

## WEAPONS AT THE BATTLEFIELD OF KALKRIESE

### ARMAS EN EL CAMPO DE BATALLA DE KALKRIESE

POR

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#### ABSTRACT - RESUMEN - RÉSUMÉ

Archaeological investigations have been taking place at the Kalkriese Hill in Northern Germany since 1987. Roman coins and military equipment are the result of a battle between Romans and Germans, probably the Varus Battle (A.D. 9). It is the aim of our research project to reconstruct the course of the battle. It has become apparent that one cannot deduct the intensity of fighting by the number of finds. Instead, we have to take into account the impact of post-battle processes on the archaeological record, such as rescuing of wounded soldiers, looting by the victors and body-stripping. This paper illustrates the finds and features from Kalkriese, especially from the main site «Oberesch», where most of the Roman artefacts as well as a rampart built by Germans as an ambush against Roman troops, and a series of pits containing the bones of the dead Roman soldiers were found. In addition, new methodological approaches for the interpretation of ancient battlefields are presented.

Desde 1987 se vienen realizando investigaciones arqueológicas en la colina de Kalkriese, en Alemania septentrional. El hallazgo de monedas y equipo militar romanos refleja una batalla entre romanos y germanos, probablemente la de Varo en el año 9 d.C. El propósito de nuestro proyecto de investigación es reconstruir el curso de la batalla. Se hace evidente que no se puede deducir la intensidad de la lucha por el número de hallazgos. Por el contrario, hemos de tener muy en cuenta los procesos posteriores a la batalla sobre el registro arqueológico, como el rescate de soldados heridos, la captura de botín por parte de los vencedores y el saqueo de los cadáveres. Este trabajo ilustra los hallazgos y las características del yacimiento de Kalkriese, especialmente en el núcleo del 'Oberesch', donde se ha hallado la mayor parte de los artefactos romanos, además de una empalizada construida por los germanos para emboscar a los romanos, y una serie de hoyos que contenían los huesos de los soldados romanos caídos. Además, se presentan nuevas aproximaciones metodológicas para la interpretación de los antiguos campos de batalla.

Différentes campagnes archéologiques ont été menées dans la montagne de Kalkriese, au nord de l'Allemagne, depuis 1987. Des monnaies romaines et des pièces d'équipement militaire y attestent le déroulement d'une bataille entre Romains et Germains, probablement celle de Varus en 9 p.C. L'objectif de notre projet de recherche consiste à reconstruire le déroulement de la bataille. Désormais, il est devenu clair qu'il n'est pas possible de déterminer l'intensité des combats à partir des concentrations de vestiges. Il faut en effet tenir compte de l'impact sur le registre archéologique des interventions immédiatement postérieures à la bataille elle-même, telles que la mise à l'écart des soldats blessés ou le pillage des dépouilles par les vainqueurs. Cet article présente les trouvailles et les caractéristiques du site de Kalkriese, en particulier de la zone principale de l'«Oberesch», où ont été retrouvés la plupart des objets romains ainsi que le rempart construit par les Germains pour tendre leur embuscade à l'armée romaine et une série de fosses contenant les ossements des soldats romains tués. Enfin, sont proposées de nouvelles approches méthodologiques pour l'interprétation des champs de bataille antiques.

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## KEYWORDS - PALABRAS CLAVE - MOTS CLÉS

Kalkriese; Teutoburg Forest; Battlefield; Varus Battle; Romans; Roman weapons; battlefield archaeology; Arminius; Germans; ambush; looting.

Kalkriese; bosques de Teutoburgo; campo de batalla; matanza de Varo; romanos; armamento romano; arqueología de campo de batalla; Armiño; germanos; emboscada; botín.

Kalkriese; forêt du Teutoburg; champ de bataille; désastre de Varus; Romains; armement romain; archéologie des champs de bataille; Arminius; Germains; embuscade; butin.

INTRODUCTION<sup>1</sup>

Since 1987 we have been investigating in the vicinity of Kalkriese, a small village north of Osnabrück (Berger, 1996; Schlüter, 1999; Harnecker/Tolksdorf-Lienemann, 2004; Wilbers-Rost *et alii*, 2007; Harnecker, 2008; Rost, 2009d; Wilbers-Rost, 2009). The area is situated between the edge of the Northern German uplands and the lowlands.

Approximately 1,500 Roman coins and more than 5,000 fragments of Roman military equipment were brought to light; they are widely scattered in an area of more than 30 km<sup>2</sup> between the Kalkriese Hill, a part of the Wiehengebirge, and the Great Bog which is situated approximately 2 kms north of the mountains (fig. 1). The evidence indicates that Roman troops must have passed this area in Augustan times. This bottleneck is passable only on narrow zones at the foot of the hill, where settlements of the indigenous population were constructed on dry sand, and perhaps at the southern edge of the bog. Between these two zones there was a wet sandy plain which could be passed only with difficulties.

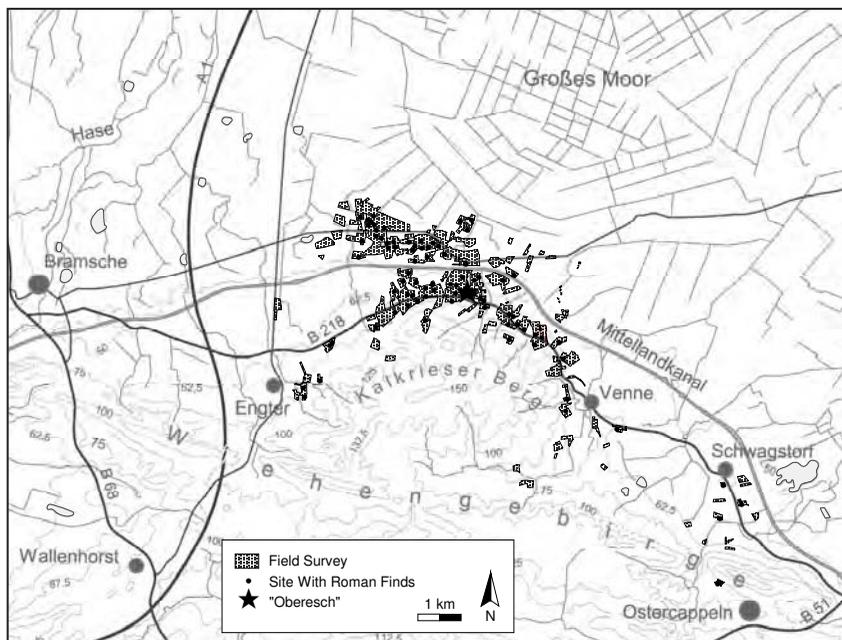


Figure 1. Kalkriese: area under investigation.

<sup>1</sup> We have to thank Dr. Ralph Häussler, University of Osnabrueck, for the improvement of our English manuscript.

Systematic excavations started in 1989 on a field called «Oberesch», situated in the centre of the area under investigation, where a concentration of coins and military objects had been discovered during field surveys. Roman military equipment –the face mask of a Roman helmet was among the first objects to be found– and the discovery of an artificial rampart led to the conclusion that this must have been the place of a battle between Romans and Germans. The rampart was not part of an enclosure, but had been built by the Germans as an ambush to attack Roman troops whom they must have expected to pass at this place. Further sites indicate that actions did not only take place at the Oberesch, but at different locations between the hill and the bog. It was a perfect location for a trap, since it was 70 to 100 kms to the nearest Roman camps on the Rhine and the Lippe, i.e. in the case of a battle other Roman troops could not easily reach the place to relief those who were in danger.

Silver coins, some gold coins and a large number of copper coins, some of them counter-marked by Varus, the head of the Roman troops in Germany from A.D. 7 to 9, were found. They date the event between A.D. 7 and 10 (Chantraine, 2002). Romans, probably Varus with three legions who wanted to return to the Rhine area from a summer camp at the river Weser in autumn of the year A.D. 9., must have been coming from the East; they already had been attacked at various places before they reached the Kalkriese Hill and the Oberesch. The number of soldiers involved in the battle is still debated since a number of soldiers had stayed in the camps on Rhine and Lippe in order to protect them and to organise the supply of the summer camp. Maybe Varus had about 10.000 to 15.000 men on the march.

#### RAMPART AND BONE-PITS AT THE SITE «OBERESCH»

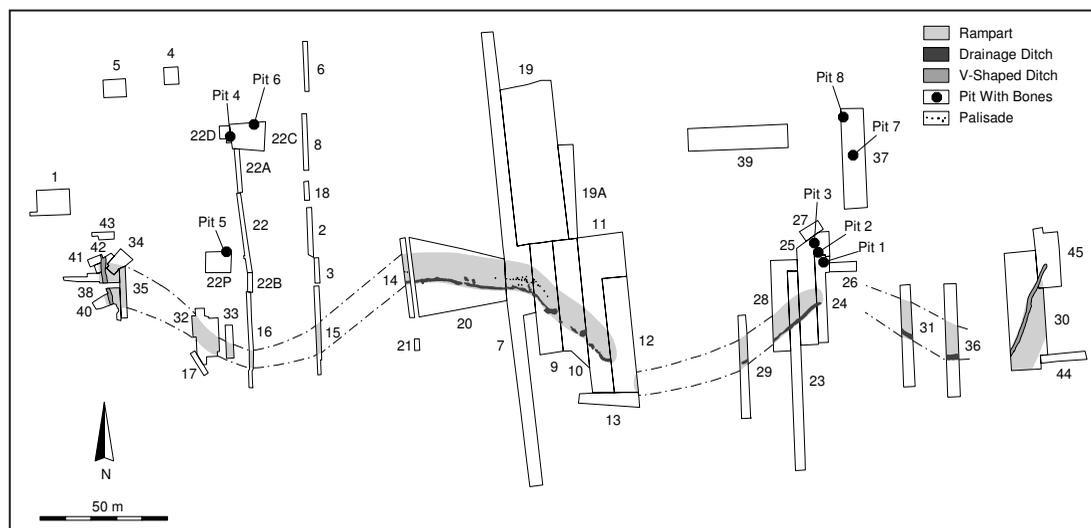


Figure 2. Site «Oberesch» with excavated trenches, rampart and bone pits.

Among the features which are directly connected with the combats, the rampart at the Oberesch site (fig. 2) is of significant importance (Wilbers-Rost, 2007: 30-84). It had a total length of about 400 m and was almost zigzagging, resembling bastions of a post-medieval

fort. It must have had a width of about 4 m<sup>2</sup> and a height of nearly 2 m, and at least in a small section it had a palisade to protect the combatants on the wall. In some sections there was a drainage ditch behind the rampart to prevent it from being destroyed by strong rain. The builders constructed it efficiently, making use for example of the local topography. They also took the material that was available in the immediate vicinity: sometimes turf and sand, sometimes limestone where turf was rare (fig. 3).



*Figure 3.* Western part of the rampart where sand, turf and stones were used for the construction; in the lower part the skeleton of a mule is slightly visible.

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<sup>2</sup> There is a zone without any Roman finds which indicates the place of the original turf wall since the objects were lost after the wall had been built. In the excavations we notice today the layer of the collapsed wall; this is much wider.

The wall had different small passages; thus the Germans could leave the shelter of the fortification to fight, but they could also retreat fast<sup>3</sup>. With the rampart to the south, the wet area to the north, creeks in the east and the west of the field which was partly wooded, the site «Oberesch» was like an encirclement that allowed the Germans to either let the Romans pass or attack them. In spite of their large military might, the Varian troops would have found it difficult to fight successfully, nor could they escape unharmed.

Parts of the rampart must have collapsed during or shortly after the combat as can be seen by skeletal remains, especially of mules. In two cases (figs. 4 and 5) larger parts of mules' skeletons with parts of their harness were preserved, having been covered by material of the wall before wild animals could tear the carcasses away or before the Germans could plunder the equipment.



Figure 4. Complete skeleton of a mule.

<sup>3</sup> Such a short-term construction with many passages and only one fortified segment would not have made sense as a Roman camp.



Figure 5. Bones of a mule with metal parts of the equipment.



Figure 6. Bone pit no. 5; in the center the skull of a man.

While those features were connected with the battle, there are other features at the Oberesch which indicate activities on the battlefield that probably took place some years later, like a number of pits containing the bones of the dead (fig. 6). In these pits, human bones are always mixed with animals bones. The skeletons are not complete and most of the bones are only small fragments in a very bad condition. They must have been lying on the surface for two to ten years before they were deposited (Großkopf, 2007: 176; Uerpmann and Uerpmann, 2007: 112). Some bones, mostly skulls, show cut marks by swords. All human bones are from men<sup>4</sup> between 20 and 40 years of age and well nourished. These were the bones of Roman soldiers and animals of their baggage train; they were not buried immediately after the battle but years later – probably in the year 15 when the Roman commander Germanicus visited the place of the battle as Tacitus (*Ann.*, 1.61-62) reports. So far, eight such bone pits have been discovered: they probably represent a kind of massgraves for the legions of Varus.

### ROMAN MILITARY EQUIPMENT

The Roman items left on the battlefield indicate the presence of both fighting troops (figs. 7-11) and a large baggage train<sup>5</sup>. From the baggage train we have a few pieces from wagons and harnesses of mules or horses. Above these, there are fragments of glass and silver vessels and glass eyes that probably were decorations of Roman furniture. They are indicators for luxurious objects which might have been carried on the wagons and suggest that the Varian troops did not expect to become involved in a battle since they had planned peaceful interaction with the Germans. Furthermore, there are pioneer axes, different tools, medical instruments, seal capsula and styli, weights and plummets among the finds.

Lance and spear heads, arrow heads, sling shots, pieces of *pila* and catapult bolts show the use of long distance weapons, while fragments of scabbards indicate short distance weapons like swords or daggers. Besides these weapons, we have found fragments of defensive arms, like crest holders of helmets, fittings from shields, plates, buckles and fittings from laminated armour and hooks from ring mail shirts; moreover, pieces of belts and apron fittings were found. In addition, brooches, finger rings and many nails of sandals were excavated. The presence of cavalry is indicated by finds of snaffle bits and spurs.

Most artefacts are very small. Only a few of the 5,000 objects from the Oberesch are complete and many show signs of destruction. When analysing finds from the Oberesch (fig. 12), we realised that we often find small fragments of equipment that were fixed to the soldier's body (fig. 13), such as buckles and plates from armour, hooks from ring mail shirts, scabbard fittings, belt buckles and apron fittings. One may explain their condition as the result of body stripping by the Germans who plundered the battlefield. The possibility to participate in looting was one of the reasons for Germans to fight against the Romans as Cassius Dio (56.18-23) reports, and the evidence suggests that they did this quite brutally and systematically, resulting in many small finds, especially of the equipment fixed to the soldiers, which was brutally pulled off. These finds are scattered primarily in front of the rampart and seem to indicate places where dead soldiers had been lying on the surface.

<sup>4</sup> There was only one bone of a woman (Großkopf, 2007: 174).

<sup>5</sup> The catalogue of all finds from the first digs at the Oberesch has now been published by Joachim Harnecker (Harnecker, 2008). Figures 7-11 in this article are copies of the plates in that volume, and we have to thank J. Harnecker for leaving them to us.

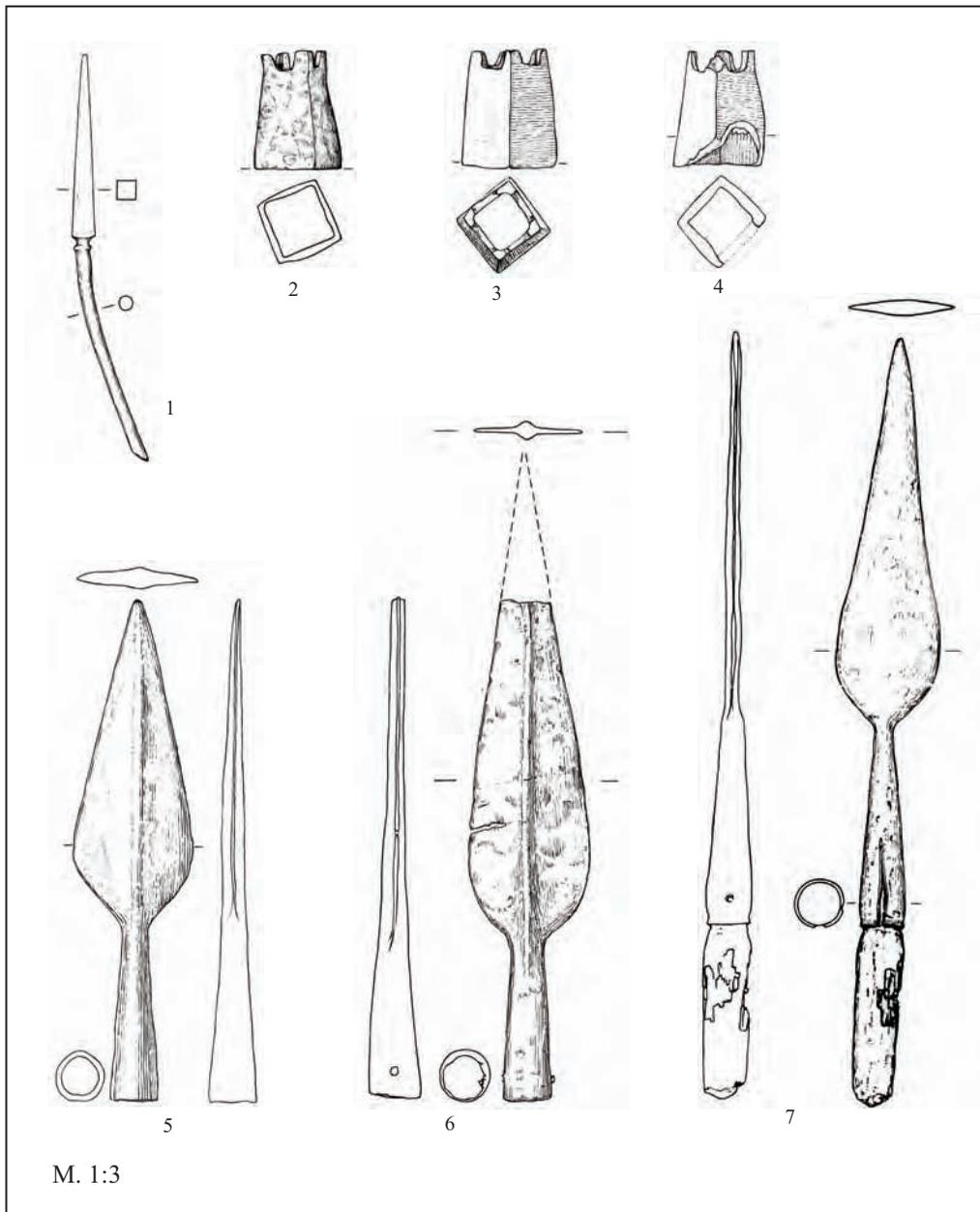


Figure 7. Kalkriese-Oberesch: head and collets of *pila*, lanceheads (iron).

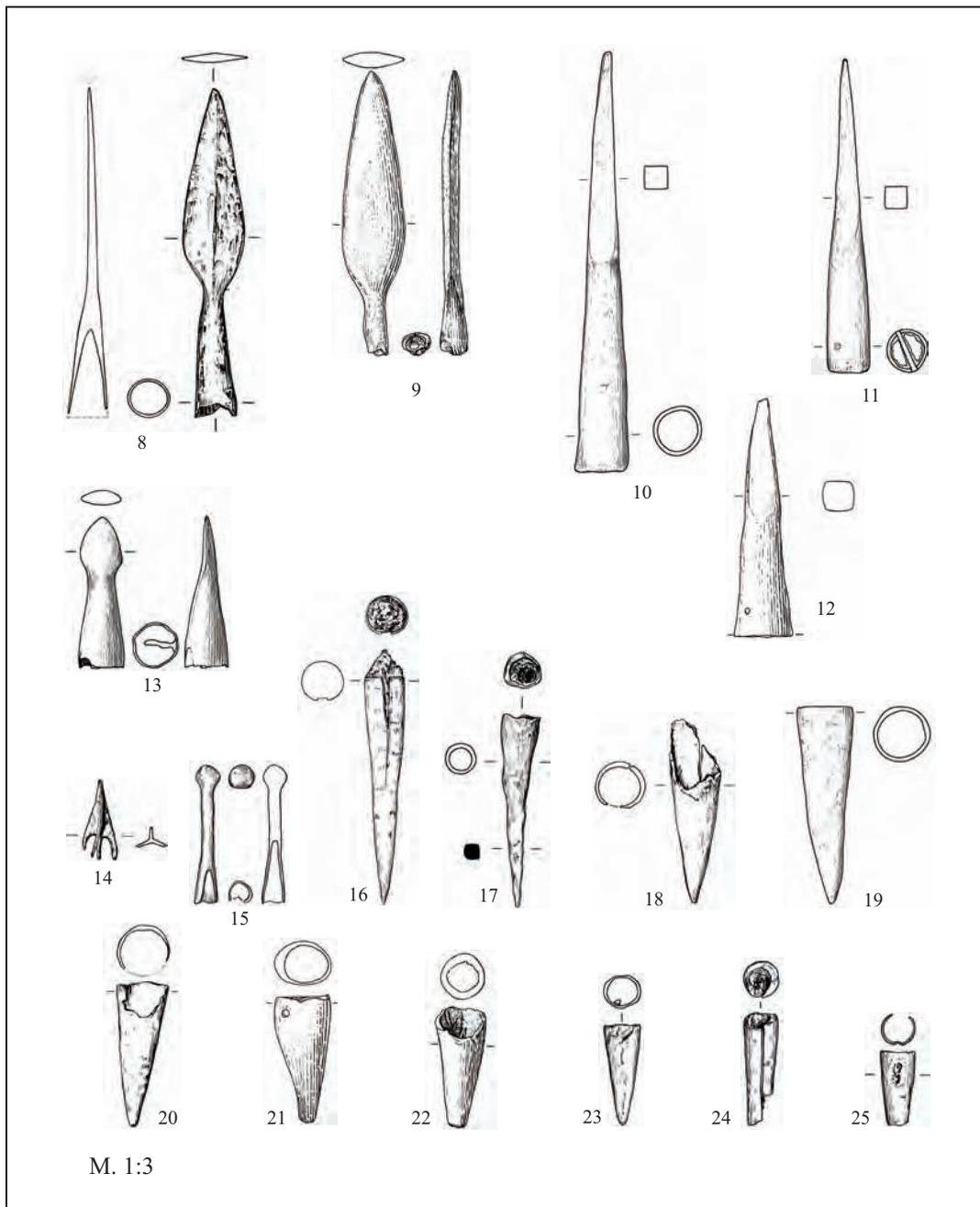


Figure 8. Lance- and spearheads, catapult bolts, lance butts (iron).

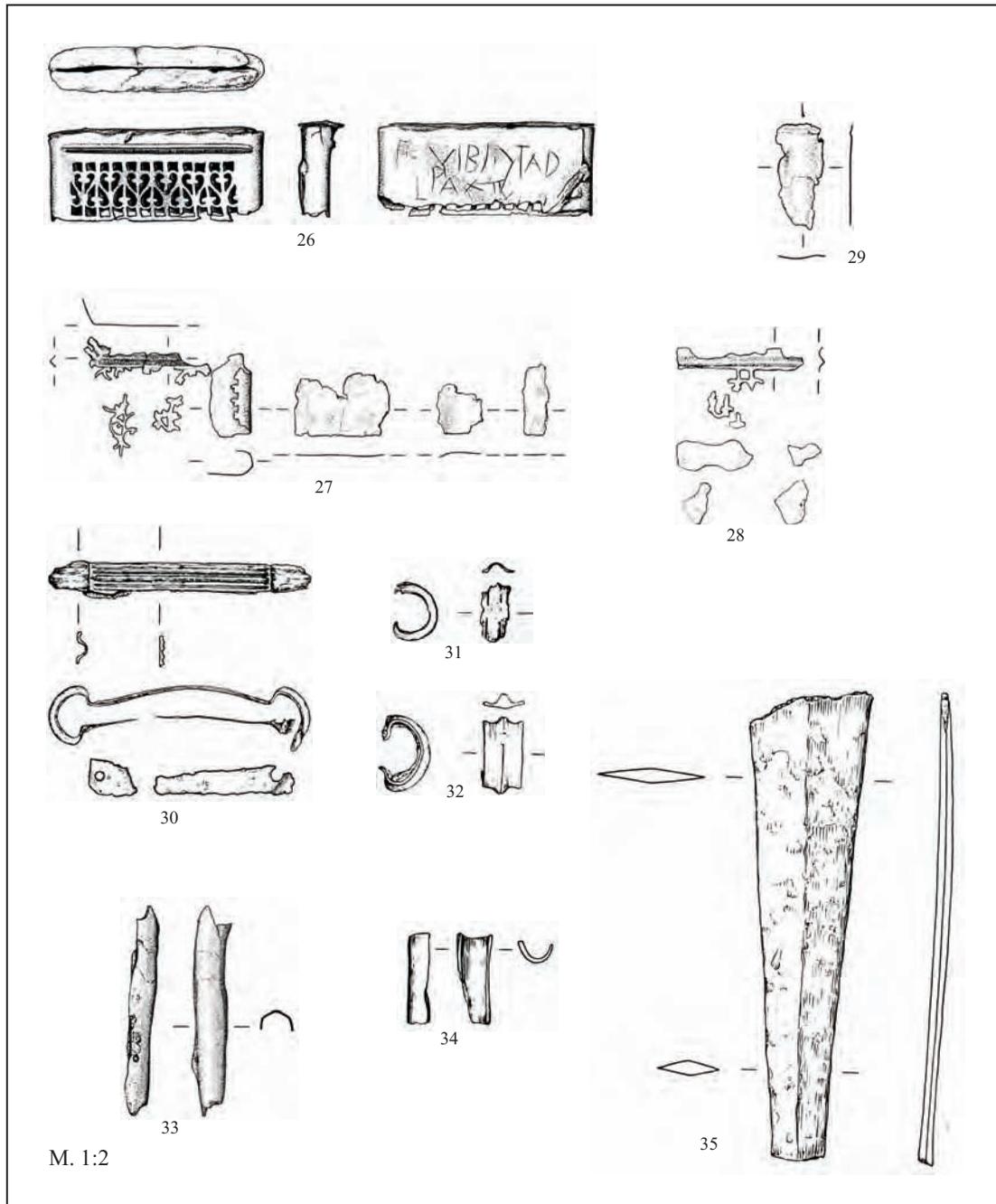


Figure 9. Fragments of scabbards (bronze) and of a sword blade (iron).

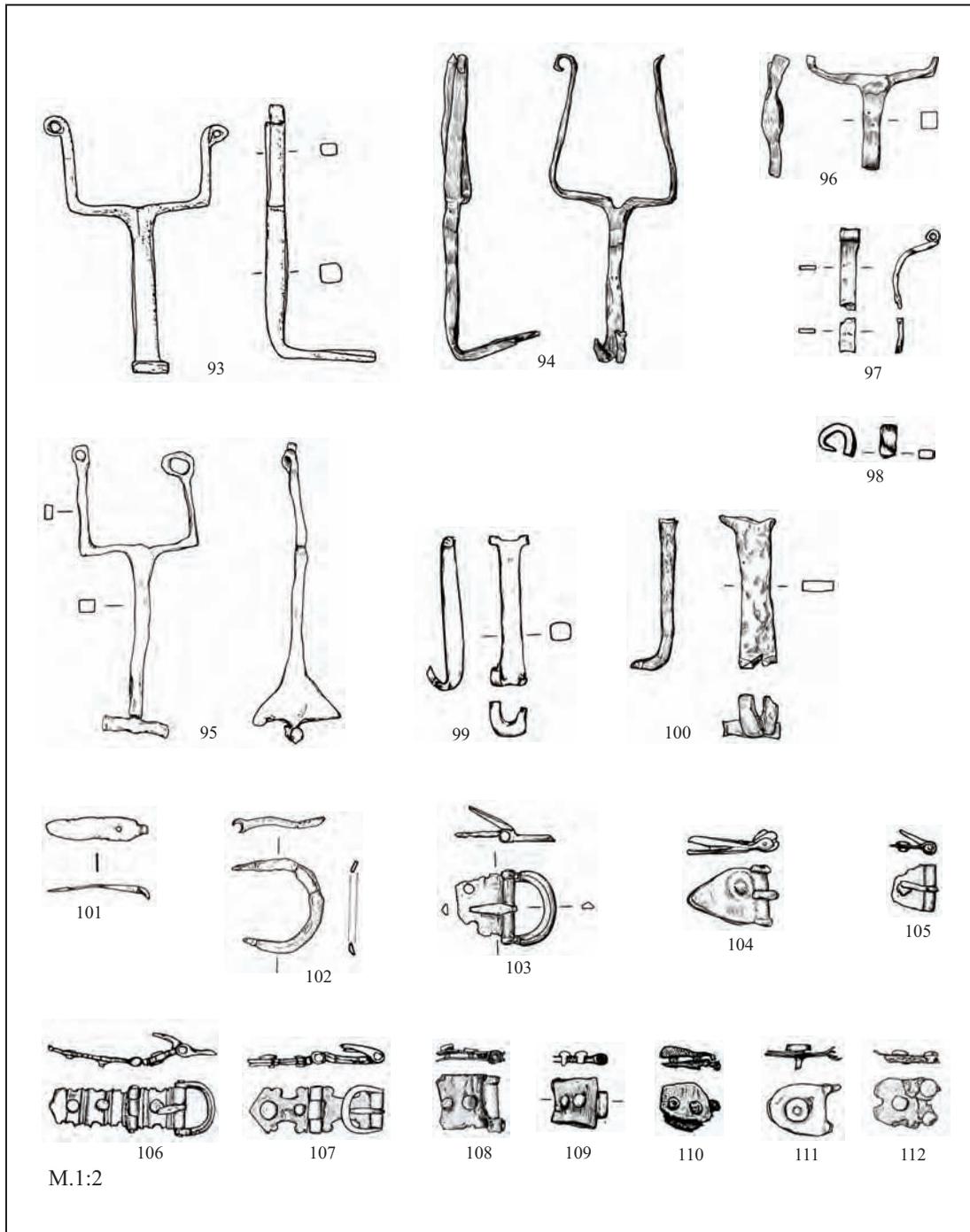


Figure 10. Crest holders, buckles and hinges of laminated armour (iron).

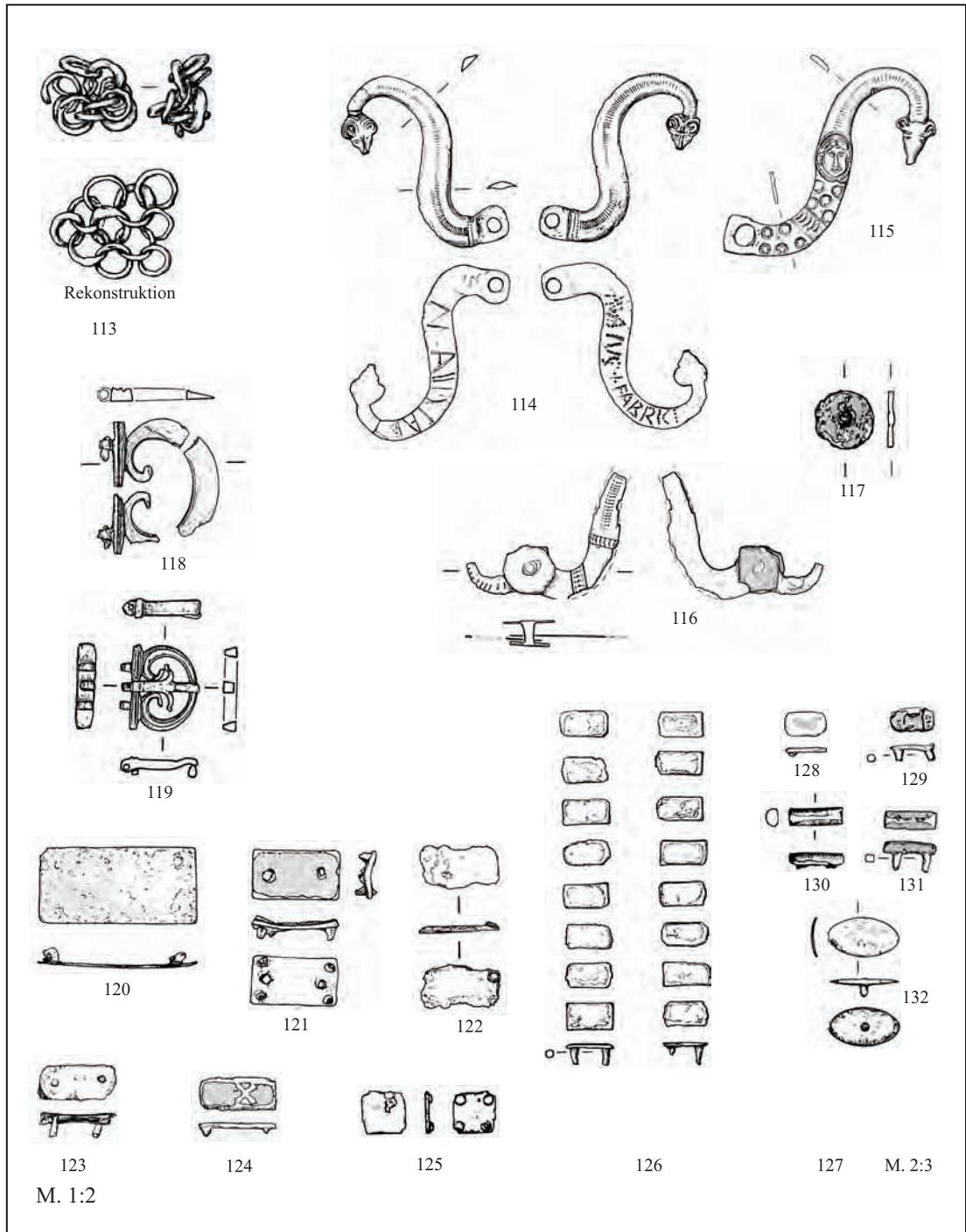


Figure 11. Rings and hooks from ring mail shirts, belt buckles and fittings, apron fittings (iron, bronze, partly silver plated).

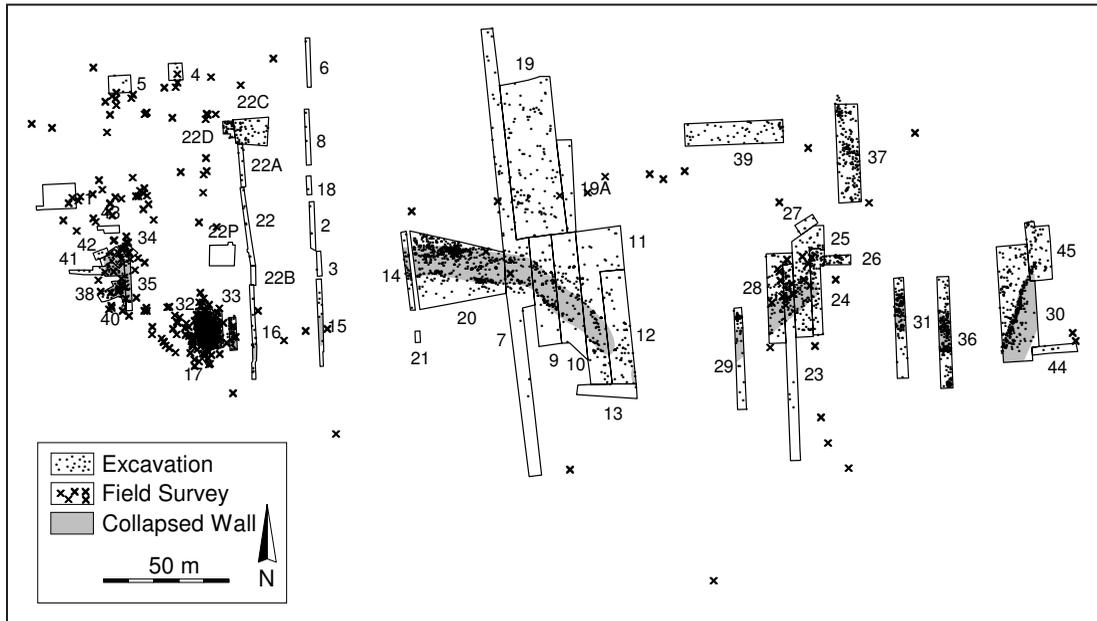


Figure 12. Roman artefacts from excavation and field survey at the site Oberesch.



Figure 13. Roman legionary of Augustan time with equipment (following Horn 1987, fig. 1). Shaded: objects found in Kalkriese.

When mapping Roman artefacts, one notices another peculiarity: bronze fittings of shields, many of them folded several times (fig. 14), concentrate exclusively in the immediate vicinity of the rampart (fig. 15). Obviously the Germans, who were primarily interested in the metal as

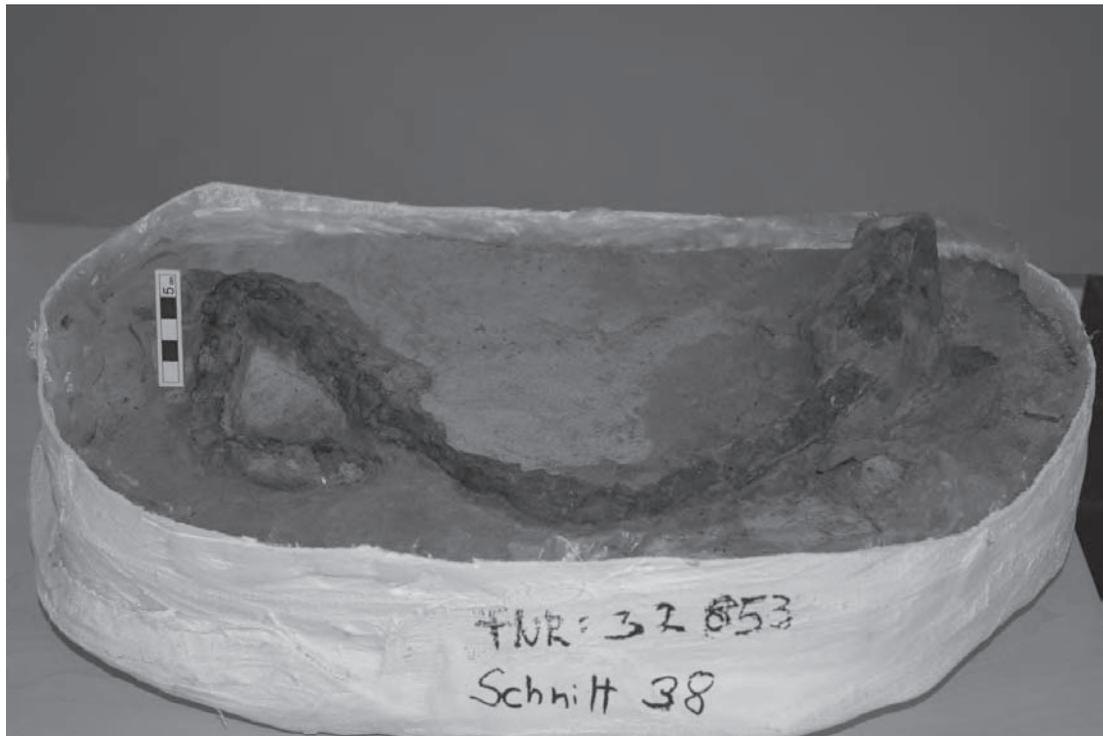


Figure 14. Long fragment of a bronze shield fitting, bent several times.

raw material and less in the complete objects, collected shields near the wall where the metal parts were separated from the wooden parts which were left, while the metal fittings were prepared by folding for an easier transportation and carried away. Even the most famous among the finds from the Oberesch, the iron face mask of a Roman helmet (fig. 16), was destroyed. Originally it had been plated with silverfoil which the German plunderers cut and picked up.

The looters carried away nearly everything as they could use it or melt it down. Tons of metal must have been left on the field after the battle, but the losers were despoiled by the victors and most of the objects were taken away. Therefore we do not find complete armour<sup>6</sup> but only those pieces and fragments which the Germans who plundered the battlefield failed to notice.

<sup>6</sup> Not even a complete gladius was discovered.

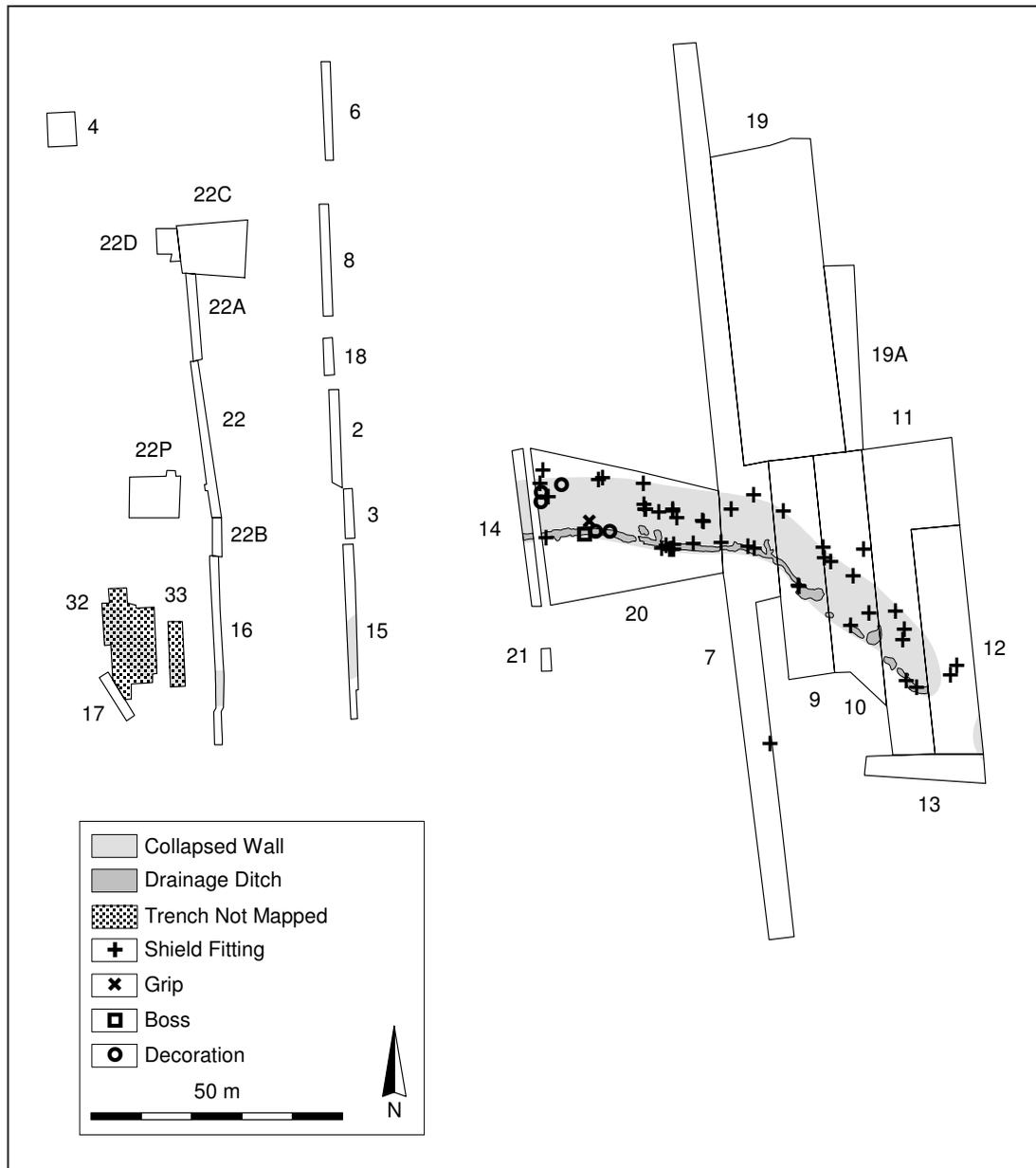


Figure 15. Distribution of metal parts of shields at the site «Oberesch» (trenches 1-22).



Figure 16. Face mask of a Roman helmet (iron, edged with bronze, fragments of silver; length: 16,9 cm).

#### FIND DISTRIBUTION IN THE AREA UNDER INVESTIGATION

On the Oberesch, the rampart, the number of Roman artefacts and the bone-pits indicate heavy fighting and many casualties. This seems to be the centre of the disaster at the Kalkriese Hill (fig. 1). But what are the possible reasons to explain the discrepancy in find distribution in the whole area under investigation which has a size of more than 30 km<sup>2</sup>? The amount of Roman finds is quite diverging: there are about 5,000 Roman items from the Oberesch, but only about 500 from all the other places, although the excavated sections are of nearly equal size.

In the early years of this research project, we thought that we may use the number of finds as an indicator for the intensity of fighting. Meanwhile we know that additional factors determine the archaeological remains of a battlefield, especially the processes that follow the fighting. We have to bear in mind these post-battle processes before we can draw conclusions for the course of the battle.

From ancient sources like Cassius Dio (56.18-23) we know about the desire of the Germans for booty. Tacitus (*Ann.*, 1.64) on the other hand describes that the Roman army under Caecina which fought against the Germans in A.D. 15 was trained to rescue the baggage train and to take care for their wounded comrades as long as possible. For Kalkriese, this would imply that the Romans should have been able to carry away their wounded and the equipment in the first part of this battle in a defile. These are two important components of military behaviour, which we have to take into account when we try to interpret the distribution of artefacts on an ancient battlefield: rescuing the dead and wounded and the looting by the victors are activities during a battle, and in particular at the end of the fighting, which may not only have

reduced but even manipulated the material remains of a battle to a high degree. Kalkriese may be used as a case study, where the impact of such post-battle processes can be analysed<sup>7</sup>.

The Roman army had to pass the narrow passage between hill and bog, marching in a long row. Unable to organise a concentrated formation in that landscape, the legions were attacked by German troops from the side at several places in an area of approximately 15 km along the hill while marching from east to west.

The fighting started east of the Oberesch. However, the first attacks of the Germans probably did not cause any substantial losses for the Roman army. We therefore should not expect to discover many archaeological finds for the first phase of the engagement. More intensive fighting would have subsequently resulted in more wounded and dead soldiers. But it might be wrong to expect an adequate number of remains, because the Romans should still have been able to take care of the wounded soldiers and the baggage train. As long as the organisation of the army, especially the medical service, functioned, they should have been able to carry the wounded along with the intact parts of the legions. Since there was no reason for the Romans to transport their wounded people undressed, only very few pieces of equipment, especially of those pieces which were fixed to the soldiers would have been left. This may explain why only about 10 % of the finds were discovered outside the Oberesch.

Being a battle in a defile, we can expect that a large number of wounded who were injured in earlier actions reached the central section of the battle where the military organisation, including medical services and logistics, collapsed and the troops were largely annihilated<sup>8</sup>. At this site, many soldiers were killed, among them those who had reached the site as invalids, and though they had probably not fought there any more, their equipment was of course also left. This phenomenon may have resulted in the enormous divergence of find distribution between remains from the Oberesch and from areas east of this site. At the Oberesch the remarkable number of fragments of the legionaries' equipment which was fixed to the body indicates the brutal despoiling of the dead soldiers at this central place of the disaster.

West and northwest of the Oberesch fewer Roman items were discovered, but among them were precious objects like coin hoards and a silver scabbard (Franzius, 1999). How can we explain this? In the development of the battle, these sites may be interpreted as zones of skirmishes and flight, following the annihilation of the legions. Fewer soldiers may have died there, but more soldiers might have been captured; probably there was less equipment left to be plundered. Besides, the Romans could have tried to hide valuable parts of their equipment like coins and scabbards when they realised that they would not be able to escape.

At the Oberesch many more of such valuable objects may have existed at the end of the fighting. However, as these pieces were attached to the numerous dead and wounded legionaries that were concentrated at this place, they were well visible and plunderers could have been much more successful in retrieving all these valuable objects than in zones where such items were lying isolated.

## METHODOLOGICAL CONSEQUENCES FOR BATTLEFIELD STUDIES

As we have seen, the interpretation of a battle in the landscape heavily depends on the record of the finds, because we usually lack other features, like fortifications. Sometimes

<sup>7</sup> A third factor are offerings which are said to have been performed by the Germans after the Varus Battle (Tacitus *Ann.*, 1.61); however, no evidence has been found at Kalkriese until today to support this statement (Rost, 2009b: 73-76).

<sup>8</sup> Dealing with the medical care of wounded soldiers in the Varian army: Rost, 2009c.

arrowheads and sling shots may help to identify an ancient battlefield (Rost, 2007: 51; Rost, 2009a: 105-107). Comparable to the ammunition of firearms from more recent battlefields they are too small and worthless to be collected, so that the distribution of such projectiles may indeed indicate the intensity of combats.

In Kalkriese, however, only two arrowheads and three slingshots were found<sup>9</sup>. In contrast to these «one-way weapons» most of the fragments discovered in Kalkriese are not a result of fighting but of the subsequent processes, especially looting and body stripping.

One of the main reasons for the numerous military remains in Kalkriese may be that a large army involved in the fighting was equipped with many metal weapons and accompanied by a large baggage train and that the troops were totally defeated far away from a region under Roman control. The losers, without hope for relief, were completely left to the arbitrariness of the victors. The Germans did not spare the defeated Romans and despoiled them brutally. Besides, the Germans started processing metal objects on the battlefield itself; this also resulted in the many fragments which entered the archaeological record.

The Kalkriese battlefield has another advantage over other sites for the study of relics from a military conflict: it is situated in an area beyond Roman control and we can be sure that the Roman objects belong to the battle, not to a Roman settlement. It would be much harder to get evidence for a battle when smaller armies or troops who did not have equipment with many metal artefacts were involved in a combat. The scarcity of Germanic items in Kalkriese points out another phenomenon: victors who won in their own territory are often able to care for their wounded soldiers and to bury the dead away from the battlefield, so that their equipment is being removed from the battlefield, too.<sup>10</sup>

One may conclude that it is less the action, but the extent of clearing a battlefield after the fighting had come to an end that may explain the difficulty in finding archaeological evidence for a military conflict. Depending on the political and social circumstances, this may be the recovery of wounded and corpses on each side but as well the looting which may include body stripping of the losers. In Kalkriese we are able to compare sites with varying qualities and quantities of find distribution. It is possible to identify different activity zones; step by step we can reconstruct the development of a battle which led into a disaster.

The site of Kalkriese clearly demonstrates that ancient battlefields are a category of their own regarding the survival patterns of archaeological finds - patterns which are very different from funerary, sacred or settlement sites. It is thus necessary to develop a new methodological framework to interpret ancient battlefields adequately.

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<sup>9</sup> Perhaps units using such weapons were not involved in the battle to a large extent.

<sup>10</sup> Besides, in Kalkriese, some of the Germans might have fought with Roman weapons because they had served in auxiliary troops under the leadership of Arminius.

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