M. Otte (dir.), *La Spiritualité*.
Actes du colloque de la commission 8 de l'UISPP (Paléolithique supérieur), Liège, 10-12 décembre 2003.
Liège, ERAUL 106, 2004, p. 37 à 53.

PEOPLE, MOBILITY AND ORNAMENTS IN UPPER PALAEOLITHIC EPIRUS, NW GREECE

Eleni KOTJABOPOULOU & Eugenia ADAM*

Introduction

In the 1960's claims were made concerning the discovery of Palaeolithic art in Greece, either in the form of engraved/painted slabs or parietal representations, but they have not withstood authentication or Pleistocene chronological assignment (see Kourtessi-Philippakis 1986). To date, then, Palaeolithic imagery from the Greek territory is confined to elements of personal ornamentation and examples of 'symbolically marked' organic artifacts originating from habitation fills, and can only be characterized as limited in quantitative terms. No doubt this paucity is partly a function of the status of Palaeolithic research in this country, which remains the Cinderella of archaeological practice. Excavated sites preserving Upper Palaeolithic (UP) occupational debris are still few, and soundly controlled cultural sequences are confined to cave/rockshelter formations. In addition, undisturbed Palaeolithic burials, i.e. contexts that can potentially produce substantial and informative elements of symbolic gear, have not as yet been encountered. Neither have the few Mesolithic inhumations from Greece produced unequivocal evidence of personal ornaments or grave offerings (Cullen 1995:277; Kyparissi-Apostolika 2000:21).

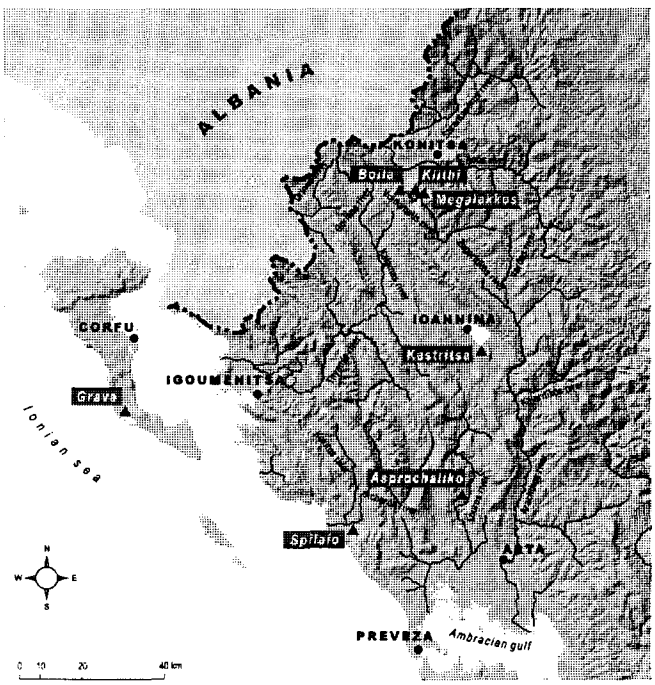

Figure 1. Map of Epirus with Upper Palaeolithic sites (indicated with a triangle) mentioned in the text.

In this paper we present an overview of the non-utilitarian organic and stone artifacts from four UP sites in Epirus, North Western (NW) Greece. A preliminary report on the assemblage from one of these sites, namely Klithi, has been previously published (Adam & Kotjabopoulou 1997), while the artifacts from the other sites receive herein for the first time a systematic account. The assemblages are also discussed on an inter-site and regional basis. The implications raised as regards the construction of social landscapes in this rugged and dissected corner of the South Balkan Peninsula receive particular attention.

The Epirus Upper Palaeolithic record: Background information

The region of Epirus, in the northwest mainland (fig. 1), provides the best-documented area of Pleistocene occupation in this part of the northern Mediterranean coast. From a Pleistocene research perspective, the area under consideration should include the north Ionian islands, of which Corfu is the largest, as these were, at times of low sea level stands, abridged to the mainland (e.g. Runnels & Van Andel 2003). For heuristic reasons, the east boundary coincides with the Pindus mountain range and the south with the Amvrakikos Gulf, even though both these "limits" could have been overcome if the need or the opportunity arose. To the north, the present Greek-Albanian border sets an arbitrary line, which, however, most probably had no relevance to Palaeolithic cultural landscapes.

(*) IB' Ephorate of Prehistoric and Classical Antiquities, Ioannina, Greece.
eleniktz@otenet.gr, eadam@otenet.gr

As a whole this region is extremely mountainous and dissected by numerous watersheds, which in turn create a plethora of juxtaposed niches and micro-environments.

Recently, Spilaion, a high-density open-air scatter of lithic artifacts located near the present mouth of the Acheron valley but lacking stratification and cultural deposits, has been interpreted as the earliest UP site, of "Bachokirian" affinity, in the region (Runnels *et al.* 2003). Given the vagaries of natural destructive processes, especially in a geomorphological setting moulded by large scale tectonic deformation and the well-known problems inherent in lithic typological taxonomies, general UP activity has been so far identified at some 20 open air-findspots distributed along or in proximity to drainage networks at elevations ranging from <200 m to c. 1000 m a.s.l. (Bailey *et al.* 1997). To date, no organic remains have been preserved at these locations. In effect, our current appreciation about UP occupation in NW Greece is founded on excavations conducted at six caves/rockshelters, namely Grava, Asprochaliko, Kastritsa, Boila, Klithi and Megalakkos. Worth mentioning is that, apart from the well-known late Mesolithic Sidari shell-midden on the north coast of Corfu (Sordinas 1969), recent research indicates that settlement pertaining to the early Holocene was more widespread (Runnels & Van Andel 2003; Kotjabopoulou 2001).

In terms of geographical location, Grava cave is situated on the present island of Corfu at an altitude of c. 100 m and at c. 10 km from the Last Glacial Maximum (LGM) coastal stretch. Asprochaliko, at c. 200 m a.s.l., is a shallow rockshelter situated in the Louros river valley, some 65 km from the LGM coastline. Kastritsa is a lakeshore cave (c. 460 m a.s.l.) positioned in the largest inland basin (c. 115 km from the LGM littoral) close to the high Pindus massif. The remaining three sites are all found in the hinterland (c. 75 km from the LGM seashore) at c. 410-430 m a.s.l.; they are aligned on the limestone sides of the Voidomatis catchment adjacent to high mountainous terrain with well-documented traces of recent Pleistocene glacial formations (e.g. Woodward *et al.* 1995). In the hinterland a handful more rockshelters have given surface indications of general Upper Palaeolithic age (Bailey *et al.* 1997).

Asprochaliko, Kastritsa and Grava were excavated in the 1960's, the former two sites by E. Higgs and his interdisciplinary team (Dakaris *et al.* 1964; Higgs *et al.* 1967), with particular care invested in the recovery of organic remains and generally of small-sized finds by dry sieving, a point confirmed by later detailed assemblage analyses, while Sordinas (1969) implemented an exploratory investigation at the Corfu shelter. The Voidomatis sites were researched in the 1980's and 1990's, using a gamut of modern recovery and documentation techniques, including water sieving (Bailey 1997a; Kotjabopoulou *et al.* 1997, 1999).

In terms of chronology, the oldest stratigraphically sound radiometric date comes from the lower part (rectangle 3, spit 9, layer 10) of the Upper Palaeolithic sequence at Asprochaliko. Obtained in the 1960's, it gives a minimum date at 26,100±900 (I-1965) for the Upper Palaeolithic industry (Bailey *et al.* 1983). Owing to various problems of taphonomy, uncertainty resides with the overall chronological position (range, duration) of this sequence. For Kastritsa, a recent Accelerator Mass Spectrometry (AMS) dating program based on 9 small charcoal samples collected by the excavators has put into question the veracity of the 1960's radiocarbon determinations, which now appear to be on the whole too recent by some 2,000-2,500 years (Galanidou & Tzedakis 2001). We herein take as a guide the new dating scheme, albeit allowing for the need of further cross-checking between occupation and taphonomic histories in different areas of the site, especially in the face of biases in the uppermost stratum (1) in the interior of the cave (see Kotjabopoulou 2001). The earliest occupation packages (strata 9 and 7), which from a stratigraphic point of view are intercalated with water-lain deposits, are bracketed between c. 24 kyr and 22 kyr BP. Further up the sequence, where anthropogenic deposits predominate, stratum 5 is constrained by four new readings between c. 22 kyr and 20 kyr BP. Occupation coincident with stratum 3 through to the lower part of stratum 1 still falls before the mid-point of the LGM, i.e. up until c. 19 kyr BP. Whether the use of the site persisted well into the Late Glacial, as originally estimated on the basis of a date at 13,400±210 BP (I-1960) (Bailey *et al.* 1983:21) and when it was finally abandoned are issues still doomed with ambiguity. The recent date at 15,930±130 BP (B-143304) from the interior of the cave (rectangle 10, Y2A, S17), does not resolve the aforementioned issues. It, however, provides a tentative indication of perhaps a small window of partial chronological overlap between Kastritsa stratum 1 and occupation at Klithi (see also below). The latter site's cultural deposits are chronometrically dated by a series of 22 AMS readings of Late Glacial age (Gowlett *et al.* 1997). Twenty of these fall in the time span 16,500-13,500 BP, which represents the main phase of occupation, while two in the period c. 12,000-10,000 BP, indicative of dispersed visits to this particular location. At Boila the cultural sequence is dated by 4 conventional and 9 AMS stratigraphically and otherwise sound radiocarbon readings to between 14,310±100 BP (Beta-109187) and 9,540±75 BP (RTA-3529) (Kotjabopoulou 2001; Kotjabopoulou *et al.* 1997; Woodward *et al.* 2001). Evidently, while partial coincidence with occupation at Klithi is well attested, the use of this site persisted for about 5 hundred years more, a case corroborated by the character of the lithic industries (Kotjabopoulou *et al.* 1999). Also, tentative and not devoid of interpretative problems, evidence from Megalakkos, which besides two early Late Glacial dates has yielded a sample falling in the first half of the 9th millennium BP (Gowlett *et al.* 1997), lends support to the argument that forays into this environmental niche did not cease with the advent of the Holocene. Finally, two surprisingly late AMS dates in the 9th millennium BP obtained on charred bone from Grava (ibid.) may, as Bailey (1999) argues, indicate either an isolation process while Corfu was progressively being separated from the Epirotic mainland or some problem with stratigraphic association.

The UP stone industries of the four sites under discussion rely predominantly on the exploitation of locally available raw materials, represented by all stages of debitage and tool production and maintenance, and supplemented by extra-local rocks as need dictated at each site (Adam 1989, 1997; Kotjabopoulou *et al.* 1999; Roubet 1999). Flint is the dominant rock type. A common trait of the industries is the dominance in the tool groups of backed bladelets, usually followed by scrapers.

The Asprochaliko stone industries, the earliest in the sequence discussed in this paper, exhibit - in the absence of systematic blade production - a preference for flakes as tool blanks; the tool inventory is limited and the backed bladelet tool-type range restricted compared to the later industries (Adam 1989). The Kastritsa lithic assemblages exhibit a strong laminar and lamellar character (*ibid.*). Starting with stratum 5 (the earliest provenance unit of non-utilitarian artifacts so far), the stone industries attest to a multitude of technological and typological changes/innovations, including the exploitation of a wide range of flint types, systematic blade and bladelet production, a variety of transformation and hunting tool types and a diversity of blank modification and tool maintenance techniques (e.g. intentional blade and bladelet segmentation, the latter via the microburin technique). A stronger emphasis on hunting activities is registered in the topmost assemblage (stratum 1). The Klithi stone industries, manufactured almost exclusively on the locally abundant Voidomatis-type flint, are dominated by bladelet tool types; the microburin technique for transforming bladelet blanks is widely employed, as at Kastritsa stratum 1. The composition of the tool kit at Klithi suggests an emphasis on hunting and on transformation activities related to it (Roubet 1999). The Boila lithic assemblages exhibit diachronic variation in composition, technology and typology, as attested by cores and bladelet tool types; the systematic use of the microburin technique - after c. 11,000 BP - served for the manufacture of geometric microliths (non- or barely represented at the other sites) and of projectiles (Kotjabopoulou *et al.* 1999). In all, the industries from Boila seem heavily oriented towards the manufacture and maintenance of hunting equipment, a trend not as strong in other inland sites. The industries of Grava were originally assigned to a single terminal Pleistocene phase (Sordinas 1969); a recent re-examination has traced two phases, one comparable to Kastritsa stratum 3 and one attributable to a later phase (Adam 1998).

For Kastritsa and Klithi, ample evidence exists that the lithic toolkit was enriched with bone/antler artifacts either in the form of hunting gear, especially at the former site, or transformation tools, particularly at Klithi. For some classes of artifacts, e.g. needles and spatulae at Klithi and antler points at Kastritsa, *in situ* manufacture is well attested. At the same time, it can be argued that certain organic equipment were carried around and/or exchanged (Adam & Kotjabopoulou 1997). Expediently produced bone domestic tools and antler points are also present at Boila (Kotjabopoulou *et al.* 1997). From Grava an item is described by Sordinas (1969:399) as a fragment of a point (see also below). For Megalakkos no reference to utilitarian organic artifacts is made (Sinclair 1997). For Asprochaliko a bone point has been reported (Bailey *et al.* 1983) and a few possible bone artifact fragments have been located in the museum collections, but the issue of the actual number and variety of organic artifacts from this site, as well as from Grava, must remain open until the faunal collections are thoroughly researched.

All the sites under discussion contain highly fragmented faunal remains, by and large by-products of hominid procurement, subsistence and consumption strategies. Pleistocene carnivore remains and gnawing damage are remarkably low key, suggesting very opportunistic use of these locations as lairs/dens, at least while the Palaeolithic occupation lasted (Gamble 1997; Kotjabopoulou 2001). In fact, cut marks induced during dismemberment and/or skinning on fox and badger skeletal elements from Kastritsa stratum 1 attest to the economic interest of these furred animals (Kotjabopoulou 2001). Invariably ungulates dominate all the faunal collections. Also, lagomorphs and birds formed part of the exploitation goals, albeit with varying interest and/or intensity at each site, while fish was an occasional dietary supplement only at the Voidomatis sites during the Late Glacial. In the limited securely provenanced UP faunal sample from Asprochaliko, red deer and caprines are equally numerous (Bailey *et al.* 1983; Kotjabopoulou 2001). Red deer was the dominant resource at Kastritsa throughout the Palaeolithic occupation, followed by the small-sized *hydruntinus* equid, *Bos primigenius* and caprines, while only minimal use of roe deer and wild boar is attested (Kotjabopoulou 2001, 2003). The Klithi and Megalakkos faunas are overwhelmingly dominated by ibex and chamois skeletal remains (Gamble 1997, Sinclair 1997). At Boila, while caprines formed the bulk of food acquisition and consumption, red deer was also a sought after resource (Kotjabopoulou *et al.* 1999; Kotjabopoulou 2001). For Grava the provisional species list comprises red, fallow and roe deer, pig, large bovid and equids (Sordinas 1969). Even though this site was always closer to coastal environments, no marine remains, neither as food nor as ornaments, are reported. Overall, patterns of high mobility involving seasonal occupations of the hinterland sites over the warm part of the annual cycle, i.e. in the range from late spring/early summer up to late autumn, have been established by a combination of on-site faunal (Gamble 1997; Kotjabopoulou & Kaftantzis in press) and off-site palaeogeographic data (Sturdy *et al.* 1997).

The small Megalakkos cavity, where only a test stratigraphic sounding was implemented, has not produced any symbolic items. From Grava a single fragmented pierced red deer pearl tooth is illustrated, along with the incised bone point mentioned above (Sordinas 1969, fig. 4:18). The four remaining sites have given varied assemblages of non-utilitarian organic and on occasion stone artifacts, which are presented below [1].

[1] In the absence of suitable equipment for microscopic examination at the time of analysis, all observations are based on macroscopic examination in natural light with the help of a hand-held 10 x magnifying glass.

	KASTRITSA								KLITHI	BOILA
Artifact	unstratified	Str 1	Str 1+3	Str 3	Str 3+5	Str 5	Str 5+7	*Total*	*Total*	*Total*
Perforated Cyclope sp.	2 (2)	2 (2)	0 (0)	2 (2)	0 (0)	11 (17)	1 (1)	18 (24)	92 (119)	40 (48)
Perforated *Homalopoma sanguineum*	0	0	0	0	0	0	0	0	41	(5)
Perforated Theodoxus sp.	0	0	0	0	0	0	0	0	20	3
Perforated cf. *Mitromorpha olivoidea*	0	0	0	0	0	0	0	0	2	0
Perforated *Arcularia gibbosula*	0	0	0	0	0	0	0	0	2	0
Perforated Hinia sp.	0	0	0	0	0	0	0	0	1	0
Dentalium sp. (tube and *rondelle*)	4	10	0	5	0	1	0	20	7	0
Other	0	0	0	0	0	2	0	2	1	0
Subtotal (shells)	*6 (6)*	*12 (12)*	*0 (0)*	*7 (7)*	*0 (0)*	*14 (20)*	*1 (1)*	***40 (46)***	***166 (193)***	***43 (56)***
Perforated red deer canine	3	8	1	3	0	4	0	19	8	1
Worked red deer canine	1	1	1	0	0	0	0	3	0	1
Subtotal (teeth)	*4*	*9*	*2*	*3*	*0*	*4*	*0*	***22***	***8***	***2***
Modified bone/horncore	*0*	*2*	*0*	*0*	*0*	*1*	*0*	***3***	***7***	***0***
Perforated stone	*0*	*0*	*0*	*0*	*1*	*1*	*0*	***2***	***0***	***1***
Total	*10 (10)*	*23 (23)*	*2 (2)*	*10 (10)*	*1 (1)*	*20 (26)*	*1 (1)*	***67 (73)***	***181 (208)***	***46 (59)***

Table 1. Modified non-utilitarian organic and stone specimens from three Upper Palaeolithic sites in Epirus, NW Greece. Contextual provenance at Kastritsa is often problematic, thus some items are unstratified or cannot be assigned to a single stratum. The Klithi and Boila samples are treated as single entities. For Asprochaliko and Grava see text for further discussion. Str: stratum. Figures in parenthesis include broken shell specimens not preserving modification or unperforated items. Fragments of unmodified bivalves are not considered.

Materials

The general composition of the samples on which the present research is based is depicted in table 1.

Asprochaliko

The group of non-utilitarian artifacts from the entire (from the Middle Palaeolithic up to the Bronze Age) Asprochaliko sequence is small and comprises three stone beads, two of uncertain stratigraphic provenance, and two animal bone fragments each bearing a hole. The only artifact that can safely be assigned to an UP context comes from rectangle 2; it is a badly weathered long bone splinter with a round perforation (diameter 3,5 mm) located close to one epiphysis. No further traces of modification are visible.

Kastritsa

The studied sample of non-utilitarian artifacts from Kastritsa is based on the one hand on material collected by the excavators and labeled as such, and on the other on artifacts located recently in the faunal collections (Kotjabopoulou 2001, 2003). In fact, for the first time that study identified the presence of shell adornments at Kastritsa; hitherto the presumed absence of this class of material culture has been considered as an element of differentiation between Kastritsa and Klithi (e.g. Adam & Kotjabopoulou 1997; Bailey 1997b), a view that needs to be partly rectified (see below). As the faunal analysis involved, in the horizontal sense, half of the excavated units, it is expected that the sample of non-utilitarian artifacts will increase in quantity and perhaps kind. In effect, then, the composition of the sample presented in table 1 is a heterogeneous one and not much should be read on apparent frequencies between either stratigraphic units or artifact categories.

As a whole, marine shells form the most numerous category of the sample (63,0 %) followed by modified animal teeth (30,0 %). The earliest occurrence of symbolic artifacts is recorded in stratum 5.

A total of 52 shell specimens have so far been located.

Three fragments of bivalves and three broken shells of unknown species show no traces of modification and are thus not included in the sample under presentation. Out of the remaining 46 specimens c. 87,0 % preserve clear evidence of modification (tabl. 1). The sample is almost equally divided between Cyclope sp. (52,2 %) and Dentalium sp. (43,5 %), while two small gastropod shells (4,3 %) have not been as yet identified.

The *Cyclope* sp. specimen dimensions range from 10,0 mm to 14,5 mm. Eighteen *Cyclope* are clearly perforated, while the remaining 6 are broken, without preserving artificial modification. On 16 specimens (fig. 2) the perforation, roughly circular or oval in shape, is executed from the outside on the dorsal side on location E1 (*sensu* Taborin 1993:170, fig. 51). The E1 hole is located at a mean distance of 2,5 mm from the natural aperture of the shell (range 1,5 mm - 4,3 mm). The dimensions of the hole range from 3,5 mm to 5,0 mm by 3,0 mm to 3,5 mm. In some cases the edges of the artificial openings are smoothened and blunted through friction with the stringing material. Two specimens already perforated on E1 bear an additional artificial hole, the first on E3 and the other on the right hand dorsal side. None of the *Cyclope* sp. shells bears traces of ochre. The two unidentified gastropods are perforated on the ventral side near location E4 with nearly round holes.

The scaphopod *Dentalium* sp. shell was also used for decorating pieces of attire at Kastritsa (fig. 3). Half of these shells come from the top of the stratigraphic sequence (stratum 1) although they are present at the site from as early as stratum 5. The sample includes 12 single tubes, 2 cases of "multiple" tubes and three thin beads. Eight of the single tubes are cut at both ends (sawn or snapped). Their length ranges from 6,0 mm to 20,0 mm and their diameter from 2,0 mm to 4,0 mm for the anterior and from 1,5 mm to 3,0 mm for the posterior part of the shell. The profiles of the tubes are curved or straight, depending on the segment of the shell's anatomy. Two tubes bear modern breaks on one end, with the other cut in antiquity. Two tubes were found containing in one case one and in the other case two additional tubes. The "insertion" of the tubes into each other could be the result of stringing in e.g. a necklace (Reese 1991:615; Taborin 1993:296). The three thin Dentalium beads (length range: 1,0 mm - 1,5 mm) are also rather wide (diameter 3,5 mm – 4,2 mm) compared to the tubes, suggesting they were cut towards the anterior part of the shell.

The category of modified animal teeth includes perforated (fig. 4) and otherwise modified red deer canines. Nearly half (N=9) of the perforated red deer canines are broken mostly by the hole and one is partially burnt. Breakage occurred in antiquity in 7 cases. Invariably, the perforation was executed bilaterally after initial preparation. Two unfinished specimens, one with a very small circular hole (1,0 mm in diame-

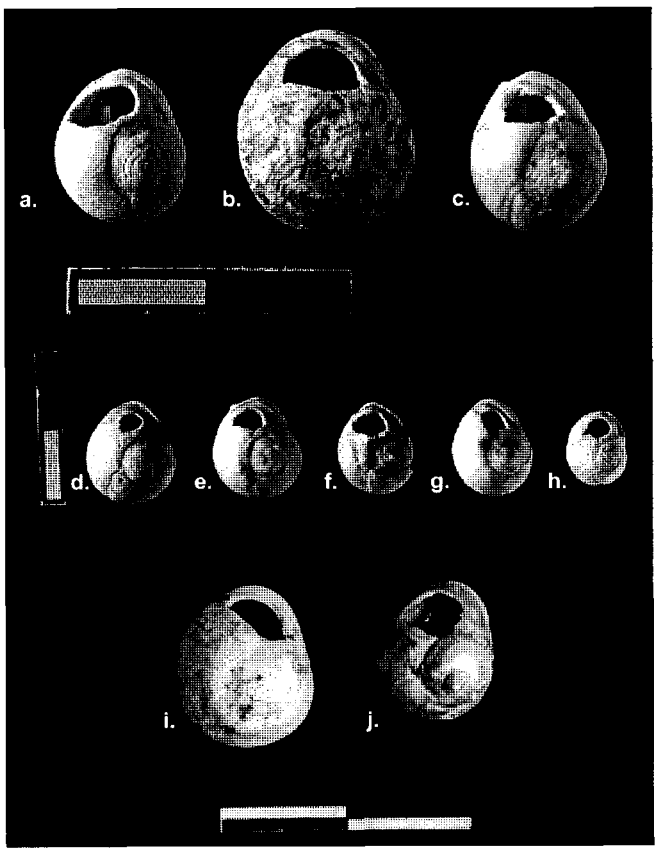

Figure 2. Perforated *Cyclope* sp. shells from Upper Palaeolithic sites of Epirus: Kastritsa (a-c), Klithi (d-h), Boila (i-j).

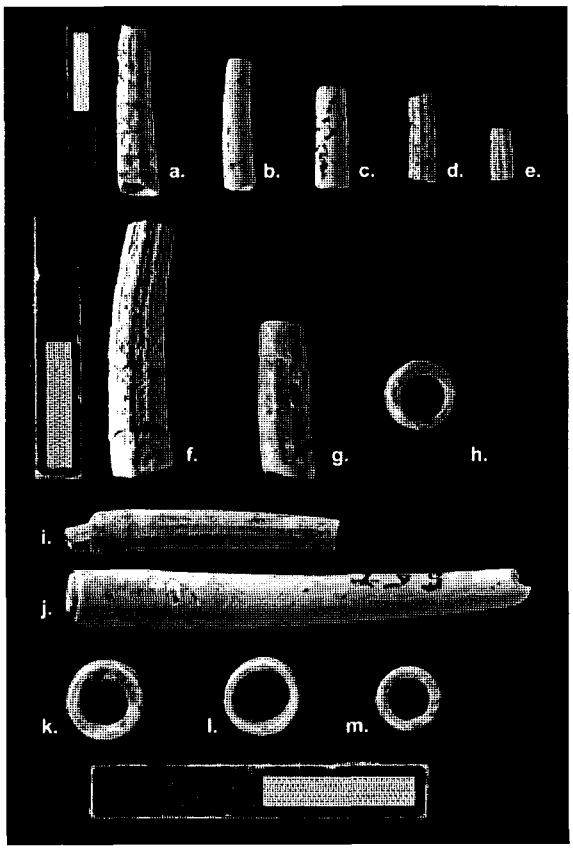

Figure 3. *Dentalium* sp. Ornaments from Upper Palaeolithic sites of Epirus: Kastritsa (a-e, i-m), Klithi (f-h).

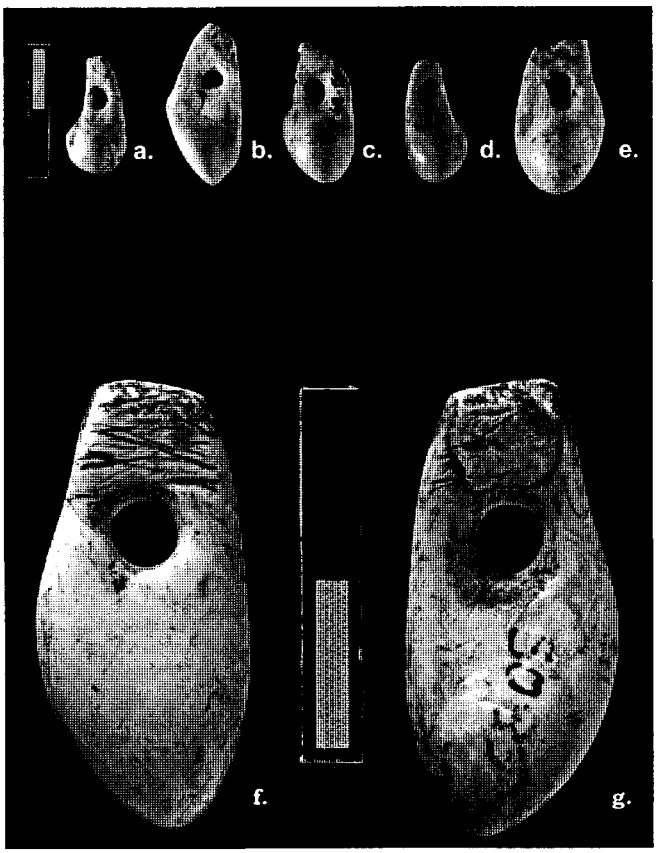

Figure 4. Perforated red deer canines from Kastritsa.

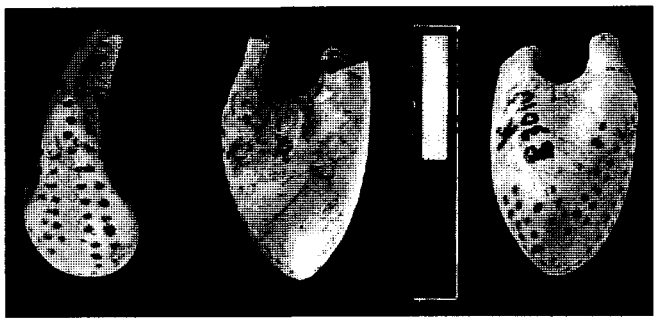

Figure 5. Perforated red deer canine from Kastritsa (stratum 1) with incised decoration.

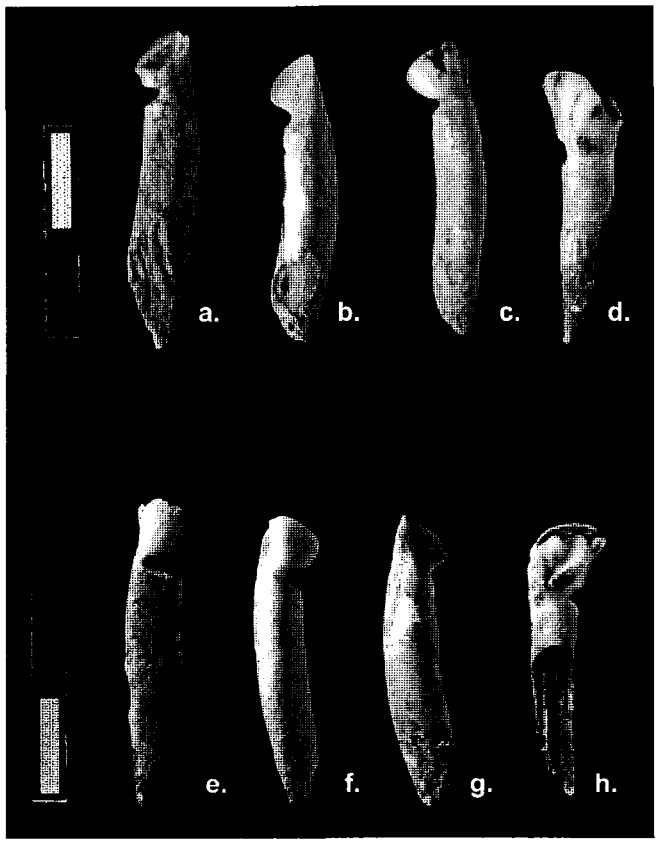

Figure 6. Herbivore (ruminant) incisors from Kastritsa beraing a "groove" (see text for discussion).

ter) and one not perforated piece bearing, however, two rectangular depressions created by scraping, one on each surface, support the notion of *in situ* preparation of some of the artifacts, a trend already observed in the case of the stone industries (Adam 1989, 1999), the organic utilitarian artifacts and the treatment of game brought to the site for consumption (Kotjabopoulou 2001). Traces of manufacture on the pearl teeth are abundant and they include preparation for the perforation on the area of the hole in the form of scratches parallel to the long axis of the tooth and thinning of the root in the form of scratches perpendicular to the long axis of the piece; gouging on the flat surface below the root is also employed (White 1989). In several cases the overall shape of the tooth is severely modified either by cutting off the root (or otherwise disposing of it, in 6 cases) or by scraping along the sides. Four canines bear traces of red ochre. Of particular interest is one specimen from stratum 1 which is adorned by incised decoration in the form of a *motif* comprised of two sets of paired rows of small, shallow, circular punctuations running along the contour of the enamel (fig. 5). This motif can be described as a "chevron". The length of the complete perforated canines ranges from 18,0 mm to 30,5 mm (mean 23,0 mm). The width of the teeth at the level of the hole ranges between 5,5 mm and 11,0 mm. The holes are circular or oval in shape; they are placed at 2,5 mm – 9,0 mm from the end of the root (whether natural or modified). The diameter of the finished holes ranges from 2,5 mm to 3,5 mm. Besides the perforated examples, the group of worked deer canines includes three pieces with artificial (?) heavy polishing on the crown end, which in at least one case results in the creation of a flat surface.

A sample of 6 herbivore (ruminant) incisors, not included in table 1, kept separately by the excavators of Kastritsa as possible artifacts, deserves some comment. These specimens, often exhibiting advanced occlusal wear, each bear single "groove" either located on the lower part of the crown at the junction with the root or right below the crown or clearly below it (fig. 6). Also, there seems to be a pattern in the location of the grooves with those on the left incisors located on the left side and those on the right incisors located on the right side. It is of importance to underline that none of the grooves circles the tooth. Similar anatomical elements

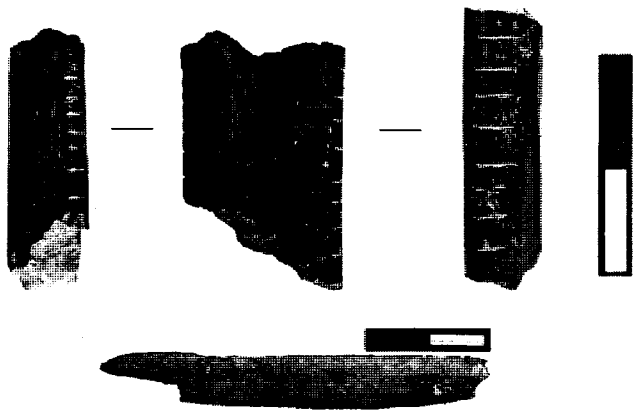

Figure 7. Bilaterally grooved artefact from Kastritsa, stratum 1 (top). Long bone shaft fragment bearing grooved lines from Kastritsa, stratum 5 (bottom).

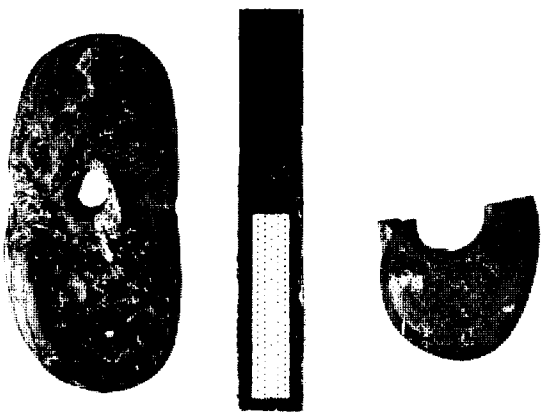

Figure 8. Perforated stone (serpentinite) artifacts from Kastritsa.

illustrated in the international bibliography, in the context of symbolic expression, are often artificially pierced or grooved all around *but* on the root end (e.g. Barge-Mahieu & Taborin 1991:fiches 1.2., 1.3.; David 1985:192, fig.44.11-16; Kozlowski 1992:39, 176; Taborin 1990:342). Irrespective of taxonomy, archaeological *comparanda*, in terms of morphology, to the Kastritsa specimens are few (e.g. Gautier 1986; Poplin 1983; Otte *et al.* 1985; Vanhaeren & A. Guadelli pers. comm.) and of controversial and unresolved, by experimental or other rigorous analytical means, aetiology. As things stand at present, it is not possible to determine whether the Kastritsa "grooved" incisors represent ecofacts, a form perhaps of heavy and idiosyncratic wear (Gautier 1986), or artifacts.

The inventory of worked bones from Kastritsa comprises three pieces each representing a different artifact type. All three items are broken. Two are manufactured on bone and one on bone or antler. The first example (from stratum 1) is a fragment of a bilaterally grooved artifact, found in the bone bags, broken in antiquity (fig. 7). It is made on a burnt, highly polished, longitudinally split bone/antler blank. On the lateral edges are positioned short parallel grooves/incisions, seven and eight respectively. The grooves are evenly spaced, shallow, perpendicular to the axis of the blank and they do not extend to the surfaces. The second item also from stratum 1 and also broken in antiquity, is semicircular in shape. The breakage is along the straight "edge". The piece is clearly cut off from a large, flat in section, part of bone and bears no traces of a hole or other modification. Its shape is reminiscent of the bone discs of the European UP sites (see Bellier *et al.*1991:fiche 5.1.) The third item, from stratum 5 (fig. 7), is probably a non-mammalian, long bone mid-shaft fragment bearing on its dorsal surface a set of three fine, closely spaced, grooved lines running along the long axis of the extant piece. Three (possibly four) sets of double lines stem from this pattern and run at an angle onto one of the lateral edges of the shaft fragment. This "engraved" pattern, although not necessarily out of context in terms of butchering activity, traces of which are otherwise present on the faunal material from the site (Kotjabopoulou 2001), is herein presented in order to invite further discussion and feedback.

Until the undertaking of the present research, non-utilitarian Palaeolithic artifacts from Greece were restricted to organic materials. However, two perforated stone artifacts were part of the Kastritsa museum collections (fig. 8). One item is complete and the other is broken at the hole by modern breaks. The intact specimen comes from an area below a large rockfall and its provenance is attributed to strata 3 to 5. The broken "bead" belongs to stratum 5. Both artifacts are manufactured on serpentinite (Karkanas pers. comm.), outcrops of which are found in the ophiolite complex of the Pindus massif. The complete specimen is of rectangular shape with rounded corners and a flat cross-section. It measures 18,0 mm in length, 8,5 mm in width and 3,0 mm in thickness. The hole, located in the centre of the blank, is made from both sides after initial preparation in the way of incisions (probably to secure the positioning of the perforating tool). Indentations are clearly visible on both long sides at the same level with the hole; they cut into the edges creating grooves possibly to facilitate the attachment of the piece (as a "button" or a securely attached bead rather than as an element of a necklace/armlet). The broken specimen is totally polished with no macroscopically discernable manufacture traces.

Klithi

The non-utilitarian organic artifacts from Klithi have been published before in a preliminary fashion (Adam & Kotjabopoulou 1997). In that report, the shell component was examined by G.N. Bailey and taxonomic identification was based on a small sample temporarily extracted to England for expert consultancy. For the purposes of the present study we have undertaken a fresh analysis of the specimens now housed at the Ioannina Archaeological Museum (tabl. 1). Perhaps owing to the original fragmented and brittle condition of the material, instead of "over 200 marine shells or shell fragments" (ibid:245) our count of *sea* molluscs preserving incontestable human inflicted modification is somewhat

depressed (N=145). If, however, we add to this figure a) 26 fragmented *Cyclope* specimens, which do not preserve man-made piercing, b) 1 whole but non-modified *Cyclope* sp., c) 1 burnt fragment of cf. *Gibula* sp. with no other modification visible and d) 20 specimens of the freshwater shell *Theodoxus* sp., which all bear humanly inflicted holes, we then reach a total of 193 marine *and* fresh water shells. Still, our count of 92 certainly perforated *Cyclope* specimens is far less than the 154 mentioned in the preliminary report (ibid:251); unless some other shell taxon was accidentally counted (or entered on the computer files) as *Cyclope*. This may well be the case, as we have for instance encountered a fair number of perforated *Homalopoma sanguineum* specimens, a taxon and artifact class not referred to in the first report. Be that as it may, let us turn our attention to the sample that we *do* have and whose general structure is depicted in table 1.

Clearly at Klithi, shells fashioned into components of jewellery or items attached to other perishable materials, e.g. clothing, containers, are most abundant (91,7 %). Nearly ¼ of this material is broken, either taphonomically (i.e. in antiquity) or during recovery, while 16,4 % is burnt. The frequency of both the breakage and the combustion alteration is paralleled in the other classes of material culture recovered from this site (e.g. Gamble 1997; Roubet 1999). Marine and freshwater shells are both present, with the former outnumbering the latter. At this inland rockshelter the marine remains are obviously imports, whereas the fresh water shells could have been locally obtained, although collection from further afield, e.g. river estuaries, cannot be excluded.

Cyclope sp. shells predominate in the sample (fig. 2). The non-perforated example measures 14,8 mm in height and 12,4 mm in width. The size range of the perforated items is heightwise 6,5 mm - 15,1 mm and breadthwise 4,9 mm - 12,7 mm. In total 8 pierced specimens retain ochre particles mostly on the ventral surface (N=5) and occasionally on the dorsal (N=2), and in one case on both these surfaces. On 91 specimens a hole was punched by a pointed tool from the outside on the dorsal side near the natural aperture on location E1. The holes are mostly round or round irregular, with elliptical outline being less common and only rarely of rectangular shape. When of round contour the diameter range of E1 holes is 2,1 mm - 4,9 mm. Irrespective of shape, the mean distance of the E1 edge from the shell mouth is 2,4 mm (range 1,1 mm - 3,8 mm). It has been observed that on occasion the perforation edges are blunted, most probably as a result of use. Also, the E1 hole has been extended towards the E2 location or more rarely very close to the outer lip, suggesting prolonged use. Three of these artifacts preserve also a much smaller round perforation on the dorsal side near the apex of the shell, which, however, is the result of natural processes, e.g. predation by other snails. Six other specimens bear a second artificial perforation on their ventral side, located in the area of E3 (N=4) or E4 (N=2). The morphology and the consistency of the location of this additional hole perhaps suggest an end product intended for attachment rather than suspension. Finally, one specimen in addition to the perforation on E1 preserves a non-hominid inflicted perfectly round depression on the ventral side. One item is perforated solely on the E3 location.

The second in abundance shell taxon transformed into non-utilitarian items that found their way into the Klithi cultural deposits is *Homalopoma sanguineum* (fig. 9). This small herbivorous mollusc, a member of the Turbinidae family, is represented in the Klithi sample by 26 intact and 15 broken in antiquity specimens, all of which bear and preserve man-made perforations. Clear burning is detectable on 29 % of this artifact class. All 41 specimens have a perforation, mostly elliptical with irregular edges and only in 3 cases a round one, vigorously punched from the outside and positioned on the dorsal surface. Owing to the small original size of this solid spherical shell (height range 5,0 mm - 7,0 mm), it is difficult to neatly categorize the location of the perforation, which on occasion has been enlarged by usage, following the general conventional scheme proposed by Taborin (1993). We note, nevertheless, that the hole occurs mostly on locations E1 and E2 and only occasionally on the E4. One example preserves clear preparatory incisions induced prior to the final percussion. On a few specimens the edges of the perforation are blunted most probably as a result of use. Of interest, also, is to remark that on two examples the natural bands of the shell have been smoothed and homogenized in the area between the edge of the perforation and that of the natural opening, suggesting perhaps a prolonged use and/or the impact of the stringing medium (ibid:202). The range of the dimensions of the E1/E2 holes is lengthwise 3,0 mm - 3,5mm and widthwise 2,0 mm - 2,5 mm. The edge of the E1/E2 perforation lies at a mean distance of 3,4 mm (range 2,4 mm – 4,2 mm) from the mouth of the shell. Two specimens preserve an additional non man-made small hole on the apex. One of these specimens has also a third hole (man-made?) in the general E4 area.

Two examples of perforated cf. *Mitromorpha olivoidea*, one whole (height 15,0 mm, breadth 9,0 mm) and one broken in antiquity at the apex, each bear a perforation more or less quadrangular in shape and positioned on the body whorl, on the last spiral, and opposite but slightly offset from the shell natural opening. The dimensions of both holes are 3,1 mm x 3,1 mm and their edges are somewhat smoothed. Both specimens of this gastropod, a member of the Turridae family, were recovered from an area of half a meter square; this may suggest that they were originally part of the same lost, broken or abandoned object.

Arcularia (Nassarius) gibbosula, a carnivorous/scavenger gastropod of the Nassaridae family, whose form shares, like *Cyclope*, a certain resemblance to red deer canines, is represented at Klithi by two specimens. One example, broken in antiquity and highly weathered bears an artificial rather large hole on the dorsal surface, on the last spiral and opposite the natural aperture. Part of the columella is exposed and bears probable traces of ochre. The second specimen presents difficulties of interpretation. Broken at the base in antiquity, it preserves part of an originally large hole on the dorsal surface, similar to the previous specimen, a second artificial roughly

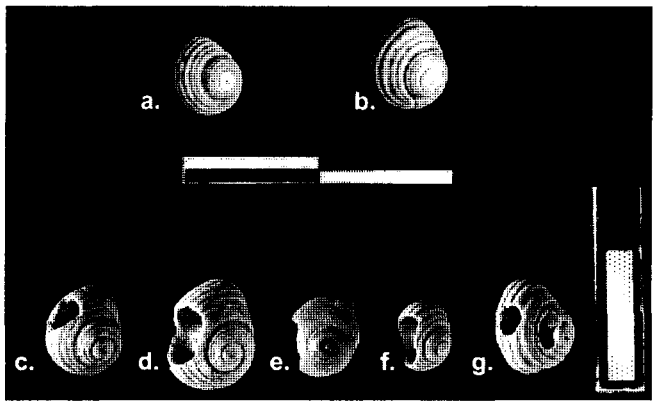

Figure 9. *Homalopoma sanguineum* specimens from Upper Palaeolithic sites of Epirus: Boila (a-b), Klithi (c-g).

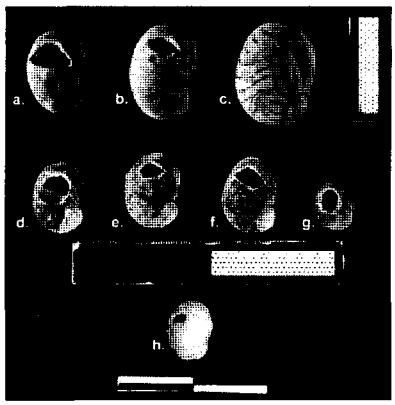

Figure 10. Perforated *Theodoxus* specimens from Upper Palaeolithic sites of Epirus: Klithi (a-g), Boila (h).

elliptical hole (maximum dimensions 5,0 mm x 3,8 mm) with smooth edges on the ventral side (E3 location) and has the apex missing. Overall, this specimen preserves the natural shell polish/luster. Further microscopic examination is expected to resolve whether this item was collected already beach damaged, but in a way that served the purpose of its collector to take advantage of the natural breakage pattern.

A single non-broken (dimensions height: 8,5 mm, breadth: 4,5 mm) but considerably weathered specimen is identified as *Hinia* sp. An almost oval man-made perforation (dimensions 3,1 mm x 2,9 mm) is preserved on the body whorl, on the last spiral opposite but not entirely aligned to the natural opening.

The genus *Theodoxus*, the only modified category of fresh water shells of the Epirus assemblages, is represented at Klithi by 17 whole and 3 broken specimens (fig. 10). Two specimens are charred. Four whole examples are of cf. *Theodoxus danubialis*, 5 examples resemble cf. *Theodoxus prevostianus*; the weathered state of the remaining specimens renders species identification extremely difficult. All *Theodoxus* specimens preserve a generally round perforation consistently located on E1 opposite the natural aperture. The hole was produced by punching/piercing; no traces of an abrasive manufacture technique, as was for instance the case at the final Natufian of Mureybet, in Syria (Maréchal 1991:604), have been observed. The cf. *Th. danubialis* specimens, with their characteristic zig-zag buff on light natural pattern, very similar to *Theodoxus jordani,* a not uncommon ornament in the Levant (ibid.), range in height from 7,0 mm to 11,0 mm and in width from 5,5 mm to 8,0 mm. The hole diameter is c. 2,5 mm and its edge from the natural aperture is at a mean distance of 1,4 mm (range: 1,0 mm - 2,0 mm). The cf. *Theodoxus prevostianus* specimens are overall much smaller in size (height range 3 mm – 5 mm, width range 2,5 mm - 3,0 mm). The range of the perforation diameter is 1,5 mm - 2,0 mm and the contour placed at a mean distance of 1,8 mm from the natural opening. The remaining 11 specimens of *Theodoxus* sp. are in relative terms intermediate in size (height range 5,5 mm - 8,5 mm, width range 3,5 mm - 5,5 mm). The hole diameter range is 1,5 mm - 2,5 mm, and its edge from the shell mouth is at a mean distance of 2,3 mm.

Scaphopods, i.e. *Dentalium* sp., are represented at Klithi by 7 specimens (fig. 3). Three mesial segments exhibit modern breaks at one or both ends. One mesial segment was probably broken at one end in antiquity. Two mesial segments (tubes) are intact. The largest (length: 18,5 mm, upper diameter: 3,8 mm, lower diameter: 3,0 mm) has a slightly curved profile and the blank was produced by sawing both ends. The smaller tube (length: 11,0 mm, upper diameter: 3,5 mm, lower diameter: 3,0 mm) is straight in profile. The upper end was intentionally snapped. Both ends have smoothed/blunted edges perhaps due to usage. Finally, a small "rondelle" (maximum length 1,8 mm, external diameter 4,8 mm), sawn at both ends, has been recovered.

Perforated red deer pearl teeth constitute the other ornament class, much less frequent (4,6 %) than the modified shell category, from Klithi. The 8 specimens recovered can safely be considered as imports to the site, given that in a collection of c. half a million secondary biomass remains recovered from this site only 11 other skeletal remains of red deer (not including unmodified canines) were identified (Bailey & Gamble 1990; Gamble 1997). Six specimens were recovered from within and/or on the immediate periphery of the main hearth feature, the latter comprising an area comparable to Binford's (1983) drop zone (see Galanidou 1997). Three specimens were broken in antiquity and two in the course of recovery. All breaks are in the loop area, and the fraction near the root end is missing. Heat alteration is observable on one broken specimen. Following thinning and preparation by scraping/incision of the area close to the root, a hole –mostly round in shape- was invariably produced by bi-directional perforation. The length of the complete perforated canines ranges from 18,5 mm to 21,5 mm. The width at the level of the hole ranges from 5,0 mm to 10,0 mm. The surviving holes are circular in shape with a diameter ranging from 2,2 mm to 3,0 mm. The hole starts from 3,0 mm to 5,5 mm from the root end. Traces of preparation are restricted to the area of the hole. One item retains traces of red ochre.

A total of 6 incised bone fragments and 1 incised caprine horn core, all broken in antiquity, were recovered at Klithi and have already been presented (Adam & Kotjabopoulou 1997). Six specimens are burnt. All specimens are incised by sets of evenly spaced short grooves, sometimes arranged in parallel rows, executed on the dorsal surface of the bones. In two cases the grooves are stained with red ochre. Similar artifacts of bone and antler are reported from Europe (e.g. Kozlowski 1992:62 & fig. 146; Taborin 1991, fiche 6.1.); in Ohallo II in Israel incised bones are associated with a male burial (Nadel 1994: pl.11).

Boila

Fifty three non-utilitarian organic (shell and tooth) specimens, five non-modified sea shell imports (see below) and a stone bead have been recovered from the Late Glacial/Early Holocene cultural deposits of the small inland rockshelter of Boila at the mouth of the Voidomatis gorge (tabl. 1). A small number of fragments from indeterminate bivalves (some of the fresh water *Unio* sp.) were also retrieved, but their use end cannot be determined.

Marine and freshwater molluscs comprise the most abundant symbolic artifact class from Boila. Notable is the dominance of *Cyclope* sp. (fig. 2) throughout the stratigraphic sequence. In total 48 specimens have been located. To judge from the range of the specimen dimensions (7,8 mm - 17,0 mm) clearly these belonged to adult individuals, sometimes rather large ones (cf. Stiner 1999, tabl. 2). A small fraction (16,7 %, N=8) is burnt. The majority of *Cyclope* specimens are whole (72,9 %). Of the 13 broken specimens only 3 bear evidence of modern breakage. Eight broken specimens do not preserve visible traces of man-made perforation, while one of these has a natural hole near the apex. Forty specimens are artificially perforated. Of these, 36 (90,0 %) bear a single perforation consistently placed on the E1 location, *sensu* Taborin (1993), while three of these have an additional but non-man-made hole. Three more specimens are clearly bifurcated, i.e. in addition to an E1 have an artificial perforation positioned on the E3 or E4 area, or in between; perhaps these were items held in an immobile position on other perishable materials, or if suspended not in a free fashion. Finally, an artifact with a hole on E1 has another hole near the apex for which we are uncertain if it was intentionally made. In total, all forty perforated *Cyclope* specimens are at least perforated consistently on the E1 area. The shape of the E1 perforation is mostly round (or round with irregular outlines), sometimes oval and only rarely rectangular. Some specimens exhibit blunting around the perforation edges, owing to usage. The mean distance from the natural aperture to the edge of the E1 perforation is 2,6 mm (range 1,0 mm - 4,0 mm). Two specimens preserve preparatory manufacture incisions on the dorsal surface to secure the perforation location. One specimen has quite extensive red ochre staining on both the dorsal and ventral surfaces, while two retain ochred patches on the dorsal.

The second group of perforated shells from Boila, much less common than the Cyclope, comprises 2 whole (height range: 8,3 mm - 9,1 mm) and 1 broken *Theodoxus* sp. Specimens (fig. 10), the latter altered by combustion. All bear a single perforation in the area between E1 and E2, round irregular (N=2) and crescent (N=1) in shape, whose mean distance from the shell mouth is 3,6 mm (range: 3,0 mm - 4,0 mm). All three *Theodoxus* artifacts belong to the oldest extensive occupation phase of the site dated to the first half of the 14th millennium BP, i.e. after the latest inundation of the shelter by the Voidomatis river, a process that left the site available for use (Woodward *et al.* 2001). Interestingly, this is the only horizon from Boila exhibiting a clear synchronic use with the bulk of occupation at Klithi. Two of these ornaments preserve residual ochre, one on the dorsal and the other on both the dorsal and ventral surfaces. Given that red ochre, although present in the Boila anthropogenic fill, was nonetheless not abundant, it can be argued that the ochre bearing specimens (*Cyclope* sp. and *Theodoxus* sp.) were intentionally marked.

Finally, at Boila 5 examples (3 whole and 2 broken in antiquity) of adult *Homalopoma sanguineum* specimens (height range: 6,0 mm - 7,0 mm) have been recovered from the Late Glacial deposits. A single specimen is charred. None, however, of these coulourful and robust shells is perforated (fig. 9). All four specimens were recovered from the same stratigraphic horizon, and three of them from an area of 0,75 m². Comparable non-modified such shells are occasionally encountered in, even inland, west European Upper Palaeolithic sites (Alvarez-Fernandez 2001; Broglio & Gurioli this volume; Mussi 2001, Taborin 1993, 2003). The possibility exists that the *Homalopoma* specimens from Boila were never used, unless their mode of use/attachment did not require a hole.

The herbivore ornaments from Boila are few in number. These include: a charred, bilaterally perforated deer canine bearing preparatory manufacture incisions though broken towards the root and a piece with the crown part ground (?). Other non-modified *Cervus elaphus* canines are included in the faunal assemblage from Boila (Kotjabopoulou 2001).

A tiny bead ("rondelle"), retrieved in the water sieving process, made of soapstone (steatite), is the only non-organic decorative item from Boila. In length this intact, laboriously manufactured, piece is 0,12 mm, its external diameter measures 0,4 mm and its maximum thickness 0,1 mm. This artifact originates from a stratigraphic package dated to between c. 12,901±157 (DEM-502) and 10,190±90 (OxA-5243) years BP.

Discussion

In contrast to the non-utilitarian artifact assemblages recovered from the Epirus hinterland rockshelters, the Asprochaliko sample is limited quantitatively and notably devoid of ornaments manufactured on shell and tooth. Whether this is a condition of chronology (in case the entire UP sequence antedates those from the hinterland) and/or of site-function/use (e.g. episodic – in the order of overnight visits, highly dispersed in

time, see Bailey *et al.* 1983; Kotjabopoulou 2001) has to remain an open issue.

As things stand at present, then, the oldest occurrence of decorative items from UP sites in NW Greece is documented at Kastritsa (stratum 5) and dates back to c. 22 kyr BP. However, this assemblage appears not to be the oldest from the Greek territory. From Klissoura cave 1, in the Argolid in the eastern part of the mainland, "more than a dozen *Dentalium* shells" are reported from Layer V (Koumouzelis *et al.* 2001a:528), a context labeled as Early Upper Palaeolithic with arched backed blades and dated to c. 40 kyr BP (Koumouzelis *et al.* 2001b:480), while from Layer IV, dated to c. 32,5 kyr BP (*ibid*:471), besides Dentalium (N=3), 21 marine probable decorative objects are mentioned (ibid:476); definite symbolic artifacts (shells identified as Umbonium, Columbella, Cypraea and Turitella, and a perforated deer canine) are mentioned for the "upper Aurignacian unit" (Koumouzelis *et al.* 2001a:525). No symbolic artifacts are reported from the Epigravettian levels of the Klissoura gorge caves (Koumouzelis *et al.* 1996). At this point, it is interesting to note that the molluscan taxonomic profile at Klissoura cave 1 differs from that of the Epirus assemblages, apart from the common occurrence of Dentalium. It remains to be seen whether this signals discrepancy in time and/or geographical setting and/or regional tradition(s). As far as Epirus is concerned, the lack, so far, of symbolic items from Kastritsa's lowest strata (9 and 7) if not a condition of taphonomic or research/sample bias, or mere chance, might be seen in time or mode of occupation terms, although such presence/absence instances, in the face of a meager regional record, should not be equated with patterning.

The full range of worked raw materials at the Epirus inland sites is present from c. 22 kyr BP (Kastritsa stratum 5) and persists until c. 9,5 kyr BP as attested at Boila. Broad similarities between the sites can be traced: perforated seashells and cervid teeth are clearly most abundant, while modified bones and stones are less common. The inventory of raw materials and of artifact "types" is not that wide overall. Other items of mobile art (e.g. figurines, bones with complex decorative motifs, ivory pendants), common in some UP European regions (e.g. Hahn 1972; Kozlowski 1992; Otte 1981; Soffer 1997; Weniger 1990; White 1997) – some from the onset of the UP - are not represented so far in Epirus and in Greece as a whole. At this point, it is worth noting that the Balkan symbolic evidence is not that extensive. Sites bordering the eastern Adriatic have produced mostly ornaments of modified shells (Dentalium, Cyclope and others) and red deer canines (e.g. Miracle 1995; Whallon 1999), where as those north of the Rhodope mountain range and especially the Danube exhibit a wider variety of raw materials and artifact classes (e.g. Beldiman this volume; Otte *et al.* 1995).

In table 2, the geometric density (Number of specimens/m³) of the shell ornament class, at the three hinterland sites of Epirus is shown. This is the only group of symbolic gear that can, for now, be safely treated on such comparative basis. Overall, frequency is low, and furthermore much lower at Kastritsa compared to Klithi and Boila. This point may partly entrain a recovery and/or sample bias, if not a genuine difference. The comparable figures for Klithi and Boila are extremely interesting given certain overall differences in the modes of occupation, e.g. repeated and standardized at the former, sporadic, perhaps brief, and distinct (separated in time) occupation phases at the latter site (e.g. Bailey 1997b; Kotjabopoulou *et al.* 1997, 1999). Also, in comparison to lithic and faunal assemblages (see Bailey & Woodward 1997; Kotjabopoulou 2001) the density of symbolic items at all three sites is extremely low. This leads us to consider the circumstances through which symbolic artifacts were incorporated in the habitation contexts. These circumstances fall into two, possibly three, categories. Firstly, the grand majority, notably shells, some at least of the modified red deer, and perhaps fashioned stones, were elements of composite decorated predominantly personal gear (e.g. head bands, necklaces, armlets, clothing) by analogy to mortuary contexts from across the European and Middle East UP world, lost, broken or otherwise abandoned by the members of the social group(s) who made use of these locations. This notion is supported by three observations: a) invariably at all sites a fair number of these elements preserve clear use wear *stigmata*, b) traces of residual ochre are present on some specimens at all three sites, irrespective if this was the result of intentional application as symbolic colouring and/or of contact with a supporting medium – e.g. hide previously treated with this mineral, and c) the "inserted" Dentalium tube beads at Kastritsa, a pattern attributed to their consecutive placement in the stringing medium. Secondly, some of the red deer canines were locally procured, manufactured *in situ* or curated, at least in the case of Kastritsa. Finally, the non-fashioned shells (1 Cyclope from Klithi, Homalopoma specimens from Boila), if not used or attached in ways that did not require modification, might represent behaviour invested with considerable time-depth planning (e.g. carrying of raw material for anticipated tasks, caching for future use). In all, the assemblages of symbolic items discussed in this paper belong to what Soffer (1997) has called "art of the living", that is to say they were destined to accompany the foragers in their daily

Site	Shell ornaments (N)	Volume of excavated deposit (m³)	Geometric density (N/m³)
Kastritsa (strata 5-1)	46	c. 60	0,76
Klithi (entire sequence)	193	c. 16	12,06
Boila (entire sequence excluding disturbed contexts)	56	c. 6,5	8,60

Table 2. Geometric density of shell ornaments from three hinterland rockshelter habitation fills in Epirus, NW Greece. Volume of excavated deposit for Kastritsa is an approximation, based on rational and calculations used by Kotjabopoulou (2001) for the sample of faunal remains within which shell ornaments were located, for Klithi see (Bailey 1997a) and for Boila the approximation is based on unpublished records.

routine. Can we then gain some insights about the social landscape?

At this point, a digression is due. In a discussion that deals with past material culture residues *a priori* invested in an archaeologist's mind with symbolic (i.e. somehow "special", out of the ordinary) connotations, we feel it important to state that the research analytical units we make use of for heuristic purposes are nothing but that. After all, symbolic expression and action is not confined to the processes of making and using just these "archaeologically special" remains; let us be reminded that even activities, often pigeon-holed as "mundane", like butchery and the distribution of game, were enmeshed in social relations (cf. Gifford-Gonzalez 1991). Furthermore, our archaeological *belles pièces* are often, like in the Epirus case, only mere small portions and dislocated topological and time instances of larger combinations. However, it is in the syntax, theirs and not ours, of the "complete object" (or notion of "completeness") and/or the patterning and effect (not necessarily restricted to the visual domain, cf. White 1997) of their overall sense of "composition" (e.g. the self adornment *process* by durable and non-durable means, that transforms the body into a cultural agent) that multilevel meaning was emanated, inter-personal relations weaved, social agendas negotiated and cosmologies and ideologies debated. To put it in other words, it is in the actual, historically specific, *engagement* of people *with* the world (cf. Ingold 1993; Gamble 1999), and not in some underlying universal cognitive pool that actions and by implication their material consequences, an otherwise inseparable *continuum*, become socially and culturally meaningful. Moreover, the rare instances in the archaeological record where the contexts of use of symbolic mobiliary artifacts can be approached (e.g. Gamble 1999; Soffer *et al.* 1993) and the increasingly sophisticated routes employed in artifact analysis and interpretation (e.g. d'Errico & Vanhaeren 2002; Vanhaeren this volume) register the immense diversity of cultural perceptions about the world and of lived experience of past hunter-gatherer communities. Still, and to return to the symbolic record from the Epirus *inland* rockshelter locales, its composition and structure, although inherently winnowed, invites thoughtful speculation about the rhythm and pace of social life.

Apart from minor differences, notable is the clear dominance of perforated marine, especially gastropod, Mediterranean shells at all three Epirotic sites *throughout* the c. 13 thousand years covered by the cultural horizons, i.e. from before the mid-point of the LGM up to the Pleistocene/Holocene transition. The presence of marine shells in inland sites located approximately 70-100 km away from the actual shores is not an unusual phenomenon (e.g. Bar-Yosef 1991; Bar-Yosef & Belfer-Cohen 1998; Mussi 2001; Reese 1991; Taborin 2003; White 1989). Possibly, the distance from the coast enhanced the value of the shells as favourite pieces of ornamentation (Taborin 2003). Their presence here testifies to systems of contact or to a network of circulation of materials (cf. Féblot-Augustins 1997). Long distance procurement of resources is also supported by the range of raw materials employed in the stone industries of the sites (Adam 1999).

The use of a rather restricted assortment of shell species is evident, however, compared to the natural availability of the Mediterranean waters even in the face of changing sea levels and the waxing and waning of local littoral habitats (cf. Stiner 1999; Shackleton 1988). This lack of any significant diachronic variation points to sustained symbolic/aesthetic preferences interweaved with selectivity related to size (i.e. adult small-sized gastropods), form/shape (e.g. resemblance of Cyclope and Arcularia to red deer canines or vice versa), colour/brilliance (e.g. Homalopoma) and perhaps on occasion natural pattern (e.g. *Theodoxus danubialis*). The restricted, if not monotonous, composition of the inland Epirus shell ornament inventory is emphasized by the lack, so far, of modified marine bivalves.

The high incidence of Cyclope artifacts – not uncommonly manufactured on already vacated shells of this carnivorous scavenger - is worthy of mention, if their collection, as Stiner (1999) argues for the Riparo Mochi assemblages at the Italian Riviera, is to be associated with a cultural response to rarity in beach-cast situations. The Homalopoma and Theodoxus specimens from the Late Glacial deposits of Klithi and Boila, shells so far absent from Kastritsa, may indicate subtle alterations in the marking of self and other portable objects and in any case provide an additional bond between the Voidomatis sites. Pierced Homalopoma shells are known from the Aurignacian through to the very Late Palaeolithic of the western and central coast of the northern Meditteranean (e.g. Mussi 2001; Taborin 1993; Stiner 1999) and have even reached the Cantabrian coast (Alvarez-Fernandez 2002) as well as continental areas of central Europe as far inland as the Rhine (Féblot-Augustins 1997). In Epirus, we need to point out that although the majority of shells, Cyclope and other, were primarily modified (i.e. perforated consistently on the same location) for suspension, the instances of man-made additional holes allude among, other possibilities, to use in an immobile fashion; this might indicate that the users of all three sites habitually wore and/or carried a variety of symbolically marked gear. The use of Dentalium sp., an appreciated shell in jewellery and garment decoration around the Mediterranean and its adjacent areas consistently from the early Aurignacian in Europe and on a systematic way in the Levantine Natufian (Bar-Yosef 1997; Mussi 2001; Reese 1991; Stiner 1999; Taborin 1993), is also attested in inland Epirus from c. 22 kyr BP onwards. If the absence of Dentalium from Boila is to be taken at face value, it contrasts with its occurrence at Franchthi (Cullen 1995:282). At this littoral site Cyclope is the dominant shell artifact from 9,500 to 8,400 years BP (molluscan zone II) (Shackleton 1988). At Franchthi primary production of shell ornaments (Cyclope) seems to have taken place [2].

[2] Shell beads and stone pendants are also reported from the pre-Neolithic (presumably pertaining to the Mesolithic) phases of occupation at the island of Yioura, Northern Aegean (Sampson 2001:59).

Invariably at all the hinterland Epirus sites perforated red deer canines comprise the second most common class of symbolic items. Comparable beads/pendants have been reported from Theopetra (N=2), Grava (N=1) and Klissoura (N=1). Kastritsa, in particular, stands out as the only site where such items were also manufactured on the spot, whereas at Klithi they were imports; this underlines common traits in the cultural identity of the hunter-gatherer groups in the Epirus hinterland. At Kastritsa, which controlled territory well-stocked with deer and at Boila perhaps, red deer crania have been brought to the site not only for consumption but also for exploiting antler and canines as raw materials (Adam & Kotjabopoulou 1997; Kotjabopoulou 2001). On comparative grounds it should be stressed that the modified canines retrieved from Kastritsa had undergone more thorough transformation than at Klithi: their shape was frequently altered and one example was further decorated and coloured. This is the only artifact of "schematic art" recovered from Greece to date. On account that the best part of this site's sequence (except perhaps of part of stratum 1) antedates the Voidomatis rockshelter occupations, some disparity in time trend and/or the kind/array of social occasions or performances and/or the cultural baggage might be echoed.

The emphasis on atrophied red deer canines in Epirus and perhaps in Greece as a whole combined with the more scarce use of stone ornaments and notably the lack of modified carnivore [3] teeth, whilst small/medium sized carnivores were occasionally procured, marks a clear differentiation from the finds recorded in most predominantly continental UP European sites (e.g. Hahn 1972; Otte 1981; Soffer 1997). The Greek pattern is paralleled in UP Italy, wherein Mussi (2001) argues that it reflects a need to reorganize symbolic activity especially in line with the focus of subsistence circumstances. This general framework could be valid also for the best part of the Southern Balkan Peninsula, to the extent that late Pleistocene faunas were of temperate character.

Bone artifacts of symbolic character (i.e. perforated, incised, cut) were recovered from Asprochaliko, Kastritsa and Klithi. The fragmented nature of the incised bones does not allow us to determine whether they originally belonged to decorated utilitarian implements as is the case at other European sites (e.g. Kozlowski 1992) or whether they were part of an independent system of notation/calculation or message transference (Bar-Yosef 1997; d'Errico 1998; Marshack 1991).

Red, and on occasion yellow, ochre in the form of small lumps and particles was recovered from three of the sites; detailed wet sieving resulted in the regular collection of this mineral at Klithi but of a limited quantity from Boila; at Kastritsa a small amount of ochre has been located within the bags of the faunal and lithic assemblages. In the course of this study residual ochre was observed on perforated shells from Klithi and Boila, on deer canines from Kastritsa and on one canine and inside the grooves of two incised bones from Klithi. While the evidence documents that ochre was employed in the treatment of soft materials (e.g. hides) at Klithi and perhaps Kastritsa (Adam & Kotjabopoulou 1997), it is not possible to prove or disprove that it was not also carried into the domestic space to be used as pigment (e.g. for the maintenance of symbolic gear).

Overall, in the UP Epirus record, a restricted and eclectic variety and a recurrent pattern of symbolic externalization on durable materials are registered. Seashells were diachronically favoured and particularly those that share visual and tactile effects with cervid teeth. No doubt, as we have seen in the preceding discussion, we are dealing with skewed evidence, that is with assemblages recovered exclusively from *inland rockshelter habitation contexts*. This acknowledged, it is, we feel, fair to assume that the above traits hint, if not to overall non-highly variable, but at least to sustained intra- and/or inter-group systems of identification and message communication. Some variation, in time trends and/or range or kind of social occasions in relation to the status of individual sites within the wider settlement grid, may be lurking, but it is not possible to elaborate in depth on this issue, given the regionally and contextually limited record. Still, we can take as a working hypothesis that habitually the members of the social groups who made use of these caves in the hinterland chose to mark their bodies and other equipment in fairly similar fashions that in turn did not change dramatically over time. Could this mean that the composition (i.e. the social personae) of the groups was, all things being equal, fairly constant? Or alternatively, that the social fabric did not require highly diverse coding systems? Or, that a combination of such kind of variables was in operation? Answers to such questions are not immediately forthcoming. We do know, however, that the grain of UP subsistence-settlement landscape(s) in this corner of Southeastern Europe was in *general terms*, after c. 20 kyr BP until some time close to the Pleistocene/Holocene transition, characterized by patterns of high mobility. Furthermore, these were founded on a *regional* integration of production goals involving locally selective procurement and consumption strategies, whereby, as a rule, consumers were moved to resources (Gamble 1997; Kotjabopoulou 2001, 2003; Sturdy *et al.* 1997). Beyond this sketchy picture some variation is traced but we are currently hampered by the quality of the record in pinpointing specific patterns. Technological, though, goals and skills, as these have been documented in the lithic industries, did experience change and innovation through time (e.g. Adam 1989, 1997). What we then observe is that the grain of aesthetics, as it has been delineated above, emphasized and played an active role in the production, negotiation and affirmation of the *integrated* character of the *regional* social landscapes in this part of the Northern Mediterranean belt. In other words, the littoral and the hinterland, two heuristic analytical entities, were not interlocked just for filling up the stomach but in symbolic

[3] A perforated bear canine is reported from Kitsos cave in Attica; the artifact though comes from the Holocene deposits of an area where Pleistocene layers were not reached (Jullien 1981).

terms as well; perhaps to the extent that the bonding/attendance of peoples with the region did not alter fundamentally through time, even though technological and to an extent production logistics within a stochastic physical space followed disparate rhythms.

We expect that future research will increase the range of symbolic inventory and discontinuities may well be manifested; but the tendency, we feel, would still point to region-specific traditions (obviously not confined to Epirus *per se*) in comparison, for instance, to more continental European provinces. Whether the lands of what is today NW Greece participated and in what ways in systems of exchange over *large* areas remains to be seen.

Acknowledgements

We express our deep thanks to Panagiotis Tsigoulis, for the photographs of the Kastritsa and Klithi material, Andreas Iliakopoulos, for the photographs of the Boila material and Dimitris Kalpakis, for compiling the map of figure 1.

References

ADAM E., (1989) - *A Technological and Typological Analysis of Upper Palaeolithic Stone Industries of Epirus, NW Greece*. Oxford: British Archaeological Reports, International Series 512.

ADAM E., (1997) - To know and to have: raw material availability and Upper Palaeolithic stone assemblage structure in Epirus. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 2, p. 481-496.

ADAM E., (1998) - Upper Palaeolithic technocomplexes in Greece: diachronic change and regional variability. *In*: *Proceedings of the XIII International Congress of the Prehistoric and Protohistoric Sciences*. Forli (Italy), vol. 2, p. 485-494.

ADAM E., (1999) - The Upper Palaeolithic stone industries of Epirus in their regional setting. *In*: G. Bailey, E. Adam, E. Panagopoulou, C. Perles & K. Zachos (eds.), *The Palaeolithic Archaeology of Greece and Adjacent Areas. Proceedings of the ICOPAG Conference*. Ioannina 1994, London: British School at Athens Studies 3:137-147.

ADAM E. & Kotjabopoulou E., (1997) - The organic artifacts from Klithi. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 1, p. 245-259.

ALVAREZ-FERNANDEZ E., (2001) - L'axe Rhin-Rhône au Paléolithique Supérieur récent: l' exemple des mollusques utilisés comme objets de parure. *L'Anthropologie* 105:547-564.

ALVAREZ-FERNANDEZ E., (2002) - Perforated *Homalopoma sanguineum* from Tito Bustillo (Asturias): mobility of Magdalenian groups in northern Spain. *Antiquity* 76:641-6.

BAILEY G., (1997a) - Klithi excavations: aims and methods. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 1, p. 43-60.

BAILEY G., (1997b) - Klithi: a synthesis. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 2, p. 655-677.

BAILEY G., (1999) - The Palaeolithic archaeology and palaeogeography of Epirus with particular reference to the investigations of the Klithi rockshelter. *In*: G. Bailey, E. Adam, E. Panagopoulou, C. Perles & K. Zachos (eds.), *The Palaeolithic Archaeology of Greece and Adjacent Areas. Proceedings of the ICOPAG Conference*. Ioannina 1994, London: British School at Athens Studies 3:159-169.

BAILEY G.N., CARTER P.L., GAMBLE C.S. & HIGGS H.P., (1983) - Asprochaliko and Kastritsa: further investigations of Palaeolithic settlement and economy in Epirus (North-West Greece). *Proceedings of the Prehistoric Society* 49:15-42.

BAILEY G. & GAMBLE C., (1990) - The Balkans at 18000 BP: the view from Epirus. *In*: O. Soffer & C. Gamble (eds.), *The World at 18000 BP*. London: Unwin Hyman, vol. 1, p. 148-167.

BAILEY G. & WOODWARD J., (1997) - The Klithi deposits: sedimentology, stratigraphy and chronology. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 1, p. 61-94.

BAILEY G., CADBURY T., GALANIDOU N. & KOTJABOPOULOU E., (1997) - Rockshelters and open-air sites: survey strategies and regional site distributions. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 2, p. 521-536.

BAR-YOSEF D., (1991) - Changes in the selection of marine shells from the Natufian to the Neolithic. *In*: O. Bar-Yosef & F.R. Valla (eds.), *The Natufian Culture in the Levant*. Michigan: International Monographs in Prehistory, Archaeological Series 1, p. 629-636.

BAR-YOSEF, O., 1997. Symbolic expressions in Later Prehistory of the Levant: why are they so few? In M. Conkey, O. Soffer, D. Stratmann & N. Jablonski (eds), *Beyond Art: Pleistocene Image and Symbol*: 161-87. California: Memoirs of the California Academy of Sciences, number 23.

BAR-YOSEF O. & BELFER-COHEN A., (1998) - Natufian imagery in perspective. *Rivista di Scienze Preistoriche* XLIX:247-63.

BARGE-MAHIEU H. & TABORIN Y., (1991) - Fiche générale des dents percés (1.0.). *In*: H. Camps-Faber (ed.), *Fiches typologiques de l' industrie osseuse préhistorique, Cahier IV*. Publications de l' Université de la Provence.

BELLIER C., BOTT S. & CATTELAIN P., (1991) - Fiche rondelles (5.1.). *In*: H. Camps-Faber (ed.), *Fiches typologiques de l'industrie osseuse préhistorique, Cahier IV*. Publications de l' Université de la Provence.

BINFORD L.R., (1983) - *In pursuit of the Past. Decoding the Archaeological Record*. London: Thames and Hudson.

CULLEN T., (1995) - Mesolithic mortuary ritual at Franchthi Cave, Greece. *Antiquity* 69:270-289.

DAKARIS S.I., HIGGS E.S. & HEY R.W., (1964) - The Climate,

Environments and Industries of Stone Age Greece: Part I. *Proceedings of the Prehistoric Society* XXX:199-244.

DAVID N., (1985) - *Excavation of the Abri Pataud (Les Eyzies, Dordogne). The Noaillan (Level 4) assemblages and the Noaillan culture in western Europe.* Cambridge, Mass.: Peabody Museum Bulletin no 37.

D'ERRICO F., (1998) - Palaeolithic origins of artificial memory systems: an evolutionary perspective. *In*: C. Renfrew & C. Scarre (eds.), *Cognition and Material Culture: the Archaeology of Symbolic Storage.* Cambridge: McDonald Institute Monographs, p. 19-50.

D'ERRICO F. & VANHAEREN M., (2002) - Criteria for identifying red deer (*Cervus elaphus*) age and sex from their canines. Application to the study of Upper Palaeolithic and Mesolithic ornaments. *Journal of Archaeological Science* 29:211-232.

FÉBLOT-AUGUSTINS J., (1997) - *La Circulation des Matières Premières au Paléolithique, tome I.* Liège: ERAUL 75.

GALANIDOU N., (1997) - *Home is Where the Hearth is.* Oxford: British Archaeological Reports, International Series 687.

GALANIDOU N. & TZEDAKIS P.C., (2001) - New AMS dates from Upper Palaeolithic Kastritsa. *Proceedings of the Prehistoric Society* 67:271-8.

GAMBLE C.S., (1997) - The Animal Bones from Klithi. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece.* Cambridge: McDonald Institute of Archaeological Research, vol. 1, p. 207-244.

GAMBLE C., (1999) - *The Palaeolithic Societies of Europe.* Cambridge: Cambridge University Press.

GAUTIER A., (1986) - Une histoire de dents: les soi-disant incisives travaillées du paléolithique moyen de Sclayn. *Helinium* 26:177-181.

GIFFORD-GONZALEZ D.P., (1991) - Bones are not enough: analogies, knowledge and interpretative strategies in zooarchaeology. *Journal of Anthropological Archaeology* 10:215-254.

GOWLETT J.A.J., HEDGES R. & HOUSLEY R., (1997) - Klithi: the AMS radiocarbon dating programme for the site and its environs. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece.* Cambridge: McDonald Institute of Archaeological Research, vol. 1, p. 27-40.

HAHN J., (1972) - Aurignacian signs, pendants and art objects in central and eastern Europe. *World Archaeology* 3:252-266.

HIGGS E.S., FAGG A.E. & VITA-FINZI C., (1967) - The Climate, Environment and Industries of Stone Age Greece: Part III. *Proceedings of the Prehistoric Society* XXXIII:1-29.

INGOLD T., (1993) - The temporality of the landscape. *World Archaeology* 25:152-174.

JULLIEN R., (1981) - La faune des vertébrés a l' exclusion de l' homme, des oiseaux, des rongeurs et des poisons. *In*: N. Lambert (ed.), *La Grotte Préhistorique de Kitsos (Attique).* Paris: Editions A.D.P.F., tome II, p. 569-606.

KOTJABOPOULOU E., (2001) - *Patterned Fragments and Fragments of Patterns: Upper Palaeolithic Rockshelter Faunas from Epirus Northwestern Greece.* Unpublished Ph.D. Thesis, University of Cambridge.

KOTJABOPOULOU E., (2003) - Food utility indices as a tool for pattern recognition in faunal assemblages: examples from the Upper Palaeolithic of Epirus, NW Greece. *In: The Prehistoric Research and its Perspectives: Theoretical and Methodological Considerations.* Proceedings of the International Symposium in the memory of D.R. Theocharis (Thessaloniki-Kastoria 1998), Thessaloniki: University Studio Press (in Greek), p. 117-125.

KOTJABOPOULOU E., & KAFTANTZIS C.N., (in press) - Seasonality and Radiology: a pilot application on red deer (*Cervus Elaphus*) dentaries from the Upper Palaeolithic cave of Kastritsa, NW Greece. *In: Proceedings of the 4th Symposium on Archaeometry* (Athens 2003), British Archaeological Reports.

KOTJABOPOULOU E., PANAGOPOULOU E. & ADAM E., (1997) - The Boila Rockshelter: a preliminary report. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece.* Cambridge: McDonald Institute of Archaeological Research, vol. 2, p. 427-437.

KOTJABOPOULOU E., PANAGOPOULOU E. & ADAM E., (1999) - The Boila rockshelter: further evidence of human activity in the Voidomatis gorge. *In*: G. Bailey, E. Adam, E. Panagopoulou, C. Perles & K. Zachos (eds.), *The Palaeolithic Archaeology of Greece and Adjacent Areas. Proceedings of the ICOPAG Conference.* Ioannina 1994, London: British School at Athens Studies 3:197-210.

KOUMOUZELIS M., KOZLOWSKI J.K., NOWAK M., SOBCZYKM M., KACZANOWSKA M., PAWLIKOWSKI M. & PAZDUR A., (1996) - Prehistoric settlement in the Klisoura Gorge, Argolid, Greece (excavations 1993, 1994). *Préhistoire Européenne* 8:143-173.

KOUMOUZELIS M., GINTER B., KOZLOWSKI J.K., PAWLIKOWSKI M., BAR-YOSEF O., ALBERT R.M., LITYNSKA-ZAJAC M., STWORZEWICZ E., WOJTAL P., LIPECKI G., TOMEK T., BOCHENSKI Z.M. & A. PAZDUR A., (2001a) - The Early Upper Palaeolithic in Greece: the excavations in Klisoura Cave. *Journal of Archaeological Science* 28:515-539.

KOUMOUZELIS M., KOZLOWSKI J.K., ESCUTENAIRE C., SITLIVY V., SOBCZYK K., VALLADAS H., TISNERAT-LABORDE N., WOJTAL P. & GINTER B., (2001b) - La fin du Paléolithique moyen et le début du Paléolithique supérieur en Grèce: la sequence de la Grotte 1 de Klissoura. *L'Anthropologie* 105:469-504.

KOURTESSI-PHILIPPAKIS G., (1986) - *Le Paléolithique de la Grèce Continentale: État de la Question et Perspective de Recherche.* Université de Paris I. Publications de la Sorbonne.

KOZLOWSKI J.K., (1992) - *L'Art de la Préhistoire en Europe Orientale.* CNRS Éditions.

KYPARISSI-APOSTOLIKA N., (2000) - The excavations in Theopetra Cave 1987-1998. *In*: N. Kyparissi-Apostolika (ed.), *Theopetra Cave. Twelve Years of Excavation and Research 1987-1998.* Proceedings of the International Conference, Trikala, Athens: Ministry of Culture (in Greek), p. 17-36.

MARÉCHAL C., (1991) - Éléments de parure de la fin du Natufien:

Mallaha niveau I, Jayroud 1, Jayroud 3, Jayroud 9, Abu Hureyra et Mureybet IA. In: O. Bar-Yosef & F.R. Valla (eds.), *The Natufian Culture in the Levant*. Michigan: International Monographs in Prehistory, Archaeological Series 1, p. 589-612.

MARSHACK A., (1991) - *The Roots of Civilization*. New York: Moyer Bell.

MIRACLE P.T., (1995) - *Broad-spectrum Adaptations Re-examined: Hunter-gatherer Responses to Late Glacial Environmental Changes in the Eastern Adriatic*. Unpublished Ph.D. thesis, University of Michigan.

MUSSI M, (2001) - *Earliest Italy. An Overview of the Italian Palaeolithic and Mesolithic*. New York: Kluwer Academic-Plenum Publishers.

NADEL D., (1994) - Levantine Upper Palaeolithic-Early Epipalaeolithic burial customs: Ohallo II as a case study. *Paléorient* 20:113-121.

OTTE M., (1981) - *Le Gravettien en Europe Centrale*. Dissertationes Archaeologicae Gandenses volume XX, Brugge: De Tempel.

OTTE M., CORDY J.-M. & MAGNON D., (1985) - Dents incisées du paléolithique moyen. *Cahiers de Préhistoire liègeoise* 1:80-84.

OTTE M., CHIRICA V. & BELDIMAN C., (1995) - Sur les objets paléolithiques de parure et d'art en Roumanie. Une pendeloque en os découverte à Mitoc, district de Botosani. *Préhistoire Européenne* 7:119-152.

POPLIN F., (1983) - Incisives de renne sciées du Magdalénien d' Europe Occidentale. *Mém. Soc. Préhist. Française* 16:55-67.

REESE D.S., (1991) - Marine shells in the Levant: Upper Palaeolithic, Epipalaeolithic, and Neolithic. In: O. Bar-Yosef & F.R. Valla (eds.), *The Natufian Culture in the Levant*. Michigan: International Monographs in Prehistory, Archaeological Series 1, p. 613-628.

ROUBET C., (1999) - Équipement pour la chasse aux caprines avec des pièces a dos tronquées du Paléolithique Supérieur de Klithi, Épire (Grèce): une proposition d' un harpon composite. L'Anthropologie 103:421-445.

RUNNELS C. & VAN ANDEL T.H., (2003) - The Early Stone Age of the Nomos of Preveza: landscape and settlement. *In*: J. Wiseman & K. Zachos (eds.), *Landscape Archaeology in Southern Epirus, Greece I*. Hesperia Supplement 32:47-134.

RUNNELS C.N., KARIMALI E. & CULLEN B., (2003) - Early Upper Palaeolithic Spilaion: an artifact-rich surface site. *In*: J. Wiseman & K. Zachos (eds.), *Landscape Archaeology in Southern Epirus, Greece I*. Hesperia Supplement 32:135-156.

SAMPSON A., (2001) - The cave of Cyclope, Yioura: the Neolithic and Mesolithic levels. *In*: A. Sampson (ed.), *Archaeology in the Northern Sporades, Greece*. Municipality of Alonnessos (in Greek), p. 41-69.

SHACKLETON J.C., (1988) - *Marine Molluscan Remains from Franchthi Cave*. Bloomington & Indianapolis: Indiana University Press.

SINCLAIR A., (1997) - Lithic and faunal assemblages from Megalakkos: some problems in the interpretation of small sites. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 2, p. 415-426.

SOFFER O., (1997) - The mutability of Upper Palaeolithic art in Central and Eastern Europe: patterning and significance. *In*: M. Conkey, O. Soffer, D. Stratmann & N. Jablonski (eds.), *Beyond Art: Pleistocene Image and Symbol*. California: Memoirs of the California Academy of Sciences 23:239-261.

SOFFER O., VANDINER P., KLIMA B. & SVOBODA J., (1993) - The pyrotechnology of performance art: Moravian venuses and wolverines. In H. Knecht, A. Pike-Tay & R. White (eds.), *Before Lascaux*. Florida: CRC Press, Boca Raton, p. 259-276.

SORDINAS A., (1969) - Investigations of the prehistory of Corfu during 1964-1966. *Balkan Studies* 10:393-424.

STINER M.C., (1999) - Palaeolithic mollusc exploitation at Riparo Mochi (Balzi Rossi, Italy): Aurignacian through Epigravettian. *Antiquity* 73:735-54.

STURDY D., WEBLEY D. & BAILEY G., (1997) - The Palaeolithic geography of Epirus. *In*: G. Bailey (ed.), *Klithi: Palaeolithic Settlement and Quaternary Landscapes in Northwest Greece*. Cambridge: McDonald Institute of Archaeological Research, vol. 2, p. 587-614.

TABORIN Y., (1990) - Les prémices de la parure. *In*: C. Farizy (ed.), *Paléolithique Moyen Récent et Paléolithique Supérieur Ancien en Europe*. Actes du Colloque International de Nemours, Nemours: Mémoires du Musée de Préhistoire d' Ile de France 3:335-344.

TABORIN Y., (1991) - Fiche coquillages façonnés (2.1.). *In*: H. Camps-Faber (ed.), *Fiches typologiques de l'industrie osseuse préhistorique, Cahier IV*. Publications de l' Université de la Provence.

TABORIN Y., (1993) - *La Parure en Coquillage au Paléolithique*. Paris: Éditions C.N.R.S.

TABORIN Y., (2003) - La Mer et les premiers hommes modernes. *In*: B. Vandermeersch (ed.), *Échanges et diffusions dans la préhistoire méditerranéenne*. Actes des congres nationaux des sociétés historiques et scientifiques, Nice: CTHS, p. 113-122.

WENIGER G.-C., (1990) - Germany at 18000 BP. *In*: O. Soffer & C. Gamble (eds.), *The World at 18000 BP*. London: Unwin Hyman, vol. 1, p. 171-192.

WHALLON R., (1999) - The lithic tool assemblages at Badanj within their regional context. *In*: G. Bailey, E. Adam, E. Panagopoulou, C. Perles & K. Zachos (eds.), *The Palaeolithic Archaeology of Greece and Adjacent Areas. Proceedings of the ICOPAG Conference*. Ioannina 1994, London: British School at Athens Studies 3:197-210.

WHITE R., (1989) - Production complexity and standardization in Early Aurignacian bead and pendant manufacture: evolutionary implications. *In*: P. MELLARS & C. STRINGER (eds.), *The Human Revolution: Behavioural and Biological Perspectives on the Origins of Modern Humans*. Edinburgh: Edinburgh University Press, p. 366-390.

WHITE R., (1997) - Substantial acts: from materials to meaning in

Upper Palaeolithic representation. *In*: M. Conkey, O. Soffer, D. Stratmann & N. Jablonski (eds.), *Beyond Art: Pleistocene Image and Symbol*. California: Memoirs of the California Academy of Sciences 23:93-121.

WOODWARD J.C., LEWIN J.& MACKLIN M.G., (1995) - Glaciation, river behaviour and the Palaeolithic settlement of upland northwest Greece. In: J. Lewin, M.G. Macklin & J. Woodward (eds.), *Mediterranean Quaternary River Environments*. Rotterdam: Balkema, p. 115-129.

WOODWARD J.C., HAMLIN R.H.B., MACKLIN M.G., KARKANAS P. & KOTJABOPOULOU E., (2001) - Quantitative sourcing of slackwater deposits at Boila rockshelter: a record of lateglacial flooding and Palaeolithic settlement in the Pindus mountains, Northwest Greece. *Geoarchaeology* 16:501-536.