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Ancient Bones and Modern Myths: Ninth Millennium BC Hippopotamus Hunters at Akrotiri *Aetokremnos*, Cyprus?

Shlomo Bunimovitz and Ran Barkai

Institute of Archaeology, Tel Aviv University, P.O. Box 39040, Ramat Aviv, Tel Aviv 69978, ISRAEL.

Abstract

Recent excavations at Akrotiri Aetokremnos, Cyprus, stirred up great excitment among students of Mediterranean archaeology and palaeozoology, since they were presented as revealing for the first time on the island a large deposit of Pleistocene fauna — mainly pygmy hippopotamus — in association with artefactual material. It was further claimed that humans may have been responsible for the extinction of some of the endemic Cypriot fauna. A re-examination of the data from the site questions the existence of ninth millennium BC hippopotamus hunters on Cyprus and addresses the more general issues of how archaeologists observe the archaeological record, give meaning to it, and reconstruct the human past.

> I will argue that archaeologists have regularly generated a variety of modern myths by virtue of failures in the inferential process. Many such modern myths have been generated by serious and dedicated archaeologists through the interpretation of faunal materials. (Binford 1981: 1–2)

Introduction

The quest for pre-Neolithic human presence on Cyprus has a long and frustrating history. Beginning with C.F.A. Schaeffer's inconclusive investigations sixty years ago, all later claims for Paleolithic chipped stone artefacts recovered through surface surveys or excavations in various parts of the island have been consistently refuted (for review and bibliography see Swiny 1988: 9–10; Held 1989: 7; Cherry 1981: 43, 1990: 151–52; Simmons 1991c: 287–88). No wonder, then, that recent excavations at Akrotiri *Aetokremnos* (Site E), revealing for the first time on Cyprus a large deposit of extinct Pleistocene fauna in association with artefactual material, have stirred up great excitement (Figure 1). In a series of articles, the excavator Alan Simmons and palaeozoologist David Reese presented their interpretation of *Aetokremnos* as a butchery and processing site of extinct vertebrate fauna — primarily pygmy hippopotami (*Phanourios minutus*) and pygmy elephants (*Elephas cypriotes*) (see mainly Simmons 1988a, 1988b, 1989, 1991a, 1991b, 1991c; Reese 1989; Simmons and Reese 1993).

In their opinion, the importance of this unique site is two-fold. First, it represents the earliest human occupation on Cyprus, dated to the mid-ninth millennium BC, some 1,500 to 2,000 years earlier than any other site on the island; and second, it lends support to the idea that humans may have been at least partially responsible for the extinction of some of the endemic Cypriot fauna. These conclusions, which bear interdisciplinary ramifications for the entire Mediterranean region, as well as beyond it, have not escaped certain skepticism (unpublished, but alluded to by Swiny 1988: 1; Held 1989: 20; Cherry 1990: 152; Simmons 1991a: 7, 1991c: 300–303; Simmons and Reese 1993: 42–43). Nevertheless, most commentators have subscribed to the idea that Akrotiri *Aetokremnos* proves the co-existence of humans and endemic fauna on late Pleistocene/early Holocene Cyprus, and that the context of the now-extinct Cypriot animals at this site is of anthropogenic origin (e.g. Swiny 1988, 1989: 180; Cherry 1990; Held 1992a: 37–38, 1992b; Knapp 1994: 401–404; also Lax and Strasser 1992: 208–209; Diamond 1992; Schule 1993: 407–408; but see Manning 1991: 875–76). Thus the door has been opened for semi-popular imaginative visions of hunter-foragers pursuing agile pygmy hippopotami in the landscape of Cyprus (see references in Cherry 1990: 148), later to enjoy hippo kebabs (Simmons and Reese 1993:43; for the reflexive impact of such images on the archaeological interpretation of the past see Moser 1992).

We suspect that the genuine enthusiasm surrounding the intriguing excavations at Akrotiri *Aetokremnos* has created a modern myth about ancient bones. Since the early days of prehistoric enquiry, most of the behavioural ideas regarding our ancient past have been dependent on the interpretation of faunal remains, their depositional contexts and association between fauna and stone tools (Daniel 1962: 30–39). This procedure has created a series of powerful images of the past: Man the Mighty Hunter, hominids living in base camps altruistically sharing food, ancient people as cannibals, etc. One might ask, however, how accurate these views are — or, in other words, how realistic is the assumption that associations between stone tools and bones at a site imply behavioural integration in the past?

This question, directly related to archaeological epistemology, site formation processes and taphonomy, has been addressed over fifteen years ago by Binford in his persuasive deconstruction of some of the well-known myths about ancient people (1981; also 1983a: 31–76). According to Binford, association between two or more elements within a spatial aggregation of preserved matter (e.g. stone tools and animal bones) in no way implies a systematic, behavioural or dynamic relationship between the components. Undoubtedly, stone tools are good indicators of people's participation in an environment, but they should not be treated as *prima facie* evidence that human behaviour is responsible for the deposit in which they occur. Such deposits are better considered as 'palimpsest deposits', deriving from a variety of events and actions by both people and animals. More recent research further emphasizes that the close spatial association of stone artifacts and animal bones cannot be accepted as sufficient evidence that people were the primary agent of site formation (e.g. Isaac 1983; Bonnichsen and Sorg 1989; Gaudzinski and Turner 1996; see also Cherry 1992: 35–36 for the methodological debate concerning adequate demonstration of early site status). While this commendable observation attests to the importance of non-cultural formation processes, the possibility of post-depositional cultural transformations of archaeological assemblages should not be ignored. Indeed, our analysis of Akrotiri *Aetokremnos* strives to show that in certain cases *both* human and natural agents may alter an archaeological deposit to such an extent that completely new associations of the original remains will be formed.

Though only preliminary reports of the excavations at Akrotiri *Aetokremnos* have yet been published, it seems to us that a scrutiny of the available data is enough to cast serious doubts on the existence of ninth millennium BC hippopotamus hunters on Cyprus. Moreover, *Aetokremnos* evokes fundamental questions concerning the formation of the archaeological record and its interpretation. This critical review of a particularly exciting image of the Cypriot past addresses, therefore, the more general issues of how archaeologists observe the archaeological record, give meaning to it, and reconstruct the human past.

Stratigraphy and Site Formation

Akrotiri *Aetokremnos* is a collapsed and badly eroded rock shelter located on the southern tip of the Akrotiri Peninsula (Figure 1). The site is situated midway down a steep cliff overlooking the Mediterranean Sea some 40 m below, and much of it is rapidly eroding into the sea.

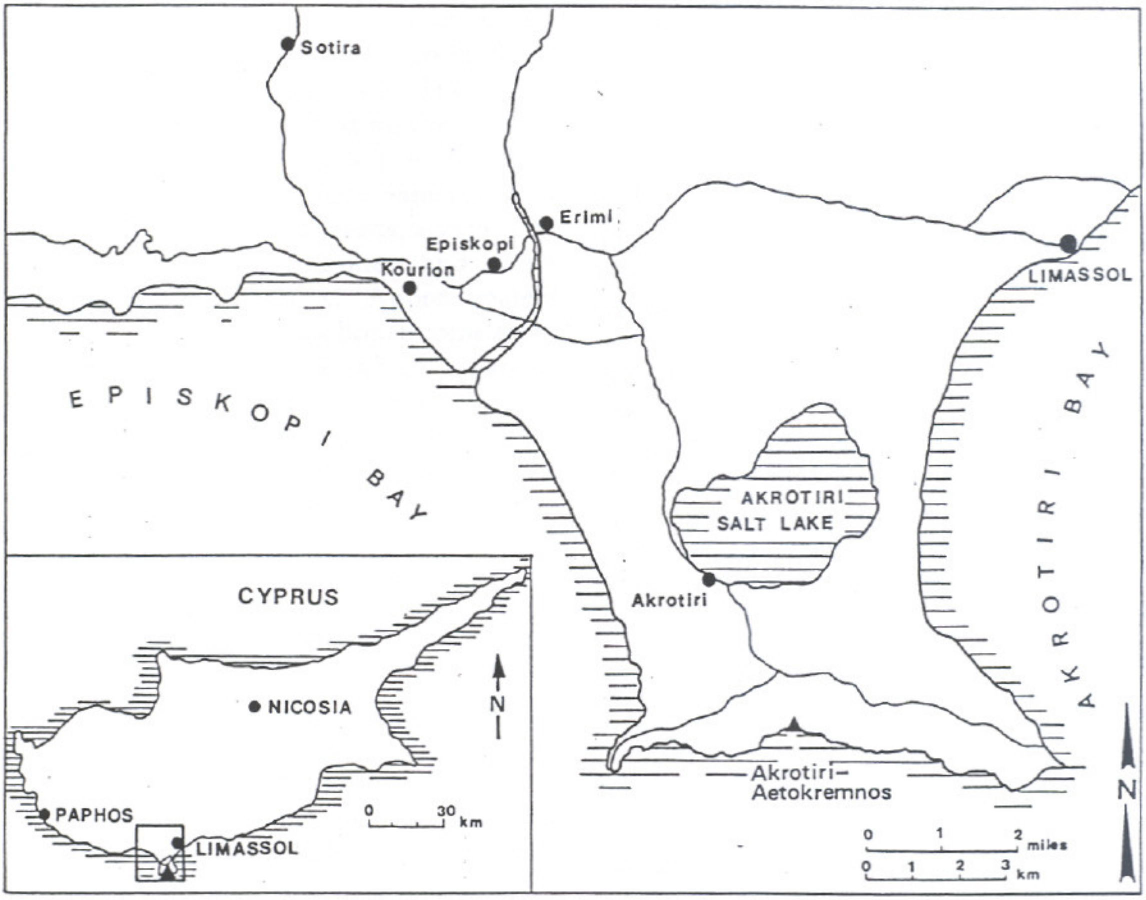

Figure 1 Location map of Akrotiri *Aetokremnos* on the Akrotiri Peninsula, Cyprus.

Obviously, the present form of *Aetokremnos* as an eroded, open site is very different from its original condition. The effect of environmental change on the site's stratigraphy, as well as on its faunal and cultural deposits, must therefore be acknowledged in any analysis of its formation and content.

Excavation has revealed that the original shelter was relatively small, covering less than 40 sq m. According to the excavator (Simmons 1991b:859–60), the rock shelter of Akrotiri *Aetokremnos* contains two distinct stratigraphic units (see Figure 2). One (Stratum 4) is composed of a thick bone bed (about 250,000 hippopotamus and elephant bones — 99% of the total bone assemblage) with hardly any matrix and only a few chipped stone artefacts (12% of the total lithic assemblage). The other (Stratum 2) includes almost all the cultural remains known from the site — the bulk (60%) of the chipped stone assemblage, a few stone artefacts, shell beads, a variety of bird, fish and reptile bones, and many edible marine molluscs. Approximately 1% of the hippopotamus bones come from this stratum. Stratum 3, which separates the two units in places, indicates that the hiatus between them was long enough for a layer of sterile sediments to accumulate over Stratum 4 before the cultural deposition of Stratum 2. It is reasonable to relate the stripping of Stratum 3 in some parts of the rock shelter to human activity conducted during the accumulation of Stratum 2.

As implied by the stratigraphic analysis and by the finds, Stratum 2 is the only stratum at the site where human activity is unequivocally indicated. It is in this stratum that 10 features (out of 12 defined by Simmons 1991b: 862) were located, in addition to the cultural remains listed above. These features are mainly hearths, some of which cut into Stratum 4. Human activity in Stratum 2 also included the excavation of a bell-shaped pit (Simmons and Reese 1993:43). In our opinion, the hearths and the pit caused direct contact between Strata 2 and 4, reciprocally contaminating them: presumably, hippopotamus bones were brought up from the underlying bone bed (Stratum 4) into Stratum 2, while chipped stone items, burned bones and 'features' were introduced into the bone concentration. However, the hearths and the bell-shaped pit are only one potential source for the stratigraphic disturbances which have caused much interpretative confusion. It is our contention that additional data from this site and general considerations about site formation processes must be taken into account in order to understand the site's complex structure.

Trampling and grubbing[1]

Trampling by humans and animals has been recognized as a major process by which archaeological materials and deposits are transformed in their formal and spatial attributes (e.g. Schiffer 1983, 1987: 126–29; Nielsen 1991, with references). If, as we believe, the pygmy hippopotami and elephants of *Aetokremnos* Stratum 4 died naturally (see below), then later trampling by kindred animals visiting the rock shelter could have disturbed the bone bed (for trampling and dispersal of elephant bones by living elephants, see Douglas-Hamilton and Douglas-Hamilton 1975; Coe 1978; Haynes 1987)[2]. Many of the ethnoarchaeological and experimental studies exploring the effect of trampling on the archaeological record have shown that it disturbs stratigraphic sequences by producing vertical migration of items (e.g. Stockton 1973; Villa and Courtin 1983; Gifford-Gonzalez *et al.* 1985; Nielsen 1991).

Ancient and recent grubbing may also have contributed to stratigraphic confusion. At least two occurrences of fossilized hippopotamus bones in aceramic Neolithic sites on Cyprus suggest that Neolithic 'palaeontologists' disturbed Pleistocene bone beds (Davis 1987: 124–25, 1989: 189). It should be remembered that a site containing chipped stone artefacts similar to the *Aetokremnos* assemblage was located immediately above the rock shelter (Simmons 1992: 10, Pile's Site No. 5). It is not impossible that the people of this site, seeking protection from the elements, took advantage of the adjacent rock shelter as an alternative (or additional) habitation/ activity zone, came across the hippopotamus bones and made use of them. Evidently, about 15% of the bones were burned, and ethnohistorical documentation confirms the use of fossil hippopotamus bones for fuel (Simmons 1991b: 866). Recent experimental work showed, however, that bones buried in sediments prior to when a fire is lit can be burned by that fire, implying that bone deposition and bone burning potentially represent unrelated events during the formation of archaeological sites (Stiner *et al.* 1995).

Moreover, the possibility of post-depositional interference by more recent fossil hunters, antiquarians and amateur palaeontologists should not be overlooked. Believed to be the remains of Early Christian martyrs and saints, pygmy hip-

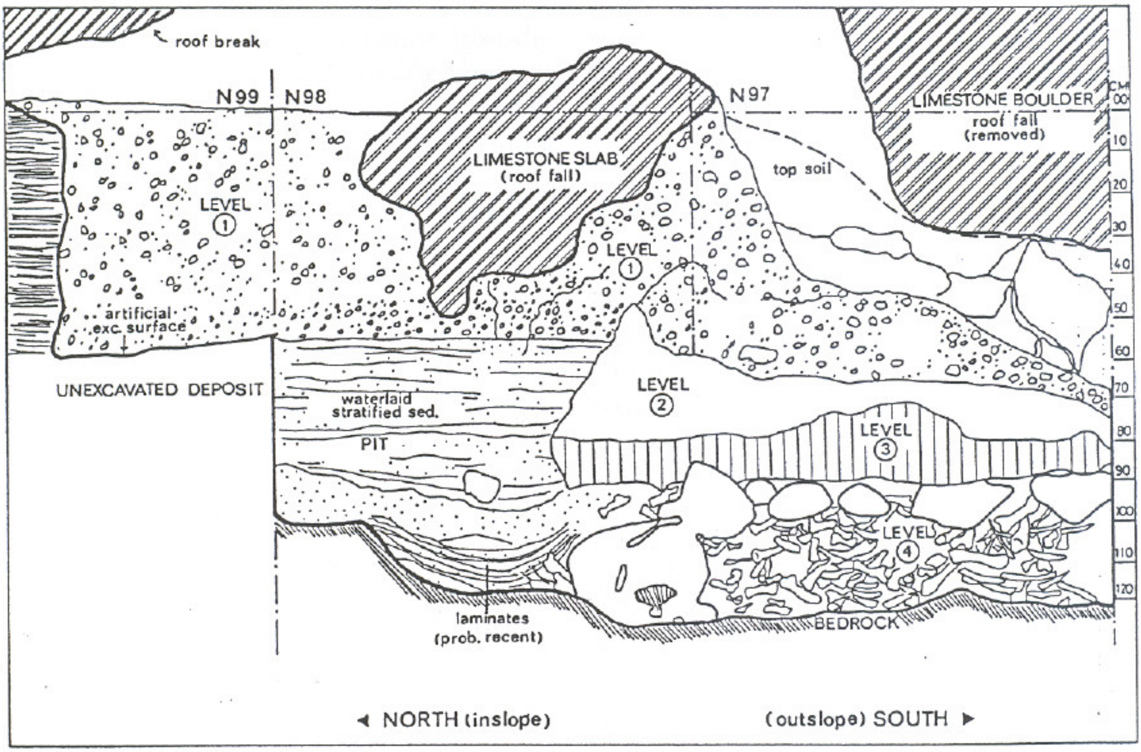

Figure 2 Simplified stratigraphic section of the east face of units N99–98–97 E87–88 at Akrotiri *Aetokremnos* (adapted from Simmons 1991b: fig. 2).

popotamus bone deposits in caves and rock shelters all around Cyprus were visited and venerated by pious neighbouring villagers. Other deposits were interpreted as the burial places of dragons killed in a catastrophic flood. Digging out bones, powdering them, and mixing them with liquid, the Cypriot peasants are reported even today to prepare a potion to cure most diseases. Modern investigation of many of the ossiferous deposits of Cyprus, which in most early cases were no more than 'romantic forays into the Pleistocene past' (Held 1992a: 12), has been no less disastrous to any future systematic study of their stratigraphy and possible association with human remains (for the history of research and ethnohistorical summaries, see Boekschoten and Sondaar 1972; Reese 1975, 1989; Swiny 1988).

The best evidence for a major post-depositional disturbance of the *Aetokremnos* deposit comes from Simmons's stratigraphic section of the east face of his units N99–98–97/E 87–88 (Simmons 1991b: fig. 2, 1991c: fig. 15.2). Here one can see in the innermost part of the shelter (unit N98) a wide deep pit/trench going all the way down from the surface to bedrock, cutting through *all* deposited layers (Figure 2). This disturbance took place sometime after the human deposition of Stratum 2, but before the disintegration of the shelter roof, as witnessed by a large limestone slab which fell on top of the pit's uppermost fill layer. It is possible that the pit was dug in order to extract bones from Stratum 4, as the bone layer is completely missing here.

Erosion

The impact of erosion on the site of *Aetokremnos* following the collapse of its roof seems to be twofold: carrying 'old' deposited material outside the shelter, while depositing 'new' material within it. This unfortunate situation is exacerbated by the site's position on a narrow talus slope of a precipitous cliff overhanging the sea (Simmons 1991b:857, 1991c:288). Obviously, prior to its collapse, the shelter's roof protected the inner deposit from the vagaries of erosion, but after this event contamination by archaeological materials from now eroded nearby sites (cf. Pile's Site No. 5; Simmons 1992:10) is not a far-fetched possibility.

In addition to the site formation processes suggested above, one has to take into account the collapse of large rock slabs and boulders from the rock shelter's roof on top of Stratum 2, as well as a countless variety of natural processes, including recent animal activity, which may have been responsible for post-depositional disturbances at Aetokremnos and caused migration of archaeological materials between strata (see, e.g., Wood and Johnson 1978; Schiffer 1987: Part III).

The Chipped Stone Assemblage

A total of 1,019 chipped stones artefacts have been recovered at Akrotiri *Aetokremnos* (Simmons 1991b: table 1, 1991c: table 15.2). The 128 formal, retouched tools in this assemblage are dominated by small 'thumbnail' scrapers (28%) (Simmons 1991b: fig. 3). Other tools include additional scraper forms, burins, retouched pieces, truncations, notches, and microliths.

Generally speaking, the typo-technological composition of this relatively small assemblage has no counterparts in the aceramic Neolithic sites of Cyprus, or among any of the known 11th millennium BP cultural entities in the southern Levant. Most of the items comprising the assemblage are small. The size of the diagnostic 'thumbnail' scrapers is but 2 cm, and the idea of butchering hundreds of pygmy hippopotami using such tiny tools seems preposterous. Admitting that the *Aetokremnos* lithic assemblage does appear inadequate for such a heavy task, Simmons (1991b: 860) relies on Frison (1989) in claiming that butchering can be performed by simple stone tools. However, Frison's experimental elephant butchery was conducted with large biface-reduction flakes (81.3 mm long, 40.0 mm wide, and 8.3 mm thick) and even these had to be sharpened regularly (1989: 777–79, fig. 10). Moreover, microwear analysis of experimental 'thumbnail' scrapers similar to those from *Aetokremnos* revealed that functionally speaking they are inefficient, wearing rapidly and needing frequent re-edging (Keeley and Newcomer 1977: 58). The chipped stone tools from *Aetokremnos*, therefore, offer little in the way of items useful in the butchering or cutting of pygmy hippoptami and elephants, or for that matter of any large game.

Chronology

The cultural assemblage at Akrotiri *Aetokremnos* cannot be synchronized with the Cypriot aceramic Neolithic, nor with any of the late Pleistocene/early Holocene assemblages in Anatolia or the Levant. Its relative age is thus not securely known. However, the excavator has presented an admirable series of 31 radiocarbon determinations from the site (Simmons 1991b: table 2; Simmons and Wigand 1994: table 1). Since these lie beyond the current limit of the standard radiocarbon calibration, a thorough discussion was needed to determine the site's absolute date (Manning 1991). Simmons and Wigand (1994: 249; see also Simmons 1991b: 865) believe that the suite of 28 determinations presently available (after removing three possibly contaminated surface specimens) argues in favour of 10,465±25 BP as a weighted average date. In an attempt to define rather better the upper phase at the site (Stratum 2A) which produced the majority of artefacts, 15 dates from secure (non-exposed) Stratum 2A contexts were assessed statistically by Manning (1991: 875, fig. 5) and these suggest a calendar date in the early 10th millennium BC. All of these samples consisted of charcoal, soil matrix and shell, and not of pygmy hippopotamus bones. The dates derived from pygmy hippopotamus bones belong to mixed Strata 2/4 deposits and Stratum 4B. In his calibrated dispersion diagrams Manning used only five such dates from secure contexts. His conclusion concerning this small set of dates is that they 'form an equivocal and disparate picture, and do little to establish a firm chronology for the pygmy hippo remains' (1991: 875; for the problems concerning the bone determinations, see also Simmons and Wigand 1994: 249–51).

Doubts concerning the consistency of the Akrotiri *Aetokremnos* dates and the site's stratigraphy are raised by the fact that the weighted average ^{14}C determinations from its main strata (Stratum 2 — 10,640±30 BP; Stratum 2/4 — 9960±75 BP; Stratum 4 — 9835±70 BP) present 'an interesting case of reversed stratigraphy' with a difference of ca. 800 radiocarbon years between the site's two major strata (Simmons and Wigand 1994: 251). These authors (1994: 252) consider the Stratum 2 dates as the most accurate because of their similarity to those extracted from the charcoal samples. The latter, however, are not dispersed all over the strata, but come mainly from Stratum 2 itself (8 of 9 samples). One may reasonably conclude that the radiocarbon determinations from Stratum 2 (which do not include bone samples) accurately date the earliest human activity at Akrotiri *Aetokremnos*, but leave open the question of overlap between humans and the endemic Cypriot fauna. Moreover, a firm chronology for the deposition of the pygmy hippopotamus bones at this site is still wanting.

The Faunal Deposit

A quarter of a million bones and bone fragments were recovered at Akrotiri *Aetokremnos*. A minimum number of 220 hippopotami of all ages are represented among them. Also present are the remains of at least three pygmy elephants, a variety of birds and other small animals, limited amounts of fish, and numerous edible marine molluscs (Simmons 1991b: 862; Simmons and Reese 1993: 42–43).

According to the excavator, this faunal assemblage results from human activity and cannot be attributed to any natural causes and/or non-cultural taphonomic processes. His interpretation of the site's function is related, therefore, to killing and processing tasks. However, no butchered bones have been positively identified. The absence of cut marks is explained as due to the fleshiness and fat of the pygmy hippopotami, as well as the cursory and inefficient butchering by their alleged hunters, because of the abundance of meat available (Simmons 1991b: 862, 866, 1991c: 291, 295, 297; Simmons and Reese 1993: 42).

The facts that only some of the hippopotamus bones at *Aetokremnos* were found in articulation and that some of them are burnt may be related to the post-depositional processes and disturbances discussed above. Moreover, Hill (1979) has convincingly demonstrated that patterns of natural disarticulation of mammal carcasses closely resemble those produced by hominid butchery practices (see also Crader 1983: 130). Unlike Simmons, we find it difficult to conceive of butchering and dismembering hundreds of hippopotami without leaving any cut marks. Apparently, the mass disarticulation of the animal bones at *Aetokremnos* does not concur with the suggested cursory cutting of lumps of meat from the killed animals. Furthermore, how can one reconcile the presence of a small group of hunter-gatherers being active at *Aetokremnos* for only a short time (Simmons and Reese 1993: 43) with the inordinate amount of meat supposed to have been processed from more than 200 pygmy hippopotami and elephants, as well as from the abundant small game and marine sources? The African pygmy hippopotamus (*Choeropsis libriensis*), which is similar in size to *Phanourios minutus* (Sondaar 1986: 53), weighs about 250–273 kg (Estes 1992: 222). Thus, even if the supposed butchering of the Cypriot hippopotami was not conducted efficiently or thoroughly, and only 100 kg of meat was extracted from each carcass, the prehistoric residents of *Aetokremnos* had to cope with more than 20 tons of meat! This minimal estimate is even more troublesome in the face of the dearth of contemporary sites nearby or elswhere in the Akrotiri Peninsula which could have shared this excessive amount of meat (Simmons 1992). The hypothesis concerning a large number of individual animals killed on a single occasion at some sort of 'hippo drive' (Simmons 1991c: 297) seems to us, therefore, untenable. On the other hand, the analysis of the archaeological evidence from *Aetokremnos* does not support a scenario of a long or recurrent occupation of the site, accompanied by recurrent hunting and/or gradual consumption of hippopotamus meat. Moreover, it seems unreasonable that butchering of hundreds of hippopotami and habitation/camping could have taken place concurrently within a rock shelter less than 40 sq m in size.

We believe that the bone bed of Stratum 4 at Akrotiri *Aetokremnos* is a natural mass die-off site, unrelated to any cultural agency. Catastrophic natural die-off sites are known in both the Old and the New World (Wilson 1984). As Wilson demonstrated, the reluctance with which archaeologists have accepted these bone beds as catastrophic has inhibited further analysis concerning the differences between such accumulations and archaeological kills. Anyhow, the numerous prehistoric examples and ethnohistoric documentation presented by him are convincing enough to prove that mass animal deaths may be more common than has been assumed (see also Conybeare and Haynes 1984; Haynes 1987). The existence of over 30 Pleistocene bone beds similar (though not necessarily contemporary) to that of Akrotiri *Aetokremnos* on Cyprus alone, and their profusion on other Mediterranean islands, indicates that the phenomenon of a large deposit of bones belonging to extinct mammals is far from being unique (see below). This intriguing site must, therefore, be evaluated and interpreted within a wider context than its own problematic data.

Akrotiri *Aetokremnos* in Context

For the time being, Akrotiri *Aetokremnos* (Site E) is the sole representative of the 'Akrotiri Phase' of occupation (11th millennium BP) on Cyprus. A nearby site (Site 23) produced a single radiocarbon date of 9780±80 BP (Simmons 1991b: 865), but the chipped stone artefacts collected from the site's surface seem rather to have an affinity with the Cypriot aceramic Neolithic and Levantine PPNB (Swiny 1988: 10–11). There have been claims for other localities with possible associations of extinct fauna and human activity (e.g. at Cape Pyla, Xylophagou *Spelios tis Englezous* and Akanthou *Vourna* — Swiny 1988: 6, n.39; Reese 1989: 29; Held 1992a: 31–32, 34–35). However, since no excavation has taken place at these sites, they can not be related to *Aetokremnos*. Thus, at present it is considered as a very special site. In our opinion, this view is only partially true, since it derives its main contextual meaning from animal rather than human behaviour, and as such it fits well within the pattern of Pleistocene palaeontological sites on Cyprus and other Mediterranean islands.

In a recent gazetteer of Pleistocene fossil sites on Cyprus (Held 1992a; also Held 1989: 17–22), 32 confirmed fossiliferous deposits were enumerated. All of these deposits are located along the northern and southern seaboards of the island and on the southern slopes of the Pentadaktylos Range, a distribution which indicates a clear geological and biogeographic pattern (Held 1989: fig. 2, 1992a: map 1). Of much interest is the fact that the majority (23) of the bone deposits were found within existing or now-eroded caves or rock shelters. Many of the caves/rock shelters are situated in coastal or littoral locations, sometimes overhanging the sea in a no less dramatic position than *Aetokremnos* (Held 1992a: 19–41; for illustrations, see Reese 1975: 27, fig.1, 1989: 25–26). *Phanourios minutus* bones were found in all of them, outnumbering the occasional bones of *Elephas cypriotes*. Some of the deposits are reported to be extensive in size and quite substantial (1–2 m thick).

The location of the fossil-bone sites clearly shows that the dwarf hippopotami and elephants could easily negotiate the Cypriot mountainous terrain, and palaeontological studies confirm that they were well adapted for mobility in such a rough environment (Boekschoten and Sondaar

1972: 331; Houtekamer and Sondaar 1979; Sondaar 1977: 683–86, 1986: 54). Access to water needed by the animals for their physiological well-being was facilitated by the position of the caves/rock shelters on the littoral, in proximity to the coast, or near the wet and marshy central Mesaorea (Swiny 1988: 8; Held 1992a: 14–15). Modern hippopotami and elephants are not known for their troglodytic behaviour and since predators were no threat to *Elephas* and *Phanourios*, Swiny (1988: 8) suggested that it was for protection from the elements that they chose to congregate in cave/rock shelters. The animals need not have inhabited these natural shelters on a regular basis, but might have visited them only sporadically, so that the rich bone beds could have accumulated over many millennia (cf. Wilson 1984: 99–100). Unfortunately, this most reasonable suggestion cannot be affirmed at present, since no amino-acid or ^{14}C dating is as yet available from any of the Cypriot ossiferous deposits, excluding the few problematic bone dates from *Aetokremnos*. However, observations conducted on fossil beds in Crete and Cyprus make it more conceivable that they represent specific event(s) such as bad season(s) and mass starvation of the endemic mammals (Sondaar 1986: 54; cf. Conybeare and Haynes 1984). Such catastrophic die-offs suggest overpopulation followed by food shortage, and may have been a recurring phenomenon. Evidently, many of these mass die-offs took place within caves and rockshelters similar to Akrotiri *Aetokremnos*.

Even if the *Aetokremnos* evidence is accepted as proof for an overlap between humans and extinct fauna on Cyprus, the sub-fossilized condition of the animal bones (Simmons 1991b: 862) may hint that this deposit is younger than other palaeontological sites on the island. Obviously, then, the occupants of *Aetokremnos* could not have caused the loss of the entire Pleistocene megafauna of Cyprus (cf. Knapp 1994: 403). Moreover, it is apparent that this fauna experienced severe crises already before the first arrival of humans to the island.

Conclusions

Our analysis of Akrotiri *Aetokremnos* reinterprets the two major strata observed at the site as two discrete episodes. The earlier seems to be natural, and represents the death of hundreds of *Phanourios* (as well as a few *Elephas*) within the rock shelter. This intriguing, though as yet unclear phenomenon, must be interpreted within the wider context of similar bone beds of extinct Pleistocene mammals known from other rockshelters and caves on Cyprus and other Mediterranean islands. The later, superimposed episode, is cultural and relates to a short-term or sporadic occupation by a small group of Holocene hunter-gatherers who made use of the ancient bones revealed within their habitat by chance. It is also plausible that these humans were totally unaware of the ancient bone bed, and that the observed intermingling between the two archaeological deposits resulted from post-depositional processes.

In keeping with the foregoing conclusions, we maintain that the site of *Aetokremnos* sheds no new light on the extinction of Cypriot endemic fauna, nor for that matter on the problem of human involvement in the extinction of Pleistocene fauna on Cyprus or other Mediterranean islands. This, however, does not detract from the great importance of the evidence recovered from the site for the earliest human presence known on Cyprus — at least two millennia before the *floruit* of the aceramic Neolithic period.

The complicated archaeological record at the site, with its association of extinct animal bones and human artifacts, challenges conventional archaeological inference from observed data. Its understanding and explanation calls for application of the full arsenal of interpretative tools existing in the discipline (e.g. careful stratigraphic analysis, study of site formation processes, taphonomic analysis, etc.) in order to overcome the tyranny of the observed 'facts'. Nor should one forget the importance of contextual examination — a comparative study of the archaeological phenomenon under consideration (in our specific case, the Pleistocene bone bed) within its natural/cultural milieu.

Many myths have been created in the past about the Pleistocene bone beds in Cyprus. As archaeologists, it is our duty to free the archaeological record from these long-held myths, not to add modern ones. In this respect, it seems better to determine that dinner at 11th millennium BP Akrotiri *Aetokremnos* included a variety of marine invertebrates and occasional small game, rather than grilled delicacies of pygmy hippos.

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About the Authors

Shlomo Bunimowitz is a lecturer in the Institute of Archaeology, Tel Aviv University. He has been involved in several field projects, notably the excavations at Shiloh and the Southern Samaria Survey (1981–1986). He now co-directs (with Zvi Lederman, Ben-Gurion University) the renewed excavations of Tel Beth-Shemesh. His current research interests are: socio-cultural change in Palestine during the Bronze and Iron ages, ethnicity and material culture, immigration and acculturation processes in Palestine and Cyprus at the end of the Bronze Age. Among his most recent publications are: "On the edge of empires — Late Bronze Age (1550–1200 BCE)", in T.E. Levy (ed.), *The Archaeology of Society in the Holy Land*, 320–331 (London: Leicester University Press, 1995); and 'Philistine and Israelite pottery: a comparative approach to the question of pots and people', *Tel Aviv* 23 (forthcoming, 1996).

Ran Barkai is a graduate student and teaching assistant in the prehistoric section of the Institute of Archaeology, Tel Aviv University. He has been involved in the excavation of several Neolithic sites in Israel and is currently a senior staff member in the Nahal Zehora Pottery Neolithic project. His research deals with the Holocene cultures of the Levant, focusing primarily on lithic technology.

Notes

1. By *grubbing* we refer to human scavenging whereby archaeological materials are dug from their primary context, thus disturbing the original stratigraphy. Such actions could have taken place in ancient, as well as in modern, times.
2. At the site of Liveras *Mandres Virilas*, Reese

(1989: 26–27) located a pygmy hippoptamus bone bed in a sheepfold made from an eroded cave. The bones were found below a thin layer of goat dung, and it is easy to imagine the stratigraphic disturbances inflicted upon the bone bed by the goats' trampling. Though such a situation is far from that reported from Akrotiri *Aetokremnos*, one may still wonder about post-depositional interference brought about by wandering local herd animals.

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