

“AURIGNACIANS” AND THE CAVE BEAR

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Introduction

Jan Fridrich has always been interested in, and open-minded about, novel phenomena and interpretations of the distant human past (e.g. 1982; 1989; 1997; 2005; see also *Fridrich – Smolíková 1973; 1976; Fridrich – Sýkorová 2005*). From an international perspective, one of his most consequential findings was his pronouncement about the Acheulian use of red ochre at Bečov (*Fridrich 1976*). The importance of this contribution remains under-appreciated, even over three decades later when it should have become obvious that we now have significant evidence of Lower Palaeolithic pigment use from various parts of the world (*Bednarik 1990; 1992; 1994*). Fridrich's work at the Bečov sites continued for many years, and he still presented new data on them in the last phase of his life (*Fridrich – Sýkorová 2006*).

Having addressed these aspects of hominin history on various occasions, the author would like to broach here another, most fascinating facet of the non-utilitarian behaviour patterns of early humans – one that also has received inadequate attention and in fact has fallen out of favour several decades ago. It is the concept of a Late Middle Palaeolithic and Early Upper Palaeolithic (EUP) practice of intentionally depositing cave bear skulls and other bones within caves, apparently as part of some kind of specific cultural behaviour. This notion, very popular up to the mid-20th century, has become so unpopular that it has been almost entirely ignored for some forty years. The only sustained effort to reopen the issue has been by *Bednarik (1993a)*. It is suggested here that this topic could profitably be revisited, and that Jan Fridrich would have approved of such reconsideration.

The most painstakingly studied and perhaps also the most pristine Palaeolithic cave art site known today is Chauvet Cave in the French Ardèche [*Chauvet et al. 1995; Clottes (ed.) 2001*]. The standard of the fieldwork being carried out there is peerless (*Bednarik 2005a*). The site's rock art is also the best-dated of the Palaeolithic sites so far subjected to any form of scientific dating (*Clottes et al. 1995; Valladas et al. 2004*; despite some objections, cf. *Zuechner 1996; Pettitt – Bahn 2003*). There are many reasons for this, some of which have to do with cave bears.

For example, it appears that access to the main cave became blocked for large species about 24 ka (24,000 years) BP, therefore a post-Gravettian age of any Chauvet art phase is unlikely. Also, there are many clear depictions of *Ursus spelaeus* in the cave, a species that disappears from the western European record around 16,000 years ago (*Rabeder et al. 2000, 107*). Here, the author will address yet another issue: the evidence from Chauvet that some of its human residents did not just have an interest in 'dangerous animals', often attributed to the 'Aurignacians'; they had a particular interest in cave bears, expressed in the intentional deposition of their remains, specifically skulls and long-bones.

Among the 3703 identified faunal remains found on the floor surface of the extensive cave, those of the cave bear account for 91.8 % (*Philippe – Fosse 2003*), and there are about 315 identifiable cave bear hibernation pits preserved in the cave. Clearly it was a bear hibernation site, like thousands of others across Europe (*Bednarik 1993a*), and probably so for tens of millennia. Their use of the site came to an end around 24 ka ago, presumably when the entrance collapsed. Radiometric dating (c. 18 ka BP) of a stalagmite that grew on one of the up-

permost collapse boulders confirms this hypothesis. Only the Salle Morel, a small side chamber, appears to have remained open to cave bears until 19 ka ago.

Early evidence

So far, three instances of anthropic deposition of cave bear remains have been observed on the cave floor, two in the Salle des Bauges and one in the Salle du Crâne [Clottes (ed.) 2001; Bednarik 2005b]. Evidence for cultural placement of cave bear skulls and long-bones has been reported from many caves, especially in central Europe, but it is temporally restricted to the final Mousterian and Aurignacoid traditions, most notably the Olschewian (Abel 1931; Andrist et al. 1964; Bächler 1940; Bayer 1924; 1928; 1929a,b; 1930; Bednarik 1993a; Bégouën – Breuil 1958; Brodar 1957; Cramer 1941; Ehrenberg 1951; 1953a,b; 1954; 1956; 1957; 1958; 1959; 1962; 1970; Kurtén 1968, 127; Kyrle 1931; Malez 1956; 1959; 1965; Mottl 1950; Rabeder et al. 2000; Rakovec 1967; Stehlin – Dubois 1916; Trimmel 1950; Tschumi 1949; Vértes 1951; 1955; 1959; 1965; Zotz 1939; 1944; 1951). This cave bear ‘cult’, as it was unfortunately called for a time (Abel – Koppers 1933), remains unrefuted, despite the endeavours of Koby (1951; 1953; Koby – Schaefer 1960) and others (Cramer 1941; Jéquier 1975). Generally, this evidence is in excess of 30 ka old at the known sites, and if the finds in Chauvet are of the same tradition, which seems very likely, the first phase of the cave’s human use should also predate that time. That does not necessarily *prove* that the cave’s early rock art phase has to be of the same period, but the onus to demonstrate that it is not is on those rejecting the Aurignacian attribution of this art. No such refuting evidence has been offered, and the doubters seem to be inspired by traditional stylistic reasoning alone.

The practice of depositing cave bear skulls and long-bones has been described in detail since Bächler’s work in Switzerland during the 1930s. Because the ‘Alpine Palaeolithic’ industry he described was assigned to the Mousterian (Drachenloch >41 ka BP, Wildkirchli, Schnurenloch, Wildenmannlisloch, Chilchli Cave; Bächler 1940; confirmed by Tschumi 1949; Schmid 1958; Andrist et al. 1964), a tendency developed to attribute every similar find to the Middle Palaeolithic, despite several early objections (e.g. Zotz 1944) that most of the site occupations in question are of EUP traditions. In the 1950s and 1960s, over-interpretation led to rejection of the ‘cave bear cult’, but the work of Koby and others is itself marked by many errors, and there remained adequate secure evidence to re-consider the issue (Bednarik 1993a).

Koby (1951) opposes the concepts of both cave bear hunters and intentional deposition of bones. The evidence refuting his first proposition includes the hornfels flake found embedded in the *os frontale* of a cave bear skull from Rotes Feld Cave (Zotz 1951, 120); charred and smashed cave bear bones in dozens of sites; the extensive evidence of hunting the last remaining populations in the Holocene (Caucasus and northern Urals) by Mesolithic hunters specializing in this one species (Musil 1981, 10); and the ‘frantic’ scratch marks found in specific locations amenable to the placement of nooses, suggesting that the fattened and possibly drowsy animals were harvested in their hibernation haunts (Bednarik 1993a). Palaeoart provides depiction such as those of two bears apparently lying on their sides, with marks at their nozzles suggesting an issuance and their bodies covered by numerous apparent piercings and arrow-like marks, in Les Trois Frères (Bégouën – Breuil 1958; H. Bégouën reported what he regarded as intentionally deposited skulls, cf. Ehrenberg 1954, 48); a similar image from Le Portel; the near-life size clay model of a bear in the Galerie Casteret, Montespan Cave, punctured with forty-one holes; and the petroglyph of a well-detailed bear head with two lines crossing the neck in a manner suggesting severance of the head, in Pech Merle (Lemozi 1929). In all, there are presently seventeen known ‘bear hunting images’ in Palaeolithic rock art (Morel – Garcia 2002), but none can be demonstrated to depict cave bears.

Among the sites that have provided apparently sound evidence for intentional deposition of cave bear bones are Drachenloch (Bächler 1940), Reyersdorfer Cave (Zotz 1939), Veternica Cave (Malez 1956; 1959; 1965) and possibly Salzofen Cave (Ehrenberg 1951 et passim; Trimmel 1950; Schmid 1957) (~34 ka BP). Leroi-Gourhan (1947) reports the striking positioning of ten bear skulls in the Caverne des Furtins, and there are similar finds in the Hungarian caves Homoródménfő, Istállóskő (Vértes 1951; 1955) and Kölyuk Caves (Vértes 1959, 160-2), and in Mornowa Cave (Brodar 1957, 154-5; Zotz 1944, 29).

The most persuasive evidence, in my view, are the several apparent depositions in Veternica Cave, 9 km west of Zagreb. Malez excavated 63 skulls and several hearths from the late Mousterian horizon of this relatively small cave. Along a wall 11 m from the entrance, six cave bear skulls were neatly arranged in a row, all with their occipitals resting against the wall and their snouts facing the cave entrance. A nearby skull and two mandibles showed extensive anthropic modification: all teeth and some other parts (*processus coronoideus* and *p. condyloideus*) had been removed by impact (some broken roots remained in the alveolar recesses), and many edges were modified by abrasion and polishing. One of the mandibles bears three man-made holes – Malez ex-

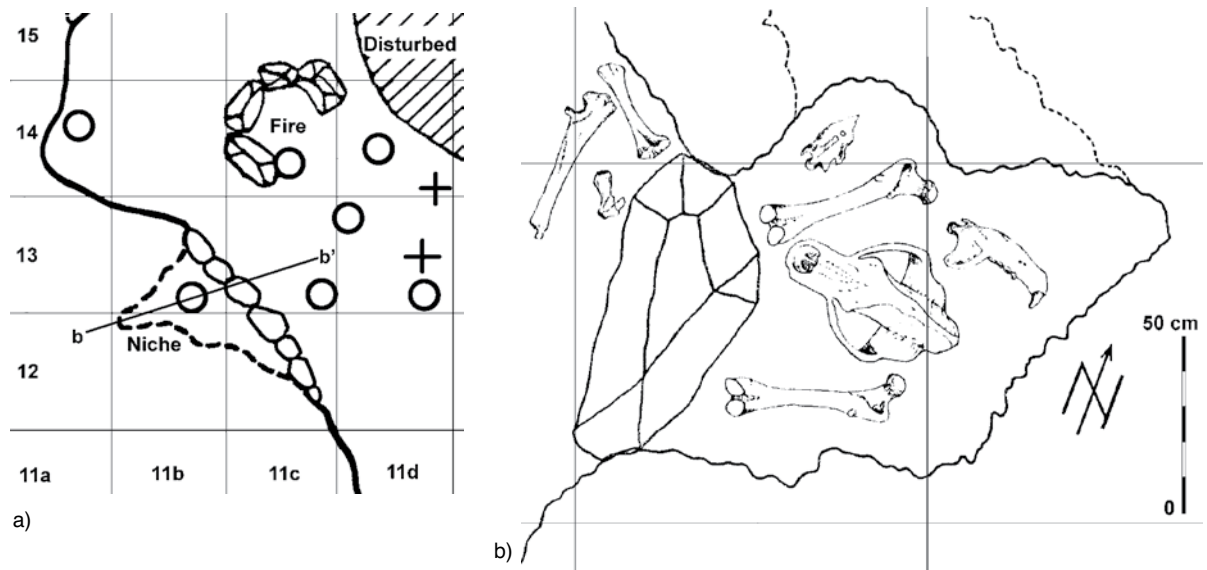


Fig. 1. Plan view (a) and section (b) of the western niche in Veternica Cave, Croatia, indicating the artificial masonry wall and other elements of the Final Mousterian. The circles indicate cave bear skulls, the crosses represent human skulls (after Malez 1959).

plicitly excludes the possibility that they are canine impressions. Such perforated cave bear mandibles, of which there are three in Veternica, have also been reported from Potočka Cave, a typical Olschewian site (Brodar 1938, 153), and from Drachenloch, Mokriška Cave and sites in Silesia (Zotz 1939, 27). Two other finds of deposited cave bear remains in Veternica are more persuasive. After completion of the excavation, Malez noted that a 2-m-long part of the west wall was not of bedrock, but had been artificially built. After removing the masonry wall he found a small niche, filled by the same strata as the space outside (fig. 1). He recovered a femur and cave bear skull facing the entrance, resting on the lowest sediment and coinciding with the late Mousterian occupation. On the opposite wall, just 5 m away, he had already excavated a similar niche, containing a skull flanked by two femurs, apparently of the same animal. A 1-m boulder had been used to close the entrance of

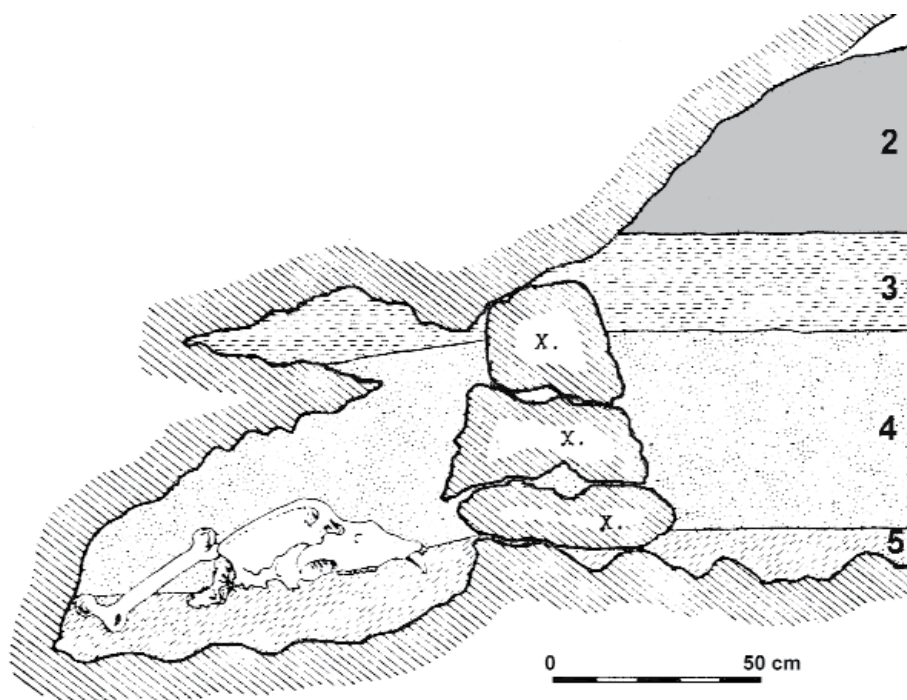


Fig. 2. Plan view of the eastern niche in Veternica Cave, indicating the locations of the cave bear bones within and in front of it, and the large boulder sealing it (after Malez 1959).

the small recess completely (*fig. 2*). The male skull it contained was the largest found in the entire cave, and accompanied by two mandibles. One of them had been extensively modified and perforated. Finally, at a fire place only one metre from the first niche, a cave bear skull, partially charred, was found resting against the charcoal, together with four apparently arranged boulders surrounding the fire remains (*fig. 3*). Various other cave bear bones in the site were also modified or charred.

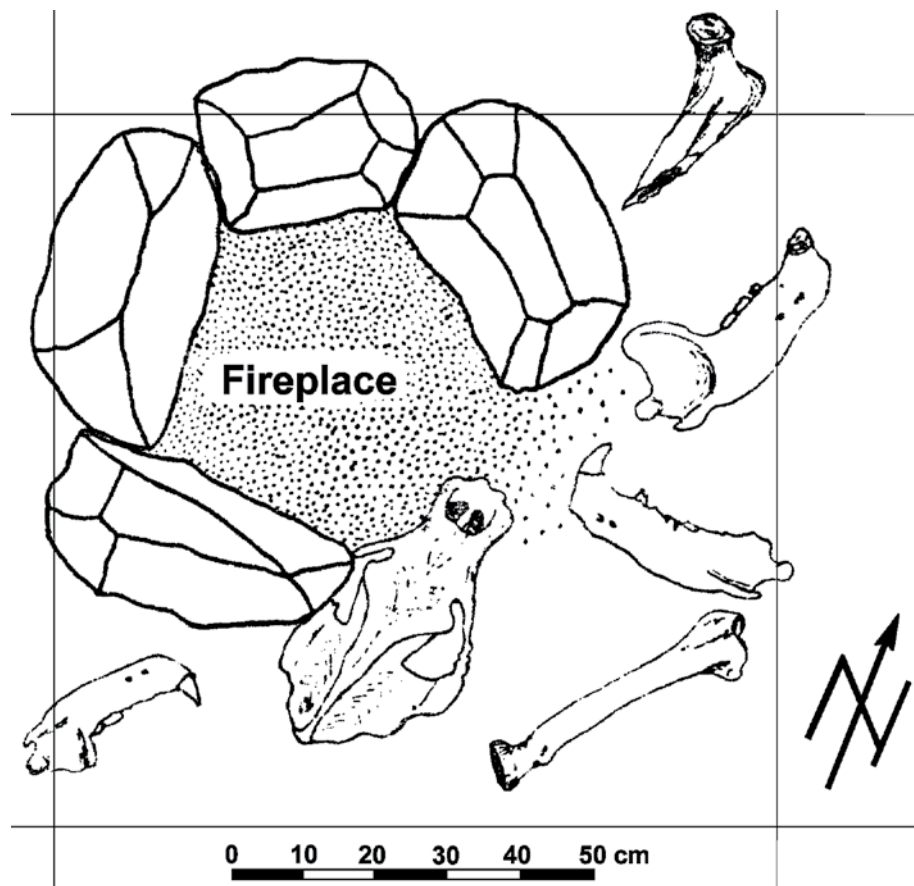


Fig. 3. Detail of the fireplace in Figure 1a, showing the locations of cave bear mandibles and a skull (after *Malez 1959*).

Recent evidence

The considerable body of evidence offered for the practice of intentional deposition of cave bear remains in the final Mousterian and EUP has been subjected to various refutation attempts, none of which produced decisive counterarguments. In reviewing the evidence in the year before the discovery of Chauvet Cave, the author therefore arrived at the conclusion that the neglect of the issue in recent decades was unwarranted (*Bednarik 1993a*). Neither side in the debate had produced conclusive evidence. On one hand, over-interpretation of scanty evidence had certainly occurred, but on the other, the opponents of the idea had also erred in many aspects, and had failed to falsify the proposition. Chauvet Cave provided a fascinating opportunity to test the idea of intentional positioning of cave bear remains. Its preservation is impeccable, both in the sense that the floors have been so perfectly maintained, and in the sense that researchers have avoided all damage to this incredibly well preserved site. The extensive floor area of approximately 20,000 square metres revealed 190 skulls of *Ursus spelaeus*, most of which occur in conspicuous accumulations. Some remains occur in articulation, apparently where individuals died in situ. However, the frequent occurrence of skulls in isolation is conspicuous, and in some of them the canines and incisors have been removed by impact. Most occur in upright positions, and one has been placed in a prominent location. It is perched on the edge of the upper, platform-like, horizontal surface of a conspicuous, table-like boulder in the Salle du Crâne. The angular block originates from the ceiling, 5 or 6 m higher, from where it fell, as did five others that are lying around the largest fragment. This rock remains in the same orientation as it was on the ceiling, i.e. the horizontal fracture surface formed when it was claimed by gravity came



Fig. 4. Floor plan of Chauvet Cave, showing the locations of three intentional depositions of cave bear bones.

to form the top of the 'table', and its narrow base is stuck in the cave floor. It now protrudes about 70 cm above the floor, which has remained as it was at least 24 ka ago. This prominent feature is located about 6 m west of the famous horse panel, among a collection of 52 further cave bear skulls on the floor, most of them surrounding this boulder. Underneath the elevated skull, which was indisputably placed on this 'table' by humans, occur charcoal fragments, probably from torches. The skull, slightly smaller than most others, rests with its premolars on the edge of the block, its canines pointing down [cf. Clottes (ed.) 2001, Figs. 202, 203].

There are two other clear examples of deposited cave bear bones in Chauvet, both found in the Salle des Bauges. This is a very large hall near the original entrance, containing only four skulls (fig. 4). In two cases, about 10 m apart and perhaps 30 to 40 m from the former, now collapsed entrance, occurs the combination of a cave bear skull with a cave bear humerus. In both cases the skulls are placed upright, and the humeri have been inserted into the ground perfectly vertically, at least half submerged in the sediment. In one case the long-bone is located close to the skull, in the other it is about a metre away, but precisely aligned with its longitudinal axis and in front of it. There are no other bones in the vicinity. In both cases the surrounding surface is entirely of fine-grained sediment and fairly flat. Fluvial action is not indicated, though the area appears to have been submerged under a shallow pond occasionally. It is extremely unlikely that these two placements are random, natural effects; the two humeri are the only elongate bones in the cave orientated vertically. If there had been fluvial turbulence, none of the other floor evidence (tracks, scratch marks) would have survived. Water flow

is of supercharged calcite solution forming flowstone, and derives from specific locations easily identifiable (the author witnessed an episode of water ingress after heavy rains in October 2004).

Another recent discovery of positioned cave bear skulls has been reported from Piatra Altarului (Altar Cave), one of a system of six caves in the Bihor Mountains in north-western Romania. The cave, over 3 km long, was only discovered in 1986. It was later found to contain at least two apparently deposited skulls with long-bones, both heavily calcified, and an apparent symmetrical arrangement of four skulls, one large and three smaller (*fig. 5*).

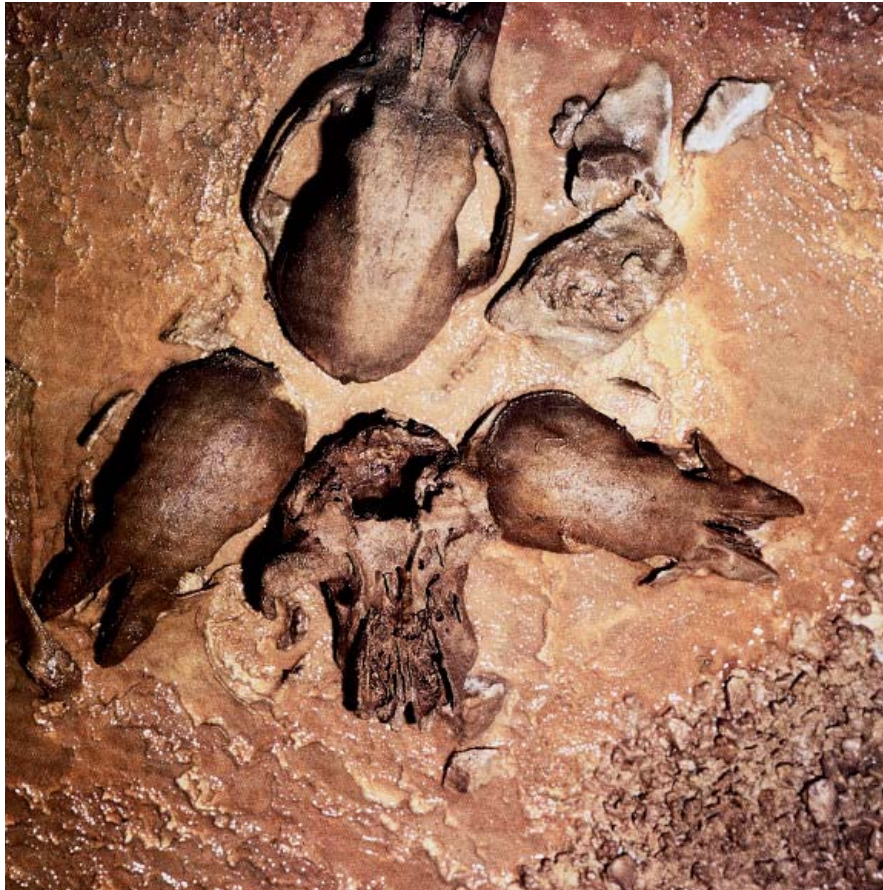


Fig. 5. Possibly intentional arrangement of four cave bear skulls on the floor of Piatra Altarului, Romania (Photo by Cristian Lascu).

Discussion

Many apparently intentional depositions of cave bear bones reported may well be the result of over-interpretation and it is undeniably correct that the vast majority of cave bear remains found in caves are of individuals that perished naturally. It is equally undeniable, however, that cave bears were hunted, from the Mousterian to the Mesolithic, in some periods occasionally, in others habitually. There is a sample of still numerous cases of intentional deposition that are not so easily explained away. For instance, in one of the Salzofen Cave skulls, a long-bone has been inserted through the eye socket, which because of the shape of the bone could only be achieved by twisting the long-bone in a specific way while inserting it from a specific angle. It seems impossible that this could have been achieved by taphonomic processes. Similarly, no natural process can account for the positioning of the skull on the stone 'table' of Chauvet, over charcoal fragments. The several deposited remains in Veternica Cave are impossible to explain without extensive human involvement. For instance, the wall in front of one niche was erected on top of sediment layer 5, at the same time as the bones inside the vault were placed, and was clearly in place as layers 4 and 3 accumulated on both sides of it. This clearly artificial wall was about 2 m long and its construction would have involved considerable effort. (Numerous examples of stonewalls

have been reported from Middle and even Lower Palaeolithic contexts; *Bednarik 1993b*.) The occurrence of a second sealed vault in the same cave, just 5 m east, and other finds from this cave and a great many other sites render it advisable to reconsider the possibility that cave bear remains were subjected to some specific attention. Deposited skulls in what have been described as ‘cists’ (boxes made of stone slabs) were already reported by Bächler. Nevertheless, the ample ethnographic evidence of bear cults, from across Eurasia and North America (e.g. *Hallowell 1926*), should not be cited to support of interpretation of Pleistocene material; rather, the Palaeolithic evidence needs to stand on its own.

The aspect of it some will find most disconcerting is that this kind of behaviour seems to straddle the Middle-Upper Palaeolithic divide. This, however, is an artificial separation that has no currency: almost all other human practices of the Middle Palaeolithic (e.g. palaeoart, such as cupule production) continue into the EUP (*Bednarik 1995*). Indeed, there is no significant objective separation also among UP traditions, they grade into one another spatially and temporally, as do the human groups of Europe. No dramatic change or replacement can be shown to occur at one point in time, and no evidence has been presented that the „Aurignacians“, for instance, were anything other than robust *H. sapiens*, either Neanderthaloid or „post-Neanderthal“ people (*Bednarik 2006; 2007*). Rather than discussing what may or may not fit into preconceived constructs of what happened in Europe between 45 and 25 ka ago, the author proposes to summarize the apparent features so far noted in respect of modification or placement of cave bear remains:

1. In numerous sites, accumulations especially of skulls are evident. No similar patterning has been observed in the occurrence of the remains of any other species. Selection by sediment transport is in many cases unlikely, and it would need to be explained taphonomically why random natural processes would select the remains of just one species.
2. Many of these skulls seem to have been placed intentionally, often together with long-bones of the same individual.
3. Where anthropic modifications of cave bear skulls and mandibles have been reported, the removal of teeth is often observed, and sometimes the presence of perforations.
4. Skulls that have been suggested to have been placed intentionally most often face the entrance, and other forms of apparent alignment have been observed.
5. No such phenomena have been reported from any cave bear hibernation site that lacks human occupation evidence. They most often occur in caves with extensive anthropic traces, such as fire use, stone tools and cave art.

Concerning the last point it needs to be appreciated that sites containing the remains of hundreds of thousands of cave bears are available for comparison. A case in point is the Drachenhöhle in Styria, which has yielded some 250,000 kg of their bones, yet not a single instance of intentional deposition has been reported. In Chauvet Cave, numerous articulated skeletal remains clearly indicate where animals perished, while other groups of surface bones are largely or exclusively of whole skulls. These lack wear from water transport or carnivore activity, and unless a more plausible explanation of how such accumulations could form naturally, and comprise the crania of just one species, Occam’s razor would suggest the direct involvement of humans. In view of the other phenomena listed, which demand an anthropic explanation, it should be considered that the people of the final Mousterian and the EUP followed a cultural practice of treating selected bones of the cave bear in certain specific ways. To refute the proposition, credible natural processes to account for all the described phenomena need to be presented.

SOUHRN

Mnohé „záměrně deponované“ kumulace kostí jeskynního medvěda mohou být výsledkem příliš horlivých interpretací a je nepopiratelné, že velká většina pozůstatků, které byly v jeskyních nalezeny, patřila přirozeně zemřelým jedincům. Stejně tak je ale nevyvratitelným faktem, že jeskynní medvědi byli loveni od moustérienu po mezolit, v některých obdobích příležitostně, v jiných běžně.

Stále existuje početná skupina případů „záměrného uložení“, která nemá jednoduché vysvětlení. Například u jedné z lebek nalezených v jeskyni Salzofen byla dlouhá kost prostrčena očním důlkem. Vzhledem k tvaru kosti toho mohlo být dosaženo pouze rotací této kosti během vkládání do lebky pod specifickým úhlem. Zdá se nemožné, že by toho mohlo být docíleno tafonomickými procesy. Stejně tak nehledíme přírodní proces za umístěním lebky z Chauvet na kamenném „stole“, která byla navíc položena na fragmentech uhlíků. Rovněž způsob uložení pozůstatků z jeskyně Veternica nelze vysvětlit jinak než jako výrazný lidský zásah. Například zeď před jedním z výklenků byla postavena na povrchu vrstvy 5, ve stejnou dobu, kdy byly do výklenku uloženy kosterní pozůstatky, a prokazatelně již existovala, když kolem ní vznikly vrstvy 3 a 4. Tato přibližně 2 metry dlouhá zeď byla bezpochyby postavena lidskou rukou a její stavba si vyžádala nemalé úsilí. (Četné příklady kamenných zdí jsou známy ze středopaleolitických a dokonce i staropaleolitických kontextů; *Bednarik 1993b*.) Přítomnost

další klenby v této jeskyni, vzdálené pouze 5 metrů východním směrem od zmíněné zdi, spolu s dalšími nálezy z této a mnoha jiných lokalit naznačují, že by bylo vhodné znovu zvážit možnost, zda nebyly kosterní pozůstatky jeskynního medvěda vystaveny zvláštní pozornosti. O lebkách uložených v „cistách“ (skříňkách vyrobených z kamenných desek) již informoval Bächler. Přesto by bohaté etnografické doklady medvědíh kultů, vyskytujících se v celé Eurasii a Severní Americe (např. *Hallowell 1926*), neměly sloužit k podpoře interpretací pleistocenního materiálu; s paleolitickými doklady je totiž třeba pracovat samostatně.

Aspektem, který by mohl mnohé zneklidnit, je fakt, že takový způsob chování smazává pomyslný předěl mezi středním a mladým paleolitem. Tento předěl je však uměle vytvořený a nemá paušální platnost: téměř všechny ostatní lidské činnosti středního paleolitu (např. umělecké projevy jako je výroba číšek) plynule pokračují do staršího mladého paleolitu (*Bednarik 1995*). Žádný významný předěl neexistuje ani v mladopaleolitické tradici, která se proměňuje spíše v závislosti na čase a prostoru, stejně jako lidské kulturní skupiny Evropy. Žádná dramatická změna nikdy nenastala v jednom momentě historie a dosud nebyl předložen jediný důkaz, že například nositelé aurignacienu se odlišovali od robustních *Homo sapiens* (*Bednarik 2006; 2007*). Raději než se dohadovat, co zapadá či nezapadá do předem vytvořených konstruktů o dění v Evropě v letech 45-25 000 B.P., navrhuji shrnout doposud zjištěné typické jevy související s modifikací či umístěním pozůstatků jeskynního medvěda:

1. Na mnoha lokalitách jsou patrné kumulace kosterních pozůstatků jeskynního medvěda; zejména se jedná o lebky. Podobné chování nebylo pozorováno v souvislosti s kosterními pozůstatky žádného jiného živočicha. Selektce způsobená přesunem sedimentu je v mnoha případech nepravděpodobná a muselo by být tafonomicky vysvětleno, proč by si nahodilé přírodní procesy vybíraly pozůstatky pouze jednoho živočišného druhu.
2. Zdá se, že mnoho z těchto lebek byly do svých pozic umístěny záměrně, často spolu s dlouhými kostmi, pocházejícími ze stejného jedince.
3. Tam, kde byly prokázány antropogenní modifikace lebek a čelistí jeskynního medvěda, lze často pozorovat odstranění zubů a někdy též perforace kostí.
4. Lebky, u kterých se předpokládá, že byly umístěny záměrně, jsou nejčastěji otočeny tváří ke vchodu do jeskyně a vykazují i další zjevné známky polohování.
5. Podobný jev nebyl zaznamenán z žádné hibernační lokality jeskynního medvěda, která nese zároveň i stopy využívání člověkem. Nejčastěji se tyto jevy vyskytují v jeskyních s výraznými antropogenními stopami, jako je například používání ohně, výskyt kamenných nástrojů či jeskynního umění.

V souvislosti s posledním bodem je nutné konstatovat, že pro komparaci disponujeme lokalitami, kde byly nalezeny až stovky tisíc kosterních pozůstatků jeskynního medvěda. Jeden příklad za všechny představuje jeskyně Drachenhöhle ve Štýrsku, kde bylo nalezeno asi 250 000 kg kostí tohoto živočicha, avšak ani v jednom případě nebylo zaznamenáno jejich záměrné uložení. Zatímco početné skupiny spojených kosterních pozůstatků v jeskyni Chauvet jasně ukazují, kde zvířata zahynula přirozeně, jiné, povrchové skupiny, jsou složeny z velké části nebo výhradně z lebek. Tyto skupiny nenesou známky vodní erozní aktivity ani aktivit masožravců, a pokud se neobjeví dostatečně hodnověrné vysvětlení, jak mohly tyto kumulace, skládající se z lebek pouze jednoho živočišného druhu, vzniknout přirozenou cestou, potom Occamova břitva ukazuje na přímé zapojení člověka. Ve světle zde představených fenoménů, vyžadujících antropogenetickou interpretaci, by mělo být vzato v úvahu, že lidé pozdního moustérienu a staršího mladého paleolitu provozovali kulturní zvyk, který zahrnoval zacházení s vybranými kostmi jeskynního medvěda specifickými způsoby. Vyvrátit toto tvrzení by mohlo pouze věrohodné vysvětlení všech výše zmíněných jevů přírodními procesy.

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