

The four horses of an Iron Age apocalypse

War-horses from the 3rd century weapon sacrifice at Illerup Aadal
(Denmark)

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Abstract

The rich assemblage of the Illerup Aadal weapon sacrifice mirrors the material world of a Germanic army from the time around 210AD. Apart from the personal equipment and the weaponry of more than 350 warriors, it also comprises four horses. The present paper provides an overview of the first conclusive analysis of the skeletal remains of these animals, involving osteological investigation and strontium isotope analysis. The results shed new light on 1) the character of the sacrificial ceremonies which unfolded in the aftermath of Iron Age battles, 2) the nature of cavalry and its significance in Iron Age warfare, and 3) the much debated question as to where the army of Illerup Aadal originally had come from.

Introduction

Since the late 19th century, more than 30 so-called weapon sacrifices dating from the period between the pre-Roman Iron Age and the Migration Period have been discovered and investigated in the area of modern day Denmark. While varying considerably in size and composition, all finds include various types of weapons, elements of personal equipment and other objects. Historical and archaeological parallels suggest that the finds represent the votive offerings of a victorious army to some sort of war god.

Four different offerings from the period between the 3rd and the 5th century AD have been identified and excavated in the Illerup Aadal, a long stretch of river valley on the eastern side of the peninsula of Jutland, southwest of the modern city of Aarhus (figure 1). The majority of the artefacts belong to the oldest, and by far the biggest, of the various offerings (place A) dating from the early 3rd century. Today, this particular offering can be regarded as one of the largest and most complex sites of its kind (Ilkjær 2000). The assemblage from Illerup Aadal A alone is comprised of 350 shields, 366 lances and 410 spears, at least 100 swords, eleven sets of riding gear, 124 sets of strike-a-lights and other elements of the warriors' personal equipment, as well as a complete set of different tools for wood- and metalworking. The find therefore paints a complex picture of an army consisting of at least 400 men organized within a strict hierarchical structure with complex functional

differentiation and associated with a well-developed logistical apparatus (Ilkjær 1990; 1993; 2001; von Carnap-Bornheim & Ilkjær 1996; Dobat 2008).

In the course of the sacrificial ritual, the majority of the artefacts underwent a process of systematic destruction before being deposited on the bottom of the shallow lake of Illerup Aadal, either as wrapped bundles dropped from boats or simply thrown into the lake from its southern shore (Ilkjær 1990: 13-27; 2002).

Although the different artefacts obviously represent individual combatants, there is no evidence at all for the sacrifice of humans or war related deaths. The only living creatures that apparently played a role in the sacrifice were at least four horses and a single bovine. The skeletal remains of these animals are extraordinarily well preserved due to the favourable conditions in the peat layers of the Illerup Aadal river valley (figure 2). Hence, they provide a rare view on cavalry as a central aspect of Iron Age military infrastructure in Northern Europe.¹ Furthermore, the horses from Illerup also provide a medium for the application of new scientific methods such as strontium isotope analysis, which has proven to be a powerful tool for the investigation of the origins of archaeological material. Tooth enamel from two horses has been analysed for strontium isotopes. The results afford new perspectives on the origin of the army from Illerup Aadal A.

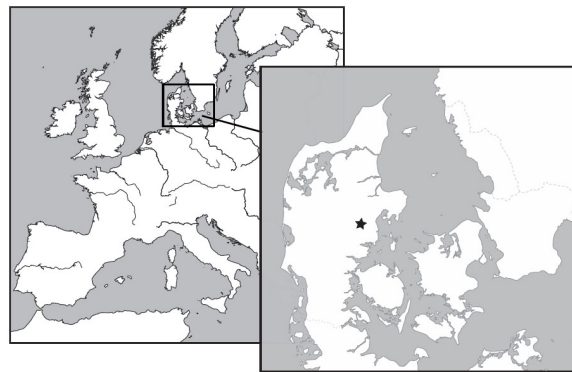


Fig. 1. The Illerup Aadal site is situated on the eastern side of the peninsula of Jutland, southwest of the city of Aarhus, in modern day Denmark.

¹ Horses were also found during the early excavation of the weapon sacrifices at Nydam in south Jutland (Engelhardt 1865: 36-42). Here they can probably be associated with the major offerings during the 3rd and 4th century AD (Rau 2010). Bones from horse(s) were also recorded during the early excavations of the sacrifices at Vimose, which is partly contemporary with the Illerup Aadal A sacrifice, and at Kragehul (Engelhardt 1869: 30; 1867), both on the island of Funen.

along with other pieces of weaponry and personal equipment were found lying together with the animal bones, documenting the animal's connection with the major sacrifice of Illerup Aadal A (dating to around the year 210 AD) (figure 3). The circumstances are more ambiguous in the case of horses 3 and 4, which form part of the more scattered parts of the major deposit of Illerup Aadal A, east of the core area. However, the similarity regarding ritually inflicted injuries on all four horses (see below) strongly suggest that they all were part of the sacrificial events.

With the exception of a few bone elements, the carcasses of horses 1 and 3 were almost complete. In the case of horse 1, the lower leg bones (metapodia and phalanges) were found in the immediate vicinity of the torso suggesting that some displacement occurred during the decay of the carcasses. Horse 2 completely lacks both rear legs including the pelvic girdle, while horse 4 lacks only the left rear leg.³ Apparently, some of the animals were partly disarticulated prior to their deposition in the lake. The complete lack of gnawing marks on the skeletal remains of all four horses indicates that the horses were deposited and covered by water immediately or shortly after the sacrifice.

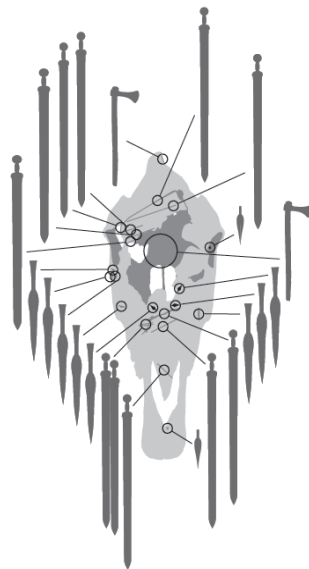


Fig. 4: The skull of horse 2 with recorded cuts from swords and wounds from pointed weapons such as lances and/or spears and arrowheads. Drawing by Lars Foged Thomsen.

³ The isolated left hind leg (from the femur to the phalanges) of a horse was found at point 83,00/93,00 (see plan 83/93 Plan 1 in Carnap, Bornheim & Ilkjær 1996a). It is probable that this leg belonged to either horse 2 or 4. Due to the lack of bone elements suitable for detailed aging and sexing, however, these bones are not included in the following.

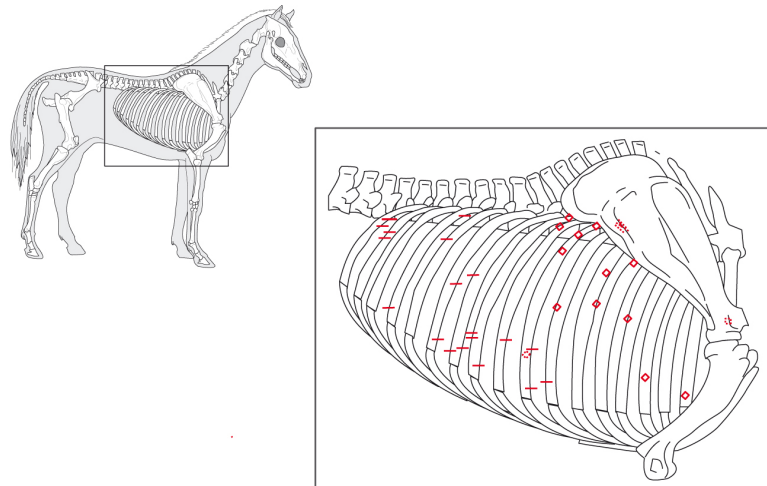


Fig. 5: The corpus of horse 2 showing two distinct groups of injuries from cutting (-) and pointed weapons (◊) respectively (probably swords and lances/spears). Drawing based on: Michel Coutureau and Vianney Forest (© 1996 Archaeozoo.org).

The ritual killings

Just as with the other material components of the find, the horses show clear traces of seemingly violent 'destruction'. As shown in figure 4, the skull of horse 2 demonstrates traces of at least 12 cuts from sharp (but not particularly heavy) instruments, ten wounds from pointed weapons struck or shot from various directions and a heavy blow to the forehead with a massive blunt instrument (a hammer or the back of an axe). Three injuries from pointed weapons were found on the palate bone inside the nasal cavity, showing that the weapons were driven with great force through the skull. Only the heavy blow to the animal's forehead, however, can be identified as most definitely fatal. Of the 18 paired ribs only two ribs (costae) from the left and three ribs from the right have no visible injuries. The impacts are dominated by perforations made by pointed weapons and cut marks made by sharp weapons. The majority of the wounds have been inflicted laterally however, some perforations were found on the inside of the ribs suggesting that the weapons (most probably arrows) penetrated the torso. The direction of the injuries indicates that horse 2 was struck, shot and stabbed several times from various directions. The grouping of two distinct types of wounds probably indicates that the wounds were inflicted by at least two individuals standing next to each other with two different types of weapons (probably a sword and a lance/spear) (figure 5). The injury's orientation and the fact that they are found on both sides of the torso indicate that the animal was standing on its legs while the wounds were inflicted.

Horse 1 received a blow to the forehead similar to horse 2. The injuries added to the torso are not as conclusive as in the case of horse 2. However, as in the case of the later, some injuries may have been inflicted while the animal was standing on its legs. The position and direction of the deep cut-marks on the lower front legs of horse 1 also indicate that they happened when the horse

was lying on its left side. The injuries from cutting weapons added to the right radius, ulna and metacarpal bones are found on the lateral side of the bones while injuries added to the left third metacarpal are found on the medial part of the bone. Injuries from pointed weapons on the dorsal aspects of some vertebrae also suggest that horse 1 was lying on the side when the wounds were inflicted. Similar injuries can be observed on horses 3 and 4.

The observed modifications on the horse bones, their anatomical position and finally the types of implements used in this process do not resemble those typically made during skinning, butchery etc. (Noe-Nygaard 1989). We cannot rule out the possibility that at least some of the injuries had already been received in the course of the military clash which obviously preceded the sacrifice at Illerup Aadal. But the amount, position and the severity of the injuries makes it rather unlikely that at least the majority could have been received during military engagements. It should be added, that there are no signs of healed injuries that could indicate whether or not the horses were longstanding warhorses injured during previous military clashes. As this has been documented for the weaponry (most of the weapons show clear traces of having been systematically destroyed prior to their deposition in the sacrificial lake), the majority of the cuts and injuries most probably have to be seen as the result of sacrificial rituals, i.e. around the time of death (peri-mortem).

In attempting to reconstruct the events that unfolded during the sacrifice, it seems likely that the horses were lead into the shallow waters along the edge of the Iron Age sacrificial lake. Here, they received a multitude of blows and thrusts from different kinds of weapons. The evidence suggests that at least some of the wounds were inflicted while the animals were standing on their legs, i.e. while they were still alive. Even though there is no definite evidence for it, one can speculate that the creatures were held in place by ropes. The heavy blow to the forehead with an axe, as seen on the skulls of horse 1 and 2, may represent the '*coup de grâce*'. Afterwards the assault continued with the dead animals being shot at and stabbed with different kinds of weapons. The skull of horse 2 was cut into pieces, while the lower legs of horses 1 and 3 were broken and partly cut off. The missing rear parts of horses 2 and 4 could be a result of similar events, where parts of the body were disarticulated and deposited at different positions in the lake.

	sex	age	withers height			$^{87}\text{Sr}/^{86}\text{Sr}$
			min	max	mean	
horse 1	♂	10 y	123,7	133	129,8	0.710657
horse 2	♂	7 y	138,5	144,2	141,3	
horse 3	♂	8-9 y	130,2	139,6	136,3	0.710357
horse 4	♂	6-7 y	128,8	139,1	135	

Table 1: The estimated sex, age and withers height of the four horses from Illerup Aadal together with the strontium isotope ratios of tooth enamel from horses 1 and 3.

Charger or nag?

All four horses have pronounced canine teeth indicative of male sex.⁴ Based on dentition, horse 1 can be estimated to have been about 10 years old, while horse 2 may have been somewhat younger, probably around 7 years. Horses 3 and 4 are estimated to an age of 8-9 years and 6-7 years respectively (table 1).⁵ In modern dressage, reminiscent of military training (Müseler 1972), the basic preparation of a horse is normally concluded after the animal is 6 or 7 years of age⁶. According to the size of the long bones, the horses had an estimated withers height between 130 centimetres and 141 centimetres (table 1).⁷ The Illerup Aadal horses would thus have been comparable with average or large-sized prehistoric horses and modern day Icelandic horses with withers heights between 120 and 140 centimetres. Compared to other contemporary finds of horses from Iron Age contexts in Scandinavia, horse 2 appears to have been a surprisingly large animal. In a supra-regional perspective, it can be categorized as belonging to the upper range of Iron Age horses on the continent and in Northern Europe (Bökönyi 1968; Reichstein 2003). One could speculate, whether this might indicate the import of horses from either Eastern Europe or the Roman Empire. It is of particular interest in this respect that various elements of riding equipment found in south Scandinavian weapon sacrifices show close similarities to riding gear from the northern Danube area or the Roman Empire (Lau 2009: 272 & 276).

The use of bits is indicated by pathological changes on the mandibles from the two oldest horses (horse 1 and 3), which can be associated with the use of hard metal bits. Horse 1 exhibits distinct "bone spurs" on the diastema (between the canines and the cheek tooth row), whereas horse 3 has a very steep bevel and a distinct dentine/enamel abrasion on the vertical anterior /mesial edge of the second lower premolars (P2) (Anthony and Brown 2011; Bendrey 2007). Two different types of mouth pieces are present in the Illerup Aadal assemblage: two examples of simple iron-jointed snaffle bits and nine complete sets of curb bits with stiff mouthpieces. The latter are highly complex devices with the actual mouthpiece and even the lower parts of the reins made of bronze and iron. Their functional principle is equivalent to modern curb bits particularly common in western-style riding, with a stiff mouthpiece and lever arms. The standard equipment used for warhorses in the Roman cavalry displays clear parallels (Junkelmann 1992). Such curb bits are considered highly specialised gear which, when used in action, effect several parts of the horse's head and mouth. Accentuating the pressure applied by the rider, they hold the potential to inflict severe pain on the

⁴ The three horses from Nydam could also be identified as male individuals (Engelhardt 1865:37).

⁵ Due to an inherent inconsistency and subjectivity when measuring and aging animal bones and teeth all four horses have been re-examined and all long bones re-measured (Ambros & Müller 1975:45). The estimated ages of the horses are based on tooth development and on tooth wear of the mandibular incisor teeth. The observed tooth wear was scored according to drawings and photographs of the tooth wear on horses of known age as shown by Habermehl (1975). The horses have been sexed on the basis of the presence of well-developed canine teeth indicative of male sex.

⁶ We are grateful to Sara Heil Jensen (Moesgård Museum) for valuable comments on the horse equipment and its possible use.

⁷ Calculation of the withers height follows Kiesewalter 1888. All complete long bones (i.e. femur, tibia, metatarsus, humerus, radius and metacarpus) and shoulder blades (scapulae) were measured according to the guide lines given by von den Driesch & Boessneck 1974: figure 1 and von den Driesch 1976. Each bone element was measured twice. The final estimation of the stature (height) of each horse was based on the mean value of all measurements from each individual as recommended by Ambros & Müller 1975:45ff, and von den Driesch & Boessneck 1974:335. When both sides of a paired element have been measured the withers height was based on the mean of those measurements.

horse, and thus gain absolute obedience and control over its movements (see also Lau 2009: 287; Junkelmann 1992: 15). The use of such harsh tools would have presupposed a long process of training, making the animal accustomed to this particular type of mouthpiece.

The famous 4th century works on horses and horsemanship by Xenophon (*peri hippikēs* and *hipparchicus*) or the treatise on cavalry tactics in the *Ars Tactica* by Arrian provide a detailed view of the enormous effort that was involved in the education of horses intended for use on the battlefield in a Greek or Roman military context (Hyland 1993; Gillmor 1992). The horses deposited at Illerup Aadal had reached the peak of their individual physical and mental development and the pathological changes on the mandibles and premolars are indicative not only of intensive use, but also training with iron bits. Even though horse training in Iron Age Scandinavia most certainly followed different standards than in classical Greece and Rome or in modern dressage, we may assume that these animals underwent a lengthy and intensive training regime, enabling their masters to use them in the for both rider and horse stressful environment of the battlefield.

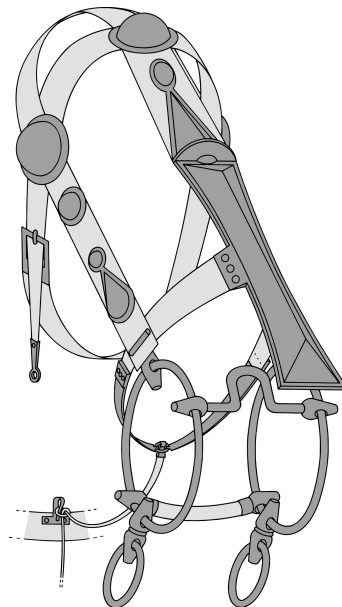


Fig. 6: Schematic reconstruction of the harnesses and curb bits from Illerup Aadal place A (after von Carnap-Bornheim & Ilkjær 1996). Drawing by Lars Foged Thomsen.

Warhorse or scapegoat?

We cannot take for granted that these horses originally belonged to the armies represented by the offering. Several alternative scenarios leading to the horses' inclusion as an element of the sacrifice at Illerup Aadal can be proposed. They may have been picked up in 'enemy territory' following the arrival of the armies via ship or boat. Another possibility is that the horses from Illerup Aadal did not belong to the opposing armies at all, but were chosen among the local stock, belonging to the victorious community itself, and used only for the occasion of the sacrifice. There are, however, several lines of evidence which suggest that the inclusion of the horses in the sacrifice reflects their original association with the defeated armies of Illerup Aadal A: First of all, the horses show the same traces of 'destruction' as we see on certain material elements of the offering, especially the military equipment and the riding gear belonging to the highest level of the

military hierarchical order. Another argument can be based on the fact that the headgear found at Illerup seem to be made to fit individual horses given that they lack any adjustment options to cater to the varying sizes and shapes of the heads of different horses (Lau 2009: 285). Indeed, the image of a military leader bringing a nonadjustable headgear into enemy territory in the hopes of finding a suitable horse on which to put it renders this scenario rather implausible.

The most decisive argument, however, for the direct relation between the armies and the horses from Illerup Aadal A are the specific requirements for horses in combat situations, which presupposes extensive training and practice. In actual combat, the acquaintance of the horse with equipment and rider would have proved essential (see the discussion above). An unknown horse, taken in possession somewhere in enemy territory, would simply not have done the job.

We can at least regard it as most likely that the horses deposited in the great sacrifice of Illerup Aadal A along with military and personal equipment originally did belong to the warrior group represented by this find.⁸ Hence, it follows that they originated from the same regional contexts as their masters.

Where did the horses come from?

From the very beginning of modern research on the weapon sacrifices, the origin of the armies that are represented by the assemblage has been one of the major topics of debate. It has been suggested that the provenance of the material (and hence, opposing armies) for the Illerup Aadal place A is the southern part of the Scandinavian Peninsula, (i.e. modern day Norway or western Sweden). This hypothesis, based on the stylistic analysis of archaeological material (Ilkjær 1993: 374-385) and scientific methods (Ilkjær et al. 1994; Ilkjær 2001: 376), has constituted the background for a historical scenario in which one or a coalition of several hostile armies crossed the Kattegat and attacked the Jutland peninsula, where they were eventually defeated by an eastern Jutish military coalition⁹.

The uniform appearance of the assemblage at Illerup Aadal A suggests that the combatants did have their origin within a coherent cultural community. However, there are also artefacts (i.e., several strike-a-light sets) which point toward the Continent (southern Denmark or modern day northern Germany) as the most probable place of origin of either the warriors or the artefacts, or both (Ilkjær 1993: 378). Hence, it is possible that the army had a more or less heterogeneous composition, with different units recruited from different areas, or individual combatants from

⁸ The horses found in the context of the later 4th century sacrifices at Nydam in south Jutland support this assumption. According to the original report on their recovery in the late 19th century, the horses were found with parts of their headgear still in position (Engelhardt 1865: 36). The horses at Nydam had received a similar treatment to the animals at Illerup, showing a multitude of injuries from different types of weapons (Engelhardt 1865: 40 fig. A-E).

⁹ Recent debate has focussed on the question of whether the sites mirror defensive or offensive military actions, i.e. whether the sacrifices were conducted by the defending communities (who had been attacked by the armies represented by the finds) or whether the booty was collected by attacking armies after a victorious expedition into foreign areas and thereafter transported back home for later sacrifice in a local context. Both scenarios seem possible on the basis of the background of the archaeological evidence at most of the finds. For the Illerup Aadal assemblage, the considerable amount of implements of military infrastructure (primarily tools for wood- and/or metalworking) may suggest that it was in fact the sacrificed army that had been on campaign in foreign territories. It is difficult, however to reach a definite conclusion in this matter. In order to include both possible scenarios, we will avoid speaking of the army from Illerup Aadal place A as the *attacking* army and instead use *opposing* army.

various places joining the coalition for the limited period of a single military expedition (compare Jensen 2008: 146). The horses from Illerup Aadal are of particular relevance in this regard, as they relate to the infrastructural apparatus and the leading elites. Tracing the origin of the horses thus enables us to at least narrow the original spatial context of the organisational and strategic backbone of the military alliance which made up the army of Illerup Aadal (place A).

Aiming at a localisation of the various possible proveniences of the horses, tooth enamel from horses 1 and 3 was analysed for strontium isotopes. This was done in full recognition of the various methodological limitations of strontium isotopes as indicators of regional origin and despite the similarity of baseline values in the moraine landscape of South Scandinavia. It was expected, however, that the analysis would contribute positively to the question whether or not the army of Illerup A originated from the ancient crystalline geological zones north and east of the Kattegat (Norway or western Sweden), as has been proposed earlier, or whether they came from somewhere in the moraine landscapes of South Scandinavia (modern day Denmark, northern Germany or southernmost Sweden).

The principles for isotopic proveniencing rely on isotopes that exhibit geographic variation and are deposited in animal skeleton via the food chain (Price 2000, Price et al. 2002, Sillen and Kavanagh 1982). An essential question regarding strontium isotope analysis concerns the local strontium isotope signal for the area in which the animal remains were found (Price et al. 2002). The local bioavailable isotopic signal of the place of burial can be determined in several ways: in human bone from the individuals whose teeth are analyzed, from the bones of other humans or archaeological fauna at the site, or from modern fauna in the vicinity. This baseline information on isotope values across an area needs to be obtained in order to make useful and reliable statements about the origins of the archaeological remains under study (Price et al. 2002, Frei and Price 2012).

Denmark is characterized by a relatively young (geologically) and rather homogenous "basement" geology. About 50% of Denmark is constructed of Late Cretaceous-Early Tertiary carbonate platforms, the other 50% by marine clastic sediments, all covered by more or less thick sequences of diverse glaciogenic sediments deposited during the two last Ice Ages. The Quaternary glaciogenic sediments are composed, among other things, of various weathered Precambrian granitoids (gneiss and granite) from Norway and Sweden. Almost everywhere in Denmark, glacial deposits are the source of strontium isotopes for plants, animals, and people. There is very little bedrock exposure anywhere.

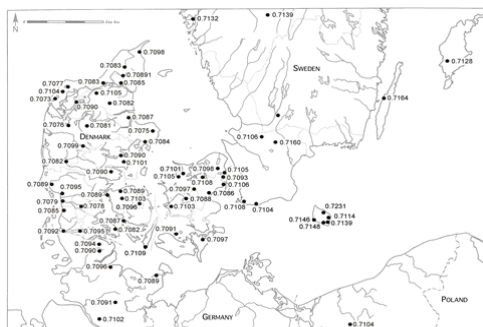


Fig. 7: Strontium isotope samples from fauna and human tooth enamel from South Scandinavia (and adjacent areas).

Frei and Price (2012) report strontium isotope ratios from samples of modern mice, snails, and archaeological fauna from Denmark. In addition they compared these ratios with strontium isotope median values from human enamel samples from archaeological sites within Denmark. The faunal samples range from $^{87}\text{Sr}/^{86}\text{Sr} = 0.70717$ to 0.71185 with an average of 0.70918 and for the humans (including non-locals) range from $^{87}\text{Sr}/^{86}\text{Sr} = 0.7086$ to 0.7110 , with an average of 0.7098 . Frei and Frei (2011) measured $^{87}\text{Sr}/^{86}\text{Sr}$ in almost 200 samples of Danish surface water and found similar results. In all these datasets we observe a small difference between the baseline values between the western (Jutland) and eastern (Funen, Zealand and the southern islands) parts of Denmark. Therefore, we have proposed two slightly different baseline ranges for the bioavailable strontium isotopic values within Denmark. The western area ranges from $^{87}\text{Sr}/^{86}\text{Sr} = 0.7079$ - 0.7099 , whereas the range for the eastern area is defined by $^{87}\text{Sr}/^{86}\text{Sr} = 0.7089$ - 0.7108 . The enamel for strontium isotope analysis of the horse teeth from Illerup Aadal was taken from the mandibles of horses 1 and 3. Results of the analysis are presented in Table 1. These two values clearly fall within the range for Denmark (between 0.70717 and 0.71185) and suggest that the animals may have been of local origin within the region of Denmark, southernmost Sweden, or northernmost Germany.

Conclusions

The analysis of the four horses in the context of the major weapon sacrifice at Illerup Aadal invites further discussion on three general topics: 1) the character and significance of the sacrificial rituals themselves; 2) the nature of cavalry and its use in Iron Age warfare; and finally 3) the old question of the origins of the armies represented by the offerings.

The sacrifice of the animals has to be seen in the light of the prominent role of horses in sacrificial rituals throughout the entire Iron Age and in very different contexts. Only rarely, however, do we see such a detailed view of the chain of events that unfolded during the sacrificial ceremony, as in the case of Illerup Aadal. The osteological analysis suggests that the horse sacrifice was a highly dramatic scene, in which the creatures suffered a gruesomely violent death, involving splattering blood and agonized screams of the poor animals being cut down by several men with multiple weapons. Together with the shrill sound of sharp metal on silver plated ornaments; heavy axes splintering shields and lances, spears and swords being smashed to pieces the scene must have

provided a highly evocative and dramatic spectacle, leaving a lasting impression in the shared memory of the sacrificing community, and facilitating the commemoration of the ritual and the battle which preceded it. In this way the horses were made to play a leading part in what can be seen as a recreation of the apocalyptic scenery of the battle, in which they already had played a crucial role.

The combined evidence of the skeletal material from the four horses and the tack that was used to ride them provides us with a complex image of the cavalry and its use in Iron Age warfare. On the one hand, the extreme ornamentation of mountings, rivets and decorative strap-ends on head gear, saddle straps or breast collars explicitly signalled the high social status of the riders as well as their prominent role within military hierarchy. On the other hand, however, the horses also emerge as highly developed and effective war-machines. Given that they were likely to have been well trained and experienced with highly specialized gear (enabling the rider to fight from horseback with his weapon in one hand, while at the same time keeping full control of the animal, even in the stressful context of a battlefield), the horses from Illerup Aadal would have spread fear and terror among any opposing fighting lines.

With the $^{87}\text{Sr}/^{86}\text{Sr}$ values below the baseline of strontium isotope values in both western Norway and western or central Sweden, it is unlikely that the horses came from either of these regions. They could, however, have come from the Viken area. Here, we find a very varied baseline, with the very lowest values on the regional scale being similar to the values of the Illerup horses. On the other hand, there is a good match between the two Illerup horses and the $^{87}\text{Sr}/^{86}\text{Sr}$ baseline for southern Scandinavia. Values around 0.710 are commonly found in various places in Jutland, Zealand and Scania, suggesting that the horses might well have been born and raised somewhere in the moraine landscapes of modern day Denmark. The data sample is not yet adequate, and the results are not sufficiently clear to support a reconsideration of the earlier theories on the origin of the army of Illerup Aadal A. Nonetheless, these new results open up new perspectives on this question and on the background of the battle that preceded the sacrifice. Instead of an 'external' conflict involving military coalitions from across the Kattegat, the Illerup Aadal sacrifice might just as well be seen as an expression of a more regional, internal conflict between various south Scandinavian groups.¹⁰ Further analyses have to be conducted, however, to evaluate this hypothesis.

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¹⁰ For the various sacrifices at Nydam, Rau (2010: 473-490) has recently proposed a more 'regional' context of the military conflicts. According to his analysis of the elements of personal equipment, the various war bands that are represented in the finds from between the 3d and 5th century all originated from somewhere within the geographical frame of South Scandinavia (North Germany, Denmark and South Sweden).

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