower levels within which translucent flint dominates and upper levels mainly composed of an opaque chert. The earlier use of translucent flint compared to that of opaque chert was thus demon-
strated and reinforced soon after by $^{14}$C dates. It was then possible, to reclassify even roughly the different Neolithic sites in the Amathus region. This use of translucent chert as a marker of the Aceramic early phases could allow us to corroborate either the search of a good raw material by the founders of Shillourokambos or the continuation of the exploitation of one or several sources already known at even earlier phases. On the other hand, throughout the occupation of Tenta, opaque chert is present mixed with a translucent chert used during the early phases, in particular for laminar pieces (McCartney, 2003a:111–112, 2003b).

The complementarity between a good raw material outcrop offering a high quality chert and its use on the site is obvious. The site was the scene of intense knapping activities from which numerous amounts of debris were subsequently discarded in pits, small hollows or into the fills of old disused wells. In comparison with this profusion of knapping waste, the number of finished pieces remains oddly low. As far back as Early Phase B (7900–7500 BC), this type of flint was gradually replaced by an opaque chert, the sources of which are even closer to the settlement. Chert finally supplanted flint after 7500 BC. Moreover, the use of this opaque chert will be attested much later during the Sotira occupation (transition fifth to fourth millennia BC).

Main characteristics of the chipped stone industry of the Early Phases A and B

During Early Phase A, the raw material introduced to the site in the form of large massive flakes and preformed cores led to a diversified production of blades and bladelets. All the manufacturing stages of this production are attested in the settlement (Brioris, 2003). Blade debitage is prominent and is characterized by several types of chaines opératoires among which the most complex example is, without any doubt, the one linked to the exploitation of bidirectional cores. The latter are morphologically close to the navi-form cores of the Levantine PPNA, but also offer a particularity: they systematically have a poste-

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3 Well 117, for example, has produced more than 39,000 waste flakes and well 2 about 12,000.
rior lateral crest (Fig. 7:6), instead of a center posterior crest. The anterior crest is axial and always extremely well made (Fig. 7:5). The center blades removed during the main core reduction phase correspond to pre-determined products (double-pointed morphology, four lateral opposed negatives of the blades removed together two by two and recutting a central negative), which have constituted blanks utilized for the manufacture of projectile points. The latter are long, with a retouched base and parallel-sided retouch by inverse pressure and they are sometimes equipped
Fig. 8. Shillourokambos (Sector 1): Translucent flint industry of the old phase B. 1 – bladelet core exploiting a ridge flake; 2 – unipolar bladelet core; 3–4, 7–8 – projectile points; 5–6 – crescent-shaped sickle-element with oblique gloss. Drawing by F. Briois
with two lateral shoulders (Fig. 7:3). They appear
to be the preferred pattern during Early Phase A.
By-products of the bipolar debitage (lateral bla-
des, convexity error correction blades and upsilon
blades...) and some of the preferential blades are
used for a basic toolkit mainly represented by
sickle blades with parallel gloss on unretouched
blades. This new pattern, which, until now, had
never been clearly attested within the Early phase
of Shillourokambos, displays parallels to those of
the Mylouthkia period 1 A (McCartney, 2003a,
2003b). The industrial package of the first stage
of Shillourokambos provides some features that
are usually typical of the second half of the ninth
millennium in the northern Levant (Coquery-Vidrovitch,
2003). According to us, it provides evidence of
regular contacts with these areas, and even of the
landing of new populations who brought those
technical traditions.

After Early Phase B, the same common basic
features are maintained in the lithic production
but are also diversified. Blade debitage evolves
toward a simplified core-reduction mode: flake
blanks are used for the production of small unipo-
lar blades. Cores are often similar to large flat
"burns"; their knapping is carried out both on the
blank edge and on its ventral surface (Fig. 8:1).
The knapping of semi-cortical, larger unipolar
blades, with thick plain butts is equally well at-
tested. Bipolar core technology continues but is
not as prominent as it was during the previous
phase. Core preparation and core reduction modes
remain unchanged but evidence of large cores is
noticeably rarer. A large increase in the number
of small blades with double arris, an ogival proximal
part and pointed end appears in the assemblages.
On these products, we can systematically observe
a small and strongly abraded butt and the notion of
preferential blades seems to prevail over that of
pre-determined blades in the previous period.
Those blades are used for the shaping of diverse
projectile points: Byblos points (Fig. 8:7), Amuq
points (Fig. 8:4, 8), and oval points (Fig. 8:3)
some of which present very clear traces of impact.
A new type of sickle element, represented by
crescent-shaped backed exhibiting oblique gloss
(Fig. 8:5-6) appeared in this phase and continued
until the early phase C, when other blade types
emerged. The basic stone toolkit – composed of
numerous pieces with multiple notches, denticu-
lates, thick scrapers and robust perforators – were
then enriched with well-made marginally re-
touched end scrapers on large and thin flakes.

Early Phase C, principally observed in Sector
3, represents the moment when chipped stones
industries started to change, without breaking from
the previous stages. The laminar component is re-
duced to a limited number of elements, usually
represented by fragments of technical pieces and
by offset or broken blades. Small unipolar blades
and robust blades are also present. Stone tools are
essentially composed of burins on thick flakes
and multiple notched pieces. There are also other
elements: end scrapers on thin flakes, borers on
thick blades and scaled pieces. Glossed sickle
blades are well represented in the assemblages
and show a morphological diversification. Bac-
ked abrupt lunates with oblique gloss are still in
the tradition of the previous stage, but at the same
time new inset types appear: bi-truncated trapezes
and elongated blades with partially backed edges.
Other larger and thicker elements are similar to
small backed knives. In spite of this morphologi-
cal variability, these pieces still show an oblique
gloss, except one element that presents a glossed
use-wear parallel to the tool edge.

The question of obsidian

Obsidian was introduced in the form of blad-
elets obtained by the pressure technique, the
technical features of which show precise concur-
dances with the production from Körnür-
Kaletetepe in the Göllü Dag region, where most of
the Shillourokambos obsidian comes from (Brion
et al., 1997; Balkan-Atlı and Binder, 2000).

Although it is not now possible to compare it
to the site of Akantou, situated on the northern
cost of the island, the site of Shillourokambos
has provided a large amount of obsidian (about
500 pieces), which is a lot compared to the limited
number of remains produced by the other Cypriot
sites. Most of it is attributed to the Early Phases A

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4 Research carried out in Sector 1 in 2004 has provided evidence of this new type of glossy pieces, which proves here to be an exclusive feature from Early Phase A.
and B (8400–7500 BC). The Early phase B was thought to constitute the main stage of this diffusion until recently. However, as only a small volume of sediments of Early Phase A had been examined, we returned to study the settlements of this phase in 2004. What emerges from this recent examination is that Early Phase A was also a stage of broad diffusion of this product, which reached the island as early as the foundation of the settlement. This link with the productions from Central Anatolia underlines the exchange networks, direct or indirect, which united Cyprus and this area, while contemporary sites are rare on the Anatolian plateau.

**ECONOMIC ASPECTS**

One of the most stimulating issues concerns the economic status of the first inhabitants of Shillourokambos. The presence of tools specific to pre-farming or farming practices (blades with lateral gloss for the earliest phase A, glossed crescents for the early phase B, lower and upper grinding tools) does not necessarily refer to a community that has acquired entirely farming. That is why carpological results are essential. New evidence from well 116 of Mylopotamia (S. Colledge), which is contemporary to the Early Phase A of Shillourokambos, has shown the presence of einkorn, emmer and barley, considered by the author as domesticated (Colledge, 2003). We must remember that wild wheats do not exist in Cyprus; they have inevitably been introduced. On the contrary, Cyprus could be part of the area where wild barley is endemic. For this reason, after examining some of the seeds or prints in earth or debris of the early stages at Shillourokambos (wells 2 and 114), G. Wilcox suggested considering emmer as a domesticated plant. But, he observes that the barley of these early phases would still have had a wild morphology for some time (Wilcox, 2001).

The identification of domesticated species in Cyprus as early as the second half of the ninth millennium (Mylopotamia, well 116), could confirm the existence of agriculture as early as this period in some areas on the mainland. Though morphologically domesticated cereals did not seem to have existed during PPNA, their presence in the Early PPNB seems to corroborate the assumption of their emergence in the course of the ninth millennium. The future examination of the archaeobotanical remains uncovered in 2004 in well 431 of Shillourokambos will give interesting information to deal with this problem.

The question of the introduction of animal species on the island as early as the first phase of Shillourokambos has also been discussed. Limiting the discussion to the main attested species, the study carried out by J.-D. Vigne and I. Carrère has provided the evidence of the transfer to Cyprus of four main species "controlled" for food – pig, cattle, sheep, goat – and a wild one: fallow deer. One of the novelties of the site – even from the beginning of its occupations – lies in the modified aspect of some already stunted pig skeletons, when compared to other more robust specimens. According to J. D. Vigne, this occurrence could be evidence for the presence of already modified animals in the process of domestication whereas the bigger specimens, which are also the more numerous, could correspond to feral individuals, which had returned to a wild status, and were then hunted (Vigne et al., 2000, 2003; Vigne, 2001). Cattle seem to have had a morphology in the process of being modified. Sheep and goat were still wild and would not present any progressive morphological modifications before Early Phase B. It has been possible for us to deduce from this result that Neolithic populations had imported to Cyprus species which were already "controlled" but which had not completely acquired, except for the pig, the definitive domestic features. The introduction of fallow deer could have been the answer to the need for a species that could be hunted for both food (a sort of potential hunting preserve) and symbolic reasons as well (fallow deer hunting contributing to social functioning by "making" the hunter status).

Some of these results have been contested recently. It has been suggested that processes of "ethnotramps" can be seen in all these species introduced in Cyprus during the ninth millennium: people would have transferred wild species from distribution to foreign areas, especially to islands. Doing so, they would have introduced wild boars, aurochs, caprins and wild fallow deer into Cyprus (Kolska Horwitz et al., 2003). The whole fauna of the early levels of the site would thus have been wild at this earlier period (ninth millennium). It would have been the
same on the mainland, where none of the species would have been really modified before the Middle PPNB.

In fact, the problem seems to be more complex. It is not our intention to return to the “Noah’s Ark” model (i.e., all species are introduced by people on boats, which implies that they were domesticated). However, it is important to point out that Cyprus, because of its geographical configuration and of the original absence of species that could be domesticated, is a true reflection of the mechanisms which occurred on the mainland in the ninth millennium. To test this assumption, several sites in southeastern Turkey and on Middle Euphrates have demonstrated that human pressure on animals was constantly increasing: the selective slaughtering of younger adult males and the smaller size of Ovis and Capra in Nevali Çori as early as Early PPNB; an increase of the proportion of female suids at the same period on the same site and at Cayönü as well (Vigne, 2000); and a reduction of the sexual dimorphism of cattle at Djade (study of D. Helmer and E. Coqueugniot, information from J.-D. Vigne).

In addition, the “Noah’s Ark” model, with its massive transfer of animals, whether domesticated and/or wild, does not necessarily correspond to reality. The introduction of species into Cyprus might have persisted for a long time and might have depended on the islanders’ cultural choices. This is an option not to be disregarded.

So it appears that Cyprus, precociously linked to the mainland, constitutes a good indicator of the changes that occurred on that continent, in agriculture and animal husbandry as well.

IDEОLOGICAL SYSTEMS

The discovery of a sculpture representing a “cat’s head” or a half-feline half-human face discovered in well 66 (Early Phase A; Guilaine et al., 1999; Guilaine, 2001) points towards the long-known feline representations of Anatolia: Gobekli (Schmidt, 1997–1998), Nevali Çori (Hauptmann, 1999). In the settlement was excavated also, but in the middle-recent phase, a human grave with a cat, probably domesticated (Vigne et al., 2004)

Another small figurine of a quadruped, unfortunately with a damaged head, found in the sediments dating from the transition Early Phase B/Middle Phase, could also be that of a feline. A feline statuette, maybe more recent, discovered on the Aceramic site of Mesovouni in the Kalavasos valley, can be added to those pieces (Todd, 1979). The specific development of a local handicraft work on picrolite, a light green rock collected in alluvial deposits of watercourses coming down the Troodos mountains, has to be pointed out too. The work on this picrolite started in an early period but it seems to develop particularly after 7500 BC. Ornaments, as well as sorts of trinkets with checked decorations and a few complete or partial animal representations (a mouse and a probable head of a wild boar), were found (Guilaine, 2003a, 2003b).

CONCLUSION

Owing to its geographical situation, which is visible from the mainland, Cyprus was the first large Mediterranean island to be colonized by populations engaged in the process of Neolithization. Therefore, it gives a true reflection of the changes that occurred on the mainland especially at the time of the foundation of Shillourokampos. That is why this site reveals, in a way, the dynamics that contributed to increases of anthropic pressure on both vegetal and animal environments in the Near East. In parallel, the site gives information on the particularities that island populations, in their turn, generate according to their own eco-cultural choices: the great variety of structures recognized in Shillourokampos sheds light on these choices. It is the same for stone industries which, during the millennium 8400–7500 BC, had a turning point that we can model in three successive stages from now on.

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Appendix

Radiocarbon dates for Early Phases A and B of Shillourokambos

**Early Phase A**

- Sector 1, Layer 2, St. 45
  - Lyon 290 (OxA): 9310 ± 80 BP (8521 – 8113 BC)

- Sector 1, Structure 170
  - Lyon 2284 (OxA): 9220 ± 50 BP (8596 – 8290 BC)
    (Probability maxima: 8348, 8385, 8449, 8367, 8445 BC)

- Sector 1, Well 66
  - Lyon 572 (OxA): 9205 ± 75 BP (8114 – 8049 BC)

- Sector 1, Layer 2, St. 45
  - Lyon 1447 (OxA): 9180 ± 55 BP (8541 – 8272 BC)
    (Probability maxima: 8303, 8399, 8409, 8375 BC)

- Sector 1, Pit 23 (C2 Charcoals sampled in layer B deposits)
  - Lyon 573 (OxA): 9110 ± 90 BP (8347 – 7973 BC)

- Sector 1, Well 2
  - Lyon 931 (OxA): 8860 ± 90 BP (8200 – 7506 BC)
    (Probability maxima: 8137, 8158, 7967, 8075 BC)

- Sector 3, Square L14, US 601
  - Lyon 2293 (OxA): 8810 ± 50 BP (8199 – 7684 BC)
    (Probability maxima: 7854, 7954, 7956, 7941, 7928 BC)

**Early Phase B**

- Sector 1, Well 114
  - Lyon 930 (OxA): 8670 ± 80 BP (7958 – 7523 BC)
    (Probability maxima: 7648, 7935, 7905, 7885 BC)

- Sector 1, Well 117
  - Lyon 574 (OxA): 8930 ± 75 BP (8083 – 7729 BC)

- Sector 1, Well 117
  - Lyon 2285 (OxA): 8940 ± 50 BP (8263 – 7964 BC)
    (Probability maxima: 8205, 8035, 8095, 8165, 7964 BC)

- Sector 1, St. 181
  - Lyon 2286 (OxA): 8845 ± 45 BP (8204 – 7755 BC)
    (Probability maxima: 8145, 8156, 7963, 7945, 7925 BC)

- Sector 1, Layer 1
  - Lyon 5 (OxA): 8825 ± 100 BP (8037 – 7577 BC)

- Sondage 2, Layer 5
  - Lyon 289 (OxA): 8760 ± 80 BP (7940 – 7593 BC)

- Sector 1, Structure 167
  - Lyon 2283 (OxA): 8760 ± 60 BP (8158 – 7608 BC)
    (Probability maxima: 7783, 7935, 7905, 7885 BC)

- Sector 1, Layer 1/2
  - Lyon 6 (OxA): 8725 ± 100 BP (8000 – 7534 BC)

- Sector 1, Layer 1/2
  - Lyon 291 (OxA): 8655 ± 65 BP (7884 – 7543 BC)

- Sector 1, Well 117
  - Lyon 929 (OxA): 8700 ± 70 BP (8156 – 7584 BC)
    (Probability maxima: 7717, 7935, 7905, 7885 BC)

- Sector 1, Pit 23, Layer A
  - Lyon 11634: 8740 ± 125 BP (8238 – 7547 av. J.C.)
    (Probability maxima: 7752, 7935, 7955, 8155, 8075 BC)

- Sector 1, Pit 23, Layer C
  - Lyon 1261 (OxA): 8735 ± 75 BP (8195 – 7595 BC)
    (Probability maxima: 7749, 7935, 7905, 7885 BC)

- Sector 1, Pit 23, Layer C/D
  - Lyon 1262 (OxA): 8670 ± 80 BP (7960 – 7578 BC)
    (Probability maxima: 7609, 7935, 7905, 7885 BC)

- Sector 3, US 2010 base
  - Lyon 1787 (GrA-20801): 8780 ± 60 BP (8198 – 7606 BC)
    (Probability maxima: 7915, 7937, 7901, 7932, 7955 BC)

- Sector 3, US 2018
  - Lyon 1788 (GrA-20804): 8510 ± 60 BP (7500 – 7483 BC)
    (Probability maxima: 7555, 7577, 7525, 7495, 7385 BC)

- Sector 3, Square G20, US 1003
  - Lyon 2292 (OxA): 8555 ± 50 BP (7604 – 7540 BC)
    (Probability maxima: 7584, 7555 BC)

- Sector 3, Squares F-G21, US 1004
  - Lyon 2291 (OxA): 8755 ± 50 BP (8157 – 7605 BC)
    (Probability maxima: 7762, 7935, 7885, 7955 BC)
Lyon 2290 (OxA): 8570 ± 45 BP (7645 – 7544 BC)
(Probability maxima: 7586, 7555, 7645, 7625 BC)
Sector 3. Square K38. Level 5
Lyon 2287 (OxA): 8850 ± 45 BP (8205 – 7764 BC)
(Probability maxima: 7965, 8157, 8142, 7945,
8075 BC)

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Shillourokambos and the neolithization of Cyprus


