Why animal bones in human graves

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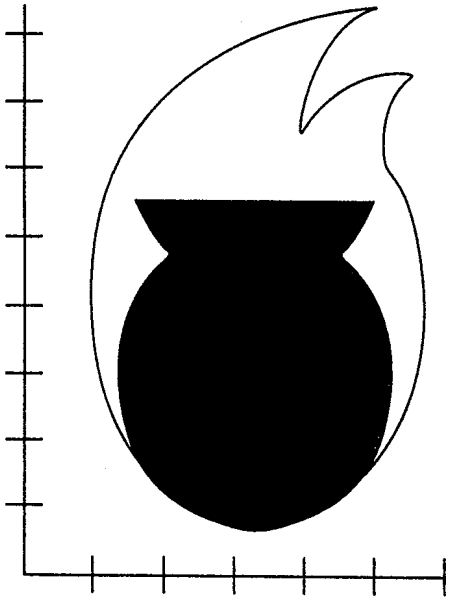

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WHY ANIMAL BONES IN HUMAN GRAVES - AN ATTEMPT TO INTERPRET ANIMALS PRESENT IN IRON AGE CREMATIONS IN SWEDEN

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Summary

In Sweden few cremations during the Iron Age contain all bones of the deceased human being. In the Early Iron Age in Sweden only human bones are found in most graves. During the Late Iron Age animal bones are often present among the burnt bones. This is believed to be caused by a shift in religious believes. In spite of this, 20% of the graves or more do not contain animal bones. Why is that? Further, the animal bones present in the cremations reflect the animals present on the farm, social rank of the individual and/or the family and the religion. How could these different cultural signals be separated and interpreted? The influence of animal production on burial traditions is discussed as the content of cremations is compared to the animal refuse in Iron Age settlements. Further, social stratum is enlightened when comparing the animal content in burials of commons to large and richly equipped mounds as well as richly equipped inhumations. Indications of high as well as low social stratum is registered. To a certain extent the religious symbols were enlightened by literature and historical sources on religion. The content of animal bones in cremations seems to be dependent on social rank of the deceased, on the animal production of the society but most of all on religious believes.

Keywords: *cremation, Iron Age, Sweden, animals, religion*

Introduction

From many osteological analyses of cremation graves in Sweden it is well known that the number of animal bones increase from the Early to the Late Iron Age. This change relates to the number of individuals as well as the number of animal species (e.g. Gejvall, 1961; Iregren, 1972; Sigvallius, 1994). As many changes also occur in the inner and outer construction of the graves and in the burning and handling of the bones these changes have been interpreted as signs of a change in religious believes followed by changes in the performance of rites. This so called "shift" has been placed in the Migration Period in the Lake Mälaren area (A.D. 400-550) (e.g. Ferenius, 1971; Bennett, 1987; Welinder, 1989; Biuw, 1992).

On the other hand, osteologists in Sweden have most often related the representation of species - even in the burials - to the economy, that is farming and cattle breeding in the country side. On rare occasions, though, scientists working within archaeology or with the study of religions have made attempts to discuss the specific animal species in terms of religious attributes (e.g. Ström, 1980; Hvoslef-Krüger, 1988; Welinder, 1989; Olausson, 1995).

Further, archaeologists as well as osteologists have often tried to enlighten if there is a relation between certain species or in the number of individuals and the social rank of the deceased (Petré, 1980; Iregren, 1972; Bennett, 1987; Sten & Vretemark, 1992; Kaliff, 1992).

This contribution is a study based on the assumption that animal bones in graves give us different signals. As I see it, the animals present give information on economy, on social rank and on religion of the deceased, simultaneously. The difficult question is how to separate and interpret these different signals. My idea is that bone material from other activities performed in society may enlighten the causes of animal representation in burials. This work was inspired by Welinder (1989) where he discussed specific animals important in Norse religion and the animal content of cremations. In this article, I have put more data into the debate.

The fundamental question is "what is a human burial"? It is, of course, the disposal of a dead body but it is also a kind of "dwelling on earth" of the dead ones. The constructions, artefacts, and different remnants etc. give us a number of vague clues of rites performed in connection with this *rite de passage.*

The burial with its contents is further a demonstration of family economy, family bonds, social rank, sex, gender, age, ethnic affiliation and personal interests or characteristics (cf. Welinder, 1989). Here, I will leave out the themes of age, sex and gender in connection with the animals. Up till now, I want to stress, we have not found that any species is reserved for any of the sexes (e.g. Iregren, 1972; Sigvallius, 1994). Further, the burial also shows traces of rites performed and religious believes of the deceased or his/her family members.

Materials and Methods

This is a case study and data have, in the first place, been collected on occurrence of animal bones in graves from 23 *common burial grounds* in Middle Sweden (the Lake Mälaren area) (see appendix). I have not used single graves but more or less complete burial grounds where most cremations have been analysed. The graves are dated from the Pre-roman Iron Age to the Viking period - this period covers more than 1000 years. I regard the overwhelming majority of these burials to represent the commons. The appendix consists of a list of the osteological materials used.

To enlighten the economical base of survival and nourishment of these people I have summarised data on animal refuse from Iron Age *settlements* in different parts of Sweden (Scania, Gotland, Öland, Lake Mälaren area) (See appendix). These are not all analysed Iron Age settlements known in Sweden but they represent a fairly large proportion of them. Both published and unpublished data have been used.

To be able to discuss the social and economical strata of the Iron Age I have made use of the content of animal bones in very *large burial mounds* which represent the uppermost level of this society. The dimensions of these graves are large as well as the bone contents (Hedelin, 1988; Sten & Vretemark, 1992; Sten, 1993; Iregren, 1996). Also, the burial gifts are extremely rich. As a further comparison *richly equipped* inhumations have been investigated. These also give clues to representativity (Stolpe & Arne, 1912; Arne, 1934; Arwidsson, 1942, 1954, 1977).

The graves are listed in the appendix and are spread out over the landscapes Uppland, Södermanland, Närke and Småland.

The religious believes and rites during the Iron Age Sweden are enlightened by the bone finds from four different sacrificial sites from the landscapes of Jämtland, Scania and Öland (see appendix). Literary sources on the Norse religion will be briefly referred to.

This is a vast material, so I have used datings and osteological data already published. The results of eight burial grounds are from my own studies as well as those from the sacrificial site below the Frösö church and from one large burial mound. I encourage my colleagues to continue the discussion of cremations and the ideas presented. Also, I ask the reader not to focus on single figures. I am sure that there are miscalculations as thousands of numbers have passed through my calculator.

Limitations

Some definitions must be mentioned here. As one burial I have used (a) collection(s) of bones registered as a separate unit by the archaeologist. Human bones must be represented in the cremation to be included in the analysis. To be able to evaluate this large and heterogeneous material I have not used all details available from the osteological analyses. I have not made use of the data on unburnt animal bones in cremations as these might represent other believes or actions than the cremated bones. One argument for this is that their frequency varies during different periods of the Iron Age.

Further, I have not separated the data relating to the fact whether the animals were likely to have been placed complete or only in parts on the funeral pyre. These results are sometimes more a question of probabilities than proves. Also, I have not used the number of animal bone fragments in a burial but the occurrence of the species. My data concerns mainly if a certain species is present or not. Because of my generalisations I might loose information but on the other hand I regard the data used as more secure.

Also, I have tried to sort out burials with bones from two human individuals. The frequency of these graves mount to about 3-7% in the Lake Mälaren area (Iregren, 1972:39ff; Sigvallius, 1994:121ff).

Source critical remarks

One disadvantage of the present material is that the very rich burial mounds as well as the settlements are distributed over a larger geographical area than the common burials. Further, there are only four sacrificial sites which are situated in different parts of Sweden. Of course, it would be ideal if all investigated monuments had been situated in the same area. However, one should look upon my contribution as an attempt to discuss these questions. My perspective is broader than that of many earlier works (including my own) and the interpretations here are based on archaeological and osteological material where literature or historical sources only form a background.

Another important aspect of representativity is that we know that the bones often were transported from the site of the funeral pyre to the place of burial and that only some of the bones of the deceased were buried. As today, it seems as if the cremation and the acts in connection with the actual burning were more important than the burial of the bodily remains. In other cases the deceased and the animals or parts of animals were cremated and buried on the same spot and can be used for comparison. Inhumations are, further, valuable when discussing the content of burials. They also suffer from destruction but, at least in some respects, it is less heavy than a fire...

Economy, results and discussion

In cremation graves in Middle Sweden a large number of animal species have been found. Most often domestic species occur, but also a few hunted mammal species, a few fishes and birds are present. Sometimes fur bearing animals or on rare occasions birds of prey manifest themselves.

There is no doubt that, most animals represented in the graves are the common farm animals that were at hand for work and utilisation. They formed the base of meat consumption, survival and prosperity. Thus, it must be said that the economic base and people's nourishment is clearly visible in the graves. On the other hand, the frequencies of different spe-

cies in the cremations do not mirror the settlement Late Iron Age material, which I will demonstrate (Tables 1, 2, 3).

The most common species present in the Late Iron Age cremation graves is the dog (Iregren, 1972a, 1972b, 1994; Sigvallius, 1994). According to Sigvallius (1994:147) the dog occurs in about 2/3 of the graves. In the settlement the number of dog bones rarely reach 1-2%. Thus, there is a considerable difference.

Regarding the horse, it is represented in about 1/3 of the common cremations (Sigvallius, 1994:147) during this period. Horse bones from settlements show a very variable and different picture, however. In most sites the frequency of horse fragments mount only single percent, while in some sites in Scania and Gotland they reach around or above 20%. In spite of this, the horse is over-represented in many of the burial grounds. In this context one must also bear in mind the possibility of Iron Age offerings of domesticates in connection with buildings (cf. Paulsson, 1993).

Table 1. Animal refuse in Iron Age Settlements in the Lake Mälaren area (number of fragments, % of mammals and dating)

Sites	Birka		Birka[1]		Helgö houses		Helgö houses		Helgö houses	
	1969-71		1991-1992		group 2		group 3		group 4	
Dating	7-9th cent		7-9th cent		A.D. 150-750		A.D. 200-800		A.D. 300-850	
Species	N	%	N	%	N	%	N	%	N	%
Horse	2	+		+	8	1	19	1	17	2
Dog	18	+		+	3	+	0		2	+
Sheep/Goat	1884	12		<10	314	39	876	46	260	29
Cattle	4481	43		60	230	29	605	32	463	51
Pig	4023	39		25	237	30	403	21	160	18
Cat	21	+		+	0		0		4	+
Bear	0			?	0		0		0	
Hen	71			+	0		1		0	
Birds of prey	0			?	0		0		0	

[1] Note that the percentage in this site refers to weight of animal bones.

Table 2. Animal refuse in Iron Age Settlements in Scania and in Gotland (number of fragments, % of mammals and dating)

Sites in Scania	Stockhomsg.		Rinkaby 13, 26		Trehögsparken		Oxie	
	Valleberga		Rinkaby		Fosie		Oxie parish	
Dating, century	5-9th		11th		11th		11th-13th	
Species	N	%	N	%	N	%	N	%
Horse	98	22	22	4	9	5	3	1
Dog	3	+	3	+	2	+	1	+
Sheep/Goat	77	17	167	27	62	35	59	24
Cattle	172	39	284	46	39	22	49	20
Pig	93	21	139	23	65	37	129	52
Cat	0		0		0		0	
Bear	0		0		0		0	
Hen	3		5		6		10	
Birds of prey	0		0		0	0		

Sites	Fjelie 19:3-6		V. Karaby 3:1		Vallhagar,	
Scania/Gotland	20:1, Scania		4:1, Scania		Fröjel, Gotland	
Dating	Late Iron Age		Late Iron Age		A.D. 100-550	
Species	N	%	N	%	N	%
Horse	96	29	110	14	191	19
Dog	4	+	2	+	13	+
Sheep/Goat	34	10	171	21	334	34
Cattle	117	36	335	42	403	40
Pig	79	24	184	23	51	5
Cat	0		0		2	+
Bear	0		0		0	
Hen	0		0		52	
Birds of prey	>2		0		3	

Let us also investigate "a true meat animal" for the attempt to enlighten the grave rites by settlement finds. I chose the cattle. Among cremations cattle might occur in about one tenth of the graves during the Late Iron Age. In the settlements these bones are often found in large numbers (Tables 1, 2, 3). Thirty, forty or up to 55% of the mammal bones might consist of cattle. Thus, cattle is under-represented in common burials.

My conclusion is, that the animal species present at the country-side farm were used as symbols of meat, companions or offerings in the cremation graves. Obviously, in many cases the species were selected for specific reasons or purposes to fulfil the needs in connection with the burial rites.

Another species which has been discussed in relation to economy, in this case trade, is the bear. I will mention the bear later in connection with both social status and religion.

Social signals, results and discussion

Very high social stratum

Now, I turn to social stratification and signals of individual's and family's rank. The very high social stratum is easy to discuss because the family members clearly demonstrated their wealth and power. I will present three examples of animals as signals of the deceased belonging to a social group of high status.

Birds of prey

We know e.g. that hunting on horse back with fast running dogs, of the grey-hound type and with a bird of prey is a hunting method linked to the aristocracy during the Iron Age and the Medieval period in Europe. This has now been proven in Sweden by osteological finds too (e.g. Sten & Vretemark, 1992).

Here, I want to mention some figures to illustrate differences within the society. In the common burial-grounds a bird of prey is found in less than 1% of the graves. In the burial mounds of large dimensions combined with valuable burial gifts and large amounts of bones, however, birds of

Table 3. Animal refuse in Iron Age Settlements in Öland and Gotland (number of fragments, % of mammal bones and dating)

Sites in Öland	**Ormöga**		**Eketorp**		**Eketorp**		**Eketorp**	
	Bredsätra		**I, I-II**		**II**		**III**	
Dating, A.D.	**200-700**		**300-700**		**400-700**		**1000-1300**	
Species	N	%	N	%	N	%	N	%
Horse	28	5	4	1	696	1	1624	1
Dog	2	+	6	1	1884	2	4441	2
Sheep/Goat	302	53	185	31	36847	48	91570	47
Cattle	180	32	325	55	30622	40	67495	35
Pig	58	10	69	12	6869	9	28362	15
Cat	0		0		56	+	424	+
Bear	0		0		0		0	
Hen	0		1		323		3380	
Birds of prey	0		0		43		134	

Sites in Öland/ Gotland	**Hässlebyborg, Köping, Öl**		**Bandlundeviken, Burs, Gotland**		**Häffinds 11:9 Burs, Gotland**		**Paviken 1, Västergarn, Gotland**	
Dating	**Early Roman Iron Age**		**A.D. 800-1050**		**A.D. 800-1050**		**7th? - 10th cent.**	
Species	N	%	N	%	N	%	N	ca %
Horse	128	4	116	8	36	3	15	1
Dog	39	1	6	+	0		+	+
Sheep/Goat	1392	45	473	32	479	42	310	22
Cattle	1029	33	439	30	233	20	910	64
Pig	448	15	432	29	391	34	178	13
Cat	1	+	7	+	1	+	1	+
Bear	0		0		1	+	?	
Hen	?		1		?		?	
Birds of prey	?		1		?		?	

prey were found in 14 out of 16 investigated burials. In richly equipped inhumations birds of prey are also more frequent than in the common cremations (cf. Table 8). Four different species of birds of prey as well as one species of owls have been determined in cremations and inhumations *Accipiter nisus*, *Accipiter gentilis*, *Falco peregrinus*, *Nyctea scandiaca* and *Bubo bubo*. Thus, birds of prey are good proves of high social rank as they indicate falconry.

Many represented species/individuals

A second possibility to enlighten status is to study the number of animal species or the number of individual animals in a grave (Table 4). It can be seen that the mean number of species increases in the common graves from the Migration period to the later periods. The range, however, remains similar. In the large burial mounds the number of species per grave is much higher than in the common graves. A still more striking evidence of a high social status is that the number of individuals is extremely high. In some graves the number of animal individuals mounds 40 with a mean of around 20!

Furs

The presence/absence of furs can presumably also be used as an indication of social status, although it has been interpreted as indication of a certain occupation e.g. the fur-traders (Petré, 1980). Table 5 shows the representation of furs of bear, lynx and wolverine. In the upper part of the table the distribution in common graves can be seen. In most cases the number of graves with bear furs of a burial ground seldom reach more than 6%.

In the lower part of the table the content of large burial mounds is summarised. Furs, thus, occur more often in the richly equipped graves, but not as frequent as many other valuable animals.

Very low social stratum

As I believe that economy as well as religious traditions were demon-

Table 4. Number of animals in cremations of different social strata in the Iron Age Society (males and females are noted, when possible. Only dated graves included)

Sites	**Migration period**		**Merovingian period**		**Viking period**	
Common burial grounds (N=9)						
North Spånga	M	F	M	F	M	F
Species, mean	1.7	1.9	2.7	2.4	2.8	2.5
Range	0 - 7		0 - 6		0 - 7	
Large burial mounds (N=16) (Number of mounds 2, 8 and 6 respectively. Double burials included)						
Species, mean	5.5		11.2		11.2	
Range	5 - 6		5 - 15		8 - 17	
Individuals, mean	7		21		19	
Range	7		5 - 43		7 - 38	

Table 5. Phalanges (III) of carnivores in cremations of different social strata (all graves included, not only dated ones)

Site/Species	*Bear*		*Lynx*		*Wolverine*	
	N	%	N	%	N	%
Common burial grounds in the Lake Mälaren Area						
Helgö 150, Ekerö (N=39)	6	15.4	1	2.5	0	
Brista, Norrsunda (N=117)	4	3.9	0		1	1.0
Viken, Lovö (N=21)	1	4.8	0		0	
N. Spånga, Spånga (N=488)	29	5.9	9	1.8	0	
Berga, Brännkyrka (N=32)	0		0		0	
Vårberg, Stockholm (N=142)	2	5.8	0		0	
Hamre, Badelunda (N=28)	4	14.3	0		0	
Bjurhovda, Badelunda (N=43)	0		0		0	
Tuna, Badelunda (N=52)	0		0		0	
Large burial mounds, South and Middle Sweden						
16 mounds	3	18.8	2	12.5	0	

strated through the animal grave goods, the existence of graves *without animals* is conspicuous.

In some instances animals that were burned with the dead human body may not have been buried afterwards, as not all bones were taken gathered from the funeral pyre. How much and what is left seems often to be accidental. But as graves without animal bones are found in relatively large numbers in one century after another, lack of representatitvity can not be the full answer.

In Table 6 I have compiled data on graves where animal bones have not been found. Information from 22 burial grounds covering the period A.D. 0 - 1000 is presented. In each instance, the figure represents the number of graves without animal bones in relation to all graves dated to the period in question. In the Early Iron Age it was not common to give animals to the deceased, as the graves without animal bones form the majority. But during the Migration period animals become presumably more important and the traces of rites involving animal bones strongly influenced the burials. The variation between burial grounds is considerable. Thus, there seems to be local traditions as well.

During the Merovingian period about 20% or more of the burials do not contain animals. In the Viking age graves the number of graves without animal bones rise, however. I regard this as a Christian influence, though I will not follow up this topic here.

But who were the humans that were buried without animal gifts when the majority was given animal companions, animal food, animal offering during the Late Iron Age? It is not likely that these humans represent another ethnic group with a different religion or other burial traditions. But this could be tested through an archaeological study of artefacts, burial constructions etc. I believe, however, that these individuals belong to the poorest strata of the society. One possibility would be that these are thralls/slaves or un-free labourers. Thralls are mentioned in different historical sources in connection with the Viking period of the Nordic countries, but they are rarely demonstrated in the archaeological or osteological material. The number of graves without animals found is unexpectedly high, though. Were they farm-workers with no land of their own or family members of the head of the farm? This might be tested by a study of the location of their burials at the grave field and other variables. I can not put

Table 6. Relative numbers (%) of cremation graves without burnt animal bones in Middle Sweden during the Iron Age (Values in per cent within every period)

Periods/Area/Site	Preroman/ Roman Iron Age	Migration period	Merovingian period	Viking period
Helgö 150, Ekerö (No of graves: 32)		12%	25%	0%
Brista, Norrsunda (N=90)		81%	26%	37%
Viken, Lovö (N=17)		0%	0%	
North Spånga, Spånga (N= 488)	70%	41%	21%	20%
Berga, Brännkyrka (N=16)			14%	50%
Vårberg, Stockholm (N=126)	97%	85%	15%	62%
Holmsmalma, Malma (N=26)	65%			
Bjurhovda, Badelunda (N=43)				35%
Tuna, Badelunda (N=22)		71%	38%	14%

forward a definite answer here, but this interesting group must be further studied.

Religion

Sacrificial sites

As not only economy or economy combined with social rank determine the presence of animals in a cremation I will try to enlighten religious believes. In this case I first turn to animal sacrifices. Four important sites have been subject to osteological analysis. The first one is a Viking age site, an out-door offering interpreted as a sacrifice in connection with the so called "tree of life" (Yggdrasil). In the second (Skedemosse - a water offering) were animal as well as human bones and artefacts (mostly weapons) found during excavation. It is dated up into the Migration period. Hassle Bösarp is similar to the offerings in Skedemosse, though a much smaller excavation. The Eketorp water-hole is a well and dated to

A.D. 0-1100. This site is especially difficult to interpret as it was used during such a long period.

Table 7 maps the presence of animal species in these sites. The number of fragments as well as the percentage of the total amount of the identified mammal bones are presented. When the frequencies of different species in sacrificial sites is compared with that of the settlements (Tables 1, 2, 3) the following must be stressed.

Neither dog nor cat are common in any of the categories. Cattle shows high figures in both types of sites. The presence of pig, on the other hand, is more variable. In early sacrificial sites, its frequency is low but the number of pig bones rises remarkedly in the Viking Age sacrifice.

To me, the most noteworthy facts are the following. In the early sacrificial sites horse is extremely common with 40% of the mammal bones. A

Table 7. Animal bones in sacrificial sites from Iron Age in Sweden (number of fragments, % of total amount of mammal bones)

Site	**Frösö**		**Skedemosse**		**Hassle Bösarp**		**Eketorp water-hole**[1]	
Dating, A.D.	**900-1000**		**200-500**		**200-550**		**0-1100**	
Species	N	%	N	%	N	%	N	%
Horse	1	+	7160	40	73	40		29
Dog	1	+	342	2	7	4		?
Sheep/Goat	68	13	2946	16	62	34		28
Cattle	28	6	6610	37	28	15		41
Pig	106	21	805	4	13	7		3
Cat	0		6	+	7	4		?
Hen	1		8		1			?
Birds of prey	0		>57		0			?
Bear	214	42	0		0			?
Elk	73	14	0		0			?
Deer	13	3	35	+	0			?
Squirrel	2		0		0			?

[1]Percentage calculated from only four mammals, dog and cat are not included (Backe et al., 1993).

similar high number can not be spotted in any of the settlements. Thus, the horse seem to be *the* important sacrificial animal during the Early Iron Age.

In the Viking age offering site, the presence of wild mammals is most remarkable, especially the very high number of bear bones. Here, I first want to mention the connection between Odin and the bear, which was pointed out by Ström (1980) in connection with bear furs in burials. This assembly does not mirror the bone composition of settlements in its vicinity (Iregren, 1989). The presence of the species probably reflect the religious rites performed by the tree of life. In the Nordic Sagas, it is told that "Four deer are jumping and eating the leaves of the tree and a goat browses there as well. A squirrel runs up and down the trunk of the tree and a cock sits at the top". Bones of all these animals are found on the site, and they most likely represent the myths and the, through rites, established and re-established links between the Gods and Man. Further, the many pig bones might be linked to Frej, the God of fertility after whom the island is named, where the sacrificial site is situated.

Influence of religion in the burials

The composition of animals in sacrificial sites seems to be specific. Thus, we expect sacrifices to vary due to their social and religious context.

Are these the results of family rites or of local or regional character? On the other hand, these finds give us signals of the importance of different species in the believes of people during the Iron Age. To note, however, is that the rites at a funeral have their purposes and their traditions different from that of a sacrifice. A single sacrificial site might also consist of remnants of *different* sacrifices e.g. in connection with seasons, human life cycles, crises in family or in society.

To compare the occurrence of species with literature or historical sources or with pictorial evidence is a tricky business as most of the species present in the cremations are mentioned in the Nordic sagas and constitute parts of the Norse religion. Many even have their individual names, as mentioned by Welinder (1989).

In Table 8, animals found in large burial mounds, in richly equipped inhumations and in the common burial grounds are presented. The data are divided into different archaeological periods. In the common crema-

Table 8. Changes in animal representation over time and in different burials

Animals in cremations in large burial mounds, South and Middle Sweden (number of individuals/grave)

	Migration period	Merovingian period	Viking period
	N=2	N=8	N=5
Horse	0.5	1.6	3.2
Dog	2	3.2	4
Sheep/Goat	1	2.2	0.6
Cattle	0.5	1.6	1
Pig	0.5	2.9	1
Cat	0.5	0.8	0.8
Bear	0.5	0.1	0.2
Hen	1	1	1.2
Birds of prey	0.5	2.4	1.6

Animals in richly equipped inhumations, Lake Mälaren Area (number of individuals/grave)

	Migration period	Merovingian period	Viking period
	N=0	N=14	N=21
Horse		2.3	1.1
Dog		1.6	0.7
Sheep/Goat			1.4
Cattle		1.1	0.05
Pig		1.2	0.1
Cat		0	0
Bear		0	0.05
Hen		0	0
Birds of prey		0.4	0

Animals in common cremations, Lake Mälaren Area (N. Spånga) (presence of species vs. no of graves)

	Migration period	Merovingian period	Viking period
Horse	+	rizing	no change
Dog	+	rizing	no change
Sheep/Goat	+	no change	decreasing
Cattle	+	no change	no change
Pig	+	rizing	no change
Cat		+	rizing (females)
Bear		no change	no change
Poultry	+	rizing	no change
Birds of prey		+	

tions the presence of animal species in denoted by a +. In the later periods the figures are transformed to verbal descriptions, as "rising", "decreasing" or "no change".

To present some last tentative explanations I chose to comment on the horse, the pig and the cat on the basis of Table 8. The horse is very important in the Viking age graves especially in the large burial mounds. We know that the horse was the symbol of the uppermost God in the Norse pantheon, Odin. He was the most powerful one and the God of warriors.

The pig as well as the cat, on the other hand, seems to be more important in the common graves during the Late Iron Age than in the mounds The pig was the specific animal of Frej - the male God of fertility. His sister Freja was the Goddess of fertility and rode in a carriage pulled by two cats. It is proven that the domestic cat was present in Scandinavia since A.D. 200 but not until the Late Iron Age the cat turns up more regularly in the burials (Table 8, cf. Boessneck & von den Driesch, 1979; Andersson, 1993). My hypothesis is, that these fertility Gods were more important to farmers and cattle breeders than to the aristocracy to whom the arrival to Odins hall of warriors was the aim to achieve after death. But in both cases, I believe that the Norse religion and the links between Man and Gods were clearly demonstrated by introducing animals in the cremation rituals during the Iron Age.

Conclusions

In Sweden analyses of cremation graves have a very long and uninterrupted tradition. Thus, since the 1940'ies when Gejvall introduced the study of cremated remains from burials these have regularly been subject to investigations (Sahlström & Gejvall, 1948).

The methodological problems have been considerable, however. Most heavily the human remains and the determination of number of indi-viduals, age and sex are affected. I have earlier (Iregren, 1991) expressed my doubts on the possibilities of gaining a representative picture of the living human population. The problems do not only concern the anthropological methods of age and sex determination but also the habits of Iron Age people of only collecting some part of the bones

from the pyres. Thereby giving us only a small part of the body to study.

In some contrast to this, the animal bones are more easy to handle. Identification of species and often of age can regularly be done. In this article, I have used only the *occurrence* of animal species and in this way tried to minimise the problems of representativity.

In Sweden, the interpretation of ideology and rituals in connection with burials and the underlying motives have only occasionally been performed (see chapter 1). I believe, however, that burial grounds with cremations can enlighten cultural traditions and rites in many ways. These might regard animal species present, amount of human bones, parts of the human body and different depositions of one individual in a burial. History of mentality is debated and investigated within disciplines as History, Archaeology, Cultural anthropology, History of religion etc. Methods to enlighten mentality, ethics and religion are sought for. I think that Historical osteology in Sweden should join this discussion to evolve our knowledge in these fields. A combination of careful archaeological field work, of thoughtful osteological investigation and of making new hypotheses on firm theoretical ground would certainly be awarding.

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Appendix: Osteological analyses used, their authors and some archaeological data (Note that not every material is used in every comparison)

Common cremations

Helgö 150, Ekerö parish, Uppland 1970	Gejvall & Persson 1970, Holmqvist
Brista, Norrsunda parish, Uppland	Elmgren Ms 1970
Viken, Lovö parish, Uppland	Iregren 1972b, Lamm 1972
North Spånga 156, 157A, 157B, 158, 160, 162, 163, 168, 169, Spånga parish, Uppland	Sigvallius 1994, Biuw 1992
Berga, Brännkyrka parish, Södermanland	Lahtiperä 1971, Rydberg 1971
Vårberg 4, 5-6, 34, 35, 136, 136A Stockholm, Södermanland	Iregren 1972a, Ferenius 1971
Holmsmalma, Malma parish, Västmanland	Welinder 1989
Hamre, Badelunda parish, Västmanland 1988a	Welinder 1989, Sellevold & Formisto
Bjurhovda, Badelunda parish, Västmanland 1988b	Welinder 1989, Sellevold & Formisto
Tuna, Badelunda parish, Västmanland (only cremations)	Iregren 1994, Nylén & Schönbäck 1994

Large burial mounds with cremation

14 large and rich mounds in Närke, Småland, Södermanland and Uppland	Sten & Vretemark 1992
A 13, RAÄ 94, Täby parish, Uppland	Hedelin 1988
A 1, RAÄ 5, Skärstad parish, Småland	Sten 1993
A 2, RAÄ 5, Skärstad parish, Småland	Iregren et al. 1995 and Nicklasson 1995

Very rich inhumations

Tuna, Alsike parish, Uppland	Arne 1934
Vendel, Vendel parish, Uppland	Stolpe & Arne 1912
Valsgärde 6, 7, 8 Uppland	Arwidsson 1942, 1954, 197

Sacrificial sites

Frösö church, Frösö parish, Jämtland	Iregren 1989 and Hildebrandt 1989
Skedemosse, Gärdslösa parish, Öland	Lepiksaar 1967, Boessneck et al 1968, Hagberg & Beskow 1967
Eketorp water-hole, Gräsgård parish, Öland	Backe *et al* 1993
Hassle Bösarp, Hassle Bösarp parish, Scania	Lepiksaar 1973 and Stjernquist 1973

Settlements

LAKE MÄLAREN AREA	
Birka, Adelsö parish, Uppland	Ericson, P. *et al* 1988
Birka, Adelsö parish, Uppland	Wigh 1995, Ericson & Svensson 1995, Ambrosiani & Clarke 1995
Helgö, Ekerö parish, Uppland	Holmgren & Wadfors 1980, Sonnhammer 1981 and Sælebakke 1983
ÖLAND	
Ormöga, Bredsätra parish	Sellstedt 1966
Eketorp I, I-II, II, III Gräsgård parish	Boessneck & von den Driesch 1979
Hässlebyborg, Köping parish	Bäckström 1993
GOTLAND	
Vallhagar, Fröjel parish	Lepiksaar 1955, Gejvall 1955 and Stenberger 1955
Bandlundeviken, Burs parish	Ahlström 1987
Häffinds 11:9, Burs parish	Ingvarsson 1987
Paviken 1, Västergarn parish	Johansson 1981 cit Ahlström 1987
SCANIA	
Stockholmsgården, Valleberga parish	Lepiksaar 1961, Strömberg 1961
Rinkaby 13, 26, Rinkaby parish	Lepiksaar 1961, Strömberg 1961
Trehögsparken, Fosie sn	Lepiksaar 1974a
Oxie, Oxie sn,	Lepiksaar 1974b
Fjelie 19:3-6, 20:1	Ericson 1984
V. Karaby 3:1, 4:1	Ericson 1984