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Section V : Exotic, Prestige and Luxury trade

THE STATUS OF ELK DURING THE MESOLITHIC

Anne BRIDAULT *

Summary

The distribution of elk remains during the Mesolithic suggests a genuine geographical disparity in elk population densities probably due to more or less favourable ecological conditions. In northern and north-eastern Europe the high proportion of elk bones in faunal assemblages suggests that elk was an economic resource from Alleröd until Atlantic times. Elk remains are almost absent from the archaeological record of western Europe. Furthermore at those sites where elk is a scarce species, only certain skeletal parts, such as teeth and foot bones, tend to be found. Several kinds of explanation are presented, some involving the mode of acquisition of the remains (hunting or exchange of elk products) and the possible symbolic status of elk. There is strong evidence for the elk symbolic status within the latest mesolithic societies of northern Europe. This suggests that we should adopt a more open research strategy when considering earlier periods when there is less clearcut evidence for elk symbolism.

Key Words

Elk, Mesolithic, Europe, Symbolism, Exchanges

Introduction

The recent finds of a small number of elk remains, including a pendant, from a mesolithic site in the east of France (Rochedane), led us to consider the significance of scarce remains of this species (those where they contribute less than 1% of the bone remains) in the archaeological record for the mesolithic period.

The first problem is to know whether or not elk bones reflect a local presence of the species or whether,

Résumé

Le statut de l'Elan durant le Mésolithique.

La distribution des restes d'élan pendant le Mésolithique suggère une forte disparité géographique, probablement redevable de conditions écologiques plus ou moins favorables. Tandis que dans l'Europe du Nord et du Nord-Est, l'élan est une ressource économique importante depuis l'Alleröd jusqu'à l'Atlantique, il est quasi absent des sites archéologiques d'Europe de l'Ouest durant cette même période. Là où l'élan est rare, seuls certains des os de son squelette comme les phalanges ou les dents sont généralement retrouvés. Plusieurs types d'explication peuvent être proposés, notamment sur le mode d'acquisition (animal chassé ou produits échangés) et sur l'éventuel statut symbolique de cet animal. Dans les sociétés du Mésolithique récent du Nord de l'Europe, le statut symbolique de l'élan peut être mis en évidence. Pour les phases anciennes du Mésolithique où la lecture symbolique est moins évidente et moins directe une stratégie de recherche très ouverte est alors nécessaire pour raisonner sur les observations.

Mots clés

Elan, Mésolithique, Europe, Symbolisme, Echanges

in some cases, the elk remains have a non local origin with some skeletal parts having been circulated between communities.

The evidence used to address this issue is both ecological and archaeological, the latter including the representation of the different skeletal parts.

Secondly, archaeological contextual data are considered as they suggest that elk may have had not only a dietary importance but also a symbolic value in some mesolithic societies.

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The spatial distribution of Elk : quantitative data

The mesolithic period is defined here in its broadest chronological sense : a period between the end of the final Palaeolithic, 12,000 years ago, and the advent of the agropastoral economies. This latter occurred at different times in the various regions of Europe, with the latest mesolithic societies of the northern countries surviving until 3,000 BC.

Over this period, there is a genuine disparity between those areas where elk remains are predominant in faunal assemblages and those where elk remains are very scarce.

During the Mesolithic, four main geographic areas can be distinguished (fig. 1 ; tab. 1).

Area 1 consists of the Baltic republics and Bielorussia. Elk is predominant in faunal assemblages

throughout the whole period, comprising between 50 and 90 percent of the number of identified specimens.

Area 2 consists of the Scandinavian countries, and also Great Britain during the Preboreal. Elk is less abundant, its remains comprising a maximum of 30 percent of the faunal remains. Elk is most abundant at the beginning of the period up until the Boreal and at the inland sites, where terrestrial mammals were exploited.

Area 3 lies to the south of areas 1 & 2, and includes Great Britain (except during the Preboreal), northern and eastern France, Switzerland, and all areas to the north of a line running through northern Italy and the Carpathians to the north of Crimea. In this area, elk remains are found occasionally but never exceed 3 percent of the total. Elk remains are most common in the early and middle parts of the period.

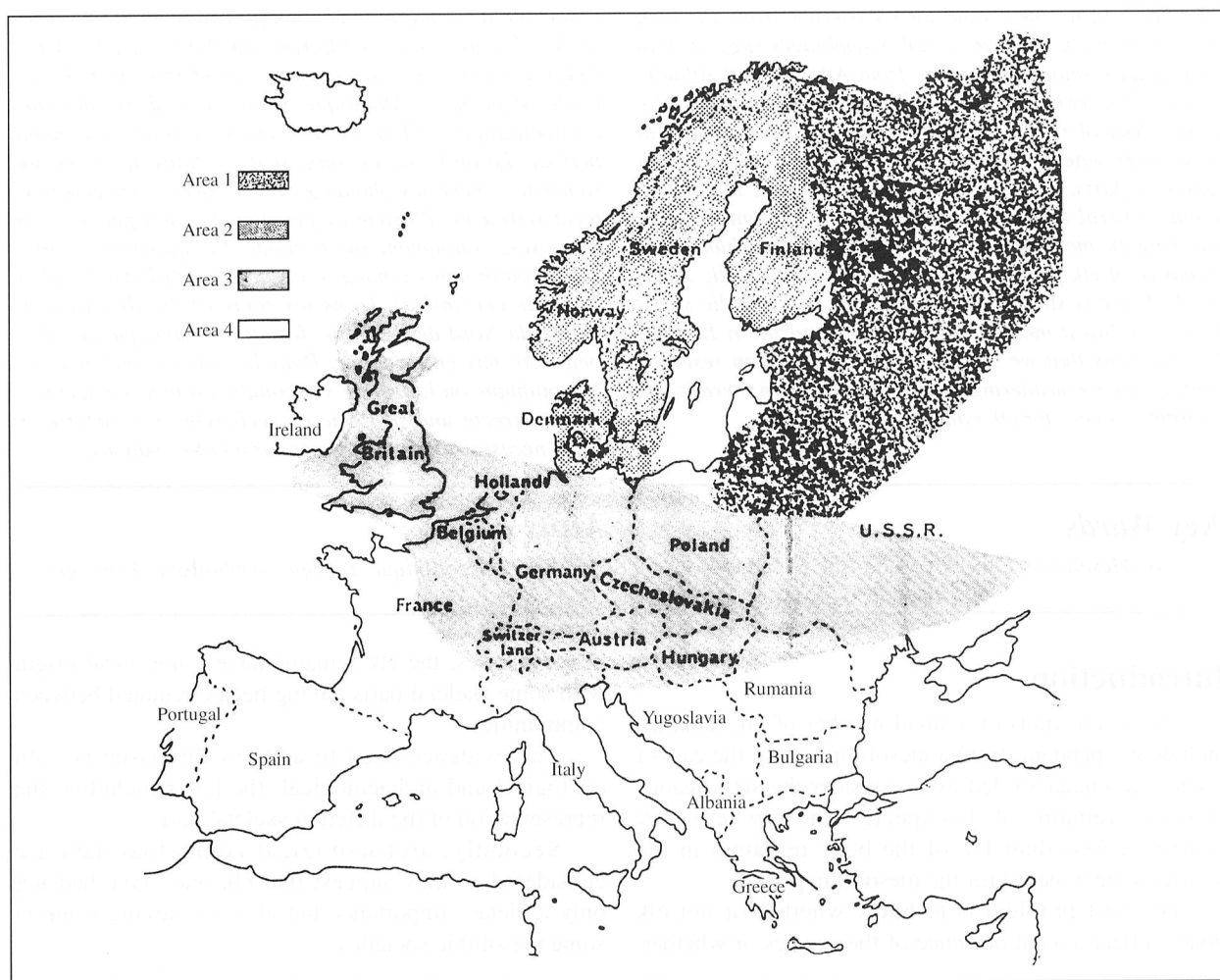


Fig. 1 : Distribution of the frequencies of elk remains (% NISP of the principal mammals) during the Mesolithic in Europe (10,000-3,000 bc). (after various authors).

Area 4 includes all the rest of Europe, south of area 3. Elk is almost never recorded as present in archaeological faunal assemblages.

The geographical and chronological variations in the frequencies of elk remains can be related to the evolution of climatic and vegetational zones and their influence on the migrations of elk populations.

During the Mesolithic, Europe was undergoing a gradual warming, as the ice sheets retreated, that lasted until the fourth millennium bc.

The general process of recovery from cold steppe to forest began earlier in the south than in the north of Europe with northern areas retarded in comparison to central and western Europe.

The succession of landscapes can be viewed as a gradual transition beginning with a very open pine forest during the Alleröd (9,800-8,800 bc), shifting to a closed hazel forest during the Boreal (6,800-5,500 bc), and to a denser mixed oak forest, almost without undergrowth, at the end of the mesolithic period, during the Atlantic.

These environmental changes led to a reduction in the extent of habitats that were suitable for elk populations, probably very early in the southern area, and from the Boreal times onwards in the other areas.

The favoured habitats of elk are sparse humid forest and boggy areas. They feed on the shoots and leaves of birch and willow and on aquatic plants. The closed landscape of the mixed oak forest of the Atlantic period in northern areas provided a much less suitable environment.

Thus, with the beginning of climatic warming around 9,800 bc, elk started to migrate from south-west of France, northern Italy, and Rumania where they had formerly lived. Their migrations seem to have been along the Danube valley to the Rhine and Rhône valleys through the Belfort region and Burgundy (DELPECH, 1989, 18).

Rochedane (Doubs, France) for example, is on this route and here almost all the elk remains are from the very early Mesolithic (tab. 1). However, elk is known to have been found in some places in Switzerland up until the Middle Ages (CHAIX & DESSE, 1981, 140), suggesting that favourable habitats still existed at this late period in some areas.

At sites in Central Europe elk remains are also recorded in the early Mesolithic, providing further evidence for their migrations (tab. 1) (SZMCZYCK, 1983 ; TOPAL and VÖRÖS, 1984).

The scarcity of elk remains in area 3 suggests two possibilities. Either elk was present, but was rarely

hunted, or the density of elk populations was very low.

In area 2, as the landscape became more densely forested, the proportions of elk remains in faunal assemblages decreased (DEGERBOL, 1964, 81-2). This decline is seen later (around 6,000 bc) in the northern parts of Scandinavia than in the southern ones (CULLBERG, 1980 ; LARSSON, 1980). On the Zealand island (east of Denmark), elk disappears at the beginning of the Atlantic, around 5,500 bc, and red deer, roe deer and wild boar become the common game animals.

Ecological data show that variations in the proportions of elk remains in faunal assemblages can be explained by variations in density of elk in space and in time, elk density being very low compared with other ungulates (ZVELEBIL, 1981, appendix 3 ; PRICE, 1980, 229, tab. 5).

In the case of area 3 the suggestion that small animal populations were isolated in certain regions must be evaluated with regard to the frequency of occurrence of the different skeletal parts, and the contextual data.

The nature of the remains : qualitative data

In the assemblages containing very few elk remains the skeletal parts which are represented are almost always phalanges and teeth, and occasionally fragments of metapodials (tab. 2).

The first possible explanation of this phenomenon is that there was local hunting but selective transport of bones to another location. The presence of head and foot bones in these assemblages could have resulted from the removal of these skeletal elements from the kill site to the residential camp. Some ethnographic observations have shown that the proportion of the skeletal elements moved any distance varies inversely with carcass size. Thus to minimize the costs of transport, the long bones of the largest carcasses are stripped of flesh and abandoned at the kill site (O'CONNELL and HAWKES, 1988).

However, in this case, the particular skeletal composition found does not seem to indicate this kind of kill site or butchering site pattern. If there were selective transport, why bringing back skeletal parts of low nutritional value and high load ?

The second possibility is that elk remains were of non local origin and non nutritional value. This view is supported by the presence of elk incisors including one made into pendant, in contemporaneous early levels of

Site	Skeletal part	MNI	Period
TAÏ*	1 incisor	1	Alleröd
CAMPALOU*	8 incisors + 4 canines 1 incisor, 1 fragment of metatarsal, 1 third phalanx of a lateral finger	2	Alleröd
ROCHEDANE B	1 incisor, 1 perforated and decorated incisor, 1 fragment of maxilla.	2	Alleröd
A2	1 first phalanx of a lateral finger	1	Boreal ?
SCHÖTZ 7	1 first phalanx, 2 fragments of metatarsal		Atlantic
BENUSSI	2 phalanges		Atlantic ?

Table. 2 : Details of the elk remains found at some sites in Area 3 (see fig. 1).

* data from F. Delpech, personal communication.

MNI : Minimum Number of Individuals

three sites in France (Rochedane, Tai and Campalou) (tab. 2). At Rochedane in level B, two incisors were recovered, one unworked, the other with a perforation on the root and transverse parallel lines decorating its convex face.

Since ornamental objects are the kind of objects that may be involved in exchange networks, and since elk seems to have been a scarce species in this area at that time, the possibility of an exotic origin for the bones must be considered.

The most likely sources of elk bones, should be those areas where elk is abundant, areas 1 or 2.

However, there is, to our knowledge, no parallel for the decorated incisor, in Europe, suggesting that any movement of elk remains was in the unworked state, perhaps to be transformed later on, at the site. This could explain the presence of the other unworked incisor found with the pendant at Rochedane, and the presence of unworked teeth at the other contemporaneous sites.

During the Mesolithic examples of long distance movement of sea shells are known (PRICE, 1987 : 289). But, in this example the foreign provenance of the shells cannot be doubted, whereas this is much more difficult to establish for the elk teeth.

Only elk teeth pendants recovered from the Danish cemetery of Vedbaeck on the island of Zealand are clearly recognizable as exotic items, probably from Sweden, because elk was extinct in Zealand at the time (PRICE, 1985).

At Rochedane, the teeth were not found in graves, and they were associated with a fragment of upper maxilla. It seems rather unlikely that complete head would have been exchanged since it was a fragile and perishable item, unless the skull and the mandible had been exchanged as a hunting trophy, once the flesh had decayed.

Finally, the association of incisors and canines with fragments of maxilla and foot bones, is more in agreement with a view that the elk bones were acquired, and, in the case of the Rochedane pendant, worked locally than with one that the items had a non-local origin. However, all these skeletal parts - front teeth, maxilla and foot bones - could have had a special value, due to a status held by the elk itself.

We do not have enough data to explore this hypothesis, but we can further investigate the possible symbolic status of elk.

The status of elk : symbolic information

The best data come from the northern areas (areas 1 and 2) during the Boreal period when elk was clearly an important economic resource.

Several categories of information are relevant in recognizing both that there is a symbolism associated with the elk and that there is also a peculiar symbolic paradigm emerging from the data.

Elk remains are found in the settlements as well as in the cemeteries, but in some cases, the graves associated with a settlement (for example at Vedbaek-Bogebakken in Denmark) contained elk teeth pendants although no elk remains were found amongst the faunal remains from the settlement (BRINCH PETERSEN, 1973 : 87). This suggests that certain remains were deliberately selected for inclusion in graves.

The particular skeletal parts of elk found in mortuary contexts are interesting. They consist mainly of perforated elk teeth. One unworked tooth was found in association with perforated teeth in a grave of a woman and a child at Skateholm I (Sweden) (grave n°6), a site belonging to a middle phase of the Ertebolle culture (LARSSON, 1990 : 372), and unworked fragments of elk jaws, joints and phalanges were found in a ritual pit at Popovo (Karelia, URSS) (OSHIKINA, 1990 : 412). Here the archaeological context of the finds suggests that in some societies, certain skeletal parts such as teeth and foot bones had a symbolic value.

The symbolic treatment of the carcasses of hunted animals is also revealed by finds of late Preboreal (7,660 - 7,590 bc) at two Danish bog sites, Skottemarke and Favrbø. The deposition of the bones bearing unusual patterns of breakage (particularly the breaking off of the spine of the scapula) has been regarded as a type of ritual or hunting magic (MOHL, 1978).

The other interesting characteristic of the symbolic aspect lies in the fact that all the artifactual representations of elk emphasize one particular part of the body of the animal, the head.

These include a sculpture in amber, wooden skis with a sculpted elk head and an ornamental knife with an elk head (tab. 3).

The artefacts and the numerous pendants of elk teeth, suggests the structure of a code. This code gives us one important piece of information, that elk had a symbolic status and special values were associated with some of its bones.

To demonstrate that the elk has a symbolic status is one thing, but to understand the nature of the status is another. A code can organize information and enlighten the social context (SPERBER, 1974) but since each society elaborates its own code, there can be no general answers.

Elk could be a clanic symbol, or elk could be associated with chamanism, or with individual or group prestige. Since prestige has a social value, the systematic analysis of the distribution of elk effigies and

elk remains among the different graves of a cemetery or among the sites of an area should be profitable in the evaluation of this dimension. This field of research has begun to be explored and has suggested the existence of a social differentiation in the late mesolithic societies of northern Europe (O'SHEA and ZVELEBIL, 1984). In these late societies the bestiary of the graves is far richer than in earlier periods (although they could merely have become more visible). The quantities of elk pendants found at Oleniy Ostrov (URSS)(tab. 3) requires us to consider the manner in which those skeletal elements were obtained and thus the structure of the acquisition and-or redistribution involved.

The main questions that emerge from diachronical analyses is why the phenomenon appears so late in the mesolithic period and why only in certain mesolithic societies ?

Conclusion

This consideration of the occurrence of elk remains touches on several important archaeological questions. We must attempt to evaluate the status of those species whose remains are scarce, and include only certain skeletal parts. We must also be aware of the possible symbolic status of animals in prehistoric societies despite the difficulty of finding relevant criterias of analysis to attest it or understand it.

By taking a rather large time scale, it has been possible to show that the two aspects of the problem could be independant (elk symbolism appears where elk is common in the environment and abundant in the diet).

When dealing with ordinary material such as bone (versus ivory for instance), it is not easy to find relevant criterias to attest the movement of animal products. Bone is not in itself a precious material unless the animal has a special status. Scarcity of a species could have been a reason to keep and work certain bones of a hunted individual or to acquire certain bone items through exchange. In the areas where the species was abundant, specially in societies where there is evidence of vertical differentiation, the possible movements of elk products could rather be viewed as the result of interaction between the members of a group, such as redistribution from one or several social centres to the rest of the group.

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Site	% NISP ²	Period	Culture	Reference	Site	% NISP ²	Period	Culture	Reference	
USSR					Pagès (Lot)	0	Dryas III ?	Azilian	Niederlander & al., 1956	
Kunda (Estonia)	92	Boreal	Kunda	Kozlowski, 1989	Pégourié (Lot)	7-4	0	Alleröd ?	Azilian	Thévenin, 1982
Mirnoe (Ukrainia)	0	Boreal	Kukrek	Kozlowski, 1989	Pont d'Ambon (Dordogne)	3b	0	Dryas III	Azilian	Delpech, 1979
Narva I-III (Estonia)	50*	Atlantic	Kunda	Kozlowski, 1989	Poeymau	7	0		Azilian	Thévenin, 1982
Pulli (Estonia)	92*	PreBoreal	Kunda	Kozlowski, 1989	(Pyrénées At.)	6	0	Dryas III	?	
Zatsenye (Bielorussia)	50*	Bor.- Atl.		Kozlowski, 1989		5-3	0	PreBor.-Bor.	Arudien	
Zienieki II (Latvia)	51*	Boreal	Kunda	Kozlowski, 1989	Rochedane (Doubs)	B	<1	Alleröd	Azilian	Thévenin, 1982
Fat'ma (Crimea) 3-4	0	Boreal		Kozlowski, 1989		A4	0	PreBoreal	Post-azilian	
						A3	0			
						A2	<1			
FINLAND					Rhodes II (Ariège)	F5-F7	0	Alleröd	Azilian	Thévenin, 1982
Inland sites	+		Maglemose	Broadbent, 1989		F7	0	Dryas III	Azilian	
NORWAY					Rochereil (Dordogne)		+	Alleröd	Azilian	Desbrosse & al., 1974
Viste (Stavanger)	8	Boreal-Atl.		Ingrelid, 1978	Rouffignac (Dordogne)		0	PreBor.-Boreal	Sauveterr.-Tarden.	Delpech, 1974
						3	0	PreBoreal		
SWEDEN					Saint-Thibaud-de Couz (Savoie)	6B1-6B2	0	Alleröd	Azilian	Thévenin, 1982
Agerod I H+C (Scania)	6	Boreal	Maglemose		Tai (Drôme)	C'1	+	Alleröd	Azilian	Delpech, n.p.
Agerod I D+B (Scania)	4	Bor-Atl.	Maglemose	Jarman, 1972	Tourasse		+		Azilian	Desbrosse & al., 1974
Agerod V(Scania)	8	Atlantic	Kongemose	Jarman, 1972						
Heden (Vasterbotten)	8	Atlantic	Ertebolle	Broadbent, 1978						
Lundfors A (Vasterbotten)	<1	Atlantic	Maglemose	Broadbent, 1989	GERMANY					
Skateholm II (Scania)	0			Larsson, 1989	Bedburg-Konigshoven	0	PreBoreal	?	Street, 1989	
Tjikkitrask (Lapland)	91	Atlantic		Broadbent, 1978	Duvensee (Schleswig-H.)	0	Boreal	Duvensee	Jarman, 1972	
					FalkensteinHole	0	Boreal-Atl.	Frühmesol.-Spätmesol	Taute, 1978	
DANEMARK					Friesack	+	PreBoreal		Gramsch & al., 1989	
Aamolle	0	Atlantic	Ertebolle	Bay Petersen, 1978	Hohen Viecheln (Mecklenburg)	3	Boreal	Duvensee	Schuld, 1961	
Bromme	+	Allerod	Bromme		Jagerhaus-Höle (Kreis Tuttligen)	13-6	0	PreBoreal-Atl.	Frühmesol.-Spätmesol.	Taute, 1978
Dyrholm	3	Atlantic	Ertebolle	Bay Petersen, 1978	Stellmoor (Schleswig-H.)		+	Dryas III	Ahrensburgian	Rust, 1943
Ertebolle (Jutland)	<1	Atlantic	Ertebolle	Jarman, 1972	Zigeunerfels	D	+	Alleröd or D.III		Thévenin, 1982
Faarevejle	0	Atlantic	Ertebolle	Bay Petersen, 1978	(Kreis Sigmaringen)	C		PreBoreal	Frähestmesolithikum	Thévenin, 1982
Hallebygaard	0	Atlantic	Ertebolle	Jarman, 1972	SWITZERLAND					
Hesselbjerggaard	9	Boreal	Maglemose	Bay Petersen, 1978	Balm unter der Fluh (Soleure)	0			Azilian ?	Stampfli, 1979
Homegaard *	+	Boreal	Maglemose	Bay Petersen, 1978	Birseck Schlossfels (Bäle)	0	Dryas III ?		Azilian	Stehlin, 1918
Kildegaard	0	Atlantic	Ertebolle	Bay Petersen, 1978	Birseck Höher Felsen	0			Azilian	Thévenin, 1982
Klinteso	0	Atlantic	Ertebolle	Bay Petersen, 1978	Birs Matten (Bern)	H5	0	PreBoreal		Schmid, 1963
Maglemose	23	Boreal	Maglemose		H3-H4	0	Boreal	Sauveterrian		
Meilgaard (Jutland)	0	Atlantic	Ertebolle	Bailey, 1978	H1-H2	0	Atlantic	Tardenoisian		
Norslund	<1	Atlantic	Ertebolle	Bay Petersen, 1978	Col des Roches				Tardenoisian	
Svaerdborg (Zealand)	22	Boreal	Maglemose	Bay Petersen, 1978	Höhle bei Soyhières	0				Stehlin, 1918
Tingbjerggaard	6	Atlantic	Ertebolle	Bay Petersen, 1978	La Baume d'Ogens (Vaud)	0				
Vinde Hesinge	28	Boreal	Maglemose	Bay Petersen, 1978	Liesbergmulhe (Bern)	<1	Atlantic			Stampfli, Ms
GREAT BRITAIN					Neumühle (Bern)	0	Alleröd ?			Thévenin, 1982
Cushendum	0			Jarman, 1972	Schötz 7 (Lucern)	<1	Atlantic	Azilian		Stampfli, 1979
Glenarm	0			Jarman, 1972	Tschäpperfels	0	Atlantic	Tardenoisian		Stampfli, 1963
Mother Grundy's Parlour	0			Jarman, 1972	POLAND					
Oban	0			Jarman, 1972	Janislawice	0	Janislawice			Jarman, 1972
Oronsay	0			Grison & al., 1987	TCHECOSLOVAQUIA					
Star Carr	23	PreBoreal	Maglemose	Legge & al., 1988	Sered I (Vah)	0	Boreal-Atl.	Tardenoisian		Barta, 1973
Tatcham (Berkshire)	1	PreBor.-Bor.	Maglemose	Wymer, 1962	ROUMANIA					
Westward Ho !	0	Atlantic		Jarman, 1972	Cuina Turcului (Iron Gates)	I	5	D II-Alleröd	Romanello - Bolomey, 1973	
FRANCE						II	2	Dryas III	azilian-	
Campalou (Drôme)	2	+	Alleröd	Azilian	Icoana I (Iron Gates)	0			Romanello-azil.	Bolomey, 1973
Chataillon (Doubs)	0	Boreal-Atl.		Petrequin & al., 1983	Erbiceni (Moldavia)	0	Boreal	Tardenoisian		Paunescu, 1989
Chateauneuf (Bouches du Rhône)	7-8	0	Boreal	Jarman, 1972	Ostrovu Corbului	I-II	0		Schela Cladovei	Paunescu, 1989
Chazelles (Ardèche)	VIIIb	0	Alleröd	Azilian	YUGOSLAVIA					
Colombier (Ardèche)	3	0	Alleröd	Azilian	Lepenski Vir (Iron Gates)	I	0			Bokonyi, 1972
	2	0	Alleröd	Azilian	Smolín (Moravia)	0	Boreal			Valoch, 1989
	1	0	Alleröd	Azilian	Vlasac (Iron Gates)	0	Boreal			Bokonyi, 1975
Cornille (Bouches du Rhône)	0				ITALY					
Couffin I (Isère)	F7-F4	0	Boreal	Thévenin, 1982	Arene Candide (Liguria)	0	Dryas III			
	F3-F1	0	Atlantic		Benussi (Trieste)	8	0		Sauveterrian	Riedel, 1976
Cuzoul de Gramat (Vaucluse)	I	0	Sauveterrian	Lacam, 1944		6	0		Sauveterrian	
	II	0	Tardenoisian			5	<1		Carso	
Dumas (Ardèche)	8-7	0	Alleröd	Azilian	Combier, 1977		E	0	Triestino	
	6-5	0	Azilian							
Escabasse (Lot)	0			Astre, 1966	1 : % calculated on the principal mammals					
Gramari (Vaucluse)	5	0	Dryas III	Sauveterroid	Poulain, 1971	2 : % of number of identified specimens (bone remains)				
	3c	0	PreBoreal	Sauveterroid	Poulain, 1971	* : approximate percentages				
	3b	0	Boreal	Sauveterroid	Poulain, 1971	+ : present				
La Balme-de-Thuy (Haute-Savoie)	8A	0	Dryas III	Azilian	Ginestet & al., 1984	N.B. : at Tai the number of elk bones is 1 ; at Campalou, 12, (pers. comm. from F. Delpech)				
	7A	0	PreBoreal	Azilian	Ginestet & al., 1987					
	6	0	Boreal	Sauveterrian	Martin & al., 1984					
La Faurélie (Dordogne)	2-3	0	PreBoreal	Azilian	Thévenin, 1982					
La Roche aux Gours (Doubs)	0		Azilian	Piningre & al., 1976						
Mannfelsen I (Haut-Rhin)	S-H	0	D.III-Atl.	Azilian-"Méso. de transition"	Thévenin, 1982					
Oullins (Ardèche)	13	0	Dryas III	Azilian	Combier, 1967					

Tab. 1 : Percentages of elk bones from european mesolithic sites¹.

Period	Site	Area	Context	unworked	Elk teeth worked	Elk raw bones	Elk artifactual representations	Local presence of elk
Atlantic	SJOHLMEN	2	settlement		1 perforated			?
Atlantic	OLENIY OSTROV	1	cemetery		4273 (Gurina, 1956)		antler sculptures of elk	very numerous
Atlantic	BOGEBAKKEN	2	cemetery		beads of teeth			missing
Atlantic	SKATEHOLM I	2	grave 53 grave 6 grave 21	1	4 perforated incisors perforated teeth bead of teeth			scarce scarce
Atlantic	SKATEHOLM II	2	grave XVII					
Boreal	EGEMARKE	2	1 lower molar					
Late Boreal	AGEROD I : H	2	grave		perforated incisor & canine		sculpture of a head in amber	numerous numerous
Boreal-Atl.	VIS I	1	grave				wooden skis with sculpted head	very numerous
Boreal	NIZHNEYE VERETYE I	1 1	settlement settlement				knife with hilt crowned with a head	very numerous very numerous
Boreal	POPOVO	1	cemetery (ritual pit)			jaws, joints & phalanges		very numerous
Preboreal	SPIGINAS	2	grave 4		3 perforated incisors			very numerous
Alleröd	ROCHEDANE B	3	settlement	1 incisor	1 perforated & decorated incisor			scarce or missing

Table 3 : Elk remains of symbolic value ; pendants found in graves or settlements ; unworked bones associated with pendants ; bones recovered in cemeteries ; effigies of elk (after various authors).