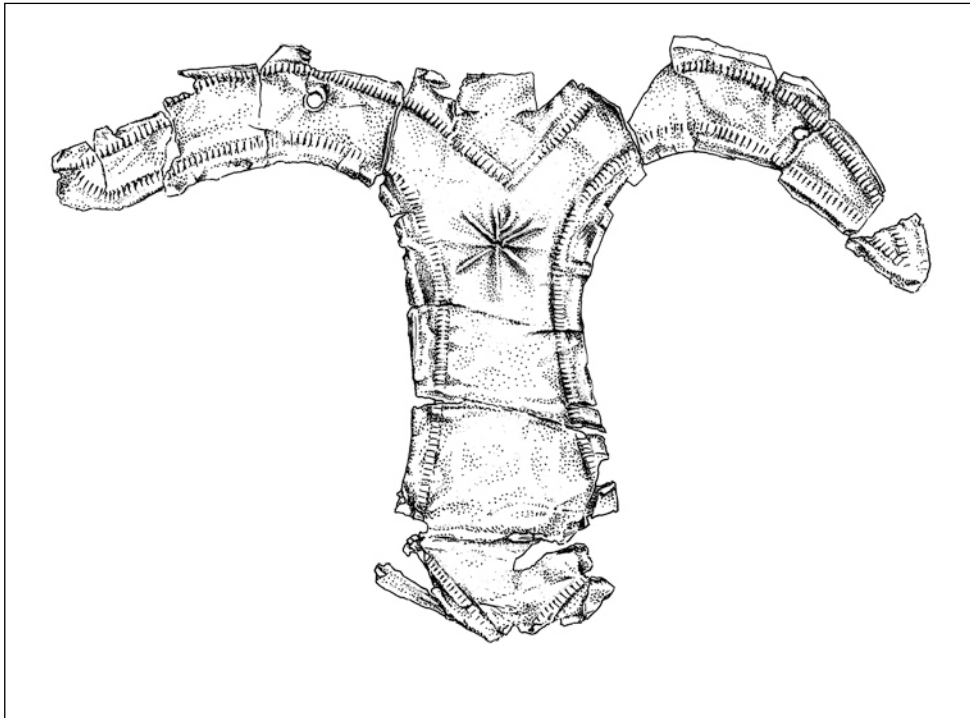


THE ENEMIES OF ROME

Edited by László Kocsis

Proceedings of the 15th International Roman Military
Equipment Conference, Budapest 2005



JOURNAL OF ROMAN
MILITARY EQUIPMENT
STUDIES

VOLUME 16 2008

THE ENEMIES OF ROME

Edited by László Kocsis

Proceedings of the 15th International Roman Military
Equipment Conference, Budapest, Hungary
Hungarian National Museum 1st to 4th September 2005

HUNGARIAN NATIONAL MUSEUM

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Cover Illustration: The coating of the nasal of the helmet from Hetény with Chi-Rho monogram

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Enemies of Rome and Byzantium

Volume 16 2008

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EDITORIAL

ROMECC XV Conference in the Hungarian National Museum, Budapest

The Roman Military Equipment Conference (ROMECC) was held in Hungary for the first time between September 1–4, 2005, in the Hungarian National Museum.

ROMECC was an initiative of British, Dutch and German researchers to create a platform for researchers studying Roman weapons, military equipment, written sources, Roman warfare and battlegrounds to present and discuss new their findings. The first conference was held in Sheffield in 1983. Fourteen ROMECC conferences have been held since, providing an opportunity for researchers to meet and discuss various issues in the light of the archaeological and historical evidence. The papers read at these conferences were at first published as separate BAR volumes and subsequently in the ARMA newsletter, launched especially for this purpose, as well as in the volumes of the *Journal of Roman Military Equipment Studies*.

The theme of the 2005 conference was “Rome and her enemies”.

The decision to hold the ROMECC XV conference in the Hungarian National Museum in Budapest (Fig. 1) was made at the ROMECC XIV conference in Vienna in 2003. This opportunity motivated us to invite the hitherto undeservedly neglected colleagues in Russia, the Ukraine and Kazakhstan studying the archaeology of the peoples living on the eastern fringes of the Roman Empire in addition to the European, Israeli and American researchers. We seized this opportunity to forge contacts with similar institutions and research projects, and to make more widely known a rich repository of barely accessible source material and research findings at a major conference. Another unique opportunity was that all aficionados of archaeology and history could participate, irrespective of their experience or academic training.

The interest in the conference surpassed by far the extent of that for previous conferences. Some sixty researchers and scholars indicated their intention to participate during the four days. Researchers whose lectures could not be fitted into the planned schedule of thirty-six lectures offering a fascinating overview of the conference’s theme from various perspectives were given the opportunity to present their findings on posters on three occasions.

The programme of the conference was as follows:

The morning session on September 1 was chaired by Professor Alexander Simonenko.

Following registration and the opening of the conference, the first paper was read by Jon Coulston (“*Parthian and Sasanid warfare and equipment*”), followed by the following three papers:

Yurij Zaytsev, “*Noble warrior’s with La Tène D military equipment in the Mausoleum of the Scythian Neapolis*”;

Kiril Firsov, “*Weapons of the population of Central and South-Western Crimea of the Roman period*”; and

Valentina Mordvintseva, “*Elite necropolis of barbarian horsemen of the second half of the 1st century AD on the Scythian Neapolis*”.

The morning session was rounded off by Boris Raev’s paper, “*The secondary use of the Roman military equipment in Scythian world*”.

The afternoon session was chaired by Dr. Valéria Kulcsár. Following the presentation of posters prepared by László Borhy, Eszter Isvánovits, Valéria Kulcsár, Hans-Joachim Schalles and Krisztina Szirmai, three papers were read before the coffee break:

Hansjörg Ubl, “*Rom übernimmt die Waffen seiner Gegner – Ein Überblick*”;

Mihail Zahariade, “*Late Roman Equipment and Weapons on Limes Scythicus*”; and

Katerzina Czarnecka, “*Simply ornament or something more? Marks of undetermined function found on barbarian lance and spear*”.

ROMECC PHOTO 2005

1. Bernard Van Daele
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3. Malcolm Lyne
4. Hans Joachim Schalles
5. Joachim Harnacker
6. Eckhard Deschler-Erb
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32. Julian Bennett
33. Jonathan Coulston
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60. Xenia Pauli-Jensen
61. Mike Bishop
62. Carol Van Driel
63. Michael J. Klierh
64. Fiema Zbigniew
65. Lea Meistrup-Larsen
66. Eva Borsos



Fig. 1. Participants of the ROMECC XV Conference in front of the Hungarian National Museum in Budapest

Four papers were read after the coffee break:

- Alexander Kozlenko, “*Barbarian throwing clubs and the problem of Roman plumbata origins*”;
 Ildar Kayumov, “*Late Roman onager: new sight on the old problem*”;
 Nicolae Gudea, “*Sagittarii porolissenses und ihre westliche Feinde*”; and finally
 Ioana Bogdan Cataniciu, “*Sagittarii on the South-East Frontier of Dacia*”.

Following the lectures in the ceremonial hall of the Hungarian National Museum, participants had a chance to visit the museum’s historical exhibitions during the reception.

The morning session on September 2 was chaired by Professor Hansjörg Ubl. Six papers were read at this session:

- László Borhy, “*Unpublizierte Paraderüstungen in ungarischen Museen*”;
 László Kocsis, “*New data on the question of morphology and dating of the Intercisa III type helmets*”;
 Hans-Joachim Schalles “*A well-preserved 1st century torsion-weapon found at Xanten*”;
 Eckhard Deschler-Erb, “*Caesarisches Militär in Basel*”;
 Michael J. Klein, “*Roman daggers and swords from Mainz-Mogontiacum. A critical catalogue*”; and
 Oleg Radjush, “*New finds of the Roman arms and equipment in Russia*”.

The afternoon session was chaired by Dr. László Borhy. Five papers were read after the presentation of posters by Balázs Komoróczy, Peter Dyczek, Jan Rajtár, Mirjana Sanader, Domagoj Tončinić, Jaroslav Tejral and Paula Zsidi:

- Mike Bishop and David Sim: “*The manufacture and repair of the Carlisle Millennium Armour*”,
 Norbert Hanel, Susanne Wilbers-Rost and Frank Willer, “*Zur Reiterhelmmaske vom Schlachtfeld bei Kalkriese*”;
 Valentina Mordvintseva, “*The Settlement and the Necropolis of Alma-Kermen, South-west Crimea*”;
 Susanne Wilbers-Rost, “*Besondere Fundkomplexe mit römischer Militärausrüstung vom Schlachtfeld in Kalkriese*”; and
 Achim Rost: “*Conditions for the preservation of Roman military equipment on battlefields – The example of Kalkriese*”.

The participants had the opportunity to visit the museum’s archaeological exhibition during the reception after the afternoon session.

Six papers were read at the morning session chaired by Dr. Eckhard Deschler-Erb on September 3:

- Carol van Driel-Murray, “*From Thorsberg to Cuijk: organics across the frontiers in the 3rd and 4th centuries AD*”;
 Xenia Pauli Jensen, “*New perspectives on Roman military equipment from the war-booty sacrifice of Vimose, Denmark*”;
 Florian Himmler, “*Testing the Ramshaw boot*”;
 Ivan Radman-Livaja, “*Roman belt fittings from Novi Banovci in the collection of the Zagreb Archaeological Museum*”;
 Emilio Illaregui, “*The Cantabrian tribes in the wars against Rome*”; and
 Dorel Bondoc, “*An evidence of the invasion of the Huns at the lower Danube: Hunnish cauldrons on the territory of Romania*”.

Six posters by Thomas Grane, Franz Humer, Zsolt Mráv, Adam Szabó, Monika Merczi, Péter Prohászka and Zsolt Vasáros were presented after lunch as part of the afternoon session, after which the participants visited Aquincum, where our colleagues working in the Aquincum museum guided us around the ruins. The participants were shown the chronoscope installed in Spring, a time machine helping to visualise how the ruins looked during Roman times. The chronoscope was greatly admired by those colleagues, who came to the conference from an institution with an open-air museum.

Following the visit to the civilian town, we spent some time at Flórián Square, where Margit Németh, Orsolya Láng and the present author showed the visitors the excavated and restored sections of the Roman legionary camp at Aquincum.

From Flórián Square we went to the Budapest Historical Museum in the former Royal Palace in the Castle area along the Pest embankment offering a stunning view of the city. Our guests could admire the panoramic view from the museum, showing Budapest in all her evening splendour, and as part of the reception, they received a bottle of Somló Juhfark 2004 wine with a personalised label and the logo of the conference. This was the first occasion that the unique bottle protected by trademark was presented to the wider public: a coloured image of the Hungarian National Museum appeared through a rectangular panel, using the light-coloured wine as a magnifying glass. (Fig. 2)

The last day of the conference, September 4, was chaired by Dr. Carol van Driel-Murray. Five papers were read:

Bartosz Kontny, “*Reconstruction of barbarian fighting techniques in the Roman Iron Age based on the analysis of the weapon sets from graves – The case of the Przeworsk culture*”;

Alexandr Simonenko, “*The Late Hellenistic Helmets of Sarmatia*”;

Igor Gavritukhin, “*Late Roman Military Style in Forest and Steppe-forest Zone of East Europe*”;

Aiman Dossymbaeva, “*Turkic Tribes of the Kazakh Steppe and Byzantine*”; and finally

Guy Stiebel, “*East is East, and West is West, and never the twain shall meet*”, a most informative and enjoyable paper.

The session and the conference were closed by Jon Coulston, one of the founding fathers of ROMEC, and chairman of the organising committee.

Two meetings were held concerning ROMEC’s future during the conference with the participation of ROMEC’s founders, our colleagues from the former Soviet Union and the directors of the Hungarian National Museum. Acting on a proposal made by the present author, it was decided that the conference, which was more of an archaeological fellowship, should be transformed into an association with a legal status. We accepted Jon Coulston’s suggestion that the association be named Association for Roman Military Equipment Studies (ARMES).

The new association will provide the necessary background for forthcoming conferences, as well as for new publications. Our British and Dutch colleagues undertook the task of elaborating the association’s constitution and by-laws. Another important decision was reached, namely that in view of Hungary’s role as a link between East and West for many millennia, the Hungarian National Museum in Budapest should house the association’s central library, which will be called the H. Russel Robinson Library of ARMES.

The conference provided an excellent opportunity to find enthusiastic correspondents among our colleagues from Europe and Asia, who indicated their willingness to assemble a bibliography of Roman military equipment studies covering the period between 500 BC and 500 AD published in their homeland and to send a copy to the planned central library in exchange for similar studies from other countries.



Fig. 2. The personalised gift presented to the lecturers of the conference

One participant of the conference was Peter Conolly, a renowned archaeologist and a highly respected artist, whose name is synonymous with artistic re-creations of the daily life of Ancient Greece and Rome. Peter's superb illustrations provide an accurate and well detailed view of the ancient world, based also on the findings of experimental archaeology, allowing a glimpse into a vanished world, which was earlier only visible to specialists.

Mike Bishop, one of ROMEC's founding fathers, who until now bore the burdens of the publication of the conference papers, held a lecture on the reconstruction of various weapon types. Valentina Mordvintseva offered a vivid account of the finds from 1st century royal burials and the graves of Barbarian mounted warriors.

We were quite overwhelmed by the enthusiasm of the younger generation of scholars, who tested the durability of the hobnails of the caligae and the techniques used in nailing them in practice, alongside the techniques used for manufacturing boots and other footwear. Another group tested the joys of ancient boating and the hardships suffered by oarsmen by building a Roman river boat.

The conference fulfilled its objective of providing new data on the arms and warfare of the Romans and their Barbarian enemies. The inclusion of the archaeological heritage of the Crimea in Roman military studies will undoubtedly provide a new stimulus to this field of research.

László Kocsis



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The Enemies of Rome

Jon Coulston

The primary theme of *ROME* XV, 'The Enemies of Rome', was intended to address a weakness in the modern literature¹. Traditionally, scholars have treated Rome's enemies as something of an afterthought, and it is not difficult to understand why this was so.

The Roman army has enjoyed a very high modern regard for its organisation, capabilities and 'superiority' over its adversaries, and has indeed attracted specific interest from the time of Polybios through to the present². The nature of sources of evidence for the army, and the development of their study since the Renaissance, has privileged the 'civilised' over the 'barbarian'. Roman historical literature may be partial in standpoint and selective in survival, but it is bounteous compared with the literature of Rome's contemporaries and neighbours. After the incorporation of the Greek world and the treasury of Polybios' writings, there are few extant sources written with an 'outside' perspective, and those which purported to deal directly with non-Roman peoples, such as the works of Josephus and Jordanes, were situated firmly within Greco-Roman historiography. Roman ethnographic writings took some interest in military institutions, equipment and 'arts' of war. However, perspectives, agendas and literary genres severely limit application of the writings of Caesar, Strabo, Pliny and Tacitus to modern cultural studies of 'barbarian' peoples³. Roman victory monuments erected over centuries of warfare had few rejoinders in the art of other contemporary cultures. The series of rock-cut Sassanid Persian reliefs depicting defeated Roman Emperors and their soldiers, and the victory inscription of the Kāba-i Zardušt at Naqsh-i Rostam (Iran) make commemoration of the wars of Shapur I quite extraordinary⁴. Roman military sites of the later 1st century BC to the early 5th century AD are easily identified as field monuments, remarkably rich repositories of material, and rewarding as exercises in structural and artefactual recovery⁵. In comparison 'native' sites have received far less archaeological attention since excavation techniques developed in the 19th century.

Perhaps this development of academic study was inevitable, not least because it was a natural product of ancient Roman perspectives. Not only were writers from the Early Modern period onwards using Roman 'civilisation' to iden-

tify their own cultural legitimacy, but they were also adopting Greco-Roman values with respect to other, inherently 'lesser' peoples. Roman concepts of exploration, expansion of territory and imperial power eventually developed along formalised lines. Victories were enhanced if vanquished peoples could be clearly defined, culturally pigeon-holed, and listed in inscriptions. Even more effectively, they could be presented iconographically with specific dress, hairstyles and characteristic weaponry, as on the Columns of Trajan and Marcus Aurelius (Rome) or the Arches of Septimius Severus and Galerius (Rome, Lepcis Magna, Thessaloniki). In this respect the very definition and recording of peoples marked dominion of the known world, just as had been done previously by Egyptian pharaohs in their palaces, temples and tombs, Assyrian kings in their palaces, and Achaemenid Persian rulers on their palace reliefs and rock-cut monuments. For the Romans it was almost as glorious to contact new peoples who "never before had heard the name of Rome" as it was to crush them in war⁶. The ethos of conquest linked to exploration was explicitly modelled on the campaigns of Alexander the Great. Through military action 'civilisation' could be spread to the natives in the form of urbanisation, literary arts and technology. Thus both Trajan and Napoléon I ostentatiously took surveyors and other savants with them to the east, in the direction taken by the Macedonian conqueror⁷. Indeed members of the Roman elite would probably have understood and approved of the concern, so prevalent in modern publications, to label maps of Rome's frontier zones and the regions beyond with ethnic names. Perhaps the latter, very satisfying, practice represents tangible academic 'conquest' of the periods and issues involved?

In recent years there has been a major upsurge in scholarly exploration of ancient perceptions of geography, peoples and the 'other'. This has been concerned with the practicalities of Roman world view through the construction and use of maps, and the literary creation of ethnic mosaics in a Mediterranean context stretching back to Herodotos⁸. Theoretical studies of ethnography and cultural frontiers have been galvanised for many periods, not least under the influence of Edward Said's works, and numerous models

of ‘contact culture’ and ‘frontier orientalism’ are of direct relevance to Roman scholarship⁹. Interactions between peoples, for example, on the long-standing Habsburg-Ottoman frontiers of central and south-eastern Europe (15th-19th centuries), or in the forests and on the plains of North America (17th-19th centuries) provide much material to help refine cultural models for the Roman Iron Age.

Over the same time-frame of recent scholarship, the study of military history has also been going through a quiet revolution. This has developed differently in various national academic cultures according to broader modern historical developments (e.g. the Viet Nam War, the death of Franco, the ‘fall’ of the Russian empire etc.), but the globalisation of academia (along with so many other aspects of the contemporary world village), is joining up the field. For example, the vigorous debate over the Early Modern ‘Military Revolution’ (15th-17th centuries) has spilled over into other periods and has many direct implications for studies of Roman warfare and society¹⁰. The armies of 16th century Europe were the first pre-industrial institutions to approach the organisation and size of the Roman army since antiquity (partially excepting the forces of Byzantium and China). Thus questions, for instance, of technology, equipment, supply, recruitment, deployment, social impact, military identity, and political power are directly relevant. Moreover, many of the ‘fringe’ cultures, although often contemporaneously recorded in ethnographic modes similar to those adopted by the Romans, exhibited continuities in military techniques and technologies parallel to those employed by ancient peoples. For instance, Early Modern Tatars and Ottoman Turks, well recorded in literature, iconography and surviving artefacts, provide much material for the study of ancient steppe horsearchers and armoured cavalry (Scythians, Sarmatians, Huns, Avars, Hephthalites, Parthians and Sassanid Persians).

With these preliminary comments in mind, it would be useful to review some of Rome’s enemies in the light of recent developments in scholarship, starting with the northern European Iron Age opponents, moving on through Iberia, passing east along North Africa to the Levant, and concluding on the Eurasian steppe. This will help to contextualise some of the following papers in this volume, and will provide the reader with further avenues for research.

For northern and north-western Europe much recent discussion has centred around cultural definition and terminology. Objections have been raised to the use of the word ‘Celtic’ to describe peoples of central and western Europe

because its traditional application comes principally out of 19th century nationalist definitions¹¹. To use the noun form, ‘Celt’, promiscuously for peoples of such a vast region is meaningless in ethnic and political terms. ‘Celtic’ as an adjective can only refer to a language family and to some aspects of artistic style (although the latter has been far too widely and loosely defined, especially in connection with religious studies). Another issue which draws directly on the Roman literary sources is the discussion of the ‘warlike’ nature of Iron Age groups, and one which feeds into a much broader understanding of pre-industrial societies¹². What credence may be placed in the demonising attitudes of literary cultures to their ‘barbarian’ neighbours? How real were the special military qualities identified by imperial powers when employing manpower from such less developed societies? The historical examples are numerous, such as the Early Mediaeval reputation of Viking raiders, lowland Scots attitudes to highland clan warriors, the definition of ‘martial races’ preferentially recruited into the forces of British India, and the special status of various light cavalry and infantry along the Habsburg-Ottoman frontier¹³. Batavian auxiliaries in the Roman context might be compared with Gurkha troops from the 19th century onwards¹⁴. Attention paid by Roman literature and iconography to the Dacian *falx* may be an example of a ‘ferocious’ barbarian weapon holding a lurid fascination for the imperial power, paralleled by the scalping knife and tomahawk, *ikhwa*, Khyber knife and Chinese beheading sword in British colonial perceptions¹⁵. In the field of direct study of Gallic military equipment, the long known finds of weaponry from sites such as La Tène (Switzerland) are now joined by massive depositions of arms and armour found in the ditches of sanctuary sites in France, apparently originally displayed with the corpses of dead warriors standing in racks¹⁶. The material from the conflict landscape of Alesia (France) is also being published and re-examined¹⁷.

Studies of warfare and military equipment in Free Germany have been transformed by a number of factors. The German-Danish exhibition in the Nationalmuseet, København, in 2003 brought together collections of artefacts from the rich votive hordes of North Germany and Scandinavia, dating from the 1st to 4th centuries¹⁸. It also assembled a new international research community of scholars specialising in Iron Age ritual, artefacts and warfare, drawing in other fields, such as Roman military equipment studies and conflict landscape studies¹⁹. Related to this impetus is the monumental, multi-volume publication of the deposits at Illerup Ådel (Denmark)²⁰. Synthetic papers have been appearing in dedicated publications, confer-

ence proceedings, and in the present volume²¹. Alongside native artefacts these Germanic votive deposits include a proportionally small quantity of Roman items, but the water deposition conditions mean that these artefacts represent some of the best preserved Roman military equipment ever recovered (mail shirts, helmet components, Latin-inscribed shield-bosses, swords, leather belts etc.)²².

In the Iberian peninsula the evolution of archaeology since the death of Franco has emphasised Iron Age and Early Mediaeval cultures, with the resultant flowering of native equipment studies which has been such a prominent feature of past Roman Military Equipment Conferences. This has also led to major publications of military artefacts and iconography²³. In contrast, apart from some early signal exceptions, the military culture of the North African peoples has received less attention, partly because of access in difficult political climates, and because the French and Italian colonial and neo-colonial academic traditions still privilege the Roman archaeology directly²⁴. One region which has seen considerable recent development is the Sudan, where funerary deposition of military artefacts, especially horse-harness and archery equipment, was a notable feature of the Late Roman and Early Mediaeval periods²⁵.

Moving out of Africa and into Asia, in the Mesopotamian-Iranian empire of the Parthian and Sassanid dynasties, the Romans were faced from the 1st century BC until the 7th century AD by the only other major, urbanised and stable empire that they knew. This neighbour has variously been characterised by modern scholars as a dangerous aggressor, or as a victim of Roman imperialist expansion²⁶. Both views have some truth at different times, dependant on the relative strength and weakness of the two empires. What fascinated the Romans amongst other things was the Partho-Sassanid art of war, dominated by the use of archery and armoured cavalry, which was so very different from the Mediterranean experience²⁷. The Persian employment of Indian war elephants was also a notable feature²⁸. Just as has been demonstrated in the Roman context by developments in Roman military equipment studies, so it is important not to see Partho-Sassanid military technology as having been monolithic, static or conservative. Like the Achaemenid Persians before them, and the Umayyad and Abbasid states after them, the Parthians and Sassanids were fully open to cultural and technological influences from abroad, not least from the west through the periodic 'super-power' wars with Rome, the east through interactions with the Indian kingdoms, and the north through Asiatic steppe contacts. Indeed, many of the changes seen in Roman military equipment in the impe-

rial period, for example, may also be traced through the Sassanid record, with a common theme of interactions with Iranian and Turkic nomads²⁹.

As with other enemies of Rome, the literary sources for Parthian and Sassanid warfare are largely those of their Roman, Byzantine and Arab opponents. On one hand, these are informative precisely because the outsiders looking inwards were so impressed with certain features, notably horsemanship, armour, archery and elephants. On the other they may principally have perpetuated and exaggerated literary *topoi*. The Roman tendency to equate *barbaritas* with lack of cities and urban crafts, and thus paucity of armour, conflicted with the realities of warfare in the Syro-Mesopotamian theatre. However, whilst Roman literary texts sometimes delighted in descriptions of heavily armoured Partho-Sassanid cavalry, this was never matched by Roman triumphal iconography. Both Parthians and Sassanids were represented as generic long-sleeved and long-trouser-wearing barbarians on metropolitan monuments such as the Arches of Severus (Rome and Lepcis Magna) and Galerius (Thessalonike)³⁰. The 'sub-monumental' sources are a little more helpful in terms of figurines, textiles, graffiti and other minor representations³¹. Thus the 'monumental' iconography from within the Partho-Sassanid context takes on a commensurately high degree of importance and modern reliance. It is particularly important that Achaemenid Persian traditions of carving figural reliefs and monumental inscriptions on cliff-faces were re-adopted, sometimes, for reasons of enhanced legitimacy, at the same sites³². The most obvious overall shortcomings of the iconography are the predominance of potentially unrepresentative elite, usually royal, subjects, and the difficulty of dating and contextualising small artworks.

The last two problems particularly affect the artefactual evidence for Partho-Sassanid equipment practices. Funerary deposit of weapons was practiced on the fringes of the Partho-Sassanid states, and occasional finds have been made at frontier sites, such as Dura and Yrzi in Syria³³. Thus there is a small corpus of Sassanid swords and a few helmets³⁴. All, with the exception of the helmet from the Tower 19 mine at Dura, are dated purely by features of construction and decoration. All the helmets, again with the Dura exception, are related to the Spangenhelm construction tradition. There is even less armour, archery equipment and horse-harness. Thus, reliance must be placed on other contemporary, or near-contemporary artefactual sources to shed light on the subject, notably Roman, Hunnic, Avar, Early Umayyad and Early Mediaeval Asiatic finds.

Most attention is paid by scholars to the armoured, elite cavalry of the Roman sources and Partho-Sassanid artworks³⁵. Infantry have been comparatively neglected, partly because ancient notices were universally scathing about their paucity or their uselessness when present at battles in any significant numbers. This was presumably both an exaggeration and a supporting element of the armoured horse-archer literary *topos*. However, it may be assumed that poor, unhorsed retainers and urban populations might have provided significant numbers of infantry archers, useful especially for urban mural defence, as when Roman armies besieged Parthian Hatra³⁶. More extensive use of infantry seems to have been made by the Sassanids than by the Parthians, both in the field and in sieges, according to the literary sources³⁷. Some of these troops were archers and skirmishers, but the bulk of them may not have been of much tactical use in battle. Late in the Sassanid period the chaining together of infantry at the battle of Qadisiyya (AD 636), and their subsequent wholesale slaughter, did not speak highly of their skills or enthusiasm³⁸. Nevertheless, a combination of social, political and institutional factors meant that the Sassanid kings were able to organise the agricultural populations of their provinces and levy labour for both engineering projects and warfare on a large scale. Siege-warfare in particular benefited from this mobilisation. The state which was able to maintain and expand the millennia-long irrigation and drainage systems of the Fertile Crescent, also redirected labour into military applications, such as bridge-construction,³⁹ moving earth for contravallations, ditch in-filling and siege-ramp construction. Political will and dedicated administrative institutions may have been what differed from the Parthian period.

The Sassanid siege of Dura-Europos in the mid 3rd century is now much better understood as part of the modern publication of the military equipment found in the excavations of the 1920s-1930s⁴⁰. The siege-ramp and multiple mines constructed by the Persians in the face of Roman artillery, archery and other missiles, and the Roman wall-strengthening and counter-mining says much about Sassanid capabilities and adds detail supporting the later descriptions of sieges provided by Ammianus, Procopius and Theophylact⁴¹. There remains some question as to whether or not the Sassanids made significant use of artillery in their siege-works. The artillery projectiles found at Dura cannot be directly attributed to the attackers rather than the defenders⁴². Anecdotes of siege-warfare from Roman writers give little firm indication of the existence of Persian catapults, and it may be that this form of specialised Greco-Roman technology was only available to them through the capture of weapons and technicians⁴³.

Recent work on the Sassanid frontier walls in northern Iran, built to impress, control movement and defend against steppe nomad peoples, has revolutionised perceptions of Sassanid building projects, organisational capabilities and deployment of military manpower⁴⁴. It is not merely the extent and sophistication of the barrier which is at issue, but the presence of numerous large fortresses with barrack accommodation. The Gorgan Wall runs for more than 195 km., from the Caspian Sea east to the Elburz mountains, with incorporated dams and canals, and more than 33 engaged forts. Some of the latter contained no recognisable administration buildings or granaries, but did feature long 'barracks' made up of paired rooms in the manner of Roman installations. The 'barracks fort' at Ain Sinu in Iraq is so similar, and its location so equivocal with regard to imperial boundaries, that the identity of its builders is now in question, Roman or Sassanid?⁴⁵ The Gorgan Wall installations have the appearance of being accommodation for a standing garrison, perhaps made up of the despised infantry levies of the literary sources, and perhaps supplemented seasonally by the more prominent and higher status Persian 'feudal' cavalry.

Lastly, there has been considerable recent movement in the study of the Asiatic nomads who contacted and occasionally overran parts of the Roman empire. The re-evaluation of Greek attitudes to the Scythians, especially as expressed by Herodotos who set the tone and detail for the literary ethnography of steppe peoples through into the Mediaeval period, has gone hand in hand with more direct anthropological work⁴⁶. Several major exhibitions have presented finds from Scythian and Sarmatian burials, some of which are famously well preserved by permafrost, and this has been the occasion for new academic studies⁴⁷. The ascendancy of steppe horsearchers on the battlefield and the evolving size, shape and components of composite bows form a constant theme to Eurasian military history from the 9th century BC to the 19th century AD. Much may be gained by a study of nomad-sedentary contacts right around the Eurasian fringe affecting the Roman and Byzantine empires, the Mesopotamian-Iranian states, India and China⁴⁸. In the specialised field of equestrian warfare, Sarmatians and Alans, Huns, then Avars and Hephthalites exerted similar cultural influences simultaneously on the Roman and Partho-Sassanid empires. Indeed more may be learnt about Roman composite bows from Asiatic finds than from the evidence available within the Roman empire⁴⁹.

Ethnographic parallels have to be treated with caution and not applied too literally, but in the study of Rome's armies and enemies such methodologies are often most valuable in

providing a range of alternatives to work from, rather than a single clear-cut model. Together with developments in other fields of research, such as conflict landscape archaeology and equestrian studies, ethnography can greatly illuminate ancient military cultures. Returning to the example of the Ottoman Turks, their Early Modern wars in Egypt, Mesopotamia and Central Europe are well documented and in many cases traversed the same geography as that covered by Roman armies, and employed pre-industrial technology similar to the Roman experience⁵⁰. Their armoured cavalry (*sipahiyan*) on armoured horses, armed with bows, long swords, maces and lances, were the lineal descendants of the *catafracti* and *clibanarii* of Roman, Parthian and Sassanid armies⁵¹. Their capabilities in field engineering and siege-warfare long outclassed the skills of European armies. Their logistical support and transport organisation enabled some of the largest armies of the Early Modern period to operate over extraordinary distances. Their pack-camels bore matériel from points east of Istanbul to Vienna, just as the ancestral animals did for Roman forces moving from the east along the northern imperial frontiers. The Roman animals left their bones as far west as Vindonissa (Switzerland), whilst the descendants of the Turkish pack-camels still live in the Balkans⁵². This is a particularly appropriate field of ethnographic research for the Roman Military Equipment Conference series which met at Vienna in 2003, within the line of defences assaulted by the Turks in 1683, and for the present published proceedings from a conference held in ‘barbaricum’, across the river from the Buda fortress which was finally wrested from the Turks in 1686⁵³.

NOTES

1. Few modern works presenting the Roman army make the effort to deal with the opponents. Exceptions are GOLDSWORTHY 1996, 39-75; ELTON 1996, 45-88. For general reviews of Roman depictions of barbarians in triumphal art see KRIERER 1995; FERRIS 2000. Representations of barbarian equipment in Roman *congeries armorum* sculpture was very stylised and generic, with the signal exception of the pedestal reliefs of Trajan’s Column (POLITO 1998, 192-196; COULSTON 2008a, 318-323).
2. In large part facilitated by the survival of one text, Vegetius’ *Epitoma rei militaris*, and one monument bearing exquisitely detailed reliefs, Trajan’s Column.
3. On Caesar’s treatment of the Gauls and Britons see BARLOW 1998; RAWLINGS 1998. Cf. RANKIN 1987; POLITO 1999; BEARD 2007, 107-186.
4. See note 34, below. For the Kàba see ROSTOVITZEFF 1943; MARICQ 1958; JAMES 1985; HUYSE 1999.
5. For the history of research and presentation at the Saalburg see SCHALLMAYER 1997. A convenient round-up of Roman military sites in the Gallic and German provinces see now REDDÉ *et al.* 2006.
6. Compare CONOLE - MILNS 1983.
7. For Trajan’s Alexander fixation see Dio 68.21.4, 29.1, 30.1. Napoléon: SAID 1995, 80-88. Roman army as agent of acculturation: WEBSTER 1969, 273-280; BOHEC 1989, 231-252; GREENHALGH 1998; HESBERG 1999.
8. DILKE 1987; NICOLET 1991; MATTERN 1999; ADAMS - LAURENCE 2001; GRANE 2003.
9. SAID 1993; 1995. See GINGRICH 1998, cited by WHEATCROFT 2008, 259-260.
10. DUFFY 1980; BLACK 1991; PARKER 1996; ELTIS 1998.
11. CHAPMAN 1992; JAMES 1999; CARR - STODDART 2002; COLLIS 2003.
12. See WEBSTER 1996; JAMES 2007.
13. India: OMISSI 1994, 10-43. Habsburgs: HOCHELDINGER 2003, 82-92.
14. For the Batavi and other Rhineland tribes see WAASDORP - KERSING 1999; ROSSUM 2004; SWINKELS 2004; NICOLAY 2007. There is an extensive literature on the Gurkhas, but a useful historical overview is provided by GOULD 1999.
15. COULSTON 2003b, 402-3.
16. NAVARRO 1972; BRUNAUX 1999; ARCELIN - BRUNAUX 2003; MAR GABALDÓN MARTÍNEZ 2004, 267-334. For other aspects of Iron Age equipment and warfare see SZABÓ - PETRES 1992; PLEINER 1993; RAWLINGS 1996; HUNTER 2001. COULSTON 2003b; STEFAN 2005 deal with Dacian issues. AITCHISON 2002; HENDERSON - HENDERSON 2004 treat with Pictish warfare and iconography.
17. REDDÉ *et al.* 1995.
18. JØRGENSEN *et al.* 2003.
19. See FREEMAN - POLLARD 2001; JILEK 2005. For many practical and philosophical reasons the term ‘conflict landscape’ is preferable to the more narrow ‘battlefield’.
20. ILKJÆR 1990; 1993; 2001; CARNAP-BORNHEIM - ILKJÆR 1996; BIBORSKI - ILKJÆR 2006.
21. RADDATZ 1985; ZIELING 1989; VALLET - KAZANSKI 1993; 1995; FRIESINGER *et al.* 1994; CARNAP-BORNHEIM 1994; 2003; RANDSBORG 1995; 1999; NØRGÅRD JØRGENSEN - CLAUSEN 1997; ILKJÆR 1997; FISCHER *et al.* 1999; SCHLÜTER - WIEGELS 1999; LUND HANSEN 2002; CRUMLIN-PEDERSEN - TRAKADAS 2003; GRANE 2007; COULSTON 2008a. See also BRADLEY 1998.
22. BISHOP - COULSTON 2006, 31-2, 149, 151, 155-57, 162-63, 199-204, 206, 217; JØRGENSEN *et al.* 2003, 44, 58, 230-31, 236-37; LUND HANSEN 2007; PAULI JENSEN 2007.

23. STARY 1994; QUESADA SANZ 1997; MAR GABALDÓN MARTÍNEZ 2004, 335-368. Cf. RAWLINGS 1996.
24. HORN - RÜGER 1979; MATTINGLY 1995, 17-49; FRANKEN 1999. Cf. GREENHALGH 1998.
25. SHINNIE 1967, 162-165; WELSBY 2002, 41, 78-82, Fig. 14, 31-2; WELSBY - ANDERSON 2004, 187-190.
26. Reviewed by ISAAC 1992, 28-33. Other regional enemies included insurgents during the Jewish Wars who drew as much on Roman sources of equipment as on Hellenistic and Syro-Parthian cultural influences. In general see BERLIN - OVERMAN 2002; STIEBEL 2003; 2005. For the Arab tribes: PARKER 1986.
27. For example Plutarch, *Crassus* 21, 24-5, 27; *Marcus Antonius* 42-5; Heliodorus, *Aethiopica* 9.15.1-6; Julian, *Orations* 2.63 B-C, 66A; Ammianus 18.8.7, 19.1.2, 2.2, 5.1, 6.9, 7.4, 23.6.83, 24.2.5, 2.10, 13, 4.2, 15, 6.8, 7.8, 25.1.1, 1.12-13, 15, 18, 3.3, 11; Procopius, *Wars* 1.14.35-7, 16.35, 18.32-35, 2.8.10, 17.14; Theophylact 3.14.2, 5.11.2; Maurice, *Strategikon* 11.1. For overviews of Partho-Sassanid warfare and military organisation see BIVAR 1972; WIDENGREN 1976; COULSTON 1986; SHAHBAZI 1987, 494-99; OVERLAET 1993b; WHITBY 1994; HOWARD-JOHNSTON 1995; GREATREX 1998, 43-59; ISAAC 1992, 219-268; SYVÄNNE 2004, 328-350; FARROKH 2007; TALLIS 2008.
28. Julian, *Orations* 2.63B, 64B, 65B-D; Ammianus 19.2.3, 7.6-7, 25.3.11, 1.14-5, 23.3.11, 6.2-3; Vegetius, *Epitoma rei militaris* 3.24; Zosimus 3.30; Procopius, *Buildings* 2.1.11-2; Theophylact 3.8.11, 15.15, 4.14.14, 5.10.6, 11.2, 7.9.10; Tabari 2287, 2294, 2298-2301, 2306, 2309, 2320, 2322, 2324-26 (FRIEDMANN 1992). For Sassanid elephants in Roman and Persian sculpture: LAUBSCHER 1975, Pl. 16.2, 40.1; FUKAI - HORIUCHI 1972, Pl. XXXII, LXXXI. In general: RANCE 2003; CHARLES 2007.
29. BIVAR 1972; JAMES 1986; 2004, 246-51; 2006; NEGIN 1998; COULSTON 2003a; MODE - TUBACH 2006.
30. BRILLIANT 1967, Fig. 51, 61, 98, Pl. 50-95; LAUBSCHER 1975.
31. E.g. GHIRSHMAN 1962, Fig. 55, 62-3, 119, 122, 125, 195, 223, 240, 247-54, 289, 314.
32. These consist notably of the Parthian reliefs at Tang-i Sarvak and the Sassanid sculptures at Firuzabad, Bishapur, Naqsh-i Rostam and Taq-i Bustan (GHIRSHMAN 1962, Fig. 69, 163-66, 168, 171, 196-206, 211-20, 225-26, 233-38; FUKAI - HORIUCHI, 1972; HERRMANN 1977, 87-100, 131-36; 1980; 1983; HERRMANN - MACKENZIE 1989; SHEPHERD 1983; VANDEN BERGHE 1984; 1993; GALL 1990.)
33. Dura: JAMES 2004, 104-5, 116-17, 151, 189-90, 241-42. The reed and rawhide shields found at Dura recall the large Persian shields of the literary sources (Ammianus 19.7.4; Procopius, *Wars* 1.14.26, 52). Yrzi: BROWN 1937.
34. E.g. GRANCSAY 1963; OVERLAET 1982; 1993b.
35. RUBIN 1955; ROBINSON 1967; EADIE 1967; GAMBER 1968; BIVAR 1972; COULSTON 1986; GALL 1990; MIELCZAREK 1993; HARL 1996.
36. Dio 68.31.3; 76.11.3; Herodian 3.9.4.
37. Julian, *Orations* 1.27D, 2.63C; Ammianus 19.7.4, 23.6.83; Procopius, *Wars* 1.14.25-6, 42, 52, 18.30.
38. Tabari 2294, 2337; Vecchia Vaglarii 1978.
39. See Procopius, *Wars* 2.21.21-2.
40. JAMES 2004, 30-39. Cf. ROSTOVTZEFF *et al.* 1936, 189-305; MESNIL DU BUISSON 1944; LERICHE 1993; LERICHE - GELIN 1997, 45-46, 54.
41. Julian, *Orations* 1.27A-D, 2.62C-66C; Ammianus 19.2.1-8.4, 23.6.83; Procopius, *Wars* 1.7.12-32, 2.5.8-27, 8.8-35, 13.16-29, 17.3-28, 26.1-27.46; *Buildings* 2.1.11-2; Theophylact 2.18.3, 3.11.2. Cf. Maurice, *Strategikon* 11.1.
42. JAMES 2004, 214-15.
43. Artillery used by Persian forces whilst besieging Amida in AD 359 had earlier been captured from Roman Singara (Ammianus 19.2.8, 5.1, 7.2, 5, 7). Dio's account of the Severan siege of Hatra suggests that the defenders used artillery (Dio 76.11.3), although the actual artillery piece found at that city was most likely a Roman weapon associated with the final defence against Sassanid attack (BAATZ 1978, 3-9, Pl. I-IV). The insurgents employed captured Roman weapons in the First Jewish Revolt (Josephus, *Jewish War* 2.553). Likewise, Trajan recovered machines which the Dacians had captured from Domitian's defeated Roman forces (Dio 68.9.3), and Domitian had also supplied the Dacian king with military technicians (67.7.4). Of course it is possible that the *topos* of barbarian technical incapacity, in deliberate contrast to the skills of 'civilised' Roman forces, may have predisposed writers to downplay enemy weaponry (note Vegetius 3.10 on the Persians learning from Roman example).
44. NOKANDEH *et al.* 2006; OMRANI REKAVANDI *et al.* 2007.
45. OATES 1968, 82-85; KENNEDY - RILEY 1990, 213-215, Fig. 167-8; OMRANI REKAVANDI *et al.* 2007, 127-128.
46. HARTOG 1988; BRAUND 2005.
47. CAHEN-DELHAYE 1991; ROLLE *et al.* 1991; *SARMATES* 1995; MIELCZAREK 1999; GALL 1997; ARUZ *et al.* 2000; BRENTJES 2000; SIMONENKO 2001; CARNAP-BORNHEIM 2003; NEFEDKIN 2006; GORONCHAROVSKI 2006. Cf. KHAZANOV 1971. For the Huns see BONA 1991; KAZANSKI 1999; KELLY 2008.
48. For Chinese-nomad relations see BARFIELD 1989; COSMO 2002; GRAFF 2002, 176, 185-189, 192, 205-218.
49. COULSTON 1985, 239-244; DUBOVSKAYA 1985; ANDRUKH 1988. The website of the Asian Traditional Archery Network publicises new finds (<http://www.atarn.net/>). Indeed, the Asiatic archery

tradition is alive today in the events of the Mongolian Nadaam festivals. For steppe contacts see BIVAR 1972, 281-287; HALDON 1975, 16-23; BALINT 1989; KHAZANOV 1994; SYVÄNNE 2004, 351-65; MODE - TUBACH 2006; COULSTON 2008b. Avars and Hephthalites: STADLER 1993; BIVAR 2004.

50. In general see MCNEILL 1964; PERJÉS 1970; COLLINS 1975; HEGYI 1986, 55-77; NAGY 1986a; FINKEL 1988; MURPHEY 1999; STEIN 2007.
51. The western tradition of the armoured knight should not be cited as a parallel because it was only superficially similar. Western knights were increasingly heavily armoured lancers, whereas eastern cavalry were primarily armoured horse-archers. The latter employed the secondary weapons necessary to penetrate armour developed in the face of horse-archery. The armour of western knights evolved specifically as a response to increasingly penetrative infantry weapons, the crossbow and longbow (EDGE - PADDOCK 1988).
52. COULSTON 2001, 112.
53. KREUTEL - TEPLY 1982; ACKERL 1983; FENYVESI 1986; NAGY 1986b; GERHARTL 1994; PARVEV 1995, 21-73; STOYE 2006; SACHSLEHNER 2006; WHEATCROFT 2008.

BIBLIOGRAPHY

- ACKERL 1983: I. Ackerl, *Von Türken belagert – von Christen entsetzt. Das belagerte Wien 1683*, Wien, 1983
- ADAMS - LAURENCE 2001: C. Adams - R. Laurence (ed.), *Travel and Geography in the Roman Empire*, London, 2001
- AITCHISON 2002: N. Aitchison, *The Picts and the Scots at War*, Stroud, 2002
- ANDRUKH 1988: S. I. Andrukh, Pogrebeniye rannyekifskogo voina v Prisivashe, *Sovyetskaya Archeologia* 1988, 159-170
- ARCELIN – BRUNAUX 2003: P. Arcelin - J.L. Brunaux (ed.), *Cultes et sanctuaries en France à l'âge du Fer*, Gallia **60**, Paris, 2003
- ARUZ – FARKAS – ALEKSEEV – KOROLKOVA 2000: J. Aruz – A. Farkas - A. Alekseev - E. Korolkova (ed.), *The Golden Deer of Eurasia. Scythian and Sarmatian Treasures from the Russian Steppe*, New Haven, 2000
- BAATZ 1978: D. Baatz, Recent finds of ancient artillery, *Britannia* **9**, 1978, 1-17
- BALINT 1989: Cs. Balint, *Die Archäologie der Steppe. Steppenvölker zwischen Volga und Donau vom 6. Bis zum 10. Jahrhundert*, Wien, 1989
- BARFIELD 1989: T.J. Barfield, *The Perilous Frontier. Nomadic Empires and China, 221 BC to AD 1757*, Oxford, 1989
- BARLOW 1998: J. Barlow, Noble Gauls and their other in Caesar's propaganda, in Welch and Powell 1998, 139-170
- BEARD 2007: M. Beard, *The Roman Triumph*, Cambridge, Mass, 2007
- BERLIN – OVERMAN 2002: A.N. Berlin - J.A. Overman (ed.), *The First Jewish Revolt. Archaeology, History and Ideology*, London, 2002
- BIBORSKI - ILKJÆR 2006: M. Biborski – J. Ilkjær, *Illerup Ådal 11-2, Die Schwerter*, Jutland Archaeological Society Publications **25**, Aarhus, 2006
- BISHOP - COULSTON 2006: M.C. Bishop - J.C.N. Coulston, *Roman Military Equipment from the Punic Wars to the Fall of Rome*, 2nd edition, Oxford, 2006
- BIVAR 1972: A.D.H. Bivar, Cavalry tactics and equipment on the Euphrates, *Dumbarton Oaks Papers* **26**, 1972, 273-291
- BIVAR 2004: A.D.H. Bivar, 'Hephthalites', *Encyclopaedia Iranica* **12**, New York, 2004, 198-201
- BLACK 1991: J. Black (ed.), *A Military Revolution? Military Change and European Society, 1550-1800*, Basingstoke, 1991
- BOHEC 1989: Y. le Bohec, *The Imperial Roman Army*, London, 1989
- BÓNA 1991: I. Bóna, *Das Hunnenreich*, Stuttgart, 1991
- BOTTINI – SPEGNI - CHRUPCALA 2003: G.C. Bottini - L. di Spegni - L.D. Chrupcala (ed.), *Archaeological Studies in Honour of S. Laffreda*, Studium Biblicum Franciscanum Collectio Maior **41**, Jerusalem, 2003
- BRADLEY 1998: R. Bradley, *The Passage of Arms. An Archaeological Analysis of Prehistoric Hoard and Votive Deposits*, Oxford, 1998
- BRAUND 2005: D. Braund (ed.), *Scythians and Greeks. Cultural Interactions in Scythia, Athens and the Early Roman Empire (sixth century BC – first century AD)*, Exeter, 2005
- BRENTJES 2000: B. Brentjes, Cascos utilizados por los pueblos de las estepas Euroasiáticas en la época de los Escitas y de los Sármatas, *Gladius* **20**, 2000, 51-73
- BRILLIANT 1967: R. Brilliant, *The Arch of Severus in the Roman Forum*, *Memoirs of the American Academy in Rome* **29**, Roma, 1967
- BROWN 1937: F.E. Brown, A recently discovered compound bow, *Seminarium Kondakovianum* **9**, 1937, 1-10
- BRUNAUX 1999: J.L. Brunaux (ed.), Ribemont-sur-Ancre (Somme): bilan préliminaire et nouvelles hypotheses, *Gallia* **56**, 1999, 177-283
- CAHEN-DELHAYE 1991: A. Cahen-Delhayé (ed.), *L'or des Scythes. Trésors de l'Ermitage*, Leningrad, Bruxelles, 1991
- CARMAN – HARDING 1999: J. Carman - A. Harding, *Ancient Warfare. Archaeological Perspectives*, Stroud, 1999
- CARNAP-BORNHEIM 1994: C. von Carnap-Bornheim (ed.), *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten*, Lublin and Marburg, 1994

- CARNAP-BORNHEIM - ILKJÆR 1996: C. von Carnap-Bornheim - J. Ilkjær, *Illerup Ådal 5-8, Die Prachtausrüstungen*, Jutland Archaeological Society Publications **25**, 1996, Aarhus
- CARNAP-BORNHEIM 2003: C. von Carnap-Bornheim (ed.), *Kontakt - Kooperation - Konflikt: Germanen und Sarmaten zwischen dem 1. und 4. Jahrh. n. Chr.*, Neumünster, 2003
- CARR - STODDART 2002: G. Carr - S. Stoddart (ed.), *Celts from Antiquity*, Cambridge, 2002
- CHAPMAN 1992: M. Chapman, *The Celts: the Construction of a Myth*, Basingstoke, 1992
- CHARLES 2007: M.B. Charles, The rise of the Sassanian elephant corps: elephants and the Later Roman Empire, *Iranica Antiqua* **42**, 2007, 301-346
- COLLINS 1975: L.J.D. Collins, The military organisation and tactics of the Crimean Tatars, 16th-17th centuries, in V.J. PARRY - M.E. YAPP (ed.), *War, Technology and Society in the Middle East*, Oxford, 1975, 257-276
- COLLIS 2003: J. Collis, *The Celts. Origins, Myths and Inventions*, Stroud, 2003
- CONOLE - MILNS 1983: P. Conole - R. D. Milns, Neronian frontier policy in the Balkans: the career of Ti. Plautius Silvanus, *Historia* **32**, 1983, 183-200
- COSMO 2002: N. di Cosmo, *Ancient China and its Enemies. The Rise of Nomadic Power in East Asian History*, Cambridge, 2002
- COULSTON 1985: J.C. Coulston, Roman archery equipment, in M. C. BISHOP (ed.), *The Production and Distribution of Roman Military Equipment*, BAR IS **275**, Oxford, 1985, 220-366
- COULSTON 1986: J.C. Coulston, Roman, Parthian and Sassanid tactical developments, in P. FREEMAN - D. KENNEDY (ed.), *The Defence of the Roman and Byzantine East*, BAR, **297**, Oxford, 1986, 59-75
- COULSTON 2001: J.C. Coulston, Travel and transport on the Column of Trajan', in ADAMS - LAURENCE 2001, 126-130
- COULSTON 2003a: J.C. Coulston, Tacitus, *Historiae* I.79 and the impact of Sarmatian warfare on the Roman empire', in C. von CARNAP-BORNHEIM (ed.), *Kontakt - Kooperation - Konflikt: Germanen und Sarmaten zwischen dem 1. und 4. Jahrh. n. Chr.*, Neumünster, 2003, 415-433
- COULSTON 2003b: J.C. Coulston, Overcoming the barbarian: Rome's enemies in Trajanic monumental art, in L.BLOIS - de O.J. HEKSTER - de G.KLEIJN - S.T.A.M. MOLS (ed.), *The Representation and Perception of Roman Imperial Power. Proceedings of the Third Workshop of the International Network Impact of Empire (Roman Empire, 200 BC - AD 476), Rome, March 20-23, 2002*, Amsterdam, 2003, 389-424
- COULSTON 2008a: J.C. Coulston, Immortalising victory: votive weapons depositions in northern Europe and the Roman empire, in A. ABEGG-WEGG - A. RAU (ed.), *Aktuelle Forschungen zu Kriegsbeuteopfern und Fürstengräbern im Barbaricum*, Neumünster, 2008, 307-330
- COULSTON 2008b: J.C. Coulston, Central Asia from the Scythians to the Huns, in SOUZA 2008, 216-127
- CORNELL - RANKOV - SABIN 1996: T. Cornell - B. Rankov - P. Sabin (ed.), *The Second Punic War. A Reappraisal*, London, 1996
- CRUMLIN-PEDERSEN - TRAKADAS 2003: O. Crumlin-Pedersen - A. Trakadas, *Hjortspring. A Pre-Roman Iron-Age Warship in Context*, Roskilde, 2003
- DABROWA 1994: E. Dabrowa (ed.), *The Roman and Byzantine Army in the East*, Kraków, 1994
- DILKE 1987: O.A.W. Dilke, Itineraries and geographical maps in the Early and Late Roman Empires, in J.B.HARLEY - D.WOODWARD (ed.), *The History of Cartography, I, Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean*, Chicago, 1987, 234-257
- DUBOVSKAYA 1985: O.R. Dubovskaya, Pogrebeniye tychnika Rannyyego Železnogo veka, *Sovyetskaya Archeologia*, 1985, 166-172
- DUFFY 1980: M. Duffy, *The Military Revolution and the State, 1500-1800*, Exeter, 1980
- EADIE 1967: J.W. Eadie, The development of Roman mailed cavalry, *Journal of Roman Studies* **57**, 1967, 161-173
- EDGE - PADDOCK 1988: D. Edge - J.M. Paddock, *Arms and Armour of the Medieval Knight*, London, 1988
- ELTIS 1998: D. Eltis, *The Military Revolution in Sixteenth-Century Europe*, London, 1998
- ELTON 1996: H. Elton, *Warfare in Roman Europe, AD 350-425*, Oxford, 1996
- FARROKH 2007: K. Farrokh, *Shadows in the Desert. Ancient Persia at War*, Oxford, 2007
- FENYVESI 1986: L. Fenyvesi, *Buda visszavívása 1686*, Budapest, 1986
- FERRIS 2000: I. M. Ferris, *Enemies of Rome. Barbarians through Roman Eyes*, Stroud, 2000
- FINKEL 1988: C. Finkel, *The Administration of Warfare: the Ottoman Military Campaigns in Hungary, 1593-1606*, Wien, 1988
- FISCHER - PRECHT - TEJRAL 1999: T.Fischer - G.Precht - J.Tejrál (ed.), *Germanen beiderseits des spätantiken Limes*, Köln and Brno, 1999
- FRANKEN 1999: N. Franken, Elefantreiter. Zum Typus der Barbarenstatuette aus Großsachsenheim, *Jahrbuch des deutschen archäologischen Instituts* **114**, 1999, 125-156
- FREEMAN - POLLARD 2001: P.W.M. Freeman - A. Pollard (ed.), *Fields of Conflict: Progress and Prospect in Battlefield Archaeology*, BAR IS **958**, Oxford, 2001

- FRIEDMANN 1992: Y. Friedmann, *The History of al-Tabari XII, The Battle of al-Qadisiyyah and the Conquest of Syria and Palestine*, Albany, 1992
- FRIESINGER – TEJRAL – STUPPNER 1994: H. Friesinger – J. Tejral - A. Stuppner (ed.), *Markomannenkriege. Ursachen und Wirkungen*, Spisy Archeologického Ustavu AV Brno **1**, 1994, Brno
- FUKAI - HORIUCHI 1972: S. Fukai - K. Horiuchi, *Taq-i-Bustan*, II, Tokyo, 1972
- GALL 1990: von H. Gall, *Das Reiterkampfbild in der iranischen und iranisch beeinflussten Kunst parthischer und sasanidischer Zeit*, Berlin, 1990
- GALL 1997: von H. Gall, Die Reiterkampfszene auf der Silbervase von Kosike: Ursprünge und Rezeption eines iranischen Motivs in Südrussland, *Archäologische Mitteilungen aus Iran und Turan* **29**, 1997, 243-269
- GAMBER 1968: O. Gamber, Kataphrakten, Clibanarier, Normannenreiter, *Jahrbuch der Kunsthistorischen Sammlung in Wien*, **64**, 1968, 7-44
- GERHARTL 1994: G. Gerhartl, *Belagerung und Einsatz von Wien 1683*, Militärgeschichtliche Schriftenreihe **46**, Wien, 1994
- GHIRSHMAN 1962: R. Ghirshman, *Iran: Parthians and Sassanids*, London, 1962
- GINGRICH 1998: A. Gingrich, Frontier myths of orientalism: the muslim world in public and popular cultures of Central Europe, in B.BASKAR – B.BRUMEN (ed.), *Mediterranean Ethnological Summer School, Piran/Pirano, Slovenia* **2**, 1998, Ljubljana, 99-127
- GOLDSWORTHY 1996: A.K. Goldsworthy, *The Roman Army at War, 100 BC-AD 200*, Oxford, 1996
- GORONCHAROVSKI 2006: V. A. Goroncharovski, Some notes on defensive armament of the Bosphoran cavalry in the first centuries AD, in MODE - TUBACH 2006 (ed.), 445-451
- GOULD 1999: T. Gould, *Imperial Warriors. Britain and the Gurkhas*, London, 1999
- GRAFF 2002: D. A. Graff, *Medieval Chinese Warfare, 300-900*, London, 2002
- GRANCSAY 1963: S. V. Grancsay, A Sassanian chieftain's helmet, *The Metropolitan Museum Art Bulletin*, ns. **21**, 1963, 253-262
- GRANE 2003: T. Grane, Roman sources for the geography and ethnography of Germania, in JØRGENSEN et al. 2003, 126-147
- GRANE 2007: T. Grane (ed.), *Beyond the Roman Frontier: Roman Influences on the Northern Barbaricum*, Roma, 2007
- GREATREX 1998: G. Greatrex, *Rome and Persia at War, 502-532*, Leeds, 1998
- GREENHALGH 1998: M. Greenhalgh, The new centurions: French reliance on the Roman past during the conquest of Algeria, *War and Society* **16.1**, 1998, 1-28
- HALDON 1975: J. F. Haldon, Some aspects of Byzantine military technology from the sixth to the tenth centuries, *Byzantine and Modern Greek Studies* **1**, 1975, 11-47
- HARL 1996: O. Harl, Die Kataphraktarier im römischen Heer. Panegyrik und Realität, *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz*, **43**, 1996, 601-627
- HARTOG 1988: F. Hartog, *The Mirror of Herodotus. The Representation of the Other in Writing of History*, Berkeley, 1988
- HEGYI 1986: K. Hegyi, *The Ottoman Empire in Europe*, Budapest, 1986
- HENDERSON - HENDERSON 2004: G. Henderson - I. Henderson, *The Art of the Picts. Sculpture and Metalwork in Early Medieval Scotland*, London, 2004
- HERRMANN 1977: G. Herrmann, *The Iranian Revival*, Oxford, 1977
- HERRMANN 1980: G. Herrmann, *The Sasanian Rock Reliefs at Bishapur* **1**, Berlin, 1980
- HERRMANN 1983: G. Herrmann, *The Sasanian Rock Reliefs at Bishapur* **3**, Berlin, 1983
- HERRMANN – MACKENZIE 1989: G. Herrmann - D.N. MacKenzie, *The Sasanian Rock Reliefs at Naqsh-e-Rustam, Naqsh-e-Rustam* **6**, Berlin, 1989
- HESBERG 1999: von H. Hesberg (ed.), *Das Militär als Kulturträger in römischer Zeit*, Köln, 1999
- HOCHELDINGER 2003: M. Hocheldinger, *Austria's Wars of Emergence, 1683-1797*, London, 2003
- HORN- RÜGER 1979: H.G. Horn - C.B. Rüger (ed.), *Die Numider, Reiter und Könige nördlichen der Sahara*, Köln, 1979
- HOWARD-JOHNSTON 1995: Howard-Johnston, The two great powers in Late Antiquity: a comparison, in A. CAMERON (ed.), *The Byzantine and Early Islamic Near East III, States, Resources and Armies*, Princeton, 1995, 157-226
- HUNTER 2001: F. Hunter, The *carynx* in Iron Age Europe, *Antiquaries Journal* **81**, 2001, 77-108
- HUYSE 1999: P. Huyse, *Die dreisprachige Inschrift Šābuhrs I. an der Kāba-i Zardušt (ŠKZ)*, Corpus Inscriptionum Iranicarum **3.2**, 1999, London
- ILKJÆR 1990: J. Ilkjær, *Illerup Ådal 1-2, Die Lanzen und Speere*, Jutland Archaeological Society Publications **25**, Aarhus, 1990
- ILKJÆR 1993: J. Ilkjær, *Illerup Ådal 3-4, Die Gürtel. Bestandteile und Zubehör*, Jutland Archaeological Society Publications **25**, Aarhus, 1993
- ILKJÆR 1997: J. Ilkjær, Gegner und Verbündete in Nordeuropa während des 1. Bis 4. Jahrhunderts, in NØRGÅRD JØRGENSEN - CLAUSEN (ed.) 1997, 55-63

- ILKJÆR 2001: J. Ilkjær, *Illerup Ådal 9-10, Die Schilde*, Jutland Archaeological Society Publications 25, Aarhus, 2001
- ISAAC 1992: B. Isaac, *The Limits of Empire. The Roman Army in the East*, Oxford, 1992
- JAMES 1985: S. James, Dura-Europos and the chronology of Syria in the 250s AD, *Chiron* **15**, 1985, 111-124
- JAMES 1986: S. James, Evidence from Dura-Europos for the origins of Late Roman helmets, *Syria* **63**, 1986, 107-134
- JAMES 1999: S. James, *The Atlantic Celts. Ancient People or Modern Invention?* London, 1999
- JAMES 2004: S. James, *The Excavations at Dura-Europos Conducted by Yale University and the French Academy of Inscriptions and Letters, 1928-1937. Final Report VII. The Arms and Armour and other Military Equipment*, London, 2004
- JAMES 2006: S. James, 'The impact of steppe peoples and the Partho-Sasanian world on the development of Roman military equipment and dress, 1st to 3rd centuries AD', in MODE – TUBACH (ed.) 2006, 357-392
- JAMES 2007: S. James, A bloodless past: the pacification of Early Iron Age Britain, in C.HASELGRAVE - R.POPE (ed.), *The Earlier Iron Age in Britain and the Near Continent*, Oxford, 2007, 160-173
- JILEK 2005: S. Jilek (ed.), *Archäologie der Schlachtfelder - Militaria aus Zerstörungshorizonten. Akten der 14. Internationalen Roman Military Equipment Conference (ROMECC)*, Carnuntum Jahrbuch, Wien, 2005
- JØRGENSEN – STORGAARD - GEBAUER THOMSEN 2003: L. Jørgensen – B. Storgaard - L. Gebauer Thomsen (ed.), *The Spoils of Victory. The North in the Shadow of the Roman Empire*, København 2003
- KAZANSKI 1999: M. Kazanski, Les tombes des chefs militaires de l'époque hunnique, in FISCHER *et al.* 1999, 293-316
- KELLY 2008: C. Kelly, *Attila the Hun*, London, 2008
- KENNEDY - RILEY 1990: D. Kennedy - D.Riley, *Rome's Desert Frontier from the Air*, London, 1990
- KHAZANOV 1971: A.M. Khazanov, *Ocherky Voyenogo Dyela Sarmatov*, Moskva, 1971
- KHAZANOV 1994: A.M. Khazanov, *Nomads and the Outside World*, Madison, 1994
- KREUTEL - TEPLY 1982: R.F. Kreutel - K. Teply, *Kara Mustafa vor Wien 1683 aus der Sicht türkischer Quellen*, Wien, 1982
- KRIERER 1999: K. R. Krierer, *Sieg und Niedergang. Untersuchungen phisionomischer und mimischer Phänomene in Kampfdarstellungen der römischen Plastik*, Wiener Forschungen zur Archäologie **1**, Wien, 1999
- LAUBSCHER 1975: H.P. Laubscher, *Die Reliefschmuck der Galeriusbogens in Thessaloniki*, Berlin, 1975
- LIGT – HEMELRIJK - SINGOR 2004: L. de Ligt - E.A. Hemelrijk - H.W. Singor (ed.), *Roman Rule and Civic Life: Local and Regional Perspectives. Proceedings of the Fourth Workshop of the International Network Impact of Empire (Roman Empire, 200 BC - AD 476)*, Leiden, June 25-28, 2003, Amsterdam, 2004
- LUND HANSEN 2002: U. Lund Hansen, Logistic considerations in connection with the attacks on Denmark from the sea in the Late Roman period, in A.NØRGÅRD JØRGENSEN - J.PIND - J.JØRGENSEN - B.CLAUSEN (ed.), *Maritime Warfare in Northern Europe. Technology, Organisation, Logistics and Administration 500 BC-1500 AD*, København, 2002, 29-46
- LUND HANSEN 2007: U. Lund Hansen, Barbarians in the north – the greatest concentrations of Roman weaponry in Europe, in GRANE 2007, 105-130
- LAUBSCHER 1975: H.P. Laubscher, *Der Reliefschmuck des Galeriusbogens in Thessaloniki*, Berlin, 1975
- LERICHE 1993: P. Leriche, Techniques de guerre sassanides et romaines de Doura-Europos, in VALLET – KAZANSKI (ed.) 1993, 83-100
- LERICHE - GELIN 1997: P. Leriche - M. Gelin, *Doura-Europos. Études* **IV**, Beirut, 1997
- MAR GABALDÓN MARTÍNEZ 2004: del M. Mar Gabaldón Martínez, *Ritos de Armas en la Edad del Hierro. Armamento y Lugares de Culto en el Antiguo Mediterráneo y el Mundo Celta*, Anejos de Gladius 7, Madrid, 2004
- MARICQ 1958: A. Maricq, Res Gestae Divi Saporis, *Syria* **35**, 1958, 295-360
- MATTERN 1999: S.P. Matern, *Rome and the Enemy. Imperial Strategy in the Principate*, Berkeley, 1999
- MATTINGLY 1995: D.J. Mattingly, *Tripolitania*, London, 1995
- MCNEILL 1964: W.H. McNeill, *Europe's Steppe Frontier, 1500-1800*, Chicago, 1964
- MESNIL DU BUISSON 1944: R. du Mesnil du Buisson, Les ouvrages du siège a Doura-Europos, *Mémoires de la Société Nationale des Antiquaires de France* **81**, 1944, 5-60
- MIELCZAREK 1993: M. Mielczarek, *Cataphracti and Clibanarii. Studies on the Ancient Armoured Cavalry of the Ancient World*, Łódź, 1993
- MIELCZAREK 1999: M. Mielczarek, *The Army of the Bosphoran Kingdom*, Łódź, 1999
- MODE - TUBACH 2006: M. Mode - J. Tubach (ed.), *Arms and Armour as Indicators of Cultural Transfer. The Steppes and the Ancient World from Hellenistic Times to the Early Middle Ages*, Wiesbaden, 2006
- MURPHEY 1999: R. Murphey, *Ottoman Warfare, 1500-1700*, London, 1999
- NAGY 1986a: L. Nagy, *A Török Világ Végnapjai Magyarországon*, Budapest, 1986

- NAGY 1986b: L. Nagy, *Lotharingiai Károly Hadinaplója Buda Visszafoglalásáról 1686*, Budapest, 1986
- NAVARRO 1972: J.M. de Navarro, *The Finds from the Site of La Tène I. Scabbards and the Swords Found in Them*, London, 1972
- NEFEDKIN 2006: A.K. Nefedkin, Sarmatian armour according to narrative and archaeological data, in MODE - TUBACH (ed.) 2006, 433-444
- NEGIN 1998: A. E. Negin, Sarmatian cataphracts as prototypes for Roman *equites cataphractari*, *Journal of Roman Military Equipment Studies* 9, 1998, 65-75
- NICOLAY 2007: J. Nicolay, *Armed Batavians. Use and Significance of Weaponry and Horse Gear from Non-Military Contexts in the Rhine Delta (50 BC-AD 450)*, Amsterdam, 2007
- NICOLET 1991: C. Nicolet, *Space, Geography, and Politics in the Early Roman Empire*, Ann Arbor, 1991
- NOKANDEH – SAUER- OMRANI REKAVANDI – WILKINSON – ABBASI – SCHWENNINGER- MAHMOUDI – PARKER – FATTAHI – USHER-WILSON – ERSHADI – RATCLIFFE – GALE 2006: J. Nokandeh - E.W. Sauer - H. Omrani Rekavandi - T. Wilkinson - G.A. Abbasi - J.L. Schwenninger - M. Mahmoudi - D. Parker - M. Fattahi - L.S. Usher-Wilson - M. Ershadi - J. Ratcliffe - R. Gale, Linear Barriers of Northern Iran: The Great Wall of Gorgan and the Wall of Tammishe, *Iran* 44, 2006, 121-173
- NØRGÅRD JØRGENSEN - CLAUSEN 1997: A. Nørgård Jørgensen - B.L. Clausen (ed.), *Military Aspects of Scandinavian Society in a European Perspective, AD 1-1300*, København, 1997
- OATES 1968: D. Oates, *Studies in the Ancient History of Northern Iraq*, London, 1968
- OMISSI 1994: D. Omissi, *The Sepoy and the Raj. The Indian Army, 1860-1940*, London, 1994
- OMRANI REKAVANDI – SAUER – WILKINSON - SAFARI TAMAK – AINSLIE – MAHMOUDI – GRIFFITHS – EERSHADI - JANSEN VAN RENSBURG – FATTAHI – RATCLIFFE – NOKANDEH – NAZIFI – THOMAS – GALE – HOFFMANN 2007: H. Omrani Rekavandi - E.W. Sauer - T. Wilkinson - E. Safari Tamak - R. Ainslie - M. Mahmoudi - S. Griffiths - M. Eershadi - J. Jansen van Rensburg - M. Fattahi - J. Ratcliffe - J. Nokandeh - A. Nazifi - R. Thomas - R. Gale - B. Hoffmann, An Imperial Frontier of the Sasanian Empire: further fieldwork at the Great Wall of Gorgan, *Iran* 45, 2007, 95-136
- OVERLAET 1982: B.J. Overlaet, Contribution to Sassanian armament in connection with a decorated helmet, *Iranica Antiqua* 17, 1982, 189-206
- OVERLAET 1993a: B. Overlaet, *Splendeur des Sassanides. L'empire perse entre Rome et la Chine (224-642)*, Bruxelles, 1993
- OVERLAET 1993b: B. Overlaet, Organisation militaire et armement, in OVERLAET 1993a, 89-94
- PARKER 1986: S.T. Parker, *Romans and Saracens*, Winona Lake, 1986
- PARKER 1996: G. Parker, *The Military Revolution. Military Innovation and the Rise of the West, 1500-1800*, Cambridge, 1996
- PARVEV 1995: I. Parvev, *Habsburgs and Ottomans Between Vienna and Belgrade (1683-1739)*, New York, 1995
- PAULI JENSEN 2007: X. Pauli Jensen, Preliminary remarks on Roman military equipment from the war booty sacrifices of Vimose, Denmark, in GRANE 2007, 131-142
- PERJÉS 1970: G. Perjés, Army provisioning, logistics and strategy in the second half of the seventeenth century, *Acta Historica Academiae Scientiarum Hungaricae* 16, 1970, 1-51
- PLEINER 1993: R. Pleiner, *The Celtic Sword*, Oxford, 1993
- POLITO 1998: E. Polito, *Fulgentibus Armis. Introduzione allo studio dei fregi d'armi antichi*, Roma, 1998
- POLITO 1999: E. Polito, *I Galati vinti. Il trionfo sui barbari da Pergamo a Roma*, Milano, 1999
- QUESADA SANZ 1997: F. Quesada Sanz, *El armamento iberico: estudio tipológico, geográfico, funcional, social y simbólico de las armas en la cultura iberica (siglos VI-I a.C.)*, Montagnac, 1997
- RADDATZ 1985: K. Raddatz, Die Bewaffnung der Germanen vom letzten Jahrhundert vor Chr. geb. bis zur Völkerwanderungszeit, *Aufstieg und Niedergang der römischen Welt II, Principat* 12.3, *Künste*, Berlin, 1985, 281-361
- RANCE 2003: P. Rance, Elephants in warfare in Late Antiquity, *Acta Antiqua Academiae Scientiarum Hungaricae* 43, 2003, 355-384
- RANDBORG 1995: K. Randsborg, *Hjortspring. Warfare and Sacrifice in Early Europe*, Aarhus, 1995
- RANDBORG 1999: K. Randsborg, Into the Iron Age: a discourse on war and society, in CARMAN – HARDING 1999, 191-202
- RANKIN 1987: D. Rankin, *Celts and the Classical World*, London, 1987
- RAWLINGS 1996: L. Rawlings, Celts, Spaniards and Samnites: warriors in a soldiers' war, in CORNELL – RANKOV – SABIN (ed.) 1996, 81-95
- RAWLINGS 1998: L. Rawlings, Caesar's portrayal of Gauls as warriors, in WELCH - POWELL (ed.) 1998, 171-192
- REDDÉ – SCHNURBEIN – BARRAL – BÉNARD - BROUQUIER-REDDÉ – GOGUEY – JOLY – KÖHLER - PETIT 1995: M. Reddé - von S. Schnurbein - P. Barral - J. Bénard - V. Brouquier-Reddé - R. Goguy - M. Joly - H.J. Köhler - C. Petit, Fouilles et recherches nouvelles sur les travaux de César devant Alésia (1991-1994), *Bericht der Römisch-Germanischen Kommission* 76, 1995, 73-158

- REDDÉ – BRULET – FELLMANN – HAALBOS - SCHNURBEIN 2006: M. Reddé - R. Brulet - R. Fellmann - J.K. Haalebos - von S. Schnurbein (ed.), *L'architecture de la Gaule romaine. Les fortifications militaires*, Documents de l'archéologie française 100, Bordeaux, 2006
- ROBINSON 1967: H.R. Robinson, *Oriental Armour*, London, 1967
- ROLLE - MÜLLER-WILLE - SCHIETZEL 1991: R. Rolle - Müller-Wille - K. Schietzel (ed.), *Gold der Steppe. Archäologie der Ukraine*, Schleswig, 1991
- ROSSUM 2004: J.A. van Rossum, The end of the Batavian auxiliaries as 'national' units, in LIGT – HEMELRIJK - SINGOR (ed.) 2004, 113-131
- ROSTOVITZEFF – BELLINGER – HOPKINS - WELLES 1936: M.I. Rostovtzeff - A.R. Bellinger - C. Hopkins - C.B. Welles (ed.), *The Excavations at Dura Europos; Preliminary Report of the 6th Season of Work, Oct. 1932 - Mar. 1933*, New Haven, 1936
- ROSTOVITZEFF 1943: M. I. Rostovtzeff, *Res Gestae Divi Saporis and Dura, Berytus* 8, 1943, 17-60
- RUBIN 1955: B. Rubin, Die Entstehung der Kataphraktenreiterei im Lichte der choresmischen Ausgrabungen, *Historia* 4, 1955, 264-283
- SACHSLEHNER 2006: J. Sachslehner, *Wien Anno 1683*, Wien, 2006
- SAID 1993: E. Said, *Culture and Imperialism*, London, 1993
- SAID 1995: E. Said, *Orientalism. Western Conceptions of the Orient*, London, 1995
- Sarmates* 1995: *Entre Asie et Europe: l'or des Sarmates: nomades des steppes dans l'antiquité*, Douglas, 1995
- SCHALLMAYER 1997: E. Schallmayer (ed.), *Hundert Jahre Saalburg. Vom römischen Grenzposten zum europäischen Museum*, Mainz, 1997
- SCHLÜTER - WIEGELS 1999: W. Schlüter - R. Wiegels (ed.), *Rom, Germanien und die Ausgrabungen von Kalkriese*, Osnabrücker Forschungen zu Altertum und Antike-Rezeption 1, Bramsche, 1999
- SHAHBAZI 1987: A. S. Shahbazi, Army in Pre-Islamic Iran, *Encyclopaedia Iranica* 2, 1987, London, 489-499
- SHEPHERD 1983: D. Shepherd, Sasanian Art, in YARSHATER (ed.) 1983, 1055-1112
- SHINNIE 1967: P.L. Shinnie, *Meroe. A Civilisation of the Sudan*, London, 1967
- SIMENENKO 2001: A. V. Simenenko, Bewaffnung und Kriegswesen der Sarmaten und späten Skythen im nördlichen Schwarzmeergebiet, *Eurasia Antiqua* 7, 2001, 187-327
- SOUZA 2008: de P. Souza (ed.), *The Ancient World at War. A Global History*, London, 2008
- STADLER 2003: P. Stadler, La chronologie de l'armement des Avars du Vie au VIIe siècle, in VALLET - KAZANSKI 1993, 445-457
- STARY 1994: P.F. Stary, *Zur eisenzeitliche Bewaffnung und Kampfwweise auf der iberischen Halbinsel*, Berlin, 1994
- STEFAN 2005: A.S. Stefan, *Les guerres daciques de Domitien et de Trajan: architecture militaire, topographie, images et histoire*, Collection de l'École française de Rome 353, Roma, 2005
- STEIN 2007: M.L. Stein, *Guarding the Frontier. Ottoman Border Forts and Garrisons in Europe*, London, 2007
- STIEBEL 2003: G. Stiebel, The *militaria* from Herodium, in BOTTINI – SPEGNI - CHRUPCALA (ed.) 2003, 215-244
- STIEBEL 2005: G. Stiebel, "Dust to dust, ashes to ashes...": military equipment from destruction layers in Roman Palestine, in JILEK 2005, 99-108
- STOYE 2006: J. Stoye, *The Siege of Vienna*, Edinburgh, 2006
- SWINKELS 2004: L. Swinkels (ed.), *De Bataven. Verhalen van een verwenen volk*, Amsterdam and Nijmegen, 2004
- SYVÄNNE 2004: I. Syväanne, *The Age of Hippotaxotai. Art of War in Roman Military Revival and Disaster (491-636)*, Acta Universitatis Tamperensis 994, Tampere, 2004
- SZABÓ - PETRES 1992: M. Szabó - É.F. Petres, *Decorated Weapons of the La Tène Iron Age in the Carpathian Basin*, Inventaria Praehistorica Hungariae 5, Budapest, 1992
- TALLIS 2008: N. Tallis, Parthian and Sasanian warfare, in SOUZA 2008, 172-181
- VALLET - KAZANSKI 1993: F. Vallet – M. Kazanski (ed.), *L'armée romaine et les barbares du IIIe au VIIe siècle*, St Germain-en-Laye, 1993
- VALLET - KAZANSKI 1995: F. Vallet – M. Kazanski (ed.), *La noblesse romaine et les chefs barbares du IIIe au VIIIe siècle*, St Germain-en-Laye, 1995
- VANDEN BERGHE 1984: L. Vanden Berghe, *Reliefs Rupestres de l'Iran Ancien*, Bruxelles, 1984
- VANDEN BERGHE 1993: L. Vanden Berghe, La sculpture, in OVERLAET 1993a, 71-88
- VECCIA VAGLARI 1978: L. Veccia Vaglari, al-Kadisiyya, *Encyclopaedia of Islam* IV, 1978, Leiden, 384-387
- WAASDORP - KERSING 1999: J.A. Waasdorp - V.L.C. Kersing, *Van Romeinse soldaten en Cananefaten. Gebruiksvoorwerpen van de Scheveningseweg*, Den Haag, 1999
- WEBSTER 1969: G. Webster, *The Roman Imperial Army*, London, 1969
- WEBSTER – COOPER 1996: J. Webster - N. Cooper (ed.), *Roman Imperialism: Post-Colonial Perspectives*, Leicester, 1996
- WEBSTER 1996: J. Webster, Ethnographic barbarity: colonial discourse and Celtic warrior societies, in WEBSTER – COOPER (ed.) 1996, 111-123
- WELCH - POWELL 1998: K. Welch – A. Powell (ed.), *Julius Caesar as Artful Reporter: the War Commentaries as Political Documents*, London and Swansea, 1998

- WELSBY 2002: D. A. Welsby, *The Medieval Kingdoms of Nubia, Pagans, Christians and Muslims along the Middle Nile*, London, 2002
- WELSBY – ANDERSON 2004: D. A. Welsby - J. R. Anderson (ed.), *Sudan Ancient Treasures. An Exhibition of Recent Discoveries from the Sudan National Museum*, London, 2004
- WHEATCROFT 2008: A. Wheatcroft, *The Enemy at the Gate. Habsburgs, Ottomans and the Battle for Europe*, London, 2008
- WHITBY 1994: M. Whitby, The Persian king at war, in DABROWA (ed.) 1994, 227-263
- WIDENGREN 1976: J. Widengren (ed.), Iran, der große Gegner Roms: Königsgewalt, Feudalismus, Militärwesen, *Aufstieg und Niedergang der römischen Welt* **II.9.1**, 1976, Berlin and New York, 219-306
- YARSHATER 1983: E. Yarshater (ed.), *Cambridge History of Iran* 3(2), Cambridge, 1983
- ZIELING 1989: N. Zieling, *Studien zu germanischen Schilden der Spätlatène- und der römischen Kaiserzeit im freien Germanien*, BAR IS **505**, 1989, Oxford



Simply ornament or something more? Marks of undetermined function found on Barbarian lance- and spearheads

Katarzyna Czarnecka - Bartosz Kontny

The heads of shafted weapons from Barbaricum have been dealt with in several extensive studies and some classifications have been suggested¹. The issue of ornaments on the lance- and spearheads (Fig. 1) was taken up much earlier². In recent years the spectacular finds, i.e., inlaid lance- and spearheads have been discussed³, as well as the ones decorated in other techniques⁴. The authors mentioned above concentrated on the decorations of the blade, disregarding the rivet holes. The lines, incisions, and engraved ornaments on the sockets of the heads are generally not mentioned in publications⁵. Even if they are marked on the drawings, a description or comment in the text is lacking. The problem has been taken up by one of us⁶, who tried to identify the diverse marks which can be noticed on the sockets. The issue deserves greater attention and more profound reflection, as not only the different forms of marks on the sockets should be dealt with but also their significance, which may be purely technological, but also decorative, and perhaps symbolic and magical.

Our investigations concern the lands of Barbarian Europe from the Pre-Roman, Roman and Migration Periods. We are, however, aware that a full museum query, important as it may be due to the fact that the researchers often disregarded the marks in question, is a truly gargantuan task. The material from the area of Poland has been investigated to a satisfying degree, and a query, albeit random, has been made in some foreign centres. Therefore, the results obtained, which may not be decisive in some aspects, should be considered reliable.

Of the various marks discovered on the sockets we would like to select two kinds: horizontal (or/and oblique) incisions and engravings made near the hole for a rivet or nail fastening the socket, and (1-3 in number) small holes made on the socket, most often on the seam (this is called the Osobowice type after the first identified example)⁷.

Within the former group several types of various shapes, techniques of making and probably functions, can be distinguished. The first type (Fig. 2) consists of straight, not very deep lines, usually of several millimetres of length, located in the lower part of the socket and crossing the rivet or nail hole (holes). It should be remarked that the incisions were found both at one (most frequently) or both holes in the socket (the details can be found in the catalogue). Forms of **Type I** are the most numerous in the discussed group and have the largest distribution. Although the majority of the finds are ascribed to the Przeworsk Culture, some items come from the lands on the Elbe river (Görbitzhausen), Thuringia (Oberwechsen), the Main river drainage basin, from the area of the Bogaczewo Culture (Stręgiel Wielki II, Bogaczewo-Kula) and also from Moravia (Kostelec na Hané). Also the time span in which the phenomenon appeared is quite long. The earliest known heads with such incisions can be dated to phase A2 (Dobrzankowo, grave 12), and the Late Pre-Roman Period is also represented by a stray find from Dobrzankowo as well as the heads from Görbitzhausen and from Stręgiel Wielki II, grave 63⁸. The majority of spear- and lanceheads of this kind have been found in the Przeworsk Culture features from the Early Roman Period, but also from the Late Roman Period (the latest is a stray find from Chmielów Piaskowy, determined as type Kaczanowski XX dated to phase C₂). The finds from central Germany dated to the Late Migration Period make up a chronologically isolated group.

The marks on sockets, mentioned above did not serve, as it seems, as ornaments: their decorative value seems to be minimal. It is more probable that these incisions had some practical significance. They probably served to make the socket thinner and, as a result, easier to punch a rivet or nail hole. It should be noted that the incision provided a stable support for the working part of the punch, which would not

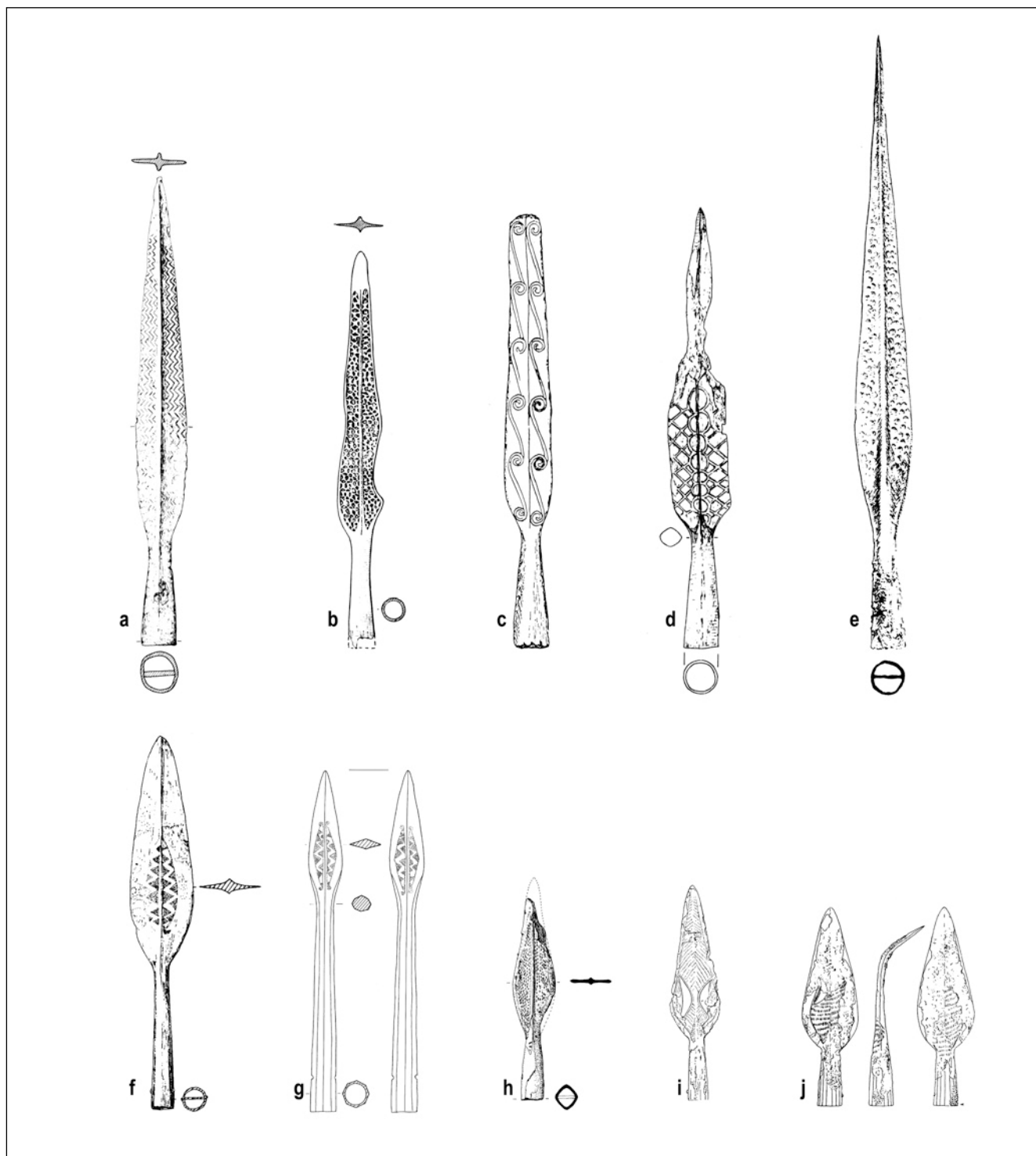


Fig. 1: Different styles of ornament on the heads of shafted weapons in the Przeworsk Culture: a-e - examples from the Late Pre-Roman Period, f-j - examples from the Roman Period; a - Kamieńczyk, grave 363 (after DĄBROWSKA 1997, pl. 167: 3), b - Dobrzankowo, loose find (after OKULICZ 1971, Fig. 47: c), c - Lemany, grave 53 (after JANKOWSKA et al. 1975, 46, Fig. b), d - Garwolin, grave 33 (after NIEWĘGŁOWSKI 1991, Fig. 16: c), e - Siemiechów, grave 12 (after JAŹDŹEWSKA 1983, pl. 299: 3, 21.), f - Garwolin, grave 57 (after NIEWĘGŁOWSKI 1991, Fig. 35: c), g - Niemirów, grave 1 (after RUSIN 2001, Fig. 2), h - Grudynia Mała, grave 2 (after KONTNY 2003, pl. XVI: a), i - Silesia, unknown site (after JAMKA 1938, Fig. 19: 1), j - Rogów Opolski, grave (JAMKA 1938, Fig. 15: 1).

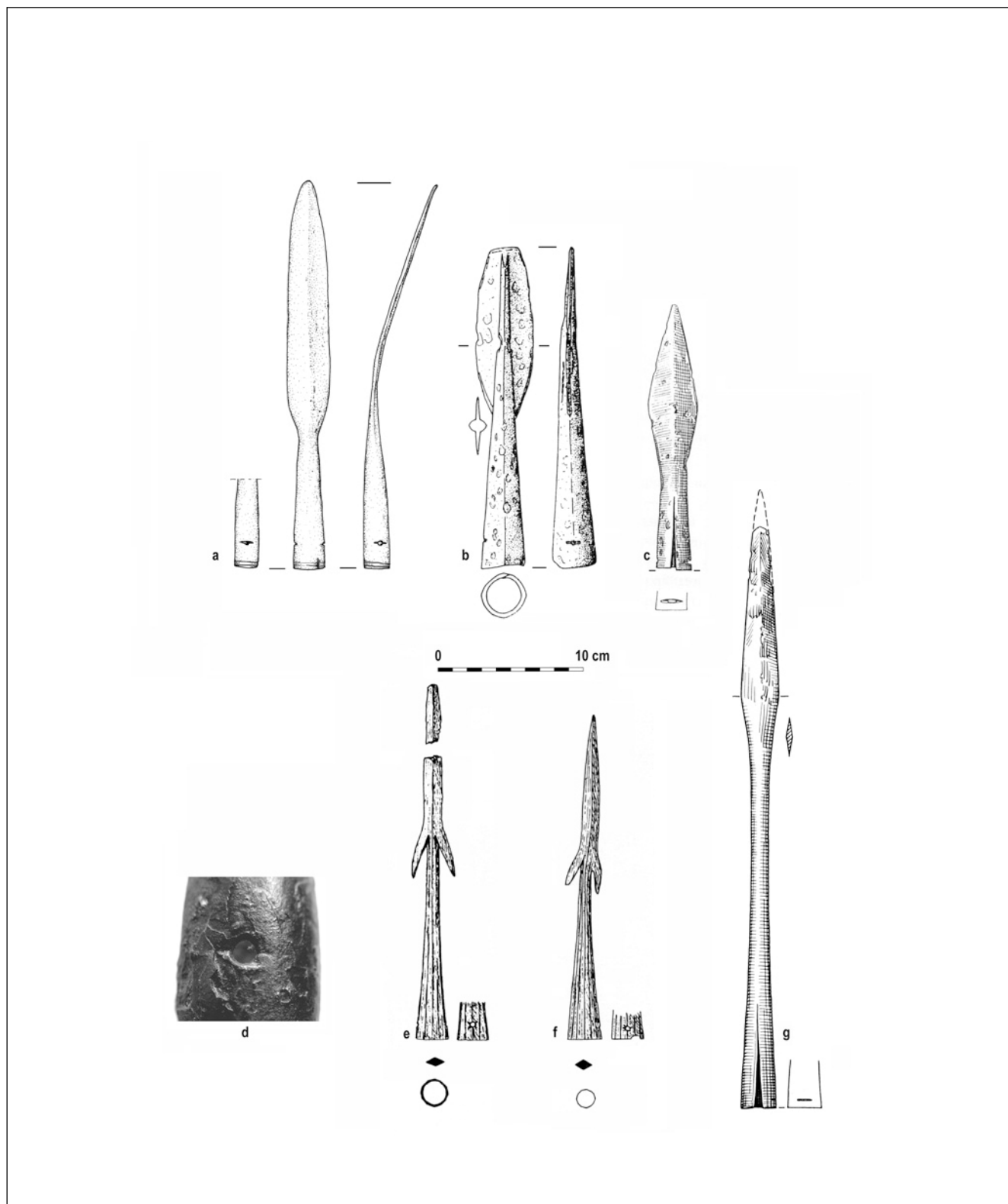


Fig. 2: Examples of lance- and spearheads with ornament of **Type 1** (a-d) and **1'** (e-g): a -Kamieńczyk, grave 144 (drawn by K. Czarnecka), b - Michelbach, loose find (after KOCH 1967, pl. 43: 3), c - Oberwechsen, grave 8 (after SCHMIDT 1970, pl. 3: 2c), d - Wesółki, grave 20a (no scale), e-f - Ejsbøl (after ØRSNES 1988, pl. 115: 7, 9), g - Stößen, grave 90 (after SCHMIDT 1970, pl. 34: 1).

slip on the rounded surface of the socket, and this made it easier to pierce the hole. This explains why the phenomenon can be observed for such a long period and for such distant areas of Barbarian Europe. This technique of making holes could have been discovered separately in various places. The exact territorial and chronological framework of the phenomenon has not been yet established: this solution might have been used in many other regions and chronological periods, but its traces have not been noticed. The method might have been much more widespread than is indicated by the collected material but the state of preservation of the artefacts often does not allow us to notice its traces.

The goal discussed above could be achieved with the use of some other, similar techniques, which have been determined as variants of **Type 1**. They are not uniform and comprise different examples of using incised lines, with no decorative function (due to their scant numbers any further attempts at their classification are premature). As an example may serve the barbed spearheads from Ejsbøl dated to phase C₂. In their case the hole in the socket was made at an intersection of two incised oblique lines forming a St. Andrew's cross. Another instance are the heads decorated with a horizontal line encircling the whole socket, crossing the rivet or nail hole (Judziki, stray barbed head; Kamieńczyk, grave 292). In this case the aim was not only to make piercing the hole in the socket easier. This is confirmed by the head from Przyborowo, which has double encircling lines made after the nail fastening the socket had been hammered in (the lines cross the nail head). The incised line might have had a decorative function, especially in the case of inlay decoration (such designs were inlaid in the Roman Period⁹), but no traces of inlay have been found on the above-mentioned heads. It is also possible that these lines were made to facilitate fastening some organic decoration, e.g., with a cord, thong or wire (such decorations are discussed later on in the paper)¹⁰.

The second particular way of working in the area of the rivet hole is to cut the wall of the socket on two sides, which yields two parted semi-oval areas connected by a short line with the rivet in the middle (Fig. 3). This form was obtained by making a v-shaped incision with a saw or file. This was achieved by placing the tool at an angle of about 45 degrees. Such an undercut yields a clearly visible mark slightly resembling an eye, but most probably its purpose was to facilitate making the rivet hole in a socket with a thicker wall, using a different technique, or perhaps a different tool (chisel or saw applied at an angle). The heads with such marks are not so numerous as the ones described above, and are predomi-

nantly found in the area occupied by the Przeworsk Culture. The few finds from other areas, however, indicate that the phenomenon was more widespread. It should be remarked that the finds from Nydam and Oberstreu are certain to have this kind of design, but as refers to the items from Obrež, Zemplin, and Skrzyppy, known from publications or archival drawings, it may only be suggested. This method has been confirmed from the Late Pre-Roman Period, Phase A₁ (Warszawa-Wilanów, grave 91), through the Early Roman Period, until the Late Roman Period (Spycimierz, stray find of an arrowhead; Nydam, possibly the stray finds from Dąbrówka and Wąchock) and even Late Migration Period (stray find from Oberstreu). In our opinion the aim was purely technological, i.e., to facilitate, like in the case of Type 1, making the rivet or nail hole. The incision was effective if the socket was not too thick, but if the socket wall was thicker, it might have been insufficient. Moreover, such an incision might have weakened the socket: the deeper cut required a longer incision. In such a case two shallower, oblique cuts, called by us **Type 2**, which originally gave an unintended decorative effect, would be more suitable. The above-described method yielded a mark resembling an eye of some ornamental value. It might have been noticed and then intentionally enhanced, linking the technological requirements with the decorative effect¹¹. These two functions may be suggested by the head from the Przeworsk Culture cemetery at Warszawa-Wilanów (grave 91) where a considerably large and carefully executed double undercutting is accompanied by an incised oblique St Andrew's cross¹². This head is also decorated with oblique incised lines at the bottom of the blade. Another interesting example is the stray find of an arrowhead (?) with two semi-circular undercuts on either side, coming from the Przeworsk Culture cemetery at Spycimierz dated to the Roman Period. The sheet of metal from which the socket was made was relatively thin and can not have required such a method to be pierced. At the burial ground at Spycimierz several similar arrowheads were found, but they did not have any incisions on the socket, so the above-discussed head did not represent a normal 'technique' but rather a specific form of decoration.

Type 3 (Oblin type heads) consists of heads with four oblique incised (sometimes double) lines around the rivet or nail hole making up a rhomboid or lenticular design (Fig. 4).

There are three variants of type 3: with additional undercutting on either side, characteristic for type 2 (Kamieńczyk, grave 123, Pakalniai, mound 2, grave 2), with an additional horizontal incision known from type 1 (Inowrocław-

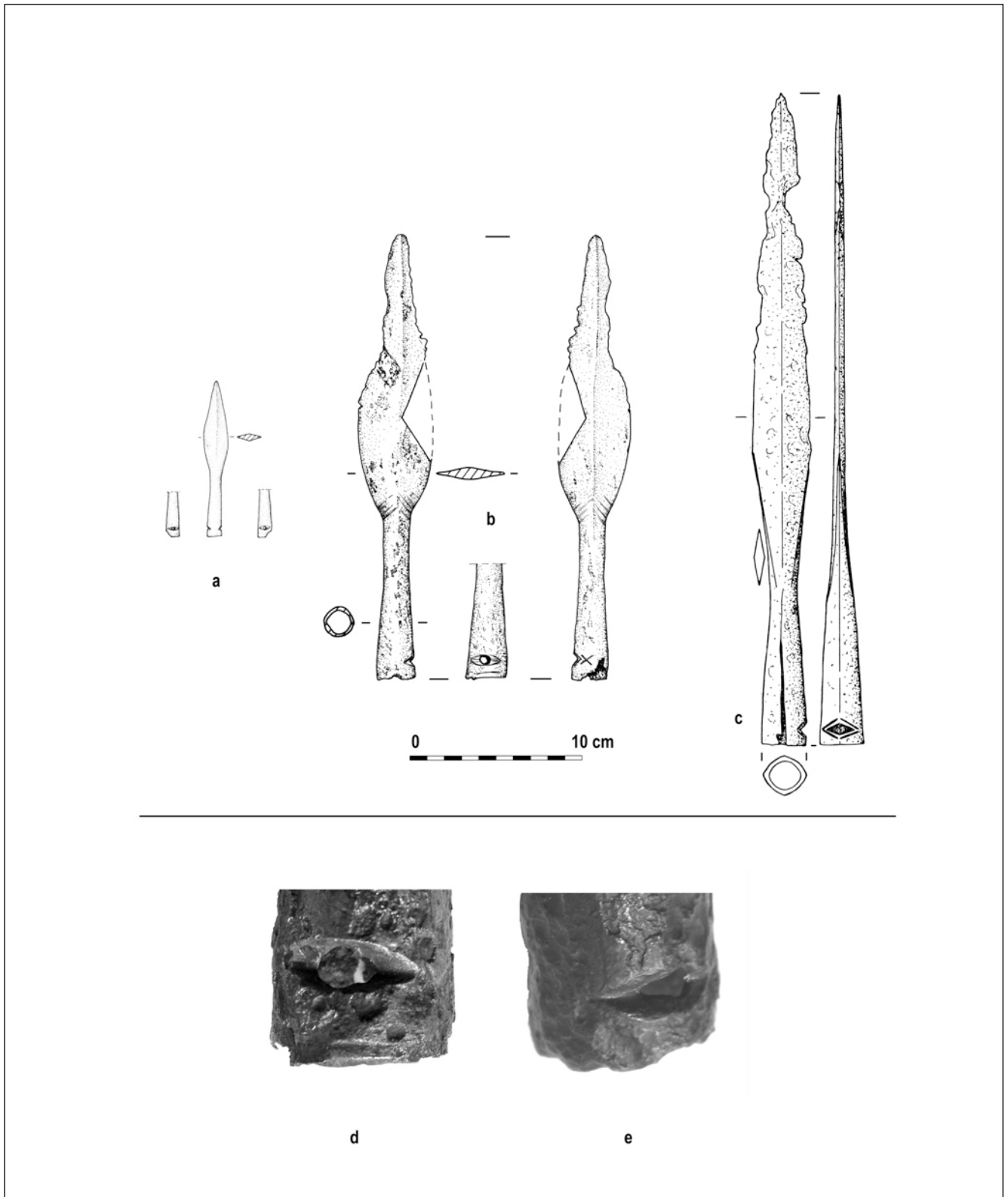


Fig. 3: Examples of lance-, spearheads and arrowhead with ornament of **Type 2**: a - Spycimierz, loose find (drawn by K. Czarnecka), b - Warszawa-Wilanów, grave 91 (drawn by K. Czarnecka), c - Oberstreu, loose find (KOCH 1967, pl. 23: 12), d - Warszawa-Wilanów, grave 91 (photo by B. Kontny), e - Oblin, grave 68 (photo by B. Kontny); d-e - no scale.

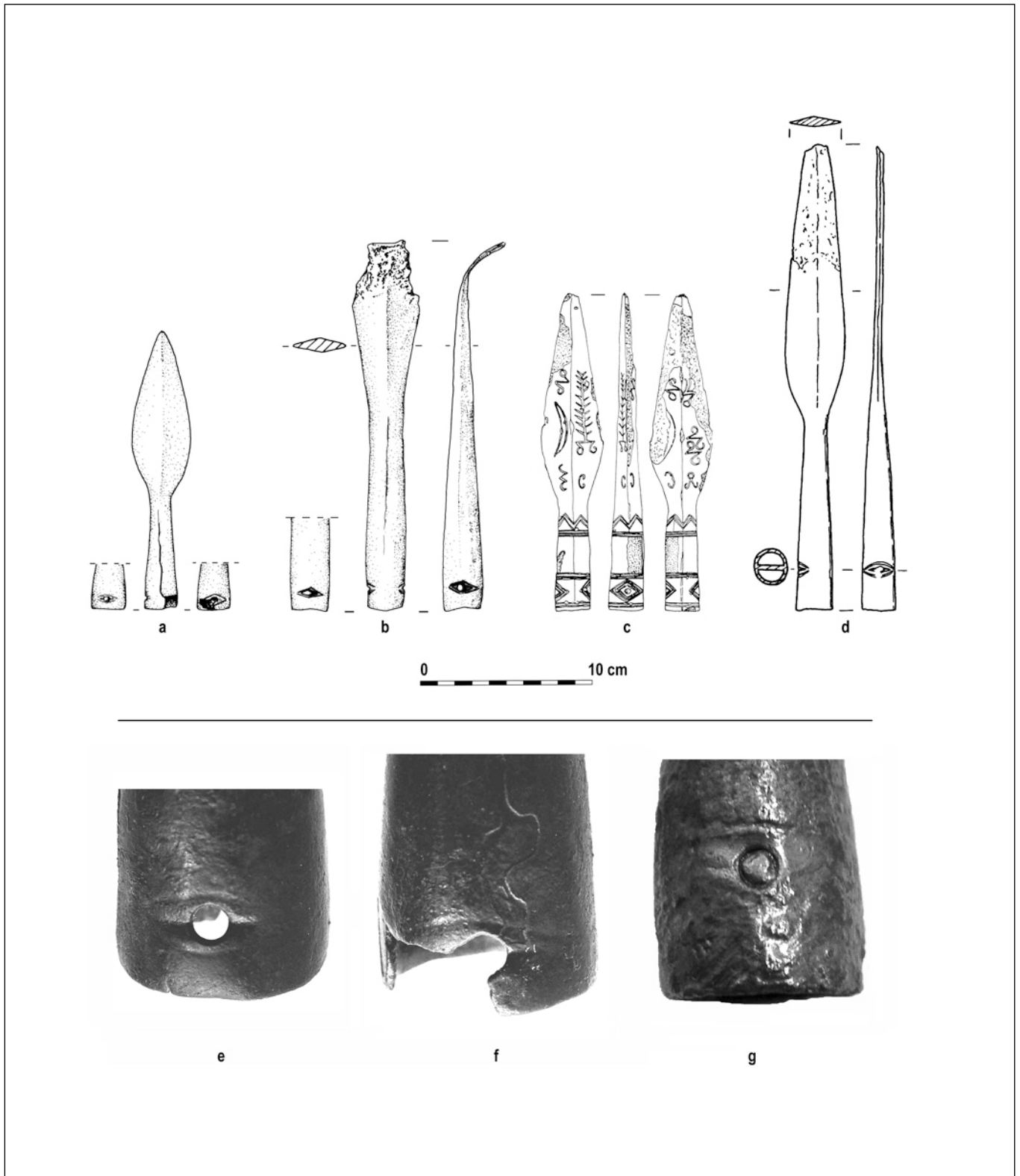


Fig. 4: Examples of lance- and spearheads with ornament of *Type 3*: a, e-f - Wesółki, grave 66 (drawn by K. Czarnecka), b - Gać, loose find (drawn by K. Czarnecka), c - Zadowice, loose find (after KASZEWSKA 1988, pl. 5: 13), d - Inowrocław-Szymborze, loose find (after BEDNARCZYK-ŁASZKIEWICZ 1990, Fig. 16: 3), g - Kamieńczyk, grave 123 (photo by B. Kontny); e-g - no scale.

Szymborze, loose find, Oblin, grave 280, Wesółki, grave 66), and without any additional marks (Gać, loose find, Wesółki, grave 20a, Zadowice, loose find). This type has so far been found only in the area occupied by the Przeworsk Culture. The exceptional discovery from a very late grave 2 from Pakalniai (the East Lithuanian Barrow Culture) seems to prove its longevity. The earliest recorded finds are dated to phase A3 of the Late Pre-Roman Period (Oblin, grave 280, Wesółki, site 1, grave 66). The above-described type of decoration has been confirmed also for the turn of the Pre-Roman and Roman Periods, Early Roman Period and Late Roman Period (stray find from Zadowice). The incised rhomboid motif 'eye' has been recorded as late as the Migration Period: it was found on the above-mentioned head of shafted weapon from Pakalniai¹³.

The discussed type represents an intentionally made ornament, for the incisions used to outline the edges of the design serve no technological purpose¹⁴. The motif might have been part of a larger decoration or even inlaid, which is testified by the head of shafted weapon from Zadowice mentioned above.

Type 4 reflects several different techniques of decoration (Fig. 5). In the case of the head from Szepietówka and spear butt from grave 77 at Zagórzyn, the ring encircling the socket broadens in one place, creating the eye design (with the use of the undercutting characteristic for Type 2). The most sophisticated form is represented by the stray find of a leaf-shaped head from Judziki: the eye design is in relief, extending the socket, but does not encircle the whole socket. Another solution is represented on the head from grave 128 at Stręgiel Wielki II. Here a motif of multiple (punched) lines making up a lenticular design around the rivet or nail hole is in evidence. It should be noted that Type 4 fulfils the criteria for the category 'others.' It embraces single heads and is considerably diversified. Thus it is impossible to make any statements as to its chronology or distribution, or to distinguish the variants clearly. It is possible, however, that in the future, with the discovery of other finds not fitting into Types 1-3 it will be necessary to modify the present typology, especially for Type 4.

As has been already remarked, the two first types of incisions are of technological character. The third type, a rhomboid marked with double lines encircling the rivet hole, is undoubtedly an intentional sign having no technological, but only decorative and, as we believe, magical meaning.

In warrior societies where free warriors were the basic social group, weapons constituted the status symbol, and

their quality and also appearance were very important. That is why the military equipment known from European Barbaricum was very often decorated, and the ornaments could be found not only on swords (both Barbarian and Roman)¹⁵ and spearheads but also on shafts (e.g. Nydam III and IV¹⁶, Kragehul¹⁷) and shields¹⁸. *Tacitus*' claim about the Germans that 'In their equipment they show no ostentation; only that their shields are diversified and adorned with curious colours'¹⁹ should not be considered as entirely reliable. In '*Germania*' he tries to contrast the Germans' simple and unassuming lifestyle Roman excess. So perhaps we have to deal here with propaganda rather than a factual description of the observed phenomena, although the decoration on the heads of spears or pommels of swords might have been not easily noticeable. Moreover, the particularly richly decorated, probably ceremonial, weapons not used in battle (e.g., the shield boss with silver sheeting from Gommern²⁰) appeared in a later period than that described by *Tacitus*. The particularly ornate weapons were used in the Younger and Late Roman Period, especially in Scandinavia (shields, swords, spearheads, and parts of horse harness decorated with precious metals)²¹.

The tradition of decorating weapons, however, comes from a much earlier date. In the Late Pre-Roman Period the shafted weapon heads from the Przeworsk or Oksywie Cultures were most often decorated on the whole surface of the blade with etched designs²². This custom, like making cut-out designs at the edges of the blade, which generally played a decorative, rather than functional role, was adopted from the Celts. In the Early Roman Period the techniques of punching and engraving predominated²³. The inlay, known already in the Early Pre-Roman Period²⁴, gained in popularity especially in the Late Roman Period. The most frequent motifs among the inlaid designs are: circles and other solar signs, lunar signs, magical signs resembling Sarmatian *Tamga* symbols, svastikas, triquetras, or representations of animals. More rarely there appeared the runic signs²⁵. The motif which we have called the Oblin type, has not been found either on blades of the heads or on other elements of weaponry or tools.

Various symbolic signs can be found, besides on weapons, also on tools (knives, fire-steels)²⁶, and on pottery²⁷. Despite the differences in their exact interpretations, it is usually assumed that along with the decorative function they also had some magical importance (protection or strengthening the 'power' of the weapon) like the inlays on Roman swords or they could have indicated clan or tribal affiliation like the Sarmatian *Tamga* symbols²⁸. Of similar meaning could have

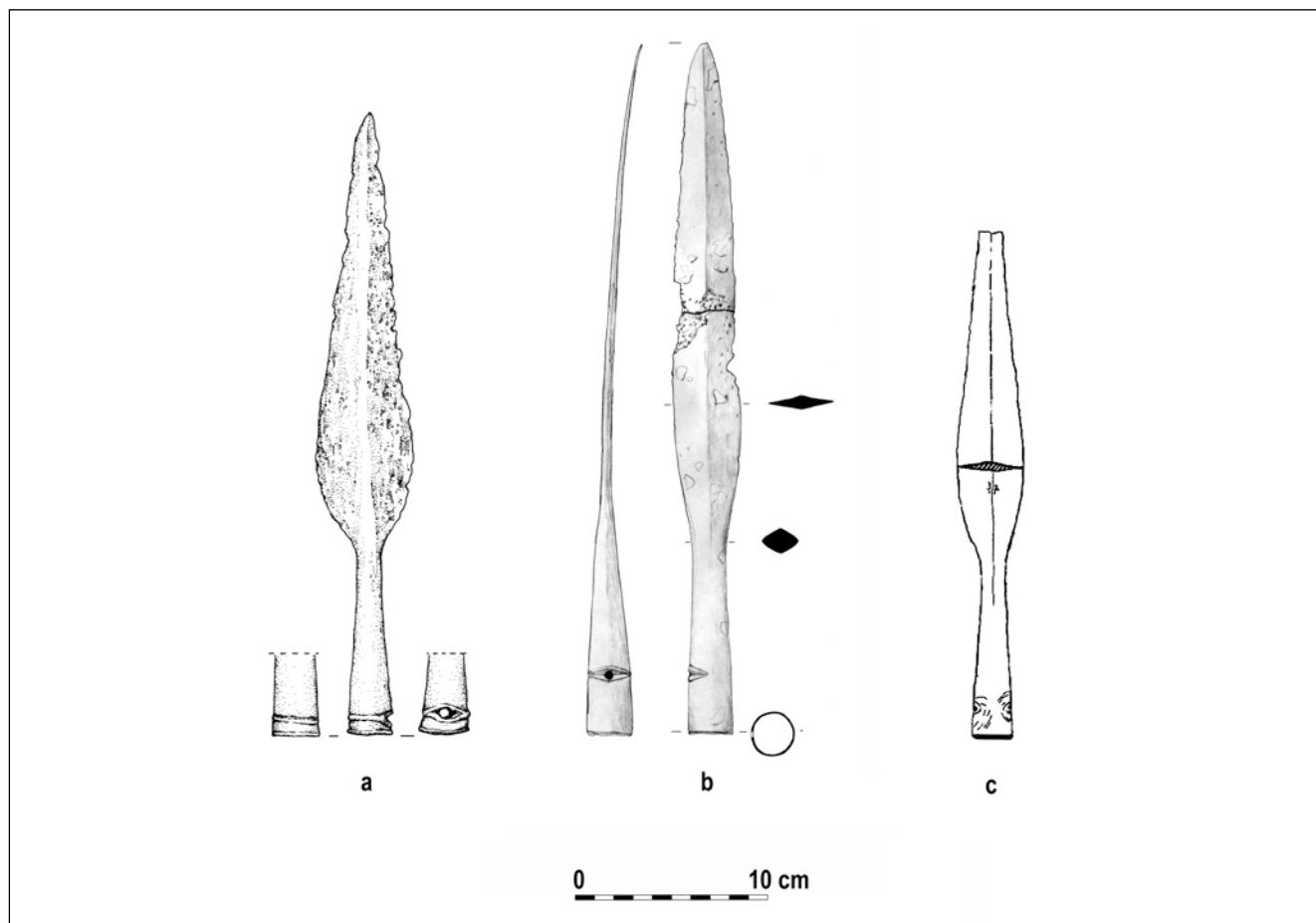


Fig. 5: Examples of lance- and spearheads with ornament of **Type 4**: Szepietówka, loose find (drawn by K. Czarnecka), b - Judziki, loose find (after KONTNY 2007, Fig. 8: a), c - Stręgiel Wielki, site II, grave 128 (sketch from the H. Jankuhn's files, after KONTNY 2007, Fig. 7: b).

been the runic signs which appeared on weapons, ornaments, small tools and pottery in the Late Roman Period in Scandinavia and, more rarely, on Polish lands²⁹. Although some of the runic inscriptions are considered to denote ownership or be a signature of the owner, other ones are interpreted as symbols.

The eye motif, however, appears quite rarely among Barbarian ornaments. Faces with marked eyes can be found on pottery³⁰. Sometimes they are very schematic: the eyes are usually round and seldom have pupils, e.g., at Hunn³¹.

The ornaments on weapons might have determined the warrior's rank. In the Late Roman Period in Scandinavia it was expressed by way of decorating the shields and swords³². Earlier on, in phase A₃ of the Late Pre-Roman Period the rank was probably indicated by decorative fittings covering the shield boss rivets³³.

The rank might have been also reflected through the shafted weapons. It should be recalled that according to *Tacitus*, the *framea* (spear) was the basic offensive weapon

of the Germans. A young man, when considered worthy, was given a spear as a symbol of an adult warrior³⁴. Shaking the spears was an expression of approval on a meeting, and the spear, together with other elements of military gear, was part of a dowry. The dance among spears is also mentioned, which probably was of magical-ritualistic character (an initiation rite?). The spear is also an Odin/Votan's attribute, so it seems to possess a valid symbolic meaning at least of the same importance as the sword. Magical signs placed on the spear (even not the very prominent ones) may thus have a substantial symbolic significance.

A suggested interpretation of the rhomboid mark with a hole is, like all attempts of reconstructing spiritual culture on the basis of its material remains, only a hypothesis. It seems, however, that the described design may be justifiably interpreted as a depiction of an eye due to the clear similarity of the form. The apotropeic meaning of the eye symbol as protecting against the 'evil eye' is quite commonly known³⁵ and it may be assumed that the Przeworsk culture population, in

whose territory the most numerous finds of decorated heads were found, was also familiar with it. It is also possible that the outcome of undercutting the socket for technological purposes created an association with a well-recognised eye symbol. The design was created intentionally as a decorative element with a supposed magical significance, and perhaps some new meaning was added.

The eye motif represented as a rhombus drawn in double lines with a hole-pupil in the middle may have, stylistically, had Celtic roots (Fig. 6). The Celtic influence is quite prominent in the Przeworsk Culture and most of the techniques of decorating spear- and lanceheads was taken over from the Celts. It is hard to state whether the Celtic art motifs were the model or an inspiration for the incisions on the heads of the Przeworsk Culture (which was quite certainly German), although this is very probable. The eyes of figures represented in Celtic art are generally oval³⁶, and sometimes clearly rhomboid in shape. They were marked in double lines, like the ones on the discussed spearheads. In many Celtic representations the eyes are 'empty,' i.e., they have no pupils. This concerns especially the representations in stone, but also metal details in the form of human heads. Rhomboid eyes with pupils are more rare but can be found, e.g., on Celtic coins dated to LTD in France and also in Esztergom, Hungary, dated to the early 1st century BC (LTD₁)³⁷. The head on a bronze part of the wagon from Dejbjerg, western Jutland (LTD, the 1st century BC) has lenticular, protruding eyes with pupils³⁸. The larger figures represented on the Gundestrup Cauldron and Rynkeby Cauldron have lenticular or rhomboid eyes marked with strong double incised lines and well defined pupils in the form of pierced holes³⁹. The smaller figures have rhomboid eyes marked with double lines, and generally no pupils. This might have symbolised the specific lore of perhaps supernatural 'seeing' of the main figures interpreted as deities. Although the Gundestrup Cauldron is a unique find, some of its stylistic motifs are more common and strongly refer to Thracian toreutics and to other Celtic representations. The dating and origin of the Gundestrup Cauldron have inspired many questions⁴⁰, answering which goes beyond the scope of this paper, yet the fact that this artefact finally found its way to the Danish bog confirms the existence of contacts between the Celts and the Germans. The way of representing the eye as a rhomboid incised in double lines may have been borrowed from the Celts. We do not know if its symbolic meaning was also adopted. The eye motif is not very common in the Celtic mythology. There does exist the story of Balor's deadly eye⁴¹ yet he is a hero of island mythologies (Ireland)

and it is doubtful whether the links should be looked for so far. To sum up: inasmuch as the representations of human heads are one of the most characteristic motifs in Celtic art, the eye motif itself is almost entirely unknown⁴². It should be assumed that even if the earliest eye-shaped signs which appeared on the heads of the Przeworsk Culture were in some way inspired by Celtic representation (as to the very form of the sign) their meaning might have had a local character, referring rather to the German mythology.

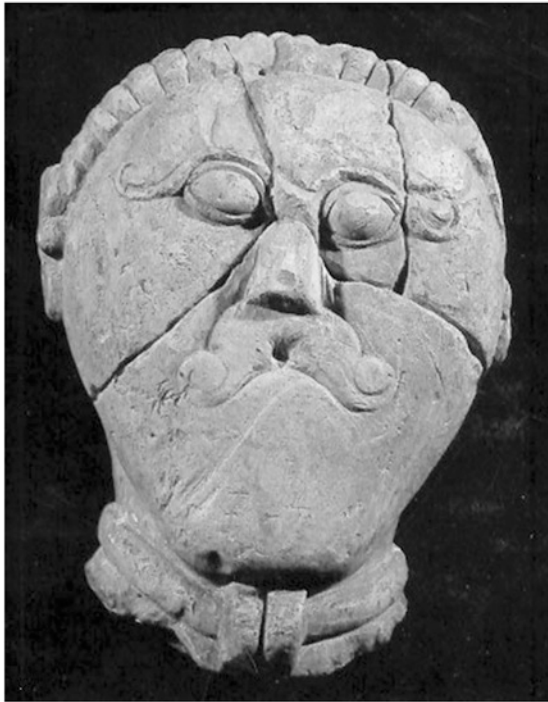
The eye may thus be somehow connected with the figure of Odin/Votan. This deity devoted his own eye to gain wisdom - knowledge of the supernatural. It should be remembered that his attribute was the spear. It is not known how old the story of Odin/Votan's eye is or whether it was known in the Roman times. The representations on the bracteates from the Migration Period are interpreted as images of Odin/Votan so it should be assumed that this myth might have been known a little earlier. The images of a human face with eyes shown in a different ways (one of them is considered to be blind) are supposed to be the representations of Odin/Votan as seen on the vessel from Guldagergård, Stenum Ksp., Hjørring amt, dated to Early Roman Period⁴³ or on a plate from Toroslunda (Öland) dated to Migration Period⁴⁴. It may be thus assumed that the myth about Odin/Votan's eye was known in the period when the presented spearheads were used⁴⁵.

Drawing the eye motif on a head of a spear - Odin/Votan's weapon, is absolutely understandable and may symbolise the act of evoking this deity of war and netherworld (*Valhalla*) where he welcomed the dead heroes. Odin/Votan's function and place in the Pantheon of Germanic deities might have changed in time and in the Roman Period might have been semantically different from the early Mediaeval connotations. However, the archetypical element of this figure, giving the eye for knowledge about the future, seems to be quite early.

The Mediaeval Scandinavian sources provide numerous pieces of information about the symbolic sacrifice to Odin/Votan of enemy ranks before battle by throwing a spear in their direction or over their heads⁴⁶. The motif of magic accompanying Odin/Votan and the spear is present also in this case. Perhaps a spear with Odin's sign had stronger magical power; in any case the sacral character of this kind of weapon is confirmed again.

The eye appeared among decorative motifs together with birds-scavengers, i.e., ravens, which accompany the battle and deal with the dead (Fig. 7:c). Odin's attributes include animals, especially two ravens: *Huginn* and *Muninn*

a



b



c



d

Fig. 6: Examples of an eye motif in Celtic and influenced arts: a - stone head from Mšecké Žehrovice (Bohemia), b - detail on the wagon from Dejbjerg, c - image of a Celtic god from the Gundestrup cauldron, d - detail of the Rynkeby cauldron (after MEGAW–MEGAW, 2001).

(Thought and Memory), which are found together with Odin in various representations (bracteats⁴⁷, decorative plates from helmets from Vendel, grave I and II⁴⁸, drawing of the scabbard from Nydam showing Odin with a raven⁴⁹). Ravens appear quite frequently as decorative motifs on various elements of Barbarian military equipment (helmets, appliqués on scabbards, shield bosses) mainly from Scandinavia from the Younger and Late Roman Period; sometimes they were presented holding an eye in their beak⁵⁰. Like other animals feeding on the dead (pecking out the eyes), they were guides on the way to *Valhalla* and according to many sagas they accompany heroes to the battlefield. An expression "to feed the ravens" is often used meaning killing the enemies⁵¹ and link the eye motif with the battle, the warrior, *Valhalla*, etc. Ravens with eyes in their beaks also appear in the sagas⁵². This kind of imagery, a specific familiarity with such dramatic images may seem shocking but it was probably perceived quite differently by warriors in the Late Antiquity. Besides, the eyes in question should belong to the enemy and were offered in this specific way to Odin, like the enemies were offered before the battle by throwing the spear.

We can only speculate whether a spear with the sign of Odin/Votan's eye could have indicated a special group of warriors belonging to *Männerbünde* type groups or, known from the later sources, the 'berserkers.' The collected material is not sufficient to confirm such a possibility. At the moment it is not even possible to state if the decoration indicated an eminent warrior: among the non-numerous forms with a sign of an eye representing Type 3 the great majority are stray finds and the remaining ones do not show any correlations with the wealth of the grave goods.

The chronological spread of the artefacts indicates that the type in question may belong to the group of symbols which were sufficiently obvious to be repeated in different cultures. It is hard to say if the same symbolic meaning was ascribed to these signs. The sign itself was quite easy to make, not requiring any special artistic skills in contrast to the later raven representations from Scandinavian weapons (these artistic stylisations must have been made by highly specialist goldsmiths-artists, not by a local smith like the decorated spearheads of the Oblin type).

It is not certain whether the eye motif on the sockets of the heads was a sign of magical, apotropeic value, or increasing the 'power' of the spear's properties, or a sign of affiliation to a group of some kind of warriors or of the 'seers.' Inasmuch as the symbol of lightning or of the sun refer directly to war prowess, the eye rather signifies knowledge, especially of the supernatural. In any case the eye sign

on the sockets is clearly of a symbolic character, but its exact meaning remains unclear and can be interpreted in many ways. Moreover, it should not be forgotten that symbols are ambiguous by their very nature thus it is possible that the eye motif contained all the suggested meanings or even embraced a still broader spectrum of associations.

As it has been said at the beginning of this paper, another kind of possible decoration (Fig. 8) may be observed on the spearheads, namely, one to three vertically arranged holes at the seam of the socket (in the Roman Period the sockets were typically formed by joining the edges) or in the long slit separating the edges of a poorly forged (they are easy to identify because they make the slit locally broader, creating an circular hole of 0.1-0.2 cm in diameter). These holes resemble in size and technique of making the rivet holes, sometimes made with the same tool (Niecieplin, grave 12), yet they can be found on only one wall of the socket not extending to the other one. The single holes were the most frequent (seven times), followed by double (five cases), and only exceptionally, three holes (one case). It is our suggestion to call this group of finds the Osobowice type.

Although heads of this type are not very numerous, it seems that some general conclusions can be made. It should thus be remarked that almost all the finds come from the Przeworsk Culture area (only the artefact from Romoty belongs to the territory of the Bogaczewo Culture, which, however, was, in the case of weapons, under a strong influence from the Przeworsk Culture⁵³). Moreover, the phenomenon concerned all the macroregions within the boundaries of this cultural unit: the areas of Great Poland (Konin, Kuny), Lower Silesia (Wrocław-Osobowice), Upper Silesia (Chorula), central Poland (Kolonja Rychłocice), Little Poland (Górka Stogniewska), and the eastern zone of the Przeworsk Culture (Kamieńczyk, Nadkole, Niecieplin) are represented. The territorial differences may be found for more detailed issues: among the artefacts from the eastern zone, although quite numerous, there were no heads with more than one hole. This should however be verified in the future on the basis of a larger statistical sample. No other regularities have been established so far.

The analysed set of artefacts is surprisingly coherent in its typology and chronology. It embraces basically only barbed heads (9 items) with a long socket, representing Type L, and leaf-shaped items of Type VI (or perhaps VIII.2) after P. Kaczanowski. The barbed forms Type L are dated from the early Roman Period to phase C_{1a}, with a clearly increased popularity in phase B_{2b}, and Types VI and VIII.2 are limited to the developed phase B₂⁵⁴. For the heads coming from burial assemblages

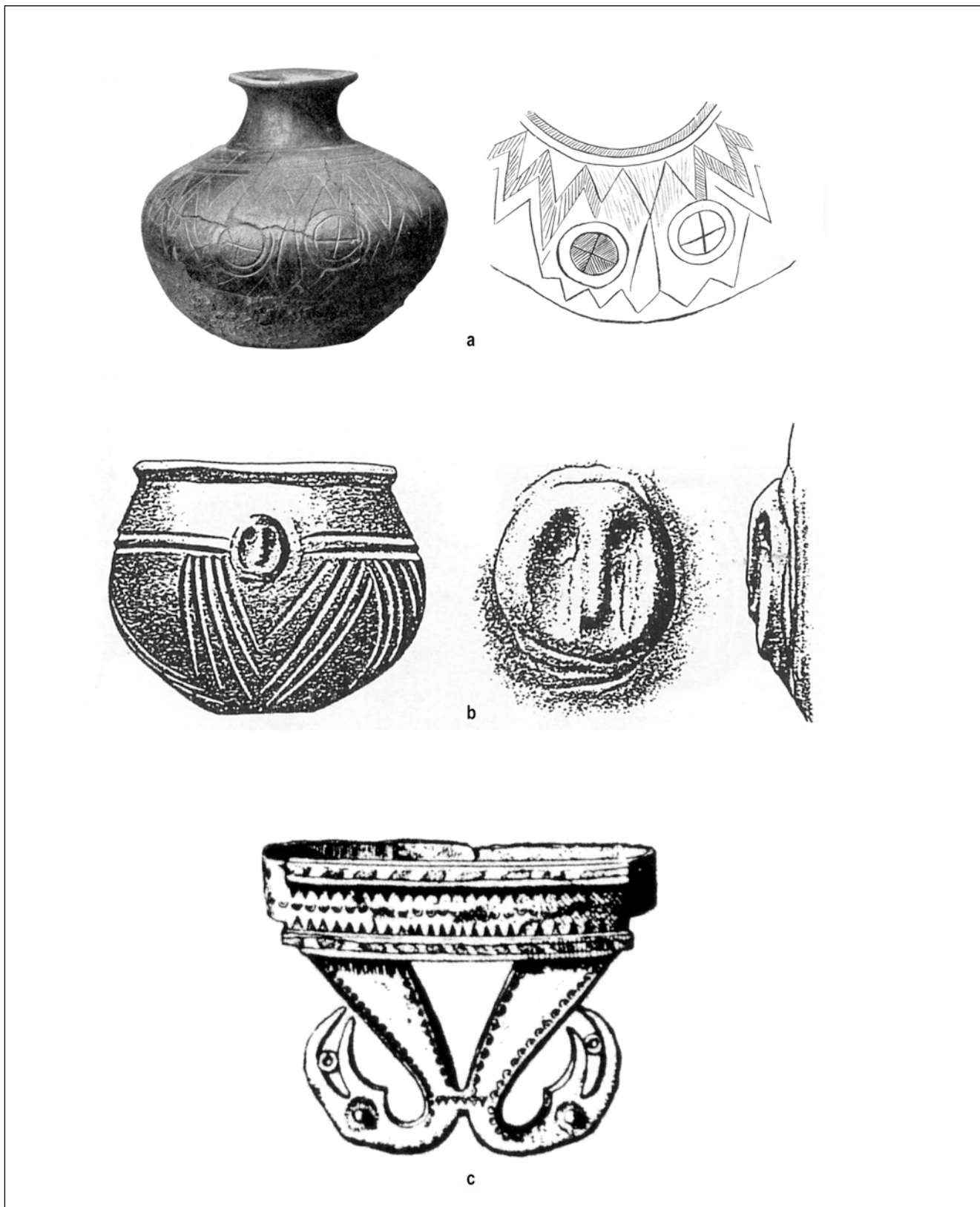


Fig. 7: Examples of an eye motif in Germanic art: a - image of the Odin/Votan's face (?) on the vessel from Guldagergård (after GLOB 1937, Fig. 29, 30), b - detail from another vessel from Guldagergård (after BUGAJ 1999, Fig. 41: a, with further literature), c - Kragehul (after ENGELHARDT 1867, pl. I: 7).

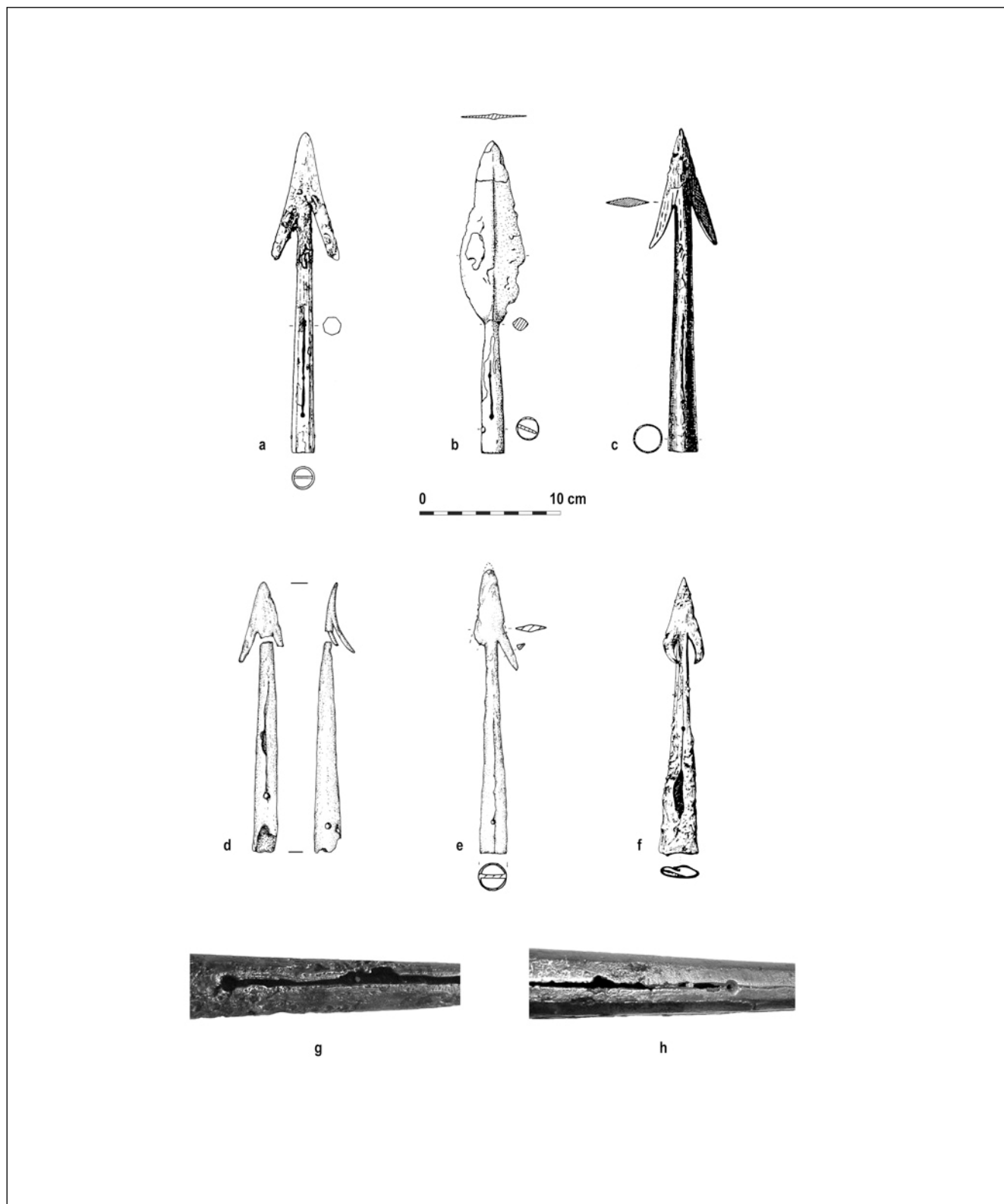


Fig. 8: Examples of lance- and spearheads with holes in the seam of the socket: a - Górká Stogniowska, grave (after TUNIA 1980, fig. 2: a), b - Wrocław-Osobowice, loose find (after KONTNY 2001, fig. 2), c - Konin, grave 59 (after KOSTRZEWSKI 1947, fig. 54: 4), d, g - Nadkole, grave 20 (drawn by K. Czarnecka, photo by B. Kontny), e - Silesia, unknown site, loose find (drawn by B. Kontny), f - Kuny, grave 73 (after MAKIEWICZ 2003, fig. 14: 1), h - Niecieplin, grave XII (photo by B. Kontny); g-h - no scale.

the accompanying finds confirm the dating to phase B₂. The earliest ones are the heads from Kuny and Kolonia Rychłocice dated by shield bosses Jahn 7b to phase B_{2a}⁵⁵. The majority of these heads should be, however, assigned to phase B_{2b}. Only the item from Romoty is dated more broadly, but it should not be forgotten that the grave goods from the burial where the head was found are not known and the form of the head, not entirely typical, does not allow us to date it more precisely⁵⁶.

There must arise a question about the function of these holes. It is impossible that they served as holes for nails fixing the head to the shaft. This would weaken the shaft and, to some extent, also the socket, without giving any benefits: the head would be attached too loosely to be effective and durable. The holes might have also served for fastening some string or a thong which would then be wrapped around the upper part of the shaft, susceptible to breaking. The place below the socket is liable to be overloaded as it is there that different materials of various toughness are connected⁵⁷. An example of such reinforcement was found in grave 28 from Alamannic cemetery in Oberflacht (Baden-Württemberg) dated to the Migration Period. The spear found there was spirally wrapped by a narrow thong in the upper part of the shaft below the socket⁵⁸. This device, although undoubtedly useful, did not require any holes in the socket, but it proves the use of organic materials which could have been fixed also in a different way. In this situation the idea suggested by the co-author of this text⁵⁹ seems to be more acceptable. According to it nails (or organic thorns) served to fix ornaments made from organic materials, or perhaps metal elements tiny enough not to survive till today to be noticed by the archaeologists, or to be identified as parts of the weapon (among the grave goods unidentified 'metal fragments' are often recorded). A whole gamut of decorations may be taken into account here, e.g., tassels fixed at the base of the socket, undetermined military signs, textile or leather pennons (animal tails, or horse hair, feathers, etc.) or, if, as the barbs indicate, it was a missile weapon, some elements which make a sound when the weapon is thrown, expected to frighten the enemy or their horses⁶⁰. As the decorative elements had to be fixed with nails or thorns be drawn into the wood and not just tied to it, it should be assumed that these objects were quite heavy. Such decorations appear quite frequently in shafted weapons⁶¹. Pennons were used, e.g., in Late Mediaeval combat weapons, and it is assumed that they belonged to the commanders of smaller military units⁶². In the early Middle Ages, when shafted weapons together with the sword served as carriers of a valid ideological message, spearheads with pennons held by the rulers were represented

on their coins, stamps and tombstones as a symbol of high rank of their holder⁶³. The shapes and sizes of pennons used by the Mediaeval military might have reflected the position of the owner⁶⁴. Numerous examples of early Mediaeval representations of shafted weapons with pennants are given by P. Paulsen (Fig. 9: a-i)⁶⁵. Similar devices have been confirmed for earlier periods. At the socket of the head from grave 9 at an Alamannic cemetery from Niederstotzingen, Kr. Heidenheim dated to the Migration Period (Fig. 9: j) a 0.5 cm wide loop of delicate fabric impregnated with iron oxides has been preserved. It was wrapped around the socket and then around ornate gilded heads of bronze rivets serving to fix the socket, and its end was pushed under the end of the socket⁶⁶. The author of the publication suggests it probably served to fasten the pennon⁶⁷, although he also considers the possibility that it was a tassel or even a military sign, e.g., in the shape of a dragon (a spear with a dragon standard is represented in the Bayeux Tapestry)⁶⁸. Except for that very spectacular find there are other cases from the Migration Period of fabric remains attached to spearheads. Some of them may be considered as remains of pennons, e.g., at Finglesham in Kent, remains of fabric fixed with wire were discovered together with a head⁶⁹. Unfortunately there have been no such discoveries from the Roman Period when cremation was the common burial rite in Central Europe, due to which no organic materials can be found among grave goods. It is possible that organic 'items' were more popular than is indicated by the scarce number of the discovered examples. This results from, on the one hand, the fact that the researchers do not notice the discussed holes, and on the other one, that the organic fixtures (thongs, textiles, string) do not leave a lasting trace among the archaeological material.

The available sources do not allow us to state if the deceased equipped with heads with holes in the slit of the socket belonged to the elite, at least in the material respect. The majority of burials collected in the catalogue are not very richly furnished graves with no elements indicating the high function of the warrior, i.e., a sword or items suggesting the use of a horse⁷⁰ (the exceptions are grave 6 from Kolonia Rychłocice and grave 92 from Chorula, and perhaps grave 73 from Kuny).

The sockets bear also some other, particular, traces, e.g., on a poorly forged socket of a head from grave 282 from the Przeworsk Culture cemetery at Oblin a large (1 x 0.9 cm) rectangular hole was cut. It is difficult to explain its function. Perhaps, like in the case of the heads discussed above, it served to attach some decorative element or perhaps it is a trace of a specific method of destruction. A smaller rect-

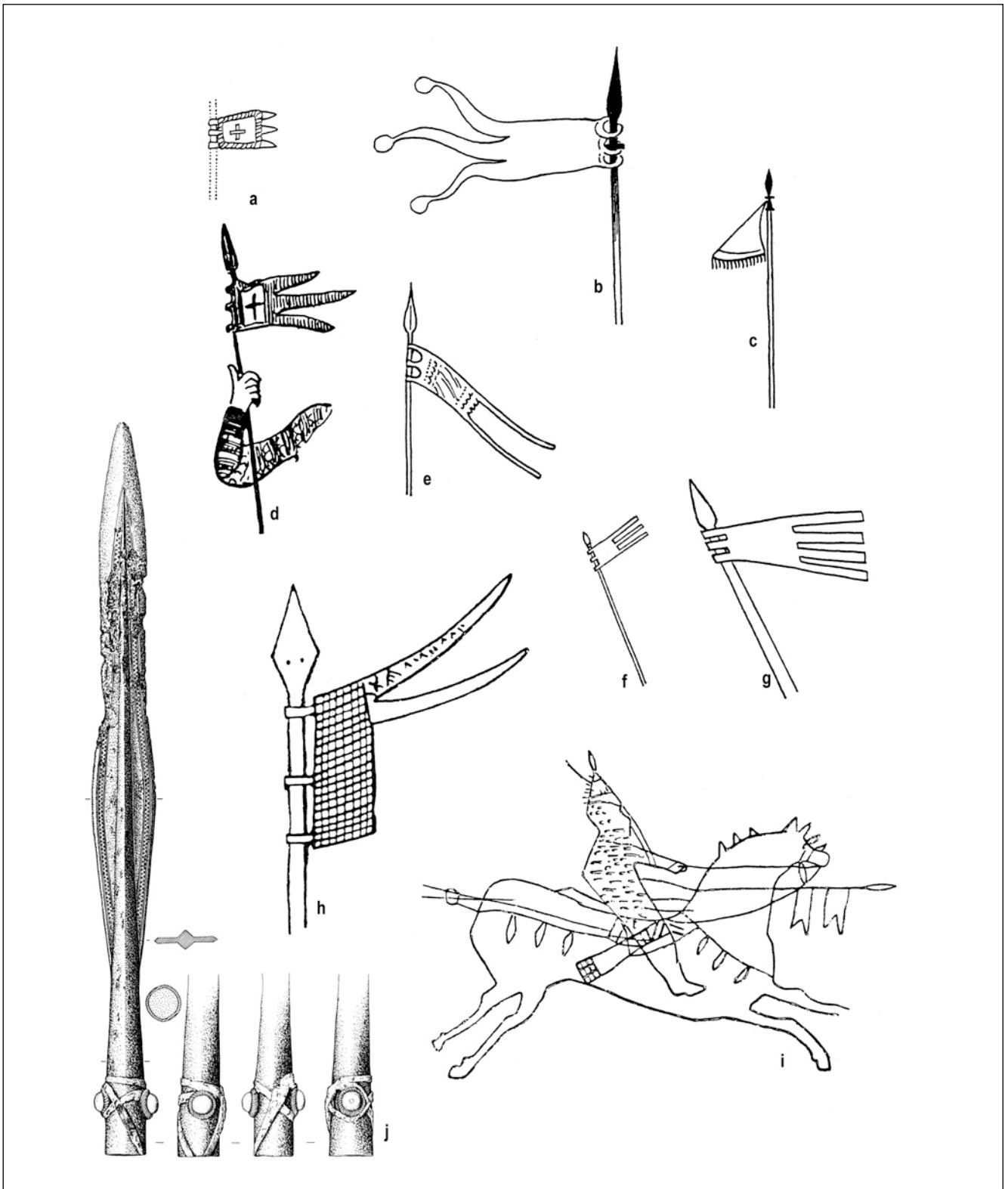


Fig. 9: Various artifacts fastened to sockets - iconographical examples: a - Hornhausen, Thuringia, early 8th century AD., b - Psalterium Aureum, St. Gallen, around 900 AD. c - Hirsau, 1160-1165 AD, d - the Bayeux Tapestry, after 1066 AD., e - reliquary of Charles the Great, early 13th century AD., f - St. Maurice, Wallis, 12th century AD., g - Grötlingbo Church, Gotland, early 13th century AD., h - gold vessel from Nagyszentmiklos, Hungary, around 900 AD., i - Mount Sulek; original finding: j - lancehead from grave 9 in Niederstotzingen (after PAULSEN 1967, pl. 17: 3).

angular hole was found on a poorly forged socket of a large arrowhead from the burial ground at Sarnia Zwola, Waśniów commune (grave 18)⁷¹ and on a head from Nydam⁷², yet the latter is dated much later and can not be considered as a close analogy.

The particular methods of decorating spear-heads/lance-heads, so far usually unrecognised or neglected shed new light on the issue of weapon symbolism both in the social (supposed determinants of rank) and magical/religious (eye signs) sphere and remind us that the reconstructed world was more complicated than the analysis of the preserved relics of material culture may indicate. It should be also remarked that it is the material which should be studied and the researchers should know the actual archaeological sources and not only their publications, however reliable their authors may be, as they sometimes omit minor but valid elements. We would also like to appeal for a careful scrutiny of heads' sockets, which will certainly allow us to notice the traces of designs discussed in this paper (or perhaps also of some new ones) and will help to make the classification presented here more precise.

CATALOGUE⁷³

Heads of shafted weapon with marks resembling the shape of an eye

Type 1

1. Localization: Bogaczewo-Kula, Giżycko com., grave 107
 - a. Other artefacts: bronze⁷⁴ fibula Type 61 after ALMGREN 1923, head of a shafted weapon type XII.2 after KACZANOWSKI 1995, fragments of the shield boss of unknown Type
 - b. Description of shafted weapon head: type close to Kaczanowski XII.2; single mark; socket fastened with the nail
 - c. Source of information: OKULICZ 1958, pl. III: 5; collection of MWM
 - d. Chronology: phase B₂
 - e. Cultural identification: the Bogaczewo Culture
2. Bogaczewo-Kula, Giżycko com., loose find
 - a. -
 - b. Type Kaczanowski XI/XII; single mark; socket fastened with the nail
 - c. OKULICZ 1958, pl. XIII: 3; collection of MWM
 - d. phases B₂-C₁?
 - e. the Bogaczewo Culture
3. Chmielów Piaskowy, Bodzechów com., loose find
 - a. -
 - b. Type Kaczanowski XX; single mark
 - c. GODŁOWSKI-WICHMAN 1998, pl. LXXXVII: 18*⁷⁵; collection of MAK
 - d. phase C₂
 - e. the Przeworsk Culture
4. Dąbrówka, Drzewica com., loose find
 - a. -
 - b. type Kaczanowski XIII?; 1 mark Type 1; 1 mark Type 2
 - c. unpublished, collection of PMA
 - d. phases B_{2b}-C_{1a}, eventually C_{1b}
 - e. the Przeworsk Culture
5. Dobrzankowo, Przasnysz com., grave 12
 - a. 2 fibulae Type K after KOSTRZEWSKI 1919, fragment of a knife, pottery (1st pottery phase after DĄBROWSKA 1988)
 - b. form typical for phases A₂-A₃; single mark?
 - c. OKULICZ 1971, Fig. 22: k; collection of PMA
 - d. phase A₂
 - e. the Przeworsk Culture
6. Dobrzankowo, Przasnysz com., loose find
 - a. -
 - b. Type?; single mark?
 - c. OKULICZ 1971, Fig. 47: a; collection of PMA
 - d. phases A₂-A₃; see chronology of the cemetery: DĄBROWSKA 1988, 32-33
 - e. the Przeworsk Culture
7. Garwolin, Garwolin com., grave 47
 - a. bronze fibula Type Almgren 61, shield boss Type 7(a?) after JAHN 1916A, head of a shafted weapon Type Kaczanowski XIV, pottery
 - b. Type Kaczanowski XIV; single mark
 - c. NIEWĘGŁOWSKI 1991, 41-42, fig. 27: f; collection of PMA
 - d. phase B_{2(b?)}
 - e. the Przeworsk Culture
8. Görbitzhausen, Kr. Arnstadt, grave
 - a. scabbard of a double-edged sword, fragment of a knife, shears, ornamental plate (element of a shield), drinking horn mounting Type B2 after ANDRZEJOWSKI 1991, 2 edge-mountings of a shield, shield grip Type Jahn 1, shield boss Type 7 after BOHNSACK 1938
 - b. Type?
 - c. CAEMMERER 1927
 - d. phase A₃
 - e. the Elbe Germans Circle
9. Kamieńczyk, Wyszków com., grave 60
 - a. bronze fibula Type Almgren 110, shield boss Type Jahn 7(b?), fragment of the bronze shield grip Type Jahn 6-8, fragment of the bronze edge-mounting of a shield, 2 spurs Type C1 after GINALSKI 1991, 1 spur Type 21 after JAHN 1921, shears, belt buckle Type D1 after MADYDA-LEGUTKO 1986, knife, fittings, pottery
 - b. Type Kaczanowski XIV/XV?; 2 marks
 - c. DĄBROWSKA 1997, 21-22, pl. XXIX: 4; collection of PMA
 - d. phase B_{2a}
 - e. the Przeworsk Culture
10. Kamieńczyk, Wyszków com., grave 124 (destroyed)
 - a. shield boss Type Jahn 7a, variant 1 after LIANA 1970, pottery (incl. fragments from the Late Pre-Roman Period)
 - b. Type Kaczanowski VIII.3? (arrowhead); 2 marks
 - c. DĄBROWSKA 1997, 34, pl. LXVI: 2; collection of PMA
 - d. phase B_{2(a?)}
 - e. the Przeworsk Culture
11. Kamieńczyk, Wyszków com., grave 144
 - a. bronze fibula close to Type Almgren 75, variant Liana 2, belt buckle Type Madyda-Legutko D1, knife, pottery
 - b. Type Kaczanowski XIV; 2 marks
 - c. DĄBROWSKA 1997, 38, pl. LXXVI: 2*; collection of PMA
 - d. phase B_{2(a?)}
 - e. the Przeworsk Culture
12. Kamieńczyk, Wyszków com., grave 352;
 - a. head of a shafted weapon Type Kaczanowski VIII.3, belt buckle Type Madyda-Legutko C 13, bronze fibula Type Almgren 59, pottery (incl. Liana VI/2, Liana II/3)
 - b. Type Kaczanowski X/XI; 1 mark Type 1; 1 mark Type 2
 - c. DĄBROWSKA 1997, pl. CLXI: 4*; collection of PMA
 - d. phase B_{2a}
 - e. the Przeworsk Culture

13. Kołoząb, Sochocin com., grave 190
 - a. bronze profiled fibula of Mazovian variant 1Aa after DĄBROWSKA 1995
 - b. Type Kaczanowski XI; single mark
 - c. unpublished; collection of PMA
 - d. phases B_{2b}-C_{1a}
 - e. the Przeworsk Culture
14. Kopki, Rudnik com., grave 25 (destroyed)
 - a. head of a shafted weapon Type?
 - b. Type Kaczanowski X; single mark
 - c. JAMKA 1935, Fig. 22: 1; collection of MAK
 - d. phase B₂
 - e. the Przeworsk Culture
15. Kostelec na Hané, okr. Prostějov, grave 159
 - a. tendril brooch with short upper cord, fragments of a fibula, two knives, clay vessel
 - b. two arrowheads (socketed ones, with needle-like and leaf-shaped blades); 2 marks?
 - c. ZEMAN 1961, Fig. 31: B, e-f (*)
 - d. C₃-D; see GODŁOWSKI 1992B, 39, 42-43, Fig. 15
 - e. the Kostelec Group
16. Kostelec na Hané, okr. Prostějov, grave 160
 - a. pieces of pottery
 - b. Type?; 1 mark?
 - c. ZEMAN 1961, fig. 32: A, a (*)
 - d. C₃-D; see GODŁOWSKI 1992B, 39, 42-43, Fig. 15
 - e. the Kostelec Group
17. Kostelec na Hané, okr. Prostějov, grave 161
 - a. fibula with short upper cord and closed catch-plate, semi-oval belt buckle with thickened frame Type?, pottery
 - b. Type?; 1 mark?
 - c. ZEMAN 1961, Fig. 32: B, d (*)
 - d. C₃-D; see GODŁOWSKI 1992B, 39, 42-43, Fig. 15
 - e. the Kostelec Group
18. Kostelec na Hané, okr. Prostějov, grave 172
 - a. tendril brooch Type Almgren 158, awl (?), polisher (?), ring, knife, wheel-made clay vessel
 - b. 5 socketed arrowheads with leaf-shaped blade; 2 marks?
 - c. ZEMAN 1961, Fig. 35: C, e-f; 36: A, b-d (*)
 - d. C₃-D; see GODŁOWSKI 1992B, 39, 42-43, Fig. 15
 - e. the Kostelec Group
19. Kostelec na Hané, okr. Prostějov, grave 200
 - a. knife
 - b. Type?; 1 mark?
 - c. ZEMAN 1961, Fig. 44: A, a (*)
 - d. C₃-D; see GODŁOWSKI 1992B, 39, 42-43, Fig. 15
 - e. the Kostelec Group
20. Kostelec na Hané, okr. Prostějov, grave 401
 - a. fragment of a tendril brooch, knife, socketed arrowhead with leaf-shaped blade, clay vessel
 - b. 2 socketed arrowheads with leaf-shaped blades; 1 mark? and 2 marks?
 - c. ZEMAN 1961, Fig. 32: A, d, 77: A, b-c (*)
 - d. C₃-D; see GODŁOWSKI 1992B, 39, 42-43, Fig. 15
 - e. the Kostelec Group
21. Michelbach, Kr. Mosbach, loose find
 - a. -
 - b. Type?; 1 mark
 - c. KOCH 1967, pl. 43: 3*
 - d. phase E
 - e. the Merovingian Culture
22. Nadkole, Łochów com., grave 93
 - a. head of a shafted weapon Type Kaczanowski XV, pottery (incl. Type Liana II/3)
 - b. close to type Kaczanowski XI; 2 marks
 - c. ANDRZEJOWSKI 1998, pl. LVIII: 3; collection of PMA
 - d. phase B_{2b} (see: chronology of the cemetery - ANDRZEJOWSKI 1998, 105-109)
 - e. the Przeworsk Culture
23. Niecieplin, Garwolin com., grave XII
 - a. pieces of pottery
 - b. Type Kaczanowski XVII; cross-section of the socket Type PT 5 after Kaczanowski (typical rather for the Early Roman Period); 1 mark
 - c. KOZŁOWSKA 1958, pl. CX: 27; collection of PMA
 - d. phase B_{2b} (see. chronology of the Przeworsk Culture cemetery)
 - e. the Przeworsk Culture
24. (?) Nowa Wieś Wrocławska, Kąty Wrocławskie com., grave 50
 - a. head of a shafted weapon Type Kaczanowski A.1, shield boss Type Jahn 6, shield grip Type Jahn 6, edge-fitting of a shield, sword Type Biborski I/7, knife, shears, razor, trumpet fibula Almgren 75, variant Liana 1 (silver inlaid), awl, pin-shaped fire-steel, stone polisher, pieces of pottery
 - b. type Kaczanowski III; 1 mark
 - c. PESCHECK 1939, Fig. 53; collection of the MAW
 - d. phase B_{1c}
 - e. the Przeworsk Culture
25. Oberwerschen, Kr. Hohenmölsen, grave 8
 - a. belt buckle with oval frame, clay vessel
 - b. Type Schmidt C2; 1 mark?
 - c. SCHMIDT 1970, 18, pl. 3: 2c
 - d. phase E
 - e. Thuringia.
26. Opatów, Opatów com., grave 494
 - a. glass folded beaker, bar-like fire-steel Type?, bone comb Type Thomas I, needle
 - b. Type Kaczanowski XIX; 1 mark
 - c. unpublished, collection of IA UJ
 - d. phase C₂
 - e. the Przeworsk Culture
27. Sochaczew-Karwowo, Sochaczew com., grave 1
 - a. head of a shafted weapon Type Kaczanowski VIII.3, clay vessel Type Liana II/3, clay vessel Type Liana V
 - b. Type Kaczanowski XI; 2 marks
 - c. CIEŚLIŃSKI-NOWAKOWSKI 2002, Fig. 2: 3*
 - d. phase B_{2b}
 - e. the Przeworsk Culture
28. Spycimierz, Uniejów com., loose find
 - a. -
 - b. Type Kaczanowski XVII/XVIII; 2 marks
 - c. KIETLIŃSKA-DĄBROWSKA 1963, pl. XXXIX: 19; collection of PMA
 - d. phase C₁?
 - e. the Przeworsk Culture
29. Stręgiel Wielki II, Węgorzewo com., grave 63 (former: Groß Strengeln)
 - a. belt buckle close to Type Madyda-Legutko C5, needle, fire-stone
 - b. form typical for the Late Pre-Roman Period⁷⁶; single hole for a nail files of H. Jankuhn*; KONTNY 2007, Fig. 9
 - c. phases A₃-A₃/B₁
 - d. the Bogaczevo Culture
30. Wesółki, Blizanów com., site 1, grave 10
 - a. shield grip Type Jahn 6, shield boss Type Jahn 6, head of a shafted weapon Type Kaczanowski F.1, knife, shears, fragment of a bronze fibula Type?, fragment of a belt buckle Type Madyda-Legutko A 1-2 or A 12, pin-shaped fire-steel, fire-stone, pottery (incl. types: Liana

- I/2, Liana VII and Liana III)
- b. Type Kaczanowski X; 2 marks
 - c. DĄBROWSKY 1967, Fig. 73: 3; collection of KSA IAiE PAN
 - d. phase B_{1b}
 - e. the Przeworsk Culture
31. Wesółki, Blizanów com., site 1, grave 20a
- a. sword type Biborski I/1, shield grip Type Jahn 5, fragments of a shield boss Type Jahn 5, X-shaped spur (?), bronze fibula Type Kostrzewski O, belt buckle Type Madyda-Legutko A14, belt hook, 2 shears, knife, razor, drinking horn mounting Type Andrzejowski B2, awl (?), ring (element of horse harness ?), pottery (incl. Type Liana I/3)
 - b. Type?; 1 mark of Type 1 and 1 mark of Type 3C
 - c. DĄBROWSKY 1967, Fig. 25: 8; KACZANOWSKI-MADYDA-LEGUTKO 2000, Fig. 5: 4
 - d. phase A₃/B₁
 - e. the Przeworsk Culture
- VARIANT 1'**
32. Ejsbøl
- a. place Ejsbøl Nord
 - b. barbed spearhead Type Äpplerum; 2 oblique lines crossing in place of the rivet-hole
 - c. ØRSNES 1988, pl. 115: 7
 - d. phase C₂
 - e. North European Barbaricum (Denmark)
33. Ejsbøl
- a. place Ejsbøl Nord
 - b. barbed spearhead Type Äpplerum; 2 oblique lines crossing in place of the rivet-hole
 - c. ØRSNES 1988, pl. 115: 9
 - d. phase C₂
 - e. North European Barbaricum (Denmark)
34. Ejsbøl
- a. place Ejsbøl Nord
 - b. barbed spearhead Type Gøe; 2 oblique lines crossing in place of the rivet-hole
 - c. ØRSNES 1988, pl. 118: 19
 - d. phase C₂
 - e. North European Barbaricum (Denmark)
35. Judziki, Bargłów Kościelny com., loose find
- a. -
 - b. barbed spearhead, Type Kaczanowski F2/G; 1 hole; line engraved around the socket
 - c. MARCINIAK 1950, pl. XVIII: 10; KONTNY 2008, Fig. 8-b; collection of PMA
 - d. phases B_{2b}-C_{1a}
 - e. the Bogaczewo Culture
36. Kamieńczyk, Wyszaków com., grave 292
- a. fragment of a bronze fibula, ornamented bronze fitting, shield boss Type Jahn 6, shield grip Type Jahn 5.203, spur Type Ginalski C1b, knife, fragment of a pin-shaped fire-steel (?), fire-stone, pottery (incl. Types: Liana I and Liana II/1)
 - b. head of a shafted weapon Type Kaczanowski III; line engraved around the socket, crossing the rivet hole (partly noticeable)
 - c. DĄBROWSKA 1997, 61, pl. CXXXV: 5; collection of PMA
 - d. phase B₁
 - e. the Przeworsk Culture
37. Przyborów, Wińsko com., grave 2
- a. shield boss Type Bohnsack 1-2, sword Type Kostrzewski I (Łuczkiwicz II/A2), sword scabbard Type Kostrzewski II, long head of a shafted weapon with laurel-shaped blade
 - b. Type? (long head of a shafted weapon with laurel-shaped blade); engraved double line around the socket, crossing the rivet' head
- c. PESCHECK 1939, 196-198, Fig. 138*; collection of MAW
 - d. phase A₁
 - e. the Przeworsk Culture
38. Stößen, Kr. Hohenmölsen, grave 9
- a. knife, belt buckle with oval frame, double-edged sword (*spatha*)
 - b. Type Schmidt C1; short, horizontal cutting from one side of the socket
 - c. SCHMIDT 1970, 22, pl. 8: b
 - d. E
 - e. Thuringia
39. Stößen, Kr. Hohenmölsen, grave 90
- a. pieces of wheel-made pottery
 - b. Type?; short, horizontal cutting from one side of the socket
 - c. SCHMIDT 1970, 35, pl. 34: 1
 - d. E
 - e. Thuringia
- Type 2**
- . Dąbrówka, Drzewica com., loose find
- a. -
 - b. Type Kaczanowski XIII? ; 1 mark of Type 1; 1 mark of Type 2
 - c. unpublished; collection of PMA
 - d. phases B_{2b}-C_{1a}, eventually C_{1b}
 - e. the Przeworsk Culture
41. Dziadowo, Brześć Kujawski com., grave 2
- a. 2 fibulae Type Kostrzewski N, pottery (2nd pottery phase after DĄBROWSKA 1988)
 - b. Type?; 1 mark
 - c. KIETLIŃSKA 1968, Fig. 2: d; collection of PMA
 - d. phase A₃
 - e. the Przeworsk Culture
42. Kamieńczyk, Wyszaków com., grave 352
- a. head of a shafted weapon close to Type Kaczanowski VIII.3, belt buckle Type Madyda-Legutko C 13, bronze fibula Almgren 59, pottery (incl. types Liana VI/2 and Liana II/3)
 - b. Type Kaczanowski X/XI; 1 mark of Type 1, 1 mark of Type 2
 - c. DĄBROWSKA 1997, pl. CLXI: 4* (in publication only one mark has been drawn); collection of PMA
 - d. phase B_{2a}
 - e. the Przeworsk Culture
43. Nydam
- a. -
 - b. untypical form (see: BEMMANN-BEMMANN 1998A, 182); 1 mark
 - c. BEMMANN-BEMMANN 1998B, 109, pl. 111: 998
 - d. Late Roman Period; see: BEMMANN-BEMMANN 1998A, 182
 - e. North European Barbaricum
44. Oblin, Maciejowice com., grave 68
- a. pieces of pottery (incl. ones from 2nd pottery phase after DĄBROWSKA 1988)
 - b. Type?; 1 mark
 - c. unpublished; collection of PMA
 - d. phase A₃
 - e. the Przeworsk Culture
45. (?) Obrež, opština Pećinci (Serbia), loose find
- a. -
 - b. Type?; 1 mark (?)
 - c. KNEŽEVIĆ-JOVANOVIĆ 2003, 293, 296, pl. I: 5
 - d. phase La Tène D
 - e. La Tène Culture
46. Oberstreu, Kr. Mellrichstadt, loose find
- a. -
 - b. KOCH 1967, pl. 23: 12

- d. phase E
e. the Merovingian Culture
47. (?) Skrzypy, Węgorzewo com. (former: Steinhof), loose find
a. -
b. Type Kaczanowski X?; 1 hole for a nail
c. files of H. Jankuhn*; KONTNY 2007, Fig. 8:c
d. Late-Pre Roman or Roman Period
e. the Bogaczewo Culture
48. (?) Skrzypy, Węgorzewo com. (former: Steinhof), loose find
a. -
b. Type Kaczanowski X?; 1 hole for a nail
c. files of H. Jankuhn*; KONTNY 2007, Fig. 8:d
d. Late-Pre Roman or Roman Period
e. the Bogaczewo Culture
49. Spycimierz, Uniejów com., loose find (trench 23)
a. -
b. arrowhead; 2 marks
c. unpublished; collection of PMA
d. Late Roman Period
e. the Przeworsk Culture
50. Warszawa-Wilanów, com. Warszawa-Wilanów, grave 91
a. pottery (1st pottery phase after DĄBROWSKA 1988)
b. Type?; 1 mark
c. MARCINIAK 1957, pl. LXXXIII: 7; collection of PMA
d. phase A₁
e. the Przeworsk Culture
51. Wąchock, Wąchock com., loose find
a. -
b. Type Kaczanowski XV; 1 mark
c. BALKE-BENDER 1991, pl. X: 3; collection of PMA
d. phases B_{2b}-C_{1(a?)}
e. the Przeworsk Culture
52. (?) Zemplin, okr. Trebišov, grave 94
a. fragments of a bronze vessel, bronze belt buckle Type?, bronze fibula Type Almgren 68, bronze fibula Type Almgren 236, fragment of a fibula Type?, fragments of a knife, 2 arrowheads, handle, pin-shaped fire-steel, fire-stone (?), stone polisher, pottery of Dacian origin, bone whistle
b. Type?; 1 mark
c. BUDINSKÝ-KRIČKA-LAMIOVÁ-SCHMIEDLOVÁ 1990, 256, 258, pl. XIII: 5(*?)
d. phase B_{1b}
e. Dacian culture?
- Type 3**
53. Gać, Gać com.; loose find
a. -
b. Type Kaczanowski XIII or XIV; 2 marks
c. unpublished; collection of MAK
d. phases B_{2b}-C_{1a}
e. the Przeworsk Culture
54. Inowrocław-Szymborze, Inowrocław com.; loose find
a. -
b. Type Kaczanowski XIII/XIV; 1 mark
c. BEDNARCZYK-LASZKIEWICZ 1990, Fig. 16: 3*
d. phases B_{2b}-C_{1a}
e. the Przeworsk Culture
55. Kamięńczyk, Wyszków com., grave 123
a. head of a shafted weapon Type Kaczanowski XI, shield boss Type Jahn 7a, variant Liana 1, knife
b. Type Kaczanowski V.3; 1 mark
c. DĄBROWSKA 1997, pl. LXVI: 2, collection of PMA
- d. phase B_{2b}
e. the Przeworsk Culture
56. Oblin, Maciejowice com., grave 280
a. fragment of a fibula Type Kostrzewski M, fragment of a wire
b. Type?; 1 mark
c. unpublished; collection of PMA
d. phase A₃
e. the Przeworsk Culture
57. Pakalniiai, rej. Biivydžiai, mound 2, grave 2
a. 2 belt buckles with oval frame (one with thickened frame), knife, axe Type Malonaitis 3
b. Type Kazakievičius Ig?; 2 marks
c. VAITKEVIČIUS 2003, Fig. 7: 4*
d. phase E
e. the East Lithuanian Barrow Culture
58. Wesółki, Blizanów com., grave 66, site 1
a. belt clasp, awl-shaped object, knife, bone sleeve, pottery (2nd pottery phase after DĄBROWSKA 1988)
b. Type?; 2 marks
c. DĄBROWSCY 1967, Fig. 73: 3; collection of KSA IAiE PAN
d. phase A₃
e. the Przeworsk Culture
59. Wesółki, Blizanów com., site 1, grave 20a
a. see no 31 in the catalogue
b. Type?; 1 mark Type 3; 1 mark Type 1
c. DĄBROWSCY 1967, Fig. 25: 8; KACZANOWSKI-MADYDA-LEGUTKO 2000, Fig. 5: 4; collection of KSA IAiE PAN
d. phase A₃/B₁
e. the Przeworsk Culture
60. Zadowice, Godziesze Wielkie com., loose find
a. -
b. type Kaczanowski XVII; 2 marks Type 3C (silver inlaid)
c. KASZEWSKA 1988, 53, pl. V: 13
d. phase C₁ (C_{1a} according to KACZANOWSKI 1988, 61)
e. the Przeworsk Culture
- Type 4**
61. Judziki, Bargłów Kościelny com., loose find
a. -
b. Type Kaczanowski XIV/XV; 1 hole for a nail
c. MARCINIAK 1950, pl. XVIII: 10, 12*; KONTNY 2007, Fig. 8:a; collection of PMA
d. phases B_{2b}-C_{1a}
e. the Bogaczewo Culture
62. Stręgiel Wielki, Węgorzewo com., site II, grave 128, (former: Gross Strengeln)
a. belt buckle close to type Madyda-Legutko C1/5, pin-shaped fire-steel, fire-stone, head of a shafted weapon;
b. form typical for the Late Pre-Roman Period; 2 marks; punched pattern?
c. files of H. Jankuhn and M. Jahn*; KONTNY 2007, Fig. 7:b
d. phase A₃
e. the Bogaczewo Culture
63. Szepietówka, rej. Kamianec Podilskij, loose find
a. -
b. Type?; single mark
c. PIĘTKA-DĄBROWSKA 1961: 224, pl. XLVI: 8; collection of PMA
d. phase C?
e. the Cherniakhov Culture?
64. Zagorzyn, Kalisz com., grave 77
a. fibula Type Kostrzewski K, fragment of a sword scabbard, awl, 2 rivets, pottery (1st pottery phase after DĄBROWSKA 1988)
b. conical spear butt; single mark

- c. DĄBROWSKI 1970, Fig. 31: 27; collection of KSA IAiE PAN
- d. phase A₂
- e. the Przeworsk Culture

Heads of shafted weapon with holes located on the socket (seam)

1. Chorula, Gogolin com., grave 44
 - a. head of a shafted weapon Type Kaczanowski VIII.3, shield boss Type Jahn 7a, shield grip Type Jahn 9 with distinct rivet plates, fibula of the Leonów type, knife, 2 razors, shears, belt hanger, bar-like fire-steel Type IICc after JONAKOWSKI 1996, belt buckle Type Madyda-Legutko G16, 2 nails, pottery
 - b. Type Kaczanowski VI.2; 2 holes
 - c. SZYDŁOWSKI 1964, 50-52, Fig. 42: 6*
 - d. phase B_{2b}
 - e. the Przeworsk Culture
2. Chorula, Gogolin com., grave 92
 - a. head of a shafted weapon Type Kaczanowski XI, shield boss Type Jahn 7a, shield grip Type Jahn 9 with distinct rivet plates, 2 spurs Type Ginalski E5b, knife, razor, shears, fibula Type Almgren 132, awl, bar-like fire-steel Type Jonakowski IIAa, belt buckle Type Madyda-Legutko G 3, belt hanger, bone comb Type Thomas B, pottery
 - b. Type Kaczanowski VI.2; 2 holes
 - c. SZYDŁOWSKI 1964, 81-83, Fig. 78: 15*
 - d. phase B_{2b}
 - e. the Przeworsk Culture
3. Górka Stogniowska, Proszowice com., grave
 - a. head of a shafted weapon Type Kaczanowski I.3 with ornamented blade (pattern of stamped short lines), shield boss Type Jahn 7a, shield grip type Jahn 9 with distinct rivet plates⁷⁷
 - b. barbed spearhead Type Kaczanowski L.2; 3 holes
 - c. TUNIA 1980, 193, Fig. 2: a*
 - d. phase B_{2b}
 - e. the Przeworsk Culture
4. Kamieńczyk, Wyszaków com., grave 243
 - a. derivate from strongly profiled fibulae Type Dąbrowska 5, head of a shafted weapon Type Kaczanowski X, knife, shield grip Type Jahn 8/217, shield boss Type Jahn 7a, fire-stone, pottery
 - b. barbed spearhead Type Kaczanowski L.1 (?)⁷⁸; 1 hole
 - c. DĄBROWSKA 1997, 54, pl. CXXIX: 4*; collection of PMA
 - d. phase B_{2b}
 - e. the Przeworsk Culture
5. Kolonia Rychłocice, Konopnica com., site 1, grave 6
 - a. head of a shafted weapon Type Kaczanowski I.4, sword Type Biborski III/4, shield boss Type Jahn 7b, prick of a X-shaped spur, 4 spurs Type Ginalski C1, incl. 2 with T-bar fastenings (*Knebelsporn*), knife, razor, shears, mountings of a wooden casket, belt buckle Type Madyda-Legutko D1(?), belt hanger, belt plate, bar-like fire-steel Type Jonakowski IICb, awl, hook, stone polisher, bone pin, glass elements, pottery (incl. Type Liana I/3)
 - b. barbed spear-head type Kaczanowski L.2; 1 hole
 - c. JAŹDŹEWSKA 2004, 292-297, pl. III: 1; collection of Museum of City Pabianice*
 - d. phase B_{2a}
 - e. the Przeworsk Culture
6. Konin, Konin com., grave 59
 - a. head of a shafted weapon type Kaczanowski V.3, knife, pottery (incl. Type Liana I/3)
 - b. barbed spearhead Type Kaczanowski L.1; 2 holes
 - c. KOSTRZEWSKI 1947, 229, Fig. 54: 4*
 - d. phase B₂
 - e. the Przeworsk Culture
7. Kuny, Władysławów com., site 4, grave 73
 - a. shield boss Type Jahn 7b, bronze edge-mountings of a shield, sword scabbard's fittings, knife, mounting, pin, razor, pottery (incl. type Liana III)
8. Nadkole, Łochów com., grave 20
 - a. head of a shafted weapon type Kaczanowski II.2, knife, pottery (incl. Type Liana II/3)
 - b. barbed spearhead Type Kaczanowski L.1; 1 hole
 - c. MAKIEWICZ 2003, 154, Fig. 14: 1*; SKOWRON 2004, 288
 - d. phase B_{2a}
 - e. the Przeworsk Culture
9. Niecieplin, Garwolin com., grave XII
 - a. head of a shafted weapon type Kaczanowski VI.2, bronze fibula (?), pottery
 - b. barbed spearhead Type Kaczanowski L.2; 1 hole
 - c. KOZŁOWSKA 1958, 345, pl. CX: 15; collection of PMA
 - d. phase B_{2b}
 - e. the Przeworsk Culture
10. Romoty, Kalinowo com. (former: Romitten), grave 42b
 - a. ? (no data)
 - b. barbed spearhead type Kaczanowski L.4? (Type Hval⁷⁹); 2 holes
 - c. files of M. Schmiedehelm*
 - d. phases B₂-C₁
 - e. the Bogaczewo Culture
11. former: Schellenberg (Silesia, Czech Republic), loose find
 - a. -
 - b. Typ Kaczanowski VI.2; 1 hole
 - c. files of M. Jahn*; before 2nd World War in collection of Museum in Opava (former: Troppau), taken from the school collection
 - d. phase B_{2b}
 - e. the Przeworsk Culture
12. Silesia, from unknown site, loose find
 - a. -
 - b. barbed spearhead type Kaczanowski L.2; 1 hole
 - c. unpublished, collection of MAW
 - d. phase B_{2b}⁸⁰
 - e. the Przeworsk Culture
13. Wrocław-Osobowice, Wrocław com., loose find
 - a. -
 - b. Type Kaczanowski VIII.2; 2 holes
 - c. KONTNY 2001, 117-118, Fig. 2-3*; KONTNY 2004, Fig. 8: 2*; collection of MAW
 - d. phase B_{2b}
 - e. the Przeworsk Culture

NOTES

1. BOCHNAK 2005; KACZANOWSKI 1995; BEMMANN-HAHNE 1994; ILKJER 1990, ADLER 1993.
2. See i.a., KOSSINA 1905; JAHN 1916a; JAHN 1916b; JAMKA 1938; KOSTRZEWSKI 1919, WOŁĄGIEWICZOWIE 1963.
3. BIBORSKI 1986; KACZANOWSKI 1988.
4. KACZANOWSKI-ZABOROWSKI 1988, 235-236; ŁUCZKIEWICZ 2002; KONTNY, in print.
5. The catalogue, which is part of this paper, records the cases when the author publishing a given artefact noticed such marks.
6. KONTNY 2001; KONTNY 2004, 149, Fig.8.
7. KONTNY 2001, 117-118, Fig. 2-3.

8. The dating of the last mentioned one may be lengthened even to the turn of the Pre-Roman and Roman Periods.
9. See: KACZANOWSKI 1995, 62-64.
10. Due to the similarity of the method of marking the socket also the finds from the Migration Period with short horizontal lines in the place where the rivet or nail (most probably with a large head) was hammered in discovered in graves 9 and 90 at Stößen have been assigned to this variant.
11. Similarly, the rings put over the sockets of spearheads or lanceheads from the Late Pre-Roman Period had, according to BOCHNAK 2005, a technological function. They made the place where the shaft joined the socket stronger, but clearly they also served as a decoration; sometimes they were twisted. An imitation of such a ring made with two incised lines, functioning only as an ornament, is also known.
12. It is also possible that these are traces of an attempt at local weakening the socket in order to make a rivet hole, similar to the method used for the heads from Ejsbøl. The action must have been ineffective due to the considerable thickness of the socket and perhaps this is the reason why a different solution was used.
13. In this connection there arises the question of how this design was adapted in the Balts' circles. It seems that it was due to the earlier (dated to the Roman Period) influence the Przeworsk Culture exerted on the Balts' military equipment, for in the Late Migration Period the Przeworsk Culture did not exist. From the beginning of the Younger and Late Roman Period the influence must have been considerably limited due to the lack of direct contacts between the Bogaczewo and Przeworsk Cultures (the Przeworsk Culture population departed from its eastern reaches; see GODŁOWSKI 1985, maps 4-5). This does not exclude the possibility of some exchange, which is testified by the finds at Bogaczewo Culture sites of, e.g., iron tendril crossbow brooches, which are considered to be a typically Przeworsk form; see NOWAKOWSKI 2001, 136-137. The eye design could have reached the Balts' world in the same way and it functioned there at least until the Late Migration Period (phase E). The fact that similar designs were used in the Bogaczewo Culture is proved by the later discussed find from Judziki (assigned to Type 4) and, perhaps, two heads from Skrzyppy (it is impossible to identify the exact design as the information is derived from an unclear drawing from H. Jahnkuhn's files).
14. It probably originated to some extent from Types 1 and 2, which is indicated by the additional technological marks used in variants A and B.
15. BIBORSKI 1978; BIBORSKI 1994.
16. PETERSEN 1998, Fig. 98, 106.
17. ENGELHARDT 1867, pl. II-III.
18. CARNAP-BORNHEIM-ILKJÆR 1996, 279-298; JØRGENSEN-PETERSEN, 2003, Fig. 10.
19. Tacitus, *Germania* 6, 1. Translation after: http://www.geocities.com/aeldricc/tacitus_germania.html.
20. BECKER et al. 1992; BECKER 2001, 142-145.
21. CARNAP-BORNHEIM-ILKJÆR 1996, 472-482.
22. ŁUCZKIEWICZ 2002.
23. Cf. KONTNY 2008.
24. KAUL 2003, 146-147, Fig. 4.5: A.
25. KACZANOWSKI 1988, passim.
26. JAMKA 1938.
27. BUGAJ 1999.
28. KOSTRZEWSKI 1921, 127-134; ANTONIEWICZ 1920, 99-111; BIBORSKI 1986, 128-129; KACZANOWSKI 1988, passim.
29. KRAUSE 1934; KRAUSE-JAHNKUHN 1966; STOKLUND 2003.
30. BUGAJ 1999, 156.
31. RESI 1986, pl. 3.
32. CARNAP-BORNHEIM-ILKJÆR 1996, 483-485.
33. DĄBROWSKA 1988, 202; SCHULTZE 2002, 172.
34. Tacitus, *Germania* 13, 1.
35. The eye itself is the symbol of knowledge, but it may also be an apotropeic symbol, e.g., the eye of Horus in Egypt. Dangerous, even deadly eyes are known from the Greek (Medusa) and Celtic (Balor) mythology.
36. MEGAW-MEGAW 2001, 171.
37. MEGAW-MEGAW 2001, Fig. 246, 302, 303, 306.
38. KLINDT-JENSEN 1950, Fig. 64.
39. KLINDT-JENSEN 1950, Fig. 68: a.
40. E.g. PITTIONI 1994; KAUL 1995.
41. Thus it could have been treated as an apotropeic sign.
42. A single 'third eye' was found in the head decorating the hilt from the cemetery at Żukowice, Żukowice com. (Lower Silesia), see: DEMIDZIUK-KOKOWSKI 2004, 290.
43. GLOB 1937, Fig. 29, 30.
44. HAGBERG 1976, 331.
45. It should be remarked that Odin/Votan's eye did not appear in the sagas and myths as an independent entity, and Odin/Votan gained the cognomen 'One-eyed.' A different situation is presented in the story of the Mimir's head which, like Bran's head in Celtic mythology, after having been cut, functioned independently, e.g., talked. Odin/Votan's lost eye, like Tyr's cut hand, did not appear any longer in sagas or myths.
46. E.g. Voluspá 24, Hervarar saga 18, Eyrbyggja saga 44; ŚLUPECKI 2003, 124.
47. SALIN 1904, Fig. 503, 508, 509, 512.
48. STOLPE 1927, pl. V: 1, 2; VI: 1.
49. SALIN 1904, 216, 218, 221, Fig. 512.
50. PETERSEN 2003.
51. E.g. Hrafnsmál that is Raven song, Corpus Poeticum Boreale; Helga kvíða Hundingsbana I, 5, Guðrunarkvíða 8-10, Edda.

52. Svipdagsmal 45, Edda.
53. NOWAKOWSKI 1994; KONTNY 2007.
54. KACZANOWSKI 1995, pl. XX-XXI.
55. See: GODŁOWSKI 1992a; GODŁOWSKI 1994.
56. This artefact may be treated as a manifestation of the Przeworsk Culture influence, but it is not an exact copy of the forms known from the area of that culture. Its shape may be analysed in terms of the typology of heads from the Przeworsk Culture as well as of the Scandinavian ones. In comparison to the other heads from the discussed group, the two holes are placed atypically low (below the vertical slit in the socket) and very close one to another. In other heads with several holes, the distances between the holes are much bigger.
57. This may be prevented by, e.g., using a very long socket (then the arm of a force becomes shorter, i.e. the section between the point where the shaft was held and the socket, and as a result the load is much lesser) or by wrapping this part with a metal band or wire.
58. PAULSEN 1967, 107; with further literature.
59. KONTNY 2001, 118.
60. The arrows with whistles scaring the horses were used in the Middle Ages, but it was a different kind of weapon, more suitable for that purpose (longer trajectory and faster flight).
61. Cf. GRADOWSKI-ŻYGULSKI JUN. 1998, 52-53.
62. ŚWIĘTOSŁAWSKI 1998, 120.
63. GŁOSEK 1990, 131-132.
64. NADOLSKI 1990, 197.
65. PAULSEN 1967, 107-108, 115-118, Fig. 58.
66. PAULSEN 1967, 108, pl. 17: 3.
67. PAULSEN 1967, 115-116.
68. PAULSEN 1967, 115-118.
69. PAULSEN 1967, 116, with further literature.
70. Cf. KONTNY 2002, 103-104.
71. We owe this information to the courtesy of S. Orzechowski, Ph.D., from Regional Service for Historical Monuments Preservation in Kielce.
72. BEMMANN-BEMMANN 1998, pl. 98: 872.
73. Abbreviations: IA UJ: Institute of Archaeology Jagiellonian University,
KSA IAiE PAN: Kalisz Archaeological Site, Institute of Archaeology and Ethnology Polish Academy of Sciences, MAK: Archaeological Museum in Cracow,
MAW: Archaeological Museum in Wrocław - Departament of the Wrocław City Museum,
MWM: Museum of Warmia and Mazury in Olsztyn,
PMA: State Archaeological Museum in Warsaw.
74. In not pointed in the other way, metal objects mentioned in the catalogue were made of iron.
75. The asterisk symbol records the cases when the author publishing or drawing a given artefact noticed such marks.

76. See BOCHNAK 2002, pl. V: 1.
77. It is possible that grave furnishing is incomplete.
78. In publication it is described as an example close to type H after Kaczanowski; see DĄBROWSKA 1997, 54.
79. See: ILKJÆR 1990.
80. Such heads appeared in late stage of phase B₁, as well as in phases: B_{2b} and C_{1a}, although overwhelming majority of them is dated for the late stage of phase B₂; see: KACZANOWSKI 1995, 34.

BIBLIOGRAPHY:

- ADLER 1993: W. Adler, Studien zur germanischen Bewaffnung. Waffenmitgabe und Kampfweise im Niederelbegebiet und im übrigen Freien Germanien um Christi Geburt, *Saarbrücker Beiträge zur Altertumskunde* **58**, 1993, Bonn
- ALMGREN 1923: O. Almgren, Studien über nordeuropäischen Fibelformen der ersten nachchristlichen Jahrhunderte mit Berücksichtigung der provinzialrömischen und südrussischen Formen, *Mannus-Bibliothek* **32**, 1923, Leipzig, 2nd ed
- ANDRZEJOWSKI 1991: J. Andrzejowski, Okucia rogów do picia z młodszego okresu przedrzymskiego i okresu wpływów rzymskich w Europie środkowej, *Materiały Starożytne i Wczesnośredniowieczne* **6**, 1991, 7-120
- ANDRZEJOWSKI 1998: J. Andrzejowski, *Nadkole 2. A Cemetery of the Przeworsk Culture in Eastern Poland*, *Monumenta Archaeologica Barbarica* **V**, 1998, Kraków
- ANTONIEWICZ 1920: W. Antoniewicz, Żelazne oszczepy inkrustowane z Kamienicy w pow. jarosławskim, *Przegląd Archeologiczny* **1**, 1919 (1920), 99-111
- BALKE-BENDER 1991: B. Balke-W. Bender, Cmentarzysko kultury przeworskiej w Wąchocku woj. kieleckie. Studium krytyczne materiałów, *Materiały Starożytne i Wczesnośredniowieczne* **6**, 1991, 121-190
- BECKER 2001: M. Becker, Bekleidung-Schmuck-Ausrüstung, *Gold für die Ewigkeit. Das germanische Fürstengrab von Gommern*, Halle an der Saale, 2001, 127-147
- BECKER et al. 1992: M. Becker-G. Böttcher-G. Gosch-Th. Weber, Ein "Fürstengrab" der spätrömischen Kaiserzeit bei Gommern, Ldkr. Burg, *Jahresschrift für mitteldeutsche Vorgeschichte* **75**, 1992, 301-311
- BEDNARCZYK-ŁASZKIEWICZ 1990: J. Bednarczyk-T. Łaskiewicz, *Cmentarzysko z okresu wpływów rzymskich w Inowrocławiu-Szyborzu woj. bydgoskie, stanowisko 1*, 1990, Inowrocław
- BEMMANN-BEMMANN 1998a: G. Bemann-J. Bemann, *Der Opferplatz von Nydam. Die Funde aus älteren Grabungen: Nydam-I und Nydam-II. Band 1: Text*, 1998, Neumünster
- BEMMANN-BEMMANN 1998b: G. Bemann-J. Bemann, *Der Opferplatz von Nydam. Die Funde aus älteren Grabungen:*

- Nydam-I und Nydam-II. Band 2: Katalog und Tafeln*, 1998, Neumünster
- BEMMANN-HAHNE 1994: J. Bemann-G. Hahne, Waffen-führende Grabinventare der jüngeren römischen Kaiserzeit und Völkerwanderungszeit in Skandinavien. Studie zur zeitlichen Ordnung anhand der norwegischen Funde, *Bericht der Römisch-Germanischen Kommission* **75**, 1994, 283-653
- BIBORSKI 1978: M. Biborski, Miecze z okresu wpływów rzymskich na obszarze kultury przeworskiej, *Materiały Archeologiczne* 1978, **18**, 53-165
- BIBORSKI 1986: Biborski, M. Zdobiona broń z cmentarzyska ciałopalnego z okresu wpływów rzymskich z Gaci k. Przeworska, *Materiały Archeologiczne* **23**, 1986, 113-134
- BIBORSKI 1994: Römische Schwerter mit Verzierung in Form von figürlichen Darstellungen und symbolischen Zeichen, *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten*, C. von CARNAP-BORNHEIM ed., Lublin-Marburg, 1994, 109-135
- BOCHNAK 2002: T. Bochnak, Die typonomische Gliederung der vorrömischen Lanzenspitzen der Przeworsk-Kultur, *Bewaffnung der Germanen und ihren Nachbarn in den letzten Jahrhunderten vor Christi Geburt. Akten der Internationalen Tagung in Nałęczów, 23. bis 25. September 1999*, A. KOKOWSKI-P. ŁUCZKIEWICZ eds., Lublin, 2002, 41-50
- BOCHNAK 2005: T. Bochnak, *Uzbrojenie ludności kultury przeworskiej w młodszym okresie przedrzymskim*, 2005, Rzeszów
- BOHNSACK 1938: D. Bohnsack, *Die Burgunden in Ostdeutschland und Polen*, 1938, Leipzig
- BUDINSKÝ-KRIČKA-LAMIOVÁ-SCHMIEDLOVÁ 1990: V. Budinský-Krička-M. Lamiová-Schmiedlová, A late 1st century B.C. - 2nd century A.D. cemetery at Zemplín, *Slovenská Archeológia* **38/2**, 1990, 245-344
- BUGAJ 1999: E. Bugaj, *Motywy figuralne na ceramice germańskiego kręgu kulturowego*, 1999, Poznań
- CAEMMERER 1927: E. Caemmerer, Ein germanisches Kriegergrab bei Görbitzhausen bei Arnstadt, *Jahresschrift für die Vorgeschichte des sächsisch-thüringischen Länder* **15**, 1927, 83-91, pl. XVII
- CARNAP-BORNHEIM-ILKJÆR 1996: C. von Carnap-Bornheim- J. Ilkjær, *Illerup Ådal*. Die Prachtausrüstungen. Tafelband, *Jutland Archaeological Society Publications* **25**: 1996, 7, Højbjerg
- CIEŚLIŃSKI-NOWAKOWSKI 2002: A. Cieśliński-W. Nowakowski, Zniszczone cmentarzysko kultury przeworskiej w Sochaczewie Karwowie, *Varia Barbarica. Monumenta Archaeologica Barbarica, Series Gemina I*, Warszawa-Lublin, 2002, 185-209
- DĄBROWSKI 1967: I. and K. Dąbrowski, *Cmentarzysko z okresów późnolateńskiego i wpływów rzymskich w Wesółkach*, pow. Kalisz, Wrocław-Warszawa-Kraków, 1967
- DĄBROWSKA 1988: T. Dąbrowska, *Wczesne fazy kultury przeworskiej. Chronologia - zasięg - powiązania*, Warszawa, 1988
- DĄBROWSKA 1995: T. Dąbrowska, Późne odmiany fibul silnie profilowanych w Polsce, *Wiadomości Archeologiczne* **53/1**, 1995, 3-34
- DĄBROWSKA 1997: T. Dąbrowska, Kamieńczyk. Ein Gräberfeld der Przeworsk-Kultur in Ostmasowien, *Monumenta Archaeologica Barbarica* **III**, Kraków, 1997
- DĄBROWSKI 1970: K. Dąbrowski, Cmentarzysko z okresu późnolateńskiego w Zagorzynie, pow. Kalisz, *Sprawozdania Archeologiczne* **22**, 1970, 331-397
- DEMIDZIUK-KOKOWSKI 2004: K. Demidziuk-A. Kokowski, Żukowice, pow. głogowski, woj. dolnośląskie, *Wandalowie. Strażnicy bursztynowego szlaku*, J. ANDRZEJOWSKI, A. KOKOWSKI, CH. LEIBER, eds., Lublin-Warszawa, 2004, 290
- ENGELHARDT 1867: C. Engelhardt, *Kragehul Mosefund 1751-1865*, Kjöbenhavn, 1867
- GINALSKI 1991: Ginalski, J. Ostrogi kabłąkowe kultury przeworskiej. Klasyfikacja typologiczna, *Przegląd Archeologiczny* **38**, 1991, 53-84
- GLOB 1937: P. V. Glob, Neues aus Vendsyssels älterer Eisenzeit, *Acta Archaeologica* **8**, 1937, 186-204
- GŁOSEK 1990: M. Głosek, Broń drzewcowa i obuchowa, *Uzbrojenie w Polsce średniowiecznej 1350-1450*, A. NADOLSKI ed., Łódź, 1990, 131-142
- GODŁOWSKI 1985: K. Godłowski, *Przemiany kulturowe i osadnicze w południowej i środkowej Polsce w młodszym okresie przedrzymskim i w okresie rzymskim*, Wrocław, 1985
- GODŁOWSKI 1992a: K. Godłowski, Zmiany w uzbrojeniu ludności kultury przeworskiej w okresie wpływów rzymskich, *Arma et Ollae. Studia dedykowane Profesorowi Andrzejowi Nadolskiemu w 70 rocznicę urodzin i 45 rocznicę pracy naukowej. Sesja naukowa, Łódź, 7-8 maja 1992 r.*, Łódź, 1992, 71-88
- GODŁOWSKI 1992b: K. Godłowski, Die Chronologie der jüngeren und späten Kaiserzeit in den Gebieten südlich der Sudeten und Karpaten, *Probleme der relativen und absoluten Chronologie ab Latènezeit bis zum Mittelalter. Materialien des III. Internationalen Symposiums: Grundprobleme der frühgeschichtlichen Entwicklung im nördlichen Mitteldonauegebiet. Kraków-Karniowice 3.-7. Dezember 1990*, K. GODŁOWSKI, R. MADYDA-LEGUTKO eds., Kraków, 1992, 23-54
- GODŁOWSKI 1994: K. Godłowski, Die Chronologie der germanischen Waffengräber in der jüngeren und späten Kaiserzeit, [in:] *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994*, C. von CARNAP-BORNHEIM ed., Marburg/Lublin, 1994, 169-178

- GODŁOWSKI-WICHMAN 1998: K. Godłowski-T. Wichman, Chmielów Piaskowy. Ein Gräberfeld der Przeworsk-Kultur im Świętokrzyskie-Gebirge, *Monumenta Archaeologica Barbarica VI*, Kraków, 1998
- GRADOWSKI-ŻYGULSKI jun. 1998: M. Gradowski-Z. Żygulski, jun. *Słownik uzbrojenia historycznego*, Warszawa, 1998
- HAGBERG 1976: U. Hagberg, Fundort und Fundgebiet der Modeln aus Torslunda, *Frühmittelalterliche Studien* **10**, 1976, 323-349
- ILKJÆR 1990: J. Ilkjær, Illerup Ådal. 1. Die Lanzen und Speere. Textband, *Jutland Archaeological Society Publications* **25/1**, 1990, Aarhus
- JAHN 1916a: M. Jahn, Die Bewaffnung der Germanen in der älteren Eisenzeit, etwa von 700 v. Chr. bis 200 n. Chr., *Mannus-Bibliothek* **16**, 1916, Würzburg
- JAHN 1916b: M. Jahn, Die schlesischen verzierten Waffen der Eisenzeit, *Schlesiens Vorzeit* N. F. **7/1**, 1916, 93-112
- JAHN 1921: M. Jahn, Der Reitersporn seine Entstehung und Früheste Entwicklung, *Mannus-Bibliothek* **21**, 1921, Leipzig
- JAMKA 1935: R. Jamka, Cmentarzysko w Kopkach (pow. niski) na tle okresu rzymskiego w Małopolsce Zachodniej, *Przegląd Archeologiczny* **5**, 1935, 23-62
- JAMKA 1938: R. Jamka, Ozdoby oręża i narzędzi z podokresu późnolateńskiego i okresu rzymskiego, odkrytych na Śląsku, *Polska Akademia Umiejętności - Prace Prehistoryczne* **3**, 1938, 1-44
- JANKOWSKA et al. 1975: B. Jankowska-A. Niewęglowski-Z. Sochacki, Cmentarzysko sprzed 2000 lat w Lemanach, pow. Pułtusk, *Pułtusk. Studia i materiały z dziejów miasta i regionu*, vol. II, Warszawa, 1975, 27-54
- JAŹDŻEWSKA 1983: M. Jażdżewska Cimetiere de La Tène III et de la période romaine a Siemiechów (Pologne centrale), *Inventaria Archaeologica* **XLIX**, Warszawa-Łódź 1983
- JAŹDŻEWSKA 2004: M. Jażdżewska, Cmentarzysko kultury przeworskiej w Kolonii Rychłocice na stanowisku 1, gm. Konopnica, woj. łódzkie, *Prace i Materiały Muzeum Archeologicznego i Etnograficznego w Łodzi: Seria Archeologiczna* **42**, 2004, 289-321
- JONAKOWSKI 1996: M. Jonakowski, Komplet narzędzi do krzesania ognia w kulturze przeworskiej ze szczególnym uwzględnieniem krzesiw sztabkowatych, *Concordia. Studia ofiarowane Jerzemu Okuliczowi-Kozarynowi w sześćdziesiątą piątą rocznicę urodzin*, Warszawa, 1996, 93-104
- JØRGENSEN-PETERSEN 2003: L. Jørgensen-P. V. Petersen, Nydam Bog - new finds and observations, *The Spoils of Victory. The North in the Shadow of the Roman Empire*, L. JØRGENSEN et al. (eds.), København, 2003, 258-285
- KACZANOWSKI 1988: P. Kaczanowski, Chronologia inkrustowanych grotów broni drzewcowej z okresu wpływów rzymskich z obszaru europejskiego Barbaricum, *Scripta Archaeologica. Uniwersytet Jagielloński Varia* **231**, 1988, 51-75
- KACZANOWSKI 1995: P. Kaczanowski, *Klasyfikacja grotów broni drzewcowej kultury przeworskiej z okresu rzymskiego*, Kraków, 1995
- KACZANOWSKI-MADYDA-LEGUTKO 2000: P. Kaczanowski-R. Madyda-Legutko, Uwagi o napływie norycko-panońskich części pasów na teren środkowoeuropejskiego Barbaricum, *Superiores Barbari. Księga ku czci Profesora Kazimierza Godłowskiego*, Kraków, 2000, 169-187
- KACZANOWSKI-ZABOROWSKI 1988: P. Kaczanowski-J. Zaborowski, Bemerkungen über die Bewaffnung der Bevölkerung der Wielbark-Kultur, *Kultura wielbarska w młodszym okresie rzymskim*, vol. I, J. GURBA, A. KOKOWSKI eds., Lublin, 1988, 221-239
- KASZEWSKA 1988: E. Kaszewska, Wstępne wyniki badań cmentarzyska z okresu przedrzymskiego i rzymskiego w Zadowicach pod Kaliszem, *Prace i Materiały Muzeum Archeologicznego i Etnograficznego w Łodzi: Seria Archeologiczna* **32**, 1988, 45-59
- KAUL 1995: F. Kaul, The Gundestrup Cauldron reconsidered, *Acta Archaeologica* **66**, 1995, 1-38
- KAUL 2003: F. Kaul, The Hjortspring find, Hjortspring. *A Pre-Roman Iron-Age Warship in Context*, O. CRUMLIN-PEDERSEN, A. TRAKADAS eds., Roskilde, 2003, 141-185
- KAZAKEVIČIUS 1988: V. Kazakevičius, *Oružije baltских племен II-VIII vekov na teritorii Litvy*, Vilnius, 1988
- KIETLIŃSKA 1968: A. Kietlińska, Dwa groby późnolateńskie z miejscowości Dziadowo, pow. Włocławek, *Wiadomości Archeologiczne* **33**, 1968, 243-244
- KIETLIŃSKA-DĄBROWSKA 1963: A. Kietlińska-T. Dąbrowska, Cmentarzysko z okresu wpływów rzymskich we wsi Spycymierz, powiat Turek, *Materiały Starożytne* **9**, 1963, 143-254
- KLINDT-JENSEN 1950: O. Klindt-Jensen, Foreign Influences in Denmark's Early Iron Age, *Acta Archaeologica* **20**, 1949, (1950), 1-29
- KNEŽEVIĆ-JOVANOVIĆ 2003: M. Knežević-Jovanović, Keltsko oružje iz razorehlih ratničkih grobova sa teritorije Srema i Bačke, *Opuscula Archaeologica* **27**, 2003, 287-309
- KOCH 1967: R. Koch, *Bodenfunde der Völkerwanderungszeit aus dem Main-Tauber-Gebiet*, Berlin, 1967
- KONTNY 2001: B. Kontny, Dwa nietypowe elementy uzbrojenia ze zbiorów Muzeum Miejskiego Wrocławia, *Officina Archaeologica Optima. Studia ofiarowane Jerzemu Okuliczowi-Kozarynowi w siedemdziesiątą rocznicę urodzin*, Światowit Supplement Series P: Prehistory and Middle Ages VII, W. Nowakowski, A. Szela eds., Warszawa, 2001, 117-125
- KONTNY 2002: B. Kontny, Broń jako wyraz zmian w obrządku pogrzebowym. Analiza zestawów uzbrojenia w kulturze przeworskiej od młodszego okresu wpływów rzymskich do początków okresu wędrówek ludów, *Światowit n. s.* **4(45)/B**, 2002, 101-144

- KONTNY 2003: B. Kontny, Die Wiederentdeckung eines Fundes aus Grudynia Mała - Versuch einer Neuinterpretation des Grabes 2, *Auf der Suche nach der verlorenen Archäologie*, W. NOWAKOWSKI, M. LEMKE eds., Warszawa, 2003, 61-71
- KONTNY 2004: Uzbrojenie kultury przeworskiej w okresie wpływów rzymskich i początkach okresu wędrówek ludów, *Wandalowie. Strażnicy bursztynowego szlaku*, J. ANDRZEJOWSKI, A. KOKOWSKI, Ch. LEIBER eds., Lublin-Warszawa 2004, 143-161
- KONTNY 2007: B. Kontny, Najwcześniejsze elementy uzbrojenia w kulturze bogaczewskiej w świetle zewnętrznych wpływów kulturowych, *Kultura bogaczewska w 20 lat później*, A. BITNER-WRÓBLEWSKA ed., Warszawa, 2007, 73-111
- KONTNY 2008: B. Kontny, Dawna technika na nowo odkryta. Uwagi na marginesie znaleziska grotu z Łodzi-Łagiewnik, *Silesia Antiqua* **44**, (2008)
- KOSSINA 1905: G. Kossina, Über verzierte Eisenlanzenspitzen als Kennzeichen der Ostgermanen, *Zeitschrift für Ethnologie* **37**, 1905, 369-408
- KOSTRZEWSKI 1919: J. Kostrzewski, Die ostgermanische Kultur der Spätlatenezeit, *Mannus-Bibliothek* **18**, Leipzig-Würzburg, 1919
- KOSTRZEWSKI 1921: J. Kostrzewski, Pismo obrazkowe, znaki własności czy symbole religijne?, *Przegląd Archeologiczny* **1**, 1920-21, 127-134
- KOSTRZEWSKI 1947: B. Kostrzewski, Cmentarzysko z okresu rzymskiego w Koninie (woj. poznańskie), *Przegląd Archeologiczny* **7/2**, 1947, 192-294
- KOZŁOWSKA 1958: R. Kozłowska, Cmentarzysko z okresu późnolateńskiego i wczesnorzymskiego w Niecieplinie, pow. Garwolin, *Materiały Starożytne* **4**, 1958, 337-365
- KRAUSE 1934: W. Krause, Die Runeninschrift von Sedschütz, *Altschlesien* **5**, 1934, 382-386
- KRAUSE-JANKUHN 1966: W. Krause-H. Jankuhn, Die Runeninschriften im älteren Futhark, *Abhandlungen der Akademie der Wissenschaften in Göttingen* **65**, 1966, Göttingen
- LIANA 1970: T. Liana, Chronologia względna kultury przeworskiej we wczesnym okresie rzymskim, *Wiadomości Archeologiczne* **35**, 1970, 429-487
- ŁUCZKIEWICZ 2002: P. Łuczkiwicz, Die verzierten Lanzenspitzen: Spuren germanischen Wanderungen während der jüngeren vorrömischen Eisenzeit?, *Bewaffnung der Germanen und ihren Nachbarn in den letzten Jahrhunderten vor Christi Geburt. Akten der Internationalen Tagung in Nałęczów, 23. bis 25. September 1999*, A. KOKOWSKI, P. ŁUCZKIEWICZ eds., Lublin 2002, 15-40
- MADYDA-LEGUTKO 1986: R. Madyda-Legutko, Die Gürtelschnallen der römischen Kaiserzeit und der frühen Völkerwanderungszeit im mitteleuropäischen Barbaricum, *BAR International Series* **360**, 1986, Oxford
- MAKIEWICZ 2003: T. Makiewicz, Archeologiczne badania ratownicze Centrum Badań Archeologicznych w Poznaniu na trasach autostrad A-1 i A-2, *Raport 2000. Wstępne wyniki konserwatorskich badań archeologicznych w strefie budowy autostrad w Polsce za rok 2000*, Zeszyty Ośrodka Ochrony Dziedzictwa Archeologicznego, seria B, Warszawa, 2003, 140-158
- MARCINIAK 1950: J. Marciniak, Dwa cmentarzyska ciałopalne z okresu rzymskiego w Judzikach i Bargłowie Dwornym w pow. augustowskim, *Wiadomości Archeologiczne* **17**, 1950, 47-76
- MARCINIAK 1957: J. Marciniak, Cmentarzysko ciałopalne z okresu późnolateńskiego w Wilanowie koło Warszawy, *Materiały Starożytne* **2**, 1957, 7-174
- MEGAW & MEGAW 2001: V. Megaw, and R. Megaw, *Celtic Art*, London, 2001
- NADOLSKI 1990: A. Nadolski, Znaki bojowe, *Uzbrojenie w Polsce średniowiecznej 1350-1450*, A. NADOLSKI ed., Łódź, 1990, 195-203
- NIEWĘGŁOWSKI 1991: A. Niewęgłowski, *Cmentarzysko kultury przeworskiej w Garwolinie, woj. siedleckie*, Warszawa, 1991
- NOWAKOWSKI 1994: W. Nowakowski, Kultura przeworska a zachodniobałtyjski krąg kulturowy, *Kultura przeworska* **1**, Lublin, 1994, 373-388
- NOWAKOWSKI 2001: W. Nowakowski, Żelazne zapinki kuszowate z podwiniętą nóżką w europejskim Barbaricum, *Wiadomości Archeologiczne* **54**, 1999-2001, 129-146
- OKULICZ 1958: J. Okulicz, Cmentarzysko z okresu rzymskiego odkryte w miejscowości Bogaczewo, na przysiółku Kula, pow. Giżycko, *Rocznik Olsztyński* **1**, 1958, 47-116
- OKULICZ 1971: Cmentarzysko z okresów późnolateńskiego i rzymskiego w miejscowości Dobrzankowo, pow. Przasnysz, *Materiały Starożytne i Wczesnośredniowieczne* **1**, 1971, 127-170
- PAULSEN 1967: P. Paulsen, *Alamannische Adelsgräber von Niederstotzingen (Kreis Heidesheim)*, Stuttgart, 1967
- PESCHECK 1939: Ch. Pescheck, *Die frühwandalische Kultur in Mittelschlesien (100 vor bis 200 nach Chr.)*, Leipzig, 1939
- PETERSEN 1998: P. V. Petersen, Der Nydam-III- und Nydam-IV-Fund. Ausgrabungen völkerwanderungszeitlicher Waffenopfer durch das Nationalmuseum Kopenhagen in der Jahren 1984, 1989 bis 1992. Ein Vorbericht, BEMMANN-BEMMANN 1998a, 241-265
- PETERSEN 2003: P. V. Petersen, Warrior art, religion and symbolism, *The Spoils of Victory. The North in the Shadow of the Roman Empire*, L. Jørgensen et al. eds., København, 2003, 286-294
- PITTIONI 1984: R. Pittioni, Wer hat wann und wo den Silberkessel von Gundestrup angefertigt?, *Veröffentlichungen der keltisch-romischen Kommission* **3**, 1984, Wien
- PIĘTKA-DĄBROWSKA 1961: T. Piętka-Dąbrowska, Przyczynki do znajomości okresu od I do VI w. n. e. z międzyrzecza Dniepru i Bugu, *Wiadomości Archeologiczne* **37/1**, 1961, 217-239

- RESI 1986: H. G. Resi, *Gravplassen Hunn i Østfold*, Norske Oldfunn **12**, 1986, Oslo
- RUSIN 2001: K. Rusin, Cmentarzysko kultury przeworskiej w Niemirowie, gmina Mielnik, woj. białostockie, *Wiadomości Archeologiczne* **54**, 1999-2001, 101-108
- SALIN 1904: B. Salin, *Die altgermanische Thierornamentik*, Stockholm, 1904
- SCHMIDT 1970: B. Schmidt, *Die späte Völkerwanderungszeit in Mitteleuropa. Katalog (Südteil)*, Berlin, 1970
- SCHULTZE 2002: E. Schultze, Bemerkungen zu den Schildzierscheiben der jüngeren vorrömischen Eisenzeit, *Bewaffnung der Germanen und ihren Nachbarn in den letzten Jahrhunderten vor Christi Geburt. Akten der Internationalen Tagung in Natęczów, 23. bis 25. September 1999*, A. KOKOWSKI, P. ŁUCZKIEWICZ eds., Lublin, 2002, 169-178
- SKOWRON 2004: J. Skowron, Kuny, pow. turecki, woj. wielkopolskie, stan. 4, *Wandalowie. Strażnicy bursztynowego szlaku*, J. ANDRZEJOWSKI, A. KOKOWSKI, CH. LEIBER eds., Lublin-Warszawa, 2004, 288
- SŁUPECKI 2003: L. P. Słupecki, *Mitologia skandynawska w epoce Wikingów*, 2003, Kraków
- STOKLUND 2003: M. Stoklund, The first runes - the literary language of the Germani, *The Spoils of Victory. The North in the Shadow of the Roman Empire*, L. JØRGENSEN et al. eds., København, 2003, 172-179
- STOLPE 1927: H. Stolpe, *La nécropole de Vendel*, Stockholm, 1927
- SZYDŁOWSKI 1964: J. Szydlowski, *Cmentarzysko z okresu wpływów rzymskich w Choruli, pow. Krapkowice*, Wrocław-Warszawa-Kraków, 1964
- ŚWIĘTOSŁAWSKI 1998: W. Świętosławski, Znaki i sygnały dowodzenia, łączności i identyfikacji, *Uzbrojenie w Polsce średniowiecznej 1450-1500*, A. NOWAKOWSKI ed., Toruń 1998, 117-122
- THOMAS 1960: S. Thomas, Studien zu den germanischen Kämnen der römischen Kaiserzeit, *Arbeits- und Forschungsberichte zur Sächsischen Bodendenkmalpflege* **8**, 1960, 54-215
- TUNIA 1980: K. Tunia, Grób kultury przeworskiej z Górki Stogniewskiej, woj. Kraków, *Sprawozdania Archeologiczne* **33**, 1980, 193-196
- VAITKEVIČIUS 2003: V. Vaitkevičius, Badania cmentarzyska kurhanowego koło wsi Pakalniiai na Litwie, *Wiadomości Archeologiczne* **56**, 2003, 111-124
- WOŁĄGIEWICZOWIE 1963: M. D. and R. Wołągiewiczowie, Uzbrojenie ludności Pomorza Zachodniego u progu naszej ery, *Materiały Zachodnio-Pomorskie* **9**, 1963, 9-166
- ZEMAN 1961: J. Zeman, *Severní Morava v mladší době římské. Problémy osídlení ve světle rozboru pohřebiště v Kostelce na Hané*, Praha, 1961
- ØRSNES 1988: M. Ørsnes, *Ejsbøl I. Waffnopferfunde des. 4.-5. Jahrh. nach Chr., Nordiske Fortidsminder - serie B* **11**, 1988, København

Late Roman Military Style in the East of the Forest and Forest-Steppe Zone of Europe

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This paper is aimed at drawing attention to East European finds not typical of the series encountered in Eastern Europe in the Roman times or the Middle Ages, but similar to the pieces of the Late Roman military style. They originate from the sites of the 4th - 5th centuries AD not only geographically distant from Roman Limes, but also separated from it by the cultural unity of Germania Libera, including Wielbark and Chernyakhov cultures disposed eastward from the Vistula.

1. Zamyatino 10, Lipetsk region, Russia.

Cultural deposit of the dwelling site of the late 4th - 5th centuries. Excavations of 2000 by G.L. Zemtsov (Fig.1:4; 6:3). Belt buckle tonque, 53 mm long, up to 6-7 mm wide, made of a massive iron rod up to 4 mm thick. Wide loop for attachment to the frame is raised over the tonque, its point being broken off. The backward part of the tonque is decorated with two pairs of short facets of different length separated by short incised line; two similar lines divide the front part of the tonque ornamented with long facets. The tonque is slightly bent and faceted. Its size suggests rather large size of the buckle it belonged to designed for a wide belt¹.

2. Zamyatino 10, Lipetsk region, Russia.

Pit N° 44 contained potsherds of hand-made vessels of the late 4th - 5th centuries. Excavations of 2001 by G.L. Zemtsov (Fig.1:5; 6:3). Belt mount, its preserved part is 39 mm long and up to 7 mm wide, was shaped of an iron plate slightly more than 2 mm thick. The mount end is bent to form an irregular ring, around 10 mm in diameter, the ends being not attached. The mount's straight part is separated from the ring by an almost square area with including a circle formed of its faceted sides. In the centre of the square an opening for a rivet is placed. Rather long faceted crosspiece joints the described area with another similar one, now broken off; the crosspiece is a little narrower than the square areas².

3. Ostrov, Brest region, Byelorussia.

Cultural deposit of a multilayer dwelling site. Excavations of 1987 by A.A. Egoreychenko (Fig.1:1; 6:1). Fragment of iron belt buckle, frame 22 mm long and 3 mm high, its preserved width is 19 mm. Along its outward side there are margins 2-3 mm wide. The lower inward part of the frame is slightly oblique (worn out?). Tonque is preserved up to 19 mm in length, it is made of a rod rounded in section, around 2.5 mm in diameter. Its base is segment-shape in section, up to 4 mm wide³.

4. Ostrov, Brest region, Byelorussia.

Cultural deposit of a multilayer dwelling site. Excavations of 1987 by A.A. Egoreychenko (Fig.1:2; 6:1). Mount preserved up to 30 mm in length, 7-5 mm wide, shaped of a bronze plate around 1 mm thick. Its back part is bent parallel to its outer surface and the end broken off. The outward and backward surfaces are attached with a stud, both surfaces are ornamented with irregular triangular-shape incisions on their sides and horizontal (or slightly inclined) incised lines⁴.

5. Snyadzin 2, Gomel region, Byelorussia.

Pit N° 51 (field N° 32) contained small fragments of pottery of the 4th - 7th centuries. Excavations of 1996 by V.S. Vjargey (Fig.1:3; 6:2). Mount 53 mm high and up to 22 mm wide is shaped of an iron plate around 1 mm thick. Side slots make the object propeller-shaped. In its upper and lower parts rivets are placed. The edges of propeller fans are ornamented with two relief lines (wire hammered into grooves?), in the centre similarly executed oblique cross is disposed⁵.

The buckle from Ostrov (N° 3) differs from the series well known among East European barbarians in Late Roman times by its flattened frame and the marsin ("crest") along its outer edge. The characteristics can be seen in same so-called "Krempenschnale". The majority of such buckles registered by K. Raddatz and R. Madyda-Legutko are different by constructed or shaped⁶. The pieces of types **second** and **third** group **F I** know differ from the Ostrov buckle by frame shape (it is more elongated horizontally), as a rule, narrower raising over "margins" (often sharpened) and narrow backward part of the frame. Besides, buckles of group **F**, in Madyda-Legutko's view, appear in **B1** period, are especially characteristic of **B2** period and fall out of use in **B2/C1** period; nevertheless, no antiquities of Early Roman period have been discovered at the dwelling site Ostrov. Still, the "crest" following frame outward outlines is present on numerous bronze buckles comprised in Late Roman belt fittings sets (Fig. 2: 5, 9, 11, 12, 14-17, 19-22, 25 and others) attributed to type **c**, shape **A** or types **d**, **e**, **f**, shape **C** according to SOMMER 1984). The major part of these buckles is of nearly oval shape, but those of **D**-shape similar to the Ostrov find are also popular (Fig. 2: 2, 6, 24). Widening front part of the buckle makes it somewhat **B**-like in shape, which may be compared with the pieces with the frame made in the shape of dolphins, or with the derivatives of this type (Fig. 2: 2, 7, 8, 27). The finds with margin in the backward part of the frame are also known (Fig. 2: 4, 10, 11, 27). The Ostrov buckle is broken, therefore we cannot state that it was decorated with the image of an animal head, but among Late Roman pieces there are simplified ones without this detail (Fig. 2: 11). I can point to a number of Late Roman buckles similar to the Ostrov find in size as well (Fig. 2: 3, 12, 14, 16, 21). Thus, the identification of the Ostrov buckle as an iron

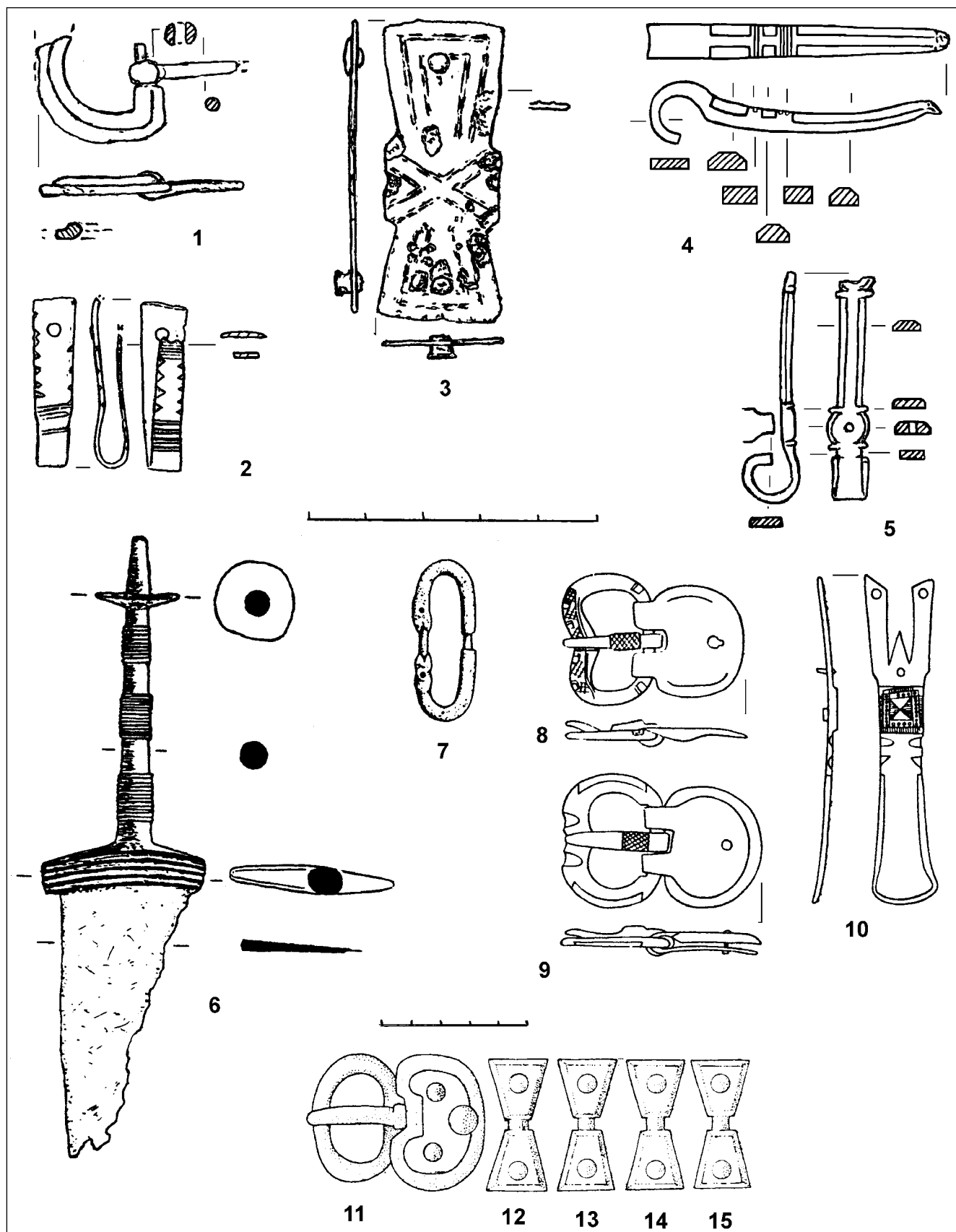


Fig. 1: 1-2- Ostrov; 3- Snyadzin; 4-5- Zamyatino 10; 6- Luga; 7- Knyazh'ya Gora; 8-10- Susly: 8 - gr. 58, 9-10 - gr. 69; 11-18- Kyzyl-Kajartobe. 1-5- from original; 6- PLATONOVA - SHCHUKIN 2000; 7- KORZUKHINA 1996 8-10 - SKRIPKIN 1972; 1998; 11-15- KAZANSKI 1994.

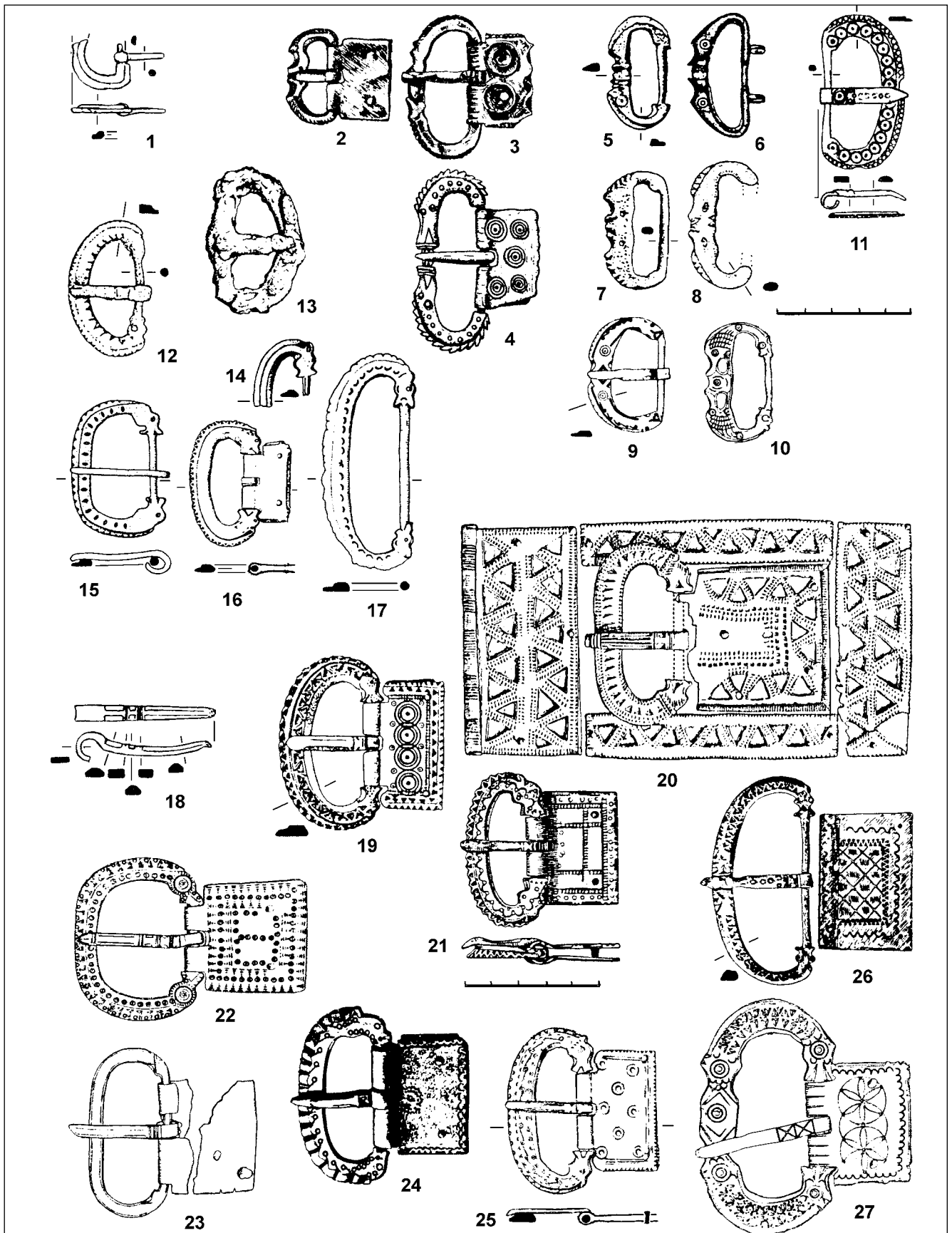


Fig. 2: 1- Ostrov; 2-3- Intercisa: 2- gr. 1106a; 3- gr. 1216; 4- Herapel; 5- La Olmeda; 6- Casillo Billido; 7- Sant Josep; 8-Villarubia de Santiago; 9- Contrat, gr. 30; 10- Amiens; 11- Chersonesos; 12- Perlberg; 13- Predloka; 14- Quelkhorn; 15- Rouen; 16- Perlberg; 17- Wijk-bij-Duurstede; 18- Zamyatino 10; 19,26- Tongern; 20- Mainz Kostheim; 21- Rhenen, gr. 829; 23- Oudenburg, gr. 263; 24- Vermand; 25- Herstal; 27- Hockenheim. 1,11,18- from original; 2-3- VÁGÓ – BÓNA 1976; 4- BULLINGER 1969; 5-8- FERNANDEZ 1999; 9, 12, 14-17, 19, 24-26- BÖHME 1974; 10, 23, 27- SOMMER 1984; 13- BOLTIN-TOME 1986; 20; 21- YPEY 1969.

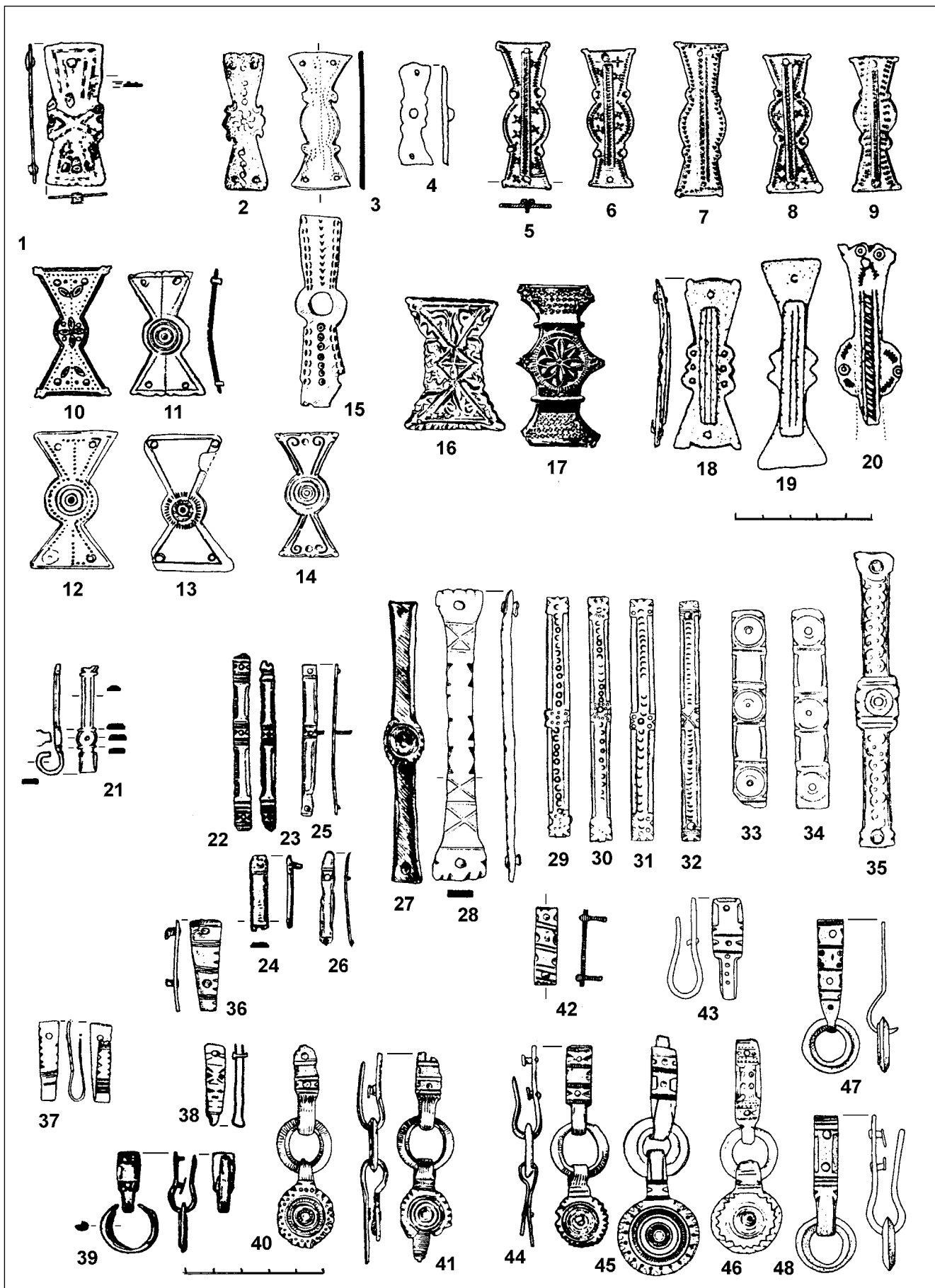


Fig. 3: 1- Snyadzin; 2,10- Strazata (Kailaka): 2- gr.1/1960; 3- Hrušica; 4- Novae; 5-9- Favianis, gr.64; 11- Kobarid; 12-13- Predjama; 14- Zengövárkony II, gr.10; 15- Pelgrimovo; 16- Tongern; 17- Colerain; 18- Camino; 19- Pamplona; 20- Cacabelos; 21- Zamyatino 10; 22-26,36,39-41- Rhenen: 22-23,40-41- gr.116, 24,36- gr.835, 25-26,39- gr.829; 27- Intercisa, gr.1106a; 28- Podkraj; 29-32- Trier Maximinstrasse; 33-34- Jamoigne; 37- Ostrov; 38- Nevioudunum; 42,46- Bonn; 43- Ben-Ahin; 44- Vieuxville; 45- Dorchester, gr.1; 47-48- Samson. 1,21,37- from original; 2- TABAKOVA-TSANOVA 1981; 3,11,28- CIGLENEČKI 1994; 4- GENČEVA 1998; 5-9- POLLAK 1993; 10- BULLINGER 1969, TABAKOVA-TSANOVA 1981; 12-13- KOROŠEC 1983; 14,22,29-35,42,45-46- SOMMER 1984; 15- *Prehistoria ...1981*; 16,43,47-48- BÖHME 1974; 17- BÖHME 1986b; 18-20- FERNANDEZ 1999; 22-26, 36, 39-41- YPEY 1969; 27 - VÁGÓ – BÓNA 1976; 38-

counterpart of Late Roman pieces of military style seems most probable.

Tongue is decorated with a combination of long and short facets and incised lines, like on the find from Zamyatino (N° 1). Which is unlike the East European buckles series, but has analogies among the buckles typical of the Late Roman military style (Fig. 2: 20-22). As a rule, these buckles' tongue are shorter than the Zamyatino one, though the items of similar proportions are also known (Fig. 2: 21-23, 25-27). The closest counterpart is the piece "Günzburg" of variant 1, type f, shape C (Fig. 2: 22)⁷. It must be included, it entered the circle of objects with more complicated scheme of usual ornamentation placed on Late Roman buckle tongue (Fig. 2: 19-21), which was related to their larger size (Fig. 2: 22, 26-27). I can also point to Late Roman pieces with raised ring in the pin tongue (Fig. 2: 24), as on the Zamyatino find.

The mount from Snyadzin (N° 5) should be considered unique against the background of East European finds (mounts are generally not typical of the barbaric belts of the 4th - 5th centuries, while those of earlier and later dates are different in shape), but the mounts of propeller-like shape are characteristic feature of a number of Late Roman military belts' types. Many pieces, though similar to the Snyadzin find in size, look different by their proportions (Fig. 3: 10-14); more elongated mounts with central projections of sophisticated shape are not rare (Fig. 3: 2-9,18-19), which makes them even more similar to the considered find. It also resembles some mounts with relief decoration (Fig. 3: 16,17). Many Late Roman mounts, as the Snyadzin one, are ornamented with lines executed in different techniques and placed along the "fans" (Fig. 3: 3, 5-16) and with cross-like compositions disposed in their central part (Fig. 3: 5-6, 10, 16, 17).

As for the bent end of the mount from Zamyatino (N° 2), most probably, it had emerged due to the object's re-use as a mount with attached hanging ring or a belt tongue. Evidently, initially the find represented a long mount with three areas separated by narrow facets, similar in its size and composition to the mounts known on the provincial Roman belts

(Fig. 3: 22-26, 29-32). These belts were sometimes decorated with mounts divided into areas ornamented with the circle executed in figured faceting (Fig. 3: 28, 33-34, 47), as well as the areas of rounded or complicated shape (Fig. 3: 27, 35).

Belt fittings' sets of the Roman times known both from Barbaricum and the Empire often comprise the mounts designed for attachment of hanging rings; apparently, the piece from Ostrov (N° 4) belongs to them. Unlike the Romans, barbarians mainly used non-ornamented mounts. Many Late Roman pieces are of round, triangular, or more sophisticated shape, mounts of rectangular shape decorated with incised lines, short facets, triangular incisions (Fig. 3: 36, 38-48) are also not rare. Late Roman rectangular mounts with a ring were fixed mainly by two studs, though mounts with one stud are also known (Fig. 3: 38), which is more characteristic of barbarians. Roman mounts are relatively short, but those with proportions similar to the Ostrov find are not rare (Fig. 3: 38, 45-48). By its ornamental style the considered object is especially close to the Late Roman belt mount from Rhenen (Fig. 3: 36).

Unlike the majority of the finds under discussion (four of five), the Late Roman belt fittings' sets are made of bronze or silver and not of iron; iron details are rarely mentioned⁸. It should be said that manufacturing of iron ornaments related to the military style is known in the Roman provinces. For instance, I should point to the series of typically Early Byzantine iron fibulae from museum collections of Macedonia and Croatia. Possibly, the iron buckle in poor state of preservation from Predloka in Croatia belongs to the Late Roman military style circle (Fig. 2: 13).

Despite the fact that the Late Roman belts attract scholarly attention over one hundred and fifty years, numerous special investigations having been published⁹, many questions remain unsolved so far. This is largely due to limited knowledge about the Late Roman military fashion of the Balkans and Mediterranean. The collections of finds from Spain and Slovenia published recently¹⁰ can improve the situation to a certain extent only. Apparently, this is the reason I have not managed to find absolutely identical counterparts for the considered objects.

Besides the belt fittings, some other finds from the forest zone of Eastern Europe are probably connected with the Late Roman military style. Specific features of the fibula from the hillfort Supruty on the Oka river, Tula region (Fig. 4: 1, 6: 4) discovered in the cultural deposit of Moshchino culture) cannot be explained from the known East European fibulae¹¹. The cross-section of its bow will look more adequate, provided it is a local imitation of the provincial Roman fibulae¹²(Fig. 4: 2-4, 7-8, 12). A local craftsman had not mastered soldering technique, therefore he reached the effect of massive bow by shaping an cross-section unusual. Recently in the vicinity of Luga¹³ there was found an iron blade with bronze handle (Fig. 1: 6, 6: 5), the authors of the publication point to its closest analogies among the battle knives of the second part of the 4th century from North Spain¹⁴.

The discussed artifacts and their prototypes hardly have been brought to the inhabitants of North-Eastern Europe just from their closest neighbors. Judging from the main publication¹⁵, the buckles characteristic of the Late Roman military style represented in Zamyatino and Ostrov are not known in the Oder and Vistula basins. Recent find from the cemetery Mokra of Przeworsk culture¹⁶ does not change the general picture, same as the mount originating from the North-East of Poland (Fig. 3: 15; 6: 6) and some others. In Chernyakhov culture on the Dniester and Dnieper the details of belt sets attributed to the Roman circle are very few, especially when compared to thousands of known finds. Some similarity to the discussed finds can be found in the buckle found near Knyazh'ya Gora, southward from Kiev (Fig. 1: 7), but the find originates from N.F. Belyashevsky's collection and its context is unclear. Evidently, the artifacts under discussion might traveled in the north-east direction from their principal area in a different way.

As for the provenance of the belt fittings of the Late Roman military style from Zamyatino 10, it is generally clear. The dwelling site enters the cultural group of Chertovitskoe-Zamyatino type located on the Upper Don¹⁷ in the late 4th - 5th century (Fig. 6). Sites of this type have become known since the 1990-s and are lately actively investigated¹⁸. These agricultural settlements were inhabited by the people of different origin resettled from the forest-steppe areas on the Dnieper left bank regions and in the Oka basin. The sites have yielded workshops specialized in producing antler combs of type III according to S. Thomas, mail-shirt and other iron objects, the traces of bronze-casting production, pottery kiln for manufacturing vessels of the types known from the North-East Pontic zone. Among the excavated finds there are numerous

pieces of weaponry, the finds attributed to the international fashion of the Hunnic period, including those of elite character (Fig. 5). One of the excavated constructions resembles yurt-type dwelling. The investigators consider it possible to interpret the cluster of sites as a base deliberately created to supply some Hunnic group or a group of population subjected by the Huns (the Akacires?) with craft and agricultural production.

In this context appearance of some elements of the Late Roman military style in Zamyatino can be explained by a number of equally probable ways (the Hunnic detachments in Roman service, diplomatic contacts of the Akacires with Constantinople, trophies, and so forth), the more so that the contacts of the region with the world of Roman Empire culture are evidenced by a number of finds. From the dwelling site Zamyatino 10, where the discussed buckle tongue and mount were discovered, a razor of good workmanship originates; a razor fragment (?) was found at Zamyatino 5; while at Zamyatino 7 - an arrowhead attributed to early Byzantine cultural circle; at the dwelling site Mukhino 2 - a fragment, most probably, of a Late Roman silver bracelet (Fig. 5: 30-32, 16, 35). Some dwelling sites yield amphorae fragments, sherds of red-slip ware pottery; in the yurt-like construction at Ksizovo a clay lamp was discovered. The objects related to the Late Roman military fashion are known, though rare, among other nomadic groups as far as the Volga basin and Central Asia (Fig. 1: 8-9, 11-15; Fig. 6: 7, 8).

Moshchino culture to which the mentioned fibula from Supruty (Fig. 6) is attributed maintained rather active contacts with the Chertovitskoe-Zamyatino group. Quite probably, nomads used a part of subjected population as auxiliary detachments. Then the odd whim of a native from the Upper Oka to demonstrate the fibula looking like provincial Roman one becomes understandable.

It is more difficult to explain the origin of the finds from Ostrov and Snyadzin. They were discovered on the sites attributed to Praga culture (Fig. 6) identified with traditional culture of the people Sclaveni/Sclavini well known for the Romans since the 6th century, when the Slavs migrated to the Danube. In the earlier times they were separated from the Empire by East German groups¹⁹. Judging from the fibulae recovered at Ostrov and Bernashovka, occasional contacts between the Slavs and the Germans are accounted for from the mid - second part of the 4th century.²⁰ From Kachin²¹ (Fig. 6) there is known a treasure evidencing that local population participated in the events that affected Central Europe during the Hunnic epoch²². Probably, some Slavic groups were involved by their neighbors into the events connected

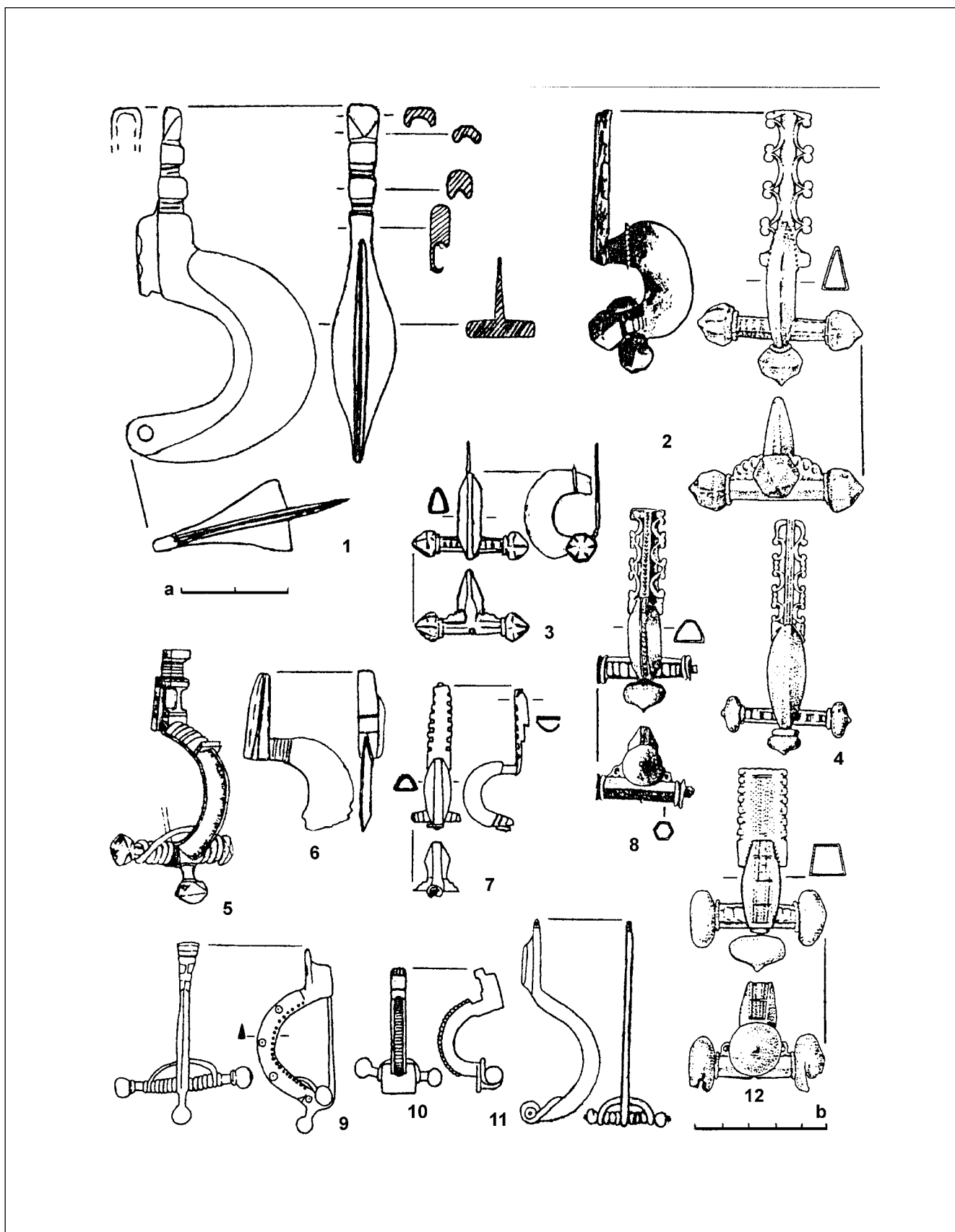


Fig. 4: 1- Supruty; 2- Ténès; 3, 6, 7- Chersonesos; 4- Vindonissa; 5- Warnikam, gr. 42; 8- Ságvár, gr. 42; 9- Dzierżęcino, gr. 11; 10- Privolnoye, gr. 20; 11- Kostelec, gr. 415; 12- Tihany. From GAVRITUKHIN 2004.

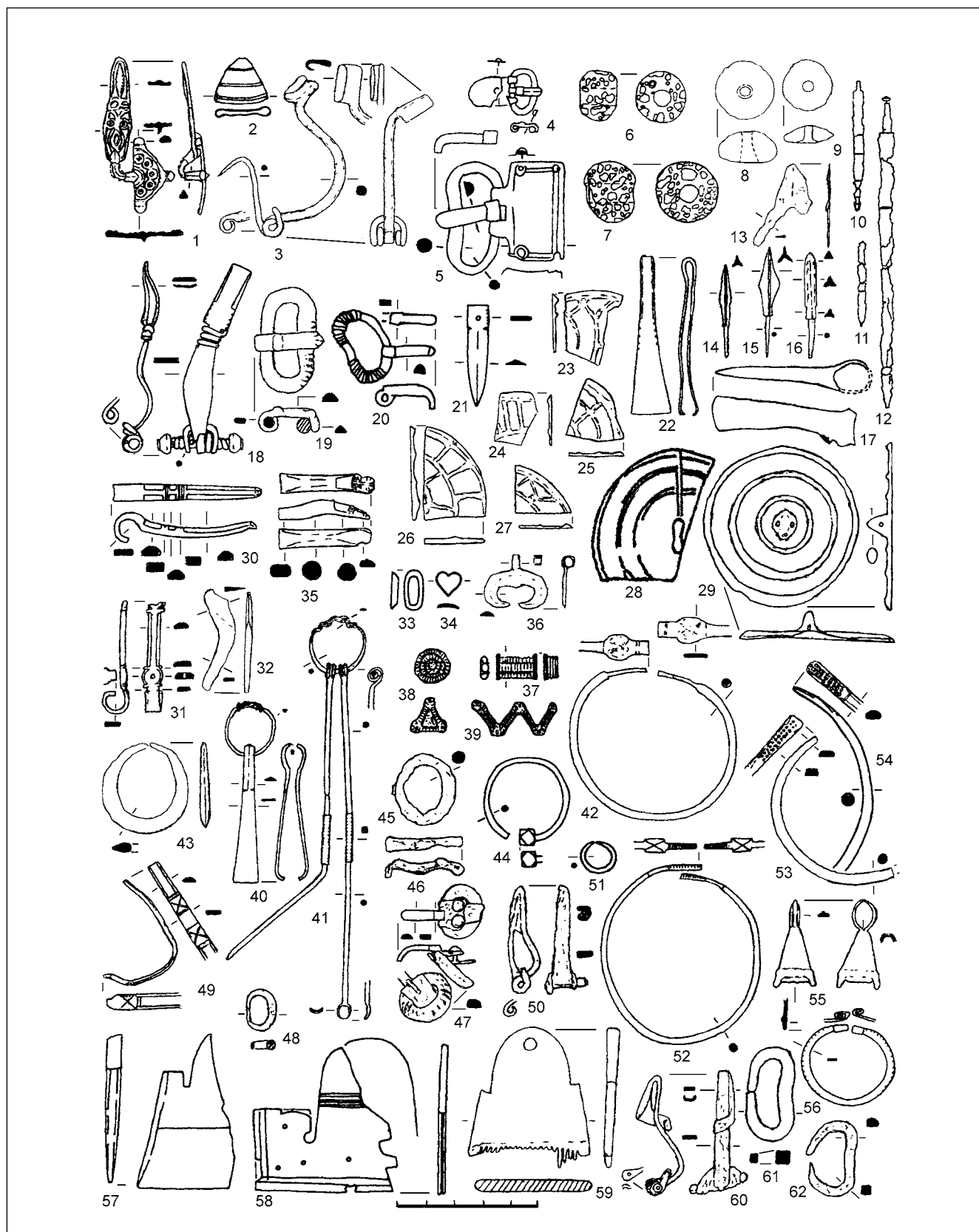


Fig. 5: Finds from Zamyatino-Chertovitskoe group. 1, 23-25, 27, 53, 61- Zamyatino-5; 2, 18, 22, 25, 59, 62- Mukhino-2; 6-8, 29, 35-42- Mukhino-2, grave; 3, 54- Ksizovo -19 u 19A; 4-5, 9-12- gr.4, 51-52- gr. 5 from Zivotinnoye; 13, 16, 45-48, 60- Zamyatino-7; 15, 17, 20, 34- Chertovitskoye III; 19, 26, 33, 49, 53, 57-58- Zamyatino -8; 21, 56- Ksizovo-17A u 17; 28- Podgornoye; 30-32- Zamyatino 10; 44- Nevezekolodeznoye; 50- Maly Lepyag.

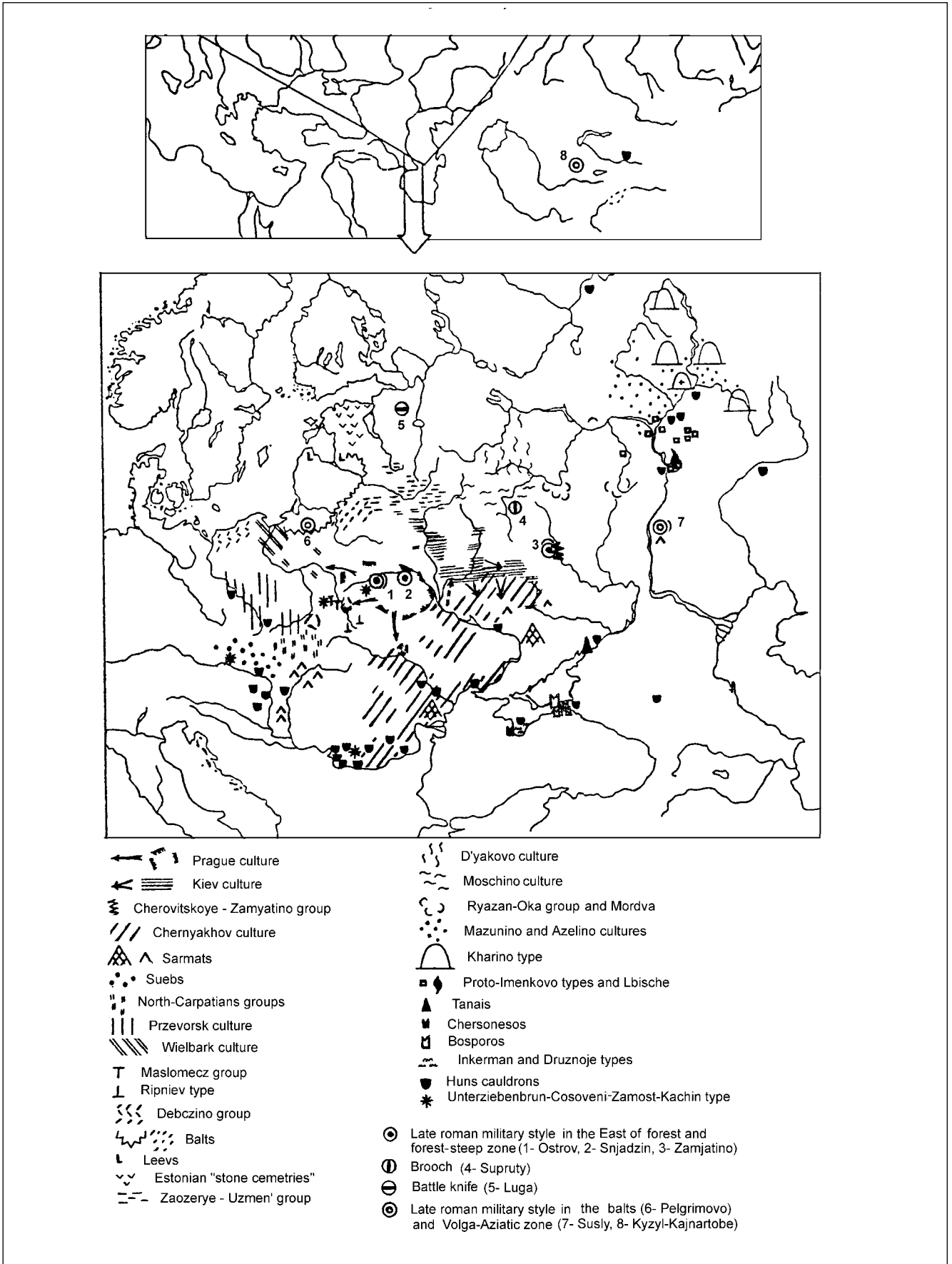


Fig. 6: The forest and forest-steppe zone of Central and Eastern Europe in the Hunnic period.

with the Huns' expansion; returning from the Danube to their motherland, they could have brought with them pieces of the Late Roman military style. Later on, in the 6th century, the Slavs participated in wars both against the Empire and on its side; when returning home they also brought with them Byzantine *fibulae*²³. Many researchers associate the artifacts of Danubian provenance and substantial cultural innovations in the forest zone of Eastern Europe from the Neman to the Upper Volga with the German-Baltic-Slavic detachments returning from the Danube region in the second part of the 5th century²⁴. Thus, the Ostrov and Snyadzin finds may be explained by the Slavs' earliest close contacts with the Roman civilization that occurred in the Hun epoch.

NOTES

1. OBLOMSKI 2004.
2. OBLOMSKI 2004.
3. YEGOREYCHENKO 1991; GAVRITUKHIN 2003a; 2005.
4. YEGOREYCHENKO 1991; GAVRITUKHIN 2003a; 2005.
5. VYARGEY 1999, Fig. 103: 10; GAVRITUKHIN 2003a.
6. Types 1, 4-8 of group F, see MADYDA-LEGUTKO 1986.
7. SOMMER 1984, Taf.7: 1; S.27, 127; Liste XIII: in the Catalogue reference to this drawing is missing.
8. for instance, buckle pins - SOMMER 1984, S. 24.
9. publication of finds and problems' review see in: BULLINGER 1969; BÖHME 1974, 1986; SOMMER 1984; BARKÓCZI 1994.
10. FERNANDEZ 1999; CIGLENEČKI 1994; Od rimljanov...2001.
11. for details see GAVRITUKHIN 2004.
12. Zwiebelknopffibel type 5 or 6 according to E. KELLER-Ph. M. PRÖTTEL.
13. 130 km to the south-west from St-Petersburg.
14. PLATONOVA - SHCHUKIN 2000.
15. MADYDA-LEGUTKO 1986, Gruppe I.
16. personal communication of M. BIBORSKI.
17. Lipetsk and Voronezh regions, Russia.
18. OBLOMSKI 2004, see bibliography in the volume.
19. GAVRITUKHIN 2000a, b.
20. GAVRITUKHIN 2000b; 2003a; 2005.
21. The Pripyat' Marshy woodland region, somewhat farther southward from Ostrov.
22. KUKHARENKO 1982.
23. GAVRITUKHIN 2002; 2003b.
24. AMBROZ 1970; KAZANSKI 1999; AHMEDOV 2003; AHMEDOV - KAZANSKI 2004.

BIBLIOGRAPHY

AHMEDOV 2003: И. Р. Ахмедов, Новые находки гарнитур с птицевидным декором в лесной зоне Восточной Европы

гуннского и постгуннского времени, *Чтения посвященные 100-летию деятельности Василия Алексеевича Городцова в Государственном Историческом музее II*, Москва, 2003, 83-87

- AHMEDOV - KAZANSKI 2004: И. Р. Ахмедов-М. М. Казанский, *После Аттилы. Киевский клад и его культурно-исторический контексты. Культурные трансформации и взаимовлияния в Днепровском регионе на исходе римского времени и в раннем средневековье*, Санкт-Петербург, 2004
- AMBROZ 1970: А. К. Амброз, *Южные художественные связи населения Верхнего Поднепровья в VI в. Древние славяне и их соседи*, Москва, 1970, 70-74
- BARKÓCZI 1994: L. Barkóczy, Beiträge zur Geschichte der Provinz Valeria im IV-VI Jh. *Specimina nova universitates quinqueeclesiensis* 1994, 57-135
- BÖHME 1974: H. W. Böhme, *Germanische Grabfunde des 4. bis 5. Jahrhunderts zwischen unterer Elbe und Loire*, München 1974
- BÖHME 1986a: H. W. Böhme, Bemerkungen zum spätrömischen Militärstil. *Zum Problem der Deutung frühmittelalter Bildinhalte* (Ed. H. ROTH), Sigmaringen 1986, 25-49
- BÖHME 1986b: H. W. Böhme, Das Ende der Römerherrschaft in Britanien und die Angelsächsische Besiedlung Englands im 5. Jahrhundert, *Jahrbuch der Römisch-Germanischen Zentralmuseums Mainz* 33, 469-574
- BOLTIN-TOME 1986: Boltin-Tome, Predloka - antièna in zgodnesrednjeveška lokaliteta, *Izdanja Hrvatskog arheološkog društva* 11/2, 1986, 189-207
- BULLINGER 1969: H. Bullinger, Spätantike Gürtelbeschläge, *Typen, Herstellung, Trageweise und Datierung*, Brugge 1969
- CIGLENEČKI 1994: S. Ciglenečki, Höhenbefestigungen als Siedlungsgrundeinheit der Spätantike in Slovenien, *Arheološki Vestnik* 45, 1994, 239-266
- FERNANDEZ 1999: J. A. Fernandez, Late Roman Belts in Hispania, *Journal of Roman Military Equipment Studies* 10, 1999, 55-62
- GAVRITUKHIN 2000a: И. О. Гавритухин, Финал традиций культур римского времени в Восточном Прикарпатье, *Die spätromische Kaiserzeit und die frühe Volkerwanderungszeit in Mittel- und Osteuropa*, Łódź, 2000, 261-324
- GAVRITUKHIN 2000b: И. О. Гавритухин, Начало великого славянского расселения на юг и запад, *Археологічні студії Т.І. Київ – Чернівці*, 2000, 72-90
- GAVRITUKHIN 2002. Фибулы византийского круга в Восточной Европе (литые дунайско-иллирийские), *Материалы по археологии, истории и этнографии Таврии IX*, Симферополь, 2002, 229-250
- GAVRITUKHIN 2003a: И. О. Гавритухин, Хронология пражской культуры Белорусского Полесья, *Гістарычна-археалагічны зборнік* 18, Мінск, 2003, 123-138

- GAVRITUKHIN 2003b: И. О. Гавритухин, Фибула из Луки-Каветчинской в контексте славяно-византийских связей, *Śłowiane i ich sąsiedzi we wczesnym średniowieczu*, Lublin - Warszawa, 2003, 197-206
- GAVRITUKHIN 2004: И. О. Гавритухин, Фибула с городища Супруты. *Europa barbarica. Monumenta studia gothica IV*, 2004, Lublin, 113-115
- GAVRITUKHIN 2005: И. О. Гавритухин, Пражские комплексы с датирующими вещами, *Archeologia o początkach Słowian*. Kraków, 2005, 403-461
- GENČEVA 1998: E. Genčeva, Drobne przedmioty metalowe z odcinku IV w Nowae, *Novensia* 11, 1998, Warszawa, 81-92
- KAZANSKI 1994: М. М. Казанский, Могилы алано-сарматских вождей IV в. в понтийских степях. *Материалы по археологии, истории и этнографии Таврии IV*, Симферополь, 1994, 238-256
- KAZANSKI 1999: М. М. Казанский, О балтах в лесной зоне России в эпоху великого переселения народов *Археологические вестни* 6, Санкт-Петербург, 1999, 404-419
- KOROŠEC 1983: P. Korošec, Predjama konec 4 do sredine 5 stoletija, *Arheološki vestnik XXXIII*, 1983, 84-114
- KORZUKHINA 1996: Г. Ф. Корзухина, Клады и случайные находки вещей круга «древностей антов» в Среднем Поднепровье. Каталог памятников, *Материалы по археологии, истории и этнографии Таврии V*, 1996, Симферополь, 352-435, 586-705
- KUKHARENKO 1982: Ю. В. Кухаренко, О Качинской находке V, *Древности эпохи великого переселения народов V-VIII веков*, Москва, 1982, 234-244
- MADYDA-LEGUTKO 1986: R. Madyda-Legutko, Die Gürtelschnallen der Römischen Kaiserzeit und der frühen Völkerwanderungszeit im mitteleuropäischen Barbaricum, *BAR, International Series* 360, Oxford, 1986
- OBLOMSKI 2004: А. М. Обломски, *Острая Лука Дона в древности*, Замятинский археологический комплекс гуннского времени (материалы исследований). Составитель А. М. ОБЛОМСКИ, Москва, 2004
- Od rimljanov do slovanov. Predmeti. Ljubljana, 2001
- PETRU-PETRU 1978: S. Petru-P. Petru, *Neviodunum* (Drново pri Krškem), Katalog najdb. Ljubljana, 1978 Prehistoria ziem polskich. T. V. Wrocław, 1981
- PLATONOVA - SHCHUKIN 2000: Н. И. Платонова – М. Б. Щукин, Странная случайная находка из окрестностей Луги Ленинградской области, *Археологические вестни* 7, Санкт-Петербург, 2000, 178-188
- POLLAK 1993: M. Pollak, *Spätantike Grabfunde aus Favianis/Mantern*, Wien, 1993
- SKRIPKIN 1972: А. С. Скрипкин, Две бронзовые пряжки из Сусловского курганного могильника, *Советская археология* № 2, 1972, 325-326
- SKRIPKIN 1998: А. С. Скрипкин, Материалы Сусловского курганного могильника, *Нижеволжский археологический вестник* 1, Волгоград, 1998, 104-123
- SOMMER 1984: M. Sommer, *Die Gürtel und Gürtelbeschläge des 4. und 5. Jahrhunderts im römischen Reich*, Bonn, 1984
- TABAKOVA-TSANOVA 1981: Г. Табакова-Цанова, Късноан-тичният некропол в местността Стражата край Плевен, *Известия на Националния исторически музей* 3, София, 1981, 102-184
- VÁGÓ – BÓNA 1976: E. Vágó – I. Bóna, *Der spätromische Südostfriedhof von Intercisa*, Budapest, 1976
- VYARGEY 1999: В. С. Вяргей, Помнікі тыпу Прагі-Корчак і Лукі-Райкавецкай. *Археалогія Беларусі* 2, Жалезны век і ранняе сярэднявечча, Мінск, 1999, 317-348, 392-406
- YEGOREYCHENKO 1991: А. А. Егорейченко, Поселение у д. Остров Пинского р-на Брестской области, *Archaeoslavica* 1, Kraków, 1991, 61-82
- YPEY 1969: J. Ypey, Zur Tragweise frühfränkischer Gürtelgarnitur auf Grund niederländischer Befunde, *Berichten van den Rijksdienst voor het Oudheidkundig Bodemonderzoek* 19, 1969, 89-127



South Scandinavian *foederati* and *auxilarii* ?

Thomas Grane

Over the years, various archaeological remains have led scholars to speculate on possible military connections between South Scandinavia and the northern part of the Roman Empire. This paper is an attempt to clarify how this material can be interpreted as such. The evidence for this reinterpretation is admittedly not decisive, but the indications derived are believed to be as strong and weak as other views. Obviously there are no common markers that signal 'Roman military' in the prehistoric material. It is the context of the examined material that is decisive. The individual objects that are crucial to a given interpretation differ greatly depending on the date and circumstances of the find. As long as confirmed knowledge of these matters is as scarce, as is the case, we must, as archaeologists and historians, attempt to challenge the traditional theories and break out of self-reassuring work-patterns. Hopefully, this attempt can provoke new ideas and generate alternative interpretations to old ones.

Two groups of material will be presented. One consists of a number of graves from Denmark spread out both geographically and chronologically. This group is labelled *foederati*. These graves represent diplomatic contacts, through which the Romans sought allies in the backwaters of Germania. Another military contact was formed by individual Germanic warriors, who were employed as *auxilarii* in the Roman army. That is the label of the second group, which consists of finds from the *castella* at Zugmantel and Saalburg in the Taunus Mountains. These finds are indications of a Scandinavian presence on the *limes*. Here a high percentage of Germanic *fibulae* and ceramics indicate that a Germanic population was closely integrated among the occupants of the *castella* and *vici* in certain periods.

FOEDERATI

The matter of Scandinavian tribes and warriors forming alliances with the Romans is not dealt with easily. The literary sources have left us nothing substantial to work with, but there are some archaeological indications that such relations might have existed, although such is the nature of the evidence that a number of hypotheses concerning the archaeological material can be made.

The following paragraphs concentrate on certain grave finds as indications of military-political connections between the Germanic nobility and the Romans. Material from a selection of six graves will be presented; the Hoby and Hedegård A 4103 graves dated to the beginning of the 1st century AD, Juellinge grave 4 from the turn of the 1st century AD, Brokær grave 1878 of the middle of the 2nd century AD and finally Himlingøje graves 1828 and 1978-1 from the beginning of the 3rd century AD (Fig. 1). These six graves are chosen as case studies for their chronological and geographical diversity. They are also chosen for the diversity in archaeological remains that function as markers of the diplomatic contacts.

THE PRINCELY GRAVE FROM HOBY ON LOLLAND

The Hoby grave is dated to the period B1a, which is the time from the birth of Christ to 40 AD¹. This is the beginning of the Early Roman Iron Age, when Roman items began to appear more regularly in Germanic graves. Most of the items belong in the banquet and drinking sphere. In the Hoby grave, a c. 30 year-old man had been laid to rest richly furnished with gifts of gold, silver and bronze, as well as an almost intact Roman banquet set of eight pieces (Fig. 2). Only a kratér was missing for the set to be complete. The most spectacular pieces are two silver cups of the finest Augustan craftsmanship. The cups are ornamented with scenes from the Iliad made in relief, and both have a maker's inscription, *Chirisophos epoi*, and weight specifications. On the bottom the name Silius is incised (Fig. 3). This name is believed to be that of the owner. It is a name that is known to us through Tacitus². Caius Silius was the commander of the Upper Rhine army from AD 14-21, and as such participated in the punitive campaigns led by Germanicus in AD 14-16³. Several factors make this grave interesting such as the inscription naming a high ranking Roman officer, the richness by far exceeding any other contemporary find, and the fact that the banquet set was almost complete. There would have been three different ways for the items to reach Lolland, trade, booty or gifts. At this early stage trade seems the most unlikely. Two things speak against this. As regular

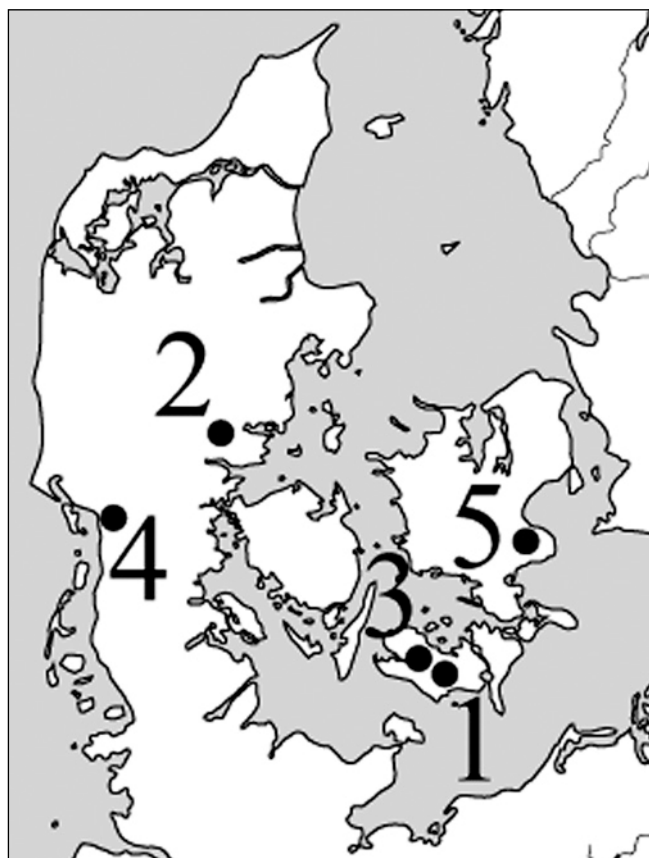


Fig. 1: Map of sites with graves mentioned in the text.
1: Hoby. 2: Hedegård. 3: Juellinge.
4: Brokær. 5: Himlingøje.

trade objects it seems probable that the assemblage would have been broken up. Furthermore, it is improbable that the property of a wealthy Roman, be it the one we know of or someone else, would appear as a trade object. A suggestion that this happened after the fall and suicide of Silius in AD 24 does not appear realistic⁴. The Hoby prince could have acquired the set as booty, had he fought with the Cherusci against the Romans. However, to have had the luck not only to get near the headquarters of the commander of four legions and auxiliaries, but indeed raiding it does somehow not seem realistic either. The last and most probable possibility is that Silius gave the banquet set as a diplomatic gift forming an alliance with a Germanic prince, who could be of use to the Romans either during the campaigns or simply as an ally behind the enemy⁵. An additional sign of contact between Hoby and the Roman Empire is an earlier grave dated to the transition from Celtic to Roman Iron Age around the birth of Christ⁶. Here a Roman bronze vessel constituted the urn of a cremation containing remains of a La Tène sword scabbard, which also points to contacts with the South. Perhaps the grave belonged to the father of the Hoby prince.



Fig. 2: The Hoby grave find. Photo: The National Museum of Denmark/Lennart Larsen

HEDEGÅRD GRAVE A 4103 FROM EASTERN JYLLAND

The gifts in this cremation grave were at least as valuable as those of the Hoby grave. However, apart from some pottery and bronze items, two lance heads and one Roman bronze platter, it was furnished with a highly unusual gift, a *pugio* (Fig 4)⁷. This kind of Roman military dagger was used in the first half of the 1st century AD. Based on the pattern of the ornamented sheath, this particular *pugio* belongs to the Dunaföldvar type, which was the earliest type. Only two other *pugiones* have been found outside the Roman Empire. One is from Ilischken near Kaliningrad and the other is from Ocnita in Romania, both part of what the Romans called Scythia⁸. Unlike, for instance, the Roman sword, which is often found in Germanic contexts, the *pugio* was closely and singularly connected to the Roman military. That the Hedegård dagger is the only one found in a Germanic context indicates that Germanic warriors could find little use for *pugiones* coming across them, as they would have, when Roman troops occasionally lost them. That also speaks against a scenario where the *pugio* was handled as

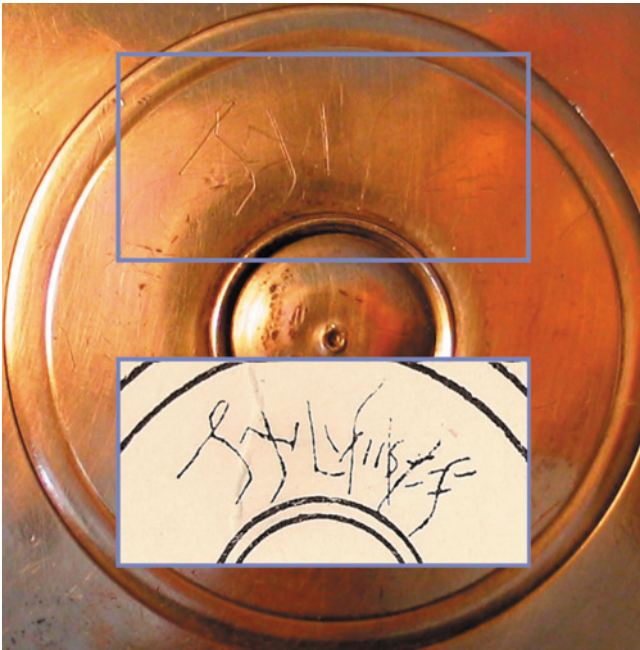


Fig. 3: The name 'Silius' inscribed on the bottom of one of the Hoby cups. After FRIIS JOHANSEN 1923: 130/Photo: Lisbeth Imer.



Fig. 4: Hedegård grave A 4103. Pugio of the Dunaföldvár type. Photo: Museum Sønderjylland/Steen Hendriksen.

a trade object. Following this line of thought the presence of this *pugio* in a grave indicates a connection between the deceased and the Roman army. If we should dare to connect this dagger to historically known events, its owner might have served under Tiberius as an *auxiliarius*. As such he could have participated in the naval expedition in AD 5 to the Cimbrian Promontory, having knowledge of otherwise unknown territory. As at Hoby, there are earlier links to the Romans at Hedegård. Three graves from the end of the 1st century BC contained high quality Roman bronze vessels⁹.

JUELLINGE GRAVE 4 ON LOLLAND

This woman's grave belongs to a larger group of richly furnished graves from the period AD 70-150¹⁰. The grave gifts consisted of a large number of gold, silver, bronze, glass and bone objects. Six Roman vessels had been deposited, four of bronze and two of glass. As such this grave is not much different from the rest of the group, if it were not for the type of glass vessels. A glance at a distribution map for this type of ribbed glass bowl shows that outside the Roman Empire it is found at very few places (Fig. 5). Outside the Empire apart from at Juellinge this type is found just on the other side of the Rhine opposite Cologne and on the coast of the Black Sea. There are several possible explanations for this. Either it is pure coincidence that other examples have not been found, something we can do very little with, or it is a result of a direct contact between the Romans and a princely family on Lolland.

BROKÆR GRAVE 1878

This cremation grave dated to the beginning of the second half of the 2nd century AD was very poorly preserved, but enough was left to identify the grave gifts in what is one of the richest graves from Iron Age Denmark¹¹. It included a ring-pommel sword, a chain mail tunic, spurs, a gold fingering, two ornamented silver beakers, two drinking horns and eight or nine Roman bronze vessels and one of silver. The ring-pommel sword, originally a Sarmatian type of cavalry sword, was copied by the Romans and used for a similar purpose from the middle of the 2nd century AD to the beginning of the 3rd century¹². The sword from Brokær was believed by M. Biborski to be a Germanic copy as it lacked the obligatory rivet hole¹³. However, X-ray pictures have later shown otherwise¹⁴. Only c. 25 ring-pommel swords have been found outside the Roman Empire. Apart from the remains of four or five swords from the war booty sacrifice in the Vimose bog on Fyn those found in a Germanic context are mostly from grave



Fig. 5: Distribution map of ribbed glass bowl from Juellinge grave 4. After JENSEN 2003, 357.

contexts, as either single or closed grave finds (Fig. 6)¹⁵. The graves are all concentrated in the Elbe area, except for the example from Brokær. K. Raddatz interpreted the ring-pommel swords from these graves as booty from the Marcomannic wars during the reign of Marcus Aurelius (AD 161-180)¹⁶. But when we look at the grave contexts significant differences appear between the Elbe graves and Brokær (Fig. 7). In the Elbe graves, the main feature is the weaponry, with a sword, shield and either lance or spear if not both, indicating the warrior status of the deceased. Apart from a gold finger ring here and a fibula there, no other status markers are present. These are not rich graves. In Brokær 1878, on the contrary, while there is only a sword, there is in addition a chain mail. In about half the graves spurs indicate a horseman. The most apparent difference is the complete lack of Roman imports in the Elbe graves. Thus, the Brokær grave is unique, being the only example, where the sword is combined with Roman imports. Raddatz explains this by stating that weaponry and imports reached the Germanic area by different means. B. Rasmussen believes that Brokær could be seen in the light of both war booty and trade. The environment of Brokær was perfect for raising cattle and it was situated at the mouth of a major west-east trade

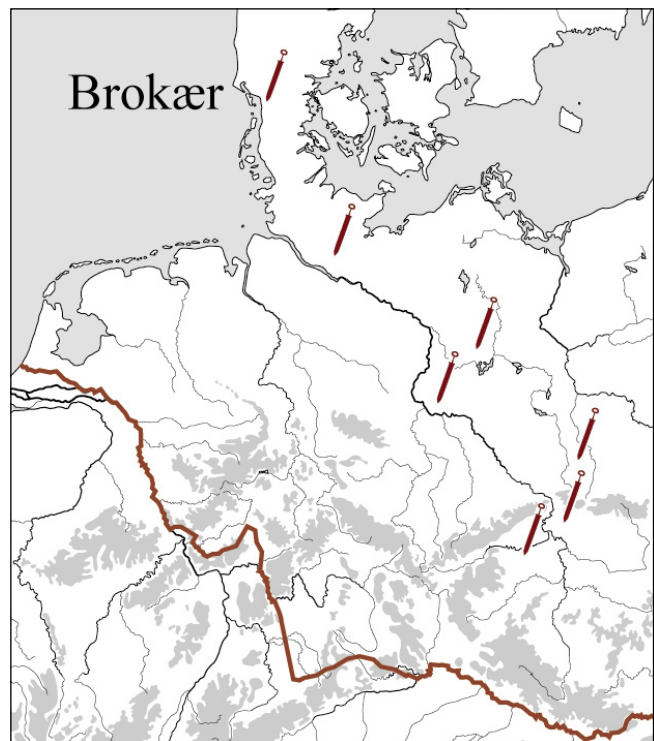


Fig. 6: Distribution map of Ring pommel swords found in graves in the western part of the northern Barbaricum. B: Brokær. After BIBORSKI 1994 and RASMUSSEN 1995.

	Hamfelde 302	Hamfelde 403	Hamfelde 665	Hohenferchensar	Malente-Krummsee 79	Brokær 1878	Kennitz 455	Hamfelde 277	Hamfelde 430	Hamfelde 508
Ring-pommel sword	x	x	x	x	x	x	x	x	x	x
Lance	x	x	x	x	x			x	x	x
Spear (javelin)	x		x		x					
Shield	x	x	x	x	x		x	x	x	
Chain mail						x				
Spurs	x	x		x		x				
Strap fitting/buckle	x	x	x	x		x				
Scissors	x	x	?	x	x	x			x	
Knife	x	x	x	x	x	x			x	x
Pottery	x	x		x			x			
Comb				x		x				
Awl					x	?				
Needle	x					x				
Whetstone				x						
Fibula			x							
Gold finger ring				x		x				
Drinking horn		x				x				
Silver beakers						x				
Roman Import						x				

Fig. 7: Grave contents of graves with ring-pommel swords. After RASMUSSEN 1995, 85.

route, the River Kongeåen at the north end of the Wadden Sea. It is not unthinkable that the locals traded hides or perhaps even live cattle with the Romans¹⁷. Only a few hundred kilometres south of Brokær, at Tolsum in the north-western corner of the Netherlands in the province of Friesland, a writing tablet with a trade contract was discovered. The contract concerned the sale of oxen by a local Friesian farmer to a group of Roman soldiers on the 9th of September 116 AD¹⁸. Trading connections could also indicate relations opposite to those of the Elbe warriors. The Brokær prince could be a Roman ally, who also prospered economically through this relation. Like Hedegård, some graves dated to the preceding period hold Roman bronze vessels¹⁹.

HIMLINGØJE GRAVE 1828

The cemetery at Himlingøje on Sjælland dated from the middle of the 2nd to the end of the 3rd century AD represents the earliest of the Germanic power centres from the Late Roman Iron Age. This centre had strong connections to the Romans, as the distribution pattern of Roman tableware in Scandinavia indicates that it was funnelled through Himlingøje²⁰. This and the following grave are dated to the first half of the 3rd century

AD. When the grave complex was discovered in 1828, some of the first finds to appear were two silver beakers with gilt ornamental bands (Fig. 8)²¹. Other grave gifts were Roman tableware of bronze and glass and spectacular Germanic gold arm and finger rings. The ornaments on the bands consist of various animals as well as human figures holding ring-pommel swords. The choice of elements could indicate a hunting scene, but as the sword is not a hunting weapon that does not seem likely. Furthermore, a close look at the animals depicted would rather suggest they are domestic and not wild. One suggestion is that the scenes represent warriors at rest looking at and pondering over their worldly riches, among them perhaps chicken, a Roman innovation²². Like the Brokær sword, the ring-pommel sword motif on the beakers has been connected to the Marcomannic wars²³. Given the status value of these beakers and the strong link between Himlingøje and the Romans starting at the time of these wars, the motif could very well indicate an ancestral participation on the Roman side that has entered the local myth.



Fig. 8: Himlingøje grave 1828. Silver beaker with gilt ornamented band. Photo: National Museum of Denmark/Lennart Larsen.

HIMLINGØJE GRAVE 1978-1 (1978-35)

Grave 1978-1 is another richly furnished grave, but in this case the gifts, of which there are plenty of gold, silver and glass, are not of particular interest. What makes this grave special is the skeletal material, both human and animal. The deceased, a male aged 18-25 had been carved up prior to inhumation. At the time of burial an attempt to position the bones correctly in the grave had failed, as some larger bones had been placed upside down and inside out, though at the right location, while some smaller bones had just been put in the grave near the body (Fig. 9). Several bones had been deposited in a manner that showed that not all parts had been completely skeletonized, though. The only pathological trace was a fractured rib on the right side of the chest²⁴. With him the deceased had his dog, of which an almost complete skeleton remained. It was found outside and on top of the grave, where the find of dog excrement indicate that it was

alive at the funeral. It was a large, rather old dog probably of either the Maremma or Komondor type²⁵. The Komondor, a Hungarian sheep dog, came to Europe from China sometime in the 10th century AD, while the Maremma, an Italian sheepdog, dates back to the birth of Christ²⁶. With the date of the type secure, it is more likely to have been a Maremma type. Considering the status of the grave, the central grave of three in one mound, and the age of the deceased he must have been a relation of the ruler, perhaps a son or nephew. One reason for carving him up could be to facilitate transport of the body in order to bring it home for proper burial at the family grave site, suggesting he died abroad! Considering his injury he might have fallen from his horse and died from inflammation. Where he had been is of course impossible to know, but not to guess at. Without calculating the time for a body to decay combined with possible daily travel distances by land or sea under various seasonal influences, it should

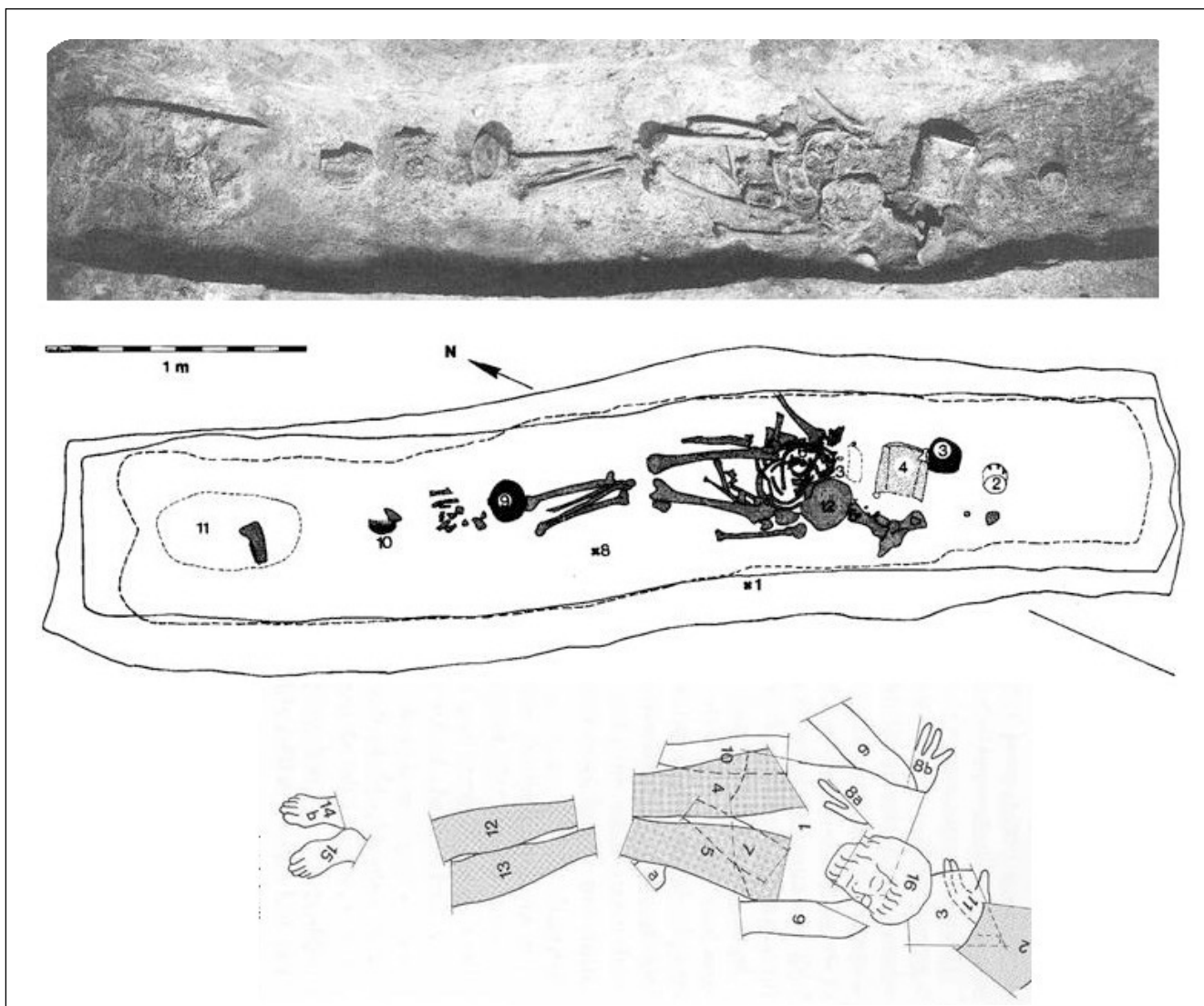


Fig. 9: Himlingøje grave 1978-1. Position of the bones of the buried male. After LUND HANSEN 1995, 127, 256.

suffice to conclude that he must have been so far away that it was easier to bring him home in pieces, but not so far that he had time to decompose completely. One suggestion could be that he had been somewhere at the *limes*. Could he have been serving as a Roman officer, or was he perhaps functioning as an envoy on a trip to Colonia Agrippinensis for his family? Apart from the overall relations between the Himlingøje family and the Romans, the link in this particular grave is the old Italian sheepdog²⁷. Perhaps it was a gift to the prince, when he was a boy.

At the Himlingøje site the earliest graves are dated to the second half of the 2nd century AD. It was a complex consisting of five huge barrows. Two of these were richly equipped with Roman bronze and glass vessels, as well as remains of weaponry and spurs. There were also the remains of two silver beakers, but as the graves contained cremations the constitution of the gifts was poor. One barrow was empty, possibly being a cenotaph, while another had been ploughed over, which is why the dating is more uncertain for these two²⁸.

AUXILIARII

The second group of material concerns the possible presence of Scandinavian mercenaries at the *limes*. As a case study for a Germanic presence, the Taunus *castella* have proven useful. The excavations at Saalburg and Zugmantel have both revealed interesting material, while the outcome of excavations at the fortlets situated between the two, Feldberg and Alteburg-Hefftrich, has been minimal. In 1972, A. Böhme examined the *fibulae* from Saalburg and Zugmantel²⁹. The largest group was the crossbow *fibula* with a high needle holder, Almgren VII. Of this group she identified 49, out of which 15 examples belong to the series 3³⁰. This type of *fibula* has its spread from the Lower Elbe area and north with a specific concentration on the Danish islands (Fig. 10). They are, for instance, represented in the prominent graves at Skovgårde and Himlingøje³¹. A few have been found in the Rhine-Weser area. From Böhme's list of Almgren VII in a provincial Roman context, it is clear that although they are not extremely rare, there are only one or two examples found in each place, with the exception of Zugmantel (42), Saalburg (7) and Butzbach (8)³². Interestingly Butzbach is the next large *castellum* east of Saalburg. From this we can deduce that whoever brought the *fibulae* were more or less placed within the same area of the *limes*. The Almgren VII types are dated to the end of the 2nd and the 3rd century AD³³. In 1995, B. Beckmann gave an overview of Germanic objects at the Taunus *limes*. Here he recapitulated Böhme's results concerning the *fibulae*,

producing a map based on these results (Fig. 10)³⁴. The map shows the spread of the three main groups of Germanic *fibulae*, Almgren V 141, Almgren V 101 and Almgren VII, as well as series 3, the largest group of Almgren VII. What is apparent from this map is that the areas of origin are not in the immediate vicinity of the Roman border. It is rather the Lower Elbe area and north. Beckmann also examines the research on Germanic pottery in this area³⁵. In 1995, this subject had hardly been touched since R. von Usler's work in the 1930s³⁶. From von Usler's work it was possible to conclude that these *castella* had had a Germanic presence for a long and unbroken duration of time, and that the Germanic pottery resembled that of the West Germanic area, i.e. the Rhine-Weser area³⁷.

In 2000, D. Walter published a dissertation on the Germanic pottery from the area between the River Main and the Taunus *limes*³⁸. The definition of Germanic pottery is that it is made in a Germanic tradition basically in the style used in the Rhine-Weser area, i.e. the pottery is generally locally made³⁹. For Zugmantel the conclusion based on the pottery, is that Germanic settlers arrived during the reign of

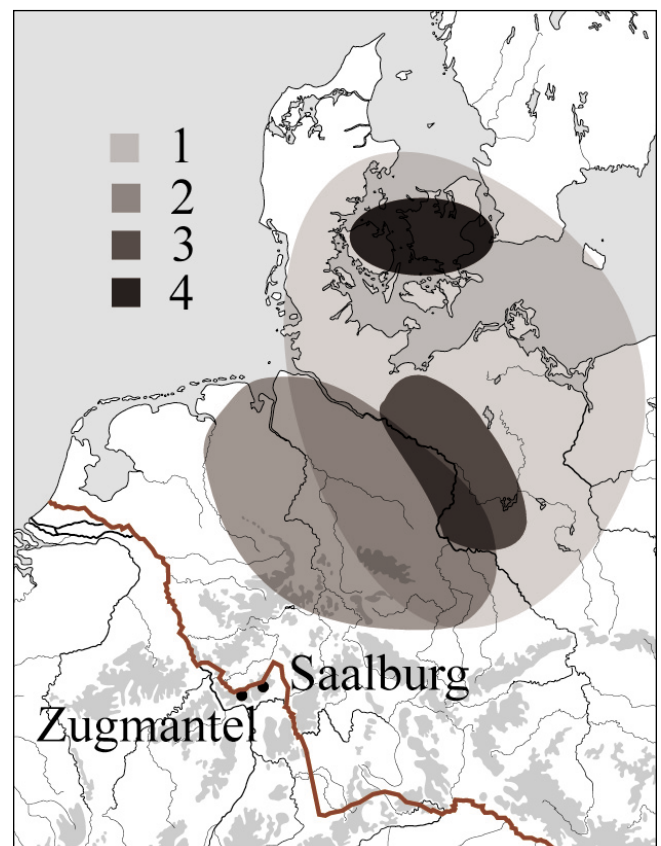


Fig. 10: Distribution map of Germanic *fibulae*. 1: Almgren VII. 2: Almgren V 141. 3: Almgren V 101. 4: Almgren VII, series 3. After BECKMANN 1995, 411.

Commodus or later most likely at the request of the Romans. Walter sees the settlement in relation to the keeping of live-stock. This presence continued throughout the first third of the 3rd century AD⁴⁰. With regards to Saalburg, the presence is more obscure. This could be due to the early excavation date of the site. The pottery is roughly and insecurely dated to the end of the 2nd and the 3rd century AD. The pottery possibly derived from a Romanized Germanic group coming from outside the Roman Empire⁴¹. In 1988, S. Sommer suggested that the *vicus* at Zugmantel had a 'Germanic quarter' based on the find location of the Germanic pottery⁴². This suggestion was rejected by Walter, who pointed out that the Germanic pottery at both Zugmantel and Saalburg was found among Roman pottery, thus indicating a mixed habitat rather than a sort of ghetto⁴³. Furthermore, the relation between the *terra sigillata* and the Germanic pottery was 3,1:1, indicating the presence of quite a few people of Germanic origin. For Saalburg such a comparison is not possible, as the find situation is not entirely clear. Although the amount of Germanic pottery compared to Zugmantel is considerably lower (50 compared to 1300 fragments), Saalburg has produced more *fibulae* and coins. This is probably partly due to the excavators' concern for 'museum worthy' objects, thus neglecting the 'unspectacular and primitive' Germanic pottery⁴⁴.

Walter also looked at other Germanic remains from this area. One group of remains was the *fibulae*. She pointed out that the percentage of Germanic *fibulae* for the late 2nd and 3rd century AD is 10 for Zugmantel and 5 for Saalburg. As stated above, most Germanic types from this period originated in the Elbe area, while only Almgren VII, Kuchenbuch series 4 had a concentration as far north as Denmark and south Sweden. This type, she states, has been found at several locations in the Rhine-Weser area. As the Elbe seems to be the primary area of origin of the main body of *fibulae*, she asked whether they came from a different Germanic population than the pottery, since only a few examples have been found in the Rhine-Weser area. To answer this question she looked for support from E. Cossack and D. Rosenstock. They explain a general lack of fibula finds with burial customs. As no such items are found in graves in contrast to the Elbe area a different pattern emerges as metal objects are often rare finds at settlements. Walter's conclusion to this problem is therefore, that the *fibula* spread-pattern of the Rhine-Weser area would have been quite similar to that of the Elbe area, a conclusion she also finds in the work of M. Kempa, who has examined the 'elbgermanischer Armbrustfibeln mit hohem Nadelhalter

aus Rhein-Wesergermanischen Zusammenhängen'⁴⁵. Thus, Walter sees a geographical overlap of the two groups of material. Beckmann has another suggestion for the different geographical areas of origin. In his article he sees a number of interesting features. First, the Germanic evidence shows us that movement over larger areas was done by individuals or smaller groups and not only entire tribes. As the production of pottery was handled by women, they travelled as well. But whether the limitation of pottery styles to that of the Rhine-Weser area meant that the women only came from that area, which is just north of the *limes*, Beckmann mentions the Chatti several times, is difficult to answer⁴⁶. Walter correlates the find groups by an assumption that a *fibula* pattern, which is undetectable at the present state of research, in one area, is more or less similar to the neighbouring area. That is a difficult argument to work with. She also sees the advent of a Germanic population in connection with a civil sphere, where they are invited to raise cattle for the Romans. The reason is that the location of these castella provides her with no other obvious purpose such as for instance trade or transport⁴⁷. Others, like Beckmann and Sommer, see *auxilarii* rather than cattle herders in the newly arrived Germanic population⁴⁸. One way to combine Rhine-Weser women with Elbe men would be to suggest that Germanic mercenaries coming to serve the Romans found local Germanic women to marry.

But let us return to the South Scandinavian aspect. Both Böhme and Beckmann mention this connection as a possibility. Walter, on the other hand, although she mentions that Kuchenbuch 4 is also to be found in South Scandinavia, stresses the fact that this type is found in the Rhine-Weser area. Another relevant point is that the material consists only of 15 examples, a very small amount to build theories on. But all in all we know very little about mercenaries coming from Barbaricum. We have no complete auxiliary units formed of mercenaries from outside the Empire stationed anywhere. At Saalburg and Zugmantel two cohorts were stationed in this period. At Saalburg it was the *cohors II Raetorum civium Romanorum equitata* and at Zugmantel, a *numerus Treverorum* probably turning into the *cohors I Treverorum equitata* in AD 223. These units would nominally be c. 500 strong. In the last phase the two units would be of equal size in theory. The size of the *castella*, however, were 3,2 and 2,1 hectares respectively for Saalburg and Zugmantel, the last being the smallest cohort fort in Germania Superior⁴⁹. Obviously we have no way of knowing whether other units were attached as well or for instance whether a *centuria* or a few *contubernia* might have consisted of Germanic mercenaries. However, Austin

and Rankov point the attention towards two 3rd century potsherds found in the *vicus* of Zugmantel, one with the graffito 'EXPLO' the other just with 'EX', the last indicating several names⁵⁰. This they suggest indicates that an *exploratio* unit was stationed here at this time. The *exploratores* were special units with the task of seeking cross-border intelligence, i.e. they acted as scouts. They were initially developed in the Roman Germanic provinces by hiring locals⁵¹. These were small units, whose members were detached from other units. By their ethnic origin, Germanic warriors would be very well suited for the assignment of patrolling the native borderlands. Interestingly such a unit, the *exploratio Halic(ensis) Alexandriana*, was billeted in the reign of Severus Alexander (AD 222-235) at the small *castellum* of Feldberg, one of the two situated between Zugmantel and Saalburg⁵².

The chronological setting for both pottery and *fibulae* starts after the Marcomannic wars. As stated above, a particular connection between the Roman Empire and Sjælland can be followed from the time of these wars. With this in mind, one scenario could be that an arrangement was made between the Romans and a group of Germanic warriors from Sjælland. Instead of returning home after the war, for which they had signed up, they stayed for a period of time at certain *castella* in the Taunus region. The reason could be that the war had created an immediate shortage of Roman soldiers in certain units. Obviously such an arrangement could have been made with any group of foreign mercenaries. If as an experiment, we transfer the percentage of *fibulae* to the number of men, i.e. 10 % for Zugmantel and 5 % for Saalburg in this period, there would have been approximately 50 Germanic warriors stationed at Zugmantel and 25 at Saalburg given the nominal value of a cohort. But this calculation presumes that all *fibulae* were worn by men. Naturally it is impossible to come close to any absolute figures, but the fact is that there are Germanic elements in this period that have an area of origin covering most of the north western part of Germania with a concentration both in the Lower Elbe region and on the Danish islands. Thus, for now a possible presence from these regions cannot be disregarded.

CONCLUSION

I have tried to explore the angle of Roman relations, but as stated in the introduction, this obviously does not mean that other angles will not create alternatives. That the evidence is circumstantial is certain, but nothing suggests that such relations did not exist.

Apart from the presence of Roman objects, all but Juellinge grave 4, have one feature in common. They all

have predecessors that have already shown contact to the Empire, whatever that contact might have been. In this group of graves, Hedegård A 4103 is somewhat different for several reasons. There is the uniqueness of the *pugio*, as well as the modesty of the grave goods compared to the other graves. Whereas all others graves are presumed to belong to the highest social class, Hedegård must belong to a lower stratum with no precious metals and only one Roman bronze vessel among the grave gifts. As mentioned the *pugio* shows an affiliation with the Roman army in particular. Although a local prince, he might not have qualified for the position of, say Arminius and his relatives or Maroboduus. Maybe he and his men were attached to a Roman unit, where he might have taken on a prominent position in a special unit like the *exploratores* in the early Roman campaigns. The fact is that the cemetery at Hedegård contained an unusually high percentage of weapon graves from the last period of the pre-Roman Iron Age and the Early Iron Age, i.e. the transition around the birth of Christ (25% compared to usually 7-8%). Among the finds were many La Tène swords and a chain mail tunic of a Gallo-Roman type⁵³. Depending on how one judges the significance of weapon graves, this might be caused by an awareness of the warrior identity in this area due to the Roman conquests of Gallia and Germania. However, it is hard to say if the Romans would have had this kind of impact already in the last century BC.

A feature common to the earlier rich graves from Hoby and Brokær is that they are both the richest graves in the Danish area of their time. This, in itself makes them interesting in this respect. But their primary features concerning military-political relations to the Romans are the 'Silius'-inscription and the ring-pommel sword, rather than their wealth.

The weakest link is the Juellinge grave. The suggestion that this grave represents a relation is solely based on the presence of two unique glass bowls. Of course it is impossible to say whether they do have such significance or not. But no matter what, this is a suggestion that direct contact in this area will most likely indicate a diplomatic and hence a military-political rather than a mere trade relationship. This, of course, touches on the question of the nature of contacts, at least in the first centuries AD. Traditionally, contact is explained in three ways: booty, trade or diplomacy. The vaguest of these is booty. Firm evidence is seen for instance in the South Scandinavian war booty sacrifices or in the hoard finds in the Upper Rhine from the 3rd century AD⁵⁴. Otherwise, it often has a sort of joker position, something that can almost always be mentioned as an alternative. The

last two explanations are mostly seen as alternatives to each other, but probably one was often followed by the other. This could be a result of peace negotiations, e.g. during the Marcomannic wars⁵⁵. The special trade conditions for the Hermunduri mentioned by Tacitus might also be seen in this light⁵⁶. Another possibility is that they developed along side each other.

At Himlingøje, the chronological coincidence of the founding graves and the Marcomannic wars and the monopoly that this family appears to hold on Roman goods for the next many years support the hypothesis that relations existed at the beginning of the 3rd century AD⁵⁷. This is the same period that the same geographical area is related to the *limes*. Though the *fibulae* cannot be linked directly to a military sphere, or to males alone for that matter, the possibility of a South Scandinavian presence is there. An interesting fact is that the garrison shift at Zugmantel in AD 223 from a *numerus* unit to a *cohors* coincides with the approximate period, where the Germanic pottery disappears again⁵⁸. Could this be an indication that the afore-mentioned (possibly partly Germanic) *exploratores* had become obsolete?

NOTES

1. FRIIS JOHANSEN 1923, 119-65; LUND HANSEN 1987, 403.
2. Tacitus, *Annales* 1.31.2.
3. ECK 1985, 3-6.
4. Tacitus, *Annales* 4.18-20; ANDERSSON–HERSCHEND 1997, 13-4.
5. See e.g. KÜNZL 1988, 36-38; WOLTERS 1991, 123, who states this as a matter of fact.
6. MÜLLER 1900, 148-153.
7. MADSEN 1999, 74-83.
8. MADSEN 1999, 74-83; NOWAKOWSKI 1983, 80, 106; THIEL–ZANIER 1994, nr. 138; WATT 2003, 185-186, Fig. 6.
9. MADSEN 1999, 63-74.
10. JENSEN 2003, 356-358; LUND HANSEN 1987, 194 Fig. 130, 403; MÜLLER 1911, 17-30.
11. RASMUSSEN 1995, 58-80.
12. HUNDT 1955, 51-52; RASMUSSEN 1995, 71.
13. BIBORSKI 1994, 90.
14. RASMUSSEN 1995, 72, Fig. 7a.
15. ØRSNES 1970, XX-XXI; PAULI JENSEN 2003, 228; RADDATZ 1961, 26-44. Only five ring-pommels can be accounted for at present.
16. RADDATZ 1961, 41, 54-55.
17. RADDATZ 1961, 40-41; RASMUSSEN 1995, 84-85, 98.
18. BOELES 1951, 129-130, pl. XVI; VOLLGRAFF 1917, 341-352.
19. RASMUSSEN 1995, 42-56.
20. LUND HANSEN 1987, 200-215.
21. LUND HANSEN et al. 1995, 141-143.
22. BRANDT 2005, 12-13.
23. LUND HANSEN et al. 1995, 386-387; STORGAARD 2001, 102-103.
24. LUND HANSEN et al. 1995, 126-128, 162-164, 254-6, 273-274.
25. HATTING 1978, 69-74; JØRGENSEN et al. 2003, 394; LUND HANSEN et al. 1995, 128.
26. www.komondor.org/html/history.html; www.maremmano.com/history.htm
27. STORGAARD 2001, 100.
28. LUND HANSEN et al. 1995, 110-123, 129-130, 193-194.
29. BÖHME 1972.
30. In BÖHME apparently there is a mix up of types, as in the text she refers to Kuchenbuch's series, of which Series 4a and b correspond to Almgren VII Series 3. In the illustration text, however, the group has changed to Alm. VII, ser. 4. Unfortunately this mistake is repeated by Beckmann, who refers to Alm. VII, ser. 4 as equal to Kuchenbuch ser. 4a-b. BECKMANN 1995, 412; BÖHME 1972, 33-35.
31. LUND HANSEN et al. 1995, 154-157; ETHELBERG 2000, 44-50.
32. BÖHME 1972, 33, 65, Fundliste 31. Again there is a discrepancy, as she says, 41 from Zugmantel and 8 from Saalburg, while from the catalogue numbers in the find list the numbers appear to be 42 and 7.
33. BÖHME 1972, 35.
34. BECKMANN 1995, 411-412.
35. BECKMANN 1995, 410-411.
36. von USLAR 1934.
37. BECKMANN 1995, 411; von USLAR 1934, 96.
38. WALTER 2000.
39. WALTER 2000, 14, 197.
40. WALTER 2000, 66-67, 70, 151-152.
41. WALTER 2000, 66, 71, 140.
42. SOMMER 1988, 607-609.
43. WALTER 2004, 127-9, 31.
44. WALTER 2000, 49-50; 2004, 127.
45. COSACK 1979, 14-15; KEMPA 1995, 104, n. 660; ROSENSTOCK 1992, 196; WALTER 2000, 54-56.
46. BECKMANN 1995, 413.
47. WALTER 2000, 66-67, 70.
48. BECKMANN 1995, 413-414; SOMMER 1988, 608. Sommer does this in relation to a new phase of Zugmantel, which he connects to Germanic pottery in the first half of the 2nd century AD, a date that Walter rejects. See WALTER 2000, 152.
49. OLDENSTEIN-PFERDEHIRT 1983, 338-342; FABRICIUS et al. 1937, 9, 36-41; 11, 70-75.
50. AUSTIN–RANKOV 1995, 192; JACOBI 1913, 81, 16, 19; pl. XVI, 16, 19.
51. AUSTIN–RANKOV 1995, 189-195; SPEIDEL 1983, 63-78.

52. CIL XIII 7495, AUSTIN-RANKOV 1995, 192 & pl. 9.
53. MADSEN 1999, 62-63, 83-86; WATT 2003, 186.
54. JØRGENSEN et al. 2003, e.g. KÜNZL 1993.
55. Cassius Dio, 71.15.
56. Tacitus, *Germania* 41.
57. BECKMANN 1995, 412; JØRGENSEN 2001, 13; LUND HANSEN et al. 1995, 385-387; STORGAARD 2001, 102-103, 106.
58. BAATZ 2002, 502.
- BIBLIOGRAPHY**
- ANDERSSON-HERSCHEID 1997: K. Andersson-F. Herscheid, Germanerna och Rom, *Occasional Papers In Archaeology* **13**, Uppsala, 1997
- AUSTIN-RANKOV, B. 1995: N.J.E. Austin-B. Rankov, *Exploratio. Military and political intelligence in the Roman world from the second Punic war to the battle of Adrianople*, London, 1995
- BAATZ 2002: D. Baatz, "Zugmantel". In: D. BAATZ-F. R. HERMANN, (eds.) 2002: *Die Römer in Hessen, (Reprint)*, Hamburg, 2002, 501-504
- BECKMANN 1995: B. Beckmann, Die germanische Funde in den Kastellen des Taunuslimes und ihre Beziehungen zum Fundgut in der Germania Libera. In: U. LUND HANSEN, 1995 & al.: *Himlingøje - Seeland - Europa*, (Nordiske Fortidsminder serie B 13), København, 1995, 410-413
- BRANDT 2005: L.O. Brandt, *Markomannerkrigene-med dansk deltagelse?*, København, Unpublished. 2005
- BIBORSKI 1994: M. Biborski, Typologie und Chronologie der Ringknaufswerter. In: H. FRIESINGER, et al. (eds.), *Markomannenkriege. Ursachen und Wirkungen. VI. Internationales Symposium "Grundprobleme der frühgeschichtlichen Entwicklung im nördlichen Mitteldonauegebiet"* Wien 23. - 26. November 1993, Brno, 2005, 85-97
- BOELES 1951: P. C. J. A. Boles, *Friesland tot de Elfde Eeuw, 's-Gravenhage* (Den Haag), 1951
- BÖHME 1972: A. Böhme, Die Fibeln der Kastelle Saalburg und Zugmantel, *Saalburg Jahrbuch* **29**, 1972
- COSACK 1979: E. Cosack, *Die Fibeln der Älteren Römischen Kaiserzeit in der Germania Libera. Teil I Armbrustfibeln, Rollenkapfenfibeln, Augenfibeln*. Göttinger Schriften zur Vor- und Frühgeschichte **19**, Neumünster, 1979
- ECK 1985: W. Eck, Die Statthalter der germanischen Provinzen vom 1.-3. Jahrhundert, *Epigraphische Studien* **14**, Bonn, 1985
- ETHELBERG et al. 2000: P. Ethelberg, Skovgårde. Ein Bestattungssplatz mit reichen Frauengräbern des 3. Jhs. N.Chr. auf Seeland, *Nordiske Fortidsminder serie B* **19**, København, 2000
- FABRICIUS et al. 1937: E. Fabricius, *Der Obergermanisch-Raetische Limes des Roemerreiches*. Abteilung B Band II 1, Berlin, 1937
- FRIIS JOHANSEN 1923: K. Friis Johansen, Hoby-fundet, *Nordiske Fortidsminder II, 1-3*, København, 119-65. *Beziehungen zum römischen Reich, (Quellen zum alten Geschichte bis zum Jahre 238 n. Chr.)*, Zweiter Teil, Darmstadt, 1923
- HATTING 1978: T. Hatting, Zoologisk beskrivelse af dyrekoglerne fra sb. 16". In: Jørgensen, M.S. et al., Himlingøje-grav-pladsens høje, *Antikvariske Studier* **2**, 1978, 47-80, 69-74
- HUNDT 1955: J.-Hundt H., Nachträge zu den römischen Ringknaufschwertern, Dosenortbändern und Minia-turschwertanhängern, *Saalburg Jahrbuch* **14**, 1955, 50-59
- JACOBI 1913: L. Jacobi, Kastell Zugmantel. Einzelfunde, *Saalburg Jahrbuch* **II**, 1913, 41-105
- JENSEN 2003: J. Jensen, Danmarks Oldtid - Ældre Jernalder, København, 2003
- JØRGENSEN 2001: L. Jørgensen, The Warriors, Soldiers and Conscripts of the Anthropology in Late Roman and Migration Period Archaeology. In: B. STORGAARD, (ed.), *Military Aspects of the Aristocracy in Barbaricum in the Roman and Early Migration Periods*. Papers from an International Research Seminar at the Danish National Museum, Copenhagen, 10-11 December 1999, *Studies in Archaeology & History vol. 5*, 2001, København, 9-19
- JØRGENSEN et al. (eds.) 2003: L. Jørgensen, *The Spoils of Victory - The North in the shadow of the Roman Empire*, København, 2003
- LUND HANSEN 1987: U. Lund Hansen, Römischer Import im Norden, *Nordiske Fortidsminder serie B* **10**, København, 1987
- LUND HANSEN 1995: U. Lund Hansen et al. Himlingøje - Seeland - Europa, *Nordiske Fortidsminder serie B* **13**, København, 1995
- KEMPA, M. 1995: M. Kempa, Haffen. Eine vor- und frühgeschichtliche Siedlung im Altkreis Rees, *Rheinische Ausgrabungen Band* **39**, Bonn, 1995
- KÜNZL 1988: E. Künzl, Germanische Fürstengräber und römisches Silber, *Lauenburgische Akademie für Wissenschaft und Kultur* **1**, 1988, 21-53
- KÜNZL 1993: E. Künzl, *Die Alamannenbeute aus dem Rhein bei Neupotz: Plünderungsgut aus dem römischen Gallien*, Mainz, 1993
- MADSEN 1999: O. Madsen, Hedegard - a rich village and cemetery complex of the Early Iron Age on the Skjern River. An interim report, *Journal of Danish Archaeology* **13**, 1996-97, 57-93
- MÜLLER 1900: S. Müller, Et fund fra overgangen mellem den førromerske og den romerske tid, *Årbøger for nordisk oldkyndighed og historie* **15**, 1900, 148-53
- MÜLLER 1911: S. Müller, Juellinge-fundet og den romerske periode, *Nordiske Fortidsminder* **II**, 1-3, 1911, København, 1-54
- NOWAKOWSKI 1983: W. Nowakowski, Rzymskie importy przemysłowe na terytorium zachodniobałtyjskiego kręgu kulturowego, *Archeologia* **XXXIV**, 1983, 63-106

- OLDENSTEIN-PFERDEHIRT 1983: B. Oldenstein-Pferdehirt, Die römischen Hilfs-truppen nördlich des Mains. - Forschungen zum obergermanischen Heer I, *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz*, **30**, 1983, 303-348
- JENSEN 2003: P. Jensen, The Vimose find. In: L. JØRGENSEN, *et al.* (eds). *The Spoils of Victory - The North in the shadow of the Roman Empire*, København, 2003, 224-238
- RADDATZ 1961: K. Raddatz, Ringknaufschwerter aus germanischen Kriegergräbern, *Offa* **17/18**, 1959/61, 26-55
- RASMUSSEN 1995: B. Rasmussen, Brokær. Ein Reichtumszentrum der römischen Kaiserzeit in Südwestjütland, *Acta Archaeologica* **66**, 1995, 39-109
- ROSENSTOCK 1992: D. Rosenstock, Kulturverbindungen Mainfrankens während der römischen Kaiserzeit im Spiegel der Fibelfunde. In: E. SPEITEL, (ed.), *Beiträge zur keltisch-germanischen Besiedlung im Mittelgebirgsraum. Internationales Kolloquium 15. bis 17. Mai 1990 in Weimar, Weimarer Monographien zur Ur- und Frühgeschichte Band 28*, 1992, Stuttgart, 184-199
- SOMMER 1988: S. Sommer, Kastellvicus und Kastell. Untersuchungen zum Zugmantel im Taunus und zu den Kastellvici in Obergermanien und Rätien", *Fundberichte aus Baden-Württemberg Band 13*, 1988, 457-707
- SPEIDEL 1983: M. P. Speidel, Exploratores. Mobile élite units of Roman Germany, *Epigraphische Studien 13, Sammelband*, Köln, 1983, 63-78
- STORGAARD 2001: B. Storgaard, Himlingøje - barbarian empire or Roman implantation? In: B. STORGAARD, (ed.), *Military Aspects of the Aristocracy in Barbaricum in the Roman and Early Migration Periods. Papers from an International Research Seminar at the Danish National Museum, Copenhagen, 10-11 December 1999, Studies in Archaeology & History vol. 5*, 2001, København, 95-111
- THIEL-ZANIER 1994: A. Thiel-W. Zanier, Römische Dolche - Bemerkungen zu den Fundumständen, *Journal of Roman Military Equipment Studies* **5**, 1994, 59-81
- VON USLAR 1934: R. von Uslar, Die germanische Keramik in den Kastellen Zugmantel und Saalburg, *Saalburg Jahrbuch* **8**, 1934, 61-96
- VOLLGRAFF 1917: G. C. W. Vollgraff, De Tabella Emptionis Aetatis Traiani Nuper in Frisia Reperta, *Mnemosyne* **45**, 1917, 341-352
- WALTER 2000: D. Walter, *Germanische Keramik zwischen Main und Taunuslimes. Untersuchungen zur Rhine-Wesergermanischen Gefäßen in römischen Siedlungen des Rhein-Main Gebietes, Freiburger Beiträge zur Archäologie und Geschichte des ersten Jahrtausends, Band 3*, 2000, Rahden
- WALTER 2004: D. Walter, Germanenviertel am Limes? Lagebeziehungen germanischer Siedlungen zu römischen Kastellen und Kastellvici. In: E. SCHALLMAYER, (ed.), *Limes Imperii Romani. Beiträge zum Fachkolloquium "Weltkulturerbe Limes", November 2001 in Lich-Arnsburg*, (Saalburg-Schriften 6), Bad Homburg v. d. H., 2004, 127-134
- WATT 2003: M. Watt, Våbengravene - regionale forskelle inden for våbentyper og gravskik i Danmark, 100 f.Kr. - 400 e.Kr. In: L. JØRGENSEN, *et al.* (eds), *The Spoils of Victory - The North in the shadow of the Roman Empire*, København, 2003, 180-193
- WOLTERS 1991: R. Wolters, Der Waren- und Dienstleistungsaustausch zwischen dem Römischen Reich und dem Freien Germanien in der Zeit des Prinzipats - Eine Bestandsaufnahme - Teil 2, *Münstersche Beiträge zur antiken Handelsgeschichte vol. 10.1*, 1991, 78-131
- ØRSNES 1969: M. Ørsnes, Forord, Bind III. In: C. ENGELHARDT, *Sønderjyske og Fynske Mosefund. Bind I-III*, Reprint, København, V-XXIII, 1969



Fig. 2: Silver coin from Turiaso and Ikalesken show two Celtiberian Horsemen



Fig. 3: Ases from Bilbilis and Segovia. Celtiberian Horseman



Fig. 4: Pompey Magnus Hispania with caetra and two Spears



Fig. 5: Galba's Denarius

Fig. 6: Caetra from nw Mints



Fig. 7: Quinari^{us}–Emerita Augusta



Fig. 8: Denarius–Emerita Augusta

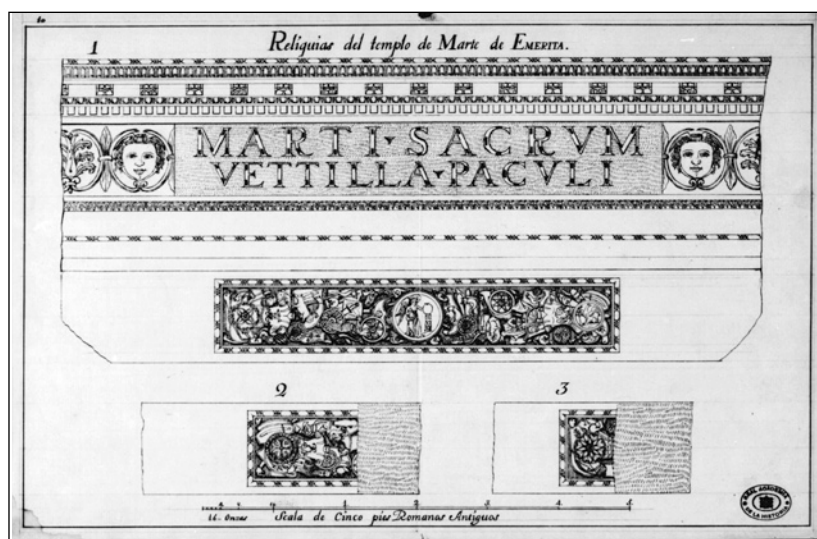


Fig. 9: XIXth century illustration from the Temple of Mars Emerita Augusta

Strabo's *Geographica*. In Book 3, which is dedicated to Hispania, he describes the peoples from the North of the Iberian Peninsula; he gives us interesting information about the Cantabrians and their customs and also about their fighting against Rome.

Some panegyrists and poets, especially Horace, describe Augustus and Agrippa as "tamers" of the fierce people from the north. Theirs is obvious propaganda in favor of the Emperor and his family. Similarly, Strabo would praise Augustus qualities in his fight against the rude and savage northern people, who "now" could live in peace and enjoy the progress brought by Rome.

During the High Empire, authors such as Suetonius or Tacitus, in some pages of their histories of Rome, remember events related to deeds performed by Romans against Cantabrians and Asturs. Florus' story of the Cantabrian Wars⁹ in *Epitomae historiae romanae*¹⁰ is especially interesting.

Sources dated from the 3rd and 4th centuries AD, although more distant in time, also refer to the Cantabrian Wars. In the 3rd century, we have the valuable chronological account of events written by the Greco-Roman historian Cassius Dio¹¹, who listed the events from the beginning of the war and named the main Roman soldiers who took part in it. The main handicap this source has is the lack of geographical or topographical information. Josephus, Plutarch, Appian of Alexandria, Lucius Ampelius and Jerome also allude to these events¹²; we can also find references in the poetic works of Horace, Crinagoras of Mitelene, Lucanus, Silius Italicus, and Juvenal¹³.

Through all of the late Roman period the memory of the Cantabrian Wars lasted as can be seen in the works of some writers. The Hispanic priest Orosius¹⁴, and Florus as well, shows the deeds of Augustus in Northern Spain, using the data provided by Livy. Orosius presents an apologetic vision of Augustus and his mission of peace—the *Pax Romana*—due to the **Fact** that during his reign Christ was born.

Besides the writings of the authors already mentioned, there are other sources, of an epigraphic nature, that are helpful when studying the development of these wars. Such is the case of the so-called *Fasti Triumphales* or lists of victorious consuls and generals. Thanks to the triumphs *ex Hispania* of the different proconsuls, from 36 to 26 BC, we are able to know the irregular military situation of Hispania at the beginning of the Cantabrian Wars. Some of the contemporary historians state that Rome was already fighting against the tribes of the North and their neighbors, that is against the Vacceos, Cantabrians and Asturs before the official beginning of the war.

Most of the Southern Cantabrian Oppida show remains

that attest to the military conflict between Cantabrians and Romans. The demolished walls in Monasterio, Cildá, or Castro de Santa Marina, the great levels of fire at Castro de Fontibre, Argüeso, Castro de San Julián, or the Roman epigraphs that speak about the war: the Ara from Villabellaco, the *prata legionis*, etc. are clear examples of this.

The chronology of conflict that leads to the final conquest of the North of the Iberian Peninsula by the Romans is as follows:

- 29 BC Statilius Taurus wins over Vaccei, Kantabroi and Asturs
- 28 BC Calvitius Sabinus celebrates a triumph *ex Hispania* thanks to his skirmishes against Asturs and kantabroi
- 27 BC Sextus Apuleius celebrates his victory over the people of Northern Spain
- 26 BC Augustus becomes the head of the Roman army and sets his camp *apud segisama*
- 25 BC Roman victory over a coalition of Asturs in Lancia
- 24 BC Victory of Lucius Aemilius over Kantabroi
- 22 BC Cantabrian revolts. They are beaten by Caius Furnius
- 19 BC Cantabrian uprising. The *Legio I Augusta* loses its Eagles. Agrippa arrives heading the *Legio III Macedonica* and wins over the Kantabroi.

Unfortunately, we know almost nothing about the initial period of the conquest. Our knowledge is based on classical sources (Dio Cassius, Livy, Anneus Florus, Paulus Orosius, Strabo, Pliny the Elder,) and the theories that Schulten, Syme, Magie, Rodríguez Colmenero, Echegaray and Solana, among others, have constructed about this conflict.

As we see it, within Cantabria, there is no evidence of any real battles. Classical authors talk about the capture of Vellica, Aracillum or the final resistance on Mons Vindius; they also speak of guerrilla tactics used by the Cantabrians. Archaeology has helped little in this case, mostly because of the territory's orography.

Polybius talks about the adoption of Hispanic weapons such as their sword or the *pugio* by the Roman army. "Romans, from Hannibal's time abandoned their ancestors' swords, and used instead those of the Hispanic, but, if they were able to imitate the form, they could not reach the same quality of iron or achieve the perfection of its manufacture"¹⁵.

There was no army specializing in a continuous war, all they did was to perform raids from spring to fall, using the spear as the main weapon. The number of warriors was very small and the tactics they used, quite simple¹⁶.

The weaponry used by the Hispanic peoples was simple

and light, adapted to their way of fighting; they did not confront the enemy directly with large armies – which they did not have – but instead they used the guerrilla warfare system, which allowed them great mobility, and they ran to the fight en masse¹⁷.

“The Cantabrians, wishing, more than the other peoples, to put their swords for hire and try their luck as mercenaries in the art of fighting, and the Vascones, who scorned the protection of the helmets”¹⁸.

“Cantabrians, who, among all these peoples clung most stubbornly to their habits of pillage, have been subdued by Caesar Augustus; and now, instead of devastating the lands of Rome’s allies, they put their weapons to the service of the Romans”¹⁹.

“Cato, full of martial spirit, and forgetting his youthfulness, when he was fighting, the swift Basques and Cantabrians strongly pushed him with a rainfall of spears”²⁰.

“They were very used to the mountains and quite good at running and jumping among rocks and crags, they were helped by their light weapons and the speed of their bodies”²¹.

“Cantabrians followed these fighting tactics, and they attacked running, with their hair tied with a band²², shouting and singing war songs which the Roman ear interpreted as a barbarian howling”²³.

Augustus fought against the Asturs and the Cantabrians; “but they did not approach him, always hiding behind the peaks of their mountains, neither they got within his reach due to their inferior number, and also because they used throwing weapons, causing him many inconveniences too if at any time they started to march. They occupied favorable places and ambushed in hollows and forests”²⁴.

The most important defensive equipment were the helmet, the shield and the cuirass. Strabo tells us that their hair was long as women’s and that during the combat they tied it on the back with a band²⁵. They covered their hair with a leather helmet as Silius Italicus describes²⁶. In the coins of P. Carisius, we can also see metal helmets with something like a crescent on its top.

It seems that Cantabrians used two types of shield:

Caetrae (concave, round and small, made of leather, with a central section made of wood, where the metallic *umbo* was placed, it was reinforced by some metal plaques that also served as ornamental pieces), it is small, of two feet of diameter, and concave in its anterior part, they carry it hanging in front tied with belts, and it does not have, so it seems, handles²⁷. Silius Italicus calls the young warriors fighting for Hannibal *iuventus caetrata*²⁸ (Fig. 17).

Scutum (large shield, it can be oblong or rectangular, and

it covered two-thirds of the body²⁹. Caesar and Livy talk of Hispanic *scutata*³⁰. We can see their type of shield in the stele from Zurita³¹.

In relation to the defensive elements, they mostly used flax coats, but some had coats of mail³².

The equipment Cantabrian and Astur warriors used depended on their financial situation, and also on the booty they had previously collected; it included weapons taken from the enemy. We know from Roman sources that most Cantabrians used light arms, preferring spears and javelins, swords and daggers.

Darts of diverse types were typical elements, they could take the form of javelin, *soliferrum*, *falarica*, spear. Silius Italicus talks of the Cantabrians as *spicula densus* (X,5). They also used spears as those found in Monte Bernorio³³.

They also used Celtiberian swords called *falcatas*. Cantabrians seem to have used, too, double axes³⁴.

In Monte Bernorio swords and daggers have been found, they have disks covered with wood or bone at the end of the sheath. In Carisius coins there is another type of small sword with disks on the handle which seem to date around the end of the hallstatic tradition³⁵. We can find them in Celada Marlantes³⁶. Another example comes from the Iuliobriga archaeological site³⁷.

The dagger that follows the model of the swords from Monte Bernorio would be a small *pugio*, very common among Roman legionaries. Lucan says: *Cantaber exiguis et longis teutonius armis*³⁸. In Merida’s theater there is a relief that could represent a Cantabrian or an Astur carrying *caetra* and *pugio*³⁹.

Another weapon documented in the coins of Publius Carisius is the double axe or *bipennis*⁴⁰; this weapon is typical of the Cantabrians and it was not used by other peoples of the Iberian Peninsula.

As of now, we have no evidence of the use of slings or bows, but they were probably known and used due to the fact that they were shepherds and they had close ties with Romans and Carthaginians since they began to serve as mercenaries.

Roman sources state that they also had heavy infantry, equipped with the above-mentioned weapons and also with leather or flax cuirasses, mail coats bronze helmets with one or more crests, derived from the Montefortino type. Helmets were usually made of leather or woven sinews; they protected the neck with their own braids, and some natives wore helmets with triple crest⁴¹.

The infantry must have been similar to that of their neighbors: Celtiberian tribes, Asturians or Lusitanian warriors. From Numantia, the vessel illustrated in Fig. 18, from the end

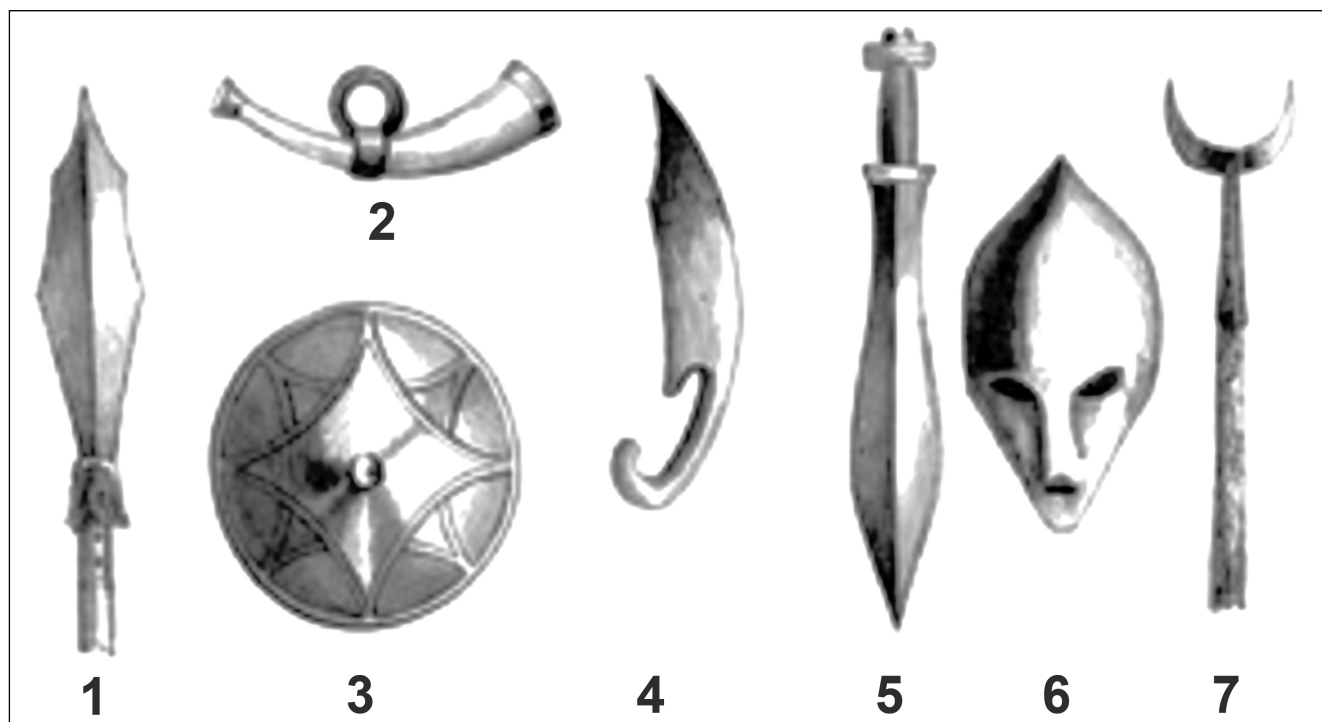


Fig. 10: XIXth century illustrations of Cantabrian Weapons

of 2nd century BC shows men fighting with *caetra*; the man at the right has a small sword; the one at the left carries spears, and the one in the middle, *soliferra*. They also used Roman protective equipment like the Montefortino helmet from Gorrita (Valladolid) with a Latin inscription stating its owner -N. PAQUI- and another, of a later period, with the name of the new user in Celtiberian characters, it is of 1st century BC⁴²; the helmet from Quintana Redonda (Soria) found with 1300-2500 silver coins- the main part is from Bolskan, and the Roman coins hidden during the Sertorian Wars⁴³.

Both types of infantry sometimes used shin pads made of leather metal, or woven⁴⁴. They would probably have used trousers, like the Gauls or the Celtiberians, and, most surely, flax or wool tunics which ended above their knees and leather boots that covered their ankles.

Cantabrian cavalry was important; from it, the Romans took two manoeuvres: the *circulus cantabricus* or Cantabrian Circle, which consisted of an advance towards the enemy riding on horseback and when the cavalymen were about to reach them, they turned away, forming a half-circle, throwing a great quantity of darts (at least fifteen before turning to the right), and protecting themselves with their shields. This maneuver was repeated as many times as it was considered necessary⁴⁵. The circling route allowed the reloading and demoralized and wore out their enemy, who could not reach them. Another manoeuvre was called *impetus* and it consisted of a massive frontal charge to break up the enemy lines⁴⁶.

The *Cantabricus impetus* was performed by the cavalry.

We do not know the amount of cavalry the Cantabrians used, but it most have been similar to that of the Celtiberians. Not only the Iberians rode on horseback in couples; of them, one could fight as a pawn⁴⁷.

Another source of knowledge on the weapons used by the northern Spanish enemies of Rome is the numismatic evidence. From the 2nd century BC until the end of the 1st century BC, the towns of the Ebro River and the central plateau minted denarii (Fig. 2) and later, bronze coins with the images of horse riders with spears and round shields. The highest point in the minting of these coins was the Sertorian wars. After them it was usual to use the same iconographical types with Latin inscriptions as, for example, in the coins from Bilbilis or Segovia. (Fig. 3)

Coins of the P. Carisius

Numismatic pieces with the inscription P.CARISIUS LEG AUG PROPR, present on their reverse weapons typical of the people of Northern Spain: shield, spear, sword, and dagger. In different mintings we find diverse representations, the most usual show the *castra*, spears and *falcatas*; in other parts, we can see a helmet, *castra* and two spears, or else a helmet with a half-moon ornament, a dagger and a double axe⁴⁸.

We know of coin series made in the colony of Emerita Augusta, founded by the legionaries from the Cantabrian

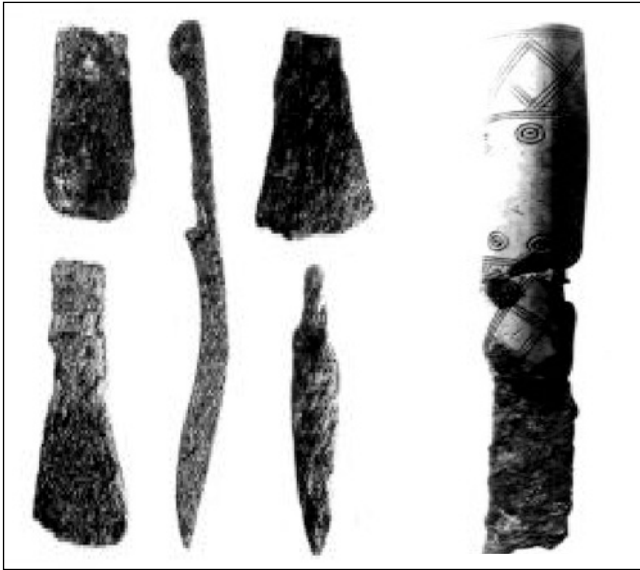


Fig. 11: Axes, Knife and Falcata from Celada de Marlantes (After GARCÍA GUINEA 1985)



Fig. 12: Spears from Monte Bernorio

wars; they were minted between 27 and 23 BC, and the highest point occurred during the campaigns of 26-25 BC, which coincided with the presence of Augustus in the Cantabrian wars⁴⁹ (Fig. 7-8). The coins of the *caetra* present another problem; they are found in the military sectors of Northern Spain and in the cities under their control. Lugo⁵⁰ and Herrera del Pisuerga⁵¹ are two well documented points in which these coins were present. In the Galician sector, Lugo was the issuing point, and there had to be some mint in the eastern sector that would supply Herrera and the military camps. These mintings lasted until Tiberian times⁵² (Fig. 6). We know of mintings prior to the victories in Hispania, such as Pompey's where Hispania is represented with the *caetra* and two spears (Fig. 4), or latter mint-

ings, such as those by Galba, with Hispania armed with *caetra* and spears (Fig. 5). These coins had a propagandistic role, and were used for the payment of Roman legionaries and fortune soldiers. The older were minted in silver in Emerita Augusta, at a second time the *caetra* type was minted in Lucus Augusti and the 3rd and 4th types were bronze coins (*ases* and *dupondius*) made in a mobile mint point.

EPIGRAPHY

Epigraphic sources show clear influences from Roman burial gravestones; Cantabrian types usually show anaepigraphic and commemorative types like those of Zurita and Toranzo (Fig. 14-15).

Cantabrian steles from Zurita and Toranzo

Cantabrian steles are monolithic stone disks of about two meters in diameter; they were usually carved in monuments about the time of the Romanization of Cantabria. Usual ornaments consisted of swastikas, Pentasqueles, crosses, helices, X-shaped crosses, warriors or pre-Roman funerary representations. The rest of the Cantabrian steles are kept in the Museo Regional de Prehistoria.

The two steles from Lombera and Zurita (Fig. 14) show iconographic ornamentation: On one of the sides there is a vulture flying towards a fallen warrior. It seems that the Cantabrians cremated their dead, with the exception of those who fell in battle, because they thought that if they were left lying there, the vultures would open their entrails and carry their souls to heaven. Fragments of other steles have been found, as the third from Lombera, but probably the best known and the best preserved stele is the Estela de San Vicente de Toranzo (Fig. 15). On one side there would have been a warrior on horseback; the bit is similar to the one from Celada de Marlantes⁵³, it shows a horseman holding javelins quite similar to those of the Clunia type, with Celtiberian and Latin inscriptions (Fig. 16, 21).

Roman authors said that Cantabrian used to march one riding the horse and the other holding its tail as can be seen in the burial stone from Borobia (Fig. 22).

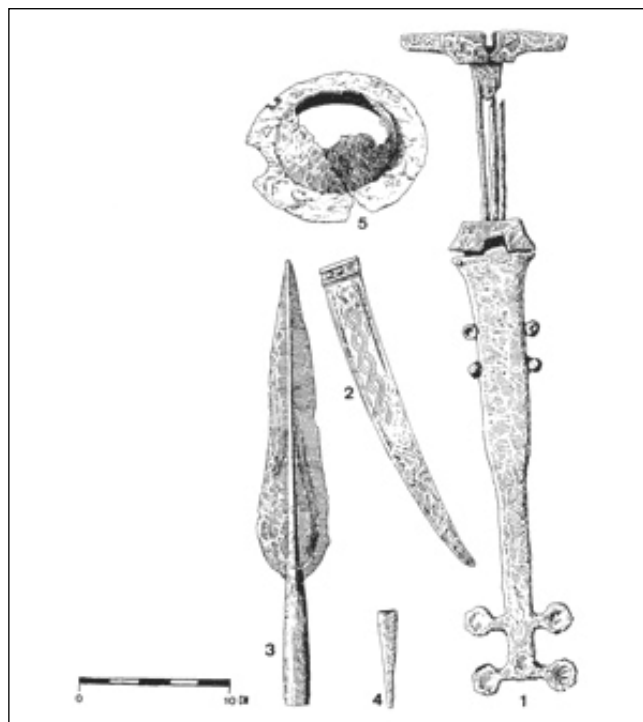
The possible trophy of the Cantabrian wars in Augustus altar in Florence shows a *caetra* and a hexagonal shield⁵⁴.

There is a frieze from Porta Flaminia with northwestern Hispanic ornaments and the head of a barbarian warrior with its hair attached to the top of the head⁵⁵. Blázquez believes that they could be Lusitanians that fought as mercenaries in the Cantabrian wars⁵⁶.

The temple of Mars in Emerita Augusta today serves as the baroque entrance to the Church of Saint Eulalía de Mérida. There, there is a dedicatory inscription and its



Fig. 13: Monte Bernorio



friezes show scenes from the Cantabrian wars⁵⁷ (Fig. 9).

The Arch of Glanum was built at the end of the Cantabrian wars (19 BC) to commemorate the submission of the Gauls by Augustus and Agrippa⁵⁸. In the northern wall we can see *falcatas*, spears and a probable leather biretta; this is similar to the mounted display of weapons from the people of Northern Hispania, or people dressed with the *sagum*⁵⁹, motifs that also appear in the northeastern relief, where two groups of people accompany a trunk with spoils from the war⁶⁰.

ARCHAEOLOGICAL FINDINGS

The only two excavated Cantabrian castra that have yielded weapons are Monte Bernorio (Fig. 12-13) and Celada Marlantes (Fig. 11). The Northern Plateau received cultural influences from Central European peoples; these were added to the peninsular culture coming from the South and the South-East. Important social changes in the Second Iron Age are the use of the potter's wheel, which opened the way to specialization and the production in series of ceramics to be exported, the generalization of the use of iron which brought mastery over metallurgical techniques, and the improvement in the fortification of towns, which now exhibit strong walls⁶¹. Iberian weapons are not the norm in the Upper Duero, only some *falcatas* or some shield handles have been found. Relations with the lands from the Middle Duero or Upper Ebro were more important, as can be seen

by the presence in the Celtiberian zone of certain objects such as daggers or some shield *umbones* from the type of Monte Bernorio type metallic sheaths, or fasteners of the type of Miraveche and Bureba. Around the middle of the 6th century BC, swords of the La Tène type of appear, these became more widespread in the following century. There are some pieces from the North of the Pyrenees, such as sheaths. According to the indigenous features of this armament, we can infer either that they arrived thanks to Celtiberian mercenary troops or that they are exotic pieces obtained through exchanges⁶².

Celada Malantes contributed some objects but it is a site that years before the excavations, had suffered plundering. This plundering has never stopped, and now it is done, according to my belief, with better technique and more freedom than before. All objects and material from Celada and whatever may be inferred from them, should be regarded as belonging to an indigenous town from Las Rabas and dated one or two centuries prior to the arrival of the Romans⁶³.

Spear points and *regatones*, axes, pickaxes, knives in the form of *falcatas*, Hallstatic type pins, handles decorated with bone pieces and carved goat or deer horns, etc. have appeared at Celada, and due to their similarities, we can think that there were cultural exchanges with Celtiberian tribes and people from the Plateau, who in the 3rd century BC, developed the so-called CASTREÑA culture, whose most important sites are Las Cogotas in Ávila, and



Fig. 14: Stela from Zurita (Cantabria)



Fig. 15: Stela from Toranzo (Cantabria)



Fig. 17: Caetra from Griegos (Teruel)



Fig. 16: Burial Stone from Clunia (Burgos)

Numancia in Soria (Fig. 18). One cannot imagine any similarity between their materials and those of Celada, hence one can think that over an Iron I substratum, to which all these peoples and also the Galicians belonged, there are signs of a strong penetration of Iberian or Mediterranean influences that arrived in Celada in the 2nd and 1st centuries BC, and that Rome, with its superior cultural level and its actions brought to an end⁶⁴.

Iuliobriga falcata and statuette of a warrior with equipment typical of people from the North of Hispania, with a helmet on the head tied with a chinstrap, with geometrical



ornamentation and braciae⁶⁵.

Fig. 18: Warriors fighting from Numancia (After SOPEÑA, 1995)



Fig. 19: Lusitanian Warrior (After Almagro), Cantabrian Warrior (After, GONZÁLES ECHEGARAY 1995-1996)

NOTES

1. GARCÍA GUINEA 1970, 1985, 1997.
2. CABRE 1920; Valera San Aparisi, 1957.
3. GONZÁLES ECHEGARAY 1986.
4. SOLANA 1983, 46.
5. Ptolomeo, *Apotel.* 64, 13.
6. Just. 44, 2, 1.
7. GARCÍA GELABERT Ma P. 1989, 69.
8. GONZÁLES ECHEGARAY 1995-1996, 148.
9. Based on Livy's accounts.
10. II, 33-46-60.
11. *Historia Romana* 51-54.
12. GONZÁLES ECHEGARAY 1995-1996, 150.
13. GONZÁLES ECHEGARAY 1995-1996, 151.
14. *Historiarum Adversus paganus*, VI, 21.
15. *Fragm.*, 95.
16. ALMAGRO-GORBEA 1995-1996, 28.
17. GARCÍA-GELABERT 1989, 70.
18. *Sil. Ita., Pun.* V.195-197.
19. Strabon, III, 3, 8.
20. *Sil. Ital., Pun.*X.13-16.
21. Strabo, III, 22, 18, and 2.



Fig. 20: Celtiberian Warriors from Numancia



Fig. 21: U P Burial stone from Clunia in Celtiberian Language

22. Strabon, III, 3, 7.
23. Silio Italico, 3, 346.
24. Dio Cassio, 53, 25, 5-6.
25. Strabo, III, 3, 7.
26. GONZÁLEZ ECHEGARAY 1986, 95.
27. Strabo, III, 3, 6.
28. GONZÁLEZ ECHEGARAY 1986, 95.
29. Diododoro, 5, 33.
30. GARCÍA-GELABERT 1989, 74.
31. GONZÁLEZ ECHEGARAY 1986, 95.
32. Strabo, III, 3, 6.
33. GONZÁLEZ ECHEGARAY 1986, 96.
34. Silio Italico, 16, 46-65.
35. GONZÁLEZ ECHEGARAY 1986, 96.
36. GARCÍA GUINEA-RINCÓN 1970, 22-23.
37. GARCÍA BELLIDO et alii, 1970, 50.



Fig. 22: Down Burial stone from Borobia (Soria) in Latin Language

38. Phars, VI, 259.
39. SCHULTEN 1943, 46.
40. Silio Italico, XVI, 56.
41. Strabo, III, 3, 6.
42. MARTÍN VALLS-ESPARZA 1992, 273.

43. MARTÍN VALLS- ESPARZA 1992, 273.

44. Strabo, III, 3, 6.

45. Arriano, *Tact*, XL, 1, 12.

46. GONZÁLEZ ECHEGARAY 1986, 97.

47. Strabo, III, 4, 18.

48. VILLALONGA 1970, 590.

49. GIARD 1976, 45.

50. RODRÍGUEZ COLMENERO-CARREÑO 1992, 394.

51. PÉREZ-ILLARREGUI-MORILLO 1995, 203.

52. PÉREZ-ILLARREGUI-MORILLO 1995, 205.

53. GARCÍA GUINEA 1970, 32.

54. PERALTA 2000, 190.

55. PERALTA 2000, 191.

56. BLÁZQUEZ 1971, 57.

57. LEÓN 1970, 181.

58. ROLLAND 1977, 46.

59. ROLLAND 1977, 33.

60. ROLLAND 1977, 34.

61. MANGAS 1995, 135.

62. LORRIO 2001, 194.

63. GARCÍA GUINEA 1997, 2.

64. GARCÍA GUINEA 1997, 3.

65. GONZÁLEZ ECHEGARAY 1986, 97 Fig. 20.

BIBLIOGRAPHY

ALMAGRO-GORBEA 1991: M. Almagro-Gorbea, Los Celtas en la Península Ibérica. In VV.AA. Los Celtas en la Península Ibérica, *Revista de Arqueología, Extra 5*, 1991, 12-17. Madrid, Ediciones

ALMAGRO-GORBEA 1995-1996: M. Almagro-Gorbea, *Los pueblos célticos peninsulares*. En La arqueología de los Cántabros. Actas de la primera Reunión sobre la Edad del Hierro en Cantabria. Santander, 1995-1996

BLÁZQUEZ 1971: J. M. Blázquez, La Iberia de Estrabón, En *Hispania Antiqua I*, Vitoria, 1971

CABRÉ 1920: J. Cabré, *Acrópolis y Necrópolis de los Celtas Berones de Monte Bernorio*, Madrid, 1920

CABRÉ 1940: J. Cabré, La Caetra y el Scutum en Hispania durante la segunda Edad del Hierro En *BSAA, VI*, 1940, Valladolid

GARCÍA-GELABERT 1989: MaP. García-Gelabert, Estudio del armamento prerromano en la península ibérica a través de los textos clásicos. En *Espacio. Tiempo y Forma serie II, Ha Antigua*. T. II. Madrid, 1989

GARCÍA-BELLIDO 1970: MaP. GARCÍA-BELLIDO-A. FERNÁNDEZ de AVILES-A. M.-GARCÍA GUINEA, *Excavaciones y exploraciones arqueológicas en Cantabria*. Madrid, 1970

GARCÍA-BELLIDO 2006: MaP. García-Bellido, *Los Campamentos romanos en Hispania (27 ac-192 dc) El abastecimiento de*

Monetal. Anejos de Gladius, CSIC- Ed. Polifemo **2**, Vols Madrid, 2006

GARCÍA GUINEA 1970: M. A. García Guinea-R. Rincón, *El asentamiento Cántabro de Celada Marlantes*. ICC. Santander, 1970

GARCÍA GUINEA 1985: M. A. García Guinea, *Historia de Cantabria: prehistoria, historia antigua y media*, Santander, 1985

GARCÍA GUINEA 1997: M. A. García Guinea, El asentamiento de Celada Marlantes y la futura arqueología de los Cántabros, En *Cuadernos de Campoó 7*, Santander, 1997

GIARD 1976: J. B. Giard, *Bibliothèque nationale. Catalogue des Monnaies de l'Empire Romain*, Paris, 1976

GONZÁLEZ ECHEGARAY 1986: J. González Echegaray, *Los Cántabros*. 2a Ed. Santander, 1986

GONZÁLEZ ECHEGARAY 1995-1996: J. González Echegaray, Las Guerras Cántabras en las fuentes. En *La arqueología de los Cántabros*. Actas de la primera Reunión sobre la Edad del Hierro en Cantabria. Santander, 1995-1996

IGLESIAS 1999: J. M. Iglesias – J. A. Muñiz, (Ed) *Regio Cantabrorum*, Santander, 1999

LEÓN 1970: P. León, Los relieves del templo de Marte en Mérida. En *Habis 1*, Sevilla, 1970

LORRIO 2001: A. J. Lorio, Los Celtíberos En *Celtas y Vettones*, Avila, 2001

MARTÍN VALLS-ESPARZA 1992: R. Martín Valls-A. Esparza, Génesis y evolución de la Cultura Celtibérica, En *Complutum 2-3*, Madrid, 1992

MANGAS 1996: J. Mangas, Aldea y ciudad en la antigüedad hispana. *Cuadernos de Historia 7*, Madrid, 1996

MENÉNDEZ ARGÜIN 2005: A. R. Menéndez Argüin, *Flavio Vegecio Renato, El arte de la guerra romana*, Madrid, 2005

PERALTA LABRADOR 2000: E. Peralta Labrador, *Los Cántabros antes de Roma*, Madrid, 2000

PÉREZ-GONZÁLEZ – ILLARREGUI 1992: C. Pérez-González – E. Illarregui, *Ideas sobre la romanización del mar Cantábrico*, Santiago de Chile, 1992

PÉREZ-GONZÁLEZ – ILLARREGUI – MORILLO 1995: C. Pérez-González – E. Illarregui – E. Morillo, Reflexiones sobre las monedas de la Caetra procedentes de Herrera de Pisuerga (Palencia) En *La Moneda Hispánica. Ciudad y Territorio Anejos de Archivo Español de Arqueología XIV*, Madrid, 1995

PÉREZ-GONZÁLEZ – ILLARREGUI 2004: C. Pérez-González – E. Illarregui, *Arqueología Militar Romana en Europa*, Salamanca, 2004

PÉREZ-GONZÁLEZ – ILLARREGUI 2006: C. Pérez-González – E. Illarregui, Military Productions in the Legio IIII Macedonicae Camps at Herrera de Pisuerga, *In Honorem Gheorghe Popilian*. Craiova, 2006

- ROBLES 2003: MA A. Robles, El ejército romano según el "breve tratado de términos militares, de Modesto, En *Aquila Legionis* **4**, Madrid, 2003
- ROLLAND 1997: H. Rolland, *L'arc de Glanum*. XXIe Supplément á «Gallia» CNRS. Paris, 1997
- SANTOS YANGUAS 2003: N. Santos Yanguas, Las acuñaciones montéales de Publio Carisio, legado de Augusto en Lusitania y la conquista romana en el N.O. peninsular, En *Aquila Legionis* **4**, Madrid, 2003
- SCHÜLEI 1969: W. Schüle, Die Meseta-Kulturen der Iberischen Halbinsel, *Madrider Forschungen* **3**, (2 Vol), Berlin, 1969
- SCHULTEN 1943: A. Schulten, *los Cántabros y Astures y su guerra con Roma*, Madrid, 1943
- SOLANA 1983: J. Ma Solana, La expedición de L. Licinio Luculo contra los Vacceos En. *Estudios en homenaje a D. Claudio Sánchez Albornoz en sus 90 años. I Anejos Cuadernos de Ha de España. Facultad de Filosofía y Letras*, Buenos Aires, 1983
- SOPEÑA 1995: G. Sopena: *Ética y ritual*. Aproximación al estudio de la religiosidad de los pueblos celtibéricos. Zaragoza: Institución Fernando el Católico, 1995
- VILLALONGA 1970: L. Villalonga: Emisión monetaria Augustea con escudo atribuible a P. Carisio y a la zona norte de la península, En *IX CAN Mérida*, Zaragoza, 1970



Sarmatian swords with ring-shaped pommels in the Carpathian Basin

Eszter Istvánovits – Valéria Kulcsár

Previously we have been dealing with the armament of the Sarmatians of the Carpathian Basin from several aspects: archaeological finds, depictions, literary sources¹. However, up to now we have not devoted special attention to the most important and frequent of Sarmatian weapons: the side arms, that is to say, the swords and daggers. This relatively large category of finds can be divided into three groups (Fig. 1):

1. Swords/daggers with ring-shaped pommels (Fig. 1: 1);
2. Long swords without metal pommels (Fig. 1: 2);
3. So-called “Meotian” or “Micia” type swords/daggers (Fig. 1: 3).

In this study we examine the first group. The main characteristics of these weapons are the closed ring at the end of the hilt, the straight and short cross-piece. All the pieces of this group found in the Sarmatian Barbaricum of the Carpathian Basin are short. The longest one hardly reaches 50 cm.

ANTECEDENTS IN THE STEPPE REGION

Ring-pommel swords appeared very early in the steppe Sarmatian milieu and became widely spread. We can find these weapons across the whole of the Sarmatian territory from the South Ural up to the Lower Danube. The shape was formed in the 3rd century BC and spread into the North Pontic Region in the second half of the 2nd century BC. Ring-pommel swords and daggers were in use mainly in the 1st–2nd centuries AD. Subsequently the type of long swords without metal pommel disappeared, but there are pieces dated to the early 3rd century AD². It is a matter of discussion, whether these weapons can be taken back to the Siberian Bronze Age or Far Eastern prototypes, or whether the ring shape evolved out of the volute shaped pommels of Scythian swords³. Different variants of this sword type, characterised by ring shaped pommel and straight cross-piece, were present continuously in Sarmatian milieu, from the moment of its appearance up to the 3rd century AD. Judging from certain steppe finds, swords were kept in wooden scabbards, usually painted red. In some cases scabbards were covered with leather and lined with textile inside. In most of the examples from the graves they were found at the right side of the dead, which corresponds to the evidence from

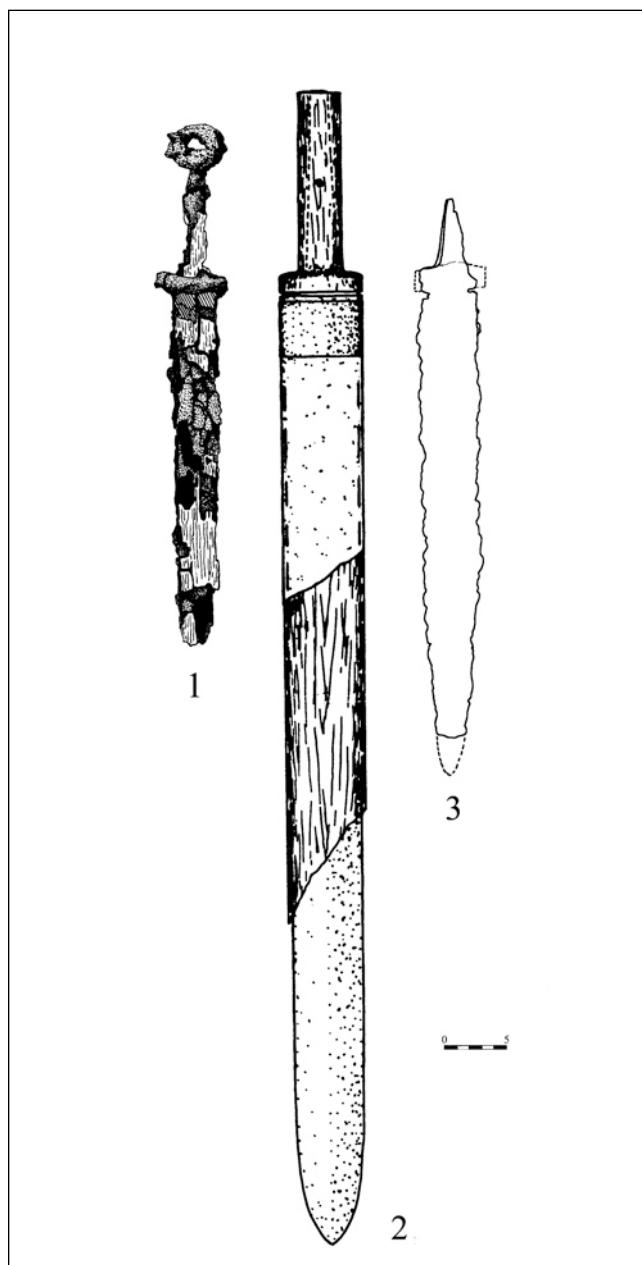


Fig. 1: Three groups of the side-arms of the Sarmatians in the Carpathian Basin: 1. ring-pommel swords (*Újszilvás*); 2. swords without metal pommels (*Hévízgyörk*); 3. so-called „Meotian” type swords (*Csongrád*)

the depictions (see later). After the disappearance of the people called Sarmatians from the history of steppe, ring-pommeled swords stayed in use over a very vast territory from Iran to China, up to the 8th century⁴. This pommel shape was regularly met in the Early Avarian armament of the Carpathian Basin.

The find material in question is homogenous: the majority of such swords were made with a similar technique. The blade and the pommel with ring were smithed from one piece in all cases. The ring has a round cross section.

This type of weapon rarely appears on depictions. It may be, but is very uncertain, that such a sword is worn by an archer depicted on a 1st century AD silver vessel from Kosika (Lower Volga) (Fig. 2)⁵. A ring-shaped pommel is undoubtedly depicted on a metal cup from Himlingøje, Denmark (Fig. 3)⁶. Good examples can be seen in the Bosporan grave-stones,⁷ where riders wore short swords or daggers with ring-shaped pommel always fixed to their right thigh (Fig. 4). Another weapon of the Bosporan depiction group, basically dated to the 1st century AD, is the bow always held on the left side. (Roman depictions will be discussed in the following.)

SARMATIAN RING-POMMELED SWORDS IN THE CARPATHIAN BASIN

The number of ring-pommeled swords in the Sarmatian finds of the Great Hungarian Plain is small. However, that does not mean that these weapons were less used here than on the steppe. The graves of the early Sarmatian period of the Great Hungarian Plain are generally characterised by the



Fig. 2: The archer of the first century silver vessel from Kosika probably had a ring-pommeled sword (after DVORNICHENKO – FJODOROV-DAVIDOV 1994, *ris.* 5)

lack of weapons. That is to say, the burial rite is an explanation for the lack of weapons.

In the Sarmatian Barbaricum of the Carpathian Basin we know six swords/daggers that definitely had ring-shaped pommel. In two further cases, such pommel can only be suggested (Fig. 5).



Fig 3: Depiction of ring-pommeled swords on the metal vessel found in Himlingøje (after LUND-HANSEN 1995, *fig.* 4: 6a)



1



2

Fig 4: Ring-pommeled swords on Bosporan grave-stones (after ROSTOVTSSEV 1913–1914, *LXXXIV:* 1; DAVYDOVA 1990, 56–58. *cat.* 46–48)

1. Gáva–Kató-halom grave 1: The grave, probably secondarily dug into a barrow, was excavated by András Jósa. In the N–S oriented male grave, a brick-red, wheel-made vessel with two handles and smoothed decoration was found at the left side of the scull. According to Jósa's notes, there was a 50.5 cm long, double-edged sword with ring-shaped pommel at the left side of the skeleton. The width of the blade: 3.9 cm. Judging from the remains, it could have been kept in a wooden scabbard. The ends of the 5 cm wide cross-piece were covered with two boat-shaped bronze decorations. The hilt was made in a form of a prism narrowing towards its end, closed with a ring of 4.5 cm diameter. The latter was covered with textile (8 threads on 5 mm) in 2–3 layers. The blade was 37.5 cm long, 3.5 cm wide at its base. The sword broke into two pieces after the discovery, but the measurements were made in situ by Jósa. Today only some fragments are known⁹. (Fig. 6; Fig. 7: 1)

2. Szentes–Kistőke grave 143: A double-edged sword was found 130 cm deep, beside a 175 cm long male skeleton. The sword was placed with its edge up, spread from the right hand as far as the thigh and foot bones. Its full length is 55.5 cm, the cross-piece is bent upward, the pommel is completed with a ring. A biconical green glass bead was placed into the middle of the ring. The utmost width of the blade is 5.2 cm, the length of the hilt is 8 cm. The exterior diameter of the ring is 5 cm. (Fig. 7: 3) Beside the sword laid an iron knife and a large, spherical shaped green bead. Several iron pieces of unknown function were also found in the grave, the exact place was not specified⁹.

3. Szolnok, Beke Pál halma: A double-edged sword with ring-shaped pommel was found together with other finds in the vicinity of a Sarmatian cemetery. Wooden traces were preserved on the hilt. The length of the fragment is 20 cm, its width is 7.1 cm. Similarly to the rest of the finds, it was lost¹⁰.

4. Törökszentmiklós, Surján, Újtelep, Kastély-dűlő, DNY-i homokbánya (SW sand-pit), grave 1: Finds from several graves of a Sarmatian cemetery got to museum. The circumstances are unknown. The following objects came from a male burial marked as "grave 1" by the publisher: **1.** Fragment of a ring-pommeled sword, length: 38.8 cm (the object was lost). **2.** White whetstone. **3.** Hilt of an iron knife with traces of bone covering (lost)¹¹.

5. Újszilvás–Gólyajárás grave 1: In 1992 Edit Tari excavated a male grave oriented S–N, 180–0°. The grave-goods were the following: **1.** At the neck, golden torques ending in hooks, decorated with a white bead. **2.** At the right part of the breast, a bronze fibula: Scharnierfibel. **3.** Beside the exterior side of the right femur, a short, ring-pommeled sword. Traces of a wooden scabbard and of the wooden cover of the hilt were well preserved. The cross-piece is short. Length: 42.4 cm. (Fig. 7: 4., Fig. 8) **4.** At the right knee, a decorative disc made of a shell and probably belonging to the sword, was found. The disc had a hole in the middle and radial carved decoration on the convex part, diameter: 4.5 cm. **5.** A one-edged iron knife was found rusted to the hilt of the sword (it was probably stuck into the sword's scabbard)¹².

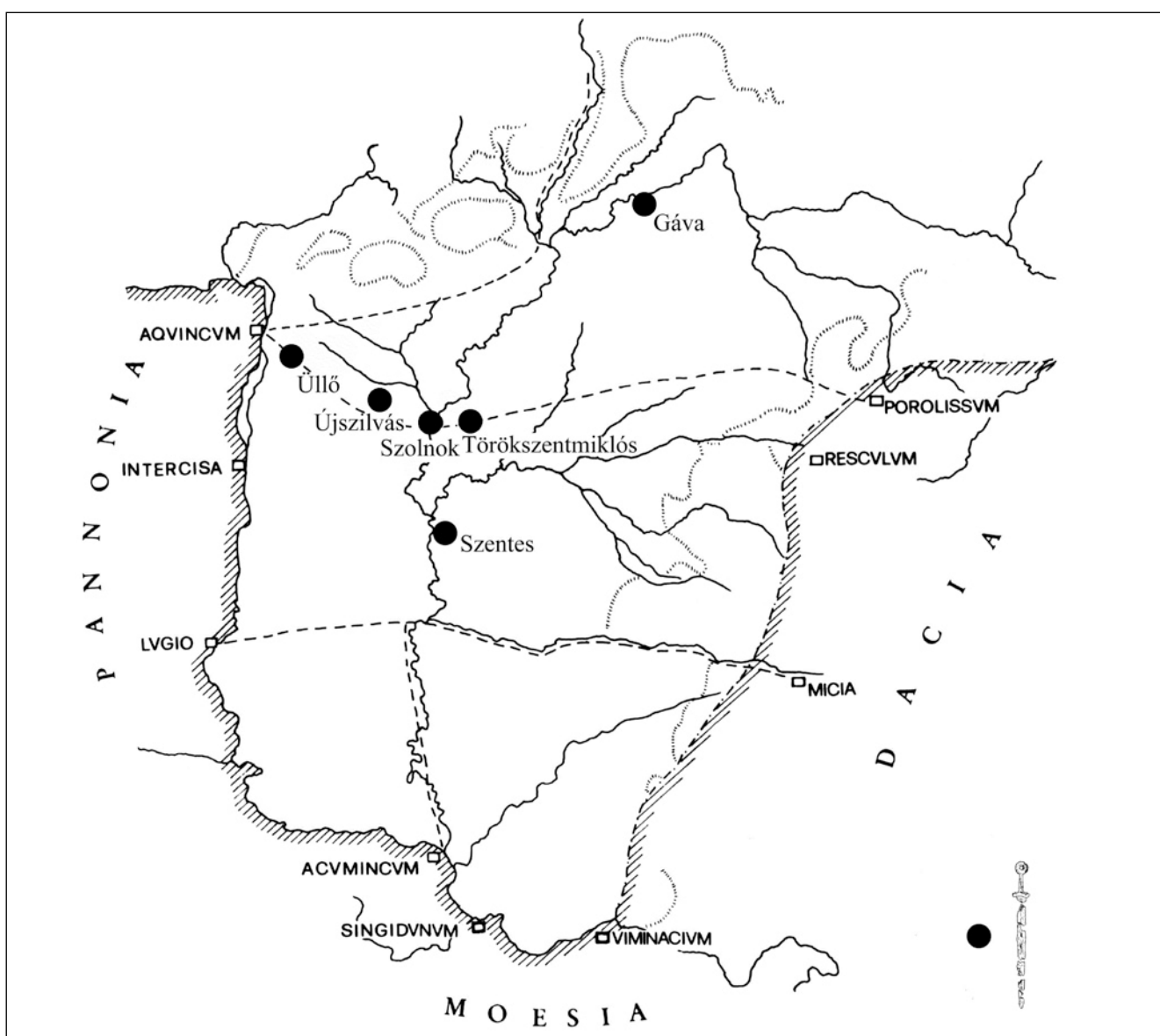


Fig. 5 Spread of ring-pommeled swords in the Great Hungarian Plain

6. Üllő site 5. (Motorway M0) grave 7501: In the course of excavation conducted by Valéria Kulcsár in 2003, a grave surrounded by a ditch was found. It was oriented SE–NW (120–310°). The deceased was buried in a coffin and partly robbed at the breast. Under the left part of the pelvis, almost parallel with the left femur, a long, ring-pommeled knife, starting beneath the elbow, was found. It was placed with its edge up. The object, especially the hilt was in poor condition, the drawing was made before restoration. After the restoration the ring-pommeled hilt fell apart. The knife itself seemed to be one-edged and asymmetrical. Length: 17.7 cm. The point of the knife is missing. (Fig. 9). Other finds: a grey, wheel-made vessel between the ankles, an iron object at the upper right part of the breast¹³.

In the case of two further swords the characteristic ring-shaped pommel was not found, but Mihály Párducz suggested that, judging from the size of the weapons, they could not belong to a different group of swords:

a. Kiskunfélegyháza–Belsőferencszállás, (known also as Petőfiszállás–Majsai u. farm no. 1586.) A grave was found on the land owned by Mrs. József Csenki, at a rescue excavation conducted by Sándor Hajmási in 1949. **1.** A 42.5 cm long iron sword. Only a 3.2 cm long fragment of the hilt was preserved. Width: 4.5 cm. The width of the cross-piece was 5 cm, its thickness 0.8 cm (Fig. 7: 3). At the lower part, remains of a scabbard chape could be traced. **2.** Handmade brick-red vessel with black spots and irregular imprints on the side and bottom. Height: 12.5 cm. **3.** A strongly profiled (kräftigprofilerte) bronze fibula¹⁴.

b. Tápíósele–Szumrák grave 90. The other piece comes from beside a robbed male skeleton. **1.** At the right side of the skeleton a grey, handmade vessel. **2.** A fluted blue glass bead. **3.** A small round bronze buckle. **4.** Three bronze belt terminal plates. **5.** Iron pieces between the feet, among them a fragment of

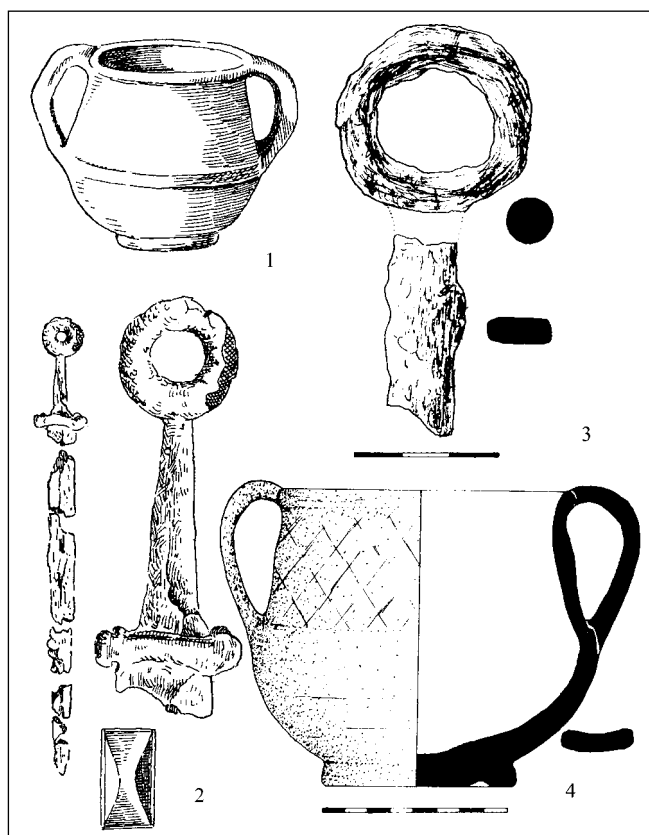


Fig. 6: Grave find from Gáva–Kató-halom 1–2: after JÓSA 1915, 202; 3–4: after ISTVÁNOVITS 1986, XXI.

a sword with a cross-piece. Judging from the shortness of the sword, Mihály Párducz suggested that it had a ring-shaped pommel, because this type was in fashion in this age¹⁵. István Dinnyés accepted this argument and added that the narrow blade and the cross-piece also refer to the ring-shaped type¹⁶.

As we can see, the short pieces of the type were spread across the Great Hungarian Plain. Their chronological attribution is usually uncertain. According to common opinion, the short sword characterised Sarmatians in the period before the Marcomannic Wars, and these swords usually had ring-shaped pommels.

The earliest find (Újszilvás–Gólyajárás) is dated to the late 1st – early 2nd century by the Scharnierfibel that accompanied the sword. Researchers dated pieces from Gáva and

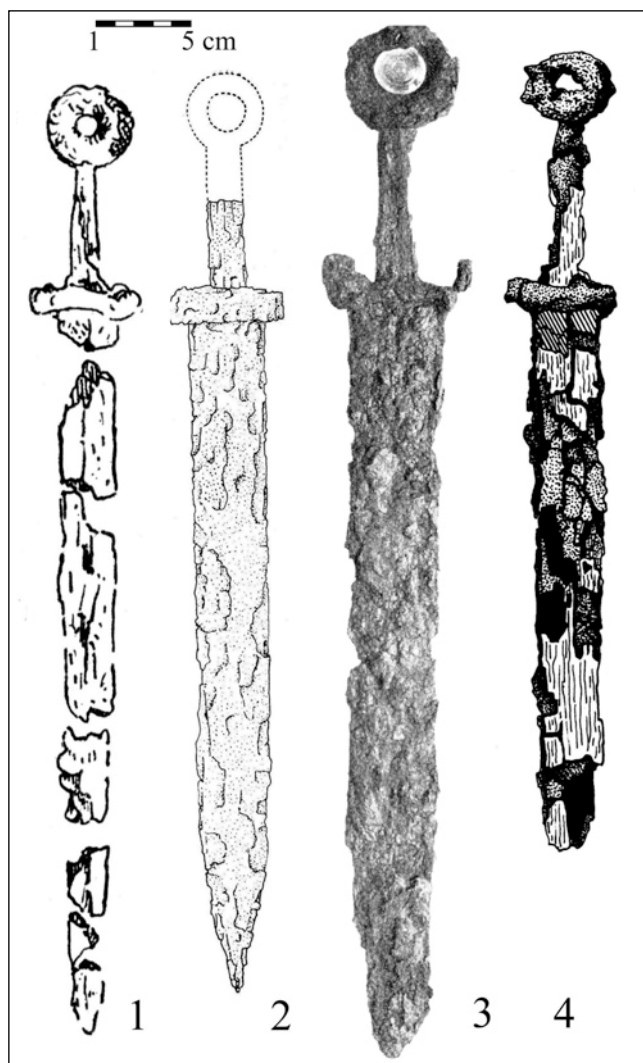


Fig. 7: Ring-pommeled short swords of Sarmatian type in the Carpathian Basin: 1. Gáva–Kató-halom (after JÓSA 1915, 202); 2. Kiskunfélegyháza–Belsőferencszállás (after PÁRDUCZ 1956, XXII: 5); 3. Szentes–Kistóke grave 143 (after PÁRDUCZ 1944, Taf. XXV: 5); 4. Újszilvás–Gólyajárás grave 1 (after TARI 1994, fig. 2: 2)

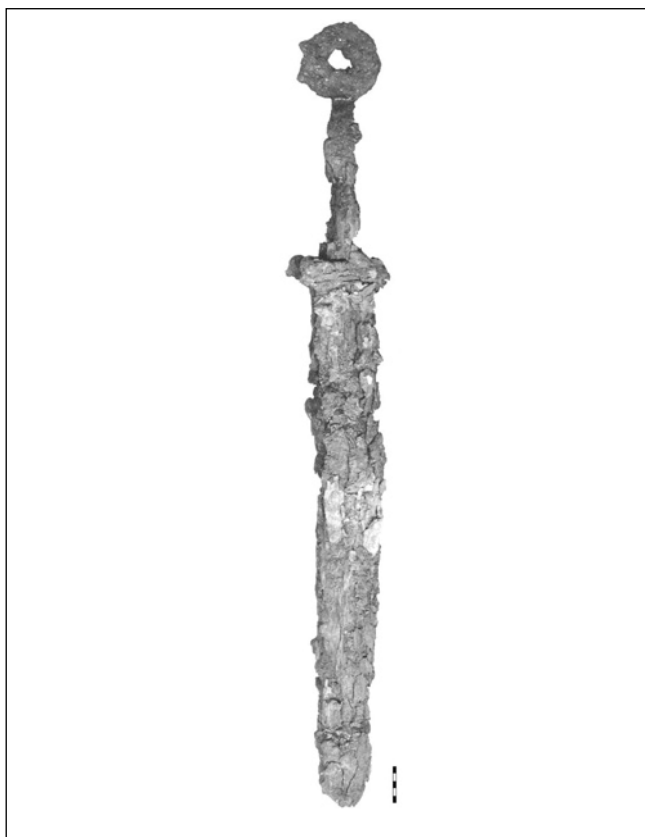


Fig. 8: Ring-pommeled sword from Újszilvás–Gólyajárás grave 1 (photo by Eszter Istvánovits)

Szentes-Kistőke to the period after the Marcomannic-Sarmatian Wars. In reality the accompanying finds do not support this dating. The basis for the dating was provided by analogies from the steppe. Mihály Párducz was right to put the swords from Kiskunfélegyháza and Tápiószele to the second period of the Sarmatian Age. In the case of the former, the basis for the dating was the strongly profiled (*kräftig profilierte*) fibula, in the case of the latter – the belt terminals and the bead. However, it is questionable whether the weapons really had a ring shaped pommel. In the case of the ring-pommeled knife from Üllő, we do not have dating material from the grave. Burials found in the vicinity can be dated to the 4th century, and this suggests a similar dating for the grave in question. In this case we have to emphasize that the weapon(?) differs from the usual type in many respects. Despite its bad preservation, it seems that its length did not reach even 20 cm, that is to say, it is too short even for a dagger, so we can define it with more probability as a knife. Another difference is that unlike the rest of pieces in question, it is one-edged.

So, we can assume that at the turn of the 1st–2nd centuries, as the latest, short swords with ring-shaped pommel (Újszilvás) appeared in the Great Hungarian Plain and stayed in use at least up to the 4th century.

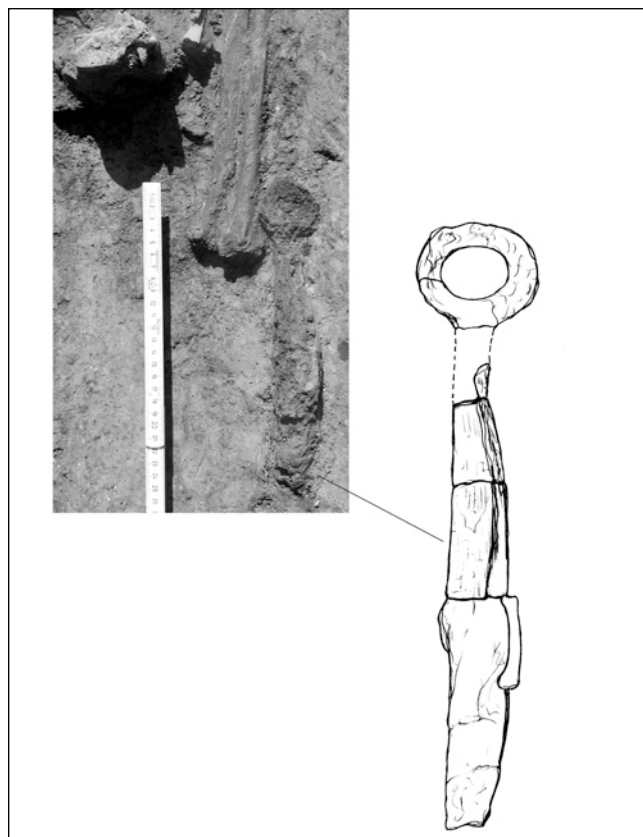


Fig. 9: Ring-pommeled dagger from Üllő, site 5 (Motorway M0) grave 7501

RING-POMMELED SWORDS IN PANNONIA

The ring-pommeled sword of the Sarmatian Barbaricum of the Carpathian Basin was found in Gáva. Most researchers, following Géza Nagy, from the very beginning refer to a Pannonian weapon from Szil as an analogy. In the course of the study of Barbarian swords we should overview also provincial pieces with ring-shaped pommels.

Today we know of a total of sixty ring-pommeled swords from the territory of the Roman Empire. Roman pieces also got to the German Barbaricum. Most of them were found in the Elba Region, on the first hand at the territory of Schleswig-Holstein, Jutland and the island of Fyn¹⁷. Marcin Biborski dated the use of Roman ring-pommeled swords between 160/170–260 and separated two basic types: the longer, spatha like type and the shorter, dagger like pieces¹⁸. Four swords (Ardánháza/Ardanovo – Ukraine, Transcarpathian Region, Opoka – Poland, Brokær Mark – Denmark, Jutland and Gojeva Gora – West Ukraine) have short blades and a short guard, with no traces of riveting on the hilt¹⁹. In the case of Gojeva Gora we see also a ring (here we have to note, that the hilt goes beyond the ring and does not seem to organically belong to it, as if it was not the ring of the sword, but an object of another function rusted to it).

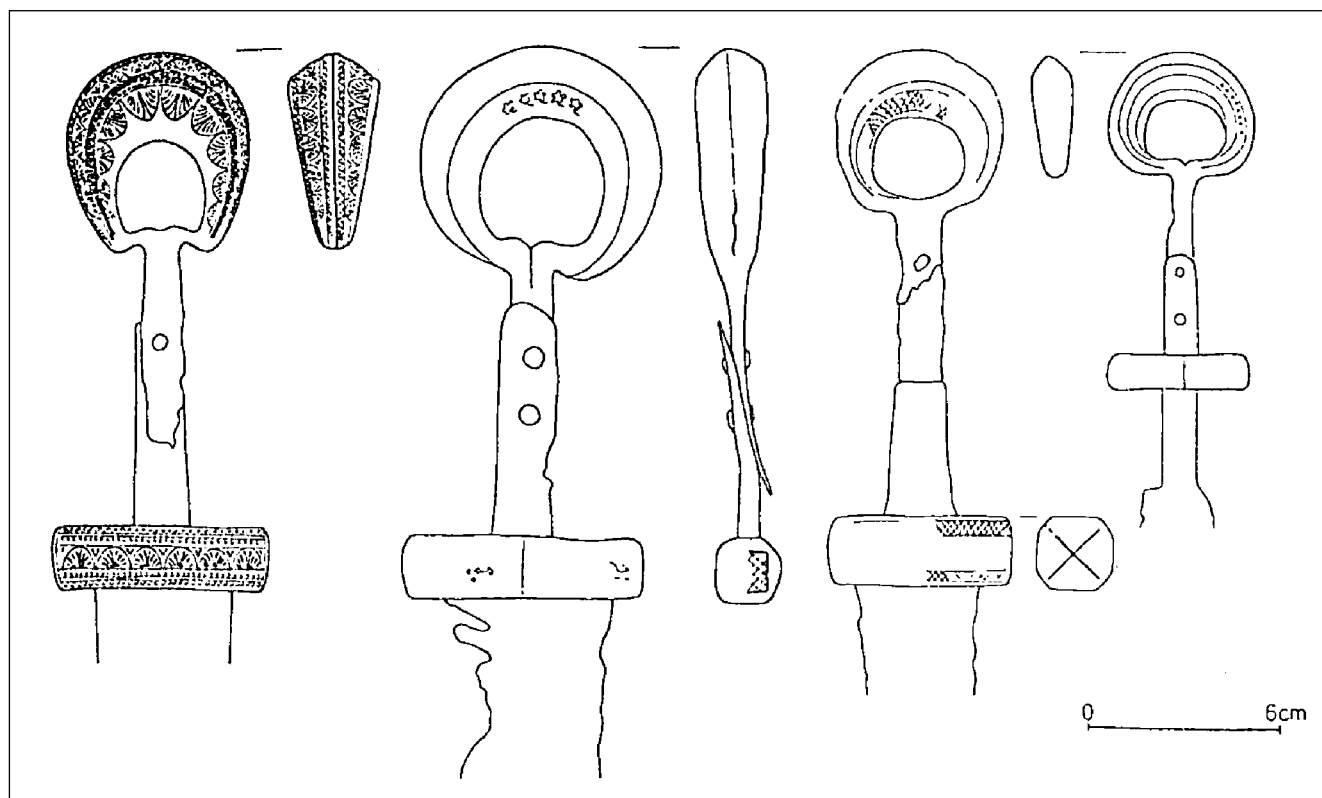


Fig. 10: Hilts of Roman ring-pommeled swords (after BIBORSKI 1994 Abb. 5)

In the case of short swords, M. Biborski assumed that the appearance of the cross-piece was the result of Sarmatian impact²⁰.

Hamfelde (Period B₂/C₁) situated at the southern border of the Jutland Peninsula, is the exceptional Barbarian site, where a ring-pommeled sword definitely analogous to Sarmatian pieces was found. That means that the ring was not riveted, but smithed as one piece with the hilt²¹. It cannot be a coincidence that pieces from the German Barbaricum are concentrated in this region, and also from a Danish site of Himlingøje the silver vessel with unique decoration is known. On the rim of the vessel we see images of humans holding a ring-pommeled sword. Ulla Lund-Hansen connected the Scandinavian appearance of such swords with the impact of Marcomannic Wars (in the sense, that Scandinavian participants of the war brought this type home)²². Recent research poured light on to several Scandinavian-Sarmatian connections. We can mention mainly insignia of rank: golden (or gilded) bracelets with widening ends, the so-called Kolbenarmringen, golden torques, shield bosses covered with golden sheets with figural relief decoration (like pieces from Herpály and Lilla Harg). To common elements, reflecting the relationship between the elite of the Carpathian Basin and of Scandinavia belongs the sword from Geszteréd and the buckle from Tiszalök-

Rázom²³.

To-date we know of eight ring-pommeled swords in the find material of Pannonia. Unfortunately, most of them come from stray finds. There are also four depictions, and recently a bronze pendant depicting such a weapon was found in Baracs²⁴. On the basis of datable cases, Péter Kovács was dealing with this question in connection with the miniature versions of the so-called beneficiarius spears, in several cases found together with sword-shaped pendants. In his opinion, these two objects could serve as badges of rank for soldiers who had different functions in administration and public order. At the same time, opposing the opinions of Nándor Fettich, Mihály Párducz and Jenő Fitz, in the list of Pannonian Roman swords, he did not consider the piece from Szil to be Barbarian. Kovács made this conclusion from the fact that all the objects found in the warrior grave from Szil are typically Roman.

As to our opinion, we think that significant difference can be made between ring-pommeled swords of Roman and of Sarmatian origin. So, the origin of the weapon itself must be judged not from the accompanying finds. Let us see these differences (cf. Fig. 7. and 10):

1. While Sarmatian swords were made as one piece,²⁵ the common characteristic of Roman pieces is that the ring

was riveted to the hilt.

2. The shape of the ring is different. In the case of Sarmatian weapons, the thickness of the ring is regular. The ring has a round cross-section. In the case of Roman pieces the ring is thickening towards its top, the cross-section is angled. The latter pieces are frequently encrusted²⁶.

If we examine the eight Pannonian weapons in this regard, we'll assume the following:

Two swords from Siscia, and pieces from Poetovio and Savaria are of definitely Roman origin (Fig. 11). It is evidenced by the angled cross-sections of the thickening ring and the riveted hilt. Two of them were damascened²⁷. The pommel of the sword from Aquincum is thickening, like the characteristic Roman swords, the ring is a "kidney shaped" one²⁸. In the case of the piece from Carnuntum, the rhomboid cross-section of the ring refers to Roman origin²⁹.

On the basis of the drawing in the inventory book, the already mentioned sword from (Somogy)Szil seemed to be clearly Barbarian. (Fig. 12)³⁰. "...it was broken into two pieces at the base of the hilt, but the pieces precisely fit together. The point of the sword is missing. The present total length is 45 cm, from which the present blade is 32.5 cm. At the base of the hilt, the straight cross-piece significantly protrudes at both sides. The upper end of the hilt ends in a 1.4 cm thick iron ring with an interior diameter of 2.1 cm. It is said to have been found in a horseman's burial. The Hungarian Historical Museum bought it together with a large number of Roman provincial finds...". Fettich also mentions that it is absolutely similar to the Gáva sword with ring-shaped pommel. The same was Géza Nagy's opinion, as also noted by András Jósa³¹. We could not study the original object, because for a long time it seemed to be lost. However, recently Zsolt Mráv succeeded in identifying the ring-shaped fragment of the hilt (in the 1950s the piece was

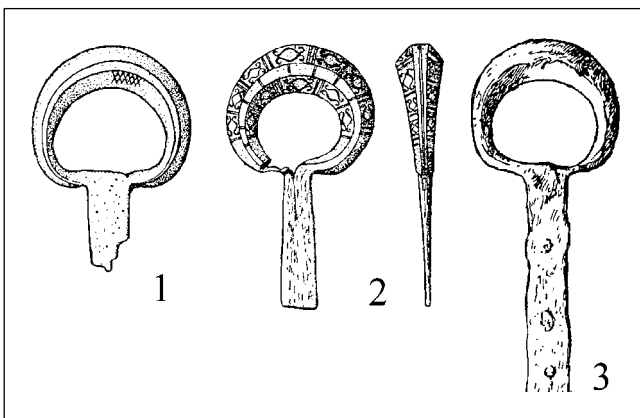


Fig. 11: Hilts of Roman ring-pommeled swords: 1–2. Siscia; 3. Savaria (after HUNDT 1955, Abb. 5: 1–2, 7)

reinvented as of unknown provenience). After restoration it shows an absolutely different shape, as on the published drawings. It came to light that the ring part is a so called "kidney shaped" one, the hilt is plain, and the riveting can be well seen, that is to say, the object shows features characteristic of Roman swords³².

The situation is different in the case of the sword from Matrica. The double-edged, ring-pommeled sword was found in the Southern cemetery of Százhalombatta/Matrica, in cremation grave 14. (Fig. 13). It was broken in the process of the burial³³. Judging from the publication, the length was 64 cm. Further grave-goods were characteristic Roman objects (sherds, lamp, coin, iron knife, iron mountings, iron nails and objects of unknown function). On the basis of the lamp and the coin, the publisher dated the sword to the late 2nd century³⁴. According to its characteristic features (regular ring without riveting) this sword recalls Sarmatian types³⁵.

An unusually long sword from the Budaörs carriage grave also had Sarmatian features. The burial was dated to the middle third of the 2nd century. Its ring's thickness is regular and the hilt was smithed as one piece and not riveted to the blade (Fig. 14)³⁶.

The features of the swords from Százhalombatta and Budaörs show that these weapons are not of Roman, but of Sarmatian type. It is notable that some features of the burial rite – emphasizing that the majority of grave-goods are Roman – have Barbarian (Sarmatian) character. To these features belong the breaking of the weapon before burial. Of course, we do not claim that these were Sarmatian warriors' burials. However, these circumstances throw a new light on the character of the Roman-Barbarian relationship.

As we can see, ring-pommeled short swords or daggers became part of Roman provincial armament also. The question is whether there is a relationship between Sarmatian and Roman ring-pommeled swords. In this regard it is significant that both types are met in the Carpathian Basin

Here we should again emphasize that in the early period it is not characteristic of the Sarmatians of the Carpathian Basin to place weapons into burials. So, the small number of finds of swords in question does not mean, in the case of Sarmatians, that they were hardly used.

On the basis of the facts outlined above we can suggest, as a working hypothesis that the Romans, probably took over this kind of sword, generally known and used in Sarmatian territories for centuries in the Carpathian Basin. Sarmatians usually played the role of enemies of Rome, but in several historical situations (e.g. Trajan's Dacian Wars) they fought as the allies of the Empire. If

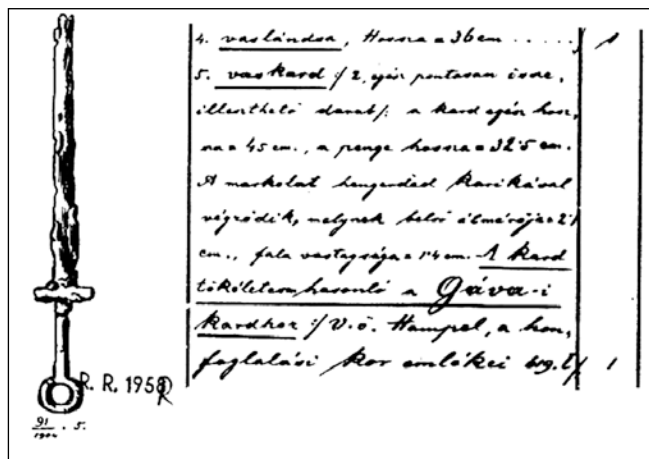


Fig. 12: Drawing of the Szil sword in the inventory book (courtesy of the Hungarian National Museum)



Fig. 15: A family grave-stone from Aquincum, with a ring-pommeled sword at the side of man at the left (photo by Valéria Kulcsár)

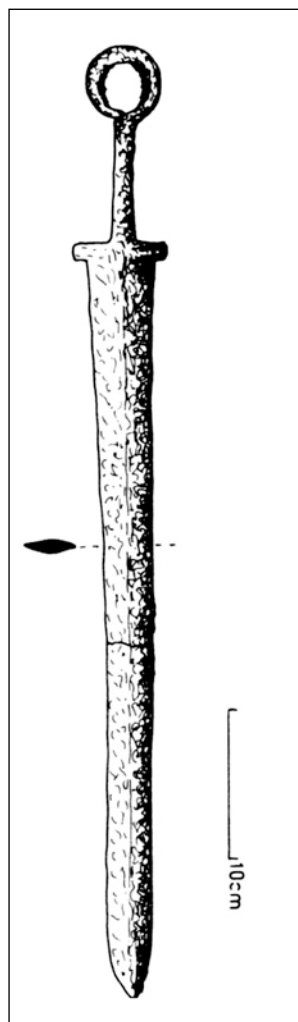


Fig. 13: Sword from Százhalombatta, Southern cemetery, grave 14 (after TOPÁL 1981, VI: 5)

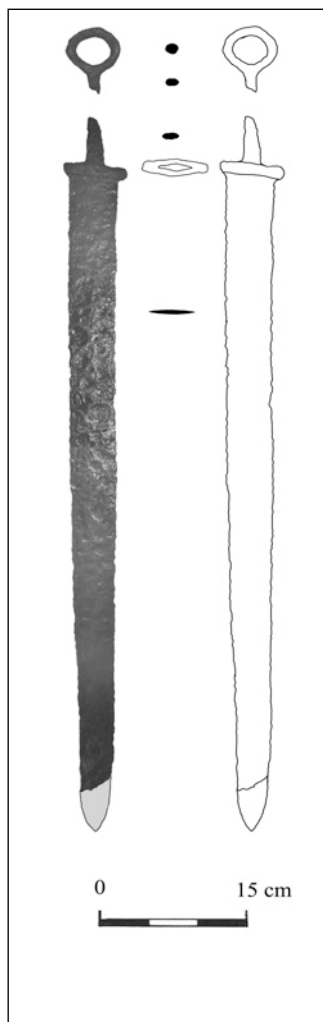


Fig. 14: Sword from Budaörs (after MRÁV 2006, Abb. 9)

this adoption really went on, the earliest datable case is the Budaörs one. So, the borrowing of the form could have happened somewhere in the first half of the 2nd century³⁷. Later the technology of ring-pommeled swords (riveting), their shape (strongly thickening ring at the upper part) and decoration (inlay) developed mainly according to Roman taste.

At the same time, the custom of wearing the sword formed in different ways. According to depictions, Romans wore it in a different way than Sarmatians did. As we could see on the Kerch depictions cited above, Sarmatians and other Iranians or people under Iranian influence (Fig. 4) wore it fixed to the thigh, whereas Romans suspended it onto the belt, as it can be well seen on the family grave-stone from Aquincum (Fig. 15)³⁸.

The piece from Üllő represents a transition form between dagger and knife. This fact refers to the circumstance that ring-shaped pommels were in general use in Sarmatian milieu, and these objects were made by Sarmatians themselves. This is a new aspect supporting the hypothesis that it was the Romans who borrowed this

type of weapons from Sarmatians and not vice versa. The latter would be realistic from chronological point of view. However, for the time being it is difficult to say, where this borrowing went on (in the Carpathian Basin or east of it). Despite the serious chronological difference, mapping of the majority of the sites shows a sort of system: most of them were found by the route Aquincum–Porolissum.

NOTES

1. ISTVÁNOVITS–KULCSÁR 1992; ISTVÁNOVITS–KULCSÁR 1994; ISTVÁNOVITS–KULCSÁR 1995; ISTVÁNOVITS–KULCSÁR 2001.
2. BÂRCĂ 1999, with the summary of the most important data on ring-pommeled swords.
3. HAZANOV 1971, 6–9, with further references.
4. HAZANOV 1971, 12–13.
5. DVORNICHENKO–FIODOROV–DAVYDOV 1994, ris. 5.
6. LUND-HANSEN 1995, fig. 4: 6a, Taf. 2.
7. ROSTOVTSSEV 1913–1914, LXXXIV: 1; DAVYDOVA 1990, 56–58. cat. 46–48.
8. Jósa András Museum, Nyíregyháza inv.no. 63.27.1, 63.383.1–3, old inv.no. IV.63–64; JÓSA 1915; with a summary of earlier references PÁRDUCZ 1944, 39–40, 79–81; PÁRDUCZ 1950, 64–65; ISTVÁNOVITS 1986 with further references.
9. PÁRDUCZ 1944, 52, Taf. XXV: 5, XXIV: 11, 13.
10. VADAY 1989, 266, cat. 276. – finds were published on the basis of the inventory description.
11. VADAY 1989, 282, cat. 402. – finds were published on the basis of the inventory description.
12. Kossuth Museum, Cegléd inv.no. 93.1.4. (disc: 93.1.5.) TARI 1994, 259–260, fig. 2: 2, fig. 3: 2; HAVASSY 1998, 151, 171. Cat. 33, 166.
13. Kossuth Museum, Cegléd, unpublished.
14. Kiskun Museum, Kiskunfélegyháza inv.no. 74.4.1–3. PÁRDUCZ 1956, 147. XXII: 5.
15. Hungarian National Museum, we did not succeed in finding the sword in the Sarmatian collection. PÁRDUCZ 1966, 43–44. XVI: 8.
16. DINNYÉS 1991, 170.
17. BIBORSKI 1993, 102. For their spread see: KACZANOWSKI 1994, 144. Anhang 1, Abb. 1.
18. BIBORSKI 1993, 102–103.; BIBORSKI 1994.
19. BIBORSKI 1993, Abb. 21.; BIBORSKI 1994, Abb. 4: 1–3, 6.
20. BIBORSKI 1993, 103, this hypothesis was not repeated in his later study: BIBORSKI 1994.
21. BIBORSKI 1993, Abb. 21: 4.; BIBORSKI 1994, Abb. 4: 6.
22. LUND-HANSEN 1995, 386–387.
23. LUND-HANSEN 1995, 385–388; LUND-HANSEN 2001,

158–163; CARNAP-BORNHEIM–ILKJÆR 1996, 360–365; CARNAP-BORNHEIM 2001, 136; ISTVÁNOVITS–KULCSÁR–CARNAP-BORNHEIM 2006, 100–101, 107–108.

24. KOVÁCS 2005, 960–965 with further reference.
25. HAZANOV 1971, 6.
26. For the description of Roman weapons, see BIBORSKI 1994, 85. In the material collected by Biborski we find also piece analogous to the ones found on Sarmatian territory. Biborski himself examined this piece separately (BIBORSKI 1994, 90. Abb. 4: 6). In the question of differences between Sarmatian and Roman swords an independent conclusion, similar to ours, was made by Polish archaeologist Sylwester Sadowski (Lublin). He also thinks that Romans borrowed the type from Sarmatians. (SADOWSKI, in print). We thank him for the opportunity to study his unpublished manuscript.
27. KOVÁCS 2005, 960–961 with further reference.
28. Inv. no. KS 64.7. Length: 28.5 cm. It was dated to the 3rd century. Cf.: Istenek, katonák, polgárok Aquincumban. Kiállítás az Aquincumi Múzeum megnyitásának 100. évfordulója alkalmából. [Gods, soldiers, citizens in Aquincum. Exhibition arranged on the 100th anniversary of the Aquincum Museum] Budapest 1995, 43. Nr. 57. In the catalogue of the exhibition no precise description, photo or drawing of the sword can be found. The sword is displayed on the permanent archaeological exhibition of the Aquincum Museum.
29. CARNUNTUM 1992, 311, Nr. 35.
30. Hungarian National Museum inv.no. 91.1904.5.
31. PÁRDUCZ 1944, 39, 79 with further reference.
32. We thank Zsolt Mráv for this information.
33. This information is important, taking into consideration that this custom is known at the Sarmatians (cf. ISTVÁNOVITS 1993, 137).
34. TOPÁL 1981, 17, 93.
35. See also MRÁV 2006, 43–44, Abb.10: 3.
36. MRÁV 2006. We thank Zsolt Mráv for the possibility to study his work in print and especially for placing the drawing of the Budaörs sword at our disposal. Our consultation proved to be very useful for both studies.
37. See also MRÁV 2006.
38. Aquincum Museum inv.no. 66.11.47.2. Cf. ISTVÁNOVITS–KULCSÁR 2001, 151. Fig. 9:5; KOVÁCS 2005, 961 with earlier reference.

BIBLIOGRAPHY

- AAH: Acta Archaeologica Academiae Scientiarum Hungarica, Budapest
 AH: Archaeologia Hungarica, Budapest
 ArchÉrt.:Archaelógiai Értesítő, Budapest
 BIBORSKI 1993: M. Biborski, Die Schwerter des 1. und 2. Jahrhunderts n. Chr. aus dem römischen Imperium und dem

- Barbaricum, *Specimina Nova*, 1993 (1994) 91–130
- BIBORSKI 1994: M. Biborski, Typologie und Chronologie der Ringknaufschwerter. In: *Markomannenkriege. Ursachen und Wirkungen. Spisy Archeologického Ústavu AV ČR Brno 1.* (Hrsgg.) H. FRIESINGER–J. TEJRAL–A. STUPPNER, Archeologický Ústav Akademie Věd České Republiky Brno, Brno, 1994, 85–97
- BÂRCĂ 1999: V. Bârcă, Sarmatic swords and daggers with ring-shape hilt in the Northern and North-western of the Black Sea, *Istros IX*, Brăila, 1999, 99–120
- CARNAP-BORNHEIM–ILKJÆR 1995: C. Carnap-Bornheim von–J. Ilkjær, Illerup Ådal. Die Prachtausrüstungen, *Jutland Archaeological Publications XXV: 5*, Århus, 1996
- CARNAP-BORNHEIM 2001: C. Carnap-Bornheim von: Das Waffengrab von Geszteréd (Komitat Szabolcs-Szatmár-Bereg) aus „germanischer“ Sicht. In: *International Connections of the Barbarians of the Carpathian Basin in the 1st–5th centuries AD. Proceedings of the international archaeological conference held in Aszód and Nyíregyháza in 1999* (ed.) E. ISTVÁNOVITS–V. KULCSÁR, *Múzeumi Füzetek 51, Jósa András Múzeum Kiadványai 47*, Aszód – Nyíregyháza, 2001, 125–138
- CARNUNTUM 1992: *Carnuntum. Das Erbe Roms an der Donau I.* Katalog der Ausstellung des Archäologischen Museums Carnuntinum in Bad Deutsch Altenburg, (Hrsg. W. JOBST) Wien, 1992
- DAVYDOVA 1990: Л. И. Давыдова, *Боспорские надгробные рельефы V в. до н.э. – III в. н.э.* Каталог выставки, Ленинград, 1990
- DINNYÉS 1991: I. Dinnyés, A hévízgyörki szarmata sírok. – Sarmatian graves from Hévízgyörk, *StudCom 22*, 1991, 145–201
- DVORNICHENKO–FIODOROV–DAVYDOV 1994: В. В. Дворниченко–Г. А. Фёдоров–Давыдов, Раскопки курганов в зоне строительства Калмыцко–Астраханской и Никольской рисовых оросительных систем. In: *Сокровища сарматских вождей и древние города Поволжья* (Отв. ред. Смирнов, К.А.) «Наука», Москва, 1989, 14–132
- FontArchHung: *Fontes Archaeologici Hungariae*, Budapest
- HAVASSY 1998: P. Havassy, *Katalógus*. In: Jazigok, roxolánok, alánok. Szarmaták az Alföldön, *Gyulai Katalógusok 6*, (szerk. HAVASSY P.), Gyula, 1998, 147–174
- HAZANOV 1971: А. М. Хазанов, *Очерки военного дела сарматов*, «Наука», Москва, 1971
- HUNDT 1955: H.-J. Hundt, Nachträge zu den römischen Ringknaufschwertern, Dosenortbändern und Miniaturschwertanhängern, *Saalburg Jahrbuch XIV*, 1955, 50–59
- ISTVÁNOVITS 1986: E. Istvánovits, *Északkelet-Magyarország területének római kori története*, Kandidátusi disszertáció, Budapest, 1986 manuscript
- ISTVÁNOVITS 1993: E. Istvánovits, Das Gräberfeld aus dem 4.-5. Jahrhundert von Tiszadob-Sziget, *AAH XLV*, 1993, 91–146.
- ISTVÁNOVITS – KULCSÁR 1992: E. Istvánovits – V. Kulcsár, Pajzsos temetkezések a Dunától keletre eső Kárpát-medencei Barbaricumban. – Погребения с умбонами в Барбарикуме Карпатского бассейна к востоку от Дуная. Schild-Bestattungen im östlich der Donagelegenen Barbaricum des Karpatenbeckens, *JAMÉ XXX–XXXII*, (1987–1989) 1992, 47–96
- ISTVÁNOVITS – KULCSÁR 1994: E. Istvánovits – V. Kulcsár, Roman and Germanic elements in the armament of the barrow-graves of the 2nd-3rd centuries AD in the Great Hungarian Plain, In: *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten*. Akten des 2. Internationalen Kolloquiums in Marburg a. d. Lahn, 20. bis 24. Februar 1994 (Hrsg.) CLAUS von CARNAP-BORNHEIM, Marburger Kolloquium 1994, Lublin–Marburg, 1994, 405–416
- ISTVÁNOVITS – KULCSÁR 1995: E. Istvánovits – V. Kulcsár, Szálfegyverek és íjak a Dunától keletre fekvő kárpát-medencei szarmata Barbaricumban. – Stichwaffen und Bögen östlich der Donau gelegenen sarmatisches Barbaricum des Karpatenbeckens, *Altum Castrum IV*, Visegrád, 1995, 9–32
- ISTVÁNOVITS – KULCSÁR 2001: E. Istvánovits – V. Kulcsár, Sarmatians through the eyes of strangers. The Sarmatian warrior. In: *International Connections of the Barbarians of the Carpathian Basin in the 1st-5th centuries AD. Proceedings of the international archaeological conference held in Aszód and Nyíregyháza in 1999* (ed.) E. ISTVÁNOVITS – V. KULCSÁR, *Múzeumi Füzetek 51, Jósa András Múzeum Kiadványai 47*, Aszód – Nyíregyháza, 2001, 139–169
- ISTVÁNOVITS – KULCSÁR–CARNAP-BORNHEIM 2006: E. Istvánovits – V. Kulcsár – C. Carnap-Bornheim von, The place of the barbarian warrior burial from Tiszalök–Rázompusztá in the third century history of the Upper Tisza region, *Archäologisches Korrespondenzblatt 36*, 2006, 91–110
- JAMÉ: A Jósa András Múzeum Évkönyve, Nyíregyháza
- JÓSA 1915: A. Jósa, Ásatások a gávai Katóhalmon és környékén, *ArchÉrt*, **35**, 1915, 197–210
- KACZANOWSKI 1994: P. Kaczanowski, Das Problem der Wiederspielung der Markomannenkriege in der Waffenfunden des Barbaricums. In: *Markomannenkriege. Ursachen und Wirkungen. Spisy Archeologického Ústavu AV ČR Brno 1.* (Hrsgg.) H. FRIESINGER–J. TEJRAL–A. STUPPNER, Archeologický Ústav Akademie Věd České Republiky Brno, Brno, 1994, 139–148
- KOVÁCS 2005: P. Kovács, Beneficiarius lances and ring-pommel swords in Pannonia. In: *Limes XIX. Proceedings of the XIXth International Congress of Roman Frontier Studies* (ed.) ZS.

- VISY, University of Pécs, 2005, 955–970
- LUND-HANSEN 1995: U. Lund-Hansen, Das Fundmaterial. Himlingøje – Seeland – Europa. Überregionale Betrachtungen. In: U. Lund Hansen et alii: *Himlingøje – Seeland – Europa. Ein Gräberfeld der jüngeren römischen Kaiserzeit auf Seeland, seine Bedeutung und internationalen Beziehungen. Nordiske Fortidsminder Serie B, Band 13*, København, 1995, 141–169, 385–416
- LUND-HANSEN 2001: U. Lund-Hansen, Gold Rings – Symbols of Sex and Rank. Necklaces and bracelets in Scandinavia and Continental Europe from the Late Roman and Migration periods. *KVHAA Konferenser 51*, Stockholm, 2001, 157–188
- MRÁV 2006: Zs. Mráv, Paradeschild, Ringknaufschwert und Lanzen aus einem Römerzeitlichen Wagengrab in Budaörs. Die Waffengräber der lokalen Elite in Pannonien, *ArchÉrt 131*, 2006, 33–73
- PÁRDUCZ 1944: M. Párducz, *Aszarmatakor emlékei Magyarországon, II. – Denkmäler der Sarmatenzeit Ungarns, II. AH XVIII*, 1944
- PÁRDUCZ 1950: M. Párducz, *A szarmatakor emlékei Magyarországon, III. – Denkmäler der Sarmatenzeit Ungarns, III. AH XXX*, 1950
- PÁRDUCZ 1956: M. Párducz, *Beiträge zur Geschichte der Sarmaten in Ungarn im II. und III. Jahrhundert, AAH VII*, 1956 139–182
- PÁRDUCZ 1966: M. Párducz, *The Scythian Age cemetery of Tápiószéle, AAH 18*, 1966, 35–91
- ROSTOVCEV 1913–1914: М. И. Ростовцев, *Античная декоративная живопись на юге России*, Санкт-Петербург, 1913–1914
- SADOWSKI in print: S. Sadowski, The sword from 8th grave on cemetery in Zvenihorod–„Goeva gora” in Ukraine. Contribution to the researches upon origin and spread of the swords with ring-shaped pommel.
- SOPRONI 1998: S. Soproni, *Római kor*. In: Százhalombatta története. Állandó kiállítás vezetője, (szerk. I. POROSZLAI – M. VICZE, Matrica Múzeum, Százhalombatta, 1998, 15–21
- StudCom: Studia Comitatus, Budapest
- TARI 1994: E. Tari, *Korai szarmata sír Újszilváson. – Early Sarmatian grave from Újszilvás*. In: A kőkortól a középkorig. – Von der Steinzeit bis zum Mittelalter. Tanulmányok Trogmayer Ottó 60. születésnapjára (szerk. Lőrinczy G.), Szeged, 1994, 259–261
- TOPÁL 1981: J. Topál, *The Southern Cemetery of Matrica (Százhalombatta-Dunafüred)*. *FontArchHung*, Budapest, 1981
- VADAY 1989: A. H. Vaday, Die sarmatischen Denkmäler des Komitats Szolnok. Ein Beitrag zur Archäologie und Geschichte des sarmatischen Barbaricums, *Antaeus 17–18*, (1988–1989) 1989
- VADAY – KULCSÁR 1984: X. Андреа Вадаи – Валерия Кульчар, К вопросу о так называемых сарматских пряжках, *AAH XXXVI*, 1984, 239–261



The war as seen by an archaeologist. Reconstruction of barbarian weapons and fighting techniques in the Roman Period based on the analysis of graves containing weapons. The case of the Przeworsk Culture

Bartosz Kontny

The methods of combat used in the Roman Period have been discussed by many authors, who based their work mainly on the information from written sources and ancient iconography¹, and used the archaeological sources only to illustrate their views. There is no point in repeating what has already been discovered in this respect, new monographs do not bring any substantial changes to the picture. However, it should be noted that the archaeological sources from certain cultural domains provide the possibility to reproduce some methods of combat and their changes. Particularly promising material is provided by Przeworsk Culture graves, frequently of precise chronology, which often contain sets of weapons.

From the very start it should be made clear that the analysis of combinations of weapon sets found in burial features has some limitations and they can be used to reconstruct the weapon sets used in actual combat only tentatively. It is tempting to assume that weapons put in the grave together with the deceased made up his actual combat gear. However, there existed many factors which might have distorted the true image. To quote H. J. Eggers² these are the processes leading to the replacement of the living culture (**die lebende Kultur**) by the dead culture (**die tote Kultur**), which becomes the rediscovered culture (**die wiederentdeckte Kultur**) owing to excavations or accidental discoveries. This is accompanied by the information drift (decrease in the amount of information) which may be explained by the entropy or destruction of the archaeological material but also by using improper excavation or conservation methods³, as well as other reasons. For the discussed period the last mentioned ones may mean, e.g., putting only selected objects in the grave or involving some magical-religious behaviour characteristic for the burial rites some of which are

extremely problematic or even impossible to be detected or interpreted today. One should mention apotropaic activities - protecting the dead and protecting from the dead, which may be reflected in equipping them with sharply ending objects such as shafted weapon heads, knives, scissors etc.⁴. Using the *pars pro toto* principle is also of great importance. This, as it seems, concerned mainly the shields, the symbolic meaning of which was very popular among the Ancient civilisations and, as is indicated by the graves equipped in weapons, probably in the *Barbaricum*. Frequently noticed ritual destruction of weapons carried out probably after burning on a funeral pyre before placing them in grave pits is also connected with the magical-religious sphere.

An important part might have been played also by economic issues, e.g., as a result of a shortage of valuable swords in a given population, they were not always put into the graves. Perhaps in this case the sword was handed over to the successors of the deceased. It seems, however, that if that phenomenon became widespread, far fewer swords would be recovered archaeologically. Moreover obvious chronological inconsistencies should be traceable, resulting from the longer use of swords (old-fashioned swords put in graves after decades of use together with modern items). Actually such cases are unique. The military equipment might reflect also the proprietary relations: the deceased warrior did not have to possess all the weapons he used but could have been temporarily provided with them, e.g., by the leader (in the case of retinue members); as a result the weapons which were not his private property would not be put in his grave.

Another factor which, while limiting information about the **lebende Kultur**, in a significant way modified the mod-

ern knowledge about the military equipment, was the custom of cremation. The corpses were cremated on a funeral pyre together with their equipment because of ideological and religious premises. For that reason the objects made from organic materials could not be preserved (only occasionally remains of the shafts can be found in the sockets of spear- or arrowheads). This custom might have distorted the modern perception of the Przeworsk Culture military equipment the more so that there are reasons to believe that some of the elements (e.g., shields, spears, maces) might have been made entirely from non-durable materials. Also objects made of glass, copper, silver and gold could have been destroyed as the temperature at the pyre was higher than the temperature at which these raw materials melt. In the case of military equipment this might have resulted in the degradation of e.g., bronze shield fittings (especially of the edges and the surface of the shield), inlays on swords and shafted weapon heads, etc.⁵.

It is possible that some elements of the military equipment were not deposited in the burials because they were lost when the remains of the pyre were transferred to the grave. This pertains especially to small elements of military equipment such as rivets and nails from shields, fittings from their edges and objects shredded in the process of ritual destruction. It was impossible to destroy completely larger elements such as, e.g., a sword unless it was symbolically replaced by the scabbard. This might have been particularly important starting from the end of phase C_{1b} as the grave goods in that period became poor and much less numerous and the grave pits generally shallower and smaller. As the amount of human bones was smaller in burials than that remaining after an experimental incineration of a human skeleton, it has been suggested that only part of the charred bones and remains of pyre was put into the grave⁶. It also seems probable that the remains of several cremations might have got mixed up on a pyre (as a result bones of several individuals may be registered in one burial). These dangers seem to involve anthropological issues rather than those concerning the 'completeness' of grave goods. Cases of evident 'inconsistencies' in the composition of the grave goods impossible to explain in any other way are quite rare.

Another valid factor diminishing the information gained by archaeological methods might have been grave robberies. The existence of this phenomenon has been confirmed by the numerous traces of plunderers' pits, frequently registered in burials from the Barbaricum of the Roman Period. As they usually concern burials with valuable grave goods, but not necessarily of an outstanding form, it may be assumed

that many of the robberies took place in Antiquity, soon after the body was buried when the robbers might have known the value of the grave goods and their precise location⁷. The proof of pillaged burials in the middle Warta river basin (which concerns mostly burials of the Przeworsk Culture), probably by an artisan-moulder is the hoard from Łubiana, Kościerzyna commune. The analysis of the hoard indicates that the robbery probably took place in the Early Migration Period⁸. Traces of the robbery may not be noticed if the excavations are not conducted in a fully professional way.

It should be finally stressed that despite their attempts archaeologists are not able to reproduce the greater part of burial rites. For that reason it is impossible to ensure that some features of the burials and grave goods are not interpreted contrary to their true significance. Ethnographical examples presenting the disproportions between the reasoning generally applied by the archaeologists and the reality known from the ethnographical descriptions have been presented by e.g., P. J. Ucko or F. McHugh⁹.

One should underline that we most probably deal with the real weapon, used in everyday life. This is corroborated by the fact that traces of repairs are occasionally spotted on weapons found in graves. They appear mainly on shield bosses (rarely also shield grips, swords, lances and spurs), which may be explained by the fact that they are permanently exposed to the hits of an enemy's weapon. Moreover, the most frequently repaired parts of shield bosses are places where enemy's blows stop and therefore are ultimately effective, e. g. lower part of spikes (Fig. 1)¹⁰. Also some unusual deformations noticed on shield bosses might be very informative. For example the twisted spike of the umbo type Jahn 7b (loose find) from Nasławice, Sobótka commune, Wrocław district, dolnośląskie voivodehip resulting plausibly from a perpendicular hit to the hard material, like an opponent's shield boss, seems to demonstrate its use as a weapon (Fig. 2).

In the light of the grave goods from the Przeworsk Culture it should be assumed that the basic offensive weapons put in the graves, and probably also used in life, were shafted weapons¹¹. The analysis of the proportion of burials equipped with shafted weapons is presented in Diagram 1, which additionally takes into account the data from the Late Pre-Roman Period. It presents the changes in frequency of burials with shafted weapons¹² in comparison to the number of all weapon graves from a given phase¹³. The results indicate that the proportion of burials with shafted weapons

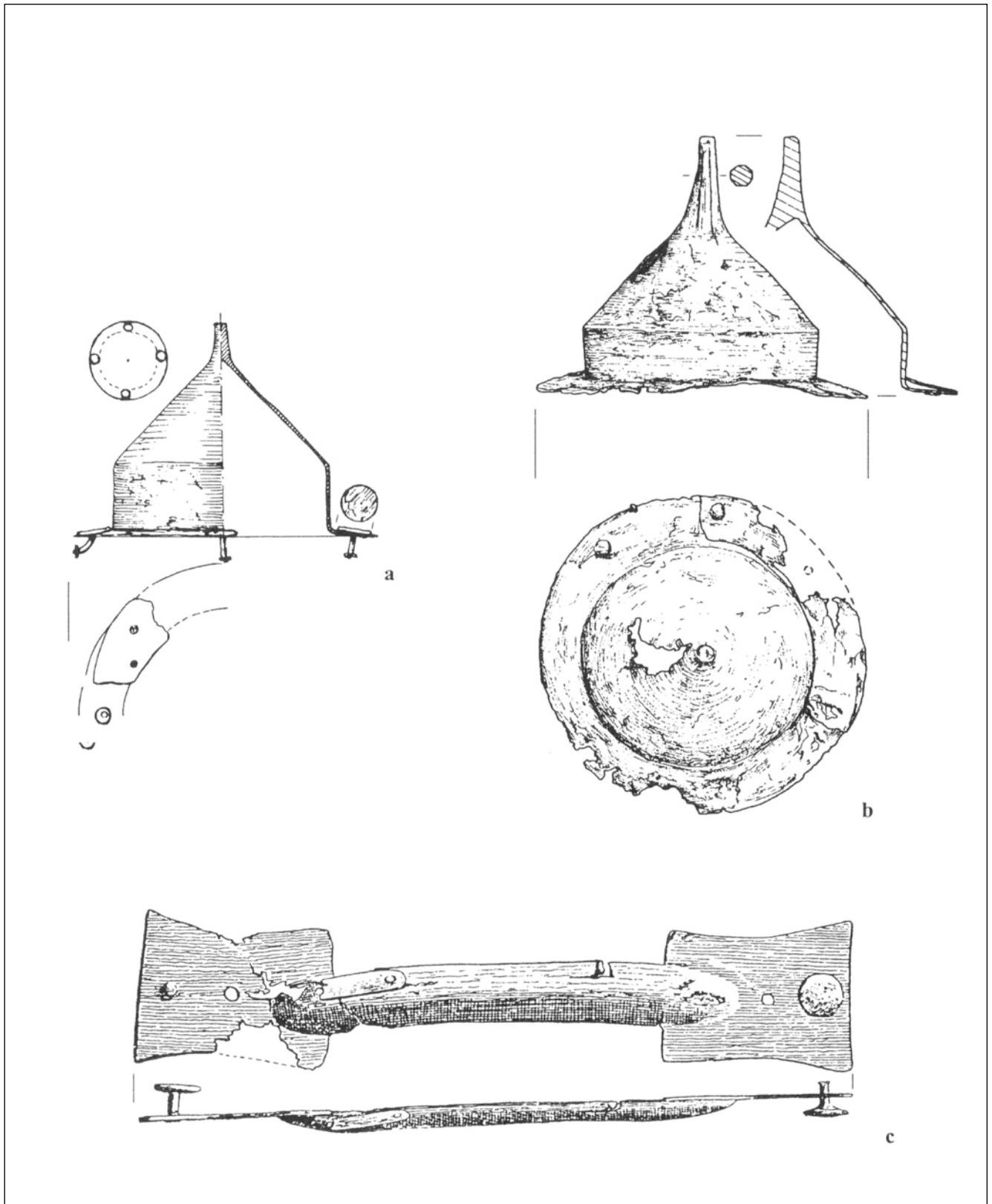


Fig. 1: Traces of repairs located on shield elements: a - Kamięńczyk, grave 293 (DĄBROWSKA 1997, pl. 134: 293,1), b - Nadkole, grave 29 (ANDRZEJOWSKI 1998, pl. 19: 4), c - Młodzikowo, grave 183 (DYMACZEWSKI 1958: Fig. 319: 12).

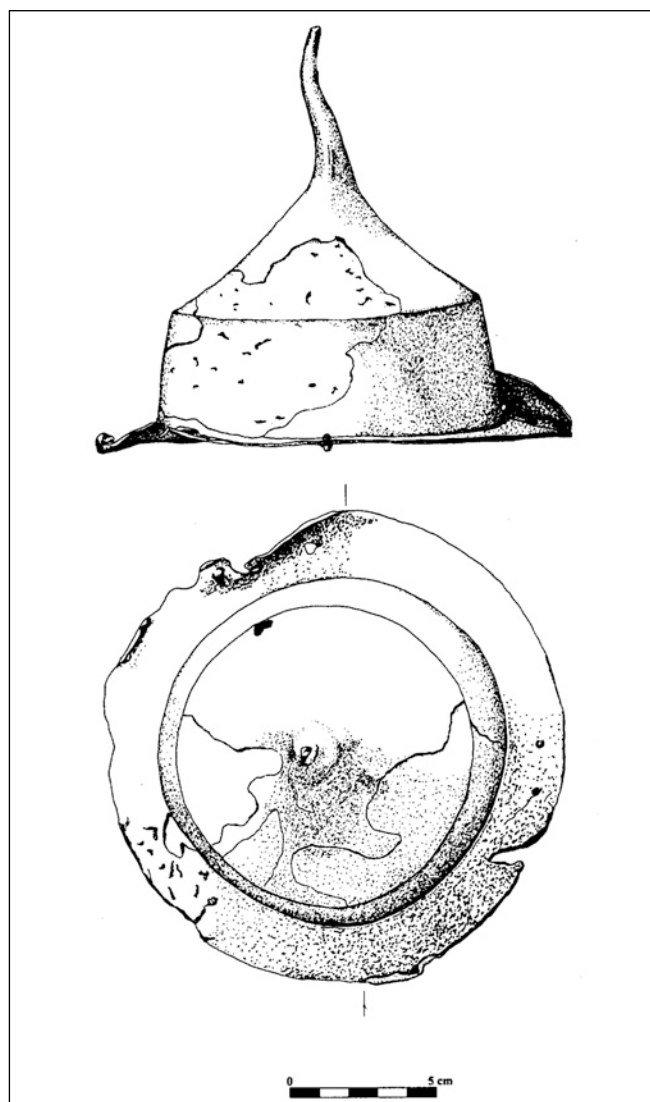


Fig. 2: Shield boss from Nastawice with traces of deformation (KONTNY 2001a: Fig 2).

changed in time, yet it never fell below 50%, and sometimes reached (A₂) or even exceeded (B_{2b}) 90%¹⁴.

Diagram 1 does not, however, distinguish between the burials with single shafted weapon heads and those with their greater number. For that reason I decided to study also other aspects of this problem. First I put together the burials with more than a single shafted weapon head (changes of frequency measured in the same way as above) - Diagram 2. It yielded the following picture: burials with several shafted weapon heads can be found as early as in phase A₁, yet their number is very small. The phases which follow manifest a tendency towards increase, reaching a culmination in phase B_{2b} (more than 70 % burials with weapons had several heads). Then there was a gradual decline of importance of this category of grave goods, which completely disappeared in phases C₂-D¹⁵.

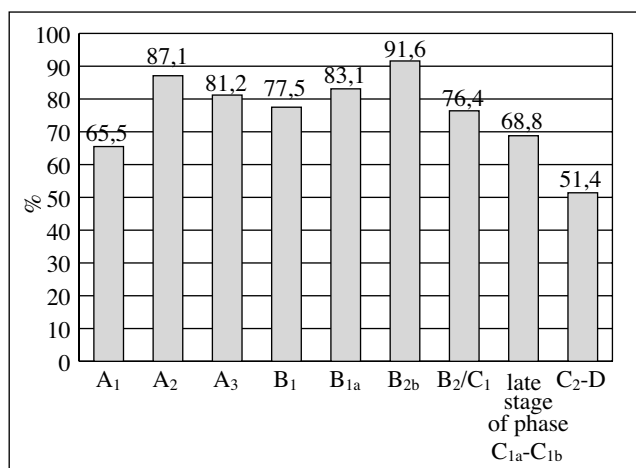


Diagram 1: Frequency of weapon graves furnished with weapon head(s) in the Przeworsk Culture

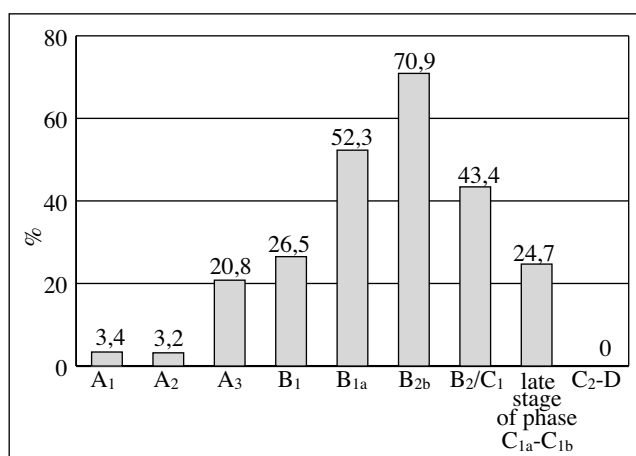


Diagram 2: Frequency of weapon graves furnished with than one shafted weapon head in the Przeworsk Culture

The appearance of more than two heads of shafted weapons in burials has been remarked upon in literature and this phenomenon was mainly linked with phase B_{2b}¹⁶. In this connection it seemed worth while to study the importance of this phenomenon. A histogram (Diagram 3) presenting the numbers of grave assemblages containing several heads was made. Two variants: two shafted weapon heads, and more than two shafted weapon heads were taken into consideration. The diagram indicates that burials with more than two shafted weapon heads were very rare and those with two heads were predominant¹⁷.

It is worth reviewing how the frequency of barbed heads looks against that background (these heads were included in Diagram 2). It is known that they appeared in the Roman Period until phase C_{1a}¹⁸, and were considered to be the most numerous in phases B₁ and B_{2a}¹⁹. The data (frecuen-

cies) presented in Diagram 4 confirm this observation and additionally indicates that the custom of placing barbed heads in burials culminated in phase B_{2a}²⁰. Barbed heads are considered unequivocally as javelin heads²¹ for the presence of barbs made it impossible to use the weapon more than once: because of the barbs the weapon could not be quickly pulled out of the object in which it was stuck (i.e., the shield or the body of the opponent). This kind of weapon would be a hinderance in hand to hand combat, so it should be considered as a thrown one²². The above observation concerning changes in the frequency of barbed heads does not mean, however, that javelins were most often put into burials in phase B_{2a}. The presence of javelins in burial assemblages may be also indicated by other elements, e.g., heads without barbs of different forms (sizes) appearing in one burial.

I tried to obtain additional data concerning the shafted weapon heads' function by studying the differences of length of pairs of heads with leaf shaped blades from one burial. Considerable differences would mean the presence of a lance and a javelin, whereas similar sizes would indicate that weapons of similar form and function were used, suitable both for close combat and fighting from a distance (weapons of dual function)²³. For that purpose the percentages of differences between pairs of heads, calculated with respect to the smaller item have been compared. In this way, it seems, it is easier to spot differences in function than if differences measured in centimetres were to be taken into account for in the former case the warriors' individual preferences as to the sizes of heads played a lesser part. Some warriors for example might have preferred weapons with long blades, others with shorter ones; in the latter case the differences in lengths would be smaller even though it would not necessarily reflect the relative specialisation of the weapons.

In this method the limits of scale values were determined arbitrarily: the sizes and number of the intervals were established so that they fit the rules (which today are not so strict as they used to be²⁴), on the one hand, and on the other one, to retain the comparability of the results for the respective phases. As in determining the limits of the intervals the frequency distribution of the measurements were taken into account, the picture is not blurred. Differences of at least 30% have been assumed as substantial (this limit seems to distinguish the heads sufficiently). Only well preserved heads or those damaged to a slight degree (and thus possible to reconstruct) have been taken into account²⁵.

The percentage differences of the lengths of the heads found in pairs in burials from phase B₁ were generally small

(up to 30% - cf. Diagram 5). This may indicate that pairs of weapons of similar sizes were put in the graves (if it is assumed that the heads of similar size indicate that the shafts were also of the same length). It thus seems that pairs of similar weapons designed both for close and long distance combat were put into the graves (Fig. 3). In the case of greater differences, located in the next scale values, a clear diversification of the functions of the heads into lance- and javelin heads should be considered, yet such cases are very rare. It should not be forgotten that the phenomenon of diversification of shafted weapons was more widespread than is suggested by Diagram 5: some burials contained several (almost always two) heads, one of which had barbs (Diagrams 2-4).

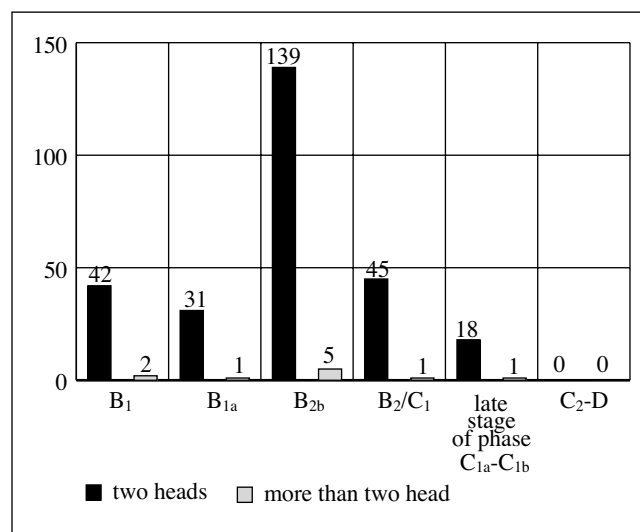


Diagram 3: Number of graves furnished with more than one shafted weapon head in the Przeworsk Culture from the Roman Period

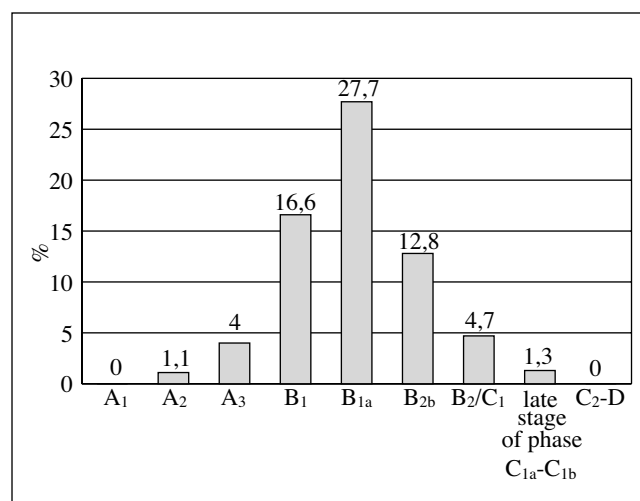


Diagram 4: Frequency of graves furnished with barbed javelin-heads in the Przeworsk Culture.

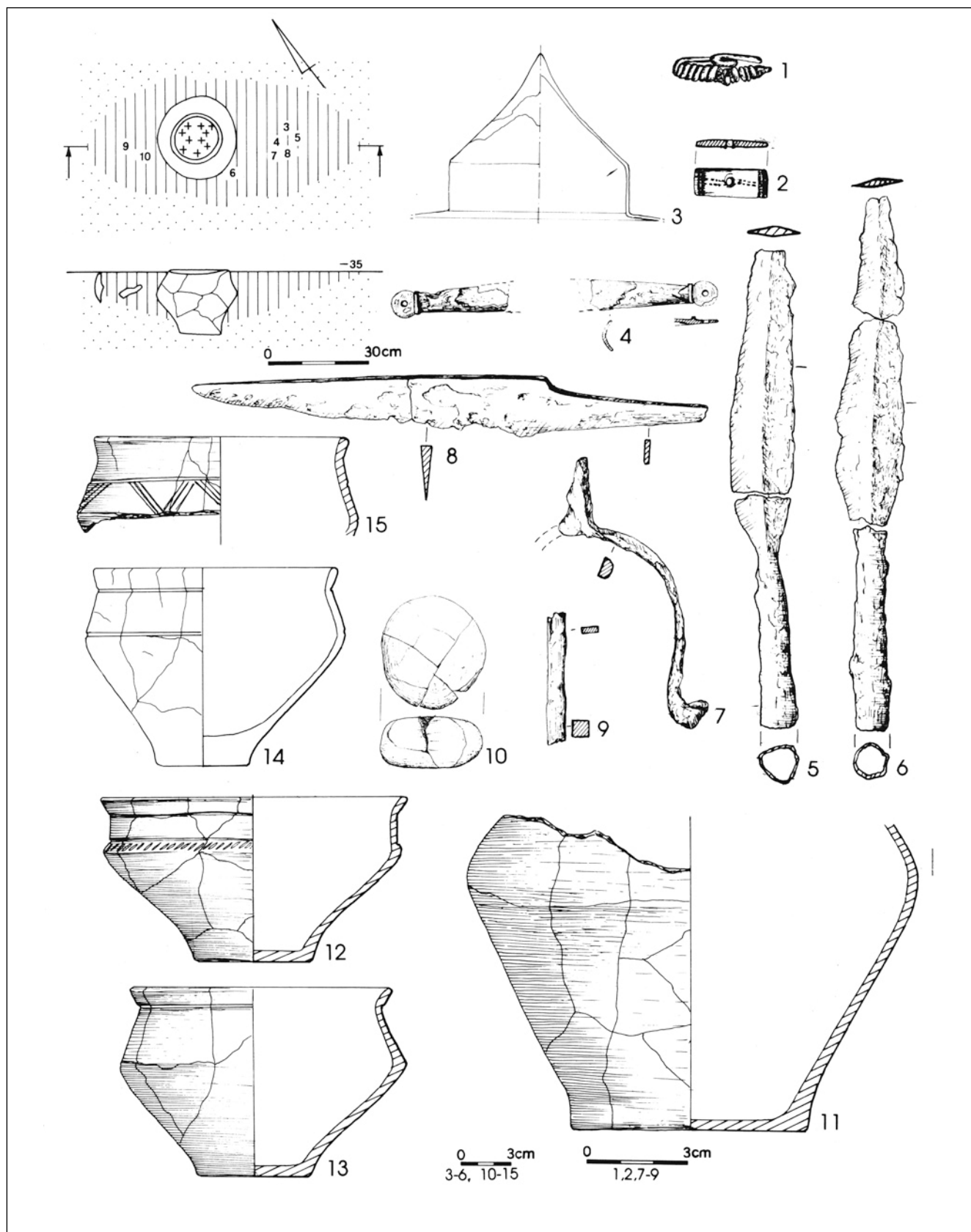


Fig. 3: Heads of shafted weapons of almost equal sizes - grave furnishing from phase B₁: Kamieńczyk, grave 292 (DĄBROWSKA 1997, pl. 135).

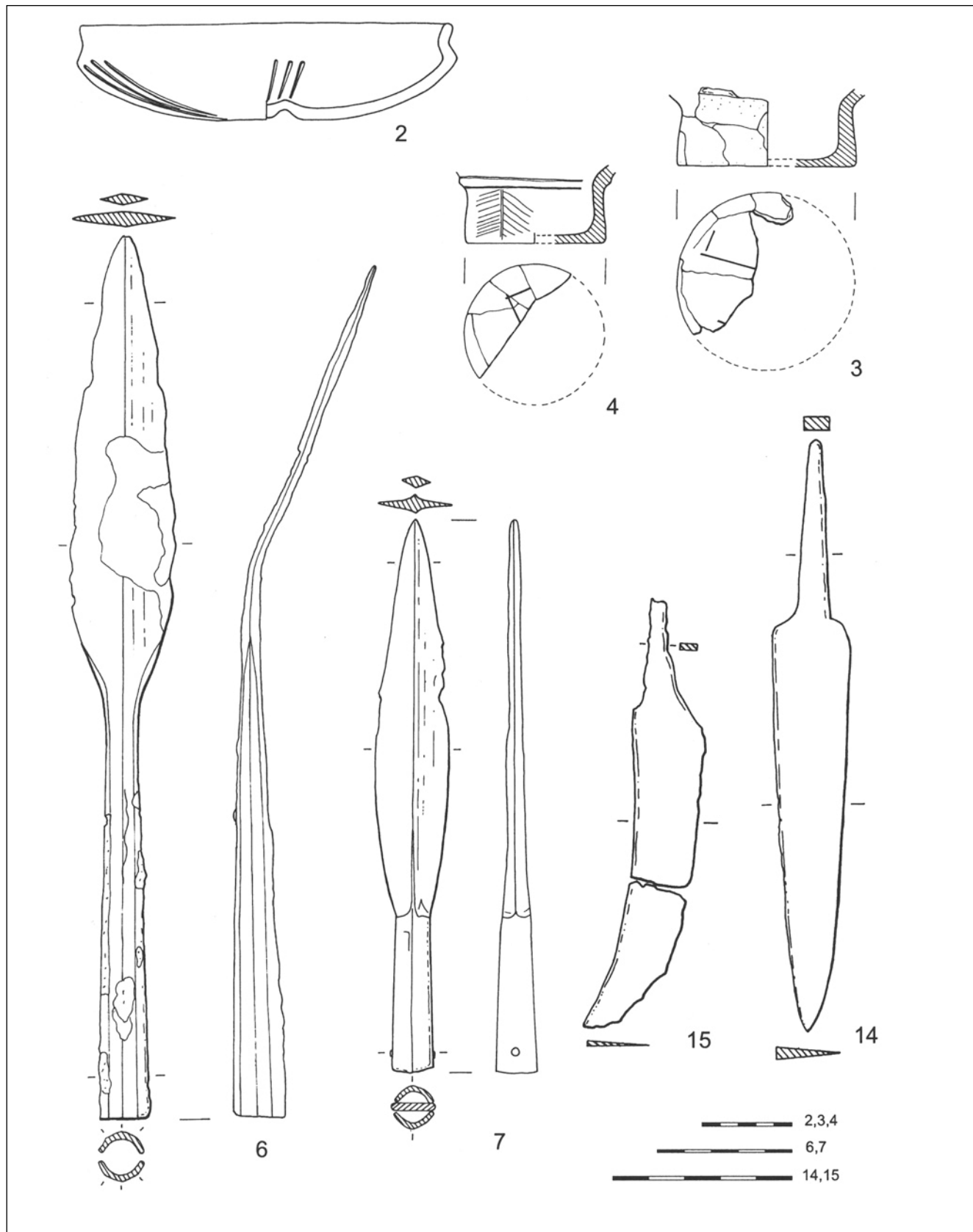


Fig. 4: Heads of shafted weapons of unequal sizes - part of grave furnishing from phase B_{2b}; Chmielów Piaskowy, grave 28 (GODŁOWSKI-WICHMAN 1998: pl. 42).

Also in the case of the heads of shafted weapons from phase B_{2a} appearing in pairs, the differences in length were most often insignificant, although in this phase there were more cases of clear diversification (Diagram 6); the frequency of barbed heads reached its peak, which suggests that javelins played an important role (Diagram 4).

The situation changed considerably in phase B_{2b}: Diagram 7 reveals a much more frequent, clear diversification of the lengths of pairs of heads (Fig. 4). The cases fitting into the first interval are in a minority in comparison to the other results. This may indicate an increasing differentiation in the functions of the shafted weapons with leaf shape blades: universal weapons with a dual function being replaced by more functionally determined weapons: the lance and the javelin. It should not be forgotten that this phenomenon is more prominent as the diagram does not take into account pairs of heads, one of which had barbs (this phenomenon is not as frequent as in the previous phase but still significant - cf. Diagram 4).

In phase B₂/C₁ pairs of heads in burials only slightly differed in length, becoming similar in this respect compared to the results obtained for phase B_{2a}, than B_{2b} (Diagram 8). This may suggest a gradual replacing of specialised weapons (lances and javelins) by weapons of dual function (this is also indicated by the scarcity of barbed weapons in burials, cf.: Diagram 4).

Diagram 9 reveals that in the late stage of phase C_{1a} and in phase C_{1b} pairs of heads did not considerably differ in length. All the significant differences were at the same level as in the previous phase: pairs of heads of similar length were predominant. This tendency, noticeable already in the previous phase probably reflects that spears and javelins were not distinguished so much as in phase B_{2b}. This is also confirmed

by the lack of barbed heads among grave goods (this takes place before the end of phase C_{1a}²⁶) and rare occurrences of pairs of shafted weapon heads in burials (cf. Diagram 2).

For phases C₂-D it is impossible to draw any conclusions on the basis of differentiation of heads' sizes co-occurring in burial assemblages because no cases of two weapon heads in one feature have been recorded.

The above-presented domination of universal, bifunctional shafted weapons in burials from the Roman Period seems to be reflected by the actual military equipment as described by Tacitus in *Germania*²⁷. Tacitus informs us that the weapons used by the Germans were *hasta* (Roman name for shafted weapons) with a narrow and short iron (he means the head) called the *framea*, which could be used both for stabbing and throwing²⁸. According to Tacitus, mounted warriors used shields and *frameas* but foot warriors additionally had *missilia* (missiles), which they threw in greater numbers²⁹. Tacitus mentions the *missilia* used as javelins. An analogy to these *missilia* can be found in Germanicus' speech described by Tacitus in the *Annales*. According to Germanicus, only the first line of the German warriors had the *hasta* and the rest used only weapons hardened by fire or short *missilia*³⁰. It seems that the *missilia* described in *Germania* and the *tela* from the *Annales* are the same type of weapon. The information that they were predominant probably did not reflect the reality, but rather the fact that Germanicus' speech was addressed to the Roman legionnaires before a battle and its aim was to present the weaknesses of the Germans and thus to encourage the legionaries to fight.³¹ The only important intelligence might concern the small number of the weapons. However, even this piece of information might be the result of Germanicus' (or Tacitus') over interpretation and in fact shorter weapons of the *framea* type were meant or other very short shafted weapons.

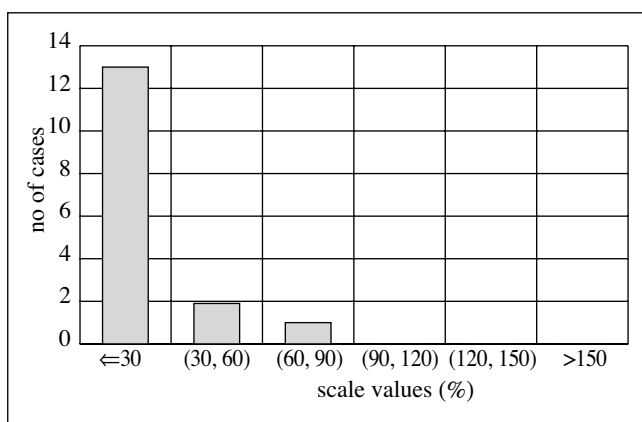


Diagram 5: Percentage differences in length between shafted weapon heads found in graves from phase B₁

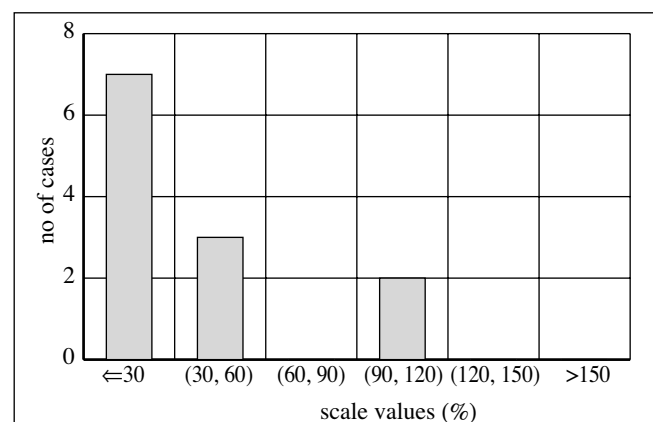


Diagram 6: Percentage differences in length between shafted weapon heads found in graves from phase B_{2a}

Taking into account the limitations of the Germania as a source of knowledge about the central European Barbaricum (especially as regards dating Tacitus' information to the 1st century AD and its only comparative value with respect to the areas occupied by the Przeworsk Culture³²) it may be tentatively assumed that the *framea*, used for close combat, throwing and horseback combat, fits the above-described weapons of dual function. It is worthy to note that Tacitus' remarks about the universal character of the Germans' *framea* concern the 1st century AD which is equivalent to phase B₁ and partly B_{2a}³³ and confirms the observations made on the basis of the archaeological material of the Przeworsk Culture.

The Ancient sources cause another difficulty in interpretation concerning Germanic shafted weapons. This topic was discussed by W. Adler³⁴, who quotes, i.a., descriptions of large Germanic shafted weapons (*praelongae hastae*,³⁵ *hastae ingentes*,³⁶ *enormes hastae*³⁷) and assigns considerable importance to these references: in his opinion the Romans believed that most of the Germans possessed shafted weapons of huge dimensions. This was supposed to concern foot warriors, as the fragment describing their combat style and weapons is taken from the *Annales*³⁸. This description, however, can hardly be considered as objective, for it serves to present the usefulness of Roman weapons (short swords) in contrast to the unwieldy Germanic shafted weapons during combat in a crowded space. A similar case is the context of description of a German lance presented in Germanicus' propaganda speech mentioned above³⁹. The other examples mentioned by W. Adlers concern the Batavians⁴⁰ or the Cherusci⁴¹, that is German tribes remaining under a considerable Roman influence and thus very different from the majority of tribes living further to the east. Moreover, these descriptions depict the military defeats of the Roman army, and the Germans are presented as individuals of giant height and the size of shafted weapons is probably designed to stress this fact. Therefore Tacitus' words describing the majority of the Germans and concerning rarity of iron resulting in scarce appearance of swords and long lances seem to be more adequate⁴². The context in which this information is presented allows us to interpret the expression "long lances" as meaning weapons with well-developed metal parts (large head). Probably the shortage of iron in German lands should be treated as a *topos*, but the description of military equipment seems to reflect Tacitus' actual state of knowledge, as he tried to subordinate the known information to the *topos*.

Establishing the actual dimensions of shafted weapons would be a considerable contribution to the study of combat

ways. Some information in this respect could be derived from the location of weapon heads in inhumation burials. The place where the head is found allows us to reconstruct the maximum length of a shafted weapon calculated as the section between the top of the weapon head and the intersection point of the limit of the burial pit with the axis of the head⁴³. The determination would be almost certain if a spear butt were found at the extension of the axis of the head. The presence of the spear butt would also allow to determine if the shaft was broken before having been put in the grave (in this case the spear butt would not be in line with the head) and in the opposite case the length of the shafted weapon could be established quite exactly. Unfortunately, as cremation burials were predominant in the Przeworsk Culture, there is no data available about the dimensions of wooden elements of shafted weapons⁴⁴. In this situation any attempts at reconstruction have to be based on indirect data or analogies from other cultural spheres and chronological periods.

Finds of completely preserved shafted weapons were made at bog sites in Denmark dated generally to the Younger and Late Roman Period⁴⁵. Although at Thorsberg the iron heads were not preserved, four shafts of the lengths: 81,3 cm, 250,2 cm, 273 cm, 294,6 cm⁴⁶ were discovered⁴⁷. At Nydam the shafts were between 230 and 305 cm long⁴⁸. At Kragehul no complete shafted weapons were excavated⁴⁹, but at Vimose there were five such cases. The lengths of the shafts found there amounted to: 248 cm, 274,3 cm, 275,4 cm, 277,8 cm and 335,3 cm. The find of a complete shafted weapon from Vimose, which had a total length of about 50 cm (and the length of the head was ca 25 cm) was a unique discovery. The shaft was made of a slightly curved branch, not completely stripped of the bark, sharpened at one end⁵⁰ (Fig. 5a). All in all, it may be said that the shafts were usually from 240 to 300 cm in length⁵¹. Similar lengths of shafted weapons from bog sites are mentioned by other researchers⁵². No clear differences in length between shafts furnished with barbed heads (javelins) and shafts with heads without barbs have been recorded, but, as the sample is small, it can not be the basis for drawing any definite conclusions. It is worth referring here to the only complete shafted weapon from Nydam (Fig. 5b)⁵³. It was quite long (ca 307 cm), and in its central part had a string loop (due to its small size it can not have been a loop attached to the shaft which was used to carry the weapon on the shoulder by the cavalry⁵⁴). This made C. Engelhardt⁵⁵ consider it as a javelin⁵⁶. However, due to its considerable size⁵⁷ this weapon was most probably used for hand to hand combat, the more so as (as the illustration in C. Engelhardt's book indicates) the loop was too short to be

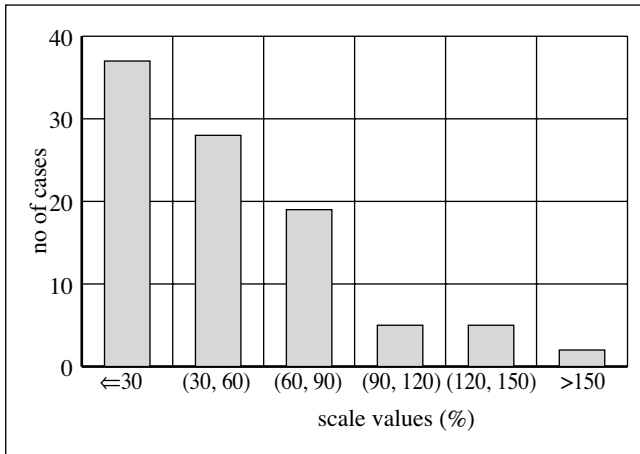


Diagram 7: Percentage differences in length between shafted weapon heads found in graves from phase B_{2b}

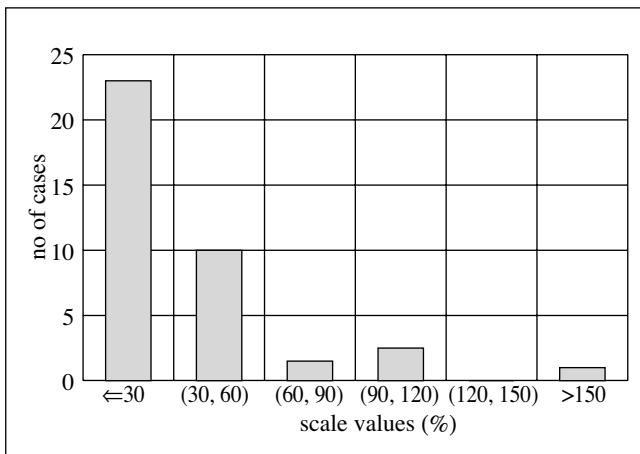


Diagram 8: Percentage differences in length between shafted weapon heads found in graves from phase B₂/C₁

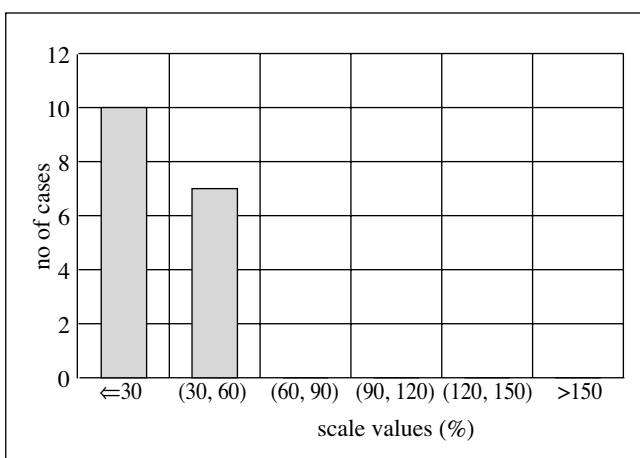


Diagram 9: Percentage differences in length between shafted weapon heads found in graves from late stage of phase C_{1a} and phase C_{1b}

wound around the shaft. Interestingly, in this case the very long shaft was equipped with quite a short head (ca 15 cm in length). It is not possible to study this find again today: the most recent publication of C. Engelhardt's materials reveals that none of the Nydam shafts have been completely preserved till today⁵⁸.

A tentative review of shafted weapon head finds from inhumation burials in the area of central and northern Barbaricum⁵⁹ suggests that shafts from bog finds and some burials from Scandinavia from the Younger and Late Roman Period might have been much longer than shafted weapons known from the areas of Barbaricum⁶⁰ further to the south where the total length of shafted weapons seldom exceeded 2.0 m, and usually was close to the height of the warriors. This issue can not, however, be settled definitely. It is also interesting to note that javelin heads (with barbs) and shafted weapon heads with leaf-like blades differed in length only to a small degree.

The representations of the Germanic warriors in Roman iconographic sources are not very helpful in reconstructing the sizes of shafted weapons. The main sources are sarcophagi with battle scenes and the column of Marcus Aurelius (the representations on coins or *tropaia* are too schematic in their composition and do not show the actual weapons)⁶¹. As the representations are subordinated to the composition of the whole work of art the sizes of the weapons may not be exact. Moreover, some of the elements in sculpted pieces have been reconstructed in modern times and thus do not reflect the original state; this concerns especially the most prominent parts of the bas-reliefs. The analysis of iconographic representations may only lead to the conclusion that shafted weapons were usually as tall as their owners⁶². An example is provided by the representations of Germanic foot warriors from the times of Marcomannic Wars imagined on the column of Marcus Aurelius (scenes LX and LXII)⁶³ (Fig. 6). It is also worth noting the representation of a Germanic mounted warrior in scene XXXIV, who is fighting with a slightly longer spear than the ones described above⁶⁴ (Fig. 7). Other examples are provided by the representations of Germanic infantry warriors from the Portonaccio Sarcophagus⁶⁵ (Fig. 8). In the latter⁶⁶ case the weapons represented were considerably shorter. Obviously, it is impossible to assess the precise dimensions of the weapons on the basis of these sources. This can be caused by the requirements of the composition: the figure of the fighting German was placed in the bottom left-hand corner of the battle scene as a result of which the actual dimensions of the shafted weapon could not have been represented

properly. The analysis of other representations of combat on the Roman battle sarcophagi (the form was quite popular in Rome especially from the 160's AD till ca 200 AD⁶⁷) does not allow to assess the length of Germanic shafted weapons because no such valuable representations have been preserved (mythological representations on battle sarcophagi are prevailing). Representations of Germanic warriors are also known from the so-called bronze appliques⁶⁸, but the parts with images of shafted weapons have not been preserved⁶⁹.

To sum up the general observations concerning shafted weapons it should be stated that probably in the Early Roman Period, despite a certain specialisation of form and functions (barbed heads which definitely belonged to javelins) the majority of shafted weapons might have been used in a two-fold way depending on the need as a lance or as a javelin. The former function was probably very important, as may be indicated by the great number of burials with single heads of shafted weapons, especially in earlier stages of the Early Roman Period. Specialisation of the heads with leaf-shaped blades appeared as late as phase B_{2b}. In that period usually pairs of heads clearly differing in sizes were put into burials, which allows us to assume that they belonged to lances and javelins. Still later, the specialisation of shafted weapons is abandoned and the frequency of burials with pairs of heads decreases. This is probably the outcome of a departure from using javelins in favour of lances or weapons designed for close combat as well as for throwing. It is not very probable that such a state resulted from the distortions caused by the decline of the burial rites which began in the late phase C_{1b}. This question was posed by K. Godłowski who compared the Przeworsk Culture grave goods with the burials from Scandinavia (where pairs of heads still occurred) on the one hand, and on the other one with the area of Germany and the so-called "Laeti" burials from Gaul (where the custom of providing the dead with only one head was predominant)⁷⁰. This possibility is, however, quite scant for we are dealing here with a culmination of a process that began long before the change of burial rites. It should be noted that the above-mentioned decline did not concern all the Przeworsk Culture burial grounds, as it can not be observed at Korzeń, Łąck commune, district Płock, mazowieckie voivodeship⁷¹; no cases of pairs of shafted weapon heads in burials were found there, however⁷². It may be said that from phase C₂ additional shafted weapons ceased to be used completely.

Shafted weapons ought to be analysed also in connection with their use in horseback combat. For a start it is worth following changes in the frequencies of burials with horse

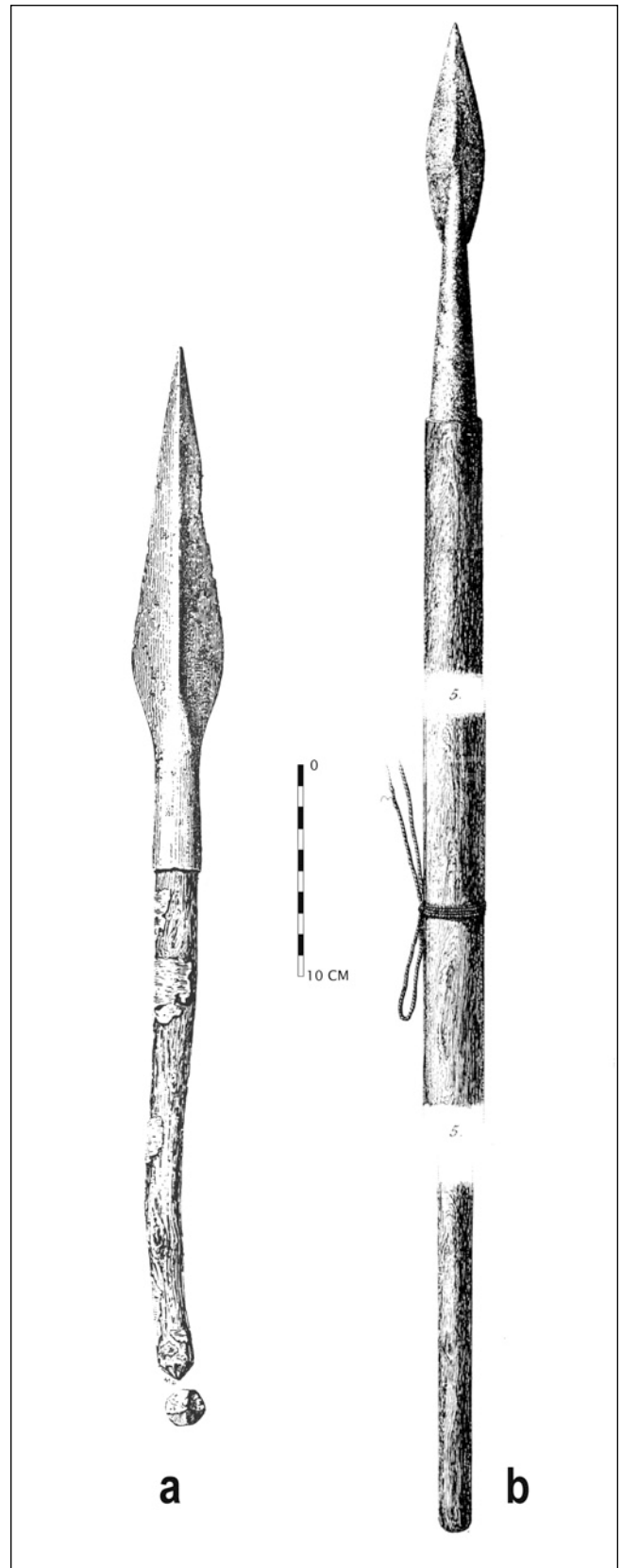


Fig. 5: Completely preserved shafted weapons from Scandinavian bog sites: a - Vimose (ENGELHARDT 1869, Fig. 23), b - Nydam (ENGELHARDT 1865, pl. X: 5).

harness⁷³. (Diagram 10) The first burials with horse harness appeared in phase A₂ (which should be linked with the appearance of spurs in the Przeworsk Culture). They appeared sporadically, and slightly increased in importance in phase A₃. A significant increase took place in phase B₁, when almost every fourth burial contained items of riding equipment. This result may be to some extent explained by the fact that this paper takes into account materials from the north-eastern zone of the Przeworsk Culture. In this area, especially in the so-called Nidzica Group from phase B₁ weapons in burials appeared only exceptionally. Only the spurs remained a common element of grave goods⁷⁴. As this area was taken into account there appeared a certain overrepresentation of spurs in contrast to other categories of military equipment. This concerns several burials⁷⁵ out of the 151 analysed ones so it does not seem that the distortion should be considerable. Thus we have a more frequent than previous custom of equipping the deceased with spurs. In phase B_{2a} burials with spurs were less numerous which to some extent may be due to the small number of burials⁷⁶. This does not necessarily mean that spurs were no longer used but might be the a result of an inexplicable tendency to put spurs in burials more rarely. In the consecutive phases the proportion of burials with riding equipment increased until phase B₂/C₁ and the period equivalent to the late stage of phase C_{1a} and phase C_{1b}, when spurs could be found in almost every third burial with military equipment⁷⁷. This seems to reflect the more frequent use of horses by the warriors. In phases C₂-D the spurs disappeared from grave assemblages⁷⁸, which certainly did not mean that horses were no longer used but rather a result of changes (decline) in the burial rite. It is even assumed that the horse was used in battle to a greater extent in the Younger and Late Roman Period; the importance of the horse was to be expressed in the use of longer two-edged swords equivalent to the Roman cavalry *spatha*⁷⁹ and a clear increase of the frequency of such swords in burials⁸⁰ (cf. Diagram 11). K. Godłowski accepted the possibility that the almost complete lack of spurs in burials was connected with changes in horse riding style⁸¹. However, in the light of the bog deposits from Scandinavia from the Younger and Late Roman Period and Early Migration Period⁸² it seems that spurs were still in use at the end of the Roman Period and during the Migration Period⁸³.

The elements of riding equipment were often accompanied in burials by pairs of heads of unequal length. This does not have to mean that javelins were used in horseback combat, although this gave a clear advantage in contrast to

foot combat as the missile was thrown from a greater height and thus had a greater range and precision⁸⁴. Such examples were known in the Roman world, as is testified by the writings of Josephus Flavius (*The Wars of the Jews*, 3, 92, 5)⁸⁵. The weapons he mentioned were smaller than normal shafted weapons and several (at least three) of them were carried in a case attached to the saddle⁸⁶. Experiments have allowed us to see that using such weapons was connected with complicated manoeuvres requiring, a horned saddle. Without it the rider's movements (especially of his trunk) might easily make him fall. To obtain concrete benefits in such kind of combat a large number of riders was necessary, which required careful group training and expert command⁸⁷. In the German world such a type of combat was theoretically possible in the case of centrally commanded and trained warriors, e.g., in service of such rulers as Marobodus.



Fig. 6: Germanic foot warriors pictured on Marcus Aurelius' column, scene LX (HAMBERG 1936, Fig. 3).



Fig. 7: Image of a Germanic mounted warrior. Column of Marcus Aurelius, scene XXXIV (CAPRINO et al., 1955, Fig. 44-45).

According to the Ancient sources he organised his state following the Roman model and had a large army (Velleius Paterculus II, 109), formed after the Roman pattern. There are no reasons to assume that the Przeworsk Culture population had any centrally commanded troops using another style of fighting than brave but uncoordinated attacks typical of the majority of the Germans⁸⁸. Moreover, there are no reasons to believe that the Przeworsk Culture population could use the horned saddle, so important for throwing a javelin from horseback. Besides, the occurrences of more than two shafted weapon heads in one burial are very rare; this seems to exclude the possibility of using numerous javelins in the Roman style. The above observations are on a par with the information given by Tacitus that the Germanic riders, in contrast to the infantry, did not use javelins but only a shield and a *framea*. There thus arises a question as to why in burials with riding equipment pairs of shafted weapon heads occur so often? The answer may be that horses indicated the high rank of the warrior and also were a means of transport to the battle, an element facilitating chasing the enemy or, in case of defeat, escape from the battlefield. The combat

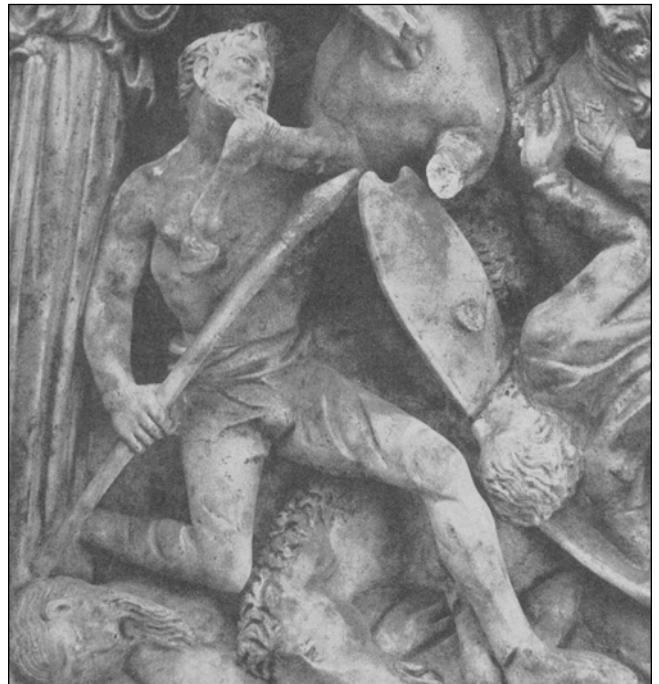


Fig. 8: Germanic foot warrior represented on the Portonaccio Sarcophagus (HAMBERG 1936, Fig. 14).

potential of the horse could have been exploited rarely in "normal" battles but more significantly during short-term military actions e.g., during looting forays of the retinue (*comitatus*)⁸⁹, although as these expeditions were probably casual it is hard to assume that horses were used as a part of tactical units. They helped to move faster (greater surprise value, effectiveness of the attack, chasing the defeated, escape in case of defeat or for fear of revenge, etc.) which does not, however, exclude, plundering forays made by warriors on foot⁹⁰. The aim was rather to use the speed offered by these animals. One should assume that they might have served as means of transport not only for mounted warriors but also infantry. Horseback without a saddle left enough room for two persons and the horse might have carried two warriors, especially for a short distance. It was probably very important in methods of fighting used by the retinue, that consisted of mounted warriors as well as infantry⁹¹. We may draw a conclusion that warriors possessing horses on their own were possibly located higher in the hierarchy of retinue than foot soldiers, collected from inexperienced youngsters⁹². Therefore it doesn't sound astounding that the horse is presented by Tacitus as one of the most desired war booties, together with bloodstained *framea*⁹³. The latter seems to be a metaphor, but obtaining a war horse actually elevated warriors to a higher position⁹⁴.

If the reasoning presented above is correct, pairs of shafted weapons from burials with riding equipment should be interpreted as ones used after dismounting but before combat (the more so as the heads found either together with spurs or without them do not reveal any differences in form). This may also be indicated by the frequent co-occurrence of spurs and short two-edged swords, in phase B₂ meant mainly for close foot combat (mainly stabbing) not for horseback combat. The greatest number of pieces of riding gear was found in burials from phase C₁. The Ancient descriptions (e.g., of the battle of Argentoratum⁹⁵ by Ammianus Marcellinus and information by Tacitus concerning the Venethi⁹⁶) as well as the representations of the Germans in Roman iconography (reliefs on the column of Marcus Aurelius and the Portonaccio Sarcophagus⁹⁷) seem to indicate that only a small number of Germanic warriors fought on horseback in the Roman Period (also in the late stage of it). The fact that warrior groups did not necessarily have to be composed mainly of riders is also indicated by the bog finds from the Younger and Late Roman Period. As they were composed of weapons won in the battle from the defeated aggressors, they represent the weapons used in practice, not 'filtered' through

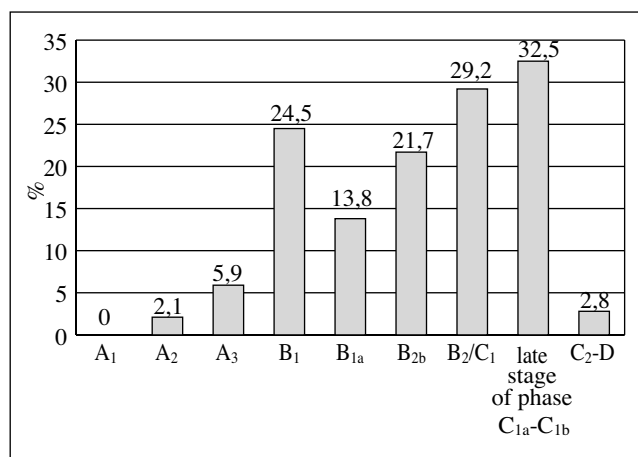


Diagram 10: Frequency of weapon graves furnished with riding gear (spurs) in the Przeworsk Culture

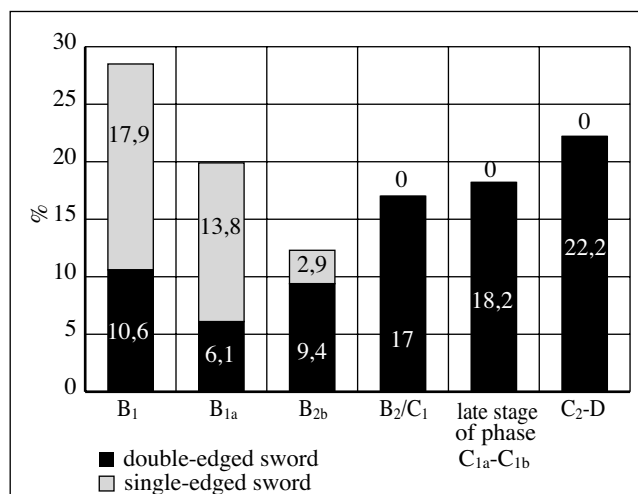


Diagram 11: Frequency of weapon-graves furnished with swords in the Przeworsk Culture from the Roman Period

the burial rites. The analysis of the military equipment found there allows us to conclude that only a small number of warriors had horses; they represented the highest ranks, who also possessed elements of costume and ornaments, as well as shield fittings, made of precious raw materials and richly decorated⁹⁸. This picture may be determined to some extent by the character of the supposed attacks: the invaders most probably got to the area of the Jutland Peninsula by boat. The vessels discovered at bog sites from the Roman Period (above all Nydam boats A, B and C⁹⁹), could not be used to transport large animals¹⁰⁰. There are, however, many reasons (analyses of horse skeletons put in bogs as offerings, the stylistics of riding gear, etc.) to assume that the invaders did bring the horses or at least horse harnesses¹⁰¹. Thus the problems of transport did not preclude using the horses (the more so as there could have been other transporting units¹⁰²), although they certainly

limited these possibilities.

In the grave assemblages from the Roman Period the elements of riding equipment were often accompanied by swords¹⁰³; this is particularly visible in phase C₁ when the swords were long, designed for slashing and suited to horseback combat. Any attempt at establishing the way they were used in combat must be preceded by the analysis in the frequency changes of the appearance of that kind of weapon in burials (Diagram 11). In phase B₁ the frequency was high, later on it decreased to reach its minimum in phase B_{2b}. From then on there was a gradual increase until phases C₂-D. The observed variability is connected with the stylistic changes of sword forms. For that reason the division into one-edged and two-edged swords was taken into account. One-edged swords, most often used as universal, handy stabbing/slashing weapons¹⁰⁴ appeared rarely in grave assemblages of the Przeworsk Culture starting from the Late Pre-Roman Period¹⁰⁵ but they became clearly more predominant in the Early Roman Period. The frequencies presented in Diagram 11 indicate that one-edged swords were a significant element of grave goods in phases B₁ and B_{2a}. Later on, although present until phase B_{2b}, one-edged swords appeared but sporadically¹⁰⁶. The above remarks generally support the previous findings¹⁰⁷.

Two-edged swords were very important as part of grave assemblages in the Younger and Late Pre-Roman Period although their frequency tended to decline¹⁰⁸; it was continued in the Early Roman Period and the lowest ebb in the appearance of two-edged swords in burials took place in phase B_{2a}. Later on their presence gradually increased and their level became fixed at more than 15% of all weapon graves in the following chronological periods. There was an increase in phases C₂-D¹⁰⁹.

Two-edged swords underwent significant changes in form (see Fig. 9-11): in the Late Pre-Roman Period they were similar to the La Tène forms i. e. long swords often with blunt points, designed for slashing¹¹⁰; in the Early Roman Period besides the residue late La Tène forms and longer swords with narrow blades of type I after M. Biborski¹¹¹ designed mainly for thrusting¹¹², there appeared short swords similar to the Roman *gladius* (the last-mentioned ones generally from phase B_{2b}), meant for stabbing and also, to a smaller degree, for slashing. At the end of the Early Roman Period there began to appear longer two-edged swords similar to the Roman *spatha* which clearly dominated in the later periods and were basically used for cutting (except for the rapier-like forms type X and some variants of type IX and XI serving equally for stabbing)¹¹³.

The diversity of two-edged sword forms is partly reflected in the differences of frequency apparent in Diagram 11. The decrease in the popularity of two-edged late La Tène forms was connected with the considerable disappearance of two-edged swords in general from burial assemblages; in phases B₁ and B_{2a} their position was taken over by single-edged swords¹¹⁴. The domination of two-edged swords in phase B_{2b} should be linked with the more widespread use of short double-edged swords and the domination of double-edged swords of long *spatha* type in grave assemblages of the Younger and Late Roman Period.

Although swords could be used in horseback combat (especially in the Younger and Late Roman Period), they were most probably used mainly in foot combat. This is suggested by the Roman iconographic sources. The column of Marcus Aurelius¹¹⁵ bears representations of Germanic warriors using swords in foot combat (scenes XV, XX, XXIX, XLIII, CIX) as well as a rider in a military context equipped with a sword as the only element of offensive equipment (scene XXVIII)¹¹⁶.

Similar conclusions are indicated by the Scandinavian bog finds from Illerup Place A and Ejsbøl Nord where a large number of long swords were discovered, yet only most spectacular group of them (with particularly ornamental hilts) could be linked with the few elements of riding equipment. This allows to assume that a large proportion of warriors using swords fought on foot¹¹⁷.

An important element of the defensive, but also offensive, military equipment was the shield. On the basis of the collected material from the Late Pre-Roman Period and the Roman Period it is possible to observe the following changes in the frequencies of burials with metal shield fittings¹¹⁸ (Diagram 12): in phase A₁ the proportion of analysed sets was considerably large in comparison with phase A₂. This difference, however, may be only apparent due to the small statistical sample for phase A₁¹¹⁹. From the end of the Late Pre-Roman Period (phase A₃¹²⁰) the shields with metal fittings gained in importance and until the end of the Early Roman Period they appeared in similar frequencies (slightly more than every second weapon grave contained metal shield fittings). There was a relatively higher (in contrast to the preceding and following phases) frequency of shield fittings in phase B_{2a}. It seems that this increase is a result of the above discussed limitations resulting from a large number of burials dated generally to phase B₂. Due to the potentially significant 'influence' of these burials on the results for phase B_{2a} it can not be assumed that this 'oscillation' reflects reality. A considerable increase can

be observed for phase B₂/C₁, which might to some extent have been the outcome of closer contacts in the sphere of weapons (including the shields) with the Roman world. There can be found in literature, for example some mentions of the influence of Roman weaponry on the popularity of hemispherical shield bosses type 8 after M. Jahn¹²¹ in the Younger and Late Roman Period, probably resulting from direct contacts between Germans and Romans during the Marcomannic Wars¹²². It may thus be that this influence is reflected also in the popularity of metal shield fittings. In the later period (the late stage of phase C_{1a} and phase C_{1b}) the shields with metal fittings became less widespread in burials but still remained at a higher level than in the Early Roman Period. This decline may be only apparent for a considerable proportion of burials dated broadly to the Younger and Late Roman Period contained fragments of shield fittings¹²³. The high frequency of burials with shield metal fittings in the chronological period equivalent to phases C₂-D may be due to the changes in the burial rite as a result of which the grave goods became poorer (in that period shield fittings were very often the only element of military equipment in burials perhaps symbolising the whole of weapons; more often than previously the graves contained shield grip fragments without shield bosses¹²⁴).

Equipping the dead with shields does not have to be reflected in the archaeological material. As cremation was the predominant burial rite in the Przeworsk Culture (the deceased were burnt with whole equipment) the possible cases of placing on the funeral pyre of shields made only of organic materials can not be traced. It seems that such shields may have been quite popular in the Roman Period¹²⁵. They were certainly more frequent in the Late Pre-Roman Period, especially in its earlier phases, which is proved by the small proportion of burials with metal fittings from that period and also archaeological finds of shields of organic materials from the Pre-Roman Period. At a bog site dated to the 4th century BC¹²⁶ at Hjortspring on the Isle of Als in Denmark ca 100 shields¹²⁷ were discovered, made entirely of wood, not one equipped with a metal shield boss, grip or a fitting¹²⁸. Moreover, the Celts, who had a huge influence on the Przeworsk Culture military equipment frequently used wooden shields. One may even imagine ones made of wicker¹²⁹ or wood and skin as proved by the bog find from Clonoura, Tipperary county (Ireland), where the shield with cover, *umbo* and edge strengthening made of skin was found¹³⁰. This may suggest that such shields were often used in that period, in the Przeworsk Culture. In the Roman Period the discussed shields, although not so numer-

ous (the proportion of burials with weapons equipped with shields with fittings is clearly higher) must have retained a certain importance. This is proved by the finds of wooden shields from bog sites at Vimose in Funen¹³¹ (not fewer than 5 wooden shield bosses¹³²) and Thorsberg (wicker¹³³ and wooden shield boss)¹³⁴. An important premise is provided by Tacitus' *Annales*. The Roman author makes Germanicus, encouraging the legionnaires to fight the Germans, speak about the weakness of Germanic shields made of "osiers woven together or of thin and painted board"¹³⁵. Germanicus' propaganda speech aims at contrasting the Roman and Germanic military equipment thus it probably does not entirely reflect the reality. However, the fact that the Germans used shields made completely from organic materials is in its light quite probable. The question remains only about the scale of the phenomenon which is probably presented untruly in Germanicus' speech. There are more premises that Germans used entirely organic shields in the Roman Period. One should remember images of Germanic shields with no room for a metal shield boss. Such a shield is presented on bas-relief from Marcus Aurelius' column (scene LXXVII¹³⁶). The shield is shown from the inner side, equipped with two shield grips: the longer around warrior's forearm and shorter held by hand (Fig. 12). Obviously grips made of organic materials are viewed here as they seem to be flexible, not stiff. Such kind of a shield was less intended to be used offensively than one with an umbo (smaller range, less manoeuvrability, lack of strong hitting part) although it is still possible, for example to hit the enemy's face with the use of a shield edge¹³⁷.

The popularity of metal shield fittings in burial assemblages, which culminated during phase C₁ should not be treated as a result of differences in the popularity of the shields themselves. The shield was the basic element of protective equipment with a very important offensive function, especially specimens with shield bosses¹³⁸. The forms of the bosses prove that such shields had to be used to attack (Fig. 9-11). They were often furnished with piercing spikes, e.g., the earlier types 6, 7b and 7a after M. Jahn¹³⁹. *Umbos* with a pointed spike (type Jahn 7b) seem to be the most efficient. They were popular in phase B_{2a} i.e. late stage of 1st-beginning of 2nd century AD. Their offensive use is probably corroborated by Tacitus' information concerning Germanic auxiliary cohorts. The Roman historian claims in "The Life of Agricola" that Germans used the shields as offensive weapons pricking opponents in their faces employing the shield bosses during the attack at the Battle of Mons Graupius in Caledonia in 83 AD¹⁴⁰. The

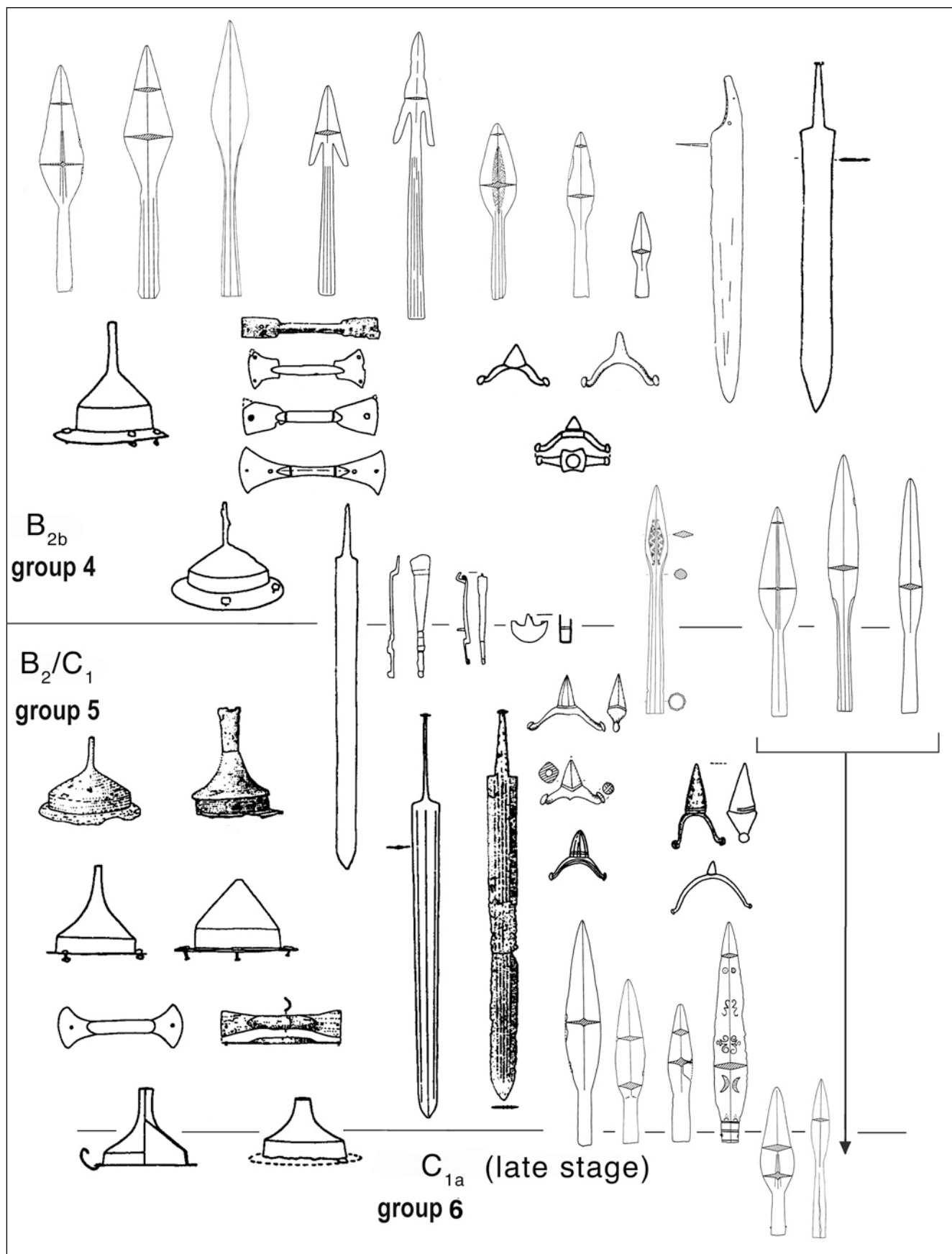


Fig. 10: Chronological groups of weapon graves; phases B_{2b}-C_{1a} (after GODŁOWSKI 1994a, supplemented by the author).

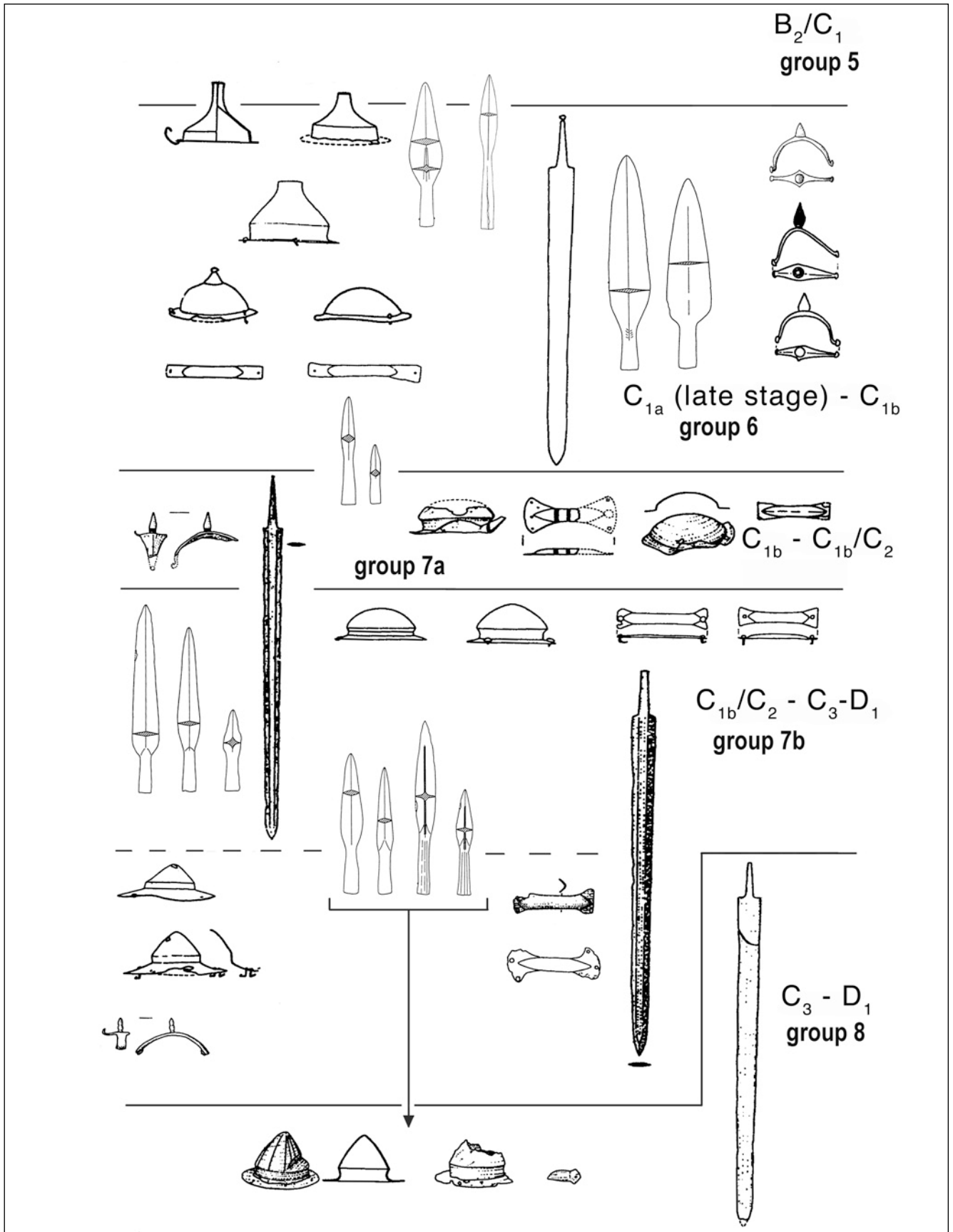


Fig. II: Chronological groups of weapon graves; phases C1b-D (after GODŁOWSKI 1994a, supplemented by the author).

popularity of shield bosses with pointed spikes and information given by Tacitus stand in surprising chronological accordance. The question arises as to why such a terrible weapon was abandoned. In my opinion pointed spikes, although effective, were too weak (spiked examples are frequently found with traces of damage, appearing during fighting, e.g., the previously mentioned shield boss from Nasławice). Therefore they were replaced by *umbos* with blunt spikes (type Jahn 7a) almost equally effective but far more durable. That is why the latter had been used for more than 100 years (at least phases B_{2b}, B₂/C₁).

The form of a shield is also of great importance. Unfortunately, organic materials do not survive but we may draw some conclusions by taking into consideration metal edge fittings from graves and rare analogies from other areas of barbarian Europe: skeleton graves with remnants of wood as well as edge fittings are known from Scandinavia, e.g. Hunn, Borge k., Norway¹⁴¹ and uniquely also from Eastern Germany e.g., Wachow, Kr. Nauen¹⁴². One should not forget numerous Scandinavian bog finds, like for example Vædebro in Eastern Jutland¹⁴³. However it should be stressed that we have another source of information at our disposal. These are miniatures of shields found in the female and child graves in the Przeworsk Culture, generally from the Early Roman Period (Fig. 13)¹⁴⁴. It is believed that they reflect the shape of shields actually used in battle. Summing up the above sources of information we may presume that in the Early Roman Period, the Przeworsk Culture population generally used smaller elongated shields of rectangular or hexagonal shape (sometimes with slightly curved longer edges) intended mainly for close-combat¹⁴⁵. Later on (phase C_{1b}) a new form of shield bosses appeared. Their hemispherical shape was probably influenced by a

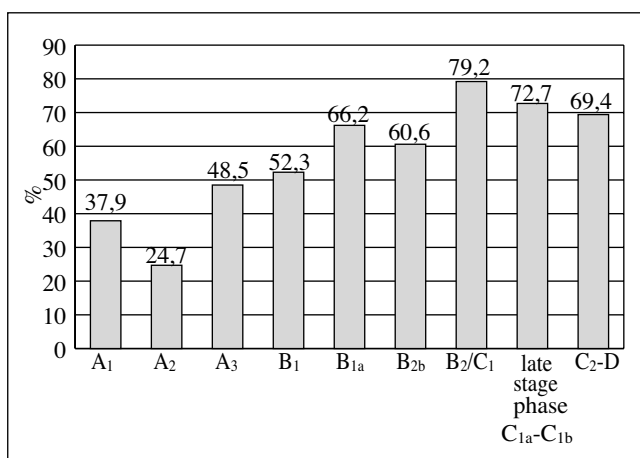


Diagram 12: Frequency of weapon-graves furnished with metal shield fittings in the Przeworsk Culture

Roman pattern¹⁴⁶. They had developed in their own, local way. The hemispherical form of a shield boss might indicate the alteration of fighting technique. Such an *umbo* is good for parrying the blows of enemy's weapons, which slid on their surface; it is not intended mainly for offensive use (the same concerns its Roman prototype). We have to remember the Younger and Late Roman shields from Scandinavia that changed significantly with the adoption of hemispherical shield bosses. There are several dozens of reconstructed shields known from that area. Almost all of them are circular, roughly 1m in diameter (Fig. 14)¹⁴⁷. Such huge shields seem to be clearly defensive not only because of characteristics of hemispherical *umbos*, but also because of their ability to shelter the body of a warrior. Together with lesser manoeuvrability it seems to be proven that we have shields used in ordered battle array. This is confirmed by a certain hierarchy of Scandinavian warriors deduced from artefacts found in bog sites; it manifests in the differentiation of quality and quantity of weapons (shields, swords and scabbards), belts and horse harness¹⁴⁸. Central organization of Scandinavian quasi-armies are confirmed also by the standardization of weapons e.g., shafted weapon heads produced in standard form in great numbers¹⁴⁹. They were probably in possession of military chiefs who dispensed them among warriors before a fight or military expedition¹⁵⁰.

In the Przeworsk Culture the situation was not so clear in the Younger and Late Roman Period. There are several findings of knee shaped or straight edge fittings from graves, which suggests that offensive shields were still in use, and the adoption of hemispherical shield fittings didn't



Fig. 12: Representation of a Germanic shield equipped with two organic (?) grips. Column of Marcus Aurelius, scene LXXVII (CAPRINO et al., 1955, pl. M).

change everything as regards to fighting techniques¹⁵¹. It is worth remembering here the hypothesis of K. Raddatz, who noticed that the introduction of metal shield fittings (including hemispherical ones!) in the Pre-Roman Period was caused by the appearance of strong slashing swords¹⁵². The shields with fittings are expected to be more resistant to hacking blows, in which the shield boss was used to receive the blows, and also, as it seems, the shield planks were thicker under a shield boss. This factor might have also played a part in the Late Roman Period when the Przeworsk Culture burials frequently contained high quality swords (including Roman imports) of greater and greater lengths and widths, and thus of greater striking power.

It is also worth noting that in the Roman Period the Przeworsk Culture burials frequently contained offensive weapons (usually the heads) which were not accompanied by shield fittings¹⁵³. This brings to mind M. Gebühr's conception adopted by W. Adler and A. Gundelwein¹⁵⁴, concerning the possibility of using shafted weapons as the only element of military equipment (the supporting argument were the cuts visible on the heads from bog sites in Scandinavia which are treated as traces of combat). This concept, however, does not seem very convincing¹⁵⁵. Therefore the change in frequency of burials with shield fittings should be treated in the way presented above, i.e. as a proof that metal fittings were used in different degrees and not the shields themselves.

The use of the bow as an element of military equipment is a separate problem. The changes in the frequencies of burials with arrowheads presented in Diagram 13 clearly indicate that the role of arrows as an element of grave goods was very minor, although in phases C₂-D it slightly increased¹⁵⁶. In the light of the above the suggestion by K. Godłowski, who believed that arrowheads became clearly more frequent in phase B_{2b}¹⁵⁷ does not seem justified, but his claim of their increased popularity in the final phase of the period analysed in this paper¹⁵⁸ (especially phases C₂-D) is confirmed. In the late stage of phase C_{1a}-C_{1b} the frequency of burials with arrowheads is rather low, although slightly higher than that presented in Diagram 13¹⁵⁹. The problem of the number of arrowheads found in burials has also been discussed in literature. K. Godłowski, based on the Przeworsk Culture materials from Upper Silesia, estimated that arrowheads appeared most frequently in compact sets of from two to seven items, and cases of single arrowheads are very seldom¹⁶⁰. However, the data collected here (Diagram 14) indicates a predominance of single arrowheads; their greater numbers have been registered from the Younger and Late Roman Period but it is unclear if the small set of data allows us

to draw such far-reaching conclusions.

There arises the question of whether the bow could have been used in combat, which concerns to a greater extent the latest part of the analysed period, when arrowheads became more frequent in burial assemblages than in the preceding one. As it seems, in order to use the bow effectively, it was necessary to create separate units located, for example, at the wings of the group of warriors, in order to support an infantry attack¹⁶¹. The existence of such units, which probably required central command (in order to synchronise the archers' actions with other groups) seems possible in Scandinavia, where traces of supposedly developed political structures have been discovered and a developed hierarchy of warriors existed, noticeable in the materials from the bog sites. For the Przeworsk Culture the theory is much weaker. The possibility can not, however, be excluded that the bow was a hunting weapon used in combat in an occasional and uncoordinated manner. Some valid indications are provided by the analysis of the Nydam finds, where the largest series of bows from the Younger and Late Roman Period or Early Migration Period were discovered. This category of artefact was studied quite a long time ago¹⁶², recently a precise reconstruction of these weapons has been made through experiments and complemented with an assessment of their effectiveness¹⁶³. The bows from Nydam represented long-bows approximately as tall as men, or even taller¹⁶⁴. There are, however, serious doubts as to their function; first of all the bows from Nydam seem to differ strongly in quality¹⁶⁵, and secondly, the considerable height of the leaf-shaped arrowheads with sleeves¹⁶⁶ suggests that they were used for non-military purposes (hunting) as their weight limited the effective range of the weapon and frequently also the quality of their shafts made of pine wood was quite poor¹⁶⁷. One of the Nydam bows was examined in detail: it had a surprisingly low (17 Kg) draw weight for a combat bow¹⁶⁸. For the purposes of further assessment eight replicas of Nydam bows were made with draw weights of 22,5-27 Kg. The experiments have shown that at a distance 25-130 m the arrows did not pierce the replicas of shields so that the arrowhead did not reach the internal side of the planks. It was also proved that needle-like tanged arrowheads seem to be more efficient, as although they did not pierce the shield, they reached deeper into the planks, effectively making the use of a shield covered with scattered sharp points of the arrowheads more difficult. Arrows with such heads had uniform effectiveness whereas leaf-shaped arrowheads depended on whether they hit along the fibres on the planks of the shield (more effective) or across them (less effective); moreover leaf-shaped

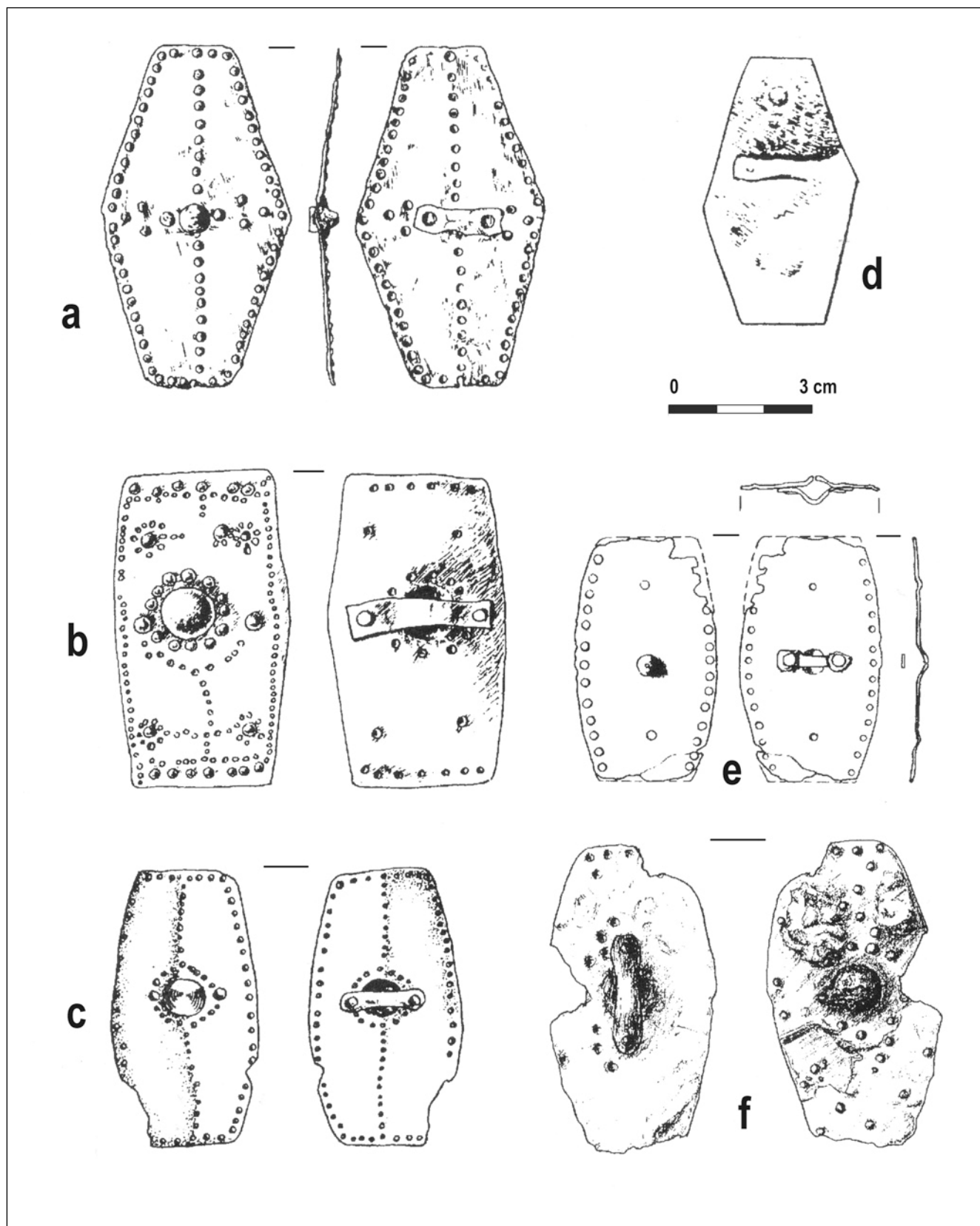


Fig. 13: Miniature shields from the territory of Poland: a - Nadkole, grave 141B, b - Siemiechów, grave 46, c - Siemiechów, grave 39, d - Siemianice, grave 24, e - Nowy Targ, grave 69, f - Siemianice, unknown grave (ANDRZEJOWSKI 2000, fig. 2); a-d, f: specimens from the Przeworsk Culture, e - specimen from the Wielbark Culture.

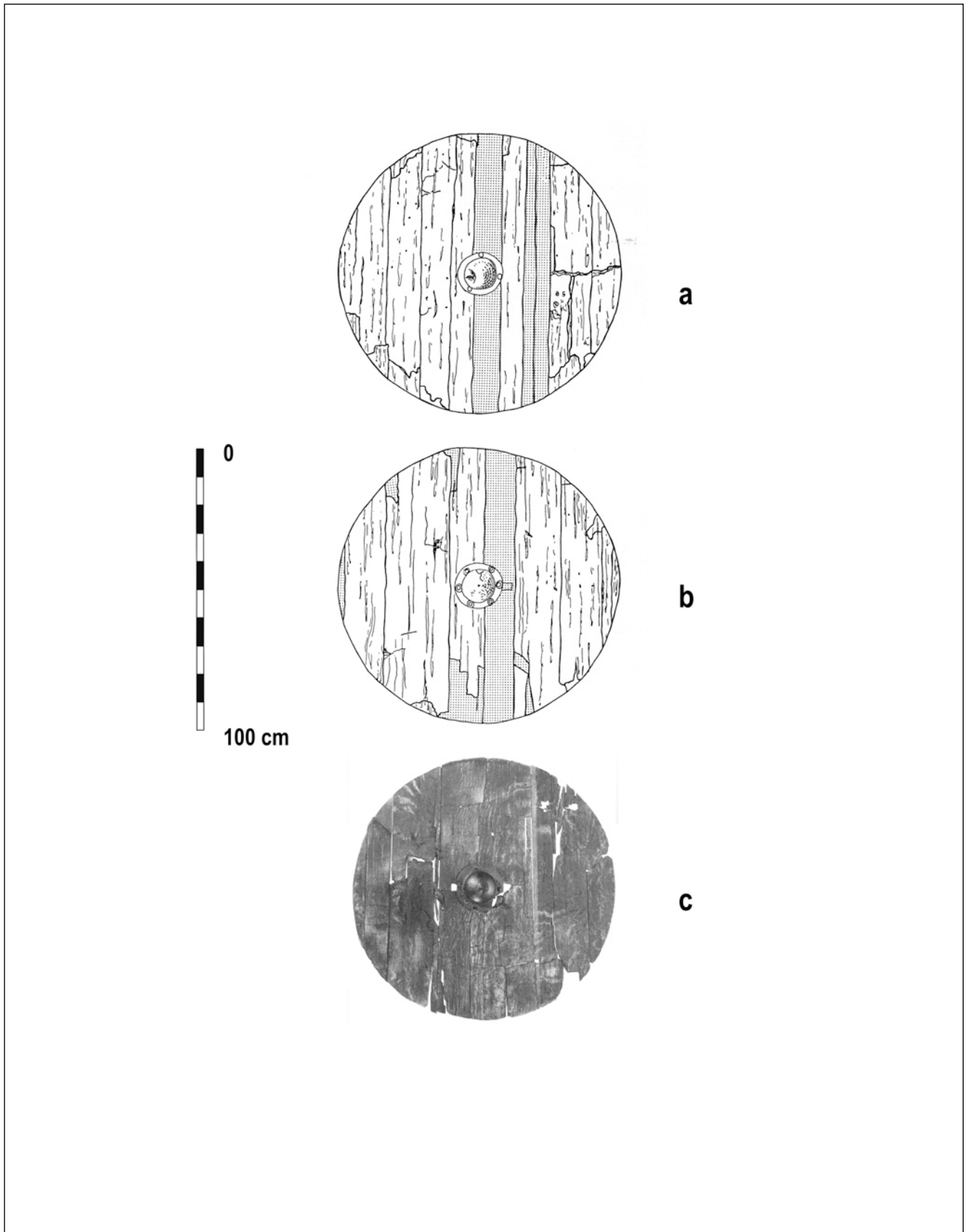


Fig. 14: Late Roman Scandinavian circular shields: a-b - Thorsberg (RADDATZ 1987, fig. 21), c - shield SATF from Illerup (ILKJÆR 2001, fig. 199).

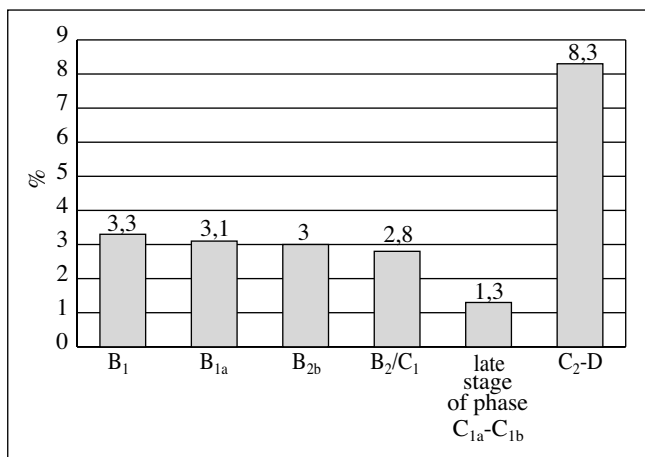


Diagram 13: Frequency of graves furnished with arrowheads in the Przeworsk Culture from the Roman Period

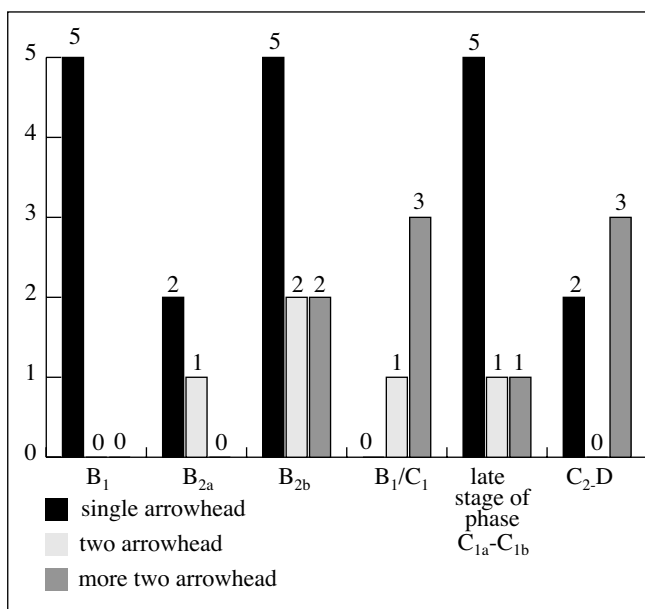


Diagram 14: Numbers of arrowheads in the Przeworsk Culture graves from the Roman Period

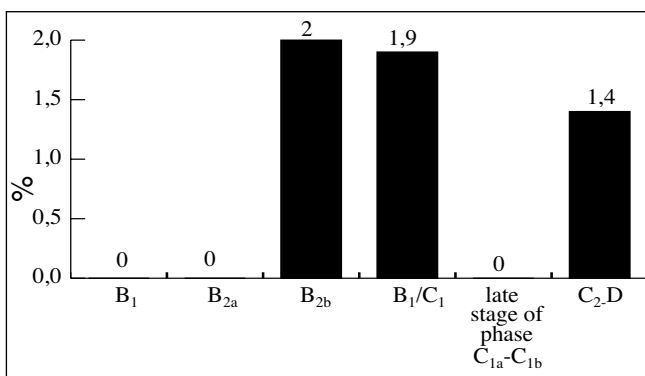


Diagram 15: Frequency of weapon graves furnished with axes in the Przeworsk Culture from the Roman Period.

arrowheads were more easily destroyed when hitting the shield-boss than needle-shaped ones (Fig. 15a-b)¹⁶⁹. Although H. Paulsen concludes that the Nydam bows could have been used either in combat or for hunting, he believes that only 8 of the 23 bows and 80 of at least 193 arrows¹⁷⁰ could have been used for military purposes. Therefore a great deal of caution should be taken when considering the military use of bows in the Przeworsk Culture, especially as the registered arrowheads represented the less effective leaf-shaped type (Fig. 15c)¹⁷¹. For the same reason the probability of the postulated substantial change of combat methods in the Younger and Late Roman Period resulting from the use of bows¹⁷², which was tentatively interpreted as the outcome of the adaptation of the Barbarian weaponry to fighting with the Roman army¹⁷³, should be considered as doubtful.

Judging from their minimal representation in the burial finds, the role of the axe in the Przeworsk Culture military equipment in the Roman Period was less than that of the bow (the frequencies for the axes reached very low values, not exceeding 2%; as a result there is no basis to make statements about any trends) (Diagram 15). The above-presented state of affairs indicates that axes were used by the population occasionally as weapons, perhaps as a borrowing from the Elbe river basin where, especially in the Younger and Late Roman Period, they were quite frequent in the burial assemblages¹⁷⁴. In contrast to the Elbe Cultural Circle, Luboszyce Culture or the Laeti' burials in Gaul¹⁷⁵ this kind of weapon was not an important element of Przeworsk Culture population military equipment. There are also doubts as to the function of the battleaxes: they were treated as weapons¹⁷⁶ or as tools¹⁷⁷. The former possibility seems to be more convincing.

To conclude (Fig. 16) it should be remarked that in the light of the results presented above the basic offensive weapons were shafted weapons used most probably in foot combat. As in the Early Roman Period there predominated in burials pairs of shafted weapon heads of double functions (*framea*?) or representing lances and javelins (especially in phase B_{2b} but also earlier, taking into account barbed javelinheads). Then - if it is assumed that they reflected the actual military gear - it should be claimed that combat began with throwing one weapon (javelin) towards the enemy (combat with the use of two shafted weapons and a shield at the same time has to be excluded). Probably this was done when running towards the enemy, which helped to increase the power and range of the missile¹⁷⁸. In close combat the second

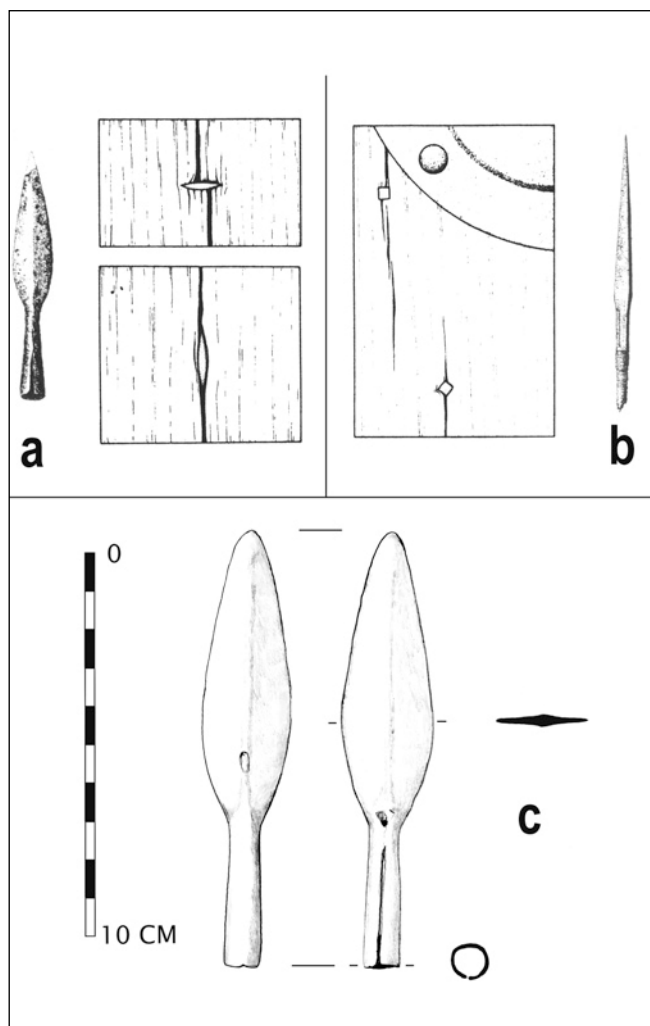


Fig. 15: Barbarian arrowheads. Effectiveness of two forms of arrowheads from Scandinavia: a - leaf-shaped, b - needle-like; c - example of leaf-shaped arrowhead from Maliszów, Syców commune in Lower Silesia (the Przeworsk Culture); a-b - after PAULSEN 1998, Fig. 18; ENGELHARDT 1865, pl. XII: 22, 29; c - drawn by B. Kontny.

shafted weapon or sword were used, the latter probably by a minority of warriors: more affluent or ones with better fighting skills i.e. professionals who could easily pillage swords. The horse probably played a small part in combat and was rarely used in direct encounters (with the momentous exception of possible looting forays). It served mainly as a means of transport or as an indication of the warrior's rank, and therefore it was very important for warriors. This probably concerns also the Younger and Late Roman Period, which does not have to be undermined by the fact that the weapon sets from phase C₁ often contained elements of riding gear. It is also possible that the increase of the proportion

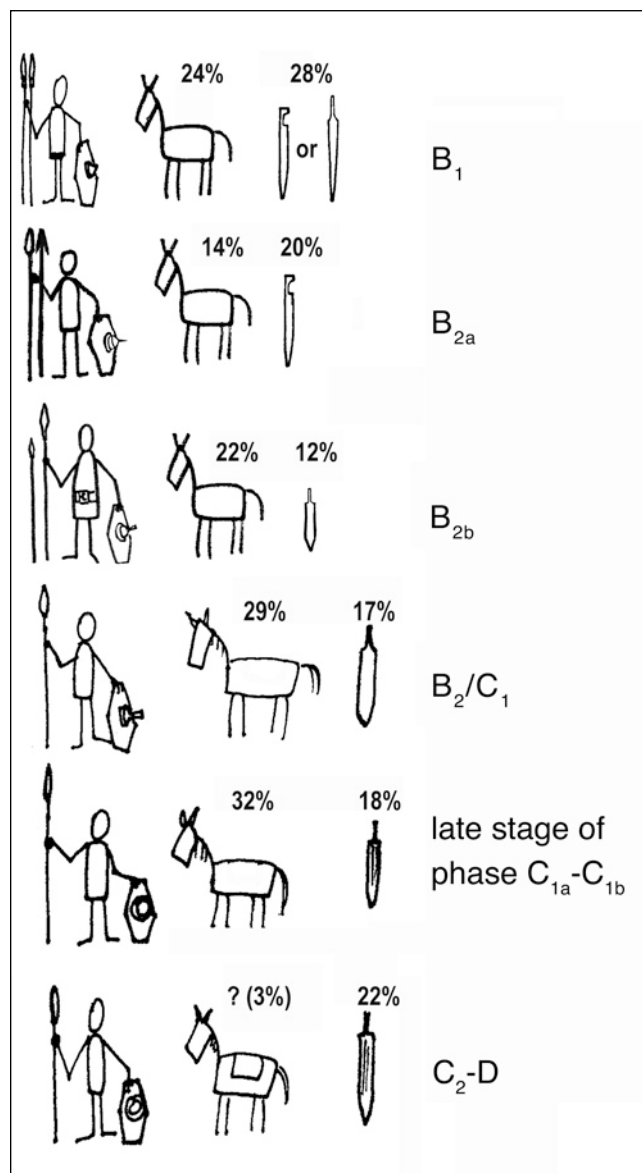


Fig. 16: Reconstruction of weapon sets from the Przeworsk Culture in the Roman Period.

of burials with spurs among the burials with weapons of the Przeworsk Culture might have been connected with more frequent war expeditions, including, perhaps the Marcomannic Wars¹⁷⁹. There are no premises, however, to assume that the possible increased use of horses resulted in creating regular cavalry troops following the Roman model. In the later periods (phases C₂-D) the spurs disappeared from burial assemblages, which was the outcome of the change (decline) of the burial rite. Long, slashing swords for horseback combat found in burials from the Younger and Late Roman Period were, as it seems, also used in foot combat. It is possible that the greater popularity of metal shield fittings was caused by the appearance of strong slashing swords and served to make the shields with metal fittings more resistant to hacking blows.



Fig. 17: Furious attack of Germanic warriors: archaeological picnic - "Iron Roots" in Nowa Słupia (photo: M. Osojca).

The changes in the Younger and Late Roman Period were accompanied by the decreased proportion of burials with more than one shafted weapon head, which ended in their complete disappearance. This is probably due to the fact that the javelins were replaced by lances or weapons designed for both close combat and throwing. The bow was less popular in that period than has been assumed and it is doubtful if it was designed for combat.

As it was mentioned above, the Przeworsk Culture population probably generally fought without central command (Fig. 17). The Germans' lack of discipline and regular array is mentioned by Tacitus (Tac., *Annales* I, 45). Such a view of Germanic style of fighting was obvious for the Romans; there are other examples in Ancient literary sources indicating the disorderly combat style of the Germans¹⁸⁰. However one cannot omit the Tacitus' conception of *cuneus* (wedge-like array). He claimed that "their [Germans] line of battle is drawn up in a wedge-like formation"¹⁸¹. This concept might have been taken from the nomadic, eastern style of fighting. In my opinion it should be compared with the other statement of Tacitus', that when retinue "went into battle, it was a disgrace for the chief to be surpassed in valour, a disgrace for his followers not to equal the valour of the chief"¹⁸². Moreover Germanic wedge-like formations, instead of being formed by chance or by a fortuitous gathering, were com-

posed of families and clans¹⁸³. The most likely explanation is that *cuneus* was not a real order but a naturally formed shape: a chief attacked vigorously drawing the rest of warriors into following him. The more brave or more strictly related the warrior was, the closer to the chief he ran. Therefore *cuneus* may be treated rather as an expression of interpersonal connections than the actual formation.

NOTES

1. E.g., HAMBERG 1936; ENGSTRÖM 1992; cf. ADLER 1993, 249-251.
2. EGGERS 1951.
3. On this subject cf. e.g., KOBYLINSKI 1988, 57-58; URBAŃCZYK 1988; KOZŁOWSKI-KACZANOWSKI 1998, 10-11, Fig. 1.
4. LIANA 1968; CZARNECKA 1992, 90-91.
5. Nevertheless it should be mentioned that we may diminish such negative circumstances to a certain degree, by using comparative materials from Scandinavian bog sites. They are a very important source of information concerning weapons from the Roman Period. In their case remains of vast quantities of weapons, probably spoils of war, were put into shallow lakes or bogs after ritual destruction. Organic materials from bogs frequently survived in a very good state of preservation, which gives us the idea about appearance of the complete weapon (shafts, bows, shield planks,

scabbards are confirmed). Although absent on the territory of the Przeworsk Culture, they should be used as a complementary material in studies of the latter.

6. SZYDŁOWSKI 1964; CZARNECKA 1992, 18, with further literature.
7. Cf. the remarks on the grave goods from the so-called Masłomęcz Group in the Younger and Late Roman Period: KOKOWSKI 1999, 103-104.
8. MAĆZYŃSKA 1994; MAĆZYŃSKA-RUDNICKA 1998.
9. UCKO 1969, Mc HUGH 1999.
10. Cf. ZIELING 1989, 321-326, Fig. 17-18; KONTNY 2001a, 120, Fig. 4.
11. The analyses presented in this paper are based on the materials collected for my doctoral dissertation: KONTNY 2001b. The catalogue of that work contains 1357 Przeworsk Culture weapon graves from the Roman Period. Before the analysis a selection was made in order to exclude burial assemblages whose structure was disturbed or where no suitable observations as to their context were made, e.g., they were the result of accidental discoveries or unprofessional excavations. As a result 894 burial assemblages were used in the statistical part of the paper. The chronological divisions are made following K. Godłowski who distinguished the groups of burials with weapons: GODŁOWSKI 1992; GODŁOWSKI 1994a; GODŁOWSKI 1994b; phase B₁ equals groups 1-2, phase B_{2a} - group 3, B_{2b} - group 4, B₂/C₁ - group 5, late part of phase C_{1a} i phase C_{1b} - group 6, phases C₂-D - groups 7a, 7b and 8. An important supplement to K. Godłowski's findings was the introduction of the classification of shafted weapon heads: KACZANOWSKI 1995; contrary to popular opinion some types of shafted weapon heads occurred within surprisingly precise chronological determinants. Sometimes, in order to obtain a longer temporal perspective of the analysed phenomena, data from the Late Pre-Roman Period (after KONTNY 2002a) was also taken into account. It should be noted that not all the analysed phases had similar numbers of burials with weapons (respectively: 151, 65, 203, 106, 77, 72). The remaining burials are not precisely dated. Thus the obtained results reflect the burial rites the least precisely for phases C₂-D (a long period of time with a small number of burials with weapons), and also for phase B_{2a} (in comparison to the number of burials dated precisely for that phase a large number of burials is dated broadly to longer periods, embracing phase B_{2a}). "As refers to an absolute chronology, the phases used in the text are dated as follows – the Late Pre-Roman Period:
A₁ – early 2nd century BC;
A₂ – from the first decades of the second half of the 2nd century BC till ca mid-1st century BC;
A₃ – from ca mid-1st century BC till the end of the first decade

AD; the Roman Period:

B₁ – till ca 75/80 AD;

B_{2a} – last quarter of the 1st century - early 2nd century AD,

B_{2b} – till ca 160 AD;

B₂/C₁ – till ca 200 AD; late part of phase

C_{1a} and phase C_{1b} – till ca 260 AD;

C₂-D – till the early 4th century AD;

It should be added that the Younger Roman Period equals phases C₁-C₂ and the Late Roman Period – phase C₃ (see GODŁOWSKI 1992b, footnote 1). Here the latter is included in wider time span covering phases C₂-D.

12. Represented by heads and quite rarely, by spear butts.
13. As the literature contains a certain lack of clarity as to the terms used (cf. e.g., FLETCHER-LOCK 1995, 28-29; ŁOMNICKI 1999, 28) I would like to stress that I understand the number as the number of cases of appearance of a given category and by frequency as a parameter most often determined by the ratio of the number (measured) and the number of the population.
14. The above result would be changed only slightly if burials dated imprecisely were to be taken into account: out of the 64 burials from phase B₂ 46 contained shafted weapons (71,9%), and out of the 47 burials dated to phases B_{2b}-C_{1a} 28 burials were equipped in this way (59,6%). The change of frequency of burials with shafted weapons could perhaps concern phase B_{2a} or B₂/C₁, yet it would not fall below several per cent.
15. It should be noted that among the 64 burials dated broadly to phase B₂ 16 contained more than one shafted weapon head (25,0%). If these burials were distributed evenly within phases B_{2a} and B_{2b} (proportionally to the length of the phase) the proportions for phases B_{2a} and B_{2b} would fall by only a few per cent. The 'correction' for phases B_{2b} and B₂/C₁ (6 burials out of 47, containing several heads, which yields 12,8%) would be at a similar level. It is impossible to assess how exactly the distribution of burials dated imprecisely would look, but it seems that it can not differ considerably from the above calculations. Therefore the frequency of burials with several shafted weapon heads would remain greatest in phase B_{2b} if a similar proportion with respect to the frequencies of burials from phases B_{2a} and B₂/C₁ is retained.
16. GODŁOWSKI 1992a, 80.
17. This conclusion is not changed by the analysis of imprecisely dated burials, where more than two heads appear very seldom.
18. KACZANOWSKI 1995, 39.
19. GODŁOWSKI 1992a, 78, 80.
20. These results seem to be reliable: in the burials dated broadly to phases B₁-B_{2a} and B₂ there sometimes appear barbed heads; later they are almost completely nonexistent. Thus if the imprecisely dated burials could be taken into account, the picture might not

- have changed in a valid way, and if so, then the high frequency of barbed heads in burials from phases B₁ and B_{2a} would be stressed.
21. Shafted weapons are theoretically divided into two categories: the 'spear' (or 'lance') and the 'javelin.' The former is supposed to be used in hand to hand combat and the javelin from a distance, i.e., used for throwing; cf. NADOLSKI 1951, 150; NADOLSKI 1954, 51; WOŁĄGIEWICZOWIE 1963, 11; GODŁOWSKI 1977, 52; FOGEL 1979, 88; FOGEL 1982, 97; KACZANOWSKI 1995, 9.
 22. Cf. NADOLSKI 1954, 51; WOŁĄGIEWICZOWIE 1963, 11; NOWAKOWSKI 1991, 69; GODŁOWSKI 1977, 53; KACZANOWSKI 1995, 9.
 23. Naturally, it should be borne in mind that in such an approach simplifications are bound to appear, for the organic parts of the weapons are not known and the function of a weapon was also determined by the dimensions and form of the shaft, and perhaps the presence of other devices facilitating throwing, e.g., a loop wrapped around the shaft into which the middle and index fingers were inserted (during the throw the string or the thong would unwind, causing the shaft to spin, which increased the length of the throw: see ŻUKOWSKI 1988, 6). Similar loops were often used in various armies of the Ancient world: some of the Roman pila (weapons designed exclusively as missiles) were equipped in it: BISHOP-COULSTON 1993, 66 or javelins used in Greek armies: WARRY 1995, 46, 50. The above traits of weapons are impossible to discover in the Przeworsk culture because of the predominant in it custom of cremation.
 24. ŁOMNICKI 1999, 27-28.
 25. So far the attempts at distinguishing the functions of heads on the basis of metrical data followed a justified, as it seems, premise that the larger dimensions of the head indicate lance-heads and the smaller - javelin heads. Such attempts were, however, quite subjective, as the intervals characteristic for the lengths of lance- and javelin-heads were established arbitrarily. For example, K. Godłowski assumed that a shafted weapon head shorter than 15 cm is a javelin head, 15-30 cm represented a weapon designed both for hand to hand combat and for throwing, and of more than 30 cm, a lance-head: GODŁOWSKI 1977, 53. W. Adler, when dealing with the heads from the Lower Elbe basin determined analogical intervals with the boundaries at: up till 15 cm, 15-19 cm, and more than 19 cm: ADLER 1993, n. 483. It should not be forgotten that the lengths of heads and shafts of weapons probably depended on the individual preferences of the warriors. On the contrary, a strict standardisation suggests that the weapons were mass-produced, perhaps on order of the military chiefs; heads of shafted weapon from Deposit A at Illerup and from deposit Ejsbøl Nord are treated in this way by C. von Carnap-Bornheim: von CARNAP-BORNHEIM, 1992, 50.
 26. KACZANOWSKI 1995, 39, pl. XXI.
 27. In this paper there are quite frequent parallels made between the Przeworsk Culture population and the Germans. Although this is a simplification, it seems justified: the Lugii, who inhabited the areas connected with the Przeworsk Culture today (or at least with a considerable part of its territory) can be considered as part of the German Suebi: KOLENDO 1999, 227, 230; KOLENDO 2004).
 28. Tac., *Germania* 6, 1: "They carry a spear (*framea* is their name for it), with a narrow and short head, but so sharp and easy to wield that the same weapon serves, according to circumstances, for close or distant conflict"; "*hastas vel ipsorum vocabulo frameas gerunt angusto et brevi ferro, sed ita acri et ad usum habili, ut eodem telo, prout ratio poscit, vel comminus vel eminus pugnent*".
 29. Tac., *Germ.* 6, 1: "As for the horse-soldier, he is satisfied with a shield and spear; the foot-soldiers also scatter showers of missiles each man having several and hurling them to an immense distance"; "*et eques quidem scuto frameaque contentus est, pedites et missilia spargunt, pluraque singuli, atque in immensum vibrant*".
 30. Tac., *Annales* II, 14: "If their first line is armed with spears, the rest have only weapons hardened by fire or very short"; "*primam utcumque aciem hastatam, ceteris praeusta aut brevia tela*".
 31. Obviously, these words can not be treated as a verbatim report of Germanicus' speech; however, they probably express a common opinion held by the Romans, which gives this information a considerable value.
 32. Cf. KOLENDO 1998, 58, 61.
 33. KOLENDO 1998, 58.
 34. ADLER 1993, 241-245.
 35. Tacitus, *Annales* 2, 21; *Historia* 5, 18.
 36. Tac., *Ann.* I, 65 (W. Adler quotes incorrectly: Tac. *Ann.* I, 64).
 37. Tac., *Ann.* II, 14.
 38. Tac., *Ann.* II, 21: "for their vast host in so confined a space could neither thrust out nor recover their immense lances"; "*cum ingens multitudo artis locis praeolongas hastas non protenderet, non colligeret...*".
 39. Tac., *Ann.* II, 14: "(...) For the huge shields and unwieldy lances of the barbarians cannot, amid trunks of trees and brushwood that springs from the ground, be so well managed as our pila and swords and closefitting armour."; "*nec enim immensa barbarorum scuta, enormis hastas inter truncos arborum et enata humo virgulta perinde haberi quam pila et gladios et haerentia corpori tegmina*".
 40. Tac., *Hist.* V, 18.
 41. Tac., *Ann.* I, 65.
 42. Tac., *Germ.* 6, 1: "(...) iron is not plentiful with them, as we infer

from the character of their weapons. But few use swords or long lances.”; “*Ne ferrum quidem superest, sicut ex genere telorum colligitur, rari gladiis aut maioribus lanceis utuntur*”.

43. Of course this should be treated with caution as the head could have shifted during the post-deposition processes.
44. Among the rare inhumation burials from the Przeworsk Culture one should mention the imprecisely dated grave 1 from Konin, loco commune, Konin district, wielkopolskie voivodeship where the fragmentarily preserved head of a shafted weapon was found under the deceased's skull: KOSTRZEWSKI B. 1947, 196-197. The poor state of preservation of the artefact and the unsatisfactory description of the context of its find do not allow us to draw any far-reaching conclusions, although it was located near the skull. The weapons (sword, shield boss, head) were found also in an inhumation burial from Trzeźnia, Górzycy commune, Tarnobrzeg district, podkarpackie voivodeship, dated on the base of shield boss type 6 after M. Jahn: JAHN 1916, most probably to phase B_{1c}: DEMETRYKIEWICZ 1897, 155-156, Fig. 14. Unfortunately, the accidental character of the find does not allow us to reconstruct the locations of the finds in the burial pit. Another find is dated to the Early Roman Period or the beginning of the Younger and Late Roman Period. It came from grave 158 at Nowa Wieś Wrocławska, Kąty Wrocławskie commune, Wrocław district, dolnośląskie voivodeship. As the discovery was accidental there is no information as to where the find was located in the burial pit: PESCHECK 1939, 349. Also the find of a barbed head from grave 2 at Jordanów Śląski, loco commune, Wrocław district, dolnośląskie voivodeship, has not been precisely located within the feature: PESCHECK 1939, 316-317. In grave 1 from Polwica, Domaniów commune, Oława district, dolnośląskie voivodeship, a skeleton lying on its back was discovered. Near the skull, at the axis of the skeleton there was a shafted weapon head ca 31 cm in length. The burial pit was only 90 cm long and the legs of the skeleton were bent at the knees (the dead body was probably pushed into the pit): PESCHECK 1939, 388; therefore it is impossible to determine whether the total length of the shafted weapon was equal to the length of the pit, i.e., ca 90 cm (the shaft of the weapon might have been broken so as to fit it into the burial pit). Grave 45 from Inowrocław, loco commune, Inowrocław district, kujawsko-pomorskie voivodeship, site 55, dated to phases C_{1b}-C₂ contained the remains of an 18-20 year-old person of undetermined sex, although it is supposed that they belonged to a woman (a necklace of glass beads was found at the neck). One head of a shafted weapon (22.8 cm long and 3.1 cm wide) discovered among the grave goods was not, unfortunately, marked on the plan of the feature or located in a descriptive form: BEDNARCZYK 1994, so it is not a reliable source for the present analysis. Also a double inhumation burial (or perhaps two separate inhumation burials) discovered accidentally at Nowa Wieś Legnicka, Legnickie Pole commune, Legnica district, dolnośląskie voivodeship: TACKENBERG 1925, 65, pl. 30; GODŁOWSKI 1994a, Fig. 1:71, dated to phases C₃-D₁ (group 8 of weapon-graves after K. Godłowski) was not documented in a way allowing us to determine the location of the respective grave goods. The head of shafted weapon from Grave 5 at Żerniki Wielkie, Żórawina commune, Wrocław district, dolnośląskie voivodeship (21.5 cm long and 3.9 cm wide) dated to phase D, was discovered at the feet of an adult man's skeleton (the dimensions of the pit were not recorded precisely): ZOTZ 1935, 61-62, 91, Fig. 3, 34. The above data can not be considered as significant: only in the case of grave 1 from Konin, grave 1 from Polwica, and grave 5 from Żerniki Wielkie is it possible to determine the location of the shafted weapon heads, which, however, does not always allow us to establish the possible lengths of the shafts. For that reason it is necessary to use analogies.
45. Cf. ILKJÆR 1990, Fig. 201.
46. ENGELHARDT 1863, 48.
47. It should be noted that the weapons deposited at Thorsberg do not correspond to Scandinavian military equipment. On the basis of the archaeological material J. Ilkjær established that this is a deposit of weapons from the area of northern Germany: ILKJÆR 1994a, 133-134.
48. ENGELHARDT 1865, 27.
49. ENGELHARDT 1867, 5.
50. ENGELHARDT 1869, 21-22, Fig. 23. As the end of the shaft is not well-worked it seems probable that originally the weapon was longer but was damaged during combat and then hastily adapted for further use, e.g., by making it shorter and sharpening the broken shaft, or, which seems more probable, fixed on a new shaft (this may be proved by the irregularity of its form; actually it is simply a branch). Fortunately the analysed specimen has survived and the above observation is positively verified. Nevertheless one should be very careful drawing conclusions on the basis of such short shafts, as we probably have to deal with fragments cut from longer shafts as is proved by their sharp ends (oral information for which I'm grateful to Xenia Pauli Jensen, working on materials from Vimose). This is obviously not the case for the specimen mentioned above.
51. ENGELHARDT 1866, 56. He gives the lengths in inches and feet which had to be calculated into centimetres. The errors which may result due to this are minimal and can be disregarded.
52. JAHN 1916, 60; GEBÜHR 1980, 79.
53. ENGELHARDT 1865, pl. X:5.
54. Cf. GRADOWSKI-ŻYGULSKI jun., 1998, 52.
55. ENGELHARDT 1866, 78.
56. As has been mentioned above, specific use of such loops might have served to increase the range and stabilise the flight of the

- javelin.
57. For comparison: the total length of athletic javelins is between 260 and 270 cm: ŻUKOWSKI 1988, 71.
 58. BEMMANN–BEMMANN 1998a, 171; BEMMANN–BEMMANN 1998b, 145-146.
 59. KONTNY 2001b, 113-118.
 60. The differences in lengths between shafted weapons from bog sites and the reconstructions made on the basis of the representations of Germanic weapons from Roman iconography were mentioned by G. Hamberg: HAMBERG 1936, 30. The considerable dimensions of the weapons from bog finds made C. Engelhardt assume that these were riders' weapons: ENGELHARDT 1866, 57, 59. It is, however, hard to accept this view today.
 61. HAMBERG 1936, 31; SCHYMALLA 1987, 4-5.
 62. HAMBERG 1936, 25, 30, 42; LEUBE 1978, 336.
 63. CAPRINO et al., 1955, Fig. 75, 77, pl. D.
 64. CAPRINO et al., 1955, Fig. 44-45.
 65. Both artefacts are dated to 180-190 A.D.: KOCH & SICHTERMANN 1982, 91; KLEINER 1992, 301; cf. GODŁOWSKI 1992b, 50; GODŁOWSKI 1994a, 175. It is equivalent to phase B₂/C₁.
 66. KLEINER 1992, Fig. 269; KRIERER 1995, pl. 34-40.
 67. KOCH–SICHTERMANN 1982, 90-91.
 68. BIEŃKOWSKI 1913; BIEŃKOWSKI 1914; BIEŃKOWSKI 1928, Fig. 34-35.
 69. Cf. HAMBERG 1936, 32-38.
 70. GODŁOWSKI, 1992a, 84.
 71. KEMPISTY 1968.
 72. KONTNY 2002b, 116.
 73. In practice these were almost entirely spurs, and only sporadically fragments of bits.
 74. OKULICZ 1970, 426.
 75. Gródki, Płońnica commune, Płońsk district, warmińsko-mazurskie voivodeship, graves 1, 39, 41: OKULICZ 1983; Niedanowo, Kozłowo commune, Nidzica district, mazowieckie voivodeship, graves 247, 275: ZIEMIŃSKA–ODOJOWA 1999; among sites outside the Nidzica Group, Modła, Wiśniewo commune, Mława district, mazowieckie voivodeship, graves 31, 10/84: GRZYMKOWSKI 1986; Stupsk, loco commune, Mława district, mazowieckie voivodeship, grave 10/91: GRZYMKOWSKI 1996, 177.
 76. The reason for this phenomenon may be the fact that the assemblages broadly dated to phase B₂ were not taken into account for the number of assemblages with spurs is too small for that period to change the results significantly (5 cases out of 64). As among the assemblages dated broadly to phase B₂ and phases B₁-B_{2a} spurs are quite rare, the frequency for the phases B₁ and B_{2a} was in fact probably slightly lower.
 77. This observation is reliable as among the burials dated to phases B_{2b}-C_{1a} and B₂/C₁-C_{1a} a similar proportion contained spurs (16 burials - 28,1% and 6 burials - 33,3%, respectively).
 78. GINALSKI 1991, 74.
 79. Cf. M. Biborski's findings on the evolution of sword forms in the Przeworsk Culture (BIBORSKI 1978, 104-105).
 80. GODŁOWSKI 1992a, 84-85; ENGSTRÖM 1992, 59.
 81. GODŁOWSKI 1992a, 85.
 82. It is assumed that with respect to riding equipment they are in many respects a better source of knowledge about weapons than the grave goods: ILKJÆR 1997, 57-58; von CARNAP–BORNHEIM 1992, 46-47; n. 6; von CARNAP–BORNHEIM 2000, 52.
 83. This is indicated by the finds from the Ejsbol Nord Deposit (dated to phase C₂), where among the ritually deposited weapons belonging to ca 200 warriors, nine pairs of spurs, nine horse trappings with chain reins, and fittings for nine saddles were discovered: ØRSNES 1988, 24. Although at Skedemosse (Oland), fragments of more than a dozen horse trappings not matching the spurs were found: HAGBERG 1967, 33, 73-75, and a small deposit from Kragehul did not yield any elements of riding equipment: ENGELHARDT 1867, table II, at Vimose 24 spurs (including ones dated to the Younger and Late Roman Period) together with fragments of a bit were unearthed: ENGELHARDT 1869, 24-25, pl. 15:7-16 and at Nydam one spur and pricks of over a dozen other ones as well as numerous bits were found: ENGELHARDT 1865, 33-34, pl. XIV:5; BEMMANN–BEMANN 1998a, 196-198; BEMMANN–BEMMANN 1998b, pl. 212, whereas at Thorsberg one spur (its remaining part was made of bronze and the iron spike has not been preserved; probably more iron spurs were deposited at the site which were not preserved due to unfavourable environment) and fittings of horse trappings were discovered: ENGELHARDT 1863, 52-53, pl. 15:32; ENGELHARDT 1866, 61; RADDATZ 1987, pl. 39-47, 100-106.
 84. W. Adler considers the possibility of using javelins by Germanic riders: ADLER 1993, 244-245. Contrary to the information by Tacitus quoted above (*Germ.* 6, 1) that the foot warriors used the javelins, which was to distinguish them from the riders, he assumes that the mounted warriors probably used javelins in combat. As a confirmation of his claim he quotes the information from Arrian's work *Ars Tactica* (Tact. 40, 9-11). This work was commissioned by Emperor Hadrian and served as a manual of military skills: HYLAND 1993, 3. It concerned, however, the Roman reality and certainly can not be automatically referred to the world of Germans. It is more justified to refer various pieces of Arrian's information (but not this one) to the Sarmatian peoples: Arrian, who took part in the wars with the Alans used their methods of horseback combat: HYLAND 1993, 5. It is thus

- more reasonable to follow the views of Tacitus and agree that in the period about which he wrote the Germanic warriors did not use javelins in horseback combat.
85. See DIXON–SOUTHERN 1992, 51; BISHOP–COULSTON 1993, 69; JUNKELMANN 1998, 140-141.
 86. On this and alternative ways of fixing spears see HYLAND 1993, 146.
 87. HYLAND 1993, 151, 163, 171-173.
 88. See PERL 1990, 151; POHL 1994a, 62.
 89. The *retinue* is usually defined on the basis of Tacitus' writings (Tac., *Germ.* 13, 2-3; 14, 1-3) as a voluntary, sworn union of warriors (free men) and the leader, where the warriors are obliged to give advice and provide military service to the chief, and he should in return give them protection and generosity. The more detailed aspect of how the *retinue* functioned are subject to debate. For the definition and kinds of German *retinues* see cf. SCHLESINGER 1953, 235; KUHN 1956, 12; WENSKUS 1961, 346-374; HESS 1977; STEUER 1982, 54-56; KRISTENSEN 1983; BAZELMANS 1991; von CARNAP–BORNHEIM 1992; WOLFRAM 1996, 70-73. On Celtic *retinues*: BIRKHAN 1993, 1037-1049. Prospects of tracing the *retinue* basing on the archaeological material are rather poor: KONTNY 2003a.
 90. See n. 96.
 91. For collaboration of Germanic foot warriors and riders cf. Tacitus, *Germ.* 6, 3 (see n. 92). Similar information concerning Germans is given by Julius Caesar - Caes., *Bell. Gall.* I, 48, 5-7: "There were 6,000 horse, and as many very active and courageous foot, one of whom each of the horse selected out of the whole army for his own protection. By these [foot] they were constantly accompanied in their engagements; to these the horse retired; these on any emergency rushed forward; if any one, upon receiving a very severe wound, had fallen from his horse, they stood around him: if it was necessary to advance further than usual, or to retreat more rapidly, so great, from practice, was their swiftness, that, supported by the manes of the horses, they could keep pace with their speed."; "*equitum milia erant VI, totidem numero pedites velocissimi ac fortissimi, quos ex omni copia singuli singulos suae salutis causa delegerant: cum his in proeliis versabantur, ad eos se equites recipiebant; hi, si quid erat durius, concurrebant, si qui graviore vulnere accepto equo deciderat, circumstebant; si quo erat longius prodeundum aut celerius recipiendum, tanta erat horum exercitatione celeritas ut iubis sublevati equorum cursum adaequarent*".
 92. Tac., *Germ.* 6, 3: "On the whole, one would say that their chief strength is in their infantry, which fights along with the cavalry; admirably adapted to the action of the latter is the swiftness of certain foot-soldiers, who are picked from the entire youth of their country, and stationed in front of the line"; "*In universum aestimanti plus penes peditem roboris; eoque mixti proeliantur, apta et congruente ad equestrem pugnam velocitate peditem, quos ex omni iuventute delectos ante aciem locant*".
 93. Tac., *Germ.* 14, 2: "Indeed, men look to the liberality of their chief for their war-horse and their bloodstained and victorious *framea*"; "*exigunt enim principis sui liberalitate illum bellatorem equum, illam cruentam victricemque frameam*".
 94. See KRISTENSEN 1983, 44, 50.
 95. According to Ammianus Marcellinus (Amm., 16, 12, 34), at a certain moment among the masses of foot German warriors there were heard voices calling the few riders belonging to the tribal aristocracy (the king's sons) to dismount, for it was feared that if the Romans were to start winning, they would use their horses to escape from the battlefield. Obeying these voices they dismounted and fought on foot: POHL 1994b, 164. This indicates that the horse was treated mainly as a means of transport to the battlefield (evacuation from the battlefield, chasing the defeated enemy) and a sign of the warrior's high rank, and not as a tool used extensively in the battle.
 96. The Venethi are described by Tacitus (the Roman historian was not certain whether they should be counted as Germans): in their plundering forays they covered large distances on foot and they differed from the Sarmatians in their fondness for walking and speed (Tac., *Germ.* 46, 2). This description may be interpreted as a confirmation that pillaging attacks organised without the use of horses were also effective.
 97. At the column representations a clear domination of Germanic foot warriors over the equestrians can be seen despite the fact that the presented warriors are generally identified on the basis of their garments as members of the elite warrior group (*nobiles*), who could probably afford to keep a horse: cf. SCHYMALLA 1987, 50.
 98. Illerup Place A: 5-7 warriors of highest rank with silver shield fittings, swords richly decorated according to local demands, horses, and other military equipment; more than 30 warriors of medium rank with bronze shield fittings, swords and shields with Roman bronze fittings etc.; almost 300 warriors of lower rank with iron shield fittings and pairs of shafted weapon heads: ILKJÆR 1997, 56-61; cf. ILKJÆR 1994b, table 1. Ejsbøl Nord: 12-14 "officers," at least nine of whom on horseback, at least 60 middle rank warriors with swords and one hundred and several ten warriors of the lowest rank: ØRSNES 1988, 25; cf. BEMMANN–BEMMANN 1998a, 357-359.
 99. SHETELIG 1930; RIECK 2003.
 100. Cf. CRUMLIN–PEDERSEN 1987, 101, 103.
 101. von CARNAP–BORNHEIM 1997.
 102. CRUMLIN–PEDERSEN 1987, 103.
 103. KONTNY 2002b, graph 1-2; KONTNY 2003c: graph 3-7.

104. KONTNY 1998.
105. KONTNY 2002a.
106. BIBORSKI 1978, 128-129; GODŁOWSKI 1992a, 78, 80. The latest known find from Grudynia Mała, Pawłowiczki commune, district Kędzierzyn-Koźle, opolskie voivodeship: JAHN 1919, 102-103, pl. X-XI, formerly dated to phase C_{1a}, actually came from an unclear context – probably the furnishings of two or even three graves were mixed: KONTNY 2003b.
107. The decline of one-edged swords may be explained, after P. Kaczanowski, with a large ‘supply’ of high-quality Roman swords, which superseded the less efficient weapons. This phenomenon appeared from phase B_{2b} (KACZANOWSKI 1992, 70).
108. Cf. KONTNY 2002a.
109. The above results may be in reality lower by a few per cent because swords were rare in imprecisely dated burials. It is difficult to assess unequivocally which of the phases would have a lower frequency of swords; this may concern phases B_{2a}-B₂/C₁, because this broader period has yielded a large number of imprecisely dated burials: KONTNY 2002b: table 1; KONTNY 2003c: table 1.
110. KONTNY 1998.
111. BIBORSKI 1978.
112. It seems that due to their considerable length they may have successfully served as slashing weapons.
113. BIBORSKI 1978, 61-62, 64, 69, 71, 78, 86, 90, 92, 94-107; GODŁOWSKI 1992a, 76-85.
114. GODŁOWSKI 1992a, 80.
115. Due to the multiplicity and variety of battle scenes the reliefs of the column of Marcus Aurelius are a better comparative source for the assessment of Germanic weapon sets than the representations from the Portonaccio Sarcophagus.
116. SCHYMALLA 1987, 31-49; cf. CAPRINO et al., 1955.
117. Cf. ILKJÆR 1994b, table 1; ILKJÆR 1997, 56-61; ØRSNES, 1988, 25.
118. They were represented by shield bosses quite often accompanied by shield grips, and sporadically by other kinds of fittings.
119. If a sample is small even non-numerous phenomena may become statistically valid.
120. KONTNY 2002a, fig. 4.
121. JAHN 1916.
122. JAHN 1916, 176; GODŁOWSKI 1977, 70; KACZANOWSKI 1992, 70; KOKOWSKI 1994, 373; SCHULTZE 1994, 365.
123. Among the 19 burials generally dated to the Younger and Late Roman Period, 9 contained fragments of shield fittings as the only element of military equipment. As a result burials with metal shield fittings were more numerous in phase C₁, that it is shown in diagram. The possible ‘growth’ of frequency may amount to as much as 10%.
124. KONTNY 2003c, table 3.
125. The suitability of shields of this type has been discussed elsewhere: KONTNY 2002a, 62-63. Therefore I only note that thanks to their flexibility they broke the blows of the opponent’s weapon very well and they were also light which made their use in the battle easier. Moreover, they were less expensive to make than shields with fittings and easier to repair.
126. KAUL 2003, 175.
127. These data are only an estimate because many shields have been preserved fragmentarily and it was impossible to assign all the fragments to particular shields.
128. ROSENBERG 1937, 106-109, Fig. 26-30; KAUL 2003, 152-153.
129. DOMARADZKI 1977, 68-69, with further literature; RITCHIE – RITCHIE 1996, 48-51.
130. RAFTERY 1989, 121-122, Fig. 8:6; CUNLIFFE 2003, 121, Fig. 50.
131. ENGELHARDT 1866, 50; ENGELHARDT 1869, pl. 5: 4, 9.
132. One should mention also one more specimen from Vimose: a rectangular object consisting of two planks. ENGELHARDT 1869, pl. 5: 20. It was interpreted as a complete shield made of organic materials: CAPELLE 1982, 272; cf. ZIELING 1989, n. 734. Actually, according to Xenia Pauli Jensen, preparing her Ph. D. on the topic of Vimose, we are dealing with a fragment of a circular shield. I’d like to express here my gratitude for that oral information.
133. According to C. Engelhardt it was the internal lining of the shield boss: ENGELHARDT 1866, 50.
134. ENGELHARDT 1866, 50; ENGELHARDT 1863, pl. 8:15.
135. Tacitus, *Annales* II, 14: “(...) *ne scuta quidem ferro nervove firmata, sed viminum textus vel tenuis et fucatas colore tabulas*”.
136. CAPRINO et al., 1955, pl. M.
137. One may imagine also different techniques of offensive use of a shield, provided i.a. by Ancient written sources. An excellent illustration is depicted by Q. Claudius Quadrigarius (ca 100 BC) who presented a duel of the Roman commander, Titus Manlius with a Celtic warrior. This took place during the battle at Anienum (360 BC). The Roman hit the Gaul’s shield with his own, shook him and then hit his opponent’s, who tried to regain his balance, shield again. The Gaul swayed, lifted his shield, uncovering his body and Manlius buried his short sword in his breast. The fragment of Quadrigarius’ description was recorded (9.13) in the 2nd century AD: PLEINER 1993, 29. Such a method is confirmed also in other cultures, e.g., Ancient Greece: OAKESHOTT 1960, 63-64 or the African Zulu tribe during the Shaka reign: MORRIS 1966, 38, 47.
138. In the eyes of Romans vast majority of Germanic warriors used the shield, which is indicated, e.g., by the representations of German warriors on the column of Marcus Aurelius: cf.

- SCHYMALLA 1987, 49-50.
139. JAHN 1916.
140. Tac., *Iulii Agricolaes Vita* 36.
141. RESI 1986, 70-72, pl. 8-9.
142. STIMMING 1912, 310, pl. 45.
143. ILKJÆR 2001, 356-358, fig. 319.
144. ANDRZEJOWSKI 2000.
145. KONTNY 2006, 207.
146. E.g., JAHN 1916, 176; GODŁOWSKI 1977, 70; KACZANOWSKI 1992, 70.
147. KONTNY 2006, 205-208.
148. von CARNAP-BORNHEIM-ILKJÆR 1996, *passim*; ILKJÆR 1997, 56-61.
149. ILKJÆR-JOUTTIJÄRVI-ANDRESEN 1994; von CARNAP-BORNHEIM-ILKJÆR 1996, 384.
150. von CARNAP-BORNHEIM 1992; von CARNAP-BORNHEIM, 2000.
151. KONTNY 2006, 207.
152. RADDATZ 1966, 440.
153. KONTNY 2002b, graph 1-2; KONTNY 2003c: graph 3-7.
154. GEBÜHR 1980, 78-80; ADLER 1993, 157; GUNDELWEIN 1994.
155. Incisions on weapons were most probably traces of their ritual destruction which is supported by the regularities of the cuts, their location, i.a., in the places where they could not have been damaged by the enemy weapons during combat, the depth of the cuts, suggesting that the weapon was held fast and the fact that not only elements of military equipment were destroyed. See M. Biborski's discussion of M. Gebühr's views: BIBORSKI 1981, 55-61. A detailed analysis of traces and origins of damage done to various kinds of weapons from the bog site at Nydam was conducted by G. and J. Bemann: BEMMANN-BEMMANN 1998a, 312-317; for the swords see also: SIM 1998, 383.
156. In burials dated generally to phase B₂ the arrowheads appeared more often than it would be indicated by the frequencies presented in Diagram 13 for all the phases (7 out of 64 burials (10.9%). It is not known to which phases these cases should be assigned, but whatever the attribution is it would not change the result obtained for phase B_{2b} (due to the large number of burials from that phase) and for phase B_{2a} the proportion of heads would increase by a few per cent.
157. GODŁOWSKI 1992a, 81.
158. GODŁOWSKI 1992a, 85.
159. Among the burials imprecisely dated to the Younger and Late Roman Period or its greater part the proportion of burials with arrowheads is greater than it is indicated by the diagram, although it is difficult to assess for which of the time intervals the change would be the greatest (arrowheads were found, e.g., in 5 burials out of the 56 dated to phases B_{2b}-C_{1a}, 2 out of the 3 burials dated from phase C_{1b} to the end of the analysed period, 3 from the 11 burials dated to phases B₂/C₁-C₁). The higher frequency might have characterised rather the end of the discussed period, which is indicated by the distribution of frequencies among the burials with more precise chronology. Due to the small numbers of broadly dated features, the changes could not exceed a few per cent (amounting to below 5%).
160. GODŁOWSKI 1977, 67.
161. ENGSTRÖM 1992, 60, fig. 14; cf. RADDATZ 1967, 9.
162. RADDATZ 1963; BECKHOFF 1963.
163. PAULSEN 1998.
164. PAULSEN 1998, 391, Fig. 3.
165. PAULSEN 1998, 390-391.
166. Analogous to the finds from the Przeworsk Culture burials.
167. PAULSEN 1998, 408, 421.
168. BECKHOFF 1963, 47; PAULSEN 1998, 422.
169. PAULSEN 1998, 423-424.
170. PAULSEN 1998, 391, 405, 423, 425.
171. It may seem that K. Raddatz also shared doubts about the functions of bows from the Roman period. He expressed them in his monograph on the arrowheads from Nydam: RADDATZ 1963, 49, 54; although in another paper he opted for their military designation: RADDATZ 1967, 9.
172. RADDATZ 1967, 9.
173. KACZANOWSKI 1992, 75.
174. KIEFERLING 1994, 336, 355-356, Fig. 1.
175. RADDATZ 1967, 9, 13.
176. DOMAŃSKI 1973, 137-143; ADLER 1993, 31-33.
177. KOSTRZEWSKI 1959, 147; KOSTRZEWSKI 1964, 105. On the doubts as to the actual role of battle axes in that period see also RADDATZ 1967, 13.
178. HYLAND 1993, 172-173.
179. One should mention that phases B_{2b} and B₂/C₁ are characterized by a clear standardization of weapon sets found in graves and growth of frequency of weapon graves. It may be interpreted as a proof of militarization of the Przeworsk Culture population as well as general improvement of economy. It correlates well with the growing flow of Roman swords into the territory of the Przeworsk Culture as well as sudden growth of iron production (e.g., Holy Cross Mountains centre, and probably also West Mazovian centre). It presumably may be connected with the warlike tendencies among barbarians distant from Roman limes preceding the Marcomannic Wars and the eventual entanglement of the Przeworsk Culture population or part of it in the military accidents of years 166-180 AD: cf. KONTNY 2005, with further literature.
180. PERL 1990, 151; POHL 1994a, 62.

181. Tac., *Germ.* 6, 4: "Acies per cuneos componitur".
182. Tac., *Germ.* 14, 1: "And what most stimulates their courage is, that their squadrons or battalions, instead of being formed by chance or by a fortuitous gathering, are composed of families and clans"; "Cum ventum in aciem, turpe principi virtute vinci, turpe comitatus virtutem principis non adaequare".
183. Tac., *Germ.* 7, 2: "quodque praecipuum fortitudinis incitamentum est, non casus, nec fortuita conglobatio turmam aut cuneum facit, sed familiae et propinquitates".

BIBLIOGRAPHY

- ADLER 1993: W. Adler, Studien zur germanischen Bewaffnung. Waffenmitgabe und Kampfweise im Niederelbegebiet und im übrigen Freien Germanien um Christi Geburt, *Saarbrücker Beiträge zur Altertumskunde* **58**, Bonn, 1993
- ANDRZEJOWSKI 1998: J. Andrzejowski, Nadkole 2. A Cemetery of the Przeworsk Culture in Eastern Poland, *Monumenta Archaeologica Barbarica* **5**, Kraków, 1998
- ANDRZEJOWSKI 2000: J. Andrzejowski, *Wczesnorzymska miniaturka tarczy z Nadkole nad Liwcem*, Superiores barbari. Księga pamiątkowa ku czci Profesora Kazimierza Godłowskiego, R. MADYDA-LEGUTKO, T. BOCHNAK eds., Kraków, 2000, 23-47
- BAZELMANS 1991: J. Bazelmans, Conceptualising early Germanic political structure: a review of the use of the concept of Gefolgschaft, *Images of the Past. Studies on ancient societies in northwestern Europe*, N. ROYMANS, F. THEUWS eds., Amsterdam, 1991, 91-129
- BECKHOFF 1963: K. Beckhoff, Die eisenzeitlichen Kriegsbogen von Nydam, *Offa* **20**, 1963, 39-48
- BEDNARCZYK 1994: J. Bednarczyk, Sépultures de la civilisation de Przeworsk en Couiavie, *Inventaria Archaeologica Polone* **66**, Łódź, 1994
- BEMMANN – BEMMANN 1998a: G. Bemann – J. Bemann, *Der Opferplatz von Nydam. Die Funde aus älteren Grabungen: Nydam-I und Nydam-II. Band 1: Text*, Neumünster, 1998
- BEMMANN – BEMMANN 1998b: G. Bemann – J. Bemann, *Der Opferplatz von Nydam. Die Funde aus älteren Grabungen: Nydam-I und Nydam-II. Band 2: Katalog und Tafeln*, Neumünster, 1998
- BIBORSKI 1978: M. Biborski, Miecze z okresu wpływów rzymskich na obszarze kultury przeworskiej, *Materiały Archeologiczne* **18**, 1978, 53-165
- BIBORSKI 1987: M. Biborski, Grób wojownika kultury przeworskiej z okresu wpływów rzymskich z Gostomi, woj. Radom a niektóre aspekty związane z rytualnymi śladami niszczenia broni, *Materiały Archeologiczne* **21**, 1987, 49-63
- BIEŃKOWSKI 1913: P. Bieńkowski, O pierwowzorach aplik greckorzymskich, przedstawiających walki z barbarzyńcami, *Sprawozdania z czynności i posiedzeń Akademii Umiejętności w Krakowie* **1913/9**, 1913, 4-8
- BIEŃKOWSKI 1914: P. Bieńkowski, O scenach wojennych historycznych w koroplastyce południowo-włoskiej, *Sprawozdania z czynności i posiedzeń Akademii Umiejętności w Krakowie* **1914/1**, 1914, 2-8
- BIEŃKOWSKI 1928: P. Bieńkowski, *Les Celtes dans les arts mineurs gréco-romains avec des recherches iconographiques sur quelques autres peuples barbares*, Cracovie, 1928
- BIRKHAN 1997: H. Birkhan, *Kelten. Versuche einer Gesamtdarstellung ihrer Kultur*, Wien, 1997
- BISHOP – COULSTON 1993: M. C. Bishop – J. N. C. Coulston, *Roman Military Equipment from the Punic Wars to the fall of Rome*, London, 1993
- CAPELLE 1982: T. Capelle, Erkenntnismöglichkeit ur- und frühgeschichtlicher Bewaffnungsformen. Zum Problem von Waffen aus organischen Material, *Bonner Jahrbücher* **182**, 1982, 265-289
- CAPRINO et al. 1955: C. Caprino, et al *La Colonna di Marco Aurelio illustrata a cura del Comune di Roma*, Roma, 1955
- von CARNAP-BORNHEIM 1992: von C. Carnap-Bornheim, Die germanische Gefolgschaft. Zur Interpretation der Mooropfer der jüngeren römischen Kaiserzeit in Südkandinavien - Ein archäologischer Diskussionsbeitrag, *Peregrinatio Gothica III, Universitetets Oldsaksamlingss Skrifter* **14**, 1992, Oslo, 45-52
- von CARNAP-BORNHEIM 1997: von C. Carnap-Bornheim, Zur Bedeutung der militärischen Seefahrt bei den Barbaren im 3. Jahrhundert n. Chr. - Skandinavien, die Nordsee und das Schwarze Meer, *Military Aspects of Scandinavian Society in a European Perspective AD 1-1300*, A. NORGARD-JORGENSEN, B. L. CLAUSEN eds., *Publications from The National Museum Studies in Archaeology & History* **2**, 1997, Copenhagen, 226-238
- von CARNAP-BORNHEIM 2000: von C. Carnap-Bornheim, Römische Militaria aus der jüngeren römischen Kaiserzeit in Norwegen - "Export" römischer negotiatores oder "Import" germanischer principes?, *Münstersche Beiträge zur antiken Handelsgeschichte* **19/2**, 2000, 40-61
- von CANAP-BORNHEIM-ILKJAR 1996: von C. Carnap-Bornheim – J. Ilkjær, Illerup Adal. Die Prachtausrüstungen. Tafelband, *Jutland Archaeological Society Publications* **25**, 7, Højbjerg, 1996
- CRUMLIN-PEDERSEN 1987: O. Crumlin-Pedersen, Häfen und Schifffahrt in der Römischen Kaiserzeit sowie in der Völkerwanderungs- und Merowingerzeit Dänemarks, *Frühmittelalterliche Studien* 1987, **21**, 101-123.
- CUNLIFFE 2003: B. Cunliffe, *Starożytni Celtowie*, Warszawa, 2003
- CZARNECKA 1990: K. Czarnecka, *Struktura społeczna ludności*

- kultury przeworskiej, Warszawa, 1990
- DĄBROWSKA 1997: T. Dąbrowska, Kamieńczyk. Ein Gräberfeld der Przeworsk-Kultur In Ostmasowien, *Monumenta Archaeologica Barbarica* 3, Kraków, 1997
- DEMETRYKIEWICZ 1897: W. Demetrykiewicz, Cmentarzyska i osady przedhistoryczne w okolicy Tarnobrzega i Rozwadowa nad Sanem, *Materyały Antropologiczno-Archeologiczne i Etnograficzne* 2, 1897, 135-156
- DIXON – SOUTHERN 1992: K. R. Dixon – P. Southern, *The Roman Cavalry from the First to the Third Century AD*, London, 1992
- DOMAŃSKI 1973: G. Domański, Zagadnienie tak zwanej kultury burgundzkiej, *Przegląd Archeologiczny* 21, 1973, 123-163
- DOMARADZKI 1977: M. Domaradzki, Tarcze z okuciami metalowymi na terenie celtki wschodniej, *Przegląd Archeologiczny* 25, 1977, 53-95
- DYMACZEWSKI 1958: A. Dymaczewski, Cmentarzysko z okresu rzymskiego w Młodzikowie, pow. Środa, *Fontes Archaeologici Posnanienses* 8-9, 1958, 179-442
- EGGERS 1951: H. J. Eggers, *Der römische Import im freien Germanien*, Hamburg, 1951
- ENGELHARDT 1863: C. Engelhardt, *Thorsbjerg Mosefund*, Kjöbenhavn, 1863
- ENGELHARDT 1865: C. Engelhardt, *Nydam Mosefund 1859-1863*, Kjöbenhavn, 1865
- ENGELHARDT 1866: C. Engelhardt, *Denmark in the Early Iron Age illustrated by recent discoveries in the peat mosses of Slesvig*, London, 1866
- ENGELHARDT 1867: C. Engelhardt, *Kragehul Mosefund 1751-1865*, Kjöbenhavn, 1867
- ENGELHARDT 1869: C. Engelhardt, *Vimose Fundet*, Kjöbenhavn, 1869
- ENGSTRÖM 1992: J. Engström, Skandinaviskt krigsväsen under mellersta järnaldern, *Meddelande* 52, 1992, 14-72
- FLETCHER – LOCK 1995: M. Fletcher – G. R. Lock, *Archeologia w liczbach. Podstawy statystyki dla archeologów*, Poznań, 1995
- FOGEL 1979: J. Fogel *Studia nad uzbrojeniem ludności kultury łużyckiej w dorzeczu Odry i Wisły. Broń zaczepna*, Poznań, 1979
- FOGEL 1982: J. Fogel, Uzbrojenie ludności kultury wschodniopomorskiej, *Przegląd Archeologiczny* 27, 1982, 87-123
- GINALSKI 1991: J. Ginalski, Ostrogi kabłąkowe kultury przeworskiej. Klasyfikacja typologiczna, *Przegląd Archeologiczny* 38, 1991, 53-84
- GEBÜHR 1980: M. Gebühr, Kampfspuren an Waffen des Nydam-Fundes, *Beiträge zur Archäologie Nordwestdeutschlands und Mitteleuropas, Materialhefte zur Ur- und Frühgeschichte Niedersachsens* 16, 1980, Hildesheim, 69-84
- GODŁOWSKI 1977: K. Godłowski, Materiały do poznania kultury przeworskiej na Górnym Śląsku (część II), *Materiały Starożytne i Wczesnośredniowieczne* 4, 1977, 7-237
- GODŁOWSKI 1992a: K. Godłowski, Zmiany w uzbrojeniu ludności kultury przeworskiej w okresie wpływów rzymskich, *Arma et Ollae. Studia dedykowane Profesorowi Andrzejowi Nadolskiemu w 70 rocznicę urodzin i 45 rocznicę pracy naukowej. Sesja naukowa*, Łódź, 7-8 maja 1992 r., Łódź, 1992, 71-88.
- GODŁOWSKI 1992b: K. Godłowski, Die Chronologie der jüngeren und späten Kaiserzeit in den Gebieten südlich der Sudeten und Karpaten, *Probleme der relativen und absoluten Chronologie ab Latènezeit bis zum Mittelalter. Materialien des III. Internationalen Symposiums: Grundprobleme der frühgeschichtlichen Entwicklung im nördlichen Mitteldonauegebiet. Kraków-Karniowice 3.-7. Dezember 1990*, K. GODŁOWSKI, R. MADYDA-LEGUTKO eds., Kraków, 1992, 23-54
- GODŁOWSKI 1994a: K. Godłowski, Die Chronologie der germanischen Waffengräber in der jüngeren und späten Kaiserzeit, *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994*, X. von CARNAP-BORNHEIM ed., Marburg/Lublin, 1994, 169-178
- GODŁOWSKI 1994b: K. Godłowski, Die Synchronisierung der Chronologie des germanischen Fundstoffes zur Zeit der Markomannenkriege, *Markomannenkriege - Ursache und Wirkungen. VI. Internationales Symposium "Grundprobleme der frühgeschichtlichen Entwicklung im nördlichen Mitteldonauegebiet"* Wien 23.-26. November 1993, J. STUPPNER, J. TEJRAL eds., Brno, 1994, 115-128
- GODŁOWSKI – WICHMAN 1998: K. Godłowski – T. Wichman, Chmielów Piskowy. Ein Gräberfeld der Przeworsk-Kultur im Świętokrzyskie-Gebirge, *Monumenta Archaeologica Barbarica* 6, Kraków, 1998
- GRADOWSKI – ŻYGULSKI jun. 1998: M. Gradowski – Z. Żygulski, jun. *Słownik uzbrojenia historycznego*, Warszawa, 1998
- GRZYMKOWSKI 1986: A. Grzymkowski, Wstępne wyniki badań na birytualnym cmentarzysku ciałopalnym i szkieletowym z okresu rzymskiego w Modle, gm. Wiśniewo, woj. ciechanowskie, *Sprawozdania Archeologiczne* 38, 1986, 222-260
- GRZYMKOWSKI 1996: A. Grzymkowski, Ziemia Zawkrzeńska w pierwszych wiekach naszej ery, *Studia i Materiały do dziejów Ziemi Zawkrzeńskiej* II, 1996, Mława, 152-208
- GUNDELWEIN 1994: A. Gundelwein, Kampfspuren an Lanzen und Speeren kaiserzeitlichen Moorfundes, *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994*, Marburg/Lublin, C. von CARNAP-BORNHEIM ed., 1994, 321-333
- HAGBERG 1967: U. E. Hagberg, *The Archaeology of Skedemosse, vol. II: The Votive Deposits in the Skedemosse Fen and their Relation to the Iron-Age Settlement on Öland, Sweden*,

- Stockholm, 1967
- HAMBERG 1936: G. Hamberg, 'Zur Bewaffnung und Kampfesart der Germanen. Bemerkungen über einige Zeugnisse der römischen Triumphalskulptur', *Acta Archaeologica København* **7**, 1936, 21-49.
- HESS 1977: H. Hess, Die Entstehung zentraler Herrschaftsinstanzen durch die Bildung klientelären Gefolgschaft, *Kölner Zeitschrift für Soziologie und Sozialpsychologie* **29**, 1977, n.v.
- HYLAND 1993: A. Hyland, *Training the Roman Cavalry. From Arrian's Ars Tactica*, Stroud, 1993
- ILKJÆR 1990: J. Ilkjær, Illerup Ådal. 1. Die Lanzen und Speere. Textband, *Jutland Archaeological Society Publications* **25/1**, Aarhus, 1990
- ILKJÆR 1994a: J. Ilkjær, Skandinavien zur Zeit der Markomannenkriege, *Markomannenkriege - Ursache und Wirkungen. VI. Internationales Symposium "Grundprobleme der frühgeschichtlichen Entwicklung im nördlichen Mitteldonaugebiet"* Wien 23.-26. November 1993, J. STUPPNER, J. TEJRAL eds., Brno, 1994, 129-138
- ILKJÆR 1994b: J. Ilkjær, Das Mooropfer von Illerup Ådal - Der Stand der Bearbeitung im Jahr 1994, *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994, Marburg/Lublin*, C. von CARNAP-BORNHEIM ed., 1994, 233-248
- ILKJÆR 1997: J. Ilkjær, Gegner und Verbündete in Nordeuropa während des 1. bis 4. Jahrhunderts, *Military Aspects of Scandinavian Society in a European Perspective AD. 1-1300*, A.N. JORGENSEN, B.L. CLAUSEN eds., *Publications from The National Museum Studies in Archaeology & History* **2**, 1997, Copenhagen, 55-63.
- ILKJÆR 2001: J. Ilkjær, Illerup Ådal. Die Schilde. Textband, *Jutland Archaeological Society Publications* **25/9**, Højbjerg, 2001
- ILKJÆR – JOUTTIJÄRVI – ANDRESEN 1994: J. Ilkjær – A. Jouttijärvi – J. Andresen, *Illerup Ådal. Proveniensbestemmelse af jern fra Illerup ådal - et pilotprojekt*, Moesgård, 1994
- JAHN 1916: M. Jahn, Die Bewaffnung der Germanen in der älteren Eisenzeit, etwa von 700 v. Chr. bis 200 n. Chr., *Mannus-Bibliothek* **16**, Würzburg, 1916
- JAHN 1919: M. Jahn, Die ober-schlesischen Funde aus der römischen Kaiserzeit, *Praehistorische Zeitschrift* **10**, 1919, 80-149
- JUNKELMANN 1998: M. Junkelmann, *Die Reiter Roms*. Teil III: Zubehör, Reitweise, Bewaffnung, *Kulturgeschichte der Antiken Welt* **53**, Mainz am Rhein, 1998
- KACZANOWSKI 1992: P. Kaczanowski, *Importy broni rzymskiej na obszarze europejskiego Barbaricum*, Kraków, 1992
- KACZANOWSKI 1995: P. Kaczanowski, *Klasyfikacja grotów broni drzewcowej kultury przeworskiej z okresu rzymskiego*, Kraków, 1995
- KLEINER 1992: D. E. E. Kleiner, *Roman Sculpture*, New Haven, London, 1992
- KAUL 2003: F. Kaul, The Hjortspring find, *Hjortspring. A Pre-Roman Iron-Age Warship in Context*, O. CRUMLIN-PEDERSEN, A. TRAKADAS eds., Roskilde, 2003, 141-185
- KIEFERLING 1994: G. Kieferling, Bemerkungen zu Äxten der römischen Kaiserzeit und der frühen Völkerwanderungszeit im mitteleuropäischen Barbaricum, *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994*, C. von CARNAP-BORNHEIM ed., Marburg/Lublin 1994, 335-356
- KOBYLIŃSKI 1988: Z. Kobylński, Możliwości poznawcze badań etnoarcheologicznych w odniesieniu do prahistorii mentalności, *Mysł przez pryzmat rzeczy. Możliwości poznania kultury duchowej poprzez jej materialne przejawy, Scripta Archaeologica* **3**, 1988, Warszawa, 57-62
- KOCH – SICHTERMANN 1982: G. Koch – H. Sichtermann, *Römische Sarkophage*, München, 1982
- KOKOWSKI 1994: A. Kokowski, Bemerkungen zu Schildbuckeln des Typs Jahn 8 (Ilkjær Typ 5a-5b), *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994*, C. von CARNAP-BORNHEIM ed., Marburg/Lublin, 1994, 369-376
- KOKOWSKI 1999: A. Kokowski, *Archeologia Gotów*. Goci w Kotlinie Hrubieszowskiej, Lublin, 1999
- KOLENDO 1998: J. Kolendo, Zróżnicowanie ludów Germanii w świetle analizy dzieła Tacyta, J. Kolendo, *Świat antyczny i Barbarzyńcy. Teksty, zabytki, refleksja nad przeszłością, Instytut Archeologii Uniwersytet Warszawski Seria Podręczników, vol. I*, 1998, Warszawa, 57-63
- KOLENDO 1999: J. Kolendo, Lugiowie Burowie oraz Burowie. Przyczynek do interpretacji sytuacji politycznej i kulturowej Europy barbarzyńskiej w końcu I wieku i w II wieku n.e.', *Comhlan. Studia z archeologii okresu przedrzymskiego i rzymskiego w Europie Środkowej dedykowane Teresie Dąbrowskiej w 65. rocznicę urodzin*, J. ANDRZEJOWSKI ed., Warszawa, 1999, 217-231
- KOLENDO 2004: J. Kolendo, Antyczne źródła pisane o najdawniejszych dziejach Wandalów, *Wandalowie. Strażnicy bursztynowego szlaku*, J. ANDRZEJOWSKI, A. KOKOWSKI, CH. LEIBER eds., Lublin-Warszawa, 2004, 11-23
- KONTNY 1998: B. Kontny, Próba odtworzenia technik walki mieczem w młodszym okresie przedrzymskim. Wpływ formy broni na jej zastosowanie, *Światowit* **41/B**, 1998, 388-406
- KONTNY 2001a: B. Kontny, Dwa nietypowe elementy uzbrojenia ze zbiorów Muzeum Miejskiego Wrocławia', *Officina Archaeologica Optima. Studia ofiarowane Jerzemu Okuliczowi-Kozarynowi w siedemdziesiątą rocznicę urodzin, Światowit Supplement Series P: Prehistory and Middle Ages*

- VII, 2001, Warszawa, 117-125
- KONTNY 2001b: B. Kontny, *Zestawy uzbrojenia w grobach z cmentarzysk kultury przeworskiej w okresie wpływów rzymskich*, Ph.D. manuscript, in Library of Institute of Archaeology, Warsaw University, Warszawa, 2001
- KONTNY 2002a: B. Kontny, Diversification of Burials with Weapons in the Przeworsk Culture in the Late Pre-Roman Period, *Die Bewaffnung der Germanen und ihren Nachbarn in den letzten Jahrhunderten vor Christi Geburt*, C. von CARNAP-BORNHEIM et al. eds., Lublin, 2002, 59-80
- KONTNY 2002b: B. Kontny, Broń jako wyraz zmian w obrządku pogrzebowym. Analiza zestawów uzbrojenia w kulturze przeworskiej od młodszego okresu wpływów rzymskich do początków okresu wędrówek ludów, *Światowit n. s.* **4(45)/B**, 2002, 101-144
- KONTNY 2003a: B. Kontny, Z motyką na Słońce? Możliwości odzwierciedlenia instytucji drużyny w materiale archeologicznym, *Antyk i barbarzyńcy. Księga dedykowana Profesorowi Jerzemu Kolendo*, A. BURSCHE, R. CIOŁEK eds., Warszawa, 2003, 253-267
- KONTNY 2003b: B. Kontny, Die Wiederentdeckung eines Fundes aus Grudynia Mała - Versuch einer Neuinterpretation des Grabes 2, *Auf der Suche nach der verlorenen Archäologie*, W. NOWAKOWSKI, M. LEMKE eds., Warszawa, 2003, 61-71
- KONTNY 2003c: B. Kontny, Przekaz z zaświatów. Analiza zestawów uzbrojenia z grobów w kulturze przeworskiej z okresu wczesnorzymskiego i początków młodszego okresu rzymskiego, *Światowit n. s.* **5(46)/B**, 2003, 111-178
- KONTNY 2005: B. Kontny, Time of war or well being? Changes in weapon sets in the Przeworsk Culture burials from the late stage of phase B2, *Europa barbarica. Ćwierć wieku archeologii w Małopolsce*, P. ŁUCZKIEWICZ et al. eds., Lublin, 2005, 215-232
- KONTNY 2006: B. Kontny, Breves gladii et rotunda scuta. Uwagi na temat uzbrojenia Gotów na marginesie przekazu Tacyty, *Goci i ich sąsiedzi na Pomorzu*, W. NOWAKOWSKI (ed.), Koszalin, 2006, 195-221
- KOSTRZEWSKI B. 1947: B. Kostrzewski, Cmentarzysko z okresu rzymskiego w Koninie (woj. poznańskie), *Przegląd Archeologiczny* **7/2**, 1947, 192-294
- KOSTRZEWSKI 1959: J. Kostrzewski, Jeszcze o kulturze "burgundzkiej" w Polsce, *Opuscula Casimiro Tymieniecki Septuagenario Dedicata*, Poznań, 1959, 143-149
- KOSTRZEWSKI 1964: J. Kostrzewski, Zagadnienie pobytu Germanów na ziemiach polskich, *Slavia Antiqua* **11**, 1964, 87-124.
- KOZŁOWSKI – KACZANOWSKI 1998: J. K. Kozłowski – P. Kaczanowski *Najdawniejsze dzieje ziem polskich (do VII w.)*, Kraków, 1998
- KRIERER 1995: K. R. Krierer, Sieg und Niederlage. Untersuchungen physiognomischer und mimischer Phänomene in Kampfdarstellungen der römischen Plastik, *Wiener Forschungen zur Archäologie* **1**, Wien, 1995
- KRISTENSEN 1983: A. Kristensen, *Tacitus' germanische Gefolgschaft*, Det kongelige Danske Videnskaberne Selskab Historisk-filosofiske Meddelelser **50/5**, København, 1983
- KUHN 1956: H. Kuhn, Die Grenzen der germanischen Gefolgschaft, *Zeitschrift der Savigny-Stiftung für Rechtsgeschichte. Germanistische Abteilung* **73**, 1956, 1-83
- LEUBE 1978: A. Leube, Bewaffnung und Kampfweise, *Die Germanen. Geschichte und Kultur der germanischen Stämme in Mitteleuropa. Band I: von den Anfänge bis zum 2. Jahrhundert unseren Zeichnung*, Berlin, 1978, 334-343
- LIANA 1968: T. Liana, Niektóre zwyczaje pogrzebowe ludności kultury przeworskiej, *Wiadomości Archeologiczne* **33**, 1968, 231-385.
- ŁOMNICKI 1999: A. Łomnicki, *Wprowadzenie do statystyki dla przyrodników*, Warszawa, 1999
- MAĆZYŃSKA 1994: M. Mączyńska, Der Hortfund aus der frühen Völkerwanderungszeit aus Łubiana, woj. Gdańsk, in Pommern, *Markomannenkriege - Ursache und Wirkungen. VI. Internationales Symposium "Grundprobleme der frühgeschichtlichen Entwicklung im nördlichen Mitteldonaugebiet"* Wien 23.-26. November 1993, J. STUPPNER, J. TEJRAL eds., Brno, 1994, 149-157
- MAĆZYŃSKA – RUDNICKA 1998: M. Mączyńska – D. Rudnicka Uwagi wstępne o skarbie z okresu rzymskiego z Łubianej, woj. gdańskie, *Nowe znaleziska importów rzymskich z ziem Polski I, Corpus der römischen Funde im europäischen Barbaricum. Supplement I*, J. KOLENDO ed., Warszawa, 1998, 41-51
- MC HUGH 1999: F. Mc Hugh, Theoretical and Quantitative Approaches to the Study of Mortuary Practice, *BAR International Series* **785**, Oxford, 1999
- MORRIS 1966: D. R. Morris, *The Washing of the Spears. A History of the Rise of the Zulu Nation*, London, 1966
- NADOLSKI 1951: A. Nadolski, W sprawie nomenklatury broniownawczej w polskiej archeologii wczesnohistorycznej, *Sprawozdania P.M.A.* **4/1-2**, 1951, 147-153
- NADOLSKI 1954: A. Nadolski, *Studia nad uzbrojeniem polskim w X, XI i XII wieku*, Łódź, 1954
- NOWAKOWSKI 1991: A. Nowakowski, *Uzbrojenie średniowieczne w Polsce (na tle środkowoeuropejskim)*, Toruń, 1991
- OAKESHOTT 1960: R. E. Oakeshott, *The Archaeology of Weapons*, London, 1960
- OKULICZ 1970: J. Okulicz, Studia nad przemianami kulturowymi i osadniczymi w okresie rzymskim na Pomorzu Wschodnim,

- Mazowszu i Podlasiu, *Archeologia Polski* **15/2**, 1970, 419-497
- OKULICZ 1983: J. Okulicz, Cmentarzysko z okresu rzymskiego na "Łysej Górze" i "Zwierzyńcu" w Gródkach w województwie ciechanowskim, *Rocznik Olsztyński* **14/15**, 1983, 73-189
- PAULSEN 1998: H. Paulsen, Bögen und Pfeile, *Der Opferplatz von Nydam. Die Funde aus älteren Grabungen: Nydam-I und Nydam-II. Band 2: Katalog und Tafeln*, Neumünster, 1998, 387-427.
- PERL 1990: G. Perl, ed. *Griechische und lateinische Quellen zur Frühgeschichte Mitteleuropas bis zur Mitte des 1. Jahrtausends u. Z., t. II: Tacitus: Germania*, G. Perl ed., Berlin, 1990
- PESCHECK 1939: Ch. Pescheck, *Die frühwandalische Kultur in Mittelschlesien (100 vor bis 200 nach Chr.)*, Leipzig, 1939
- PLEINER 1993: R. Pleiner, *The Celtic Sword*, Oxford, 1993
- POHL 1994a: W. Pohl, Barbarenbilder seit Tacitus, *Markomannenkriege - Ursache und Wirkungen. VI. Internationales Symposium "Grundprobleme der frühgeschichtlichen Entwicklung im nördlichen Mitteldonauebiet"* Wien 23.-26. November 1993, J. STUPPNER, J. TEJRAL eds., Brno, 59-65
- POHL 1994b: W. Pohl, Barbarenkrieger - Wahrnehmungen und Wirklichkeiten, *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994*, Marburg/Lublin, C. von CARNAP-BORNHEIM ed., 1994, 155-167
- RADDATZ 1963: K. Raddatz, Pfeilspitzen aus dem Moorfund von Nydam, *Offa* **20**, 1963, 49-56
- RADDATZ 1966: K. Raddatz, Die germanische Bewaffnung der vorrömischen Eisenzeit, *Nachrichten der Akademie der Wissenschaften in Göttingen. I. Philologisch-Historische Klasse* **1966/11**, 429-446
- RADDATZ 1967: K. Raddatz, Die Bewaffnung der Germanen in der jüngeren römischen Kaiserzeit, *Nachrichten der Akademie der Wissenschaften in Göttingen. I. Philologisch-Historische Klasse* **1967/1**, 1-17
- RADDATZ 1987: K. Raddatz, *Der Thorsberger Moorfund. Katalog*, Neumünster, 1987
- RAFTERY 1989: B. Raftery, Barbarians to the West, *Barbarians and Romans in North-West Europe from the later Republic to late Antiquity*, J. C. BARRETT, A. P. FITZPATRICK, L. MACINNES eds., *BAR International Series* **71**, 1989, Oxford, 117-152
- RESI 1986: H. G. Resi, Gravplassen Hunn i Ostfold, *Norske Oldfunn* **12**, Oslo, 1986
- RIECK 2003: F. Rieck, *The ships from Nydam Bog, The Spoils of Victory. The North in the shadow of the Roman Empire*, L. JORGENSEN, B. STORGAARD, L. G. THOMSEN eds., Copenhagen, 2003, 296-309
- RITCHIE – RITCHIE 1996: J. N. G. Ritchie – W. F. Ritchie, The Army, Weapon and Fighting, *The Celtic World*, M. J. GREEN ed., London, New York, 1996, 37-81
- ROSENBERG 1937: G. Rosenberg, Hjortspingfundet, *Nordiske Fortidsminder* **3/1**, København, 1937
- SCHLESINGER 1953: W. Schlesinger, Herrschaft und Gefolgschaft in der germanisch-deutschen Verfassungsgeschichte, *Historische Zeitschrift* **176**, 1953, 225-275
- SCHULTZE 1994: E. Schultze, Die halbkugeligen germanischen Schildbuckel der jüngeren römischen Kaiserzeit, *Beiträge zu römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten. Marburger Kolloquium 1994*, C. von CARNAP-BORNHEIM ed., Marburg/Lublin, 1994, 357-367
- SCHYMALLA 1987: A. C. Schymalla, *Tarcze germańskie w ikonografii rzymskiej okresu wojen markomańskich a ich znaleziska z terenu Barbaricum z faz: B2, B2/C1-C1a*, M. A. Thesis manuscript, in Library of Institute of Archaeology, Warsaw University, Warszawa, 1987
- SHETELIG 1930: H. Shetelig, Das Nydamschiff, *Acta Archaeologica København* **1/1**, 1930, 1-30
- SIM 1998: D. Sim, *The Reproduction of a Late Roman Pattern-Welded Sword, Der Opferplatz von Nydam. Die Funde aus älteren Grabungen: Nydam-I und Nydam-II. Band 1: Text*, Neumünster, 1998, 381-385
- STEUER 1982: H. Steuer, Frühgeschichtliche Sozialstrukturen in Mitteleuropa. Eine Analyse der Auswertungsmethoden des archäologischen Quellenmaterials, *Abhandlungen der Akademie der Wissenschaften in Göttingen. Philologisch-Historische Klasse* **3/128**, Göttingen, 1982
- STIMMING 1912: R. Stimming, Waffen der römischen Kaiserzeit aus der Mark Brandenburg, *Mannus* **4**, 1912, 309-315
- SZYDŁOWSKI 1964: J. Szydłowski, Obrządek pogrzebowy na Górnym Śląsku w okresie wpływów rzymskich, *Rocznik Muzeum Górnos Śląskiego w Bytomiu, Archeologia* **2**, 1964
- TACKENBERG 1925: K. Tackenberg, *Die Wandalen in Niederschlesien*, Berlin, 1925
- THOMPSON 1965: E. A. Thompson, *The Early Germans*, Oxford, 1965
- UCKO 1969: P. J. Ucko, Ethnography and archaeological interpretation of funerary remains, *World Archaeology* **1/2**, 1969, 262-280
- URBAŃCZYK 1988: P. Urbańczyk, Ontologia źródła archeologicznego, *Myśl przez pryzmat rzeczy. Możliwości poznania kultury duchowej poprzez jej materialne przejawy, Scripta Archaeologica* **3**, 1988, Warszawa, 49-51
- WARRY 1995: J. Warry, *Armie świata antycznego*, Warszawa.
- WENSKUS 1961: R. Wenskus, *Stammesbildung und Verfassung. Das Werden der frühmittelalterlichen Gentes*, Köln-Graz, 1961
- WOLFRAM 1996: H. Wolfram, *Germanie*, Kraków, 1996
- WOŁĄGIEWICZOWIE 1963: M. D. and R. Wołągiewiczowie, Uzbrojenie ludności Pomorza Zachodniego u progu naszej

- ery, *Materiały Zachodnio-Pomorskie* 9, 1963, 9-166
- ZIELING 1989: N. Zieling, Studien zu germanischen Schilden der Spätlatene- und der römischen Kaiserzeit im freien Germanien, *BAR International Series* 505, Oxford, 1989
- ZIEMIŃSKA-ODOJOWA 1999: W. Ziemińska-Odojowa, Niedanowo. Ein Gräberfeld der Przeworsk- und Wielbark-Kultur in Nordmasowien, *Monumenta Archaeologica Barbarica*, vol. VII, Kraków, 1999
- ZOTZ 1935: L. F. Zotz, *Die spätgermanische Kultur Schlesiens im Gräberfeld von Grob-Sürding*, Leipzig, 1935
- ŻUKOWSKI 1988: R. Żukowski, *Rzut oszczepem. Technika, metodyka nauczania, trening*, Warszawa, 1988
- ØRSNES 1988: M. Ørsnes, *Ejsbøl I. Waffenopferfunde des. 4.-5. Jahrh. nach Chr., Nordiske Fortidsminder- serie B 11*, København, 1988



Weaponry of the Goths of the mid-3rd to the 7th century AD

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The main sources for studying the Goths' weapons are literary evidence and real artifacts, while the pictorial monuments are very rare and questionable for their attribution. The aim of this article is to collect the information from the late antique authors about Gothic weaponry and then to compare it with archaeological and iconographic data. The artifacts came from the **Wielbark** and **Chernjakhov** cultures, which are thought to be part of the Gothic population, and from Spanish and Italian tombs. Most academic works on the subject deal with archaeological data, and only a few of them deal with the literary sources¹. The literary evidence is scattered throughout various works of Greek and Latin authors: a few pieces of information can be found in the biography of the Emperor Claudius II (AD 268-270) by Trebellius Pollio in the *Scriptores Historiae Augustae*; the Greek soldier and great Latin historian Ammianus Marcellinus mentions various Gothic arms of the last 3rd of the 4th century AD, and there are some data in "The Wars" by the famous 6th-century military historian Procopius of Caesarea. The author of *Strategicon* composed a chapter about warfare of the fair-haired races (i. e. the Germans). According to Procopius, the European fair-haired peoples included the Goths². Russian scholar Petr Shuvalov³, who has studied the composition of the *Strategicon*, suggests that the chapter deals with the part of the treatise of the Roman general Urbicius, i. e. the date of the information is the later 5th and early 6th centuries.

In the literary sources there are some descriptions of the Gothic panoply, a complex of weaponry and armour. In the *Scriptores Historiae Augustae* the letter of Claudius II describes the armament of the Visigoths in AD 269 as following: shields, swords, and small spears⁴. Therefore infantry, that were the most numerous force of the Goths' army at this period, were armed with swords and spears, and wore no protective armour besides their shields. Ammianus Marcellinus tells us about the same panoply of the Visigothic footmen in the 370s⁵. The author of *Strategicon* records that the blond-haired people were armed with shields, spears, and short swords⁶. As these sources tell us about the typical

offensive and defensive arms of the Goths, one can believe that armour was not spread among the Gothic forces, and their typical weapons were the spear and sword.

In AD 681 the order of the Visigothic King Erwig (680-687) directed the magnates to arm their serfs with various arms for a war: some of them must be armed with armour of two kinds (*zaba* and *lorica*), most with shields, swords, bows, spears, and some with the sling or other arms⁷. In the order there is a clear division between some armoured warriors and the more numerous unarmoured fighters who used the shield as their only protective arm, although it is probable the skirmishers had no shield at all, like the Italian Goths⁸.

In general, the armament of a common Gothic warrior was nearly the same for four centuries. As the infantry was the most numerous armed force, one can suppose that these descriptions deal primarily with the Gothic foot soldiers. The infantrymen complex was typical for ancient and early medieval Germans: the warrior was a shield-bearer armed with spears of various kinds and side arms such as daggers and swords. The armour is usually not mentioned in our sources which, as far as I know, corresponds to the historical facts.

There are two different types of spear, one for thrusting in close fighting, the other for throwing in distant battle. The 6th-century Gothic historian Jordan considers the *contus* as the usual weapon of the Goths contrasting it with the sword of the Gepidus, the javelin of the Rugus, and the arrow of the Hun⁹. As a military term the *contus* (Greek *κοντις*) means a long thrusting lance. In the 4th to the 7th century the Ostro- and Visigoths' cavalrymen used the *contus* as their main weapon. This fact is reported in many literary sources¹⁰. Procopius indicates the long length of the lance¹¹. It should be noted that he named the lance according to the classical tradition *δόρυ*, not *κοντός* or the Byzantine term *κοντόριον*, while in Procopius' text the word *κοντις* means "a pole"¹². One can approximately estimate the length of the *contus* from Procopius' description of the single-combat between two mounted lancers, the Byzantine Artabazes and the Goth Valaris¹³. In the collision the butt of Goth's lance had hit a stone and had rested against it, then the lance, fly-



Fig. 1: The Byzantine lancer. The silver dish from Isola Rizza (Italy, sixth century). After Perevalov LEBEDYNSKY 1998, 21.

ing almost vertically into air, pierced the enemy's armour and severed an artery in the Byzantine's neck. Assuming the height of mounted man to be about two and a half metres, one can estimate the lance's length as more than two and a half metres, because the weapon was not absolutely vertical. In the 6th century silver dish from Isola Rizza (Italy) the length of the armoured cavalryman's lance is about the same dimension, based on the proportions of the men depicted on the dish (Fig. 1)¹⁴. As Valaris' lance pierced the armour, its spearhead would be narrow in order to be able to do it. Indeed, in grave N° 196 at Kompanijcy village of the Chernjakhov culture a narrow leaf-shaped spearhead was found, beside the bit¹⁵. Therefore, it was a weapon of a horseman.

Probably, the Goth's lance had a loop for holding it. Writing about the death of the Ostrogothic leader Theodoric Strabo in AD 481, the church historian Evagrius writes that Theodoric, having fallen from his horse, was killed by a lance which was hung before a tent by a loop¹⁶. One can suppose

that the loop (*Κγκλῆ*) was designed for the right hand, not the shoulder as Maurice describes that of the 'Scythian' peoples (various nomad peoples, viz. Huns, Avars, Turks)¹⁷.

The many sources inform us that throwing spears were widespread among the Goths' army. The biographer of the Emperor Claudius described the Goths' shield-bearers as armed with *lanceolae*; Ammianus Marcellinus named the Gothic spears as *tela*, *jaculum*, or *verrutum*¹⁸. The first term was a general name for throwing weapons, the second is a normal javelin, and the latter, in the Roman army, was an one-meter spear with the head 12 cm long¹⁹. The Latin poet Claudius Cladius mentions the *pila* as weapons of the Visigoths²⁰. According to the late Roman military theorist Vegetius, the *pilum* was a throwing spear with the 1.6 m shaft and the head 22 cm long²¹. In the battle at the Catalaunici campi (AD 451) the Ostrogoths fought with *telum*, and in AD 439 the Visigoths defended their stronghold throwing *hastilia*²². The bishop of Pavia

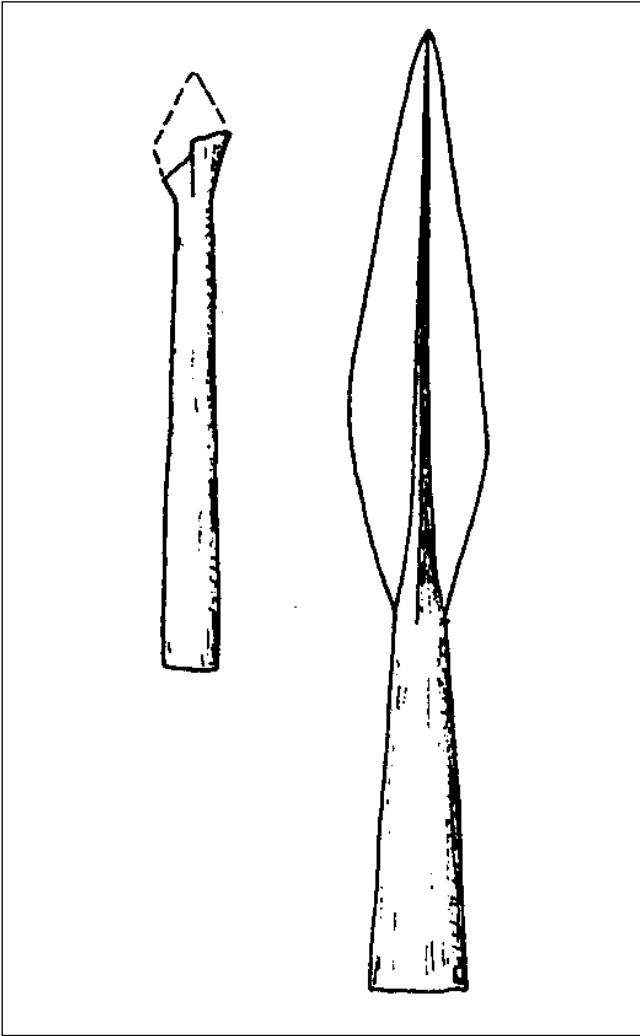


Fig. 2: Two spearheads from tomb 86 at Kompanijcy of the Chernjakhov culture. After KOKOWSKI 1993, 346, fig.4 f 2, f 5.

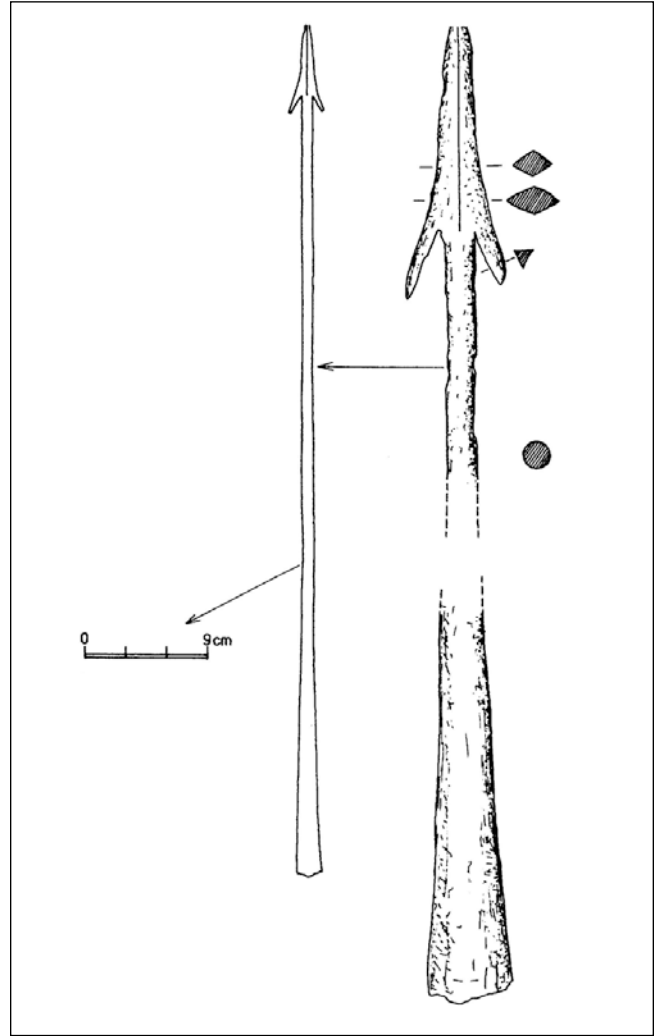


Fig. 3: The two-barbed long spearhead from Móawa in Poland (the second half of the third up to the early 4th century). After KOKOWSKI 1993, 349, fig. 5c.

Felix Magnus Ennodius considers the *lancea* as typical weapon of the Goths in the 6th century²³. Procopius notes that the Italian Goths use δορύτιον (light throwing spear), or just ἀκόντιον (javelin)²⁴. Both terms are synonyms in Procopius' text²⁵. The bishop of Toletum, Julian mentions that during the sieges the Visigoths fought with *spicula* and *lanceae* (AD 670s), and Gregory, the bishop of Tours, mentions *jacula* (AD 584)²⁶. Through Vegetius points out that the term *spiculum* was a later synonym of the *pilum*²⁷, but it is more probable that the Spanish bishop did not use the word in its definite military sense. Vegetius writes that the barbarian shield-bearers fight with two or three spears named *bebrae*. This spear name is unclear as well as the ethnic root of the word²⁸. Because the author mentions the Goths in the same chapter, one can suggest that the *bebrae* were Gothic weapons, but we do not know what they looked

like. In some tombs considered Gothic there are two types of spearheads (Fig. 2)²⁹, this fact confirms that the Gothic warrior was armed with two spears. In general, the Greek and Latin authors called the Goths' spears by Greek or Latin terms, comparing a very approximate appearance of barbarian spears with the Roman types of the spears.

In the Chernjakhov culture spearheads of various shapes from 22 to 23 cm long are reported to be javelins³⁰. The two-barbed long spearhead, dated to the second half of the 3rd up to the early 4th century, was found at Móawa in North Poland (Fig. 3)³¹. The spearhead was designed to penetrate through armour and/or shield and stick into the enemy's body. The appearance of the head is similar to the famous Frankish *ango*, but not to the Roman *pilum*, as it is usually thought, because Vegetius describes the head of the *pilum* in a different way³³.

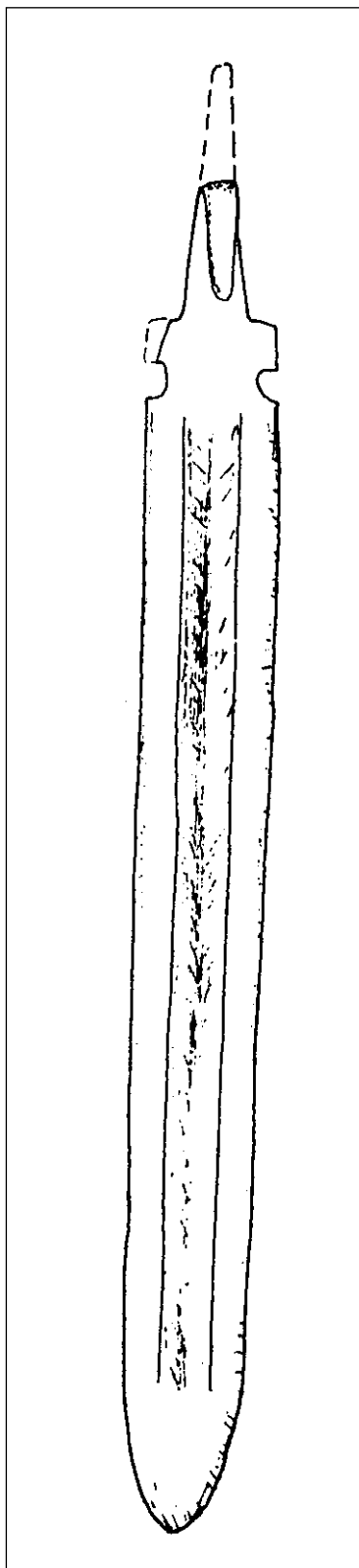


Fig. 4: The sword from Iaşi-Nicolina of the Chernjakhov culture. After KOKOWSKI 1993, 346, fig. 2i.

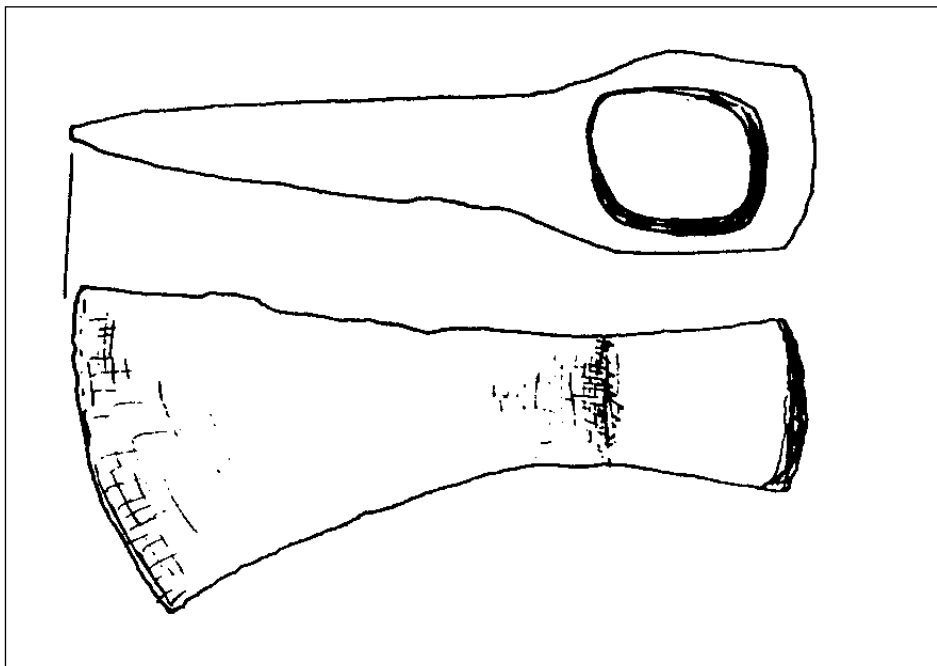


Fig. 5: An axe of the Chernjakhov culture. After KOKOWSKI 1993, 346, fig. 2z.

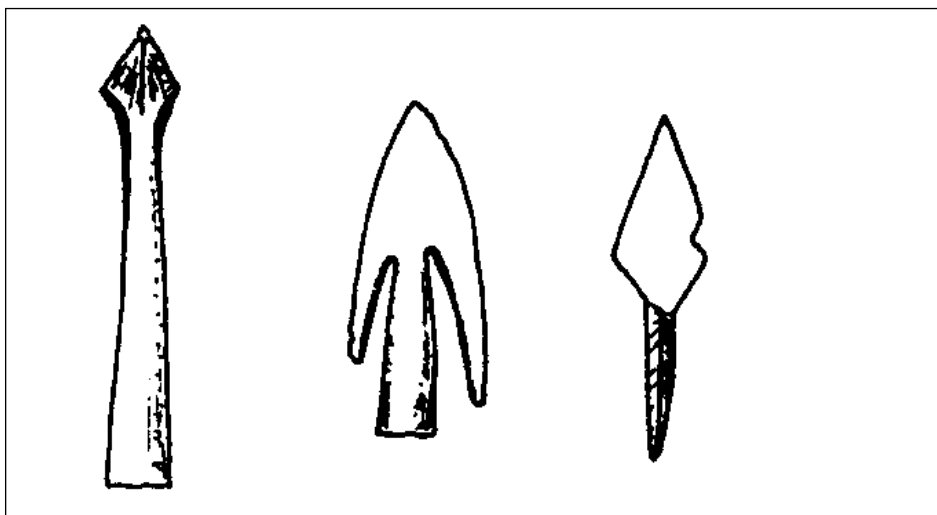


Fig. 6: The various arrowheads, one right from Romashki and two left from Oselinvka of the Chernjakhov culture. After KOKOWSKI 1993, 346, fig.2q, w, x.

Ammianus Marcellinus, writing about the battle at Salices between the Roman and Visigothic armies in AD 377, notes that the Goths threw 'big burnt clubs'³⁴. The 'clubs' appears to have been javelins burnt at their sharp ends for firmness, but not real throwing clubs, as some think³⁵, because such a weapon was unusual for the ancient Germans. The burnt spears were often used by the Germans in the times of Caesar and Tacitus³⁶. The Latin historian paid attention to the weapon, as very extraordinary for Roman soldiers. The use of such a weapon by Gothic warriors can be explained by the fact that the Roman officials disarmed the Goths (or at least were trying to do that) when the latter were crossing the Danube³⁷. There was therefore a shortage of weapons in the Gothic army and they needed to arm themselves with staves, as warriors should use spears in skirmishing.

The various side arms were of secondary importance to a Gothic warrior. There are many references to the sword as a weapon of the Goths. The authors use the general terms for the swords: Latin *gladii*, *enses*, and Greek ξιφῆ³⁸. Trebellius Pollio mentions *spathae* as main weapons for close-quarters fighting³⁹, and later the same sword is noted by the Italian high official and historian Cassiodorus⁴⁰. As a military term, the *spatha* was a double-edged long straight sword 60-70 cm long⁴¹. Claudianus notes that the swords of the noble Goths had ivory handles⁴². The appearance of the sword is known from the archaeological finds. The Chernjakov culture's swords (from the mid 3rd to the mid 4th century) are 80-95 cm long, which were hung in wooden scabbards, sometimes with metallic chapes (Fig. 4)⁴³. At Daganzo an excavated Visigothic sword 87 cm long had the leather scabbard with silver plates (the 7th century)⁴⁴. The fact that the Goths leant on the sword handle during the talk suggests the same length of the sword. A sword made of high-quality steel was a valuable gift in early medieval diplomacy⁴⁶.

It is difficult to understand the meaning of Maurice's sentence that the fair-haired races were armed with "short swords (σπαθῶν κοντοῦς) slung ... over their shoulders"⁴⁷. It is strange that in this passage the author did not mention the long swords which were the usual weapons of the contemporary Germans. Philip Rance follows M. Speidel's emendation of the text as the warriors armed "with shields and spears and swords [and] lances which they carry upon their shoulders", because Maurice uses the noun κοντοῦς, a 'lance', and the adjective 'short'⁴⁸. However, in our case the lance was slung over the shoulder, therefore it means that the lance slung on the shoulder with a large loop. However, in *Strategicon* Maurice notes it as an Avars' tradition, not Germanic⁴⁹.

Probably, Maurice's passage does not need to be emended, but his own description of the Germanic weaponry would be incorrect. Of course, Maurice compares the barbarian sword with the Byzantine one, but the length of both swords was the same in this time⁵⁰. The information would have been derived from earlier sources, because Tacitus mentions that the Gotones and their neighbouring peoples were armed with round shields and short swords⁵¹. The sword of the full length of 60 cm was excavated at Yagnyatin village in Zhytomir region (the Ukraine), but it is an unique artifact⁵². It seems more probably that *Strategicon* describes the contemporary armament of the imperial enemies, but not their archaic panoply, because the treatise was a typical military manual dealing with the actual foes of the empire, viz. the Slavs, fair-haired races (the Germans), Persians, and Scythians (European nomads). One can suppose that the author means a *semispatha*, i. e. the sword of moderate length. For example, the ivory diptych (probably from the 6th century), in which the acts of St. Paul are represented, shows one bearded barbarian in a fur cloak, who is armed with a sword of moderate length, but it hangs on his waist-belt⁵³. One can also suggest that Maurice talks about the poniard which differs from the sword by its shorter length. Usually a dagger was worn at a waist-belt, however, in the 6th and 7th centuries, the Visigoths attached their poniards and knives 12-24 cm long to shoulder-belts⁵⁴. In Visigothic Spain these weapons were widespread according to the archaeological record⁵⁵.

In the above mentioned order of King Erwig, the *scrami* were listed among various weapons. The *scramus* (= *scramasaxes*) was an one-edged 'cutlass', which the Goths used in Spain in the 7th century. There were two types of the knife 36-75 cm long, which are considered to appear under Frankish influence⁵⁶. In the earlier period the *scramasaxes* were not widespread among the Goths.

Ammianus Marcellinus notes the *mucrones* (poniards) as weapons of the *Goths*⁵⁷. In his *Chronicle* Marcellinus Comes mentions the 'Getic' (that is Gothic) knife as a killing weapon⁵⁸. The daggers from the Chernjakhov culture are 34-44 cm long with the blade cut out at both sides near the handle. Russian archaeologist Mark Ščukin considers these weapons as poniards with the cuts designed for holding the opponent's sword during double-handed fencing⁵⁹. In fact, we have no real data about the fencing technique of the Germanic warriors, who were mostly armed with shields held by the left hand and so could not fence with both hands. Moreover, judging by the published archaeological data, in the Chernjakhov graves there are no sword near skeletons of the warriors who were armed with such daggers⁶⁰.

The Goths' warriors could fight with battle-axes, as it follows from Marcellinus' text about the battle of Adrianople (AD 378) where both sides broke each other's helmets and armour with their axes⁶¹. Ammianus writes about the axes of both forces, Roman and Gothic, but armour was more usual for the Romans than for the Goths, hence one can suggest that the axes were barbarian weapons in the first instance. In general, according to the literary sources, the axe is not a usual weapon for the Gothic panoply, however it was sometimes used, especially as an entrenching tool, throwing weapon during the fortress defence, or for hunting⁶². In the battle of Adrianople these axes were real battle weapons because the Goths were short of arms, as mentioned above. In the Wielbark and Chernjakhov cultures there are simple forms of the axe with asymmetrical blade (Fig. 5)⁶³. They could be tools, as well as weapons.

The ancient Germans and especially the Goths were not celebrated for their archery. Mentioning the passion of the ancient 'Goths' for drawing the bow, Jordan thought that the bow was typical weapon of the ancient Goths. In the text he refers to the 1st century Roman epic poet M. Annaeus Lucanus who certainly meant the bow of the Thracian Getae, not the German Goths⁶⁴. At the turn of the 4th and 5th centuries the Latin poet Claudius Claudianus repeated the *topos*, describing the arms of various enemies of the empire⁶⁵. Modern scholars' opinion suggests that the importance of the bow in the Germanic weaponry had been increasing since the 3rd century AD⁶⁶. Indeed, at the end of the 4th century, the noble Visigoths were trained to use the bow from their childhood⁶⁷. Despite of definition of the bow as a non-heroic weapon, the young Visigothic King Theodoric II (AD 453-467) used it in hunting, drawing the bow in two ways⁶⁸. In the battle of Adrianople there were a lot of bowmen in the Goths' army and, the Latin authors mention the volume of arrows hitting the Roman soldiers⁶⁹. In the second half of the 5th century the Goths in the Roman service also used the bow⁷⁰. The archers of the Goths took an active part in siege warfare. In AD 670s the Visigoths fought with arrows, spears, and stones during the sieges⁷¹.

The composition of the Gothic bow is unclear. About 30 votive bows from Vimose in Denmark (the 3rd century AD) were fitted with bone and **iron** laths at the ends⁷². According to the evidence of a bone lath from grave N° 50 at Belen'koe village, one can suggest that the Chernjakhov people used the so-called "Hunnish" bow⁷³. Usually this bow was 1.2-1.5 m long with bone laths, which were fitted at the grip and ends, giving additional power to the bow⁷⁴. In AD 378 during the siege of Adrianople, the Goths took Roman arrows

and then shot them from their bows⁷⁵, therefore it seems to be that both used similar bows, which could shoot the same arrows. In the 6th century the Gothic bow was a powerful weapon; King Teja's brother Aligern, celebrated as a perfect archer, shot an arrow from a fortress and hit a Byzantine commander through his shield and iron armour⁷⁶.

The arrows were kept in quivers⁷⁷. The quivers from votive place at Vimose were made of wood and leather, containing as many as 20 arrows⁷⁸. The ancient sources hardly note any details of the arrow design. Talking about the ad Salices battle, Ammianus called the arrows of both sides 'reed weapons'⁷⁹. On the one hand the name was a metaphorical epithet for arrows, but, on the other, the reed was the usual material for manufacture of arrows⁸⁰, and so Ammianus' information may be true, i. e. Gothic arrows were made from this material.

Procopius once states that Belisarius' hypaspistes Arzes was wounded with an arrow, the head of which had "behind three points"⁸¹. It does not seem to be an arrowhead barbed with three tenons, not typical of European barbarian warfare, but a trilobate tanged one. In another passage Procopius notes a large, long iron arrowhead⁸², but its shape is not clear. The arrowheads from the Chernjakhov culture are tanged or socketed with leaf-shaped or rhomboid blades made of iron (Fig. 6)⁸³.

Describing the battle *ad Salices*, Ammianus notes that the warriors were wounded by sling bullets⁸⁴. This passage of Marcellinus' narrative is highly rhetorical, and it presents a fierce fighting between the Goths and Romans. The sling was not a widespread weapon among the Germanic levies, nevertheless they used it⁸⁵. Some scholars think that in the passage the Goths use the slings⁸⁶, but it is more likely that the sling is a weapon of the Romans, whose lightly armed warriors use the sling. The above mentioned Erwig's order directs the magnates to arm their serfs with various weapons including the sling⁸⁷. However, it was probably not Gothic, but a local weapon. It is uncertain, if the man shown on a votive bowl from Pietroasa (Romania, the 4th century) has a sling or something else⁸⁸.

The lasso was a typical tool for nomads, but not for sedentary people. However, in John Malalas' account about an engagement of the Romano-Persian war in AD 421-422 there is a note about employing the lasso. Two cavalymen, the Goth Ariobindus, an officer of the Roman army, and the Persian from the Immortals' unit Ardazanes, fought in single-combat. Ariobindus "carried the lasso after the Gothic usage". In the fight he tossed the lasso over the enemy's neck, pulled him from his horse, and stabbed him with a

weapon⁸⁹. It is interesting to note that Malalas indicates that to use the lasso was just a Gothic, not a nomadic custom, and thus, it was typical for the Goths to use the lasso in the fighting, at least from the point of view of the 6th century author. Probably, in the early 5th century the Visigoths of the King Ataulf used the lassos, if a conjecture of the manuscript A of Olympiodorus' text is true⁹⁰. It seems very probably that the lasso was introduced into the Gothic army under nomadic (Alano-Sarmatian or/and Hunnish) influence.

In general, after the ancient German manner, most of the Goths' infantry were shield-bearers armed with various spears and side arms: swords, *scramasaxes*, poniards, and knives. With the shields, the Goths formed the array called the "shield wall" protecting them from enemy missiles. A distant battle was waged by the archers whose armament was influenced by neighbouring peoples, as the Germans were not good bowmen. It seems archery developed more among the Visigoths than the Ostrogoths. The Ostrogoths developed their cavalry under the Alano-Sarmatian influence. Like the Sarmatians and Alans, the Goths, especially Ostrogoths, became armoured lancers, who fought in close combat without the shield, only with long lances and swords, because the Gothic ethos was that of the heroic age. In the cavalry there were also horsemen armed with light spears which would be used for throwing. The Visigoths had preserved the Germanic tradition of foot battle, and only in Gallia and Hispania in the 5th century AD had they improved their mounted force who were skirmishers first of all⁹¹.

NOTES

1. E.g., see BARRIERE-FLAVY 1902; KOKOWSKI 1993; MAGOMEDOV LEVADA 1996; A. ARRANZ-R. MARQUES-S. MONTES 1998; G. JIMENEZ-V. I CODINA 2003.
2. Procop. *Bel. Vand.* I.2.2-5. P. V. Shuvalov thinks that the names of Lombards and Franks were added to a title in the '*Strategicon*' (XI.3) later and the author did not mean them at all (SHUVALOV, 2002, 441).
3. SHUVALOV 2002, 448-449.
4. SHA. XXV.8.5.
5. Amm. XXXI.5.9, 7.12.
6. Mauric. *Strat.* XI.3.2 (ed. Mihăescu).
7. LV. IX.2.9 (= *Leges Visigothorum*, edidit K. Zeumer, *Monumenta Germaniae historica. Legum sectio I: Leges nationum Germanicarum*, t. I. Hannoverae; Lipsiae 1902): partem aliquem zabis vel loriceis munitam, plerosque vero scutis spatibus scamis lanceis sagittisque instructos, quosdam etiam fundarum instrumentis vel ceteris armis, que noviter forsitan unusquisque a seniore vel domino suo iniuncta habuerit, principi duci vel comiti suo presentare studeat. On these kinds of armour see my paper: NEFEDKIN 2006.
8. Procop., *Bel. Goth.* I.27.27.
9. Jord. *Get.* 261; cf. Amm. XXXI.5.9; Claud. XXVI (*De bel. Goth.*), 483; Greg. *Turon. Hist. Franc.* II.37; Ps.-Mauric. *Strat.* XI.3.2.
10. Claud. XXXVI (*De bel. Goth.*), 484-485, XXVIII (*De VI cons. Stilich.*), 270; Oros. *Hist.* VII.33.14; Jord. *Get.* 261.
11. Procop. *Bel. Pers.* II.18.24; cf. *Bel. Goth.* II.2.22; III.30.13; IV.29.26-27, 32.6, 8.
12. Procop. *Bel. Vand.* I.13.3, 7, 6,20; *Bel. Goth.* IV.11.33, 34, 37, 60, 23.32, 31.9, 35.30.
13. Procop. *Bel. Goth.* III.4.21-29.
14. See: PEREVALOV, LEBEDYNSKY 1998, 21
15. KOKOWSKI 1993, 343, ? 38; 346, Fig. 2 c.
16. Evag. *Hist. eccl.* III.25: δόρυ διαγκυλιμένον; cp.: Joan. Antioch. *frg.* 211,5.
17. Mauric. *Strat.* I.1.5, 2.2; XI.2.6. For the Scythian peoples see: SHUVALOV 2002, 431-437.
18. *Lanceolae*: SHA. XXV.8.5; *tela*: Amm. XXXI.13.1-2; cf. Ambros. *Epist.* XV.5; *jaculum*: Amm. XXXI.13.1; cf. Isidor. *Hist. Goth.* 9; *verutum*: Amm. XXXI.7.12.
19. Veget. *Epit.* II.15.
20. Claud. XXX (*Laud. Seren.*), 235.
21. Veget. *Epit.* II.15.
22. *Telum*: Jord. *Get.* 209; *hastilia*: Merob. II.158.
23. Ennod. *Paneg.* 12,65-66; cf. Veget. *Epit.* III.14, 24; IV.29.
24. Procop. *Bel. Goth.* III.11.24; II.23.37.
25. Procop. *Bel. Goth.* II.2.14, 30.
26. Greg. *Turon. Hist. Franc.* VI.43; Julian. *Hist. Wamb.* 13; 17.
27. Veget. *Epit.* II.15.
28. Veget. *Epit.* I.20; see IHM, 1901.
29. KOKOWSKI 1993, 343, N° 38; MAGOMEDOV-LEVADA 1996, 315 (tomb N° 86 at Kompanijcy); A. ARRANZ-R. MARQUES-S. MONTES 1998, 414, 415, 418. Fig. 2 (Visigothic tomb N° 11 at Daganzo de Arriba in the Madrid area).
30. MAGOMEDOV-LEVADA 1996, 308-309.
31. KOKOWSKI 1993, 337, 349, Fig. 5^c.
32. E.g. KOKOWSKI 1993, 337. For the traditional opinion about the appearance of the *pilum* see, e. g., RIENACH 1906, 481-484; For the description of the *ango* see Agath. II,5.
33. Veget. *Epit.* II.15.
34. Amm. XXXI.7.12: *ingentes clavas in nostros conicientes ambustas*.
35. OLDENBURG 1909, 20.
36. Caesar. *B. G.* V.42; Tacit. *Ann.* II.14; *Germania*, 45.
37. On the problems of disarming see: BURNS 1973, 336; and especially: WOLFRAM 2003, 172-173.

38. *Gladii*: Amm. XXXI.5.9, 7.13; Oros. *Hist.* VII.33.14; Cassiod. Var. X.31.1; *enses*: Merob. II.159; Sidon. Carm. VII.412; Cassiod. Var. IV.2.2; xíjh: Procop. *Bel. Goth.* I.18.10, 27.27; IV.23.30, 32, 32.7.
39. SHA. XXV.8.5.
40. Cassiod. Var. V.1.1; cf. LV. IX.2.9.
41. BISHOP–COULSTON 1989, 28-29, 43.
42. Claud. XXVI (*De bel. Goth.*), 487.
43. MAGOMEDOV–LEVADA 1996, 304-305, 319.
44. ZEISS 1934, 6, 150; A. ARRANZ–R. MARQUES–S. MONTES 1998, 414, Fig. 2.
45. Claud. XXVI (*De bel. Goth.*), 487.
46. Cassiod. Var. V.1.1.
47. Mauric. *Strat.* XI.3.2.
48. I would like to thank Dr. P. Rance for his communication by e-mail (24 March 2006), see: SPEIDEL 2004, 140, n. 31.
49. Mauric. *Strat.* I.2.2; see: SHUVALOV 1999, 50.
50. Cf. HALDON 1975, 31.
51. Tacitus, *Germania*, 43.6.
52. KOKOWSKI 1993, 336, 348, Fig. 3d; MAGOMEDOV–LEVADA 1996, 319, 559, fig. 2.8.
53. DELBRÜK 1929, N° 69.
54. A. ARRANZ–R. MARQUES–S. MONTES 1998, 441, Fig. 16.
55. A. ARRANZ–R. MARQUES–S. MONTES 1998, 420-425, 443-445.
56. ZEISS 1934, 65; KAZANSKI 1991, 101; A. ARRANZ–R. MARQUES–S. MONTES 1998, 416-417, 442-443.
57. Amm. XXXI.7.12; cf. Salvian, *De gubernat. dei*, V.57.
58. Marcel. Com., a. 514.3: *culter Geticus*.
59. ŠČUKIN 1993, 327.
60. KOKOWSKI 1993, 353-354; MAGOMEDOV–LEVADA 1996, 313-319.
61. Amm. XXXI.13.3: *et mutuis securium ictibus galeae perfringebantur atque loricae*.
62. The entrenching tool: Procop. *Bel. Goth.* III.20.15; throwing weapon: Agath. I.9; hunt: Procop. *Bel. Pers.* II.21.7.
63. KOKOWSKI 1993, 337, 346, fig. 2 p, z; 4 f-l; MAGOMEDOV–LEVADA 1996, 307-308, 562, Fig. 5. An axe from the tomb N° 14 at Deze in Spain is thought to be a **bench** one, ZEISS 1934, 65, 162, Taf. 27.16.
64. Jord. *Get.* 43; Lucan. *Pharsalia*. VIII.221.
65. Claud. XXI (*De cons. Stilich. I*), 112.
66. SCHLETTE 1977, 130.
67. Claud. XXVI (*De bel. Goth.*), 495-496.
68. Sidon. *Epist.* I.2.5.
69. Veget. *Epit.* I.20; Oros. *Hist.* VII.33.14; Paul. Diac. *Hist. Rom.* XI.11.
70. Malal., p. 371. ll. 16-18; Joan. Nic. *Chron.* 89.
71. Julian. *Hist. Wamb.* 12, 13.
72. SCHLETTE 1977, 130.
73. MAGOMEDOV–LEVADA 1996, 309, 313.
74. See NIKONOROV 2002, 278-279.
75. Amm., XXXI.15.11.
76. Agath. I.9.
77. Claud. XXVI (*De bel. Goth.*), 495-496; Sidon, *Epist.* V.12.1: *pharetra*.
78. SCHLETTE 1977, 130.
79. Amm., XXXI.7.14: *alii glande fundis excussa vel harundinibus armatis ferro confixi*.
80. Plin. *Hist. nat.* XVI.160; also see NEFEDKIN 2004, 56-57.
81. Procop. *Bel. Goth.* II.2.17, 28.
82. Procop. *Bel. Goth.* II.5.25-27.
83. MAGOMEDOV–LEVADA 1996, 309-310.
84. Amm. XXXI.7.14.
85. SKOBELEV 2001, 84-85, 90, pl. 3, Fig. 1.
86. MACDOWALL 2001, 12-13, 18; cf. ELTON 1996, 64.
87. LV. IX.2.9.
88. DUNAREANU–VULPE 1967, 23, Abb. 19.
89. Malalas, p. 364, ll. 11-17.
90. Olympiod. frg. 17 = Phot. Bibl. 80.58b, l. 30; see NIKONOROV 2002, 288-289.
91. For the Italian Goths' cavalrymen armed with spears see Procop., *Bel. Goth.* I.18.7, 10, 27.27; II.2.11, 30; III.11.24; for Spanish Goths' horse see Isidor, *Hist. Goth.* 69-70; Greg. Turon. *Hist. Franc.* II.37.

BIBLIOGRAPHY

- A. ARRANZ – R. MARQUES – S. MONTES 1998: F. Ardanaz Arranz – S. Rascón Marqués – A. L. Sánchez Montes, *Armas y guerra en el mundo visigoto, Arqueología, paleontología y etnografía 4*: Jornadas internacionales “Los visigodos y su mundo”. Ateneo de Madrid, Noviembre, 1990, Madrid, 1998, 409-452
- BARRIERE–FLAVY 1902: C. Barriere-Flavy, Le costume et l'armement du Wisigoth aux Ve et VIe siècles, *Revue des Pyrénées* **14**, 1902, 125-145
- BISHOP – COULSTON 1989: M. C. Bishop – J. C. Coulston, *Roman Military Equipment, Shire Archaeology* **59**, Aylesbury, 1989
- BURNS 1973: T. S. Burns, The Battle of Adrianople: A Reconsideration, *Historia* **22,2**, 1973, 336-345
- DELBRÜK 1929: R. Delbrück, *Die Consulardiptychen und verwandte Denkmäler*, Berlin–Leipzig, 1929
- DUNĂREANU–VULPE 1967: E. Dunăreanu-Vulpe, *Der Schatz von Pietroasa*, Bukarest, 1967
- ELTON 1996: H. Elton, *Warfare in Roman Europe AD 350-425*, Oxford Classical Monographs, Oxford, 1996

- G. JIMENEZ – V. I CODINA 2003: G. García Jimènez – D. Vivo i Codina, Sant Juli de Ramis y Puig Rom: Dos ejemplos de yacimientos con armamento y equipamiento militar visigodo en el noreste peninsular', *Gladius* **23**, 2003, 161-189
- IHM 1901: Ihm. 'Bebra', *Thesaurus linguae Latinae*, **II,I** Lipsiae, 1901, 1797
- HALDON 1975: J. F. Haldon, Some Aspects of Byzantine Military Technology from the Sixth to Tenth Centuries, *Byzantine and Modern Greek Studies* **1**, 11-47
- KAZANSKI 1991: M. Kazanski, *Les Goths Ier-VIe après J.-C.* Paris, 1991
- KOKOWSKI 1993: A. Kokowski, L'art militaire des Goths, l'èpoque romaine tardive d'après les données archéologiques, F. VALLET et M. KAZANSKI (eds.), *L'Armée romaine et les barbares du IIIe au VIIe siècle*, Rouen, 1993, 335-354
- MACDOWALL 2001: S. Macdowall, *Adrianople AD 378: The Goths Crush Rome's Legions*, Campaign. 84, Oxford, 2001
- MAGOMEDOV–LEVADA 1996: Б. В. Магомедов - М. Е. Левада, Оружие черняховской культуры. *Материалы по археологии истории и этнографии Таврии* **5**, 1996, 304-323, 558-566
- NEFEDKIN 2004: А. К. Нефедкин, *Под знаменем дракона: военное дело сарматов во II в. до н. э. - V в. н. э.* Ст. Петербург, 2004
- NEFEDKIN 2006: А. К. Nefedkin, Armour of the Goths in the 3rd - 7th centuries AD, *Fasciculi archaeologiae historica* **19**, 2006
- NIKONOROV 2002: В. П. Никоноров, Военное дело европейских гуннов в свете данных письменой традиции, *Записки Восточного отделения Российского археологического общества, Новая серия* **1** (26), 2002, 223-323
- OLDENBURG 1909: E. Oldenburg, *Die Kriegsverfassung der Westgoten: Inaugural-Dissertation zur Erlangung der Doktorwürde*, Berlin, 1909
- PEREVALOV – LEBEDYNSKY 1998: M. Perevalov – I. Lebedynsky, *Les combattants sarmates et alains dans l'armée romaine*, Saulcet, 1998
- REINACH 1906: A.-J. Reinach, Pilum, C. DAREMBERG., E. SAGLIO (eds.), *Dictionnaire des antiquités grecques et romaines d'après les textes et les monuments* **4,1**, Paris, 1906, 481-484
- SCHLETTE 1977: F. Schlette, *Germanen zwischen Thorsberg und Ravenna. 3. Ausgabe*, Kulturgeschichte der Germanen bis zum Ausgang der Völkerwanderung, Leipzig–Jena–Berlin, 1977
- ŠČUKIN 1993: M. B. Ščukin, A propos des contacts militaires entre les Sarmates et les Germains à l'èpoque romaine, d'après l'armement et spécialement les umbo de boucliers et les lances, F. VALLET et M. KAZANSKI (eds.), *L'Armée romaine et les barbares du IIIe au VIIe siècle*, Rouen, 1993, 323-333
- SHUVALOV 1999: П. В. Шувалов, К вопросу о влиянии аваров на познеримское военное дело, В. М. Массон (ред.), *Изучение культурного наследия Востока: Культурные традиции и преемственность в развитии древних культур и цивилизаций*, Санкт-Петербург, 1999, 48-51
- SHUVALOV 2002: П.В. Шувалов, Враги Империи (по трактату Псевдо-Маврикия), *Записки Восточного отделения Российского археологического общества, Новая серия* **1** (26), 2002, 448-449
- SKOBELEV 2001: Д. А. Скобелев, Праца: снаряды и способы метания в античности, *Para bellum-Дайджест: Военноисторический журнал*, Санкт Петербург, 2001, 75-96
- SPEIDEL 2004: M. P. Speidel, *Ancient Germanic Warriors*, London–New York, 2004
- WOLFRAM 2003: X. Вольфрам, *Готы*, Санкт Петербург, 2003, (Russian translation)
- ZEISS 1934: H. Zeiss, *Die Grabfunde aus dem spanischen Westgotenreich*, Germanische Denkmäler der Völkerwanderungszeit, II Berlin–Leipzig, 1934



The elite military necropolis in Scythian Neapolis (I-II century AD)

Valentina Mordvintseva - Yuriy Zaytsev

In the first centuries AD the Crimea was a sphere of special interest to the Roman Empire. (Fig 1) However, at this time the power of the Bosporan kingdom, which was situated along both sides of the Cimmerian Bosphorus, was so strong, that the Romans could anchor only on the South-Western shore of the peninsula. On this territory they faced always the numerous and warlike barbarians, whose main fortress was the Scythian Neapolis in the centre of the Crimea.

This fortress was well-known from the Hellenistic period. Strabo mentioned it among the three main fortresses of the Scythians in the Crimea – Scythian Neapolis, Palakium and Khabei.

During the first centuries AD the Scythian Neapolis was still the most important barbarian settlement of the Crimea. From the second half of the 1st century to the third quarter of the 2nd century, in period B (after the chronology of Yuriy Zaytsev), the settlement of Neapolis was a wide territory surrounded by fences. At the time buildings there were rare except the *megaron* in the northern part of the settlement – the

so-called Northern Palace. It is usually thought that this place was a residence of some barbarian governor, who was in good relations with the Bosporan dynasty. (Fig. 2). The walls of the main building were decorated with frescos, which were made after traditions of Bosporan and provincial Roman decor. The scheme of decoration was reconstructed by I. V. Yatsenko. Based on stylistic parallels, she dated these polychrome paintings from the 2nd quarter to the middle of the second century AD. On the walls there were found so-called “Sarmatian signes” or *tamgas* and other graffiti representing a siege.

Despite of a paucity of other building remains on the Scythian Neapolis at the time one can see many traces of activity – a cultural layer, ash-hills with rich and various material, and household pits – which bear witness to the numerous population of the place. The discovered absence of buildings could be explained by a special way of life of the inhabitants of the Scythian Neapolis, who quite possibly were nomads, whose type of economy suggests an absence of permanent dwellings.



Fig. 1: Main fortress of the Scythian Neapolis in the centre of the Crimea.

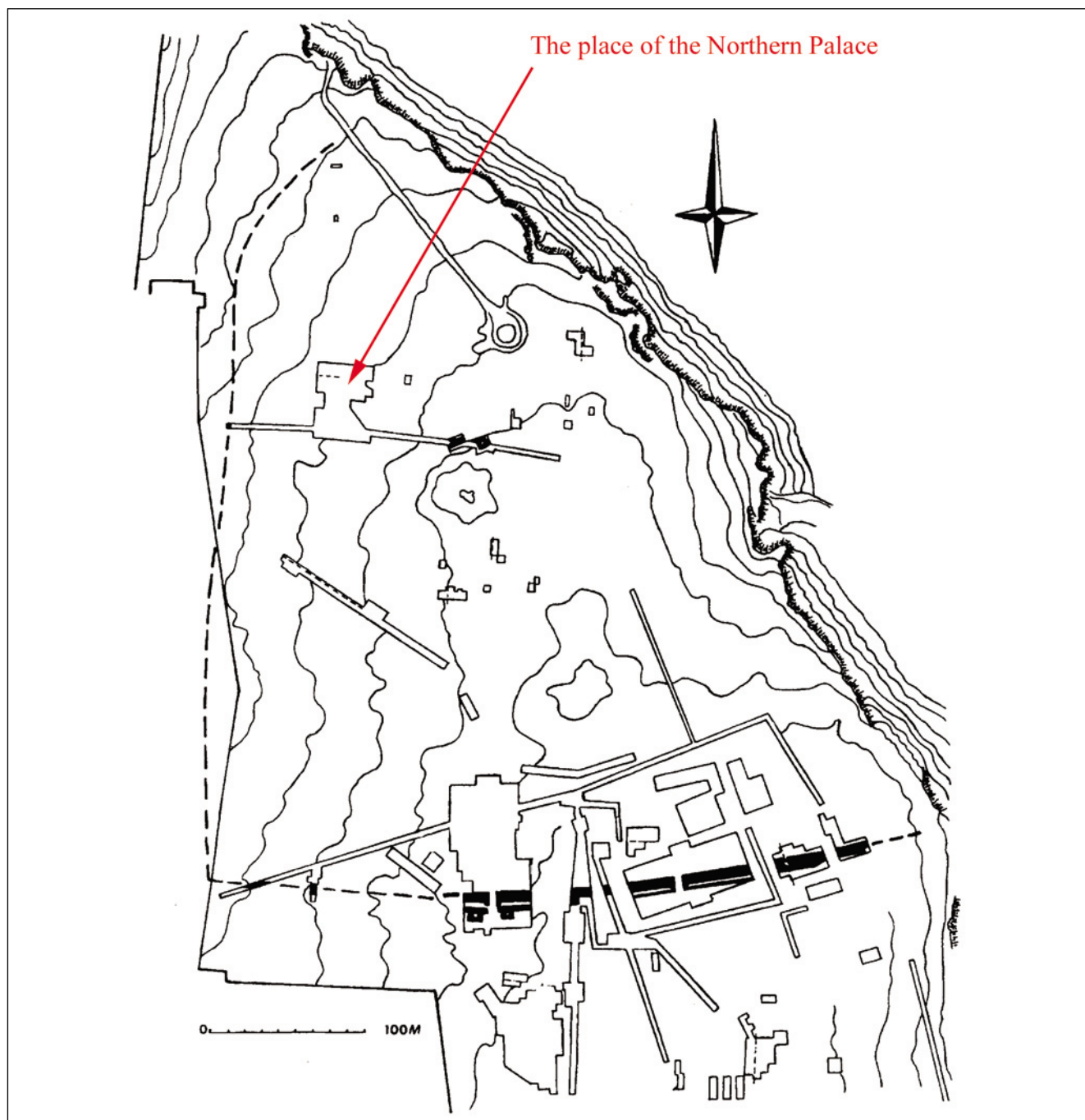


Fig. 2: *The so-called Northern Palace*

Another interesting feature of the Neapolis in the period B were burials, which were found on the site of the former Southern Palace of Hellenistic times. There were discovered a grave of a noble warrior, a grave of a child, remains of other rich human burials and 6 graves of horses. (Fig. 3)

This small necropolis was formed around the Hellenistic Mausoleum of the Scythian King Argotus, the second husband to the Bosporan Queen Kamasaria. The name of Argotus was mentioned in the inscription on the grave-stone recently found at the site of the Mausoleum. It seems, that in

the 2nd century BC it was a small temple with a subterranean tomb. Its form in the 2nd century AD is unknown. But it is possible, that this place was still adorned by the Barbarians in the 1st centuries AD.

The history of discoveries at this site started at the beginning of the 19th century. It is quite likely that the last robbery of the Mausoleum of Argotus, took place at that time, when local people took the last stones from this monument. Their booty was examined by the regional ethnographer and antique dealer Sultan Krym-Girey, who noticed among the

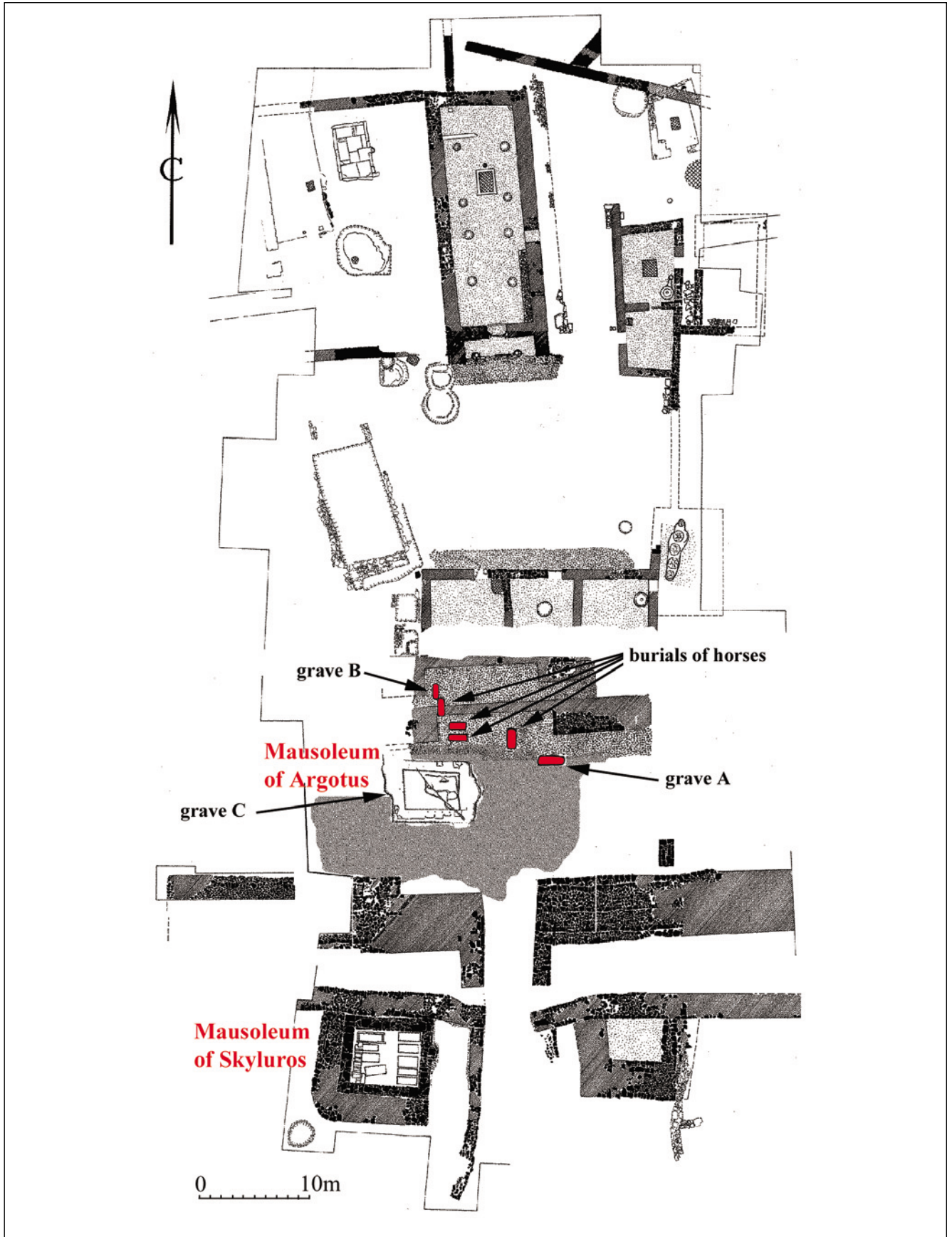


Fig. 3: The plan of the Southern Palace and the central Gates of the Scythian Neapolis

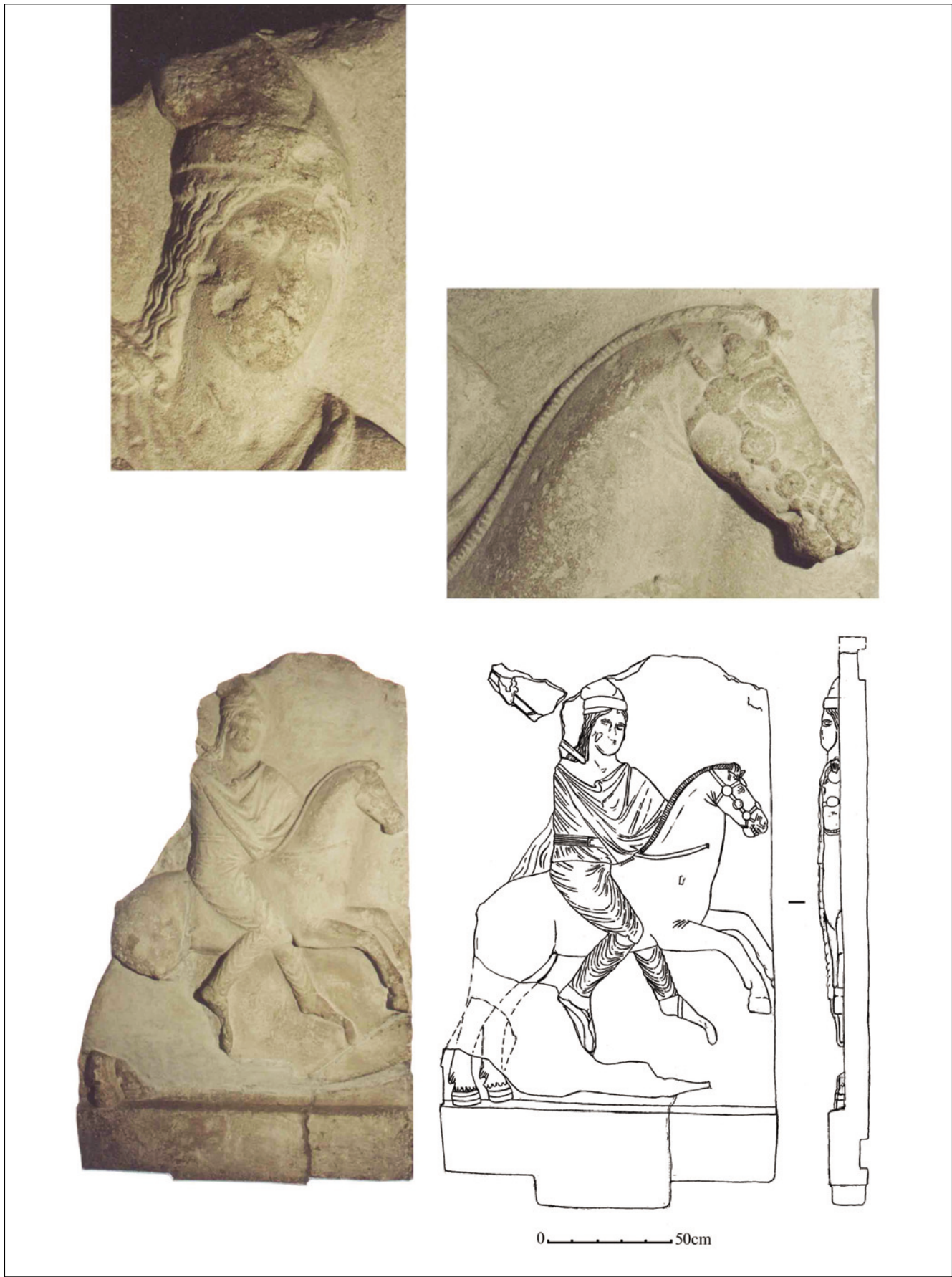


Fig. 4: The stone relief representing a rider

stones a relief representing a rider (Fig. 4). This relief was until now believed to be a portrait of Palakus – the son to the Scythian King Skiluros, both mentioned by Strabo.

In 1827 the Scythian Neapolis was visited by the well-known Russian archaeologist from S.-Petersburg Ivan Blaramberg. He investigated the site, from which the stone reliefs came, but found nothing.

The investigation of this site was continued at the end of the 1940-s under direction of Pavel Schultz and Aleksandr Karasev. In 1949 four horse burials and a grave “A”, which was later named as a «Burial of the Alanian military leader» was excavated. This complex was never fully published.

The name “Alanian military leader” was given to this grave mainly because of the rather unusual set of horse

trappings, which at the time had no analogies. The female skeleton in this grave was believed to be an earlier burial, disturbed and pushed to the wall of the chamber (Fig. 5). But the photo of this grave shows the bones of the female skeleton laid in an anatomical order. The bracelet was found *in situ* on the hand. Thus, it was rather a special burial rite, to bury a man lying on his back and a woman lying at feet of the man, in a semi-coiled position. Such a position in the grave is not unique for this area. A burial of the same date and of the same type of a man with a woman thrown near his legs was found in grave 63 of the Bitak necropolis – the 3rd necropolis belonging to the Scythian Neapolis.

Both skeletons of grave A were buried in a rectangular shaped pit cut into the rock. In the eastern corner of the grave



Fig. 5: The grave of the “Alanian military leader”

were found a so-called light-clay amphora (Type C), an iron knife, and a bone of an animal. Among the objects of the male burial was an iron finger ring. Near the right leg of the male skeleton a short iron sword was found (Fig. 6).

Near the feet of the male skeleton were elements of two horse harnesses (Fig. 7): two pairs of iron bits, an iron open-work head-piece, iron and bronzen *phalerae* covered with a gold foil, dividers of belts, buckles, clips and rings, 16 large chalcedonic beads, and plaques of different shapes made of golden foil.

On the female skeleton were found: a bronze bracelet, a bronze fibula, and glass beads (Fig. 8).

Burials of horses were connected with this grave (Fig. 9). They had been placed in the earthen pits in a “briled” position – on a stomach, with bended legs. Their heads were placed on earthen shelves. In three cases objects of equipment were placed on the horses: iron bits and saddle buckles. In one case the role of bits played an iron chain.

It is important to note, that the same year near the grave “A” was found one more fragment from the relief of a riding horseman.

In 1950 the excavations were continued. Two more horse burials and a grave of a child were found. In this grave beads, a golden earring and a golden pendant in the shape of Herakleos club were found.

Then field works at this site were interrupted until 1999, when finally the rest of the Mausoleum of Argotus, including the grave-stone with an inscription were investigated. West from the rocky-pit were found a small golden applique, a fragment of a roundel belonging to a horse harness, made of fossile bone, and the bones of an elderly man and a young woman.

In 2003 fieldwork continued. Near the rocky-pit were found a silver belt-buckle, a fragment of chain-armour and human bones (Fig. 10).

Thus, in front of the main entrance of the fortress at the end of the 1st century AD was arranged a necropolis of the barbarian nobility. The main grave was possibly made at the site of the Mausoleum of Argotus and afterwards disturbed many times. To this grave could belong the rest of a chain mail armour, a silver belt-buckle, and a golden applique.

This grave could also be connected to a grave-stone with the relief of a riding horseman. The usual interpretation of this relief as an image of Palakus, son to the Scythian King Skiluros was recently argued by Aleksej Voloshinov. Comparing this monument with the Bosporan grave-stones of the 1st centuries AD he has shown, that the monument

from the Scythian Neapolis has similar features in the representation of a horseman and in the type of composition.

Grave A could be dated even more precisely. The amphora from this grave was dated recently by Sergey Vnukov to the period from the second quarter to the end of the 2nd century AD. The fibula and bracelet from the female burial could be dated to the first half of the 2nd century AD. One could propose a narrower date to this grave – the second quarter of the 2nd century AD. Other burials of the necropolis one can date broader – from the end of the 1st to the 2nd centuries AD.

The historical interpretation of this necropolis is less clear than its date. T. Vysotskaya has attributed grave A to the burial of a conqueror of the Scythian Neapolis. It is hard to agree with. Many types of objects, which were found here – horse bits with wheel-shaped psalia, amphora, fibula, the bracelet with a knob on the endings, beads of chalcedony – are usual for the synchronous burials of other necropoli of the Scythian Neapolis. The inserting of these graves of high social status into the sacral area, marked by the ruins of the Mausoleum of Argotus is also an argument to consider these people as an elite of the local Barbarians.

If we look for the analogies to the burial goods, we can find them in the area between the South-Western Crimea and the Barbarian surroundings of the Bosporan kingdom. The most clear analogies in types and ornamentation of the horse harness can be seen in the crypt of Ashik in Pantikapaion and in crypt II in Gorgippia, which was recently dated by M. Treister to the middle of the 2nd century AD. Such ornamental detail as a golden knurling on the iron plates was noticed also in the complexes of the Crimea (Ust-Alma, Neapolis, Bitak) and the Lower Don valley.

Rests of a chain-armour are characteristic for the graves of the so-called “Golden cemetery” situated on the banks of the Kuban river. In the same necropolis was found a direct analogy to the belt-buckle from the grave C.

The short sword has no analogies.

Thus, for the Crimea this necropolis is one of rare cases where the burials of horsemen – *kataphraktarii* (with rests of chain armour, “strict” bits etc.) were found. In many features they are comparable to the elite warrior burials of the Bosporan kingdom, Lower Don and Kuban region of same period. These horsemen, apparently, represented part of a military group which the Romans had faced during their political contacts with Bosporus and Chersoneses in the 1st and the 2nd century AD.

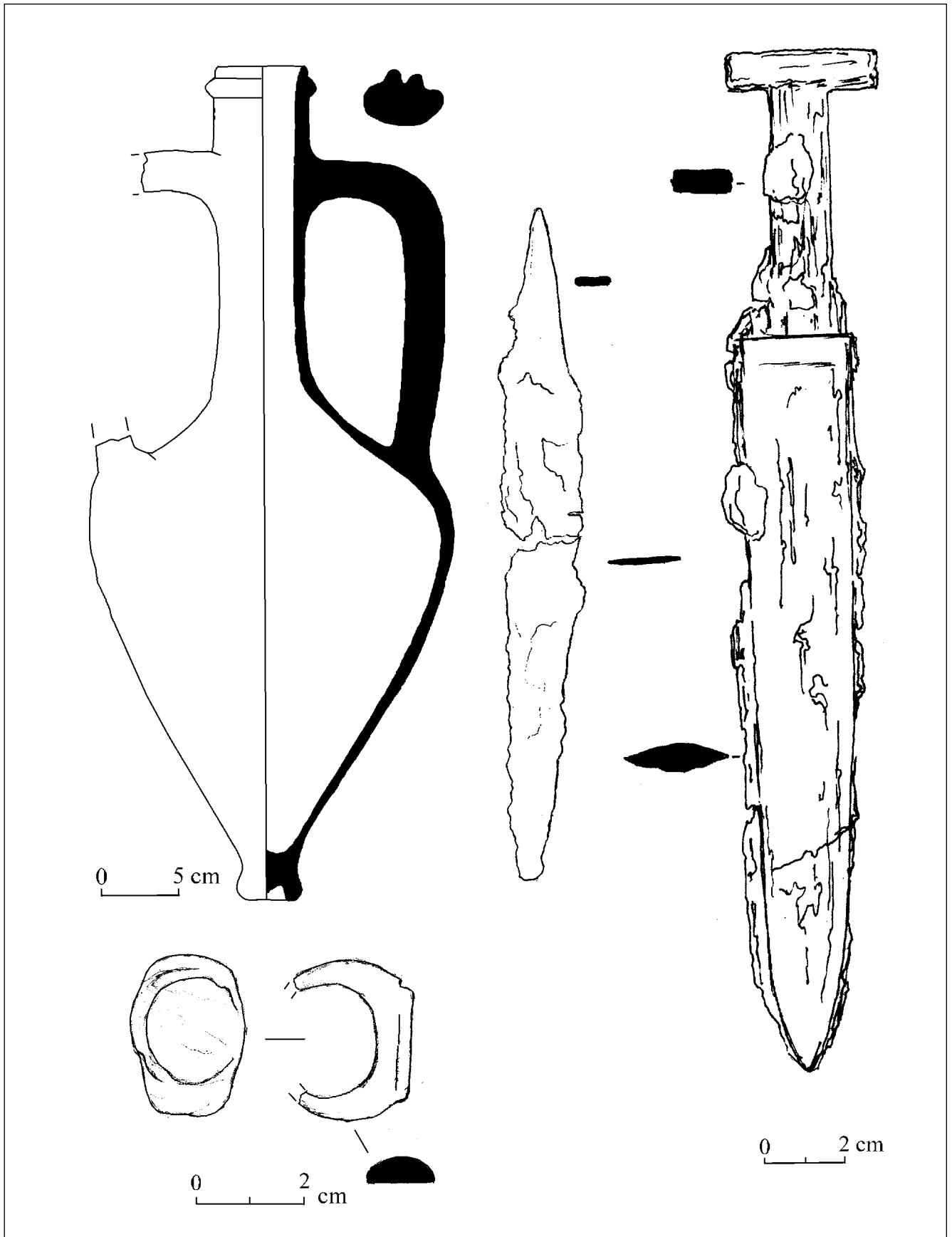


Fig. 6: Burial goods of the "leader"

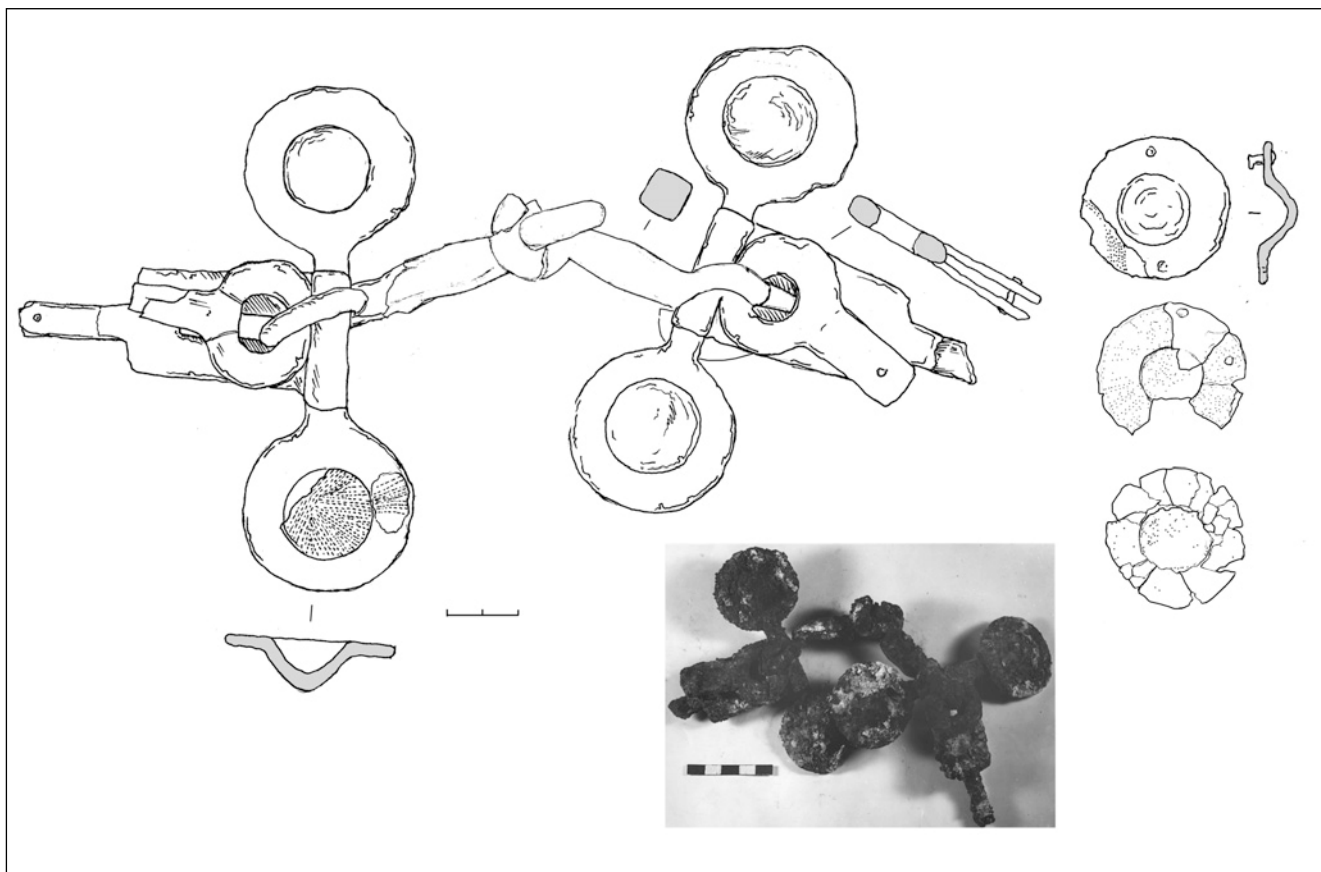


Fig. 7: horse harnesses

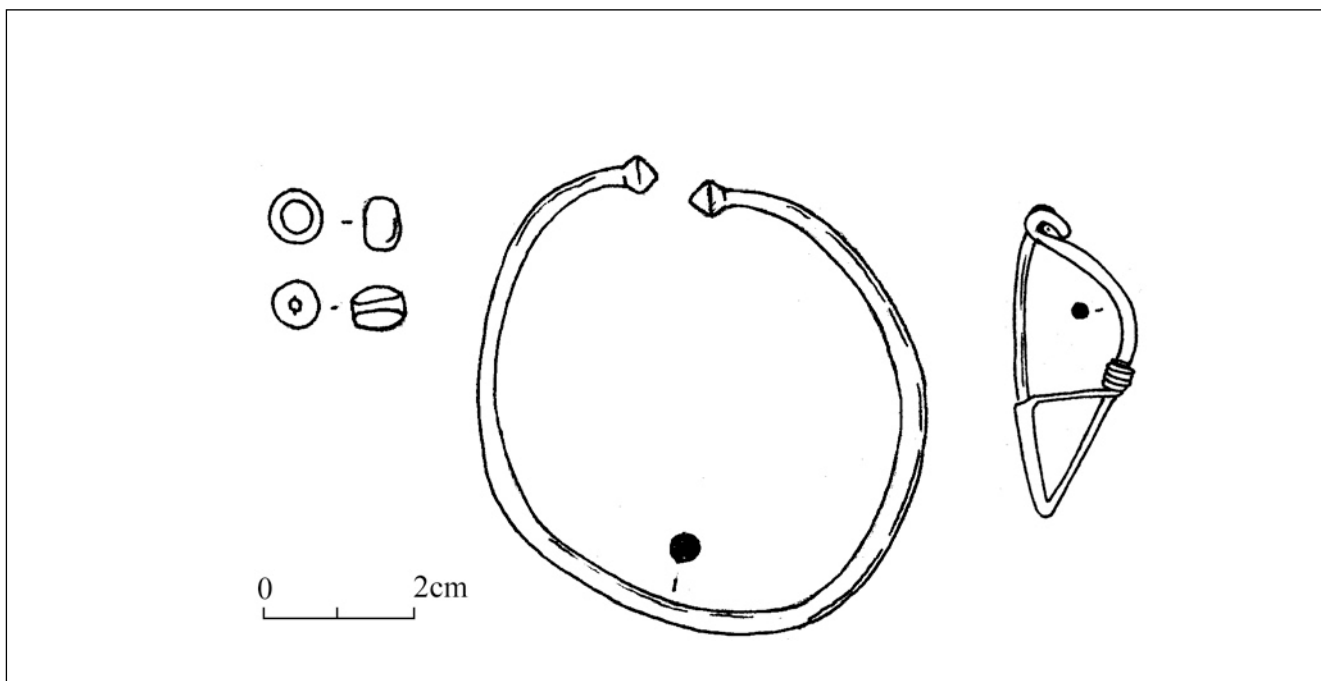


Fig. 8: Burial goods of the woman

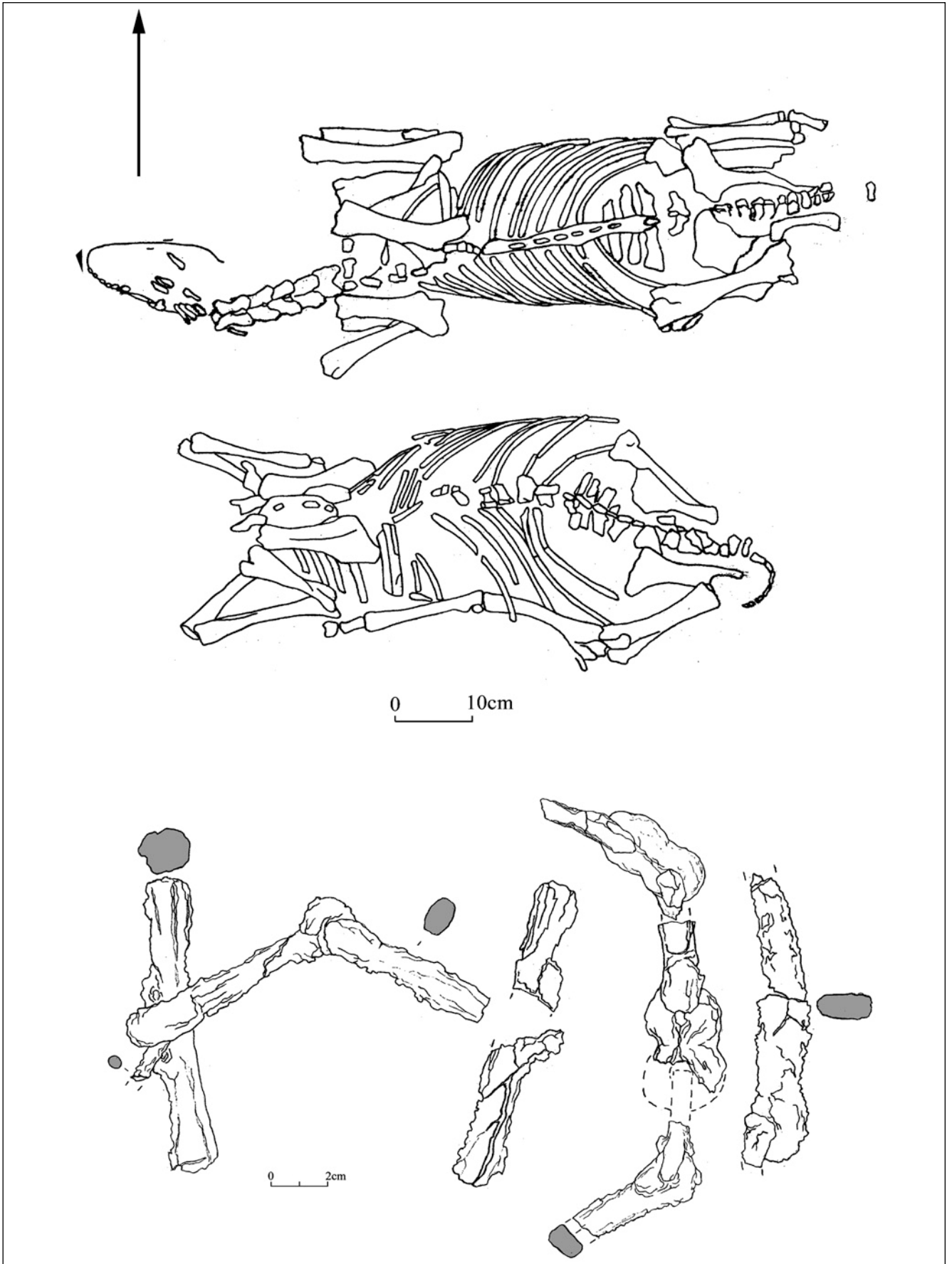


Fig. 9: Burials of the horses

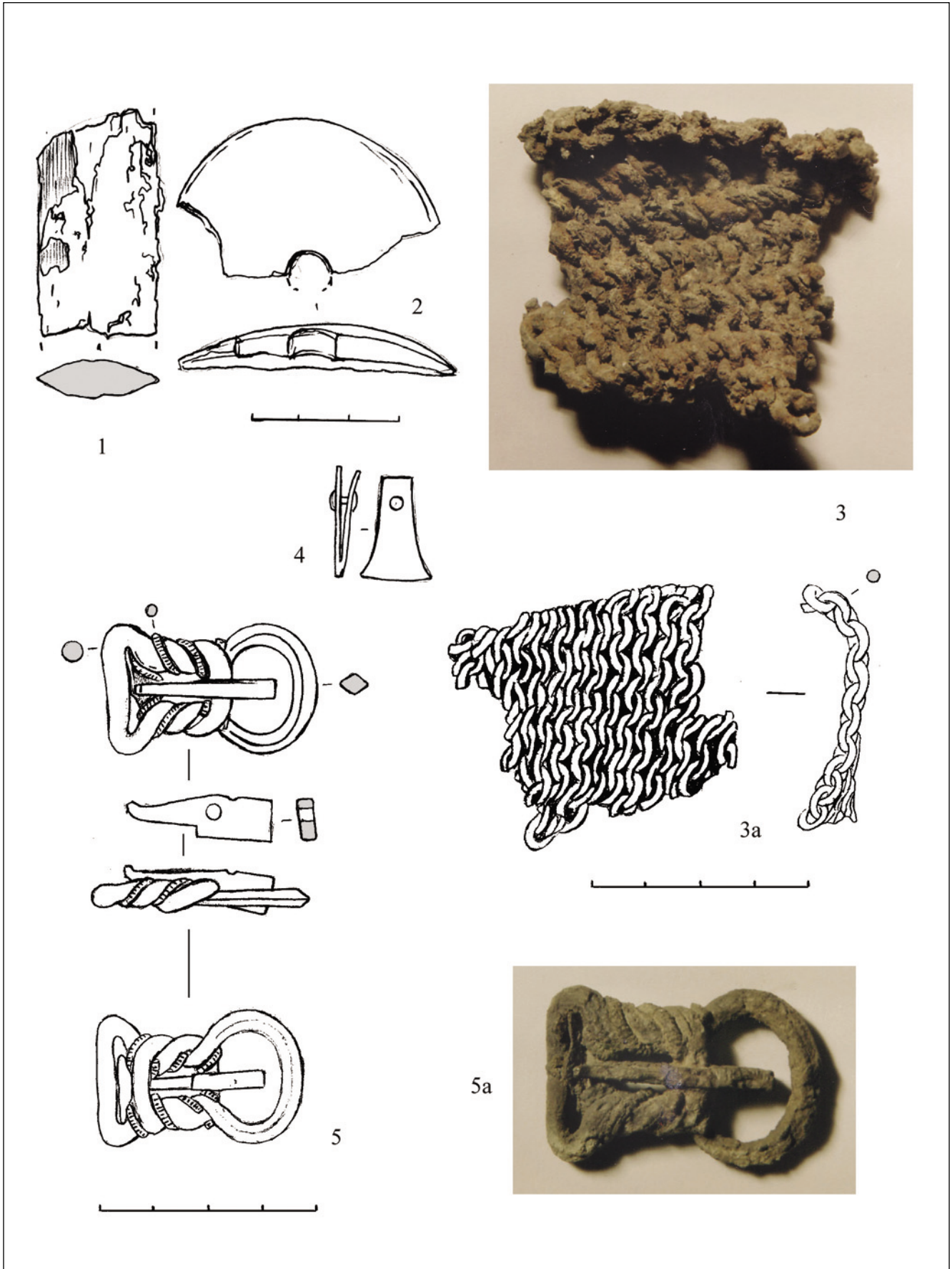


Fig. 10: The silver belt-buckle and a fragment of chain-Armour

BIBLIOGRAPHY

- ABRAMOV 1993: А.П. Абрамов, Античные амфоры. Периодизация и хронология, *Боспорский сборник*, Вып. 3. Москва, 1993
- ALEKSEEV–KOTSIEVSKI 1982: В.П. Алексеев–А.С. Коциевский, Херсонесская надчеканка на монете Боспорского царства. *Нумизматика античного Причерноморья*, Киев, 1982
- ALEKSEEVA 1975: Е.М. Алексеева, Античные бусы Северного Причерноморья, *Свод археологических источников*. Вып. Г1-12, Москва, 1975
- ALEKSEEVA 1978: Е.М. Алексеева, Античные бусы Северного Причерноморья, *Свод археологических источников*. Вып. Г1-12, Москва, 1978
- ALEKSEEVA 1982: Е.М. Алексеева, Античные бусы Северного Причерноморья, *Свод археологических источников*. Вып. Г1-12, Москва, 1982
- AMBROZ 1966: А.К. Амброз, Фибулы юга европейской части СССР II в. до н.э. - IV в.н.э. *Свод археологических источников*. Вып. Д1-30, Москва, 1966
- BABENCHIKOV 1949: В.П. Бабенчиков, Новый участок некрополя Неаполя скифского, *Вестник древней истории* 1, 1949
- BABENCHIKOV 1957: В.П. Бабенчиков, *Некрополь Неаполя скифского*. История и археология древнего Крыма, Киев, 1957
- BLARAMBERG 1931: J. de Blaramberg, *De la position de Trois forteresses Tauro-Scythes, dont parle Strabon, avec cartes, plans, copies d'inscriptions et dessins d'après des mabres antiques*, Odessa, 1931
- DASHEVSKAYA 1962: О.Д. Дашевская, Граффити на стенах зданий в Неаполе Скифском, *Советская археология* 1, 1962
- DOMBROVSKI 1961: О.И. Домбровский, О технике декоративной живописи Неаполя скифского, *Советская археология* 4, 1961
- DUBOIS 1843: F. Dubois de Montpréaux, *Voyage autour du Caucase, chez les Tcherkesses et les Abkases, en Colchide, en Géorgie, en Arménie, en Crimée*, Paris, 1843
- ETTLINGER 1962: E. Ettliger *Die römischen Fibeln in der Schweiz*, Bern, 1962
- PUZDROVSKI 2001: А.Е. Пуздровский, Погребения Битакского могильника первых веков н.э. с оружием и конской уздой. Поздние скифы в Крыму, *Труды Государственного Исторического Музея*. Вып. 2001, 118
- SCHULZ 1949: П.Н. Шульц, Работа Тавро-скифской экспедиции, *Краткие сообщения Института истории материальной культуры* Вып. XXVII, Москва, 1949
- SCHULZ 1953: П.Н. Шульц, *Мавзолей Неаполя Скифского*, Москва, 1953
- SCHULZ 1957: П.Н. Шульц, Исследования Неаполя Скифского (1945 - 1950), *История и археология древнего Крыма*, Киев, 1957
- SHELOV 1978: Д.Б. Шелов Узкогорлые светлоглиняные амфоры первых веков н.э.: классификация и хронология, *Краткие сообщения Института археологии АН СССР*. Вып. 1978, 156
- VINOGRADOV 1997: Ju. G. Vinogradov, *Pontische Studien*, Mainz, 1997
- VINOGRADOV 1987: Ю.Г. Виноградов, Вотивная надпись дочери царя Скилура из Гантикапея и проблемы истории Скифии и Боспора во II в. до н.э. *Вестник древней истории* 1, 1987
- VINOGRADOV 1989: Ю.Г. Виноградов, *Политическая история Ольвийского полиса VII -I вв. до н.э. Историко-эпиграфическое исследование*. Москва, 1989
- VINOGRADOV – ZAYTSEV 2003: Ю.Г. Виноградов - Ю.П. Зайцев, Новый эпиграфический памятник из Неаполя скифского (предварительная публикация), *Археология* 1, 2003
- VNUKOV 1988: С.Ю. Внуков, Широкогорлые светлоглиняные амфоры Северо-Западного Крыма *Советская археология* 3, 1988
- VYSOTSKAYA 1979: Т.Н. Высотская, *Неаполь - столица государства поздних скифов*. 1979
- ZAYTSEV 1990: Ю.П. Зайцев, Золотой статер Риметалка из Неаполя Скифского. *Советская археология* N 1, 1990
- ZAYTSEV 1992: Ю.П. Зайцев, Мавзолей Неаполя Скифского. *Археология* N 1, 1992
- ZAYTSEV 1995: Ю. П. Зайцев, Хронология Неаполя скифского. *Древности Степного Причерноморья и Крыма, Запорожье*. Вып. V, 1995
- ZAYTSEV 1997: Ю.П. Зайцев, Южный дворец Неаполя скифского. *Вестник древней истории* 3, 1997
- ZAYTSEV 1999: Ю.П. Зайцев, Скилур и его царство. (Новые открытия и новые проблемы) *Вестник древней истории* 2, 1999
- ZAYTSEV 2001: Ю.П. Зайцев, Мавзолей царя Скилура: факты и комментарии. Поздние скифы в Крыму, *Труды Государственного Исторического Музея* Вып. 2001, 118
- ZAYTSEV 2002: Yu.P. Zaytsev, Skiluros and His Realm. New Discoveries and New Problems, *Ancient civilization* 1, 2002
- ZAYTSEV 2002: Ю.П. Зайцев, *Скульптура и рельефы Южного дворца Неаполя скифского. Боспорский феномен. Погребальные памятники и святилища*. Санкт-Петербург, 2002

ZUBAR - SIMONENKO 1984: В.М. Зубарь - А.В. Симоненко, О снаряжении боевых коней в первые века н.э. на территории Северного Причерноморья. *Вооружение скифов и сарматов*. (Под ред.) Е.В. ЧЕРНЕНКО, Киев, 1984, 148 – 155

YATSENKO 1960: И.В. Яценко, Декоративная роспись общественного здания в Неаполе скифском. *Советская археология* 4, Москва, 1960

YATSENKO 1962: И.В. Яценко, Тарелка царицы Гипеперии из Неаполя скифского, *Историко-археологический сборник*, Москва, 1962

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Sagittarii on the South-East Frontier of Dacia

Ioana Bogdan Cataniciu

Dacia Inferior, created as a result of the administrative-territorial policy initiated by Hadrian when he put on the imperial purple, served the purpose of ensuring the connection between intra-Carpathic Dacia and Moesia, and protecting the empire's eastern flank at the entryway between the Carpathian bow and the Danube's turn towards the east.

The eastern frontier of Dacia Inferior fulfills these two functions, with fortifications all along the two roads connecting the Danube to Transylvania from Novae through the Bran Pass and from Oescus through Turnu Rosu, along the Olt¹, where there are natural ways in from the west. On Dacia's eastern border, the Romans had to face century-old enemies, the Getae of Wallachia² and the free Dacians of Moldavia. Following the reign of Trajan, who had a client treaty with the Roxolan-Sarmats to the north of the Black Sea, Hadrian allowed the latter to enter the low plain areas of Wallachia. Probably, as it can be assumed that the Dacians from sub-Carpathic areas became clients of the empire again when the troops from Moesia Inferior left Wallachia and southern Moldavia (Fig.1), so the Roxolans

were accepted in exchange for a treaty and probably with the obligation to defend the borders from exterior in front of a *via gentium*³.

The research we have carried out on this part of the Roman border was meant to provide topographic and chronological information, details related to the organization and location of Dacia Inferior troops in the fortifications of the border system.

There are still many question marks regarding this border area - not because we could not ask the proper questions or find solutions in order to investigate them, but because we could not manage to persuade the decision-making bodies to approve the funding, with the proper resources, of the systematic research of a system of fortifications that is very likely to be destroyed by modern development.

The geographical aspect of the border sector and the nature of the Vorland must have had a say in choosing the characteristics of the troops stationed in the castella on the border of Dacia Inferior.

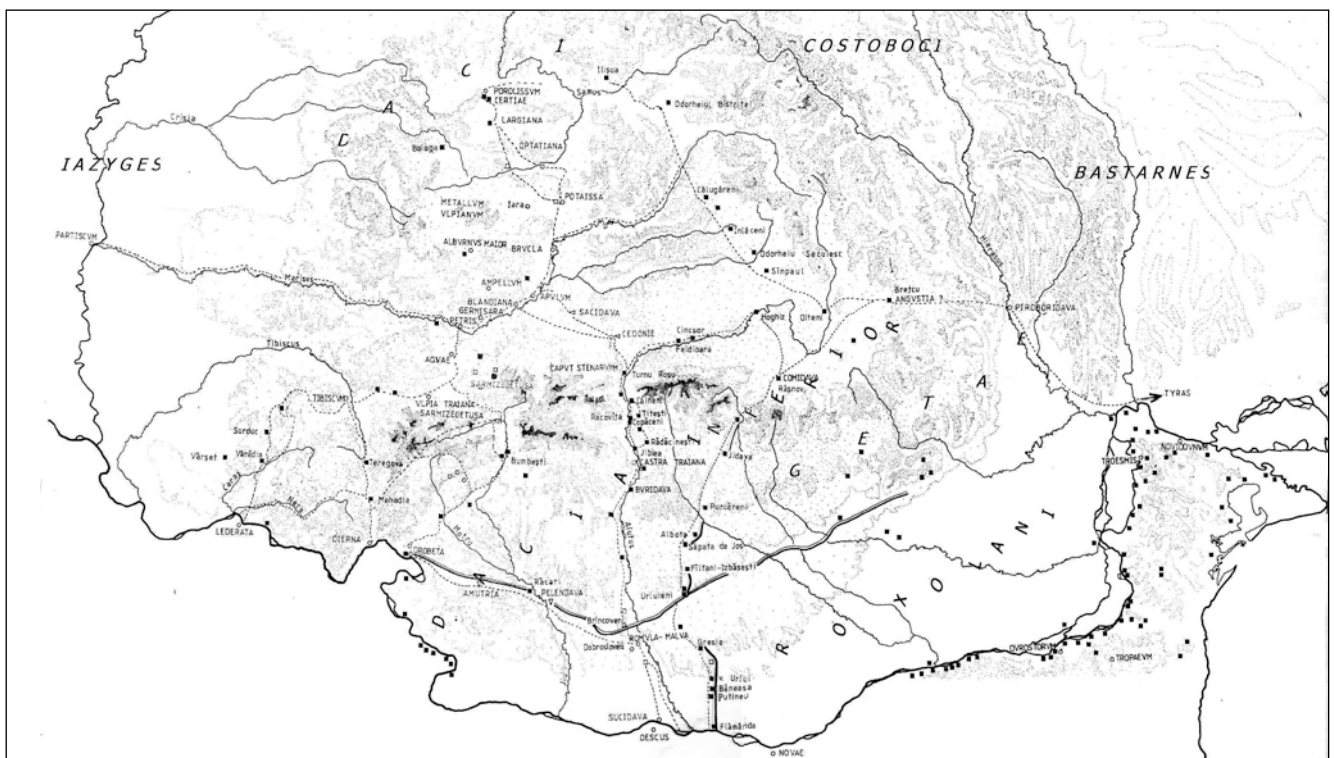


Fig. 1: Provincia Dacia and her neighborhood in Hadrian's time

The presence of several stamps on bricks in the same castellum and of the same stamp in different castella on the alutan line (the precise recording of the place where these stamped bricks were found has been overlooked) and the total lack of this type of epigraphic document on the line to the east of the Olt, make it difficult to retrace the stations and movements of the troops on the two lines of border fortifications.

We have suggested⁴ a solution to this problem by using both epigraphic arguments and deductions based on comparisons with other sectors of the imperial frontier.

Now we shall talk about the southern sector of the border of Dacia Inferior which comprises a high plain area traversed by the Cotmeana river and, more to the south, Vedeia, with tributaries that constitute openings along the SE-NW line. In order to control the movement of the Roxolan population of riding archers and of any other entry from the east, a quick reaction was needed, with the same type of weapons, and therefore it was necessary to have a troupe of riders and archers at the same time.

The sector is under the supervision of the *ala Hispanorum* stationed in the Slaveni castellum, the largest and in fact the best researched on the alutan line.

The troops along the Olt did not have the advantage of the terrain in the southern sector (the eastern bank dominates the western one), therefore they set up small advanced points on the transalutan line in order to supervise any movement outside the border. There have not been any stamps discovered in any of the transalutan line fortifications with the name of the garrison troops on the *tegulae*.

At Putineiu, research did not go beyond three free sides of the small castellum and we started an excavation, but then funds became unavailable... We have to underline from the start that at Putineiu⁵ we found mostly massive bolts, which is difficult to explain if we take into account the size of this fortification where only detachments of auxiliary troops could have stayed.

The research carried out in the past decades was more extensive at Urluieni. The A - earth castellum could not be investigated after 1990 as the land was given back to the owners, who, because the soil is poor, only grow corn, which is harvested late, when my workers -high school students- have left. We managed (1983-2002!) to uncover (Fig. 2) part of the B brick castellum: two gates, one corner and a connecting tower (but no barracks); all of the *principia* was investigated and the *praetorium* was left to be investigated when it is deemed necessary to continue the funding. It has to be said again that most of the surface of the brick castellum has been destroyed by fertilization

works and the brick walls have been removed, but it was possible to identify three phases noted B₀, B_I and B_{II}⁶

We assumed that at Urluieni, the B₀ phase was built under Trajan, in order to accommodate one of the cohorts that had taken part in the Dacian wars and to protect the road over the Bran Pass. The fact that we did not identify fortification elements of the B₀ phase on all sides suggests the possibility that the brick camp might have different dimensions compared to the first phase, and therefore, that upon rebuilding it, the garrison troops might also have been replaced. It seems, however, that the archers' contribution in all three phases to the protection of the Urluieni sector, situated between the high plain and the hills area, must be taken into account. The size of the B castellum at Urluieni allows for the hypothesis that it was inhabited by a *cohors quingenaria*, but it can be assumed that it was also suitable for a *numerus*, which could have also included riders.

The discoveries in the castellum help to if not state beyond doubt, at least strengthen our hypothesis that one of the *cohorts* of *sagittarii* or a *numerus surorum sagittatorum* stayed at Urluieni.

In terms of weapons, arrowheads are predominant in all the sectors we looked at. For the initial Trajanic phase, we discovered a trilobate arrowhead (N° 1) with a broken barb (Fig. 3) and another small arrowhead with a square cross-section (N° 21), both in the eastern area of the castellum, where we intersected the undisturbed stratigraphy over several meters.

The filiform arrowhead (N° 20) found in a ditch covered when the brick *principia* was built, is also in a context that can be dated to the 2nd century. The dipyrmidal arrowhead (N° 11) was discovered in a context with material from the initial phase of construction of the brick structure to the west of the headquarters building. We can obviously only underline the fact that the same shapes were also discovered in the last phase of the castellum, and that we cannot speculate on their chronology.

We notice that alongside barbed trilobate arrowheads there are also smaller trilobate arrowheads without barbs.

There are also small dipyrmidal arrowheads, with both triangular (Nos 11-13) and square bases (Nos 14-16), the tang only slightly different from the tip. (Fig. 4)

Numerically, the predominant arrowheads are the tanged ones of different shapes and sizes. (Figs 5-6). The side of the quadrangle varies between several millimeters (Nos 19-23) and one centimeter (N° 33).

N° 18, with a short pyramidal head and a very long tag (a 1:2,5 ratio), is a special piece. (Fig. 5)

Nos 24-33 are relatively large, but we place them in the category of arrows. It should be added that on the last level

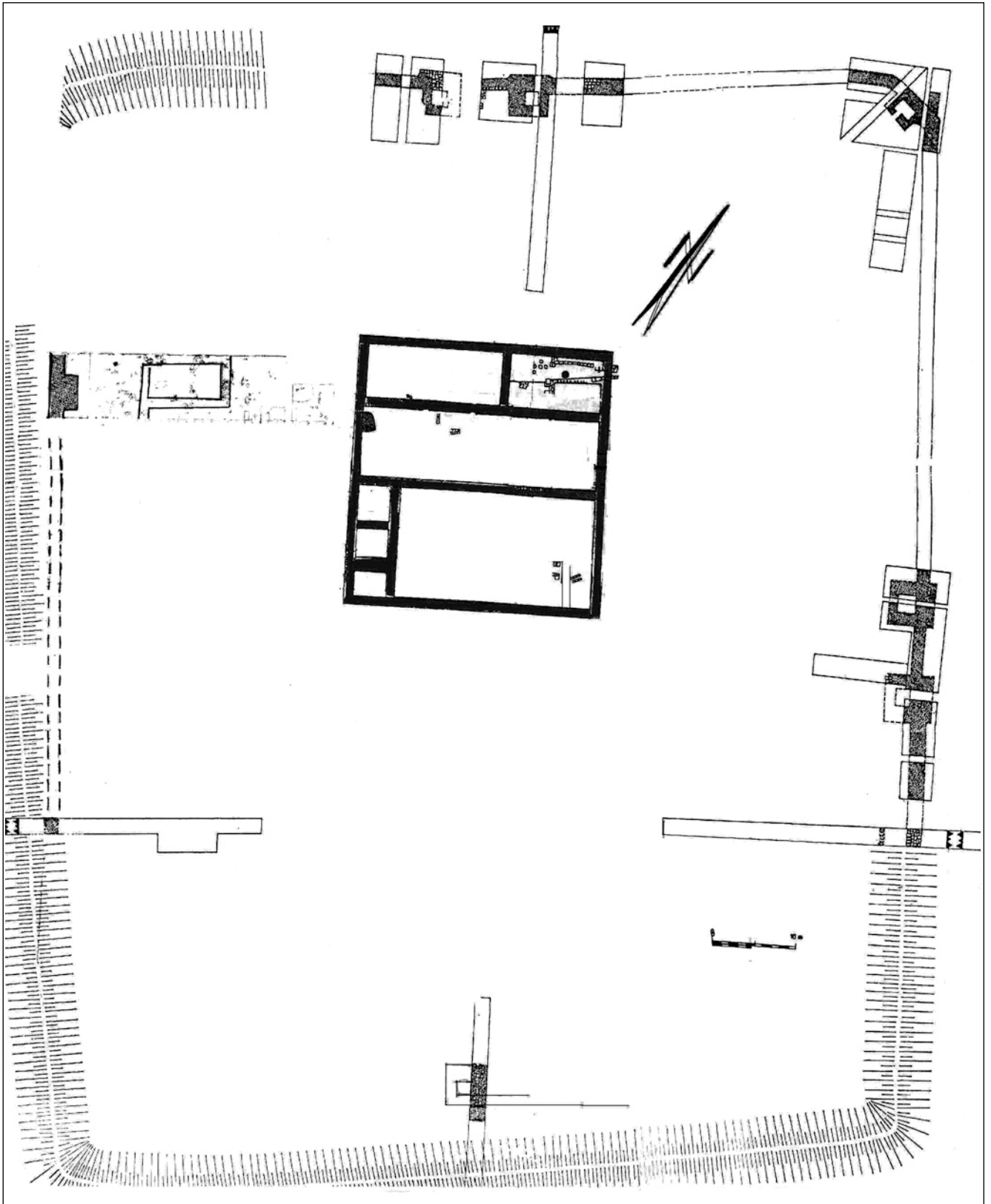


Fig. 2: Urluini, castellum B

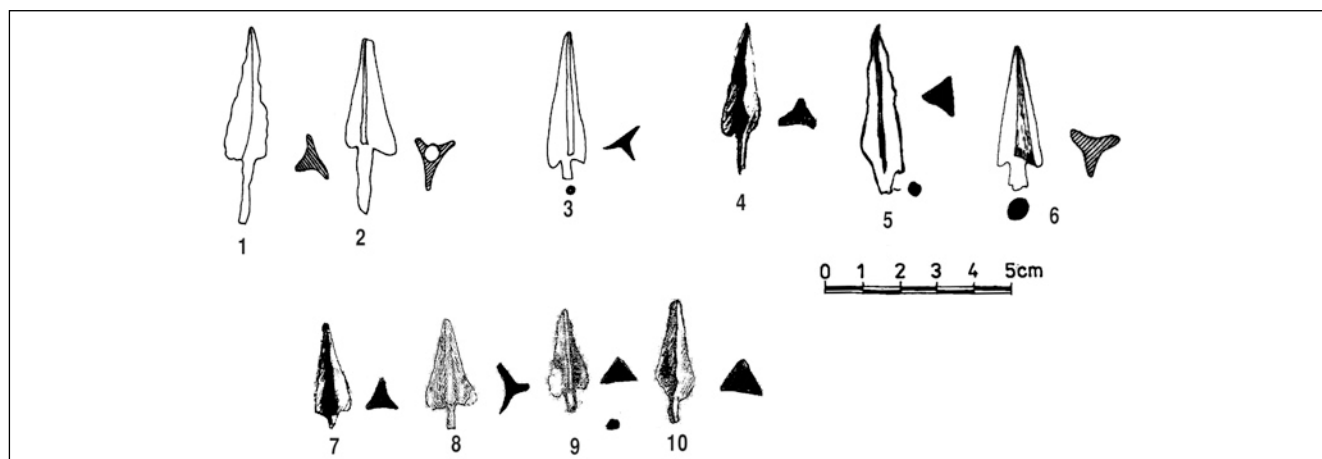


Fig. 3: Trilobated arrowheads, Urluieni

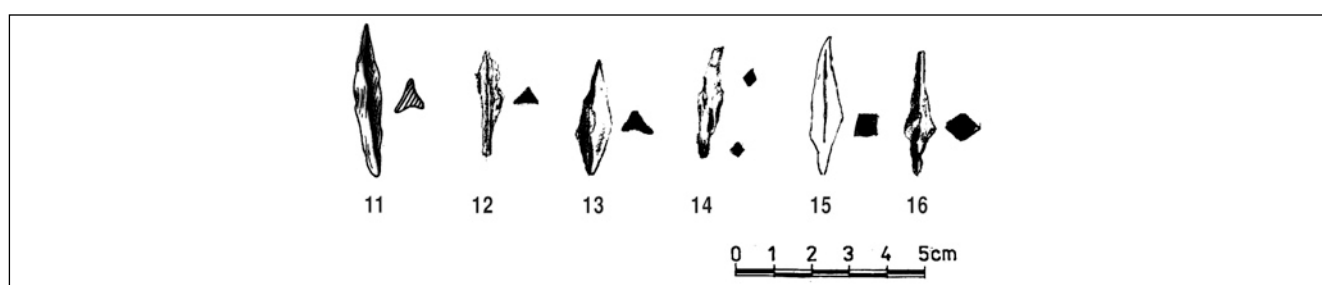


Fig. 4: Dipyramidal arrowheads, Urluieni

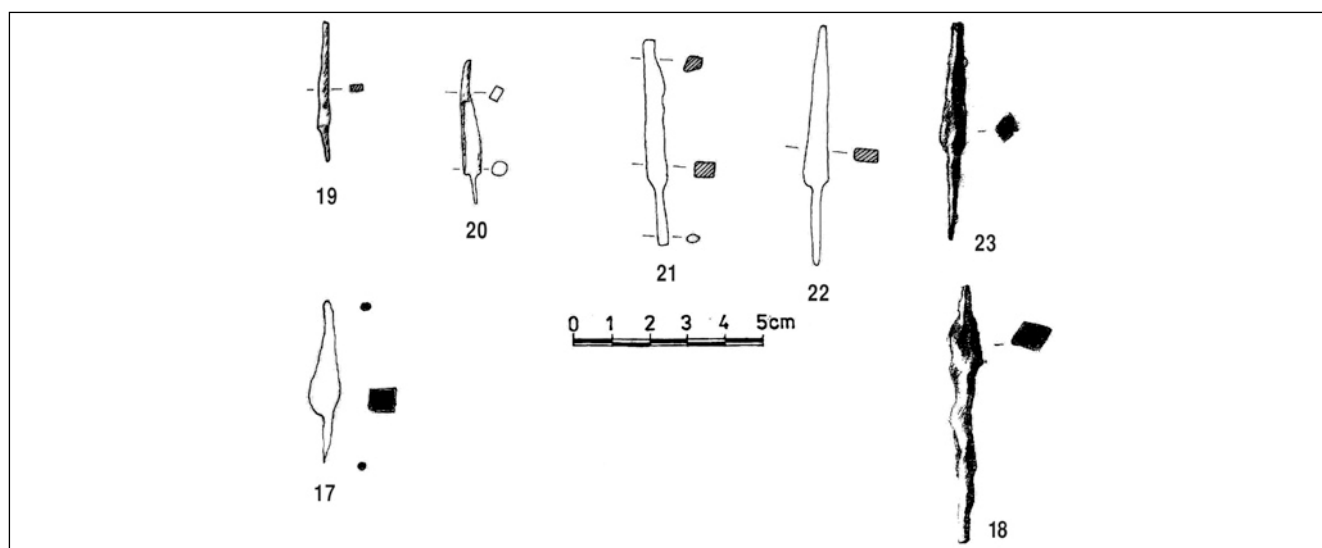


Fig. 5: Filiform arrowheads from Urluieni

of the castellum we also found a number of large bolts that weighed more than 30 grams, with a rectangular cross-section and a socket - it is hard to say whether they are parts of spears or artillery bolts.

On the western side, in the area of the fortifications, we discovered another two unique pieces: a short thick pyramidal tanged arrowhead with a 1:1 ratio that I considered suitable for hunting (N° 34). The second (N° 35) pyramidal on triangular base, socketed arrowhead, however, is a form

used particularly in the 3rd century. The diameter of the wooden part that fitted the socket makes us believe that it is an arrow, even though the iron tip is relatively large.

The two flat dilobate arrowheads are part of a category used by Roman troops later. One of them (N° 36) was discovered in the *prae-furnium* area of the *principia*, and the second one (N° 37) appeared among the ruins of the eastern tower of the northern gate. As among the materials discovered in the castellum there are also other elements that determine us to

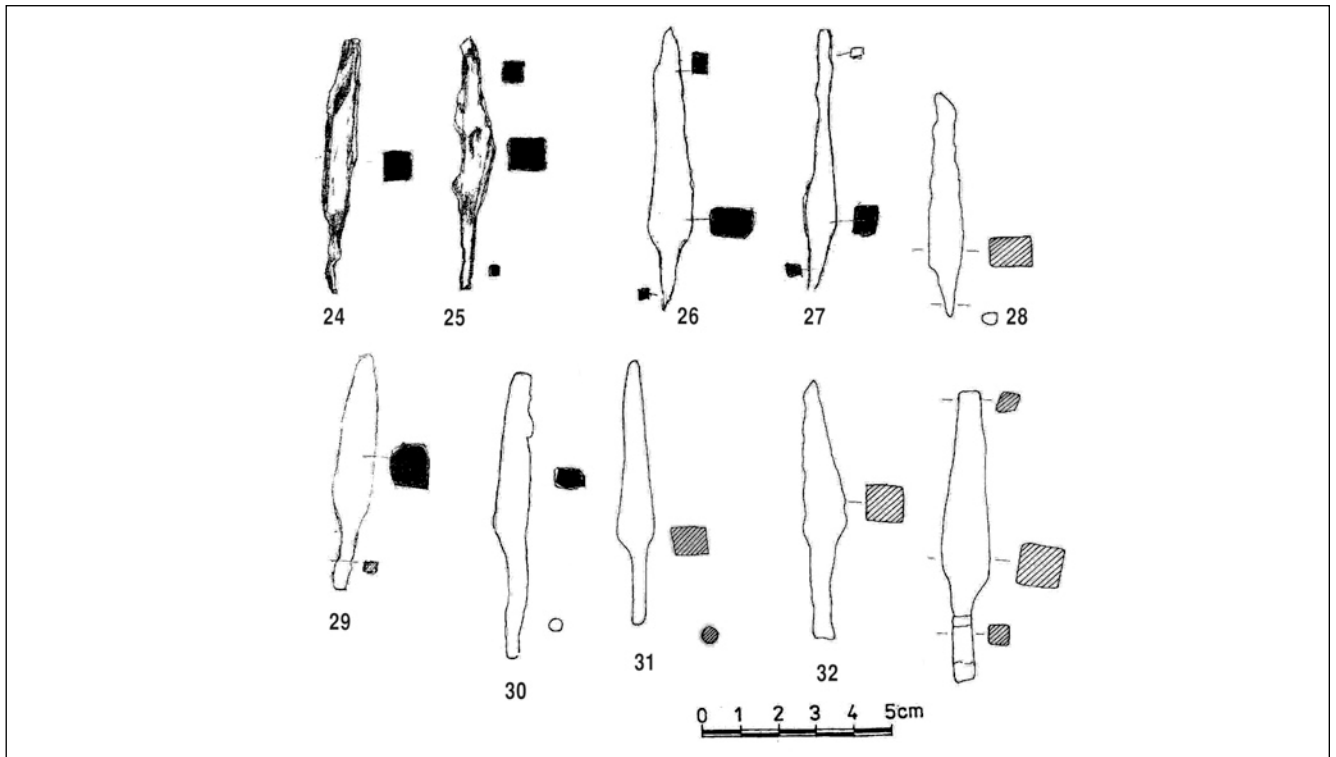


Fig. 6: Pyramidal arrowheads, Urluieni

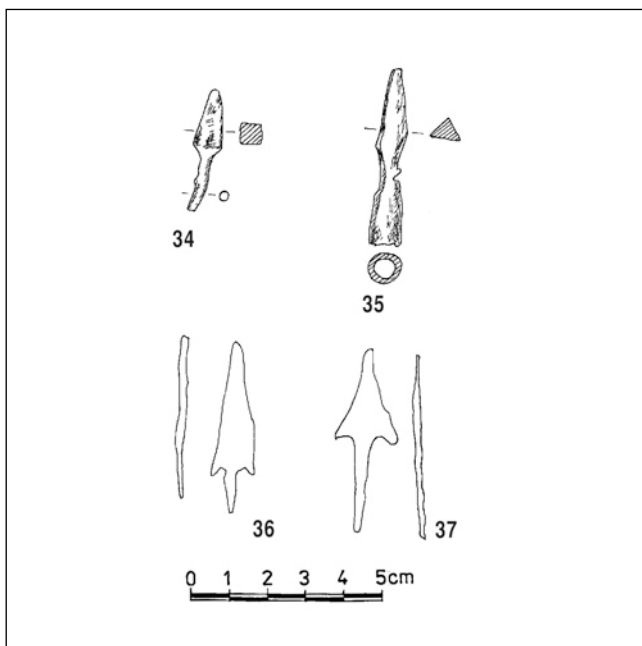


Fig. 7: Arrowheads from Urluieni

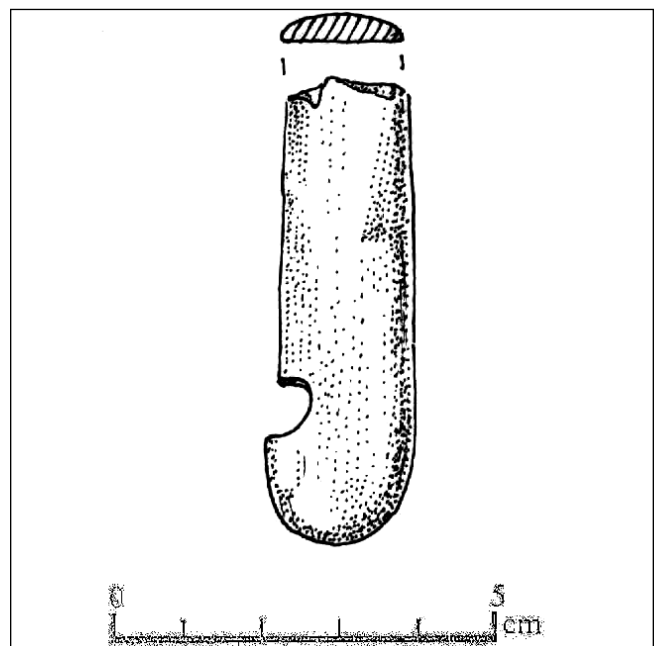


Fig. 8: Bone lath from a composite bow

state that the fortification was used for a long time after the supposed Carpien attack, which caused the transalutan line to be abandoned according to Phillip the Arabs, we assume that the two pieces were used by the soldiers in the castellum and not by the attackers.

We have only discovered one lath (Fig. 8) with a bone-rounded end - used to reinforce composite bows⁷, but that

is in the context of a likely bone-processing workshop, in *praetentura sinistra*.

In 1989 we discovered a metal warehouse in the north-western corner of the headquarters building. Among the large iron pieces were also the bronze bands (Fig. 9) of a "quiver", an arrow pouch where there were also iron fragments. The leather or cloth pouch was attached to the inner

narrower band, punctured with a serrated lower edge. The inner band, diameter: 3,1 cm is decorated with a puncti-form vegetal garland (Fig. 10). The outer band (diameter: 3,5 cm), without holes and the jagged part destroyed, has a puncti-form inscription. Unfortunately, the name of the



Fig. 9 a-b: Bronze bands from a "quiver"

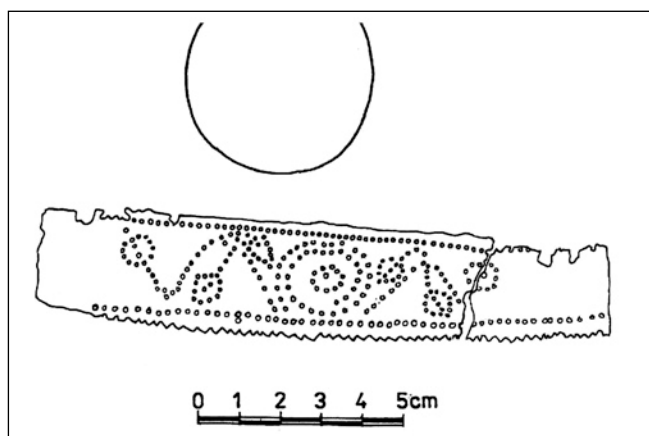


Fig. 10: The ornament of the reinforce band of the pouch

cohort does not appear in the inscription. The length of the pouch can be calculated to at least 24 cm, the length of the longest piece found between the bronze bands (Fig. 11).

A miniature bronze arrowhead, (Fig. 12) discovered in the northeast area of the *principia* is probably part of the decoration on a military suit (a buckle tongue?)

We believe that the discoveries in the castellum can prove the presence of the archers as garrison troops.

The archer troops in Dacia Inferior are *cohors I Tyrorum sagittariorum* and *surii sagittarii*. But it is likely that *cohors I Fl. Commagenorum* and *cohors I Thracum*⁸ were also archer troops, as oriental and Thracian troops used mostly the bow.

Obviously, we did not find inscriptions, as the stone and the bricks have been reused for centuries as building material. One simple bronze S was uncovered in the brick castellum from Urluieni (Fig. 13); May I suggest Suri!?

I. I. Russu⁹ and M. Speidel,¹⁰ state that there is only one *numerus surorum*, the one in *Dacia* being identical to the one in Mauretania, opposing to what W. Wagner¹¹ and H. T. Rowell¹² say. It is possible that the *numerus surorum* that was stationed in the Slaveni castellum and that comprised young men recruited from the neighboring Romula, might have been transferred to the north-African army, where it remained, the soldiers' presence being attested through their descendants until the 5th century¹³. The fact that there are traces of a *numerus surorum* also after the age of Septimius Severus¹⁴ as well as bricks with the *cohort's* stamp used in the *coloniae Romulae* wall on a wide area during the time of Philip the Arab¹⁵ gives us reason to believe that the *cohort* that left for Africa was not the only one to be born from the *surii sagittarii*. All of M. Speidel's statements¹⁶ regarding the creation of the Transalutan Limes by Septimius Severus, at the same time as a major reduction of the provincial army of *Dacia Malvensis*, are proven wrong by the objective situation in the area, as we believe we have demonstrated through research on the transalutan line¹⁷. If the *cohort* in the castellum were *suri sagittarii*, this would explain the stamps at Slaveni and Romula, where the soldiers would have taken part, temporarily, in construction work.

Neither can things be undisputably proven on the basis of the cursive inscription found in an advanced state of degradation on a brick in the castellum¹⁸. We believe, however, that we have a piece of evidence. The *sagittarii* in the Urluieni castellum were the ones who controlled any movement from southern Wallachia and the route over the Olt through Acidava into the province.

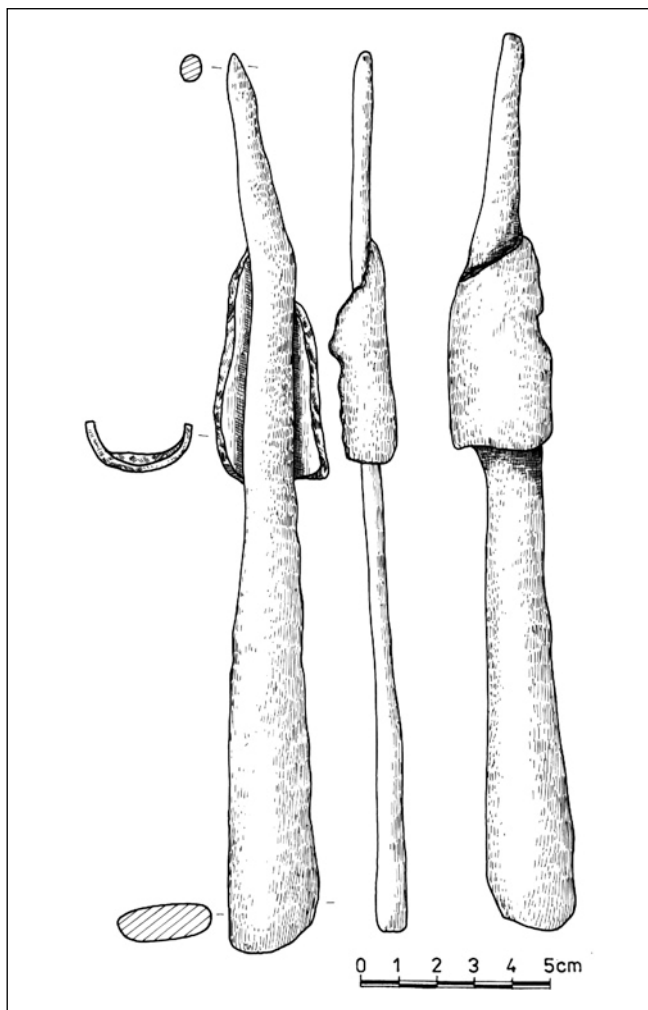


Fig. 11: Iron piece found in the quiver

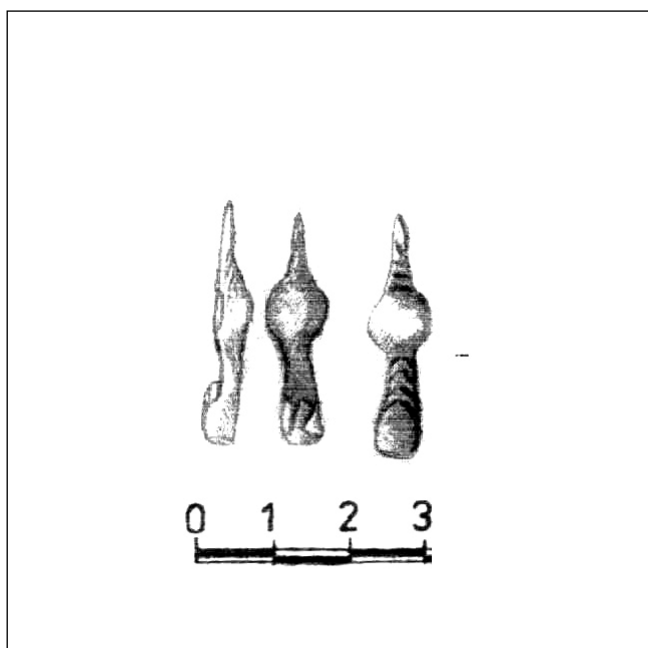


Fig. 12: Miniature arrowhead from Urluieni

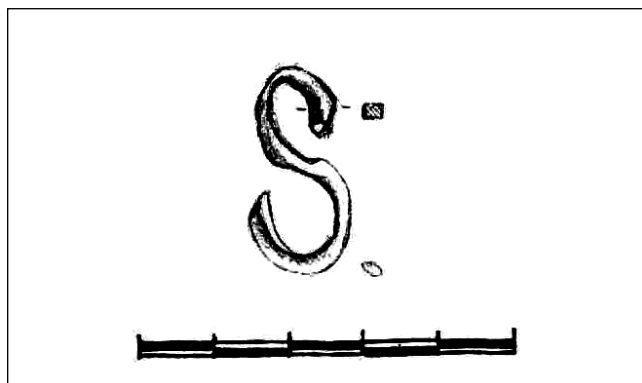


Fig. 13: Bronze S uncovered in castellum B from Urluieni

CATALOGUE: (catalogue number is the same on the figures)

Trilobate barbed arrowheads (Fig. 3)

1. Urluieni castellum B, 1986, S X 1V-1E - 0,70 m L = 5,2 cm damaged barb
2. Urluieni, castellum A, 1987, S XI, - 0,30 north-east corner; L = 4,3 cm
3. Urluieni castellum B, 1984, caseta S V 3e-0,50 s - 0,40 m L = 3,9 cm
4. Urluieni castellum B, 1995 S XXXI (nr 70) 1 V-6S -0,20 m L = 5,2 cm
5. Urluieni castellum B, 2000, S XXXI, 5N- 9,7 E - 0,20 L = 3,6 cm
6. Urluieni castellum B, 1983 S IV 5,5 -0,40 m L = 3,7¹⁹ cm

Trilobate arrowheads

7. Urluieni castellum B, 1995 S XXXI, 14-15 -0,40 L = 2,8 tip 2,5 cm damaged peduncle
8. Urluieni castellum B, 1984 S IV Nord gate 1 -0,25 L = 3 cm suchlike from Brandon, Herefordshire - *Britannia* XVIII, 1987²⁰
9. Urluieni castellum B, 1992, S XXVI principia West L = 2,8 cm
10. 1995 S XXXI 3V-5S -0,30 L = 3,3 tip L = 2,3 cm

Dipyramidal on triangular base (Fig. 4)

11. 1996 S XXXI 4-5V1-3 S -0,60 m ; such one from Adamclisi, the beginning of II century²¹.
12. Urluieni castellum B, 1992, S XXXVII L = 2,7 cm
13. Urluieni castellum B, 1995 S XXXI, 3V-5S -0,30 L = damaged tag

Dipyramidal, square in cross-sections (Fig. 4)

14. Urluieni castellum B, 1992 S.XXXVII principia vest L = 2,9 peduncle = 0,7 cm
15. Urluieni castellum B, 1998 S XXXI passim L = 3,4, tip = 2,9 cm
16. Urluieni castellum B, 1995 S XXXI 12V4-5 S -0,55 L = 3,2 tip = 2 cm

Filiform arrowhead with a square cross-section (Fig. 5)

17. Urluieni castellum B, 1998 S XXXI 28,5V-3 S - 0,35 L = 4,4 tip = 3 cm
18. Urluieni castellum B, 1995 S XXXI 2V-6-7S -0,40 L = 6,8 cm, peduncle = 4,5 cm
19. Urluieni castellum B, 1984 S IV 2-3 -0,30 L = 3,6 cm, "filiform" tip = 2,9 cm
20. Urluieni castellum B, 1991, S XXI groapa -1,15 m L = 3,8, tip = 3 cm
21. Urluieni castellum B, 1987 S X 9 -0,75 L = 5,4 peduncle L = 1,5 cm
22. Urluieni castellum B, 1984 S V 17 -0,45 L = 6,3 tip = 3,3 peduncle L = 2,1 cm, Rheingöheim T 46/3
23. 1995, S XXXI, 17V-5S -0,50 m L = 5,6 cm, peduncle 2,3 cm

Large pyramidal arrowheads (short peduncle)

24. Urluieni castellum B, 1989 SXX 5-6 L = 6,6 cm tip = 4,8 cm
25. Urluieni castellum B, 1981 S XXII,
26. Urluieni castellum B, 2000 S XXXI 14,5 N-0,7 E -0,30 L = 7,4 cm tip = 5,5 cm
27. Urluieni castellum B, 2000 S XXXI 1,5 R-8,5 N - 0,20 m L = 7,2 cm peduncle only 1,4 cm
28. Urluieni castellum B, 1989 S XXI 4, -0,25 m L = 6,4 peduncle = 1,4 cm
29. Urluieni castellum B, 2000 S XXXI, 2N-3,5E - 0,15 m L = 7,5 cm tip = 5,5 cm
30. Urluieni castellum B, 1989 S IV-VIII north gate, L = 7,4 cm
31. Urluieni castellum B, 1989 SXXI 10,80E-1,45 N - 0,30 m in basilica principiae L = 6,9 cm tip = 4,9 cm
32. Urluieni castellum B, 1989 S XXI 4E-1N -0,25 m principia, basilica L = 6,9 cm, tip = 4,6 cm

33. Urluieni castellum B, 1989 SXXII 4 E-3S -0,40 m L = 7 cm square side = 1,1 cm; tip = 5,2 cm masiv peduncle
 34. Urluieni castellum B, 1984 S V15 -0,30 L = 3,3 cm tip = 1,7 cm pyramidal tanged arrowhead

Pyramidal, socketed

35. 1984 S V 13-15 v -0,40 on the berm in the latest debris level (Fig. 7)²²

Flat dilobed arrowhead

36. Urluieni castellum B, S XXIV, 4-1 S -0,40 m L = 4,5 thick = 1,5 mm tip = 3,4 cm; Manning, Newcastle N° 21. Fig. 13
 37. Urluieni castellum B, S VIII-0,45-0,70 m North gate L = 4,8 cm thick = 1,5 mm tip = 2,3 cm

NOTES

1. Most of the results of the excavations carried out with important material resources by Prof. D. Tudor and subsequently by the Military Museum have remained unpublished; unfortunately, part of the research only had the purpose of enriching the mobile patrimony of the Military Museum, neglecting the archaeological context of the discovery.
2. BÂRCA 2002.
3. CATANICIU 1997, 267-275.
4. CATANICIU 1997 b, 157-168.
5. We did not publish the results of this research except in synthetic papers, because we considered it necessary to finish with the few objectives we had started with and to clarify the issues raised by this small-size type of castellum. If one loses even hope one will publish one's discoveries even with unanswered questions. It is sad that there is no interest in this fortification system and soon it will be impossible to recover data on what was left in the ground in the wake of "intensive" socialist agriculture, in the context of liberalism without respect for archaeological heritage.
6. CATANICIU 1994.
7. COULSTON 1985, fig. 1, 3, 49-12.
8. The cohort is not mentioned in the diplomas of Dacia Inferior and had not appeared on the stamps from the province. During research carried out by I. Ciucă from Slatina, the stamp *Coh I Thracum*, with two variants, was found in the ruins around the fortification at Enosesti (A. BARNEA – I. CIUCĂ, *SCIVA*, **40**, 2, 1989, 147-155) - stamp dated by the two to the earth phase of the encampment, that we investigated in 1975, discovering that it was wider to the east than the brick one (I. BOGDAN CATANICIU, *SCIVA*, **32,4**, 1981, 547-548 and in *Limes*, Székesfehérvár, 1978, 336; Evolution, 1981,7,n 45,234). We then discovered the *coh. III Gallorum* stamp (ActaMN **XXI**, 1984, 136, n.137) and a fragmented piece *coh I* --- which I believed to have been *coh I Flavia Commagenorum*, but can be now said to have been *coh I Thracum*. The troupes were probably stationed in Dacia for a short time and probably only during the Dacian wars. K. STROBEL, *Dakerkriegen Trajans*, 1984, 144.
9. RUSSU 1972, 74-76.
10. SPEIDEL 1973, 171.

11. Dislokation 215.
12. RE, s. v. numerus, 1937, 2553.
13. SPEIDEL 171.
14. The inscription at Piuia Pietrii - CIL III 7493.
15. IDR, -II, 383 with the bibliography
16. SPEIDEL 1973, 173.
17. CATANICIU 1997 b.
18. CATANICIU 1997 b, fig. 81/7.
19. DAVIES 1977, 257-270.
20. see: Bar Hill - *Britannia* VIII, 1977, 257-270.
21. SÂMPETRU 1984, 181, Fig 133.
22. *Britannia*, VIII, 1977, 264, 267.

BIBLIOGRAPHY

- BAATZ 1966: D. Baatz, Zur Geschützbewaffnung römischer Auxiliärtruppen in der frühen und mittleren Kaiserzeit, *Bonner Jahrbücher* **166**, 1966, 194-205
- BÂRCA 2002: V. Bârca, Patrunderea sarmailor la Dunarea de jos si de mijloc si relatiile cu geto dacii, (sec. I a.Chr-I p.Chr.) The incoming of Sarmatians at the Middle and Lower Danube and the relationship with Dacians, *Ephemeris Napocensis* **XII**, 2002, engl.abstract 95-96
- CATANICIU 1977: B. I. Cataniciu, Le limes du sud-est de la Dacie et les relations des romains avec la population de la Valachie (II-III-e" siecle n.d.)," *Studien zu den Militärgrenzen Roms* **II**, Bonn, 1977, 267-275
- CATANICIU 1994: B. I. Cataniciu, Castella de la Urluieni, *SCIVA* **45**, 4, 1994, 327-355
- CATANICIU 1997a: B. I. Cataniciu, La Dacie et la Stratégie romaine face aux des menaces de l'Est, *Roman Frontier Studies*, 1995 (ed.) W. GROENMAN-van WAATERINGE – B. L.van BEEK – W. J. H. WILLEMS – S. L. WYNIA, *Oxbow Monograph* **91**, 1997, 101-107
- CATANICIU 1997b: B. I. Cataniciu, Muntenia în sistemul defensiv al imperiului roman, sec. I-III p. Chr; *Wallachia in the Defensive System of the Roman Empire, 1-3 cent AD*, Alexandria, 1997
- COULSTON 1985: J. C. Coulston, Roman Archery Equipment, in M. C. BISHOP, (ed.) 1985, *The Production and Distribution of Roman Military Equipment, Proceedings of the Second Roman Military Equipment Research Seminar*, *BAR*, **S 275**, Oxford, 1985, 220-236
- DAVIES 1977: J. L. Davies, Roman arrowheads from Dinorban and the sagittarii of the Roman army, *Britannia* **VIII**, 1977, 357-370
- ERDMANN 1976: E. Erdman, Dreiflügelige Pfeilspitzen aus Eisen von der Saalburg, *Saalburg-Jahrbuch* **33**, 1976, 5-10
- ERDMANN 1982: E. Erdmann, Vierkantige Pfeilspitzen aus Eisen von der Saalburg, *Saalburg-Jahrbuch* **38**, 1982, 5-11

- MACKENSEN 1987: M. Mackensen, *Frühkaiserzeitliche Klein-kastelle Nersingen und Burlafingen an der Oberen Donau*, München, 1987, Fig. 43/2
- MANNING 1976: W. H. Manning, *Catalogue of Romano-British Ironware in the Museum of Antiquities Newcastle u. Tyne*, 1976, 18-23
- PETCULESCU 2000: L. Petculescu, The military equipment of oriental archers in Roman Dacia in *Limes XVIII, Proceedings of the XVIIIth International Congress of Roman Frontier Studies*, Amman, 2000, vol II, BAR, **1084**, 2002, 765-770
- PETRIKOVITS 1951: H. v. Petrikovits, Eine Pilumspitze von der Grotenburg bei Detmold, *Germania* **29**, 1951, 19
- ROBINSON 1976: H. R. Robinson, *What the Soldiers Wore on Hadrian's Wall*, 1976
- RUSSU 1972: I. I. Russu, *SCIIVA* **23**, 1, 1972, 74-76
- SÂMPETRU 1984: M. Sâmpetru, *Tropaeum Traiani*, vol II, 1984, p.181, Fig 133
- SPEIDEL 1973: M. Speidel, Numerus Syrorum Malvensium *Dacia NS* **17**, 1973, 169-178
- VÖLLING 1991: T. Völling, Plumbatae sagittae? Anmerkungen zu Waffenfunden aus dem augusteischen Lager von Haltern, *Boreas* **14-15**, 1991-1992, 293-296



Militaria der Spätlatènezeit und der frühen Kaiserzeit aus Basel

Eckhard Deschler-Erb

EINLEITUNG, DIE SIEDLUNGSSTRUKTUREN

Basel und in dessen Zentrum der Münsterhügel liegen am Oberrhein und damit in einer zentralen mitteleuropäischen Position. Von hier aus gehen Verbindungen in alle Himmelsrichtungen. Im Westen ermöglicht die burgundische Pforte über das Rhonetal den Weg in Richtung Mittelmeer. Nach Norden öffnet die Oberrheinische Tiefebene den Zugang in die Mittelgebirgszone. Nach Osten verläuft die Route den Hochrhein entlang hin zur oberen Donau und nach Süden ermöglichen die Pässe im Schweizerischen Jura einen Weg in das Schweizerische Mittelland und weiter über die Alpen nach Italien¹.

Geologisch betrachtet gehört der Münsterhügel zur Niederterrasse des Rheins und besteht aus kiesigen Rheinschottern mit einem Unterbau aus lehmigen Schichten. Er umfasst eine Fläche von gegen 5,5 ha und erhebt sich bis zu 40 m über den Rhein. Die Spornlage, mit zu Rhein und Birsig steil hin abfallenden Hängen, bietet natürlichen Schutz. Nur im Süden gibt es einen flacheren Zugang, der bei Bedarf leicht gesichert werden konnte².

Eine erste Besiedlung ist für die mittlere und späte Bronzezeit nachweisbar³. Nach einer Pause von bald 700 Jahren wurde dann in der Spätlatènezeit ab spätestens 80 v. Chr. eine Siedlung gegründet, die bis heute Bestand hat. Als Bewohner des spätlatènezeitlichen Münsterhügels sind die Rauriker belegt. Das Besiedlungsbild dieser Epoche zeigt auf dem gesamten Münsterhügel eine intensive Überbauung (Abb. 1) mit umfangreichen Befestigungsanlagen. Insbesondere der von Süden her leichte Zugang wurde durch Wall und einen breiten Sohlgraben massiv gesichert. Der Wall besass einen äusseren Bereich mit einer Front aus Trockenmauerwerk und mächtigen Stützpfeilern sowie einen Kernbereich mit vernagelter Holzarmierung; als Zugang lässt sich ein Zangentor postulieren⁴. Auch entlang der übrigen Seiten des Hügels sind leichte Befestigungen zu vermuten⁵. Die dahinter liegende Siedlung dürfte untergliedert gewesen sein; gesichert ist bis jetzt ein interner Graben, der einen klei-

neren Siedlungsteil im Norden von der südlich anschliessenden Fläche abtrennte. Reste von Holzbauten und zahlreiche Gruben für Vorratshaltung und Abfallbeseitigung geben Hinweise auf eine dichte Bebauung. Die Häuser erstreckten sich beiderseits einer gut ausgebauten, breiten Strasse, der Verlängerung des Zufahrtweges zum Münsterhügel. Reihen eng stehender kleiner Pfosten lassen auf Umzäunungen zugehöriger Hofareale schliessen⁶. Während die Strasse sich in der Mitte der Siedlung platzartig zu weiten schien, liess sich an anderer Stelle eine Aufteilung in zwei Stränge beobachten⁷. Unter dem heutigen Münster wurde zwischen den Strassensträngen ein Gebäude errichtet, bei dem es sich möglicherweise um einen Tempel handelte⁸. Dies wäre das bisher einzige nachgewiesene öffentliche Gebäude der spät-keltischen Siedlung.

Mit Beginn der frühen Kaiserzeit ab den 30er Jahren v. Chr. änderte sich die Siedlungsstruktur auf dem Münsterhügel grundlegend (Abb. 2). Insbesondere scheinen sämtliche Befestigungsanlagen abgerissen worden zu sein. Die grosse Abschnittsbefestigung nach Süden wurde teilweise abgetragen sowie in die neu entstehende Siedlung integriert, die sich nun bis in das Vorfeld der ehemaligen spätkeltischen Befestigung ausdehnte. Warum die Siedlung so tiefgreifend umgestaltet wurde, ist noch nicht geklärt. Vielleicht war der Münsterhügel zeitweise weniger intensiv besiedelt. Dafür spricht, dass die in der Spätlatènezeit bereits eingerichtete Nord-Süd-Achse zunächst mit Abbruchschutt überdeckt und erst später wieder in Form einer aufwändig gestalteten Strasse auf Holzbalken instand gesetzt wurde. Sicher wurde die Strasse aber zu keinem Zeitpunkt völlig aufgelassen⁹. Die Überbauung bestand zum einen aus einfachen Holzhäusern, die sich von Nord nach Süd immer mehr konzentrierten und besonders in Zone 20 entlang der Strasse in der Art von Streifenbauten aufgereiht waren und zum anderen aus grösseren Strukturen mit lang gestreckten Wandgräbchen und/oder Balkenrosten, deren genaue Deutung noch offen steht¹⁰. Als mutmassliches öffentli-



Abb. 1: Basel Münsterhügel, Besiedlungsbild der Spätlatènezeit. In dunklem Raster sind die bisher ausgegrabenen Flächen hinterlegt. Zur besseren Orientierung besteht von Nord nach Süd eine Unterteilung in die Zonen 1-20. o. M. (Arch. Bodenforsch. Basel-Stadt)



Abb. 2: Basel Münsterhügel, Besiedlungsbild der frühen römischen Kaiserzeit. In dunklem Raster sind die bisher ausgegrabenen Flächen hinterlegt. Zur besseren Orientierung besteht von Nord nach Süd eine Unterteilung in die Zonen 1-20. o. M. (Arch. Bodenforsch. Basel-Stadt)

Kategorie	Objekt	Zone	Horizont	Inv.Nr.	Literatur
Angriff					
1	Schwertgriff	8.1	III.2b	1978/13.11645	
2	Schwertgriff	8.1	III.2a/b	1978/13.11215	
3	Schwertscheidenrand	12	II.Gr. 19	1977.A.8745	HELMIG 1978, Taf. 29, 8745
4	Schwertscheidenrand	2	II.Gr.2	2004/01.1197	ACKERMANN 2005, Abb. 14 E
5	Schwertscheidenrand	15	II	1974.A.11528	FURGER - GUNTI 1979a, 62. Taf. 6, 77
Verteidigung					
6	Panzerschuppe ??	18.1	II	1978/13.13257f	
Gürtel-/Trachtteile					
7	Ringknopfgürtelhaken	16	II	1982/06.2808.1	HECHT 1998, 32. Taf. 20,5
Pferdegeschirr					
8	Trensenknebel	5.5	II.Gr. 25	1978/13.1247	
9	Trensenknebel	4.3	II.Gr. 17	1978/26 FK 7588	
10	Trensenknebel	5	II	1978/24.217	
11	Trensenknebel ?	15	II/III	1974.A.9050	FURGER - GUNTI 1979a, 66. Taf. 15, 235 FURGER - GUNTI 1979a, 66
12	Trensenknebel	15	unbest.	1973.A.1028	Anm. 119
13	Trense	2	II.Gr.1	2004/01.1396	ACKERMANN 2005, Abb. 7B
14	Anhänger Triskell	18	II	1991/19.3966	RODEL 2000, 26 ff.
15	Anhängeröse ?	16	II	1978/13.14407	
16	Riemenbeschlag	6.1	II.1 Gr. 27	1978/13.12098	
17	Jochbeschlag ?	18	II	1992/16.6914	RODEL 2000, 29 f.
18	Zügelringe	12	II/III	1977/03.1715+16	HELMIG 1978, Taf. 22. 29, 1715. 1716

Abb. 3: Basel Münsterhügel. Liste der spätlatènezeitlichen Militaria

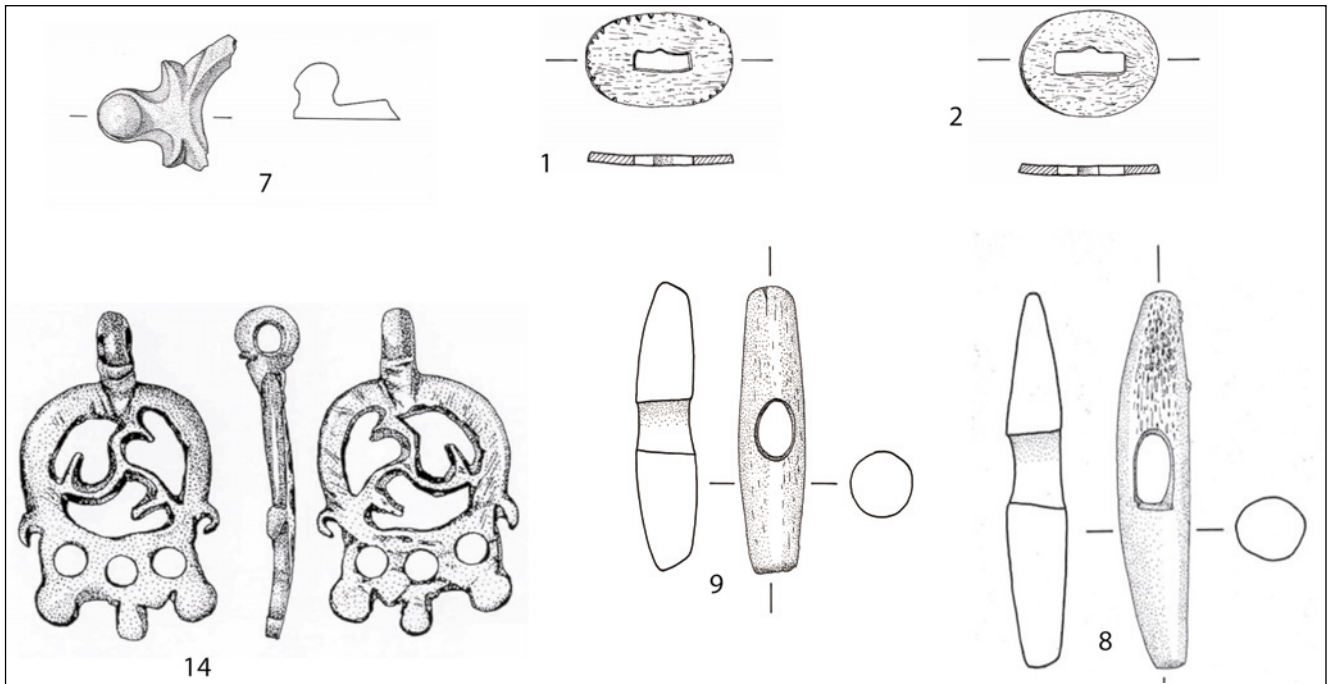


Abb. 4: Basel Münsterhügel. Eine Auswahl spätlatènezeitlicher Militaria. Die Nummerierung bezieht sich auf den Katalog Abb. 4. Versch. M. (Nachweise siehe Abb. 3)

ches Gebäude könnte zuletzt das Fundament eines grossen Holzbaus mit vorgestellten Pilastern (?) gedeutet werden¹¹.

Eine geplante Siedlungsstruktur ist bis anhin auf dem Münsterhügel nicht zu erkennen; anscheinend gab es aber getrennte Wohnbereiche für die einheimische und für die römische (militärische) Bevölkerung.

Bis zur Mitte des 1. Jh. n. Chr. herrschte die reine Holzbauweise vor. Als erster vollständig in Stein errichteter Bau ist ein Keller mit Fugenstrich unterhalb des heutigen Münsters zu nennen, der zu einem grösseren Privathaus gehört haben dürfte¹².

FUNDMATERIAL, DIE MILITARIA

Die Spätlatènezeit und die frühe Kaiserzeit haben ein umfangreiches Material geliefert, darunter vor allem Keramik. Daneben konnten aber auch u. a. zahlreiche Militaria geborgen werden, die im Folgenden kurz vorgestellt werden sollen.

Spätlatènezeitliche Militaria:

In diese Gruppe gehören insgesamt 18 Objekte (Abb. 3. 4). Die Tabelle Abb. 3 vermerkt zuerst die Kategorie¹³ und die genaue Objektbezeichnung, danach die Fundzone auf dem Münsterhügel sowie den Fundhorizont¹⁴, die Inventarnummer und zuletzt ein Literaturzitat, falls das betreffende Objekt bereits einmal publiziert worden ist. Eine Auswahl der Stücke ist auf Abb. 4 zu sehen. Mit 11 Objekten

dominiert eindeutig das Pferdegeschirr¹⁵, wobei allerdings die einfach gelochten Trensenknebel in ihrer Interpretation etwas umstritten sind¹⁶. Als zweite grössere Gruppe folgen fünf mögliche Bestandteile der Schwertausrüstung¹⁷. Bei den beiden übrigen Objekten handelt es sich zum einen um einen Ringknopfgürtelhaken für den Schwertgurt¹⁸ und zum anderen um eine Panzerschuppe, deren Bestimmung allerdings nicht ganz sicher ist. Nahezu alle der aufgelisteten Militaria stammen aus spätlatènezeitlichen Schichten und ihre Verbreitung beschränkt sich auf die spätlatènezeitliche Besiedlungszone des Münsterhügels (Abb. 3, Zone).

Frühkaiserzeitliche Militaria:

Insgesamt handelt es sich um 40 Objekte, die sich auf fünf verschiedene Kategorien verteilen (Abb. 5. 6)¹⁹. Mit 17 Stücken dominieren dabei die Angriffswaffen²⁰ und darunter mit 10 Objekten die Schwertteile²¹. Bei den Schwertteilen fällt auf, dass im Prinzip alle näher datierbaren Fragmente zu typologisch sehr frühen Typen im Übergang von später Republik zu früher Kaiserzeit gehören: Eine spiralig gerippte Griffschale aus Knochen (Abb. 5, 7) hat ihre beste Parallele in Dangstetten²² und das längsgerippte Scheidenmundblech (Abb. 5, 11; 6) findet einen Vergleich am spätrepublikanischen Schwert von Port BE²³. Auch die verschiedenen Fragmente einer netzförmigen Scheide (Abb. 5, 13. 14; 6) und ein kahnförmiges Ortband (Abb. 5, 15; 6) gehören zu einem Schwerttypus, der in den Übergang von der cäsarischen in die frühaugusteische Zeit datiert²⁴.

Kategorie	Objekt	Zone	Horizont	Inv.Nr.	Literatur
Angriff					
1	Geschosbolzen	10/11	II/III	1958.751	BERGER – HELMIG 1991, 19 Abb. 10,10
2	Geschosbolzen	10/11	??	1955.216p	BERGER – HELMIG 1991, 19 Abb. 10,14
3	Geschosbolzen	10/11	II/III	1958.749	BERGER – HELMIG 1991, 19 Abb. 10,15
4	Speerspitze	12	III.1	1977.A.8722	HELMIG 1978, 39 Abb. 7,8722; Taf. 29
5	Speerschuh, Eisen	20	III	1979/25.1223	BERGER – HELMIG 1991, 19 Abb. 10,24
6	Schwertkettchen?	20	III.1 (Grube)	1992/42.2646	OHNSORG 2004, 18 Abb. 9,3. 63 Taf. 10, 2646
7	Griffschale,	09	III.1	1979/30.2027a	BERGER – HELMIG 1991, 18 Abb. 9,6
8	Stichblatt	05	III.2	1978/24.757	BERGER – HELMIG 1991, 18 Abb. 9,3.
9	Stichblatt	15	III.1	1974.A.4408	BERGER – HELMIG 1991, 18 Abb. 9,1
10	Stichblatt	15	III.2	1974.A.6715	BERGER – HELMIG 1991, 18 Abb. 9,2
11	Scheidenmundblech	15	III.1	1974.A.6894	BERGER – HELMIG 1991, 18 Abb. 9,4
12	Scheidenklammer	15	III.1	1974.A.7815	BERGER – HELMIG 1991, 18 Abb. 9,5
13	Scheidenbeschlag	05	III.2	1978/24.982	FURGER-GUNTI 1979c, 378 Abb. 50a,162
14	3xScheidenrand	05	III.2	1978/24.788a	FURGER-GUNTI 1979c, 378 Abb. 50a,163
15	Ortband	10/11	II/III	1958.750	BERGER – HELMIG 1991, 19 Abb. 10,17
16	Dolch, Eisen	15	III.3 (Grube)	1974.A.4085	BERGER – HELMIG 1991, 18 Abb. 9,8
17	Dolch, Eisen	20	III.1	1987/3.5418	HELMIG 1990; BERGER – HELMIG 1991, 18 Abb. 9,9
Verteidigung					
18	Panzerschuppe	04.3	III.1a	1978/26.1133a	DESCHLER-ERB i. Vorb. Abb. 85; Taf. 73
Gürtelteile					
19	Riemenendbeschlag	03	V-VI	1978/26.3102a	DESCHLER-ERB i. Vorb. Abb. 85; Taf. 90
20	Riemenbeschlag	20	III	1987/3.2902	BERGER – HELMIG 1991, 20 Abb. 11,31
21	Anhänger	12	V-VI	1978/13.5737b	DESCHLER-ERB i. Vorb. Abb. 85. Taf. 117
22	Anhänger	20	III.1 (Grube)	1992/42.2645	OHNSORG 2004, 18 Abb. 9,1. 63 Taf. 10,2645
23	Anhänger	10/11	??	1955.216g	BERGER – HELMIG 1991, 20 Abb. 11,25
24	Anhänger	15	III	1974.A.8210	BERGER – HELMIG 1991, 20 Abb. 11,32
25	Anhänger	10/11	??	1940.640	BERGER – HELMIG 1991, 20 Abb. 11,25
26	Anhänger	04.3	III.1a	1978/26.1290	BERGER – HELMIG 1991, 20 Abb. 11,28
27	Anhänger	08.1	II.2a	1978/13.11808	DESCHLER-ERB – BOZIČ 2002, 39 Abb. 10
28	Riemenverteiler	15	III-VII	1973.A.661	BERGER – HELMIG 1991, 19 Abb. 10,24
29	Riemenverteiler	20	??	1992/20.7193b	Unpubl.
30	Riemenschlaufe	10	V-VIII	1978/26.5724	DESCHLER-ERB 2000, 20 Abb.
31	Riemenschlaufe	04	??	1998/28.18	Unpubl.
32	Riemenhaken	20	III.2	1979/25.2063	Unpubl.
Weit. Ausrüstung					
33	Stecktorques	20	III.1 (Grube)	1992/42.2510	OHNSORG 2004, 18 Abb. 9,2. 65 Taf. 11,2510
34	Knopfsporn	20	III	1999/9.84	DESCHLER-ERB – HAGENDORN 2005, 119 Abb. 141
35	Mundstück	10/11	??	1940.670	BERGER – HELMIG 1991, 19 Abb. 10,16
36	Tessera Militaris	15	III.1	1974.A.9144	BERGER – HELMIG 1991, 20 Abb. 11,29
37	Einfache Schnalle	04.3	III.2b	1978/26.492	DESCHLER-ERB i. Vorb. Taf. 89, 2707
38	Einfache Schnalle	16.1	III.1	1978/26.4572	DESCHLER-ERB i. Vorb. Taf. 122, 4244
39	Einfacher Ösenknopf	03	??	1968.3101	Unpubl.
40	Dolabra, Eisen	10/11	??	1958.752	BERGER – HELMIG 1991, 19,22

Abb. 5: Basel Münsterhügel. Liste der frühkaiserzeitlichen Militaria. Grabfunde sind nicht berücksichtigt

Einzig die Scheidenklammer (Abb. 5, 12) dürfte zu dem etwas jüngeren Schwerttyp Mainz gehören, der aber ebenfalls bereits ab augusteischer Zeit genutzt wurde²⁵. Auch bei den Dolchen gehört eine eiserne Scheide in spätrepublikanische Zeit (Abb. 5, 17; 6)²⁶; während der zweite Dolch, der ohne Scheide gefunden wurde, aufgrund seiner Klingensform in die erste Hälfte des 1. Jh. n. Chr. datiert wird (Abb. 5, 16; 6)²⁷.

Während die Verteidigungswaffen (Panzerung) und die Gürtelteile schlecht vertreten sind (Abb. 5, 18-21), bildet das Pferdegeschirr mit 11 Objekten wieder eine grössere Gruppe. Auch hier finden sich, wenn genauer datierbar, einige frühe Stücke: Zu nennen sind hier besonders ein blattförmiger Anhänger (Abb. 5, 22) mit einziger Parallele in Dangstetten²⁸, ein republikanischer Phallusanhänger aus

Knochen (Abb. 5, 27; 6) und eine durchbrochen gearbeitete Riemenschlaufe (Abb. 5, 30; 6)²⁹, wobei auch die übrigen Teile des Pferdegeschirrs ohne Probleme in der augusteischen Epoche untergebracht werden können. Auch unter der weiteren Ausrüstung sind einige sehr interessante Objekte zu erwähnen: Zu nennen sind hier der Stecktorques (Abb. 5, 33; 6), der eindeutig zu einem Auxiliarreiter keltischer Herkunft gehört³⁰, ein Knopfsporn (Abb. 5, 34)³¹ und die *tessera militaris* mit dem Schriftzug T.TORI (Abb. 5, 36; 6)³². Von den stratigrafisch zuweisbaren 24 Stücken stammen die meisten aus augusteischen Schichten (Abb. 5, Horizont III.1+2). Ihre Verteilung zeigt eine hohe Konzentration im Bereich des westlichen Münsterplatzes (Zonen 10-12) und unter dem Münster (Zone 15) an (Abb. 5, Zone). Es stellt sich die Frage, ob mit dieser Konzentration auch die Wohnbereiche des römischen Militärs auf dem Münsterhügel markiert sind. Daneben kommen auch einige Militaria aus dem südlichen Vorfeld (Zone 20) des Münsterhügels. Von hier stammen u. a. die frühe Dolchscheide (Abb. 5, 17; 6) und ein Grubenensemble mit Stecktorques, Schwertkettchen sowie Anhänger (Abb. 5, 22. 33; 6), das einem Auxiliarreiter gehört haben dürfte.

INTERPRETATION

Spätlatènezeit:

Die spätlatènezeitliche Besiedlung auf dem Münsterhügel ist in zwei Phasen unterteilbar. In der ersten Jahrhunderthälfte haben wir eine unabhängige Siedlung der Rauriker vor uns, die zu Recht als *oppidum* bezeichnet werden kann. Einheimische Adlige dürften die Leitung dieser Siedlung innegehabt haben. Als Nachweis für sie können u. a. die oben aufgezählten Militaria gelten, wobei natürlich nicht jedes Waffenteil in Adelsbesitz gewesen sein muss. Gerade in der keltischen Gesellschaft kann davon ausgegangen werden, dass ein grösserer Teil der männlichen Bevölkerung Waffen getragen hat. Qualitätvollere Waffen und Ausrüstung für die Reiterei dürften aber mehrheitlich adligen Kriegerern bzw. Anführern zuweisbar sein.

Mit der casarischen Eroberung Galliens, die spätestens um 50 v. Chr. abgeschlossen war³³, geriet auch der Basler Münsterhügel unter die Herrschaft Roms. Am militärisch und einheimisch geprägten Charakter der Siedlung änderte sich vorderhand aber wenig. Die starke Festung war zur Kontrolle der burgundischen Pforte, einer der wichtigsten Einfallachsen nach Gallien, ideal geeignet und durch keltische Adlige mitsamt ihrem bewaffneten Gefolge gut besetzt. Sie dürften unter dem Befehl der römischen Armee gestanden und in deren Auftrag die Grenze gesichert haben.

Zur Kontrolle der Einheimischen scheinen auch römische Militärpersonen vor Ort gewesen zu sein. Dafür sprechen einige der oben vorgestellten Militaria, die zum Teil spätrepublikanisch zu datieren sind bzw. auch direkt aus spätlatènezeitlichen Schichten des Münsterhügels stammen. Dies gilt insbesondere für die Objekte Nr. 1, 3, 15 und 27. Die Anwesenheit kleinerer römischer Militärkontingente innerhalb einheimischer Siedlungen ist während der galischen Kriege gut belegt und auch für die ersten Jahrzehnte der römischen Herrschaft in der Provinz zu erwarten³⁴.

Frühe Kaiserzeit:

Mit Beginn der augusteischen Epoche änderte sich auf dem Münsterhügel nicht nur die Besiedlungsstruktur sondern auch die militärische Nutzung. In der nun offenen Siedlung wurde ein Posten mit regulärem Militär stationiert. Ein Kastell scheint aber nicht errichtet worden zu sein. Es sieht eher so aus, als ob das augusteische Militär mitten auf dem ansonsten zivil genutzten Münsterhügel gewohnt hätte. Die stationierte Einheit dürfte am ehesten aus Auxiliaren bestanden haben, die in engem Bezug mit dem Militärlager in Dangstetten³⁵ zu sehen sind. Darauf weisen nicht nur Parallelen bei den Militaria (s. o.) sondern auch bei der Keramik hin³⁶. Der Stützpunkt auf dem Basler Münsterhügel dürfte wohl gemeinsam mit weiteren Stützpunkten zur Sicherung der Versorgungslinien für Dangstetten und zur Vorbereitung des sogenannten Alpenfeldzugs (16/15 v. Chr.) eingerichtet worden sein³⁷, in dessen Verlauf das gesamte nördliche Alpenvorland bis hin zur Donau unter römische Herrschaft geriet.

Spätestens ab tiberischer Zeit ist im römischen Basel ein starker Rückgang der Militärpräsenz zu beobachten, was sich vor allem auch im Verschwinden der Militaria bemerkbar macht. Neben der oben bereits erwähnten Dolchklinge (Abb. 5, 16; 6) können nur noch ein Pferdegeschirranhänger³⁸ und ein Reliefknopf (Abb. 5, 20; 6)³⁹ mit Sicherheit in tiberische und jüngere Zeit datiert werden, wobei der Pferdegeschirranhänger aus einem Brandgrab tiberisch-/claudischer Zeit stammt⁴⁰. Gleichzeitig mit der schwindenden Militärpräsenz verlor auch die zivile Siedlung auf dem Münsterhügel ihre Bedeutung. Sie wurde abgelöst von der nur wenige Kilometer rheinaufwärts in augusteischer Zeit neu gegründeten Koloniestadt Augusta Raurica⁴¹, die sich innerhalb weniger Jahre zum Zentrum der Region entwickelte.

Auf dem Gelände der späteren Unterstadt von Augusta Raurica wurde ein Auxiliarlager eingerichtet⁴² und es ist zu vermuten, dass das zuvor in Basel befindliche Militär in dieses neue Lager verlegt worden ist. In Basel ist ab diesem

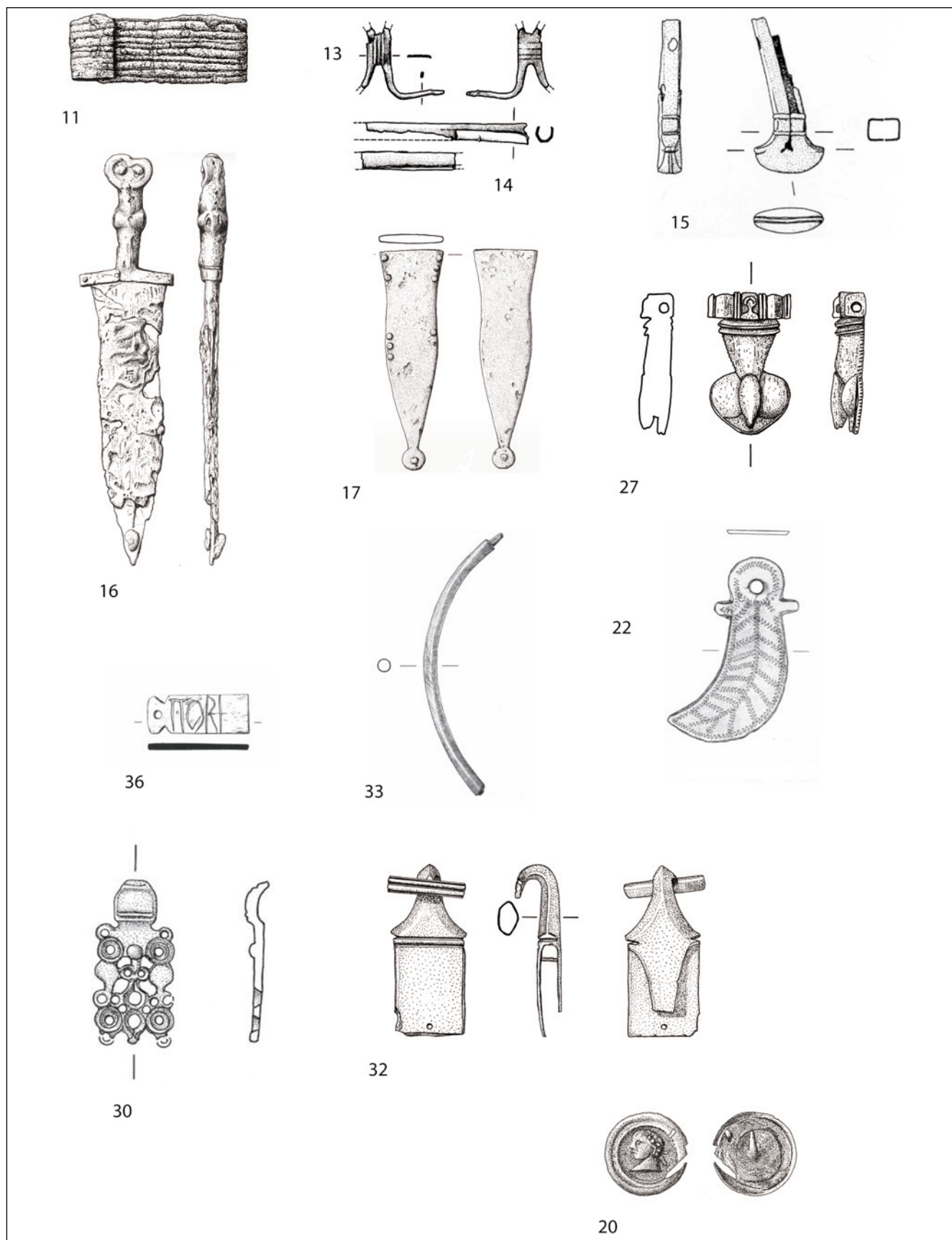


Abb. 6: Basel Münsterhügel. Eine Auswahl frühkaiserzeitlicher Militaria. Die Nummerierung bezieht sich auf den Katalog Abb. 5. Versch. M. (Nachweise siehe Abb. 5)

Zeitpunkt keine grössere Militärpräsenz mehr nachweisbar. Möglich scheint aber, dass ein bis zwei Soldaten des genannten Auxiliarlagers zur Überwachung des Verkehrs von Basel aus eingesetzt wurden⁴³. Diese Präsenz könnte bis in das 3. Jahrhundert hinein aufrechterhalten worden sein, bis mit Beginn der Spätantike die militärische Bedeutung von Basel wieder evident wurde. Doch das ist eine andere Geschichte.

ANMERKUNGEN

1. DESCHLER-ERB u. a. 2005, 155.
2. DESCHLER-ERB – HAGENDORN 2005, 6.
3. HOLSTEIN 1991, 35-45; HAGENDORN – DESCHLER-ERB 2007, 13.
4. DESCHLER-ERB – RICHNER 1994; HAGENDORN – DESCHLER-ERB 2007, 13-15.
5. DESCHLER-ERB – HAGENDORN 2007, 14; DESCHLER-ERB i. Vorb. Kap. 3.2.2.
6. DESCHLER-ERB u. a. 2005, 159-160; DESCHLER-ERB – HAGENDORN 2005, 160.
7. DESCHLER-ERB u. a. 2005, 158-160.
8. MARTIN-KILCHER 2002, 321-322 Abb. 402; DESCHLER-ERB i. Vorb. Kap. 3.2.2.
9. HAGENDORN – SCHÖN – STEGMÜLLER 2005, 35-37; DESCHLER-ERB – HAGENDORN 2007, 31.
10. DESCHLER-ERB u. a. 2005, 160-163.
11. DESCHLER-ERB i. Vorb. Kap. 3.2.3.
12. DESCHLER-ERB – HAGENDORN 2007, 29.
13. Zu den Kategorien vgl. DESCHLER-ERB 1999, bes. 14.
14. Horizont II = Spätlatènezeit. Horizont III = frühe Kaiserzeit; Horizont IV-VIII = mittlere Kaiserzeit bis Neuzeit. Vgl. auch DESCHLER-ERB i. Vorb. Kap. 2.1.2.
15. Zur Trense vgl. Ackermann 2005b, 31-32. Zum Anhänger mit Triskell vgl. RODEL 2000, 26-29; BOŽIČ 2003, 263-267 Abb. 8 (Typ Hofheim).
16. Zur Diskussion vgl. DESCHLER-ERB i. Vorb. Kap. 2.5 Militaria, Pferdegeschirr.
17. Zum Schwert und zur Schwertscheide in der Spätlatènezeit zuletzt umfassend PERNET 2006, 29-42.
18. Zum Ringknopfgürtelhaken METZLER 1995, 311-312 Abb. 161 (zur Trageweise); HECHT 1998, 32; BATAILLE 2001, 454-455 (Typ 4E2); 449 Abb. 5, 24-26; PERNET 2006, 53.
19. Nicht berücksichtigt sind die Grabfunde.
20. Zu den Fernwaffen (drei Geschossbolzen, eine Speerspitze, ein Speerschuh) vgl. z. B. BISHOP – COULSTON 2006, 53-54; DESCHLER-ERB – PERNET – VOIROL REYMOND i. Vorb. Kap. 2. Dort kann belegt werden, dass gerade Spitzen mit Widerhaken – wie sie auch in Basel mit zwei Exemplaren vorliegen – in die Übergangszeit von später Republik zu früher Kaiserzeit zu datieren sind.
21. Beim "Schwertkettchen" Abb. 5, 6, ist die Zuweisung jedoch nicht ganz sicher. Genau ein solches Kettchen diente in Dangstetten (D) z. B. als Schmuckkettchen mit Bulla (Anhänger): FINGERLIN 1998, 125 Fst. 1037, 2; 325 Abb. Taf. 4.
22. FINGERLIN 1986, 63 Fst. 164, 30; 278 Abb. Taf. 9; BISHOP – COULSTON 2006, 80 Abb. 40, 2b.
23. WYSS – REY – MÜLLER 2002, 58 Kat. 82 Taf. 25; Taf. 26 (allerdings mit eisernem Scheidenmundblech). Zum Schwerttyp vgl. PERNET 2006, 48 ff.
24. Kahnförmige Ortbänder und netzförmige Scheiden wurden bis anhin immer getrennt angeschaut. Sie scheinen aber meiner Ansicht nach eher zu einem gemeinsamen Typ zu gehören, dessen netzförmige Scheide entweder in einem kahnförmigen oder in einem kugeligen Ortbänder endet.
Netzförmige Scheiden: ISTENIČ 2003. Zu ergänzen wären neben dem Basler Stück auch ein Scheidenteil aus Oberwinterthur (CH): DESCHLER-ERB 1996, 115 Taf. 34, 1381. Ebd. Anm. 929 mit mutmasslichen weiteren Parallelen. Kahnförmige Ortbänder: DOLENZ 1998, 51-53; RADMAN-LIVAJA 2004, 39-40 Nr. 47. 48; DESCHLER-ERB – PERNET – VOIROL REYMOND i. Vorb. Kap. 2. Kombinationen: Magdalensberg (DOLENZ 1998, Taf. 1, M1); Pitres, la remise (F, Grabfund, freundl. Mitt. Thierry Dechezleprêtre).
25. Vgl. DESCHLER-ERB 1999, 27; BISHOP – COULSTON 2006, 81 Abb. 41, 2-5 (versch. Beispiele).
26. HELMIG 1990, 161; BISHOP – COULSTON 2006, 56-57; DESCHLER-ERB – PERNET – VOIROL REYMOND i. Vorb. Kap. 2.
27. DESCHLER-ERB u. a. 2004, 653 ff. 654 Abb. 6. Zum Typ vgl. BISHOP – COULSTON 2006, 83 type A. 84 bes. Abb. 42, 4.
28. FINGERLIN 1998, 125 Fst. 1037,1; 325 Abb. Taf. 4; OHNSORG 2004, 18.
29. Zum Phallusanhänger aus Knochen vgl. DESCHLER-ERB – BOŽIČ 2002. Zur Riemenschlaufe vgl. HÖGLINGER 2002; DESCHLER-ERB i. Vorb. Kap. 2.5.2 Militaria, Pferdegeschirr zu Kat. 4024.
30. OHNSORG 2004, 112 Nr. 24 (mit weiterer Lit.).
31. Knopfsporen stellen den häufigsten und am weitesten verbreiteten Typ der Spätlatènezeit dar. Ihre Datierung reicht aber bis in die frühe Kaiserzeit hinein. Van ENDERT 1991, 37-41; 38 Abb. 9 (Verbreitungskarte für Spätlatènezeit); BAITINGER 2004, 353-355. Augusteische Belege z. B. Dangstetten: FINGERLIN 1998, 118 Fst. 1012, 1; 174 Fst. 1257, 2; 315 Abb. 383 Abb. Taf. 5.
32. Zu Etiketten (Gepäckanhänger allg.) DESCHLER-ERB 1998, 153; GOSTENČNIK 2005, 261 bes. Anm. 1255. Zur Lesung der Ritzinschrift vgl. FURGER-GUNTI 1979b, 137-138 (= Turma Tori, Abteilung des Torius) oder DRACK – FELLMANN 1988,

- 28 Abb. 9 (= Titi Tori, des Titus Torius). Zur Diskussion auch BERGER – HELMIG 1991, 11.
33. Für einen Überblick zu den gallischen Kriegen vgl. z. b. GILLIVER 2002.
34. FICHTL 1998; Ders. 2005, 184-189.
35. Zu Dangstetten zuletzt FINGERLIN 2006, 257-259.
36. DESCHLER-ERB i. Vorb. Kap. 3.3.3 römisches Militär.
37. DESCHLER-ERB 2006, 90-91.
38. Zum Typ vgl. z. b. DESCHLER-ERB 1999, 50-51.
39. HELMIG–JAGGI 1990, 128; 125 Abb. 12, 2; DESCHLER-ERB 1999, 47-48.
40. HELMIG – SCHÖN 1996, 30-31.
41. Vgl. z. b. DESCHLER-ERB u. a. 2005, 164.
42. Das Lager dürfte um 20 n. Chr. gegründet worden sein und hatte bis in claudische Zeit Bestand. vgl. FELLMANN 2003, 38.
43. Vgl. DESCHLER-ERB 1996, 133-135.
- BIBLIOGRAPHIE**
- ACKERMANN 2005: R. Ackermann, *Zwei spätkeltische Gruben der Grabung Martinsgasse 6+8, 2004/01*. Unpublizierte Diplomarbeit am Institut für Prähistorische und Naturwissenschaftliche Archäologie der Universität Basel, 2005
- BAITINGER 2004: H. Baitinger, Hellenistisch-frühkaiserzeitliche Reitersporen aus dem Zeusheiligtum von Olympia, *Germania* **82**, 2004/2, 351-380
- BATAILLE 2001: G. Bataille, Les agrafes de ceinturon du sanctuaire de La Villeneuve-au-Châtelot, *Arch. Korrb.* **31**, 2001, 443-460
- BERGER – HELMIG 1991: L. Berger – G. Helmig, Die Erforschung der augusteischen Militärstation auf dem Basler Münsterhügel. In: B. TRIER (Hrsg.), *Die römische Okkupation nördlich der Alpen zur Zeit des Augustus*. Koll. Bergkamen 1989. Bodenaltert. *Westfalens* **26**, 1991, Münster, 7-24
- BISHOP – COULSTON 2006: M. Bishop – J. C. N. Coulston, *Roman Military Equipment. From the Punic Wars to the fall of Rome*, Oxford, 2006
- BOŽIČ 2003: D. Božič, L'aiguière en bronze de la tombe à char de Verna (Isère): une composition tripartite, *Arch. Vestnik* **54**, 2003, 259-269
- DESCHLER-ERB 1996: E. Deschler-Erb, Die Kleinfunde aus Edelmetall, Bronze und Blei. In: E. DESCHLER-ERB – CH. EBNÖTHER – A. KAUFMANN-HEINIMANN – V. SCHALTENBRAND OBRECHT, *Ausgrabungen im Unteren Bühl. Beiträge zum römischen Oberwinterthur, Vitudurum 7. Monogr. Kantonsarch. Zürich* **27**, Zürich, Egg 1996, 13-139
- DESCHLER-ERB 1998: S. Deschler-Erb, Römische Beinartefakte aus Augusta Raurica, *Forsch. Augst* **27/1+2**, 1998, Augst,
- DESCHLER-ERB 1999: E. Deschler-Erb, Ad arma! Römisches Militär des 1. Jahrhunderts n. Chr. in Augusta Raurica, *Forsch. Augst* **28**, 1999, Augst,
- DESCHLER-ERB 2000: E. Deschler-Erb, Keltisches Pferdegeschirr? *Instrumentum* **11**, 2000, 20
- DESCHLER-ERB 2006: E. Deschler-Erb, Die Grenzen Roms in der heutigen Schweiz. In: G. KLOSE – A. NÜNNERICH-ASMUS, *Grenzen des Römischen Imperiums*. Zaberns Bildb. Arch. Mainz, 2006, 89-97
- DESCHLER-ERB i. Vorb.: E. Deschler-Erb, *Romanisierungsprozesse unter der Lupe*. Basel-Münsterhügel am Übergang von spätkeltischer zu römischer Zeit Basel i. Vorb.
- DESCHLER-ERB – BOŽIČ 2002: E. Deschler-Erb – D. Božič, A Late Republican bone pendant from the Münsterhügel in Basel (CH), *Instrumentum* **15**, 2002/1, 39-41
- DESCHLER-ERB – HAGENDORN 2005: E. Deschler-Erb – A. Hagedorn, Die spätkeltische Siedlung auf dem Basler Münsterhügel. In: A. BRÄUNING – A. BURKHARDT – R. DEHN – E. DESCHLER-ERB – S. DORNHEIM – A. HAGENDORN – Chr. HUTH – M. NICK – N. SPICHTIG – H. WENDLING – J.-J. WOLF, *Kelten an Hoch- und Oberrhein. Führer arch. Denkm. Baden-Württemberg* **24**, 2005, Esslingen, 113-120
- DESCHLER-ERB – RICHNER 1994: E. Deschler-Erb – K. Richner, *Murus Gallicus – Vorbericht zu den Grabungen 1990 bis 1992*. Jahresber. Arch. Bodenforsch. Basel-Stadt 1991 (1994), 29-33
- DESCHLER-ERB – PERNET – VOIROL REYMOND i. Vorb.: E. Deschler-Erb – L. Pernet – A. Voirol Reymond, Militaria républicains en territoires helvète et rauraque. In: V. GUICHARD – M. POUX (Hrsg.), *Militaria césariens en contexte gaulois. Actes de la table ronde*. Coll. Bibracte (i. Vorb.)
- DESCHLER-ERB u. a. 2004: E. Deschler-Erb – E. Lehmann – L. Pernet – P. Vontobel – S. Hartmann, Complementary Use of Neutrons and X-ray for the Non-destructive Investigation of Archaeological Objects from Swiss Collections, *Journal of Archaeometry* **46:4**, 2004, 647-661
- DESCHLER-ERB u. a. 2005: E. Deschler-Erb – G. Helmig – P.-A. Schwarz – N. Spichtig, Region Basiliensis im Vergleich. Siedlungen und Baustrukturen in Basel und Augst am Übergang von Spätlatènezeit zu früher römischer Kaiserzeit. In: G. KAENEL – S. MARTIN-KILCHER – D. WILD (Hrsg.), *Colloquium Turicense. Siedlungen, Baustrukturen und Funde im 1. Jh. v. Chr. zwischen oberer Donau und mittlerer Rhone*, *Cahier Arch. Romande* **101**, 2005, Lausanne, 155-169
- DOLENZ 1998: H. Dolenz, Eisenfunde aus der Stadt auf dem Magdalensberg. *Arch. Forsch. Grab. Magdalensberg* **13. Kärntner Museumsschr.** **75**, 1998, Klagenfurt

- DRACK – FELLMANN 1988: W. Drack – R. Fellmann, *Die Römer in der Schweiz*, Stuttgart, 1988
- FELLMANN 2003: R. Fellmann, Die Besatzungsgeschichte des südlichen Teils der oberrheinischen Tiefebene und des anliegenden Hochrheintales von Tiberius bis zum Ende des 1. Jh. n. Chr. *Freiburger Universitätsbl.* **159**, 2003/1, 37-46
- FICHTL 1998: S. Fichtl, La présence militaire romaine sur les oppida dans la Gaule du nord et de l'est. In: A. MÜLLER-KARPE – H. BRANDT – H. JÖNS – D. KRAUSSE – A. WIGG (Hrsg.), Studien zur Archäologie der Kelten, Römer und Germanen. Festschr. A. Haffner. *Int. Arch.* **4**, 1998, Rahden–Westf. 153-168
- FICHTL 2000: S. Fichtl, *La ville celtique. Les oppida de 150 av. J.-C. à 15 ap. J.-C.* Paris, 2000
- FINGERLIN 1986: G. Fingerlin, Dangstetten I. *Forsch. Ber. Vor- u. Frühgesch. Baden-Württemberg* **22**, 1986, Stuttgart
- FINGERLIN 1998: G. Fingerlin, Dangstetten II. *Forsch. Ber. Vor- u. Frühgesch. Baden-Württemberg* **69**, 1998, Stuttgart
- FINGERLIN 2006: G. Fingerlin, Dangstetten. In: M. REDDÉ – R. BRULET – R. FELLMANN – J. K. HAALEBOS † – S. von SCHNURBEIN, Les fortifications militaires. L'architecture de la Gaule. *Doc. Arch. Françaises* **100**, 2006, Bordeaux, 257-259
- FURGER-GUNTI 1979a: A. Furger-Gunti, Die Ausgrabungen im Basler Münster I. *Basler Beitr. Ur- u. Frühgesch.* **6**, 1979, Derendingen/Solothurn
- FURGER-GUNTI 1979b: A. Furger-Gunti, Torius, der bisher älteste mit Namen bekannte Bewohner Basels. *Basler Stadtb.* **99**, 1978 (1979), 135-142
- FURGER-GUNTI 1979c: A. Furger-Gunti, Die Funde aus der spät-keltischen Grube und aus dem frühromischen Spitzgraben. In: R. MOOSBRUGGER-LEU – A. FURGER-GUNTI – S. MARTIN-KILCHER – B. SCHÄRLI – E. SCHMID – F. ZELLER, Die Ausgrabung im Museum für Völkerkunde, *Basler Zeitschr.* **79**, 1979, 362-387
- GILLIVER 2002: K. Gilliver, *Caesar's Gallic Wars 58-50 BC*. Essential Histories, Oxford, 2002
- GOSTENČNIK 2005: K. Gostenčnik, Die Beinfunde vom Magdalensberg. *Arch. Forsch. Grab. Magdalensberg* **15**. *Kärntner Museumsschr.* **78**, 2005, Klagenfurt
- HAGENDORN – DESCHLER-ERB 2007: A. Hagendorn – E. Deschler-Erb, Auf dem Basler Münsterhügel. Die ersten Jahrtausende, *Arch. Denkm. Basel* **5**, 2007, Basel
- HAGENDORN – SCHÖN – STEGMÜLLER 2005: A. Hagendorn – U. Schön – Ch. Stegmüller, 2001/46 Münsterplatz 1 und 2. *Jahresber. Arch. Bodenforsch. Basel-Stadt* 2003 (2005), 35-37
- HECHT 1998: J. Hecht, Die Ausgrabungen auf dem Basler Münsterhügel an der Rittergasse 4. *Materialh. Arch. Basel* **16**, 1998, Basel
- HELMIG 1978: G. Helmig, Die Ausgrabungen im Reischacherhof 1977. Unpublizierte Lizentiatsarbeit am Seminar für Ur- und Frühgeschichte der Universität Basel, Basel, 1978
- HELMIG 1990: G. Helmig, "Hispaniensis Pugiunculus"? Technologische Aspekte und Anmerkungen zum Fund einer Dolchscheide aus Basel, *Arch. Schweiz* **13**, 1990, 158-164
- HELMIG – JAGGI 1990: G. Helmig – B. Jaggi, Archäologische und baugeschichtliche Untersuchungen in der Deutscherkapelle in Basel. *Jahresber. Arch. Bodenforsch. Basel-Stadt* 1988 (1990), 110-193
- HELMIG – SCHÖN 1996: G. Helmig – U. Schön, *Römische Gräber in der St. Alban-Vorstadt. St. Alban-Vorstadt* **62**, 1993/3. *Jahresber. Arch. Bodenforsch. Basel-Stadt* 1993 (1996), 25-38
- HÖGLINGER 2002: P. Höglinger, Zwei bemerkenswerte Artefakte aus einer Salzburger Höhensiedlung. In: *Temenos*. Festschr. Florens Felten u. Stefan Hiller, Wien, 2002, 161-164
- HOLSTEIN 1991: D. Holstein, Die bronzezeitlichen Funde aus dem Kanton Basel-Stadt, *Materialh. Arch. Basel* **7**, 1991, Basel
- ISTENIČ 2003: J. Istenič, Augustan sword-scabbards with net-like fittings, *Arch. Vestnik* **54**, 2003, 271-279
- MARTIN-KILCHER 2002: S. Martin-Kilcher, Glaube und Kult. In: L. FLUTSCH – U. NIFFFELER – F. ROSSI (Hrsg.), Römische Zeit. Die Schweiz vom Paläolithikum bis zum Mittelalter **5**, 2002, Basel, 305-331
- METZLER 1995: J. Metzler, Das treverische Oppidum auf dem Titelberg. *Doss. Arch. Mus. National d'Histoire et d'Art* **3/1+2**, 1995, Luxemburg
- OHNSORG 2004: P. Ohnsorg, Aufgetischt und abgeräumt. Basel, Rittergasse 29A: Auswertung einer Fundstelle im römischen Vicus. *Materialh. Arch. Basel* **18**, 2004, Basel
- PERNET 2006: L. Pernet, Les armes. In: E. CARLEVARO – Ph. DELLA CASA – L. PERNET – B. SCHMID-SIKIMIĆ – L. TORI – G. VIETTI, Les tombes de La Tène Finale et d'Epoque Romaine. La Necropoli di Giubiasco (TI) 2. *Coll. Arch.* **4**, 2006, Zürich, 27-84
- RADMAN-LIVAJA 2004: I. Radman-Livaja, *Militaria Sisciensia*. Kat. Mon. Arh. Muz. Zagreb **1**, 2004, Zagreb
- RODEL 2000: S. Rodel, Die Funde aus den spätlatènezeitlichen Horizonten. Ausgrabungen am Basler Murus Gallicus 1990-1993. Teil 3. *Materialh. Arch. Basel* **14**, 2000, Basel
- van ENDERT 1991: D. van Endert, Die Bronzefunde aus dem Oppidum von Manching. *Augr. Manching* **13**, 1991, Stuttgart
- WYSS – REY – MÜLLER 2002: R. Wyss – T. Rey – F. Müller, *Gewässerfunde aus Port und Umgebung*. Katalog der latène- und römerzeitlichen Funde aus der Zihl. Schr. Bernisches Hist. Museum **4**, 2002, Bern



Segmental armour from the fortress of the First Italic Legion in *Novae*

Piotr Dyczek

The fortress of the *I Italica* in *Novae* on the Danube (Fig. 1) has been the object of excavations by Polish and Bulgarian archaeologists since 1960¹, bringing to light both military and civil architecture². The legionary-related structures included sections of the castrum fortifications, foundations of the main gates³, part of the *principia*, a legionary bath from the Flavian period and another one erected in the reign of Trajan⁴. As for the civil architecture, a *villa urbana* and another *extra muros* were uncovered⁵, as well as a medieval graveyard⁶.

Work has been most intensive in the *praetentura* of the fortress, where the Research Center for the Antiquities of Southeastern Europe of Warsaw University has been digging the remains of an army hospital (*valetudinarium*) of Trajan's time⁷, and the Institute of Archaeology of the Bulgarian Academy of Sciences has focused its efforts on the excavation on the *scamnum tribunorum* (Fig. 2). The army hospital, which covers an area of over 6 000 m², was cleared in its entirety. It appears to have functioned until the first half of the 3rd century when it was abandoned. In the 280s, after near to 50 years in ruin, some of the surviving legionary walls were re-used as foundations for buildings of civil architecture, thus making the *valetudinarium* in *Novae* one of the best preserved structures of the kind anywhere in the Roman Empire. The fact that it stood abandoned and dilapidated for most of half a century is the reason why part of the original furnishings and equipment, including several pieces of segmental armour, were preserved in the floor layers and the rubble filling the ruins.

Two archaeological features were recognized during the investigations of the *scamnum tribunorum* area. One was a wooden army barrack⁸, which burned down, making place for the stone structure of a *tribunus* house. In turn, at the end of the 3rd century, the house was rebuilt by the civil inhabitants of *Novae*.

Pieces of *lorica segmentata* are seldom found in *Novae*. The only bigger assemblage of armour fragments was discovered by Bulgarian archaeologists in one of the pits in the *scamnum tribunorum* area (Fig. 3). It was dated to the 1st-2nd

century AD, which puts it among the oldest. Fragments of armour from the army hospital have been dated by coin finds to the first half of the 3rd century AD (probably the 240s), making them one of the latest. The armour from Eining is slightly later in date⁹, the Carlisle example was found in a 4th century context and the armour from Newstead is now assigned a later date than originally¹⁰. The fragments from *Novae* were discovered either in the small vestibules preceding the sick rooms or in the sick rooms themselves; they were also recorded in the courtyard and in the *portico* surrounding the courtyard. Two whole sets of armour were found next to one another in a room interpreted as a surgery (Fig. 4).

An analysis of the distribution of these finds indicates that the legionaries took their armour with them to the hospital and that no army hierarchy was observed in assigning patients to rooms (Fig. 5). Furthermore, two complete sets of armour were left in the hospital after it was abandoned. A *phalera* can be seen on one of them even today (Fig. 6). The pauldron of yet another set was discovered (Fig. 7); perhaps the rest had been removed by the owner. Other fragments of the *lorica segmentata*, chiefly single scales and hitches, could have found their way into archaeological contexts accidentally. Possibly legionaries in hospital had time to do minor repairs on their armour. A bronze *phalera* depicting Harpocrates (Fig. 8)¹¹ could have come from armour of other than *lorica segmentata* type¹².

The *scamnum tribunorum* yielded 37 fragments of armour representing two categories: pieces of plates and fragments of fittings, catches, rivets and others. The breastplates have been dated to the second half of the 1st century AD¹³. All these fragments were discovered in a pit. The excavators were of the opinion that the metal had been collected for the purpose of being remelted¹⁴. Isolated finds of *lorica segmentata* armour came from various spots in the house of the *centurion*; these were dated to the 2nd-3rd century AD.

The armour fragments discovered in the pit in the *scamnum tribunorum* do not come from a single set and it is not possible to reconstruct a cuirass. The pieces included small

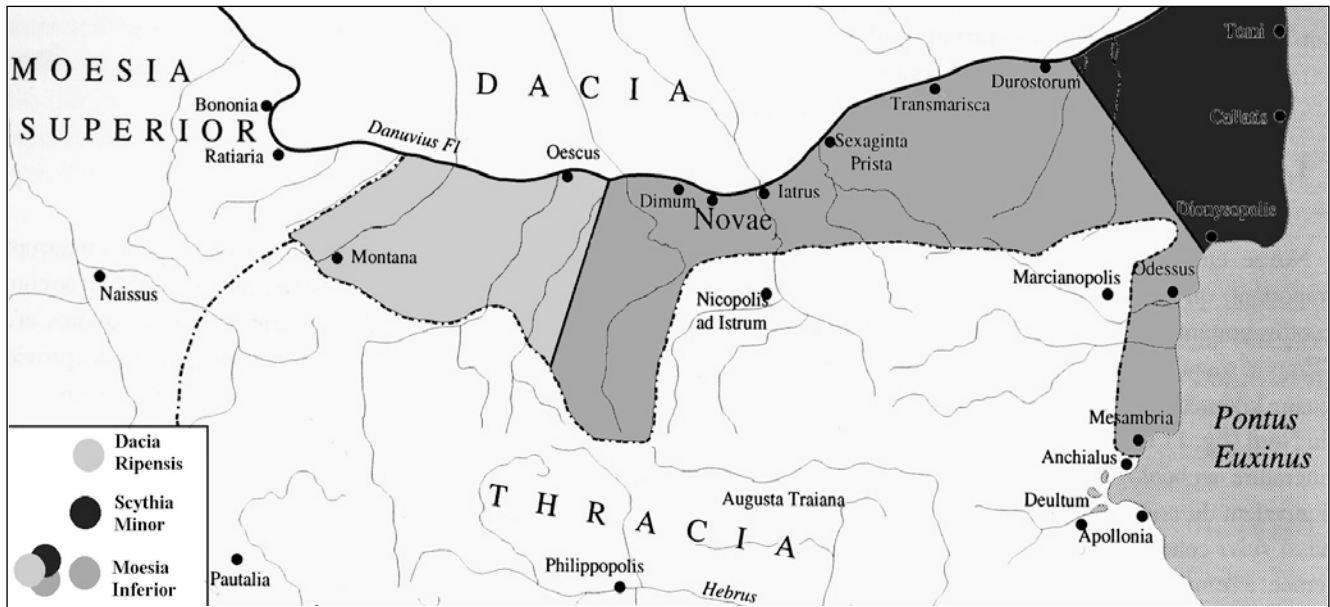


Fig. 1: Location of Novae, elaborated P. Dyczek, J. Janowski

plates fastened with flat rivets, minor joints and scales of various shapes (Fig. 9), openwork hinge fittings (Fig. 10), two hinged ferrules of bronze and four bronze catches. These elements were part of pauldrons and breastplates. According to the discoverer, they all represented a type of armor referred to as **Corbridge A**¹⁵. It appears that one catch and small buckles and ferrules actually came from armour of the **Corbridge B** type¹⁶.

The tribune's house also yielded the only buckle dated *per analogiam* to the 2nd-3rd century AD¹⁷. A pit in one of the edge rooms of unidentified function, excavated in 2005, was found to contain a considerable set of eroded iron plates, possibly belonging to one set of armour of **Corbridge B** type. Publication of this material is forthcoming.

Many more fragments of the *lorica segmentata* type of armour were discovered in various places inside the army hospital and these¹⁸, unlike the objects from the barrack in the *scamnum* area, which were early and could not be dated precisely, have a definite *terminus ante quem*. This is when the hospital ceased to function, an event fixed in time during recent archaeological research in 2005. Until now it had been supposed, based on the evidence of Caracalla's coins issued at Nicopolis ad Istrum, that the hospital was abandoned in the end of Caracalla's reign or the beginning of Elagabal's, meaning generally in the first quarter of the 3rd century AD. Recent fieldwork brought confirmation of the dating in the form a fragmentary marble slab inscribed with the titulature of Maximinus Thrax and revealing evidence of *damnatio memoriae* of the *I Italica* legion (!). This has moved the date for the abandonment of the hospital

into the reign of Gordian. While more studies are required before the text is published, it can already be added to other archaeological data permitting the assumption that armour fragments found in archaeological layers should be dated to

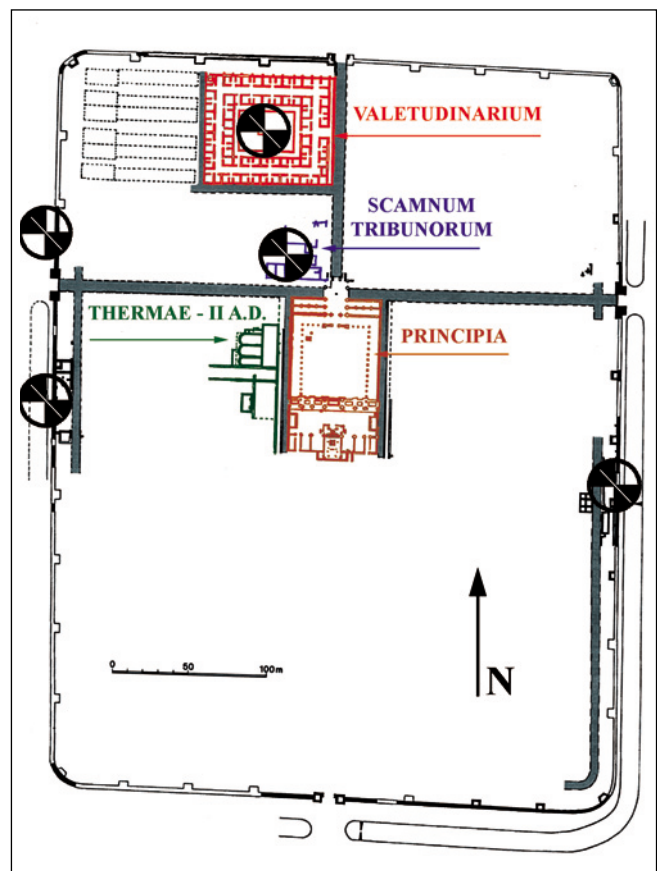


Fig. 2: Plan of the castrum at Novae showing the findspots of segmental armour



Fig. 3: Fragments of *lorica segmentata* from a pit discovered in the *scannum tribunorum* area, according to GENČEVA 2002, pl. LVI.

before the middle of the 3rd century AD. These are currently the latest fragments of *lorica segmentata* from the region of Moesia Inferior.

More extensive finds of armour from the *valetudinarium* came from two spots. In one room (35), next to upturned Tuscan capitals reused as tables, two complete but heavily eroded sets of armour were discovered¹⁹. Conservation allowed pieces of the sheet plate from the pauldron and breastplates to be recovered. Two *phalerae* of bronze were found next to them²⁰.

The room, which also yielded fragments of small caskets²¹ and surgical instruments, is interpreted as a surgery for conducting minor operations. The armour presumably belonged to the medical staff.

A *lorica segmentata* found in the middle of room 16 was lost presumably during the evacuation of the hospital²². The pauldron consists of four iron plates 5-7 cm wide and 2 mm thick. Each plate has from 5 to 7 rivet holes.

Singular elements of armor came from various other rooms. Pieces of iron breastplates were found in the hospital courtyard and in room 9. Another room yielded two bronze catches from the breastplates and two bronze buckles and a bronze ferrule.

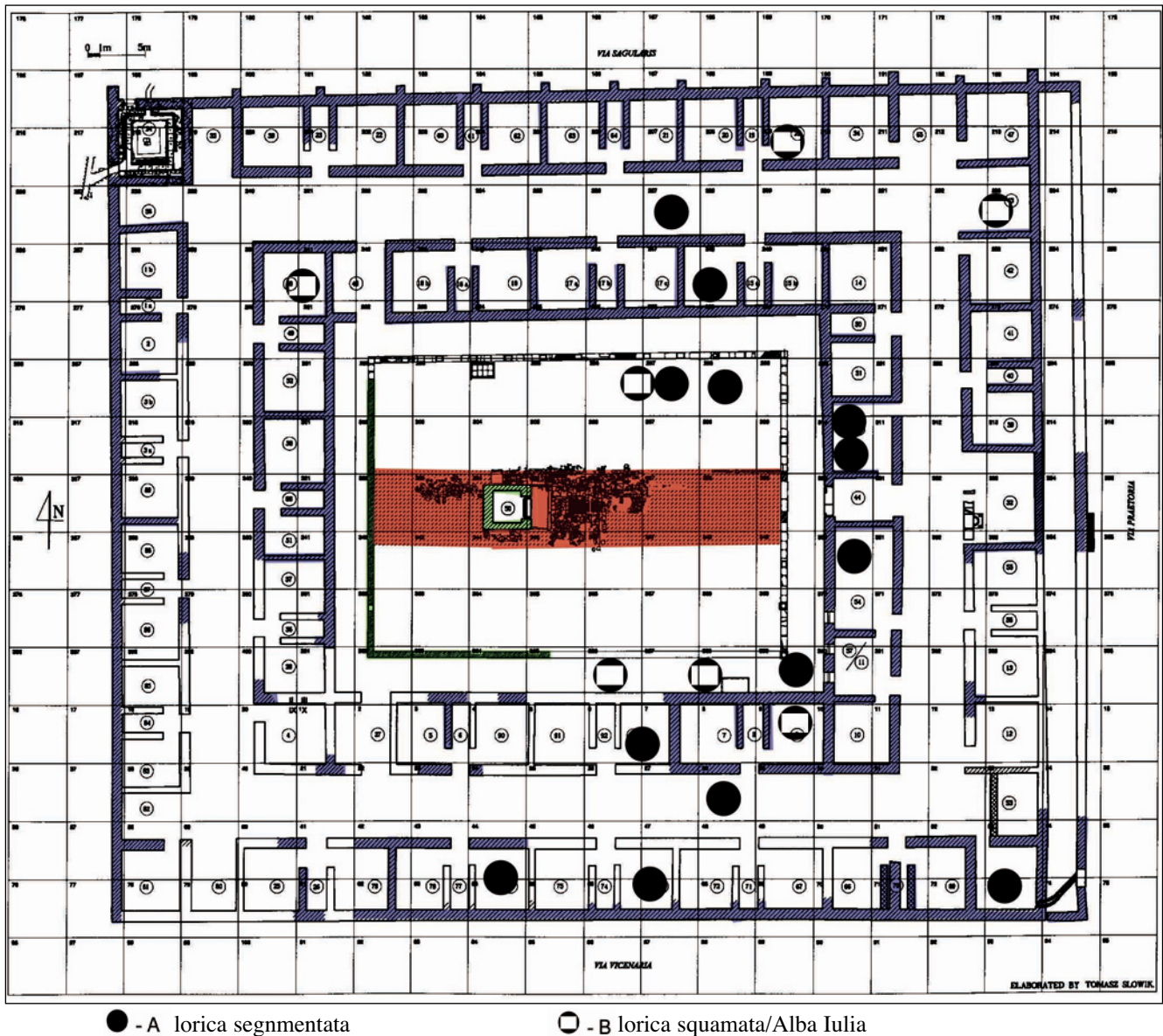
Fragments of *lorica segmentata* were also recovered from excavations carried out in 1979 on the western defense wall and tower in the *intervallum*. 11 small iron fragments came from one or a few worked breastplates. A hole through one fragment was for a rivet attaching a buckle²³. The archaeological context of this find indicates that the pieces of



armor were discarded during the construction of the defensive wall (?), sometime in the end of the 1st century AD²⁴.

In 1967-1969, Bulgarian archaeologists investigating the eastern side of the legionary fortress uncovered a section of defensive wall, the inner wall of a platform and foundation of a ramp wall²⁵. Polish archaeologists returned to the area in 1979 and 1981, excavating the remains of defensive ditches and a wooden tower supported on six posts. A single *lorica segmentata* catch, dated to the 1st century AD, was retrieved²⁶. Another catch with ferrule from the same period was discovered on the western side of the fortress, inside an *extra muros villa* situated next to the *porta principalis sinistra*²⁷.

Fig. 4: Corbridge type armor found in room 35 of the *valetudinarium* (so-called surgery), phot. S. Lipa



● - A lorica segmentata

○ - B lorica squamata/Alba Iulia

Fig. 5: Plan of the army hospital at Novae showing places where segmental armor was discovered, elaborated P. Dyczek

The *phalera* depicting Harpocrates, found in room 41 of the hospital²⁸, raises some doubts concerning the interpretation. It came from a layer of rubble, on top of which the roof of the building had collapsed. According to one opinion, it was an ornament attached to leather horse harness²⁹. It was made as a solid cast, preserving a centrally positioned attachment hole. Based on the stratigraphy, it can be assigned to the early 3rd century AD, a dating confirmed by parallels



Fig. 6: *Phalera* seen on a fragment of armour from the valetudinarium in Novae, phot. M. Dąbski

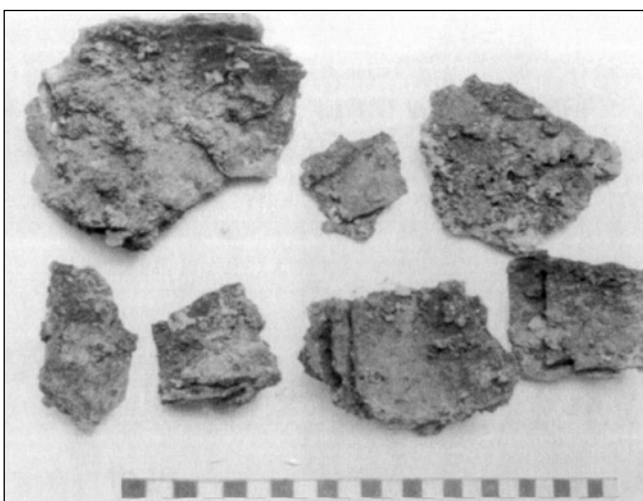


Fig. 7: Segmental armour pauldron from room 16 of the army hospital, phot. T. Biniewski

from the second half of the 2nd - first half of the 3rd century AD³⁰. While this utilitarian interpretation cannot be entirely excluded, it is possible for the piece to have been a breast-plate ornament. The context in which it was discovered, that is, rubble inside the hospital, would favor the second idea. Moreover, Harpocrates obviously was a popular god in Novae; for example, a bronze handle with a representation of the deity was found in another hospital room³¹.

Other finds found with relative frequency in the hospital area include small, rectangular plates with pierced holes around the edges. These pieces are c. 30 × 40 mm in size and 2 mm thick, and they are virtually identical with plates discovered in the so-called “Waffenmagazin” at Carnuntum³². They are often accompanied by thin corroded wires rolled into a loop. These plates have been recognized as parts of a *lorica squamata*³³. An identical plate was found in the *scannum tribunorum* area. So far, plates of smaller size³⁴ had been found in Novae only next to the west fortifications, in the *intervallum*³⁵. Bigger plates occurred only in the sick rooms. One possible reason was that armour of this type went with the patient and was not left deposited in the *vestibules*, or else patients did minor repairs on them while convalescing in the hospital.

Considering the location of these plates, the history of Novae and the importance of the fortress on the Lower Danubian limes, it may be assumed that they belonged to armour of the **Alba Iulia** type³⁶.



Fig. 8: Representation of Harpocrates on a *phalera*, drawing P. Dyczek

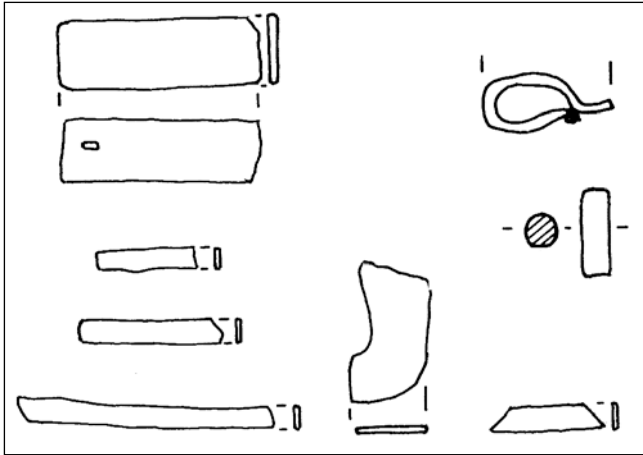


Fig. 9: Minor joints used in segmental armour

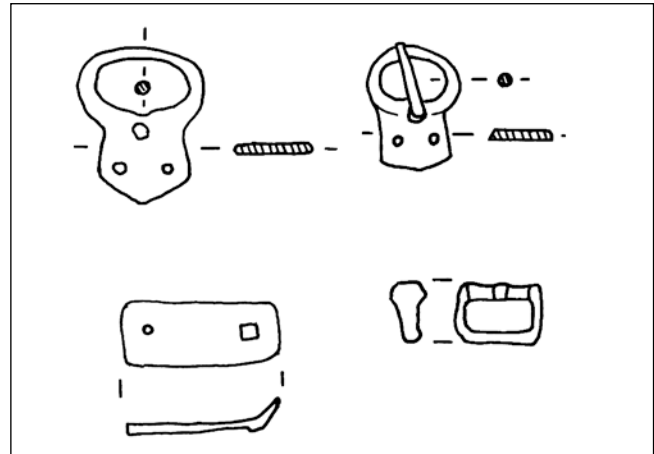


Fig. 11: Fragments of Kalkriese-type armour

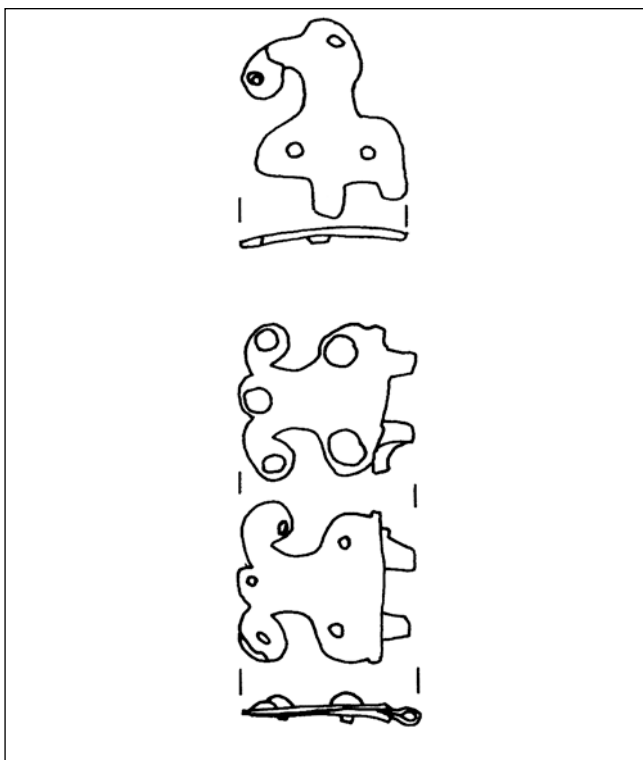


Fig. 10: Hinged fittings used in segmental armour

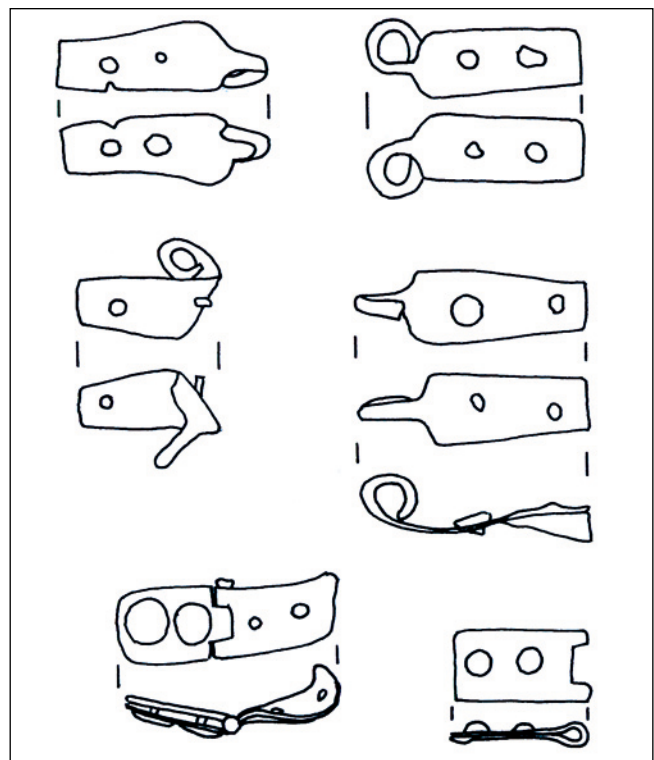


Fig. 12: Fragments of Corbridge-type armour

An analysis of all the fragments of segmental armour discovered so far in Novae provides information on type, as well as precise dating based on a well studied stratigraphy. Available data on the discoveries and identified parallels indicate that all the known types of segmental armour, i.e.: **Kalkriese** (Fig. 11), **Corbridge** (Fig. 12), **Newstead** (Fig. 13) and **Alba Iulia** (Fig. 14), were represented at Novae. Altogether, 60 fragments were found, belonging to at least 46 sets of armour. Specific elements predominate, primarily buckles. The majority came from the *valetudinarium* area, but this is merely a reflection of the state of research: so far, the hospital is the only legionary building in Novae to be investigated in its entirety. All the armour elements found in the hospital

are attributed to the turn of the 2nd century and the first quarter of the 3rd century, based on their findspot either in the layer of rubble or in the upper floor layer which was reached everywhere in the hospital. Since the sand floor of the *valetudinarium* was repeatedly renewed, it cannot be excluded that armour elements from an earlier period can be found lower down.

The concentration of finds in the hospital area does not seem entirely accidental. Foremost, the pieces of armour were discovered in sickrooms and in the *porticos* surrounding the hospital courtyard, especially the southern one. The sick legionaries presumably stored their armour in the hospital rooms. Whatever was found in excavations, must have

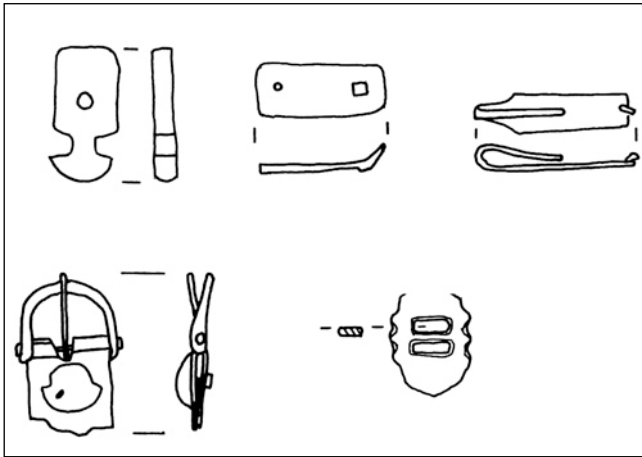


Fig. 13: Fragments of Newstead-type armour

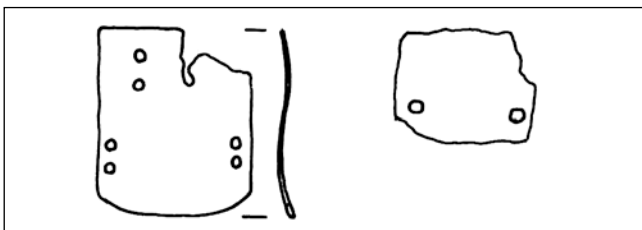


Fig. 14: Fragments of Alba Iulia-type armour

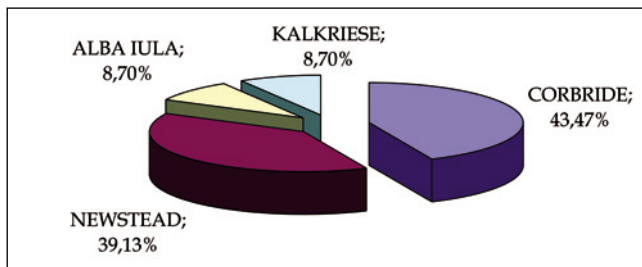


Fig. 15: Histogram illustrating the percentage share of different types of segmental armour discovered at Novae

been lost or forgotten in the hospital or else, considering that some pieces were damaged, the patients or rather the convalescents had been doing minor repairs on them.

The occurrence of armour pieces in the hospital portico is explained by the stratigraphy. The finds are concentrated in a part of the southern portico which was closed off and transformed into a kind of kitchen with an oven and tegulae-lined pit for a smoldering fire. It was surely a place often visited by all the patients.

The bigger pieces, that is, the two full sets and the pauldron, obviously remained behind when the hospital was evacuated. The pauldron may have simply been broken off from a set of armour and lost. As far as the two full sets left behind in the surgery, the case must have been different in my opinion. They could have belonged to the medical staff.

Inscriptions discovered in the hospital, next to the *sacellum* of the medicinal deities³⁷, have demonstrated the presence of two civilian physicians, Asklepio and Macedos. Quite possibly civilians working in an army hospital would have been issued armour as well and they would have left it in the hospital instead of taking it home with them. In this instance presumably they did not have an opportunity to return for it. If the abandonment of the hospital was indeed connected with an act of *damnatio memoriae* of the *legio I Italica*, such a sequence of events is quite probable.

A typological analysis of the armour fragments from the hospital has demonstrated a preponderance of the Corbridge type, followed by a lesser number of pieces of the Newstead type and the least of the Kalkriese and **Alba Iulia** types (Fig. 15). All in all, however, all the different kinds of segmental armour were represented and the distribution of the finds clearly suggests that patients were assigned to rooms not in any special order, as some would like to have it, but regardless of rank and equipment.

The hospital finds set the upper chronological horizon; on the other hand, armour pieces from other parts of Novae determine the lower border date, which falls in the 1st century AD, in the second half of the century to be more precise. There is nothing surprising about this, as the *legio I Italica* arrived at Novae in AD 69.

Limitations of the excavation area are the reason why so little is known about the earlier fortress which was garrisoned by the *legio VIII Augusta*³⁸ starting from AD 45-46³⁹. Possibly from this period in the history of the castrum come the fragments of *lorica segmentata* discovered in pits in the *sannum tribunorum* area and attributed by the excavator to the **Corbridge A type**⁴⁰. The few examples of the **Kalkriese Type** may also belong to this period, but in their case the years AD 45-46 would be the upper limit of their use; current research has demonstrated that this type of armour went out of use at about this time⁴¹. The issue at Novae is not easy to decide, as only two of the four pieces come from a clear context, which is the leveling layer under the construction of the hospital building. Since there is a Flavian legionary bath underlying the construction of the hospital, it is possible that the fragments of armour found their way into these layers as a result of building development. The stratigraphic analysis gives a *terminus ante quem* for these finds about AD 70.

The overall picture of the chronology of armour pieces found in Novae is as follows: **Kalkriese Type** - *terminus ante quem* c. AD 70, **Corbridge type** with *terminus post quem* about AD 45-46 and an *ante quem* in AD 238 (*damnatio* of the Maximinus Thrax), **Newstead Type** - *terminus*

post quem AD 70 AD and *ante quem* 238, **Alba Iulia Type** - *terminus post quem* presumably in the end of the 1st century AD⁴² as no data from Novae is available, and an *ante quem* in AD 238.

The distribution of the different kinds of armour in Novae leads to further conclusions of a different kind. In the end of the 3rd century AD, presumably in Aurelian's time, the hospital underwent total rebuilding⁴³. There is proof, however, of some areas, like the center of cult and a few specific rooms, being used also at an earlier date⁴⁴. Coming from the time of Aurelian/Probus and later are some minor pieces of armour, most probably of the **Alba Iulia type**. The latest originated from layers dated to Diocletian's reign. All the plates were made of bronze.

The distribution of armor fragments in the hospital proves that the legionaries not only wore their armour while in the fortress, but that they took it with them when admitted to hospital. It does not seem that ranks or detachments had assigned space in the hospital. Minor repairs to the equipment were apparently made in the hospital. Moreover, it cannot be excluded that the civilian medical staff serving in the *valetudinarium* were issued (?) weapons, armour in particular. The distribution of armour inside the fortress follows principles of common sense: pieces were found in the hospital, in the *scamnum*, and the eastern and western *intervallum*. What is surprising is the absence of any remains of armor in the well explored *principia* and Trajanic baths, the construction of which coincided with the dismantling of the earlier Flavian baths in the *praetentura* and the construction of the hospital in their place. The new baths were located west of the *principia*. The **Corbridge type** of armour, and perhaps **Kalkriese**, appears to be the most characteristic of the earlier, 1st century AD period. For the turn of the 2nd and early 3rd century AD, **Corbridge**, **Newstead** and **Alba Iulia** tend to be the most typical.

The finds from Novae provide a significant contribution to the picture of weaponry and armour from a less investigated area like Novae. They have also given better dating grounds for a number of different types of armour. The presence of **Alba Iulia** type of armour in the *legio I Italica* comes as no surprise, considering that the legion was active on the Dacian front, where this kind of military equipment was used. Yet taking into account the percentage share of armour of this type in the overall weaponry assemblage, it could not have been used by more than a few of the smaller detachments.

NOTES

1. MAJEWSKI 1961, 75-162.
2. DYCZEK-KOLENDO-SARNOWSKI 2001.

3. DONEVSKI 1998, 13-17.
4. BIERNACKI 2003, 39-58.
5. VLADKOVA 2003, 221-230.
6. DYCZEK 2006 (in print)
7. DYCZEK 2002a, 121-124.
8. GENČEVA 2002, 19, Figs. 22, 23.
9. COULSTON 1990, 147.
10. BISHOP 1999, 37-43.
11. DYCZEK 1995, 367.
12. GENČEVA 1998, 88.
13. GENČEVA 2002, 55.
14. GENČEVA 2000, 74; SARNOWSKI – GACUTA 1982, 125-138.
15. GENČEVA 2000, 74; ROBINSON 1975, 176.
16. GENČEVA 2000, 74.
17. ROBINSON 1975, 489-490; BISHOP – COULSTON 1989, 32, Fig. 20/4.
18. GENČEVA 2003, 21-38.
19. DYCZEK 1996, 57.
20. DYCZEK 1996, 55.
21. DYCZEK 2002b, 145-150.
22. DYCZEK 1987, 139; GACUTA 1993, 37.
23. GACUTA 1993, 37, Pl. XXVI, 2-12.
24. Press et al. 1981, 127, 131.
25. DIMITROV-ČIČIKOVA 1974, 161-176; ČIČIKOVA 1980, 58.
26. SARNOWSKI 1983, 160.
27. GENČEVA 2000, 76-77, pls. X, 10.
28. DYCZEK 1989, 129, Fig. 7; idem. 1995, 367.
29. GENČEVA 1998, 85, Pl. III, 6; eadem 2000, 79, Pl. XII, 2.
30. OLDENSTEIN 1979, 207 f.
31. DYCZEK 1993, 197-204; idem, 1994, 135-139.
32. von GROLLER 1901, Pl. XVI, 6.
33. GENČEVA 2000, 74, tab. X, 1-2.
34. GARBSCH 1978, 79.
35. GACUTA 1993, 38, pl. XXV, 2.
36. BISHOP 2002, 62-65.
37. KOLENDO 1998, 55-70; DYCZEK 1999, 495-500.
38. GENČEVA 2002, Fig. 29.
39. KOLENDO 1994, 87-100.
40. GENČEVA 2002, 55.
41. BISHOP 2002, 23.
42. BISHOP 2002, 62.
43. DYCZEK 1998, 17-30.
44. DYCZEK 2005

BIBLIOGRAPHY

- BIERNACKI 2003: A. B. Biernacki, *The Thirty Years of the Exploration of Novae (Moesia Inferior) by the International*

- Interdisciplinary Archaeological Expedition of the Adam Mickiewicz University in Poznań*, *Novensia* **14**, 2003, 39-58
- BISHOP 1999: M.C. Bishop, The Newstead "lorica segmentata", *Journal of Roman Military Equipment Studies* **10**, 1999, 27-43
- BISHOP 2002: M. C. Bishop, Lorica Segmentata, vol I. A handbook of Articulated Roman Plate Armour, *JRMES Monograph* **1**, 2002
- BISHOP-COULSTON 1989: M. C. Bishop-J. Coulston, *Roman Military Equipment*, Aylesbury, 1989
- ČIČIKOVA 1980: M. Čičikova, Forschungen in Novae (Moesia Inferior), *Klio* **62/1**, 1980
- COULSTON 1990: J.C.N.Coulston, Later Roman Armour, 3rd-6th centuries AD, *Journal of Roman Military Equipment Studies* **1**, 1990, 139-160
- DIMITROV-ČIČIKOVA 1974: D. P. Dimitrov-M. Čičikova, Arheološki razkopki v iztočnija sector na Novae prez 1967-1969 g. *Izvestija na Arheološki Institut* **34**, 1974
- DONEVSKI 1998: P. Donevski, Inner Arrangement of the Camp at Novae, *Novensia* **10**, 1998, 13-17
- DYCZEK 1987: P. Dyczek, Novae - Sektor zachodni, *Archeologia* **40**, 1987, 135-159
- DYCZEK 1989: P. Dyczek, Novae - Western Sector, 1989, *Archeologia* **42**, 1991, 123-136
- DYCZEK 1993: P. Dyczek, Harpocrates z Novae, *Novensia* **5**, 1993, 197 - 204
- DYCZEK 1994: P. Dyczek, Harpocrates on Bronze Handle from the Valetudinarium at Novae, *Akten der 10. Internationalen Tagung über Antike Bronzen, Freiburg, 18. - 22. Juli 1988. Forschungen und Berichte zur vor- und frühgeschichte in Baden - Württemberg, Band 45*, Stuttgart, 1994, 135-139
- DYCZEK 1995: P. Dyczek, Bronze Finds from the Site of the Valetudinarium at Novae (Moesia Inferior), *Acta of the 12th International Congress on Ancient Bronzes, Nederlandse Archeologische Rapporten* **18**, 1995, 365- 372
- DYCZEK 1996: P. Dyczek, Novae - Western Sector, 1992-1995, *Archeologia* **47**, 1996, 51-64
- DYCZEK 1998: P. Dyczek, Via inscriptionum at Novae, *Novensia* **10**, 1998, 17-30
- DYCZEK 1999: P. Dyczek, A Sacellum Aesculapi in the valetudinarium at Novae, *Roman Frontier Studies XVIII/1997. Proceedings of the XVIIth International Congress of Roman Frontier Studies, Zalau*, 1999, 495-500
- DYCZEK 2002a: P. Dyczek, Novae - Western Sector (Section IV), 2000-2001, *Archeologia* **53**, 2002, 121-136
- DYCZEK 2002b: P. Dyczek, Bronze appliques of wooden caskets from the site of the valetudinarium at Novae, *Acta of the 13th International Bronze Congress, held at Cambridge, Massachusetts, May 28-June 1, 1996*, Portsmouth, Rhode Island, 2002, 145-150
- DYCZEK 2005: P. Dyczek, The site of the valetudinarium in Novae in the third century AD: Remodeling the architecture, Belgrad, 2005, 231-238
- DYCZEK 2006 (in print): P. Dyczek, The medieval cemetery of Novae from Sector IV, Warszawa
- DYCZEK-KOLENDO-SARNOWSKI 2001: P. Dyczek-J. Kolendo-T. Sarnowski, *Novae - 40 years of Excavations*, Warszawa, 2001
- GACUTA 1993: W. Gacuta Przedmioty metalowe z Novae. 6 kampanii wykopaliskowych Ekspedycji Archeologicznej w latach 1977-1987, *Novensia* **5**, 1993, 7-178
- GARBSCH 1978: J. Garbsch, *Römische Paraderüstungen, München*, 1978
- GENČEVA 1998: E. Genčeva, Drobne przedmioty metalowe z odcinka IV w Novae. Sprzączki, aplikacje, kolczyki, *Novensia* **11**, 1998, 81-98
- GENČEVA 2000: E. Genčeva, Metalowe części wyposażenia żołnierskiego w Novae, *Novensia* **12**, 2000, 49-98
- GENČEVA 2002: E. Genčeva, *Pàrvijat voenen lager v Novae provincija Mezja (Severna Bălgarija)*, Warszawa, 2002
- GENČEVA 2003: E. Genčeva, Le premiere camp militaire a Novae, *Novensia* **14**, 2003, 21-38
- KOLENDO 1994: J. Kolendo, Aneksja Tracji za cesarza Klaudiusza, [in:] *Studia Moesiaca*, Poznań, 1994, 87-100
- KOLENDO 1998: J. Kolendo, Inscriptions en l'honneur d'Esculape et d'Hygie du valetudinarium de Novae, *Archeologia* **49**, 1998 (1999), 55-70
- MAJEWSKI 1961: K. Majewski, Sprawozdanie tymczasowe z wykopalisk w Novae w 1960 roku, *Archeologia* **12**, 1961, 75-162
- OLDENSTEIN 1976: J. Oldenstein, Zur Ausrüstung römischen Auxiliareinheiten. Studien zu Beschlägen und Zierart an der Ausrüstung der römischen Auxiliareinheiten der obergermanisch-raetischen Limesgebietes aus dem zweiten und dritten Jahrhundert n. Chr., *Berichte der RGK* **57**, 1976, 49-284
- PRESS et al. 1981: L. Press, et al., Novae - Sektor zachodni, 1979, *Archeologia* **32**, 1981, 85-159
- ROBINSON 1975: H.R. Robinson, *The Armour of Imperial Rome*, Norfolk, 1975
- SARNOWSKI 1983: T. Sarnowski, Wschodni bok twierdzy legionowej (ha XXVI) sondaże, *Archeologia* **34**, 1983, 153-160
- SARNOWSKI-GACUTA 1982: T. Sarnowski-W. Gacuta, Skarb brązów z zachodniego arearium komendantury w Novae, *Archeologia* **33**, 1982, 125-138
- VLADKOVA 2003: P. Vladkova, The Portico Building extra muros in Novae. Investigations and problems, *Novensia* **14**, 2003, 221-230
- VON GROLLER 1901: M. von Groller, Römische Waffen, *Der Römische Limes in Österreich* **2**, 1901, 85-132



SAGITTARII POROLISSENSIS UND IHRE KAMPFWAFFEN. I.

Nicolae Gudea

I. PRÄAMBEL

Zur Zeit arbeite ich an einem Aufsatz mit dem Titel "Sagittarii aus dem römischen Heer und ihre Waffen. Fallstudie: *sagittarii in exercitus Daciae Porolissensis*". Aus gutem Grund habe ich das Thema auf eine Fallstudie beschränkt.

Für diese Mitteilung habe ich aus der oben erwähnten Arbeit folgendes entnommen: **a.** die *sagittarii*-Einheiten aus Porolissum; **b.** ihre Bewaffnung (beschränkt auf die leichten Pfeilspitzen); **c.** einiges über die entdeckte Bewaffnung der Barbaren, die in der unmittelbaren Nachbarschaft der nördlichen und nordwestlichen Grenze von Dacia Porolissensis wohnten.

II. POROLISSUM - EIN GRUNDLEGENDES STRATEGISCHES ZENTRUM DES NORDWESTLICHEN DAKISCHEN LIMESABSCHNITTS

Sechsfundfünfzig Jahre von Limes-Kongressen, also von Limesforschung, konnten immer noch keine einheitliche Meinung über die Verteidigung der römischen Provinzen schaffen. (Abb. 1.) Die auf modernen nationalen Abschnitten oder sogar noch kleineren Teilen getrennte Forschung, der Mangel an allgemeinen und gemeinsamen Forschungs- und Veröffentlichungskriterien verursachten und verursachen, daß weiterhin die römische Verteidigung in ihrer Einheit kaum bekannt ist. Zur Zeit gibt es immer noch fast unbekannte Provinzabschnitte.

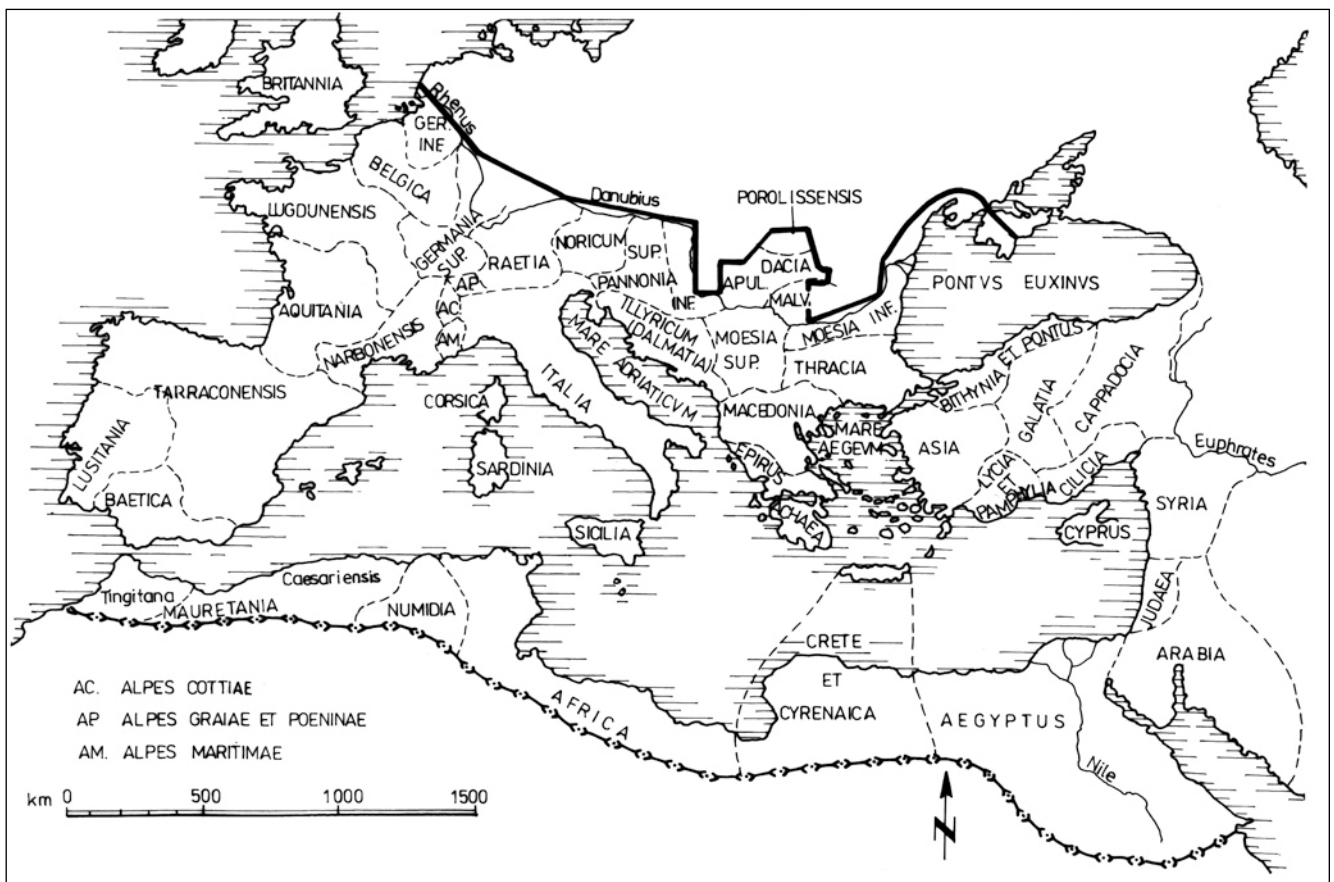


Abb. 1: Landkarte des Römischen Reichs im 2.-3- Jahrhundert n. Chr. Der Ort des Dacia Porolissensis ist bezeichnet

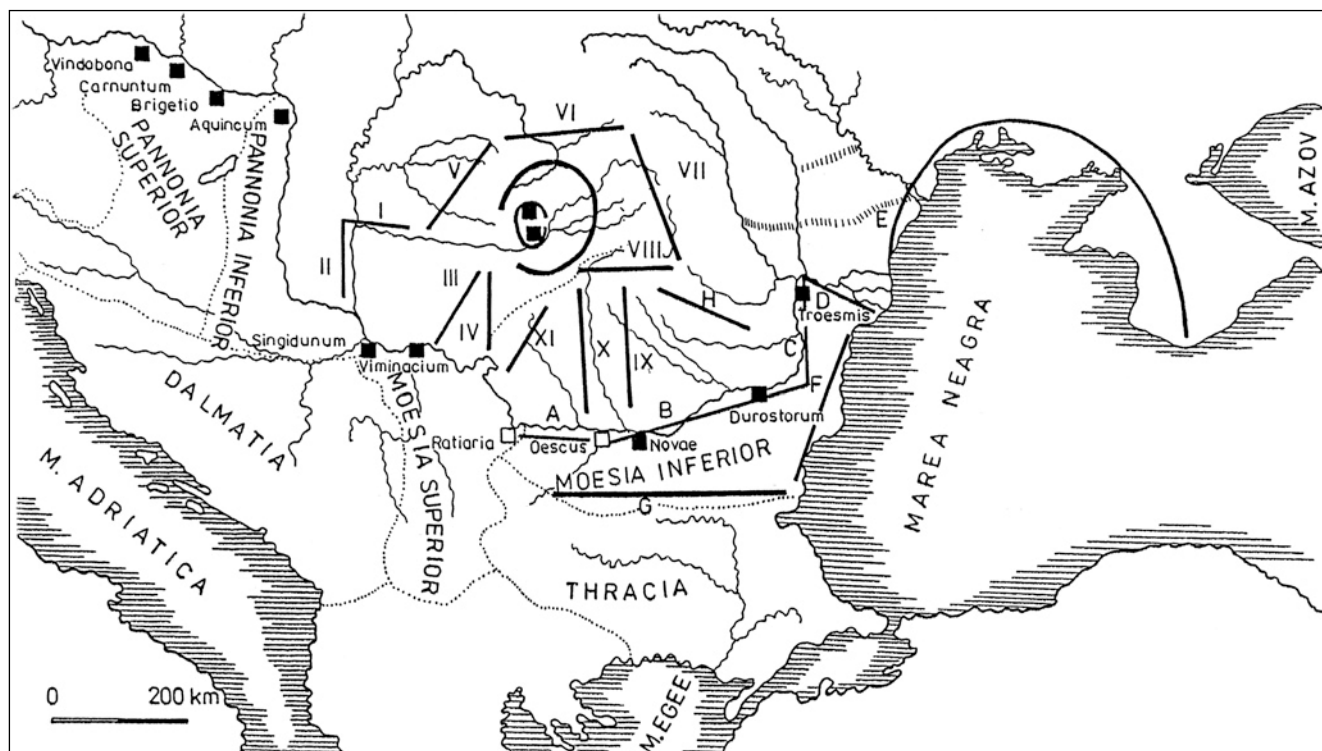


Abb. 2: Landkarte mit dem Verteidigungssystem der dakischen Provinzen

Dakien gehört zu den fast günstigsten Fällen, weil der größte Teil des römischen Limes sich auf dem gegenwärtigen nationalen Gebiet befindet. (Abb. 2) Dank ihrer Lage wurden Dakien und später die dakischen Provinzen (Porolissensis, Apulensis und Malvensis) deshalb geschaffen und beibehalten, um die Einheit der Barbarenfront an der mittleren und unteren Donau zu durchbrechen. (Abb. 3) Das Verteidigungssystem dieser Provinzen wurde mit diesem Zweck organisiert¹. Diese Tatsache kann sowohl durch die Beobachtung der Lage der Provinzen im geographischen Raum als auch vor allem durch die Positionierung der Barbarenstämme in dieser Gegend konkret festgestellt werden. Die Aufstellung der Militäreinheiten entsprach denselben Kriterien sowohl durch die Truppenverteilung als auch durch die Auswahl ihres taktischen Charakters (Fußtruppen, Reiterei, leichte Infanterie, reitende Bogenschützen usw.).

Die Barbarengruppen, die westlich und nordwestlich der großen Pässe wohnten, wurden auf zwei Stufen "aufgestellt": in der Nähe der Grenze durchwanderten gemischte, aus Dakern, Vandalen, Juhungen, usw. zusammengestellten Barbaren-gruppen; noch mehr westlich befanden sich, besser gruppiert, die Sarmaten und Jazygen. (Abb. 3).

Die Beziehungen zwischen der Provinz Dakien und diesen Barbarengruppen waren meist und für lange Zeit friedlich. Es sind aber sowohl gegen die Provinz ausgeübte militärische

Handlungen² als auch repressive Aktionen der Römer³ bekannt. Gleichzeitig mit diesen "zufälligen" Handlungen wurde ständig eine rege Handelstätigkeit sowohl aus der Provinz in Richtung Barabaren⁴ als auch von den Barbaren in Richtung Provinz gepflegt⁵. Diese ganze Tätigkeit hat auf ziemlich bekannten und von den Forschern einstimmig anerkannten Handelswegen stattgefunden. (Abb. 4)

Von den dakischen Provinzen stellt zur Zeit Dacia Porolissensis das beste Modell dar, um den strategischen Zweck des Limes und seine Organisation zu erläutern. (Abb. 5)

Im Rahmen des Verteidigungssystems der Provinz hebt sich Porolissum (Dorf Moigrad, Gemeinde Merşid, Kreis Sălaj) von den anderen Festungen ab, einerseits wegen seiner strategischen Bedeutung, bzw. seines eigenen Verteidigungssystems und der großen Konzentrierung von Militäreinheiten⁶ andererseits wegen seiner wirtschaftlichen Bedeutung als Exportzentrum⁷. (Abb. 6)

III. DIE MILITÄREINHEITEN, DIE IN POROLISSUM STATIONIERTEN

In den 165 römischer Besatzungsjahren stationierten in Porolissum zahlreiche vollständige Militäreinheiten oder Teile von ihnen. Einige von ihnen stationierten dort ständig, andere nur vorübergehend.

Ich werde sie sehr kurz dargestellt, wobei ihr taktischer Charakter hervorgehoben wird:

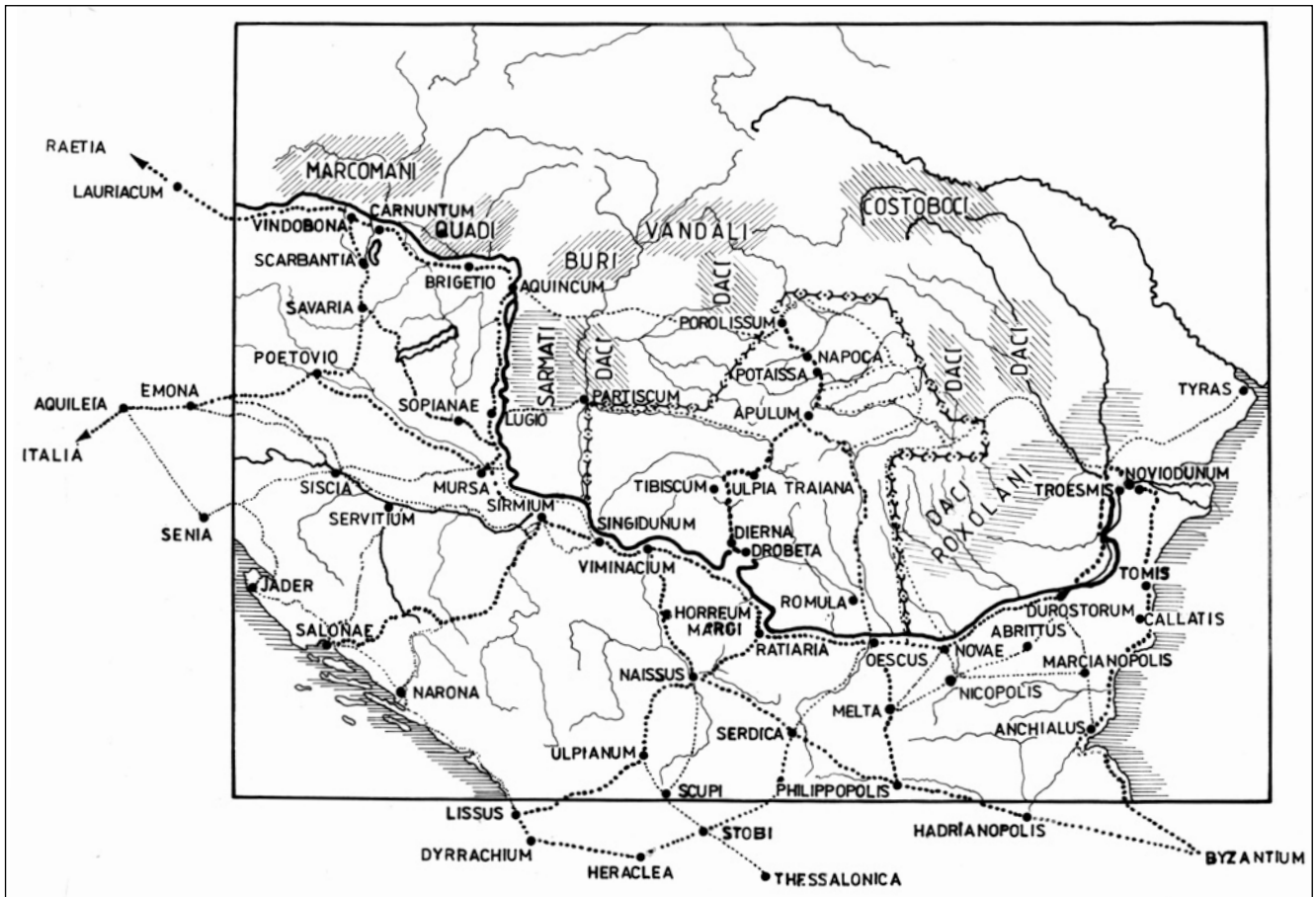


Abb. 3: Landkarte der dakischen Provinzen vom mittleren und unteren Donau und die benachbarten Barbarengruppen (nach N. Gudea)

1. in der Zeit kurz nach der Eroberung (106-118) stationierten:

- Truppeneinheit der Legion *IV Flavia*; Fußtruppe; gestempelte Ziegel; der Aufenthaltsort nicht genau bekannt; wahrscheinlich wurde sie 114 zurückgezogen, als die Legion wegen des Partherkrieges nach Syrien verlegt wurde⁸.

- Truppeneinheit der Legion *XIII Gemina*; Fußtruppe; gestempelte Ziegel; der Aufenthaltsort nicht genau bekannt; wahrscheinlich wurde sie nach 114 zurückgezogen⁹.

- *cohors I Augusta Ituraeorum sagittariorum*; reisende Bogenschützen; Militärdiplome von 109, 110, 114; gestempelte Ziegel: *COH I AVG*; der Aufenthaltsort nicht genau bekannt; sie wurde für eine Zeit nach Bucium verlegt; nach 114 kehrte sie nach Porolissum zurück¹⁰.

- *cohors I Ituraeorum*, höchstwahrscheinlich Bogenschützen; Militärdiplome aus 109, 110; gestempelte Ziegel: *CHSJS*; *CHSIJS*; Aufenthaltsort nicht genau bekannt; wahrscheinlich das Kastell auf der Pomet-Bergspitze¹¹.

- *cohors V Lingonum*; Fußtruppe ?; Militärdiplome aus 109, 110, 114; Ziegel mit der Inschrift: *CVL*; stationierte im Kastell auf der Pomet-Bergspitze¹².

2. beginnend mit Hadrianus und bis zum Ende des 2. Jahrhunderts

Es fanden zahlreiche Truppenverlagerungen statt:

a. ein Teil der in der ersten Phase stationierten Einheiten wurde zurückgezogen (die Einheiten der Legionen *III Flavia* und *XIII Gemina*; um 144 wurde auch die *cohors I Augusta Ituraeorum* zurückgezogen);

b. an ihrer Stelle tauchten andere Militäreinheiten (*cohors I Ulpia Brittonum*, *numerus palmyrenorum*) auf

- *cohors I Ituraeorum*; wahrscheinlich *sagittaria*; Militärdiplome von 157, 158; gestempelte Ziegel: *CHSJS*; *CHSIJS*; der Aufenthaltsort nicht genau bekannt; wahrscheinlich das Kastell auf der Pomet-Bergspitze¹³.

- *cohors V Lingonum*; Fußtruppe ?; Militärdiplome von 130, 154, 164; Inschriften auf Ziegeln und Dachziegeln: *CVL*; stationierte im Kastell auf der Pomet-Bergspitze¹⁴.

- *cohors I Ulpia Brittonum*; leichte Fußtruppe; kehrte nach 114 von Bologna nach Porolissum zurück; Militärdiplome aus 133, 159, 164; gestempelte Ziegel: *COH I BR*; Inschriften; stationierte wahrscheinlich auch im Kastell auf der Pomet-Bergspitze¹⁵.

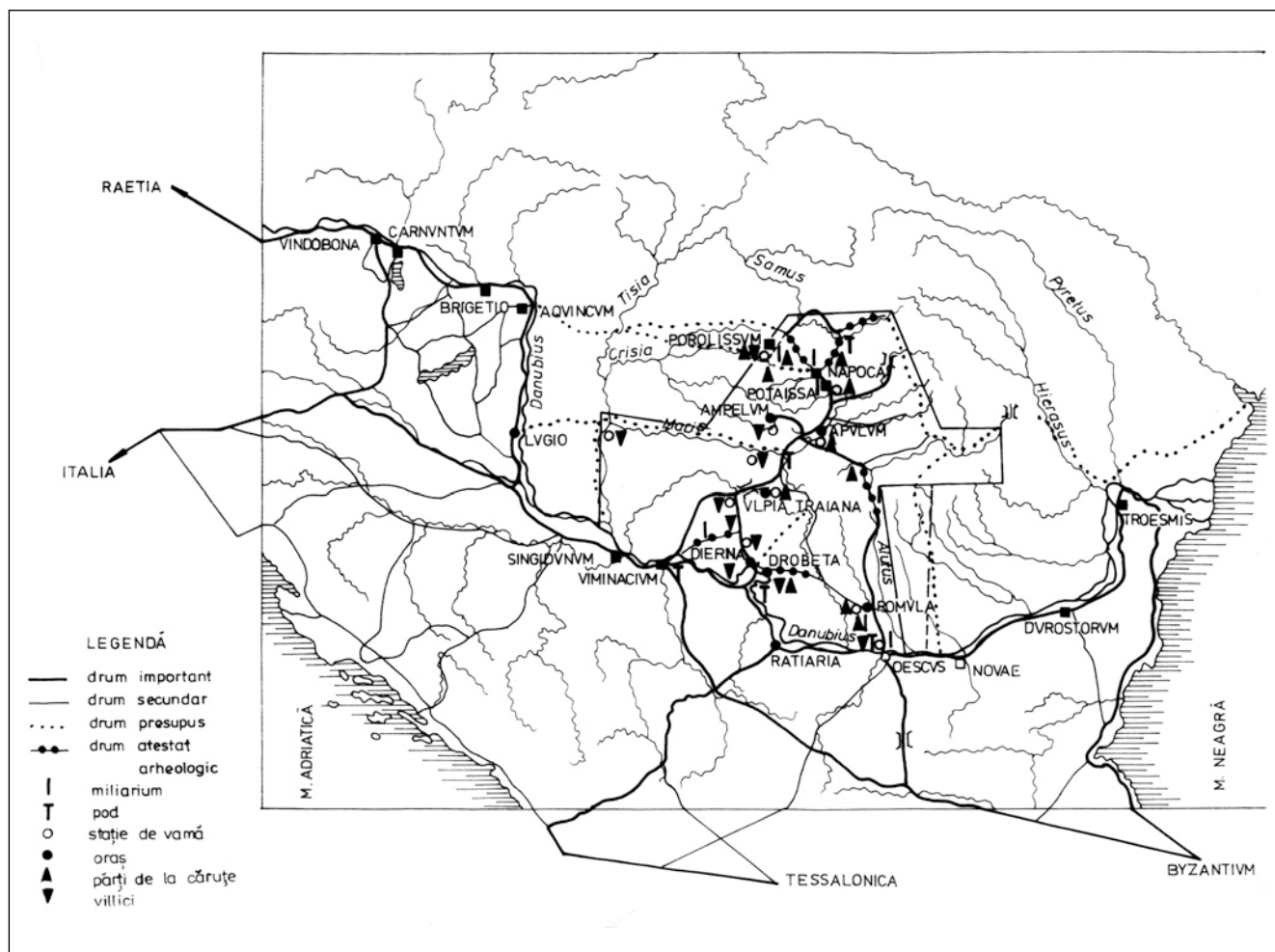


Abb. 4. Landkarte der dakischen Provinzen mit dem Straßennetz; die vermuteten Straßen nach Pannonia Inferior wurden unterstrichen

- *numerus palmyrenorum porolissensium*; reitende Bogenschützen; Ziegel mit Stempel: *NP*; Inschriften auf den Ziegeln: *NP*; Aufenthaltsort unbekannt; man vermutet das Kastell auf dem Citera-Berg¹⁶.

3. vom Ende des 2. Jahrhunderts bis um das Ende des 3. Jahrhunderts können die folgenden Militäreinheiten mit Sicherheit erwähnt werden:

- *cohors I Ituraeorum*; wahrscheinlich *sagittarii*; Militärdiplome von 157, 158; gestempelte Ziegel: *CHSJS*; *CHSJS*; Ziegel mit Inschriften: *ITV* in späten Kontexten datiert; der genaue Aufenthaltsort unbekannt; wahrscheinlich das Kastell auf der Pomet-Bergspitze¹⁷.

- *cohors V Lingonum*; Fußtruppe?; spät datierte Inschriften auf Dachziegeln und Ziegel mit der Inschrift: *CVL*; Inschriften, in denen sie die Titel *antoniniana*, *philippiana* trägt; stationierte im Kastell auf der Pomet-Bergspitze¹⁸.

- *cohors I Ulpia Brittonum equitata*; leichte Fußtruppe; von gestempelten Ziegeln: *COH I BR* und Inschriften vom

Anfang des 3. Jahrhunderts n. Chr. bestätigt; stationierte wahrscheinlich im Kastell auf der Pomet-Bergspitze¹⁹.

- *numerus palmyrenorum porolissensium*; reitende Bogenschützen; Weihinschriften vom Anfang und von der Mitte des 3. Jahrhunderts; stellt den Tempel von Bel wieder her; von gestempelten Ziegeln: *NP* bestätigt; errichtet ein Heiligtum am Amphitheater; stationierte wahrscheinlich im Kastell auf dem Citera-Berg²⁰.

- Truppeneinheit der Legion *VII Gemina*; Fußtruppe? oder Reiter?; Ziegel mit Stempeln: *LVII G F*, die für den Anfang des 3. Jahrhunderts gut datiert sind; der genaue Aufenthaltsort unbekannt²¹.

- Truppeneinheit der Legion *III Gallica*; reitende Bogenschützen? Fußtruppe und Bogenschützen?; der Aufenthaltsort nicht genau bekannt; gestempelte Ziegel: *LIIG*²².

- *cohors III D(acorum?)*; Bogenschützeneinheit (kam aus Syrien mit der Truppeneinheit der Legion *III Gallica*!); Stempel: *CIID*, *CIII*, *CIIIID*; der genaue Aufenthaltsort unbekannt²³.

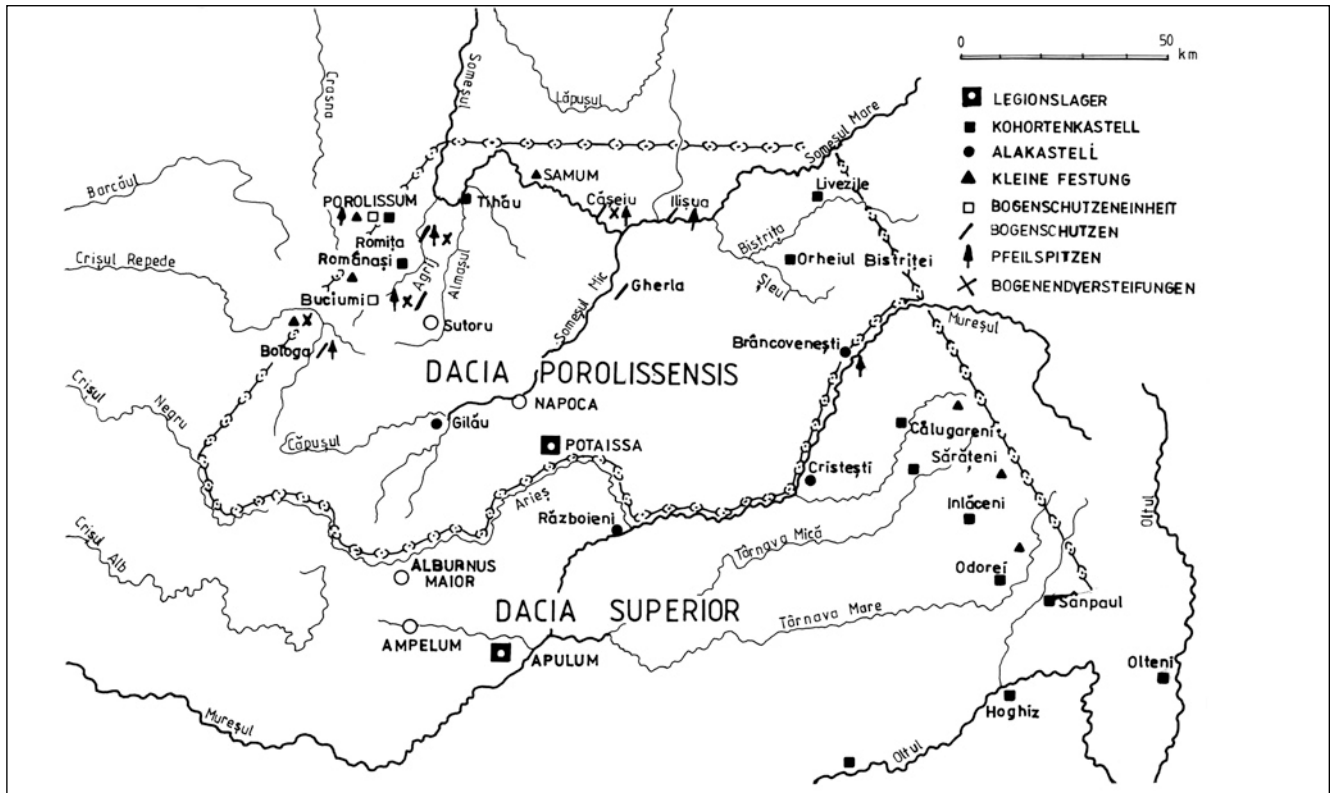


Abb. 5: Landkarte der Provinz Dacia Porolissensis. Die Kastelle, wo Einheiten der Bogenschützen stationierten, wurden mit Rot umkreist

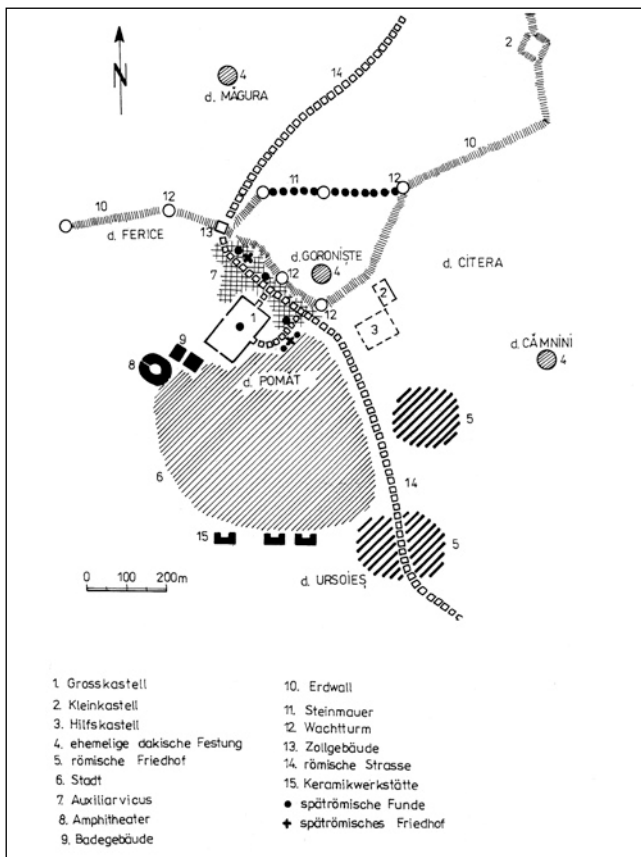


Abb. 6: Skizze des dakisch-römischen Komplexes von Porolissum

IV. ÜBER DIE IN POROLISSUM ENTDECKTE BEWAFFNUNG DER BOGENSCHÜTZE

Aus den alten Funden aus Porolissum²⁴, von den nach 1977 bei allen Anlagen (Kastell, Zivilsiedlung, Heiligtümern, Amphitheater usw.) durchgeführten Grabungen stammt eine ungewöhnlich große Anzahl von Waffen (Lanzen-, Speer-, Pfeilspitzen), Bewaffnungsgegenstände usw. Viele von ihnen können den Bogenschützen zugeschrieben werden.

Wie schon im Vorwort erwähnt, werde ich hier nur eine einzige Waffengruppe behandeln, bzw. die leichten Pfeilspitzen. Die anderen Waffen oder die zum Bogen gehörenden Gegenstände werden in einem anderen Beitrag behandelt. Jene Gegenstände aus Eisen, Bronze oder Knochen, die kleine Ausmaßen haben (Länge bis $\pm 5/6$ cm und Gewicht bis 10 g), wurden leichte Pfeilspitzen genannt.

Die in Porolissum entdeckten leichten Pfeilspitzen stammen entweder aus den zufälligen Entdeckungen während der landwirtschaftlichen Arbeiten oder alten Grabungen²⁵ oder von den systematischen archäologischen Grabungen, die im Kastell auf der Pomet-Bergspitze²⁶, im römischen Zollgebäude²⁷, in verschiedenen erforschten Bauten (Amphitheater, Wohnungen, Läden usw.) durchgeführt wurden.

Ihre Anzahl ist groß, demnach können eher technische als chronologische Beobachtungen gemacht

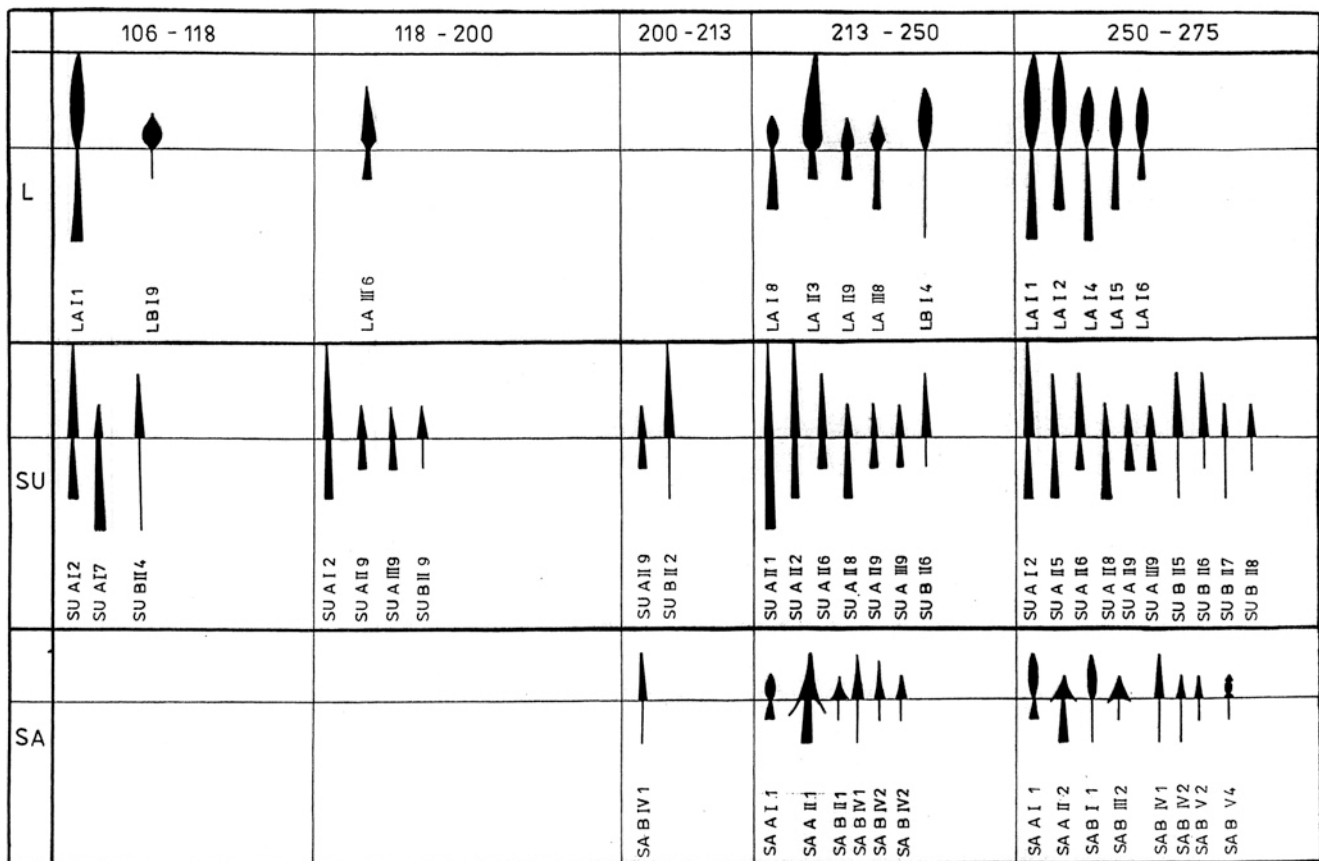


Abb. 7: Übersicht der in Porolissum entdeckten Waffenarten

werden. Unter den alten Funden befinden sich 11 leichte Pfeilspitzen; vom Kastell auf der Pomet-Bergspitze stammen etwa 200 Stück, vom Zollgebäude 51 Stück und vom Heiligtum des Jupiter Dolichenus 13 Stück.

Anhand der Übersicht der in Porolissum entdeckten Waffen (Abb. 7) kann eine interessante Tatsache festgestellt werden: von den Waffen, die zeitlich bestimmt werden konnten, überwiegen die im 3. Jahrhundert konzentrierten Pfeilspitzen. Wir werden sehen, ob diese zeitliche Bestimmung mit den archäologischen Daten übereinstimmt.

Nach der Befestigungsart können die leichten Pfeilspitzen in zwei großen Gruppen eingeteilt werden: **1.** mit Tülle; (Abb. 8) **2.** mit Befestigungsdorn. Jede Gruppe enthält mehrere Typen:

- Gruppe 1 Typ
- 1 blattförmige Pfeilspitze mit linsenförmigem/quadratischem Profil SA A 1
 - 2 pyramidale Pfeilspitze mit dreieckigem Profil SA A 2
 - 3 pyramidale Pfeilspitze viereckigem Profil SA A 3
 - 4 pyramidale Pfeilspitze mit sechseckigem Profil SA A 4

- Gruppe II Typ
- 1 pyramidale Pfeilspitze mit linsenförmigem Profil SA B 1
 - 2 rhomboidale Pfeilspitze mit rechteckigem Profil SA B 2
 - 3 pyramidale Pfeilspitze mit dreieckigem Profil SA B 3
 - 4 pyramidale Pfeilspitze mit dreieckigen Hacken SA B 4
 - 5 rhomboidale Pfeilspitze mit dreieckigem Profil SA B 5
 - 6 pyramidale Pfeilspitze mit quadratischem Profil SA B 6
 - 7 rhomboidale Pfeilspitze mit quadratischem Profil SA B 7
 - 8 pyramidale Pfeilspitze mit rundem Profil SA B 8
 - 9 pyramidale Pfeilspitze mit sechseckigem Profil SA B 9
 - 10 Kompositpfeilspitze: der Oberteil pyramidal mit rundem Profil; der mittlere Teil oval; am Grund eine runde Scheibe SA B 10

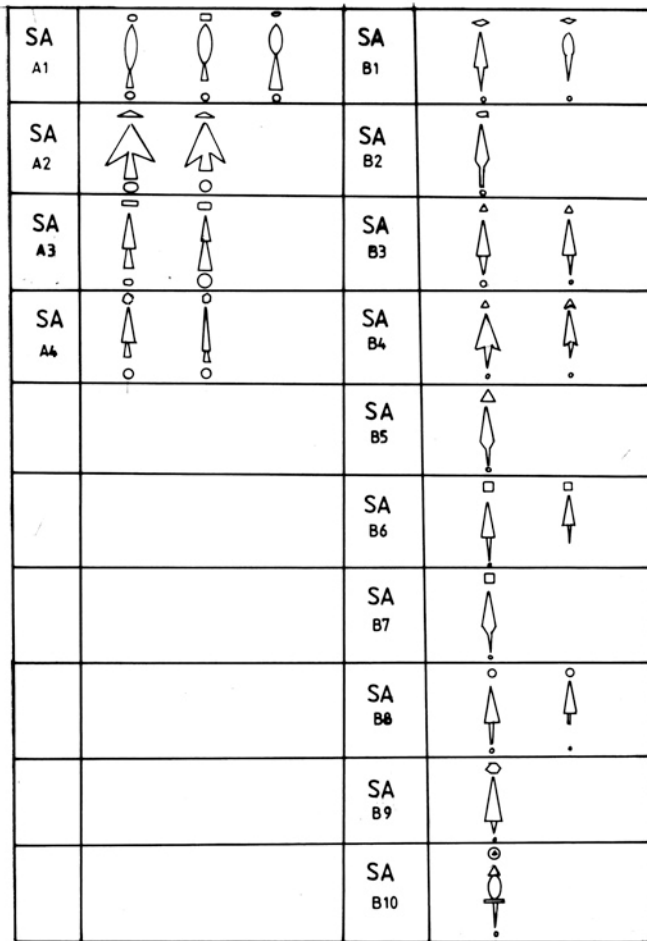


Abb. 8: Übersicht der leichten Pfeilspitzentypen (SA)

Am Ende dieser Aufzählung können einige Bemerkungen gemacht werden:

- die Anzahl der leichten Pfeilspitzen ist größer als an jedwelchem anderen Fundplatz
- die Fundstücke wurden zerstreut im Kastell (*praetorium*, Kommandantengebäude, Baracken) und viele (meistens jene aus Knochen) um das Wasserreservoir herum gefunden; sie wurden noch im Zollgebäude, in der Baracke und im Heiligtum des Jupiter Dolichenus im Raum der Opfertagen, entdeckt
- die leichten Pfeilspitzen sind aus Eisen, Bronze und Knochen; die zahlreichsten sind jene aus Eisen; nachher die aus Knochen; aus Bronze gibt es sehr wenige (Abb. 9-10-11)
- von den beiden großen Gruppen (mit Tülle und mit Befestigungsdorn) überwiegen jene mit Befestigungsdorn
- zahlreicher sind die pyramidalen Pfeilspitzen mit dreieckigem Profil SA B 3; im Zollgebäude gibt es nur solche Pfeilspitzen
- die pyramidalen oder rhomboidalen Pfeilspitzen mit linsenförmigem, dreieckigem, rundem oder viereckigem Profil sind seltener

- eine gruppenoder typusbezogene Datierung kann schwer gemacht werden; im allgemeinen werden sie für die ganze Eroberungszeit (106-275 n. Chr.) datiert; für einige können getrennte, engere Datierungen gemacht werden: z.B. die Pfeilspitzen aus dem Heiligtum des Jupiter Dolichenus stammen nur aus der Zeitspanne 244-255 n. Chr. (Abb. 12-13)
- welchen Truppeneinheiten die Pfeilspitzen aus Porolissum gehörten, kann schwieriger bestimmt werden
 - im Kastell auf der Pomet-Bergspitze stationierten:
 - Militäreinheiten, die sicherlich Bogenschützen hatten: *cohors I Ituraeorum*, *numerus Palmyrenorum* und wahrscheinlich auch die Auxiliareinheit aus der *legio III Gallica* (wegen einem langfristigen Aufenthalt im Orient);
 - Militäreinheiten, die theoretisch keine Bogenschützen hatten, aber deren Anwesenheit nicht ausgeschlossen werden kann
 - im Zollgebäude sind dieselben beiden Truppengruppen bestätigt:
 - Einheiten, die Bogenschützen hatten (*Ituraei*); die vermutete *cohors III D(acororum)* wegen des Aufenthalts im Orient;
 - cohors V Lingonum*, die theoretisch keine Bogenschützen hatte; praktisch wissen wir es aber nicht²⁸.
- wir sind der Meinung, daß die im Heiligtum des Jupiter Dolichenus gefundenen leichten und schweren Pfeilspitzen als Opfertage abgelegt wurden (Abb. 12-13).

V. ÜBER DIE BEWAFFNUNG DER VÖLKER, DIE IN DER UNMITTELBAREN NÄHE DES NORDWESTLICHEN LIMES WOHNTE

Die Frage, die ich mir während der Analyse der Waffen aus Porolissum gestellt habe, war: warum haben sich so viele Bogenschützeneinheiten in Porolissum konzentriert?

Eine Antwort könnte nur von der Kenntnis der Waffen der Völker, die in der unmittelbaren Nähe außerhalb der Grenze wohnten, ausgehen.

Die Daten über die Waffen bei diesen Volksstämmen oder Stammesverbänden stammen aus zwei neuzeitlichen Quellen. Eine direktere Quelle ist die Arbeit über die Funde aus der römischen Zeit, die von solchen Volksstämmen stammen, die auf dem Gebiet Rumäniens wohnten²⁹. Eine gewissermaßen indirekte Quelle, die aber grundsätzlich verwendet werden kann, ist die Arbeit über die Waffen der Sarmaten³⁰. Die Feststellungen von Andrea Vaday wurden von der Analyse der Grabbeigaben der Sarmaten bestätigt³¹. Wir möchten aber hervorheben, daß die östliche Wohngrenze der Sarmaten von der nor-

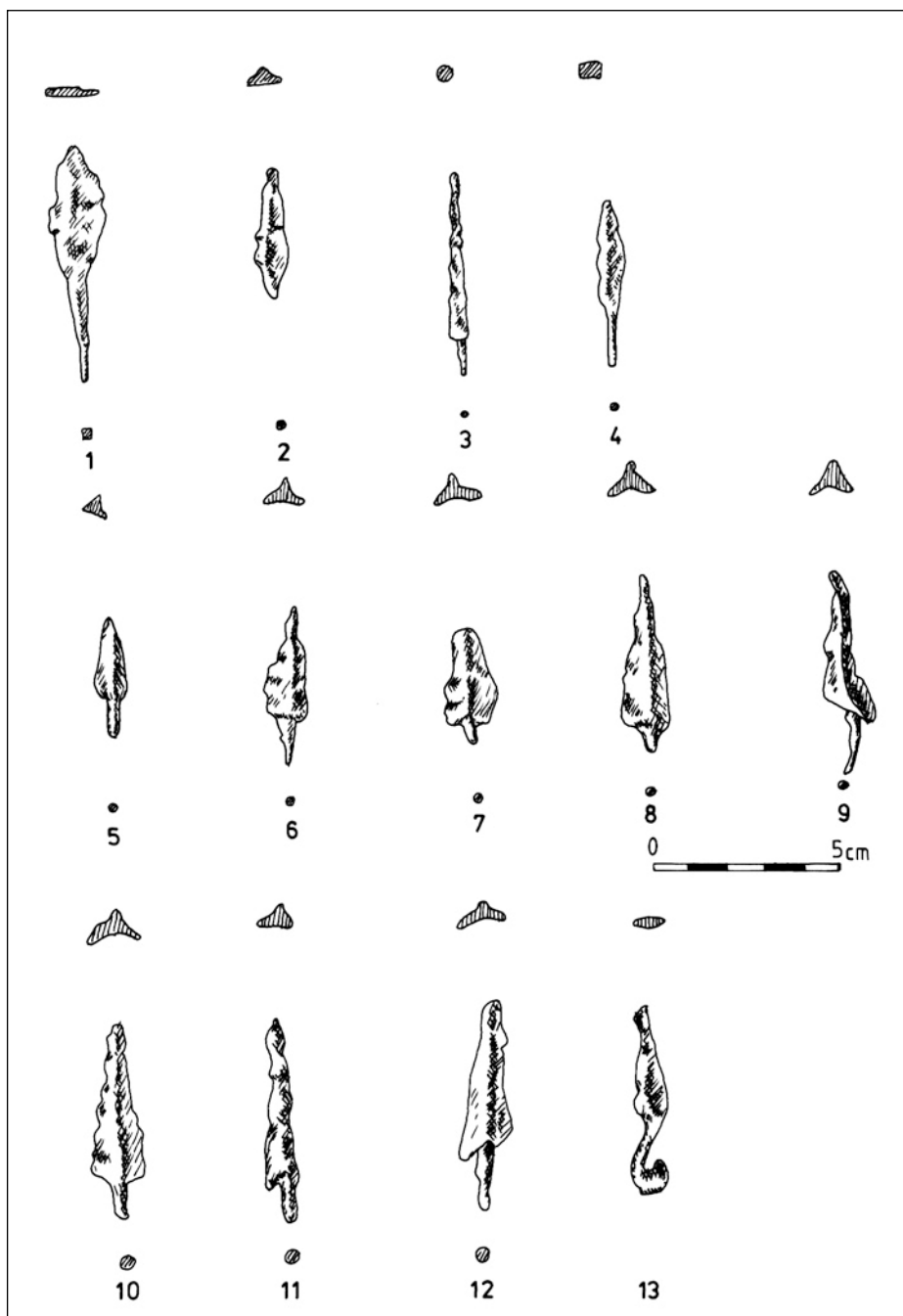


Abb. 9. Leichte Pfeilspitzen aus Eisen, die im Kastell vom Pomet-Berg entdeckt wurden

dwestlichen Grenze der Provinz Dacia Porolissensis weit entfernt ist.

In der unmittelbaren Nachbarschaft von Dacia Porolissensis, die von den Barbaren bewohnt wurde, finden wir die folgende Lage vor:

1. die Anzahl der Waffen ist sehr gering
2. es wurden keine Pfeilspitzen entdeckt, oder besser gesagt, es wurden keine Pfeilspitzen erwähnt oder veröffentlicht

3. es wurden nur große und mittlere Lanzen spitzen sowie Säbel entdeckt

4. es fehlen die Schildumbos nicht

Diese Lage widerspiegelt selbstverständlich den gegenwärtigen Forschungsstand.

In dem von den Sarmaten bewohnten Gebiet, vom Limes entfernt gibt es Pfeilspitzen, aber ihre Zahl ist nicht besonders groß.

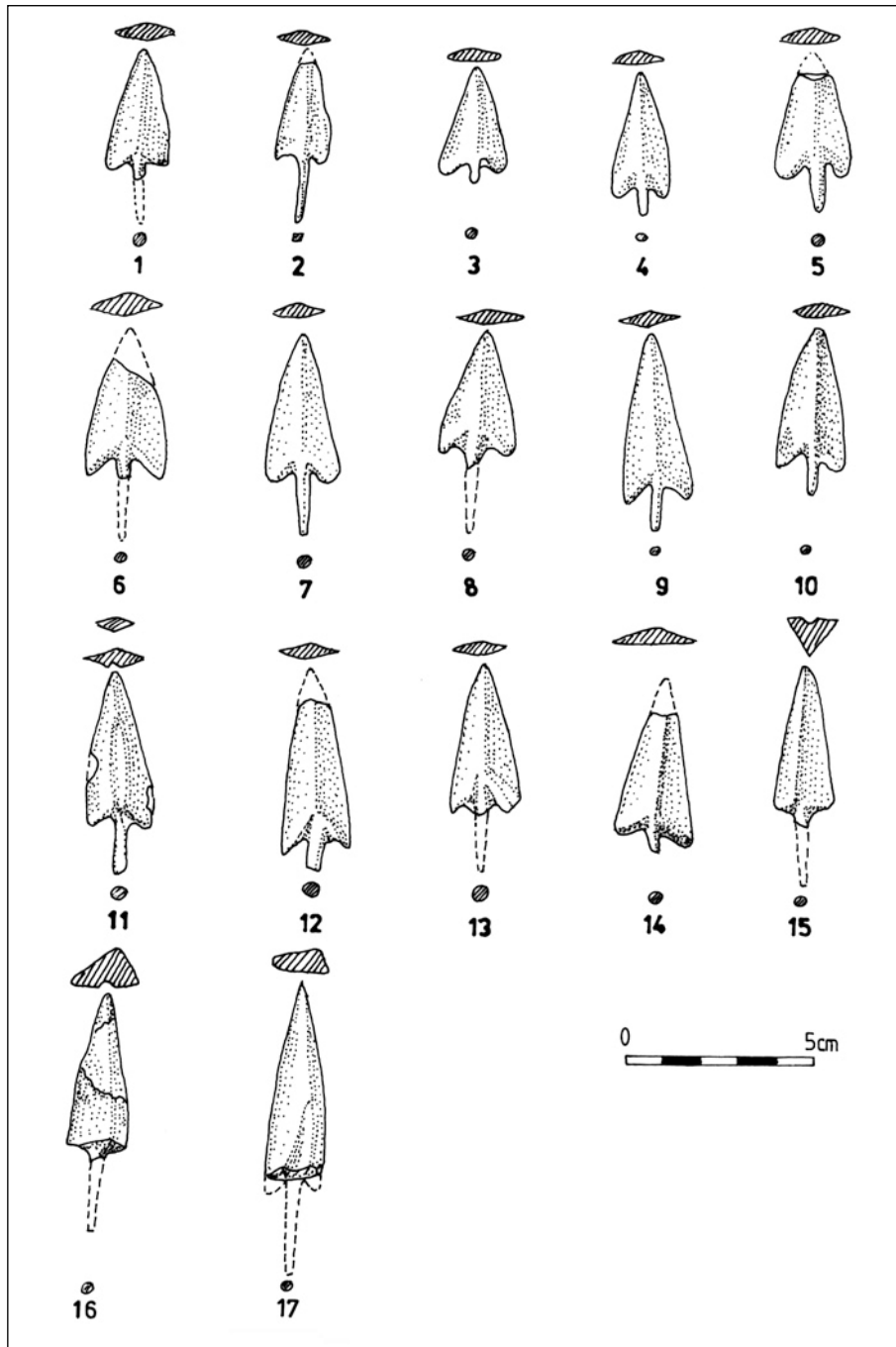


Abb. 10. Leichte Pfeilspitzen aus Knochen, die im Kastell vom Pomet-Berg entdeckt wurden

VI. EINIGE BEMERKUNGEN OHNE SCHLUSSFOLGERUNGSSCHARAKTER

1. die Vorherrschaft des Bogens, also der Bogenschützen in Porolissum entspricht dem Mangel an Waffen im allgemeinen und insbesondere dem Mangel an Hilfswaffen im "feindlichen" Raum vor dem Militärkomplex nicht
2. diese Lage könnte eine besondere Bedeutung haben; die Römer bewaffneten sich nicht unbedingt der Bewaffnung der Feinde entsprechend
3. es wäre aber möglich, daß die Truppen der reitenden Bogenschützen dank ihrer taktischen und technischen Überlegenheit ein wirksames Vorbeugungsmittel der Angriffe darstellte

Die wahre Antwort auf diesen Fragen wird aber erst nach dem Fortschreiten der Forschungen betreffs der beiden Seiten - sowohl der römischen als auch der barbarischen - kommen.

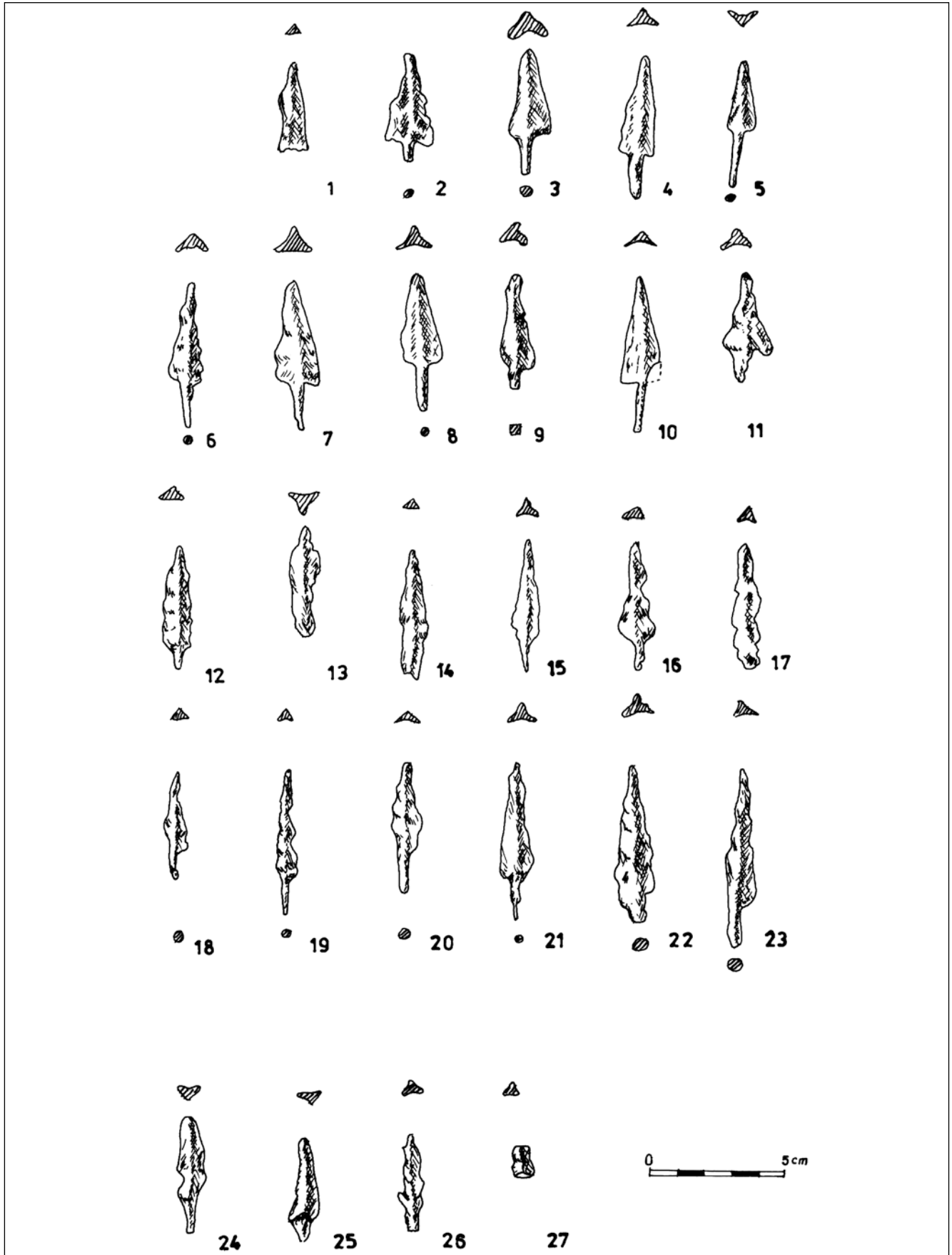


Abb. 11. Leichte Pfeilspitzen aus Eisen, die im Zollgebäude von Porolissum entdeckt wurden

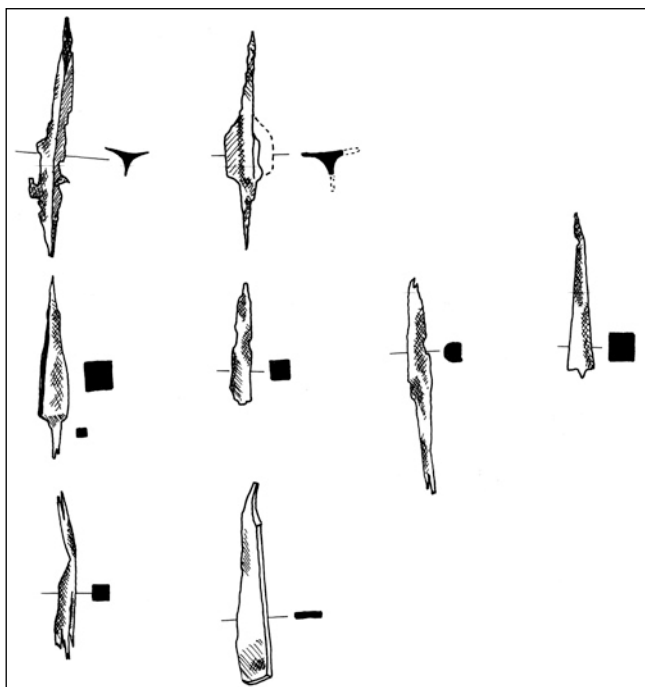


Abb. 12: Leichte Pfeilspitzen, die im Heiligtum des Jupiter Dolichenus entdeckt wurden (244-255 n. Chr.)

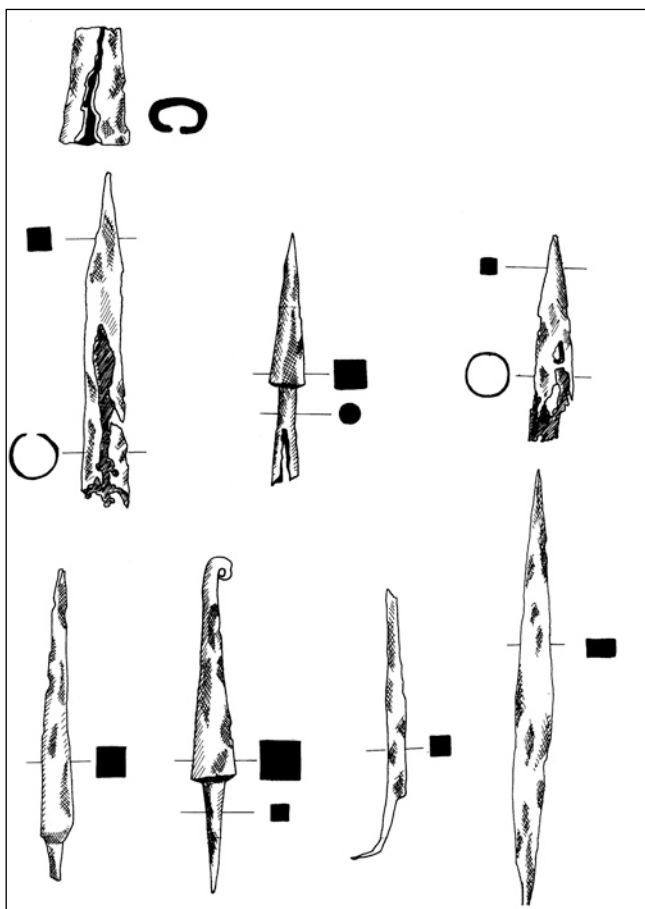


Abb. 13: Schwere Pfeilspitzen, die im Heiligtum des Jupiter Dolichenus entdeckt wurden (244-255 n. Chr.)

ANMERKUNGEN

1. GUDEA 1997.
2. MACREA 1969, 43-44, 55, 69.
3. MACREA 1969, 44, 56, 72-73.
4. Siehe die römischen Importe in der Nachbarschaft der Grenze: vgl. MATEI-STANCIU 2000, passim.
5. OPREANU 1998, 96-124.
6. GUDEA 1989, GUDEA 1996.
7. GUDEA 1989; GUDEA 1991; GUDEA 1997b.
8. GUDEA 1997, 27.
9. GUDEA 1989, 161-162.
10. GUDEA 1989, 166-167; PETOLESCU 1997, 106, Nr. 47.
11. GUDEA 1989, 166-; PETOLESCU 1997, 106, Nr. 46.
12. GUDEA 1989, 169-170; PETOLESCU 1997, 106-107, Nr. 48.
13. GUDEA 1989, 166-167; PETOLESCU 1997, 106, Nr. 46.
14. GUDEA 1989, 169-170; PETOLESCU 1997, 106-107.
15. GUDEA 1989, 162-164, 767, Nr. 29; PETOLESCU 1997, 85-86.
16. GUDEA 1989, 174-175; PETOLESCU 1997, 125-126, Nr. 73.
17. GUDEA 1989, 166-168.
18. GUDEA 1989, 169-170; PETOLESCU 1997, 169-170.
19. GUDEA 1989, 162-164, 767, Nr. 29; PETOLESCU 1997, 85-86.
20. GUDEA 1989, 174-175; PETOLESCU 1997, 125-126, Nr. 73.
21. GUDEA 1989, 160-161; GUDEA 1997, 28-29.
22. GUDEA 1989, 159-160; GUDEA 1997, 28.
23. GUDEA 1989, 168-169.
24. GUDEA 1989, 538-547.
25. GUDEA 1989, 545-546.
26. GUDEA 1997, 37.
27. GUDEA 1996, 235-239.
28. GUDEA 1996, 71.
29. MATEI-STANCIU 2001.
30. VADAY 1997.
31. KULCSÁR 1998, 64, Abb. 15.

BIBLIOGRAPHIE

- GUDEA 1989: Nicolae Gudea, *Porolissum. Un complex daco-roman la marginea de nord a Imperiului Roman. I. Cercetări și descoperiri arheologice pînă în anul 1977 / Porolissum. Ein dakisch-römischer Komplex an der Nordgrenze des Römischen Reichs. I. Archäologische Forschungen und Entdeckungen bis 1977*, Zalău, 1989
- GUDEA 1991: Nicolae Gudea, *Porolissum. Der Schlußstein des Verteidigungssystems des Provinz Dacia Porolissensis*, Marburg, 1991
- GUDEA 1996: Nicolae Gudea, *Porolissum. Un complex daco-roman la marginea de nord a Imperiului Roman. II. Vama romană. Monografie arheologică / Porolissum. Ein dakisch-römischer*

- Komplex an der Nordgrenze des Römischen Reichs. II. Das römische Zollgebäude. *Archäologische Monographie*, Cluj-Napoca, 1996
- GUDEA 1997: Nicolae Gudea, *Der dakische Limes. Materialien zu seiner Geschichte*, Mainz 1997. Sonderdruck aus *Jahr RGZM* **44**, 1997
- GUDEA 1997a: Nicolae Gudea, *Das Römergrenzkastell von Moigrad-Pomet. Porolissum 1 / Castrul roman de pe vârful dealului Pomet-Moigrad. Porolissum*, Zalău, 1997
- GUDEA 1997b: Nicolae Gudea, *Der Meseş Limes. Die vorgeschobenen Kleinfestungen auf dem westlichen Abschnitt der Grenze der Provinz Dacia Porolissensis / Limesul de pe Muntii Meseş. Linia înaintată de turnuri de pază de pe sectorul de vest al granitei provinciei Dacia Porolissensis*, Zalău, 1997
- IDR I 1977: *Inscriptiile Daciei Romane. I.*, Bucureşti, 1977
- KULCSÁR 1998: Valeria Kulcsár, *A kárpát-medencei szarmaták temetkezési szokásai* [Die Bestattungsriten der Sarmathen aus dem Donau-Becken], Aszód, 1998
- MACREA 1969: Mihail Macrea, *Viata în Dacia romană*. [Das Leben im römischen Dakien], Bucureşti, 1969
- MATEI-STANCIU 2000: Alexandru V. Matei-Ioan Stanciu, *Vestigii din epoca romană (sec. II-IV p. Chr.) în spațiul nord-vestic al României / Funde der römischer Zeit (2.-4. Jahrhundert n. Chr.) im Nordwestgebiet Rumäniens*, Zalău, 2000
- OPREANU 1998: Coriolan Opreanu, *Dacia romană și barbaricum / Das römische Dakien und das Barbaricum*, Timișoara, 1998
- PETOLESCU 1997: Constantin C. Petolescu, *Die Auxiliareinheiten im römischen Dakien*, in: N. GUDEA (Hrsg.), *Beiträge zur Kenntnis des römischen Heeres in den dakischen Provinzen*, Cluj-Napoca, 1997, 67-141
- VADAY 2001: Andrea Vaday, *Military system of the Sarmatians*, in: E. ISTVÁNOVICS-V. KULCSÁR (Hrsgs.), *International connections in the Carpathian Basin in the 1st-5th centuries*, Aszód-Nyíregyháza, 2001, 171-191

Untersuchungen zur Helmmaske von Kalkriese

Norbert Hanel und Frank Willer

Im Rahmen der Forschungen zu frühen römischen Maskenhelmen in Germanien hatten die Verf. die Möglichkeit, die Helmmaske von Kalkriese einer intensiven Analyse zu unterziehen¹. Das Waffenteil, das zu den größten erhaltenen und spektakulärsten Fundobjekten im Areal des antiken Schlachtfelds nördlich des Wiehengebirges bei Osnabrück zählt, kam bereits im Jahr 1990 bei den ersten großflächigen Ausgrabungen von Kalkriese zutage². Es wurde vor einem Abschnittswall in der Flur "Oberesch" gefunden (Abb. 1), der als Befestigungsanlage germanischer Aufständischer im Zusammenhang mit dem Hinterhalt gegen den Heereszug des Varus im Jahre 9 nach der Zeitenwende interpretiert wird³. Die stark korrodierte Helmmaske lag ungefähr vier m nördlich der Vorderfront des Walls auf der antiken Bodenoberfläche; sie war zusammen mit weiteren römischen Fundstücken, die jedoch nach ersten Erkenntnissen keine Verbindung mit der Gesichtsmaske aufweisen, von einer dünnen Schicht des erodierten Walls überdeckt.

Nach ihrer Auffindung, bei der die Helmmaske wegen der starken Korrosion noch nicht identifiziert werden konnte, durchlief das Fundstück zwei Restaurierungsphasen, bei denen im Jahr 1990 zunächst die originale Oberfläche freigelegt wurde und Fehlstellen und Brüche mit Epoxidharz geklebt und ergänzt wurden. Zehn Jahre später war es mit Hilfe von Röntgenaufnahmen und Computertomographien möglich, Korrekturen vor allem im Bereich der Mund, Nasen- und Augenpartien vorzunehmen.

Die erhaltene Helmmaske besteht aus drei Teilen: 1. der eisernen Unterlage, 2. dem Silberblech und 3. der Randeinfassung aus Kupferlegierung⁴. Die Maße der Maske betragen in der Höhe 17,1 cm, in der Breite maximal 16,3 cm und in der Tiefe etwa 8,6 cm. Öffnungen waren für die Augen, die Nasenlöcher und den Mund vorgesehen. Von dem die gesamte Gesichtsmaske überdeckenden, 0,2 - 0,3 cm dünnen Silberblech sind lediglich geringe Reste unter der U-förmigen Randeinfassung erhalten geblieben. Wie Schnittspuren und Aufwellungen zeigen, wurde das Blech zunächst mit einem Messer abgelöst und erst dann abgerissen. Die Randeinfassung war mit

insgesamt sechs Eisennieten am Rand der Eisenmaske befestigt. Experimentelle und technische Untersuchungen zur Montage von Silberblechen auf römischen Reiterhelmen haben ergeben, daß eine sichere und stabile Anbringung nur durch ein organisches Klebemittel erreicht werden konnte. Erste Analysen des Doerner Instituts (München) haben dies am Beispiel des Xantener Reiterhelms bestätigt⁵.

Aus dem Zustand des Waffenteils einerseits und aus seiner Fundlage andererseits lassen sich Rückschlüsse auf die antiken Verlustumstände der Kalkrieser Helmmaske ziehen. Danach fehlen jegliche Hinweise auf Beschädigungen, die vom unmittelbaren Kampfgeschehen herrühren könnten: Weder sind Spuren von Nahkampf- oder Fernwaffen festzustellen, noch z. B. solche, die mit einem Sturz vom Pferd zu erklären wären. Durch die Fundlage unmittelbar vor dem germanischen Abschnittswall wird suggeriert, daß die Helmmaske bzw. der komplette Maskenhelm mehr oder weniger in situ verloren ging. Allerdings muß in Betracht gezogen werden, daß die Helmmaske erst nach dem Ende der Kampfhandlungen und nach dem Entfernen des Silberblechs im Rahmen der Plünderungen des Schlachtfelds an diese Fundstelle kam, bevor sie durch das Erdreich des Walls überdeckt wurde. Gerade aus dem Entfernen des Silbers ergeben sich weiterreichende Aussagen: Nach dem vergeblichen Versuch, das Blech durch Aufhebeln abzulösen, wurde es zunächst mit einem (Messer-) Schnitt im Randbereich von der Eisenunterlage gelöst und erst anschließend größtenteils abgerissen. Die Frage, warum der Plünderer nicht den gesamten Helm bzw. die Gesichtsmaske mitnahm, ist dahingehend zu beantworten, daß es ihm vermutlich in erster Linie auf das Sammeln von Edelmetall ankam und das Eisen (zunächst) keine Rolle spielte.

Die Frage, wer den Maskenhelm in der Schlacht bei Kalkriese trug, ist mit Hilfe des Fundstücks selbst nicht zu klären. Aufgrund von Darstellungen auf Grabsteinen aus Mainz und Corbridge wurden *signiferi* der Legionen und der Kavallerie in Betracht gezogen.

Allerdings ist die Deutung der betreffenden Bildzeugnisse wegen der schlechten Erhaltung in der Forschung umstritten⁶. Besitzerinschriften auf jüngeren Maskenhelmen belegen

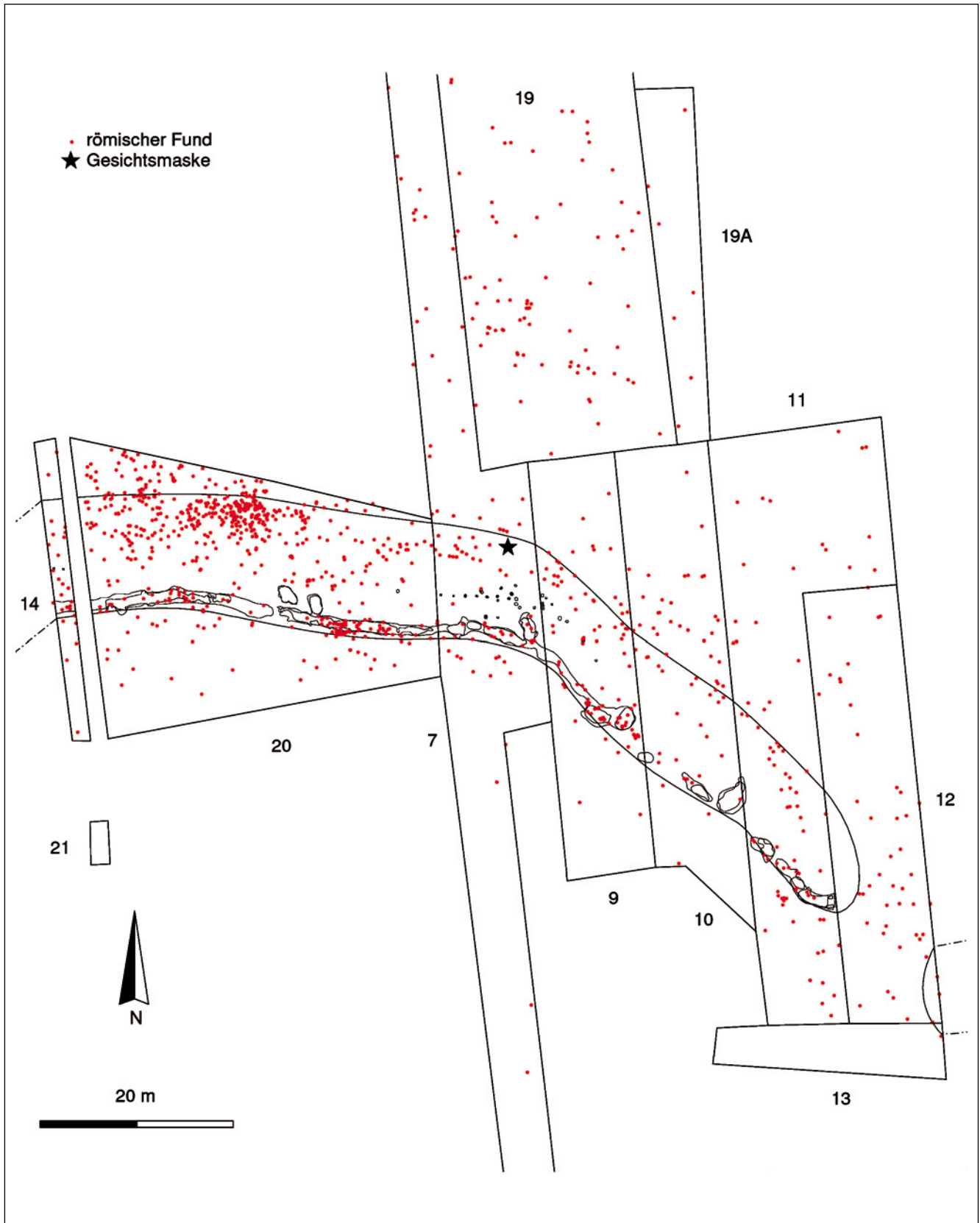


Abb. 1: Kalkriese "Oberesch", Stadt Bramsche (Landkreis Osnabrück). Die Fundstelle der Helmmaske vor dem Abschnittswall.



Abb. 2: Kalkriese. Die Helmmaske nach der 1. Restaurierung.



Abb. 3: Kalkriese. Die Helmmaske nach der 2. Restaurierung.

als Träger hauptsächlich gemeine Reitersoldaten⁷. Die ursprüngliche Vermutung, daß es sich bei dem Träger des Kalkrieser Maskenhelms um einen hochrangigen Angehörigen einer gallischen oder thrakischen Reitertruppe gehandelt hat, läßt sich nicht aufrecht erhalten⁸. Was die allgemeine Fundstreuung anbelangt, zeichnet sich zwar ein Verbreitungsraum für die Maskenhelme vom Typ Nijmegen-Kops Plateau in Gallien und Thrakien ab, jedoch gilt dies nicht für diejenigen des Typs Kalkriese. Letztere wurden fast ausschließlich am Niederrhein gefunden; die Herkunftsangabe Bulgarien bzw. östliches Donaugebiet ist bei drei Exemplaren des Typs Kalkriese in der Sammlung A. Guttmann und in der New Yorker The Shelby White and Leon Levy Collection unsicher⁹. Ob der Maskenhelmtyp Kalkriese unter römischen Einfluß am Niederrhein, möglicherweise im Gebiet der Bataver entstanden ist, läßt sich wegen der geringen Anzahl an Funden derzeit nicht entscheiden.

Anhand des ehemaligen Silberblechs der Kalkrieser Helmmaske und mit Hilfe von Angaben in einem frühkaiserzeitlichen Papyrus wurde der Versuch unternommen, eine ungefähre Vorstellung über den Preis eines römischen Maskenhelms zu gewinnen. Das Gewicht des Silberblechs betrug ungefähr 30 - 35 g. Dies entsprach etwa 7,5 bis 10 *denarii* aus der Zeit des Augustus. In spätkaiserlicher Zeit betrug der Jahressold eines Auxiliarreiters (*eques cohortis*) 225 *denarii*; demgegenüber erhielt ein Alenreiter und ein Legionsreiter gleichermaßen 262,5 *denarii* pro Jahr¹⁰. Abhängig von der Truppenzugehörigkeit hatte das Silberblech der Kalkrieser Helmmaske einen Wert, der zwischen 10,7 und 16,6 Tagessätzen lag. Über den Gesamtwert dieser Helmmaske samt dem zugehörigen Helm lassen sich nur Vermutungen anstellen. Immerhin erlaubt ein Papyrus aus dem Jahr 27 nach der Zeitenwende, eine gewisse Vorstellung vom Wert eines zeitgenössischen Reiterhelms zu gewinnen. Ein Reiter einer *ala* hinterlegte als Pfand für 400 kaiserliche und ptolemäische Drachmen, die etwa 100 *denarii* entsprachen, drei Ausrüstungsteile, bei denen es sich um einen versilberten Helm, um ein versilbertes Abzeichen und eine mit Elfenbein eingelegte versilberte Dolchscheide handelte¹¹. Auch wenn der jeweilige Einzelwert der drei Waffenteile nicht bekannt ist, läßt sich der Wert des Helms auf umgerechnet 40 bis 50 *denarii* veranschlagen. Demnach besaß ein Reiterhelm zwar einen gewissen Wert, aber von einer teuren Prunkausrüstung kann in diesem Zusammenhang wohl nicht gesprochen werden.



Abb. 4: Kalkriese. Röntgenaufnahme der Helmmaske.

ANMERKUNGEN

1. HANEL–PELTZ–WILLER 2000; HANEL–ROHNSTOCK–WILLER 2001/2002. - Eine ausführliche Untersuchung ist in den Bonner Jahrbüchern erschienen: HANEL–WILBERS–ROST–WILLER, 2004.
2. FRANZIUS 1991, 53-59.
3. SCHLÜTER 1999, 41-48; WILBERS-ROST, 2003, 125.
4. Zu den Metallanalysen des Silbers und der Kupferlegierung vgl. FRANZIUS 1991, 53 Anm. 1-2.
5. Eine Publikation der Analyseergebnisse ist für die Bonner Jahrbücher vorgesehen.
6. zuletzt JUNKELMANN 1996, 20-22.
7. GARBSCH 1978, 33-34; HANEL-PELTZ-WILLER 2000, 271.

8. FRANZIUS 1991, 135; SCHLÜTER 1999, 138.
9. HANEL-PELTZ-WILLER 2000, 269-272.
10. SPEIDEL 1996, 66 mit Abb. 34; 94-96.
11. HARRAUER-SEIDER 1979, 111.

BIBLIOGRAPHIE

- FRANZIUS 1991: G. Franzius, Die Maske eines Gesichtshelms. In: *W. Schlüter, Römer im Osnabrücker Land. Die archäologischen Untersuchungen in der Kalkrieser-Niederwedder Senke. Schr. Kulturregion Osnabrück des Landschaftsverbandes Osnabrück e. V.* 4, 1991, Osnabrück 53-59
- GARBSCH 1978: J. Garbsch, *Römische Paraderüstungen*, München, 1978

- HANEL – PELTZ – WILLER 2000: N. Hanel – U. Peltz – F. Willer, Untersuchungen zu römischen Reiterhelmmasken aus der Germania inferior, *Bonner Jahrb.* **200**, 2000 (2003), 243-274
- HANEL – ROHNSTOCK – WILLER 2005: N. Hanel – U. Rohnstock – F. Willer, Untersuchungen zu römischen Reiterhelmmasken in der Germania Inferior, *Journal Roman Military Equipment Stud.* **12/13**, 2001/2002 (2005), 9-13
- HANEL – WILBERS-ROST – WILLER 2004:
N. Hanel – S. Wilbers-Rost – F. Willer, Die Helmmaske von Kalkriese, *Bonner Jahrb.* **202**, 2002/2004
- HARRAUER – SEIDER 1979: H. Harrauer – R. Seider, Ein neuer lateinischer Schuldschein: P. Vindob. L 135. *Zeitschr. Papyrol. u. Epigr.* **36**, 1979, 109-120
- JUNKELMANN 1996: M. Junkelmann, *Reiter wie Statuen aus Erz*, Mainz, 1996
- SCHLÜTER 1999: W. Schlüter, Zum Stand der archäologischen Erforschung der Kalkrieser-Niewedder Senke, W. SCHLÜTER – R. WIEGELS (Hrsg.): *Rom, Germanien und die Ausgrabungen von Kalkriese. Akten Internat. Kongr. 2.-5.9.1996, Osnabrück. Osnabrücker Forsch. Alt. u. Ant.-Rezeption 1*. Osnabrück, 1999, 13-60
- SPEIDEL 1996: M. A. Speidel, *Die römischen Schreibtafeln von Vindonissa. Veröff. Ges. Pro Vindonissa* **12**, 1966, Brugg
- WILBERS-ROST 2003: S. Wilbers-Rost, Der Hinterhalt gegen Varus. Zu Konstruktion und Funktion der germanischen Wallanlage auf dem "Oberesch" in Kalkriese, *Die Kunde N. F.* **54**, 2003, 123-142



Conditions for the preservation of Roman military equipment on battlefields - the example of Kalkriese¹

Achim Rost

Weapons and military equipment are well known from the main categories of archaeological sites: settlements, cemeteries, cult sites and deposits. Military objects from battlefields, however, are rare. The Kalkriese project² therefore is of great importance for archaeological research. During the last 15 years about 20 000 m² have been excavated and more than 5 000 artefacts and fragments of Roman military equipment have been discovered.

When the project started we assumed that this kind of material was typical for a battlefield. But during our research we realised that certain distinctions had to be made. For the interpretation of battlefields it is essential to analyse those processes by which the material remains were reduced after the end of the actions. This is an important premise in order to make assumptions on the nature of a battle based on the archaeological record. Especially when studying battle sites on the open field where we usually do not have any man-made traces like walls or ditches which might inform us about military activities, our knowledge depends largely on artefact distribution.

The value of an archaeological site is generally determined by a number of factors that have an effect on the preservation of finds and features over the centuries, like landscape development, vegetation and agriculture. The amount of archaeological remains on battlefields also depends on the size of the military units, i.e. when large troops were engaged in a battle and one party was clearly defeated is there a chance for archaeologists to find enough remains of their equipment.

The most important factors for the archaeological evidence of a battlefield, however, seem to be processes of looting which must be expected on battle sites of all periods. Such activities result in the enormous diminution of the remains that originally spread across a field at the end of a battle. The success of archaeological investigations depends on the events after the battle, such as the treatment of the

dead and wounded soldiers: were those who had been killed in the action gathered to be buried, or did looters strip the dead soldiers at the places of their death, only interested in getting weapons, equipment or just metal for recycling? It is the aim of this paper to discuss these different processes of looting or clearing up a battlefield.

Virtually all military equipment - at least those pieces which had been attached to a body - might have been removed from a battle site if both losers and winners were able to take care of their dead and wounded people. For our studies this would mean that all objects had been taken away before entering the archaeological record.

Various examples serve to demonstrate how problematic it is to identify an archaeological site as a battlefield under such circumstances. Analyses of ancient battlefields often depend on finds of sling shots and iron arrowheads while the evidence of more recent battlefields is based on the projectiles of firearms. For example in Olynthos, Northern Greece, an ancient town that was besieged and stormed, sling shots and arrow heads from the aggressors were found almost exclusively³. Distribution maps of the battlefield of Palo Alto (US-Mexican war) are first of all based on the ammunition of firearms⁴. Such "one-way-weapons" were scattered widely and were at the same time too small and worthless for contemporaries to retrieve them after the battle. Nearly all other pieces of military equipment and weapons were removed by plundering or clearing up the battlefield. One can easily imagine how little remains of military actions if such weapons were not used: very few objects would be left, and they could hardly be taken as a certain proof of a battlefield.

The situation in Kalkriese is very different; there are so many archaeological finds that it makes us wonder why this is the case. As the processing of the Roman finds is still in progress in Kalkriese, our analysis will be limited to certain significant artefact groups. In our attempt to analyse the distribution of finds on a battlefield



Fig. 1: Roman legionary with objects which were found in Kalkriese (in red).

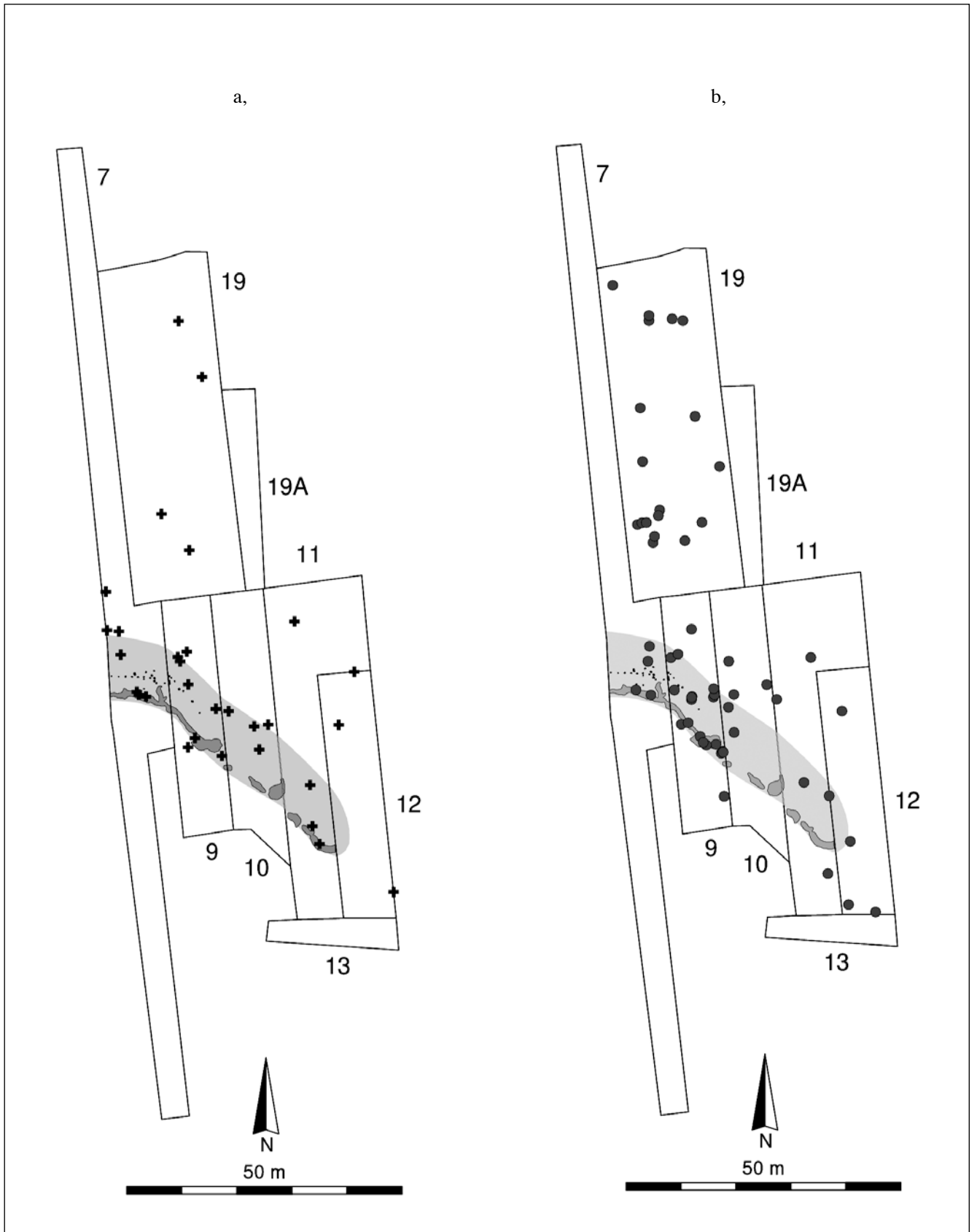


Fig. 2a and b: Distribution of finds on the Oberesch: a) pieces which were not attached to the body; b) pieces attached to the body.

for aspects of looting, we do not consider it important to subdivide the military equipment according to their original use such as weapons of defence or offence. Instead it is important to deliberate about characteristic criteria that correspond with those activities and perceptions we expect from the looters on the battlefield. It is therefore important to ask which pieces of the legionary's equipment were originally attached tightly to his body and which were not (Fig. 1). We find a large amount of small fragments of the soldiers equipment fixed to the body, such as buckles and plates from plate armour, hooks from ring mail shirts, scabbard fittings, belt buckles and apron fittings, which is remarkable⁵. They are widely scattered on the field "Oberesch", the main site at Kalkriese. In contrast, those fragments of military equipment which were not attached to the soldier (Fig. 2a) - like lances, *pila*, shields or sword blades - are rarer (Fig. 2b)⁶.

How can we explain this? We suppose that fragments of the attached objects which are widely spread across the field resulted from a special kind of looting: the despoiling of dead soldiers at the place of their death is most likely to cause such a picture. Tearing off armour and belts from corpses is a drastic and violent action, combined with the destruction of fittings and locking hooks. The objects involved were small and might therefore have escaped the attention of the looters; for this reason they were preserved until today.

Our understanding of processes of looting can be improved by studying more recent battlefields that are better documented. For example, drawings of the battle of Waterloo show that the dead soldiers were buried in mass graves while their uniforms were collected next to the burial site⁷, i.e. the corpses were assembled with their equipment and they were stripped just before being buried. Such a process could never cause a wide artefact distribution as can be observed in Kalkriese. At the site "Oberesch" it was the stripping of Roman soldiers at the places of their death by Germanic looters that resulted in the spread of small fragments of military equipment which was originally attached to the body. In order to complement our studies we need to analyse all the other categories of military equipment like baggage and objects of personal use⁸ under similar aspects, asking for the reasons why these objects were left on the battlefield⁹.

It appears that the complete destruction of a large army, richly equipped with metal objects, that was completely left to the arbitrariness of the victors - without giving the defeated the possibility to rescue their wounded and dead soldiers

- would be most favourable for the battlefield archaeologist. It seems likely that the battlefield of Kalkriese results from such an encounter by which the Roman army was completely destroyed by their Germanic adversaries. While we have a lot of small fragments from the equipment of the defeated Roman army, there are hardly any artefacts of Germanic origin. We must assume that the Germans, having been victorious in their own territory, were able to retrieve their dead warriors together with their equipment and bury them elsewhere in regular cemeteries.

Based on these theoretical reflections, further conclusions can be drawn. If we know the historical context of a battle we can infer the circumstances in which activities could have taken place after the battle and we might therefore assess the chance for finding archaeological traces on the battlefield.

For example at the Gallic hilltop site Alesia, having been besieged by Caesar, hardly any pieces of Roman equipment attached to the body were found¹⁰. One reason could be that unlike in Kalkriese it was the Romans who were successful in this action and were therefore able to collect their dead and wounded soldiers¹¹.

Taking into account the processes of looting may also help us in identifying the battlefield of Kalkriese with more certainty. There has been much debate whether Kalkriese really was the site of the Varus Battle or whether it was one of the sites where Germanicus fought against the Germans six years later. Some historians tried to resolve this problem by studying the coin evidence from the site, but this does not provide a conclusive answer¹². Perhaps archaeological theory can lead to a new insight.

Our ancient sources on Germanicus' military activities, especially on the fights between Caecina and the Germans, recount that the Romans were able to care for their wounded legionaries and the baggage by carrying them along with the intact parts of the troops¹³. The quantity of archaeological remains must be extremely small in such cases and it might be nearly impossible to recognise such a battle site archaeologically. But the military context of the Varus Battle is very different from Caecinas' combats. Based on our literary sources¹⁴, the Roman army can be expected to have been completely destroyed by the Germans; the Roman officers are recorded as having committed suicide. For the six years that followed the battle the Roman army was not capable of taking care of the dead soldiers and their equipment; the corpses were completely left to the arbitrariness of the Germans, who were able to plunder brutally. It therefore seems the identification of the Kalkriese battlefield with

the combat that took place between Varus and Arminius in the year AD 9 is much more probable.

There is a further aspect which needs to be considered when analysing the processes of looting. When we try to reconstruct the course of a battle we have to take into account the fact that looting does not only reduce the number of relics on a battlefield but that these processes work selectively. Thus the density of archaeological finds does not allow us to draw conclusions about the intensity of a fight at a particular place. If we imagine the situation at the end of a battle of annihilation, the zones of major combat activity must have been covered with many corpses and pieces of military equipment. When such places of concentrations with many interesting objects were looted hardly any items would have escaped the attention of the plunderers. Archaeologists therefore would not find many objects at such central places of battles, except when corpses had been stripped. In contrast to these central fighting areas, there are zones that are more marginal; at the margins of the Kalkriese battle site, we can find fewer, but often rather valuable objects, such as coin hoards and even the complete silver fittings of a scabbard¹⁵. This shows that looting was probably less thorough in these marginal areas where the plunderers saw only a few corpses and a few items of their equipment. Sometimes these objects of larger value have been interpreted as indications of fights in which more officers were involved¹⁶. In my opinion such objects must have been left in much larger quantities in central zones of the battle area than at its edges after the end of the fights, but in areas with large concentrations of equipment they were retrieved more fully by the looters together with the other military equipment. At these main areas with intensive fights we will therefore find only small fragments which were left after the stripping of the bodies. Thus the looting of a battlefield manipulates the later picture of the distribution of finds; archaeological sources sometimes appear to indicate the opposite of the original proportions. The battlefield of Kalkriese with its relatively large amount of remains from the Roman army has turned out to be of great relevance for a more detailed analysis of processes after the battle.

NOTES

1. For his help in improving my English text I would like to thank Dr. Ralph Häussler, University of Osnabrück.
2. For information about the battlefield in Kalkriese compare the article of Susanne Wilbers-Rost in this volume
3. LEE 2001.
4. HAECKER 2001.
5. FRANZIUS 1992.
6. The concentration of finds close to the wall is very particular because the destruction of some parts of the wall during and immediately after the battle covered a larger number of objects (compare paper of S. Wilbers-Rost in this volume). This situation helped to preserve such items from looting.
7. Von KEUSGEN 1999, Fig. page 190 below left.
8. Though there are only small fragments, we get a lot of information about the equipment of the Roman army from them.
9. We also have to analyse larger parts of the excavated area in the same way.
10. For military equipment from Alesia compare SIEVERS 1995, 156-157; SIEVERS 2001.
11. The difficulty in finding the place where Boudicca fought against the Roman army in Britain might have similar causes.
12. CHANTRAINE 2002.
13. Tacitus *Ann.* I 63-68.
14. Tacitus *Ann.* I, 59-62.
15. BERGER 1996 (coins); FRANZIUS 1999; HARNECKER-TOLKSDORF-LIENEMANN 2004 92-99.
- The distribution of sites in the Kalkriese area can be seen in the article of S. Wilbers-Rost in this volume (Fig. 1). The scabbard and most of the coin hoards were found near the bog (Großes Moor), more than 2 km northwest of the "Oberesch". Further aspects in ROST 2007; ROST 2008.
16. SCHLÜTER 1999, 49.

BIBLIOGRAPHY

- BERGER 1996: F. Berger, *Kalkriese 1 - Die römischen Fundmünzen*. Römisch-Germanische Forschungen **55**, Berlin, 1996
- CHANTRAINE 2002: H. Chantraine, Varus oder Germanicus? Zu den Fundmünzen von Kalkriese. In: *Thetis* **9**, 2002, 81-93
- FRANZIUS 1992: G. Franzius, Die Fundgegenstände aus Prospektion und Grabungen in der Kalkrieser-Niewedder Senke bei Osnabrück. In: W. SCHLÜTER et al.: Archäologische Zeugnisse zur Varusschlacht? Die Untersuchungen in der Kalkrieser-Niewedder Senke bei Osnabrück, *Germania* **70**, 1992, 349-383
- FRANZIUS 1999: G. Franzius, Beschläge einer Gladiusseide und Teile eines cingulum aus Kalkriese, Lkr. Osnabrück. In: *Germania* **77**, 1999, 567-608
- HAECKER 2001: Ch. M. Haecker, The official explanation versus the archaeological record of a US-Mexican War battle. In: P. FREEMAN, A. POLLARD (Ed.), *Fields of Conflict. Progress and Prospect in Battlefield Archaeology. Proceedings of a conference held in the Department of Archaeology, University of Glasgow*, BAR International Series **958**, Oxford, 2001, 135-141

- HARNECKER – TOLKSDORF-LIENEMANN 2004: J. Harnecker – E. Tolksdorf-Lienemann et. al., *Kalkriese 2 - Sondierungen in der Kalkrieser-Niewedder Senke*. Röm.-German. Forschungen **62**, Mainz, 2004
- VON KEUSGEN 1999: H. K. von Keusgen, *Waterloo 1815. Meilenstein europäischer Geschichte*. Garbsen, 1999
- LEE 2001: J. W. I. Lee, Urban combat at Olynthos, 348 BC, P. FREEMAN – A. POLLARD (ed), *Fields of Conflict. Progress and Prospect in Battlefield Archaeology. Proceedings of a conference held in the Department of Archaeology, University of Glasgow*. BAR International Series **958**, Oxford, 2001, 11-22
- ROST 2006a: Achim Rost, The Battle of Varus (9 AD) - Methodological ideas for the interpretation of ancient battlefields. In: *American Battlefield Protection Program. Fields of Conflict III, Proceedings of a Conference in Nashville, Tennessee*, April 2004, (in print)
- ROST 2006b: Achim Rost, Quellenkritische Überlegungen zur archäologischen Untersuchung von Schlachtfeldern am Beispiel von Kalkriese. *Akten des Kongresses "Alesia und Kalkriese"* in Paris, April 2005, (in print)
- ROST 2007: A. Rost, Characteristics of Ancient Battlefields: Battle of Varus (9 AD), D. SCOTT – L. BABITS – CH. HAECKER (eds), *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*. Westport, 2007, 50–57
- ROST 2008: A. Rost, Quellenkritische Überlegungen zur archäologischen Untersuchung von Schlachtfeldern am Beispiel von Kalkriese, M. REDDÉ – S. von SCHNURBEIN (Hrsg.), *Alésia et la bataille de Teutoburg. Un parallèle critique des sources*. Francia Beih. **66** Ostfildern, 2008, (in print).
- SCHLÜTER 1999: W. Schlüter, Zum Stand der archäologischen Erforschung der Kalkrieser-Niewedder Senke, R. WIEGELS – W. SCHLÜTER (ed), *Rom, Germanien und die Ausgrabungen von Kalkriese. Osnabrücker Forschungen zu Altertum und Antike-Rezeption*, Osnabrück, 1999, 13-60
- SIEVERS 1995: S. Sievers, Die Waffen. In: M. REDDÉ et. al., Neue Ausgrabungen und Forschungen zu den Belagerungswerken Caesars um Alesia (1991-1994). *Bericht der Römisch-Germanischen Kommission* **76**, 1995, 135-157
- SIEVERS 2001: S. Sievers, Les armes d'Alésia. In: M. REDDÉ, S. von SCHNURBEIN (ed), *Alésia. Fouilles et recherches franco-allemandes sur les travaux militaires Romains autour du Mont-Auxois*. Vol. 2: Le matériel. Paris, 2001, 194-198

Special features with Roman military equipment in Kalkriese

Susanne Wilbers-Rost

Since 1987 archaeological research has taken place at Kalkriese Hill north of Osnabrück. During this time more and more hints were found that the place of the Battle of Varus, also known as “Battle of the Teutoburg Forest”, can be located in the area at the edge of the Wiehengebirge.

The site was discovered by chance in 1987. Roman silver coins and three Roman sling shots were the first artefacts which showed that Roman troops had passed this area - an area where a few contemporary Germanic sites were known but where Romans had never settled. More intensive field surveys started in 1988, and one year later different places with Roman coins and a few pieces of Roman military equipment were identified. They showed a large distribution in an area of more than 30 km² between the northern slope of the Kalkriese Hill (Fig. 1), a part of the Wiehengebirge, and the south rim of the Great Bog which is 2 to 5 kms north of the mountains. In the centre of the find area systematic excavations started on a field called “Oberesch” in 1989 because some coins and military pieces had been found close together. After some weeks more finds had become unearthed - among them the face mask of a Roman helmet (Fig. 2) - and an artificial structure was discovered under a thick layer of turf which farmers had put on the fields during the Middle Ages - the so-called Plaggenesch. Diverse observations led to the conclusion that the site was not a Roman camp but the place of a battle among Romans and Germans. The rampart had been built by the Germans as an ambush to attack Roman troops which they had probably expected at this place. Other sites, however, showed that actions had not only taken place on the “Oberesch”, but at different places along the hill and the bog.

Besides silver coins a few gold coins and a lot of copper coins, some with a countermark of P. Q. Varus (head of the Roman troops in Germany from AD 7 to 9,) were found. They helped to ascertain the date of the battle: after 7 AD and, as no coin produced after AD 10 was unearthed, before AD 10¹. Together with the large find area, the rampart and the type of finds we slowly realized that the site of the Battle of Varus had probably been found. Many people had looked

for the site of this battle, but nobody had yet discovered it - though in 1885 the famous historian Theodor Mommsen had already interpreted this area as the place of the Battle of Varus because he knew of many Roman coins which farmers had collected during their work in their fields².

In AD 9 Varus was said to have had a summer camp near the river Weser. When he wanted to go back to the camps at the Rhine in the autumn he was - as Roman historians have written - led into an ambush and his three legions were nearly completely destroyed by Germans³. Finds show that the Roman troops reached the Kalkriese Hill, probably coming from the east, and that they were attacked at a number of places. After 20 years of research we think that the number of soldiers was less than people believed before systematic investigations had started - much less than 20 000, perhaps only 10 000. The ambush must have been planned before the Romans reached this area. The place was chosen perfectly, since it was far from the nearest Roman camps at Rhine and Lippe (at least 70 to 100 kms). In the case of an attack there was almost no chance for the Romans to send a relieving army.

THE WALL

At first the wall on the “Oberesch” seemed to be a semi-circle, but now we know that it had the form of a zigzag, nearly like bastions of a fort (Fig. 3). The wall must have had a width of about 4 m and a height of nearly 2 m; at least a small section had a palisade to protect the Germanic warriors on the wall. Behind the wall there was a drainage ditch to prevent the rampart from being destroyed by strong rain before the Romans arrived there. The wall had doors and gates; thus the Germans were able to leave the shelter of the wall to fight, but they could also go back easily. In total the wall had a length of about 400 m and was built between two creeks. The Germans built quite efficiently and used for example the natural situation of the ground or the edge of a wood. They also took material they found in the immediate vicinity: sometimes turf and sand, sometimes even limestone where turf was rare.

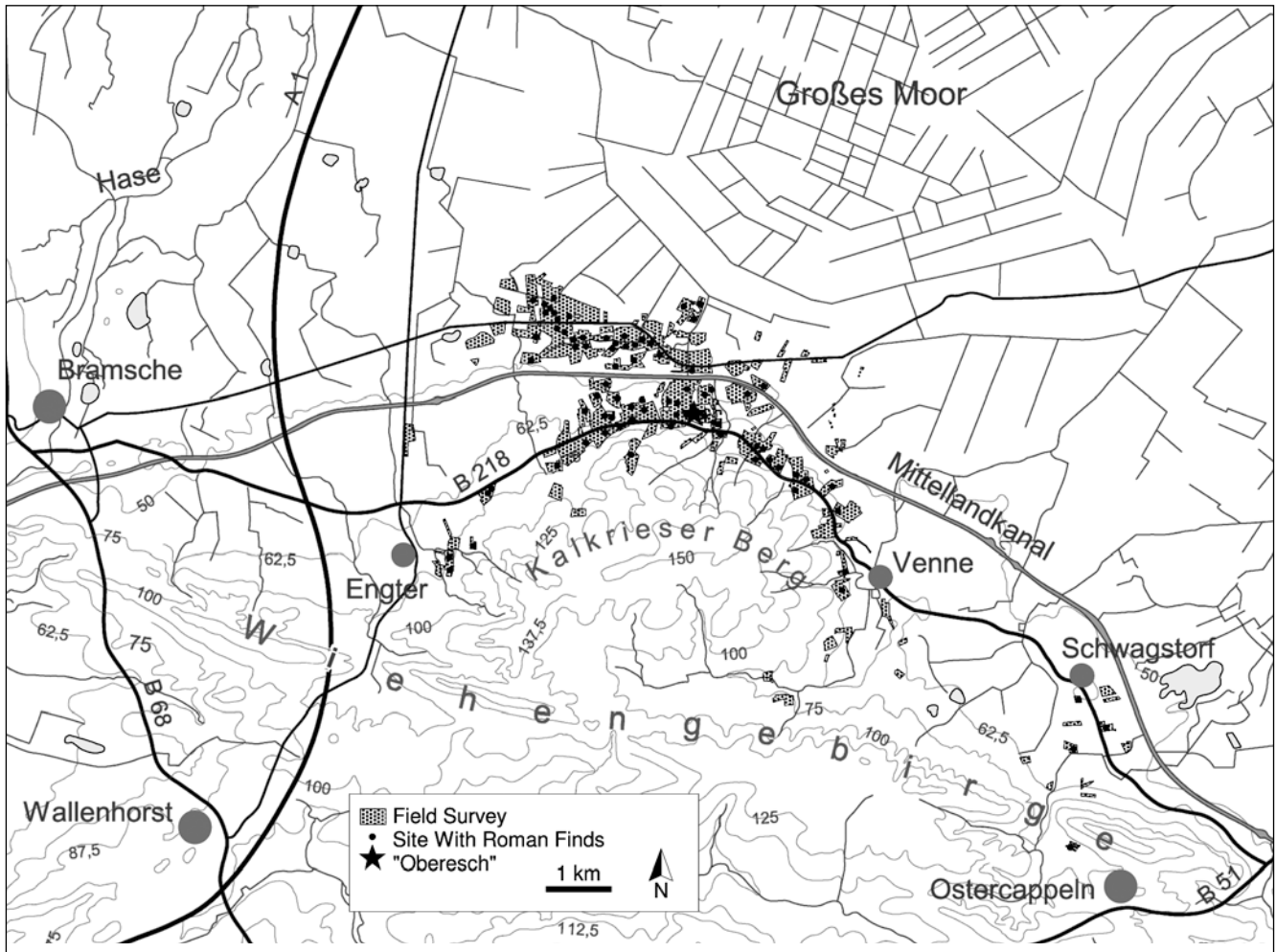


Fig. 1: Research area of the Kalkriese-Project.



Fig. 2: Iron face mask of a Roman helmet.

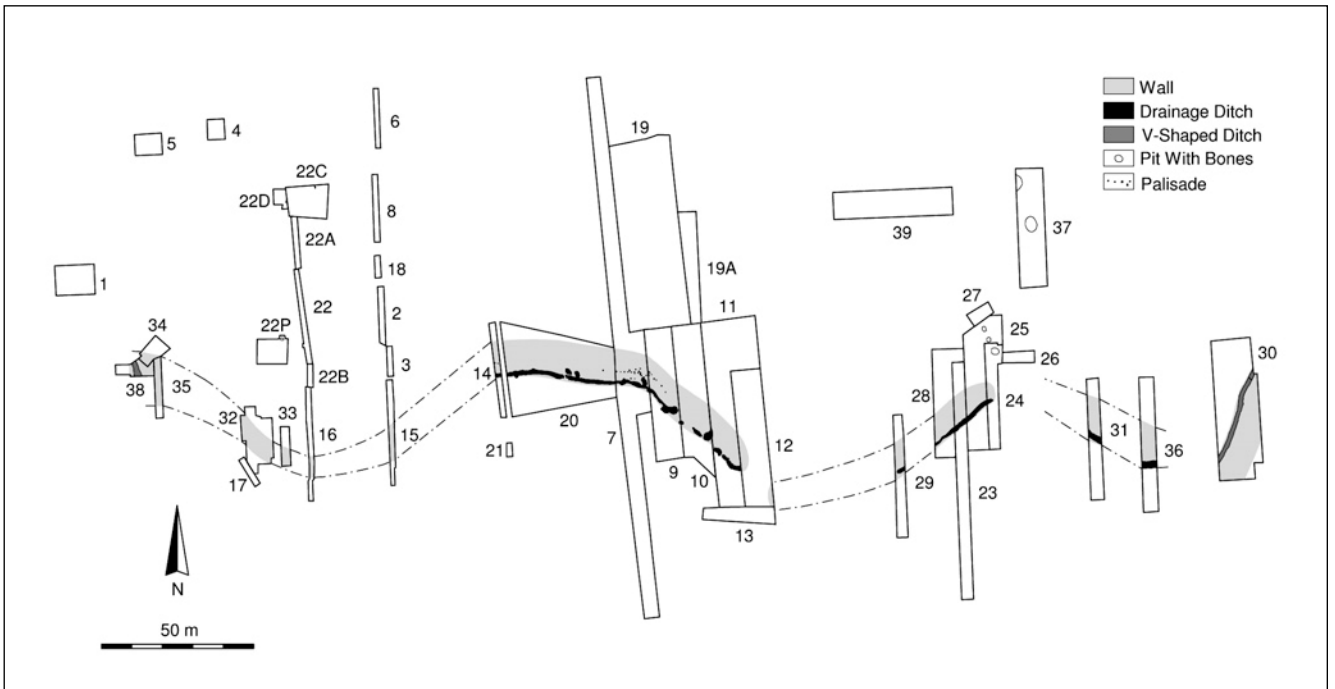


Fig. 3: "Oberesch site" with features of the battlefield: wall with ditches and palisade, pits with bones.

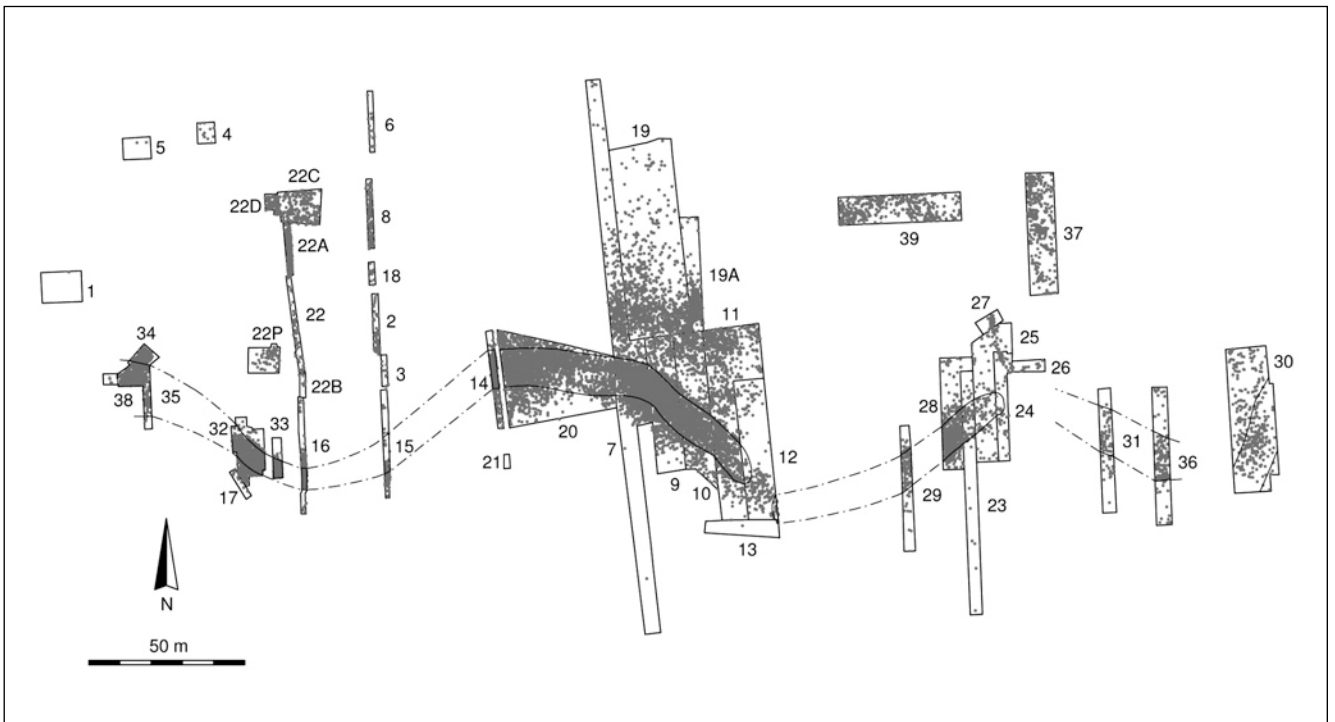


Fig. 4: Wall on the "Oberesch site" and distribution of pottery of the Pre-Roman Iron Age.

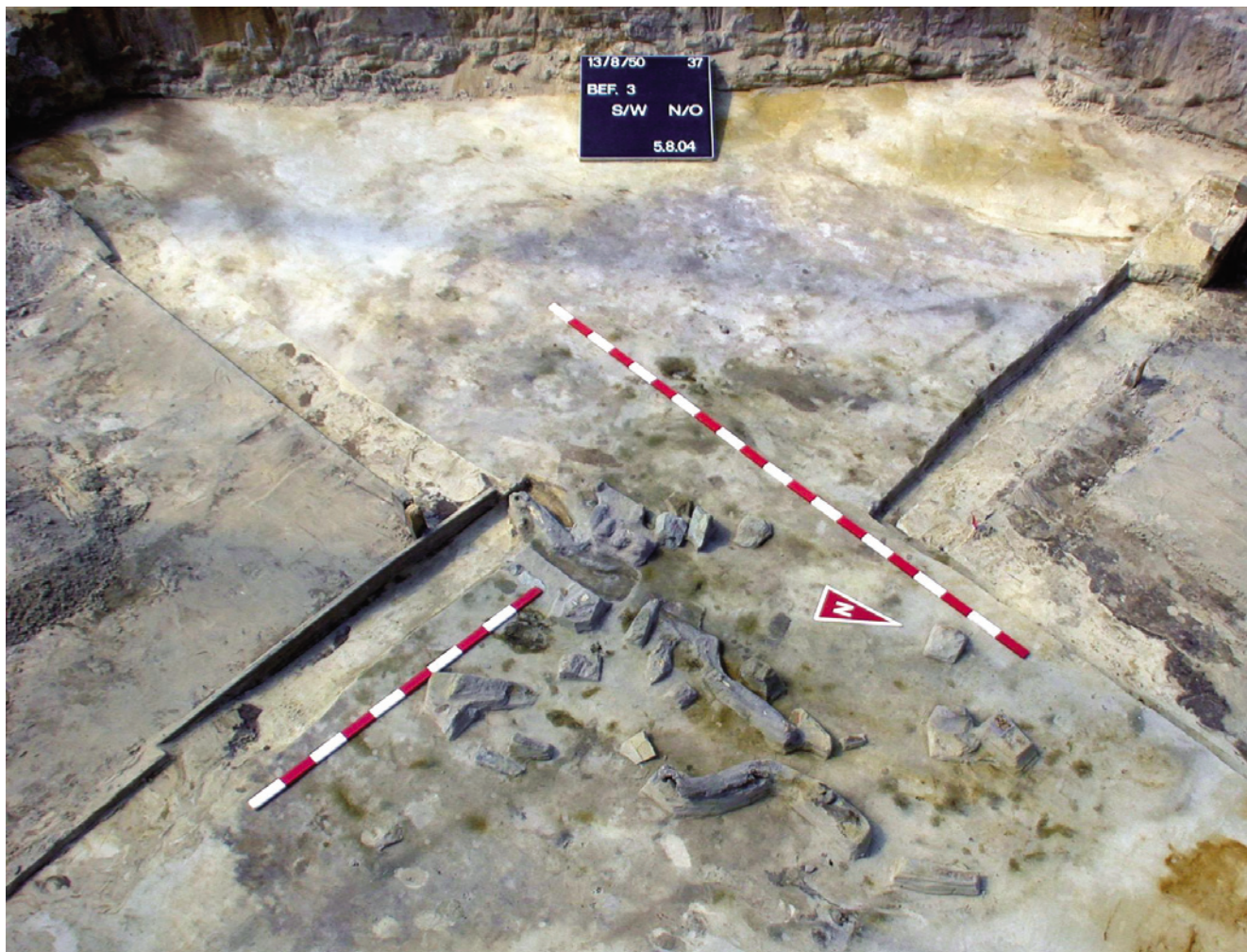


Fig. 5: Large pit with fragments of bones.

Turf and sand were accessible in front of the wall. The area of a Germanic settlement that had been left some decades before the battle was probably used as a meadow for cattle after it. Mapping potsherds of the Pre-Roman Iron Age (Fig. 4) one can identify a zone with many fragments of pottery. In front of the wall there is less pottery, then another zone with a lot of pieces follows in the north. While the zone with much ceramics shows the position of the wall, the zone with only a few fragments indicates the area where the grass sods were taken away for the construction of the wall. Thus mapping of artefacts which do not belong to the battle helped to reconstruct details of the rampart.

BONES

Besides the wall as a structure of the battle itself features of Roman activities some years after the fight have been found: pits with bones of the dead soldiers. Human bones, however, are in all cases mixed with animal bones. The skeletons are never complete and most of the bones are only small frag-

ments in a very bad condition (Fig. 5). They must have been lying on the surface for some years before they were deposited - between 2 and 10 years as osteologists found out. Some bones show strokes from swords, and all the human bones except one fragment are from men. They were between 20 and 40 years old and well nourished. A few Roman artefacts were found in the pits, like a big knife for cutting leaves for example (Fig. 6). Zoologists and anthropologists had the impression that these finds are the remains of Roman soldiers and of animals of their baggage train, and that they were not buried immediately after the battle but six years later. Therefore we can interpret these pits as part of the activities of the Roman commander Germanicus who visited the site of the battle and buried the dead soldiers as the written sources tell us⁴. Those pits with bones (of which we now have eight) are obviously a kind of mass-grave for the legions of Varus. They were only discovered at the "Oberesch", and together with the wall and the large amount of finds - more than 4 000 - they might show that this site was one of the main sites of the disaster.



Fig. 6: Iron Roman knife found in the pit with bones.

The bone-pits do not have an equal distribution on the field. There are five nearly in a row in the eastern part and three in the western area, none in the middle. The reason is not quite understood yet. One has to take into consideration that there were local differences in vegetation on the “Oberesch” at the time of the battle on one hand and during the time of the burials on the other hand. Especially at places where the vegetation had been open during the battle bushes and trees must have been grown considerably during the following years; though many bones must have been laying here even some years later, the vegetation might have prevented the Roman troops of Germanicus from observing and collecting these bones in such areas when they wanted to bury the dead. Plentiful bone-pits or fragments of bones on the old surface do not necessarily mean that the fights were more intensive in such areas.

FINDS

The iron face mask of a Roman helmet was not only one of the first, but also one of the largest finds from Kalkriese⁵. Even this piece shows traces of looting: originally it had been plated with silver foil which the Germanic looters took with them after the battle. Most of the items which were excavated in Kalkriese are small and fragmentary, however, because the Germans collected nearly everything as they could use it or melt it down to produce new objects. Tonnes of metal must have been left on the field after the battle, but the bodies were despoiled by the Germans and nearly all metal objects were taken away, except those which were too small to be seen.

There are hints of nearly all the weapons and equipment which were in use in the Roman army during the time of

Augustus, such as lance heads, catapult bolts, pieces of *pila*, shields, swords, buckles and fittings of armour, belt decoration, helmets, sandals⁶. The amount, however, is much less than in the deposits of Scandinavian bogs where war booty was deposited⁷. For lance heads for example we only have about two dozen, and other weapons are even rarer.

Tools, medical instruments, pieces of vessels, coins, metal pieces of chests, chariots and horses harnesses were found as well, but only few of each group. Most objects are very small such as for instance hundreds of nails or fragments of iron or bronze sheets. Many of them show signs of destruction, and a lot of long fittings were obviously folded several times (Fig. 7), perhaps to carry them more conveniently in a basket. The Germans were first of all interested in the raw material (gold, silver, bronze and iron); therefore it did not matter in which form they took the booty with them.

MAPPING ARTEFACTS

We started to map Roman military equipment from the “Oberesch” to interpret the course of the battle, but soon we realised, that the distribution of finds was highly influenced by the looting after the battle⁸.

The map (Fig. 8) shows different zones: just in front of the wall and behind the wall in the drainage ditch there are more finds than in the area a bit farther from the wall. Right next to the rampart objects were hidden by wall material when it collapsed - sometime during the battle or shortly after it, so that the Germans did not find all the pieces; this is the reason why even large objects were left there. In the middle part of the “Oberesch” the landscape in front of the wall was probably quite open, since in the area of an aban-

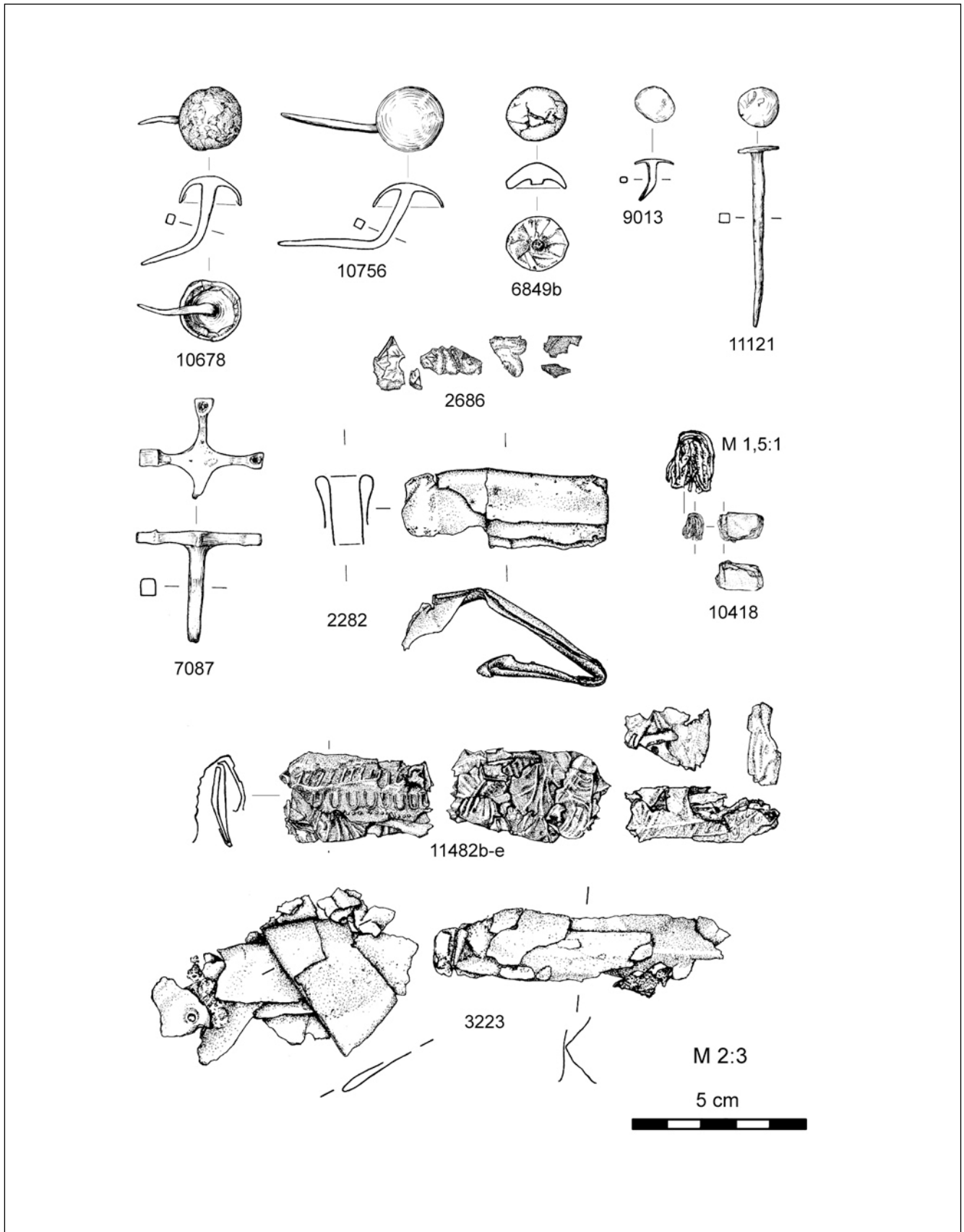


Fig. 7: Small finds from the “Oberesch site”: different kinds of iron nails, bronze and silver fittings, most of them folded several times.

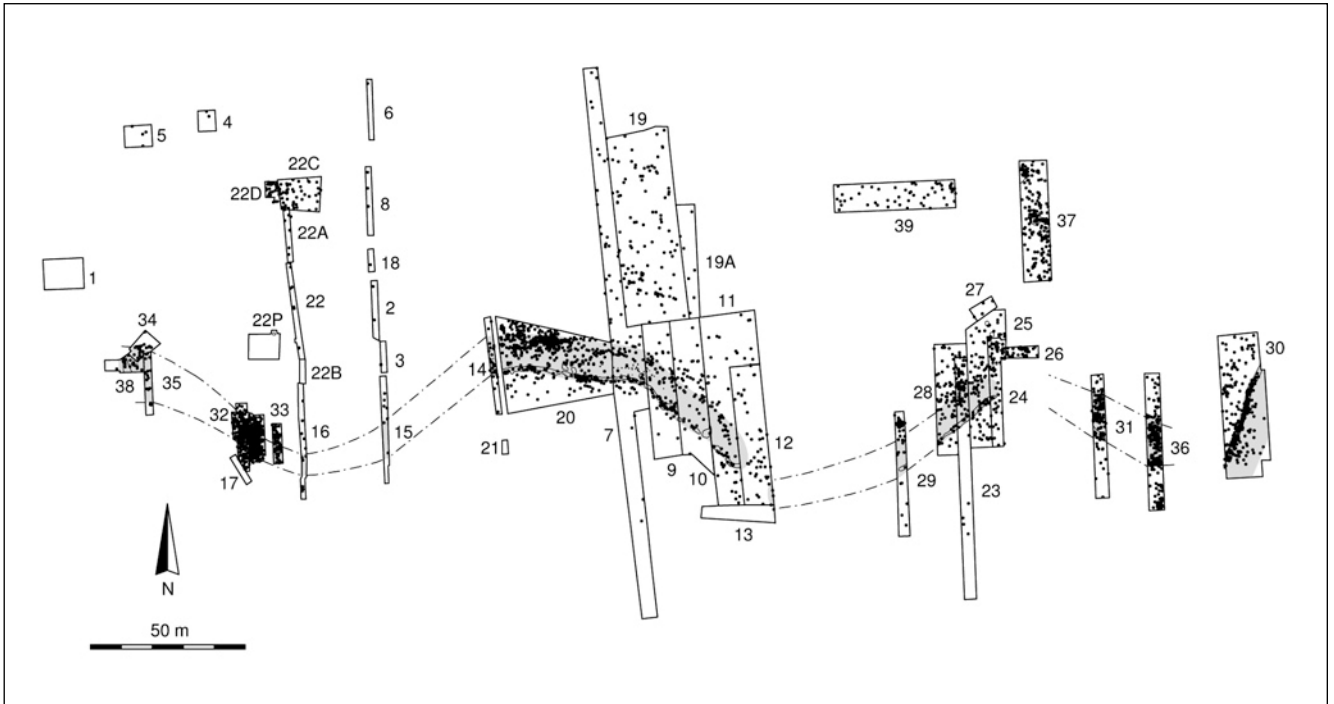


Fig. 8: Wall on the “Oberesch site” and distribution of Roman finds.

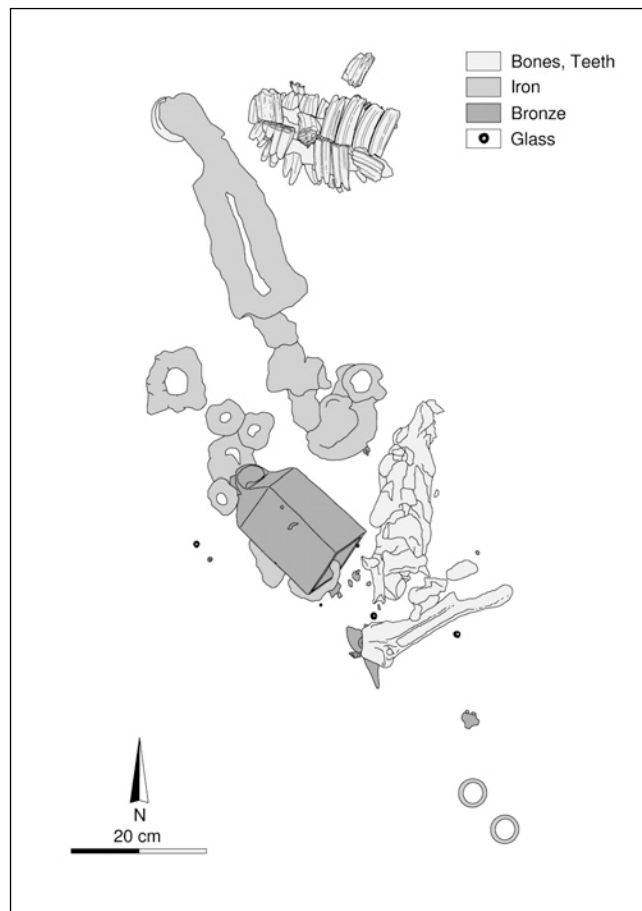


Fig. 9: Bones of a Roman mule and various parts of its harness.

Harness of a mule:

Fig. 10a: Bell, used as a top of a shaft, pendants and fitting for leather (bronze), glass beads.



Fig. 10b: Bit and chain (iron).

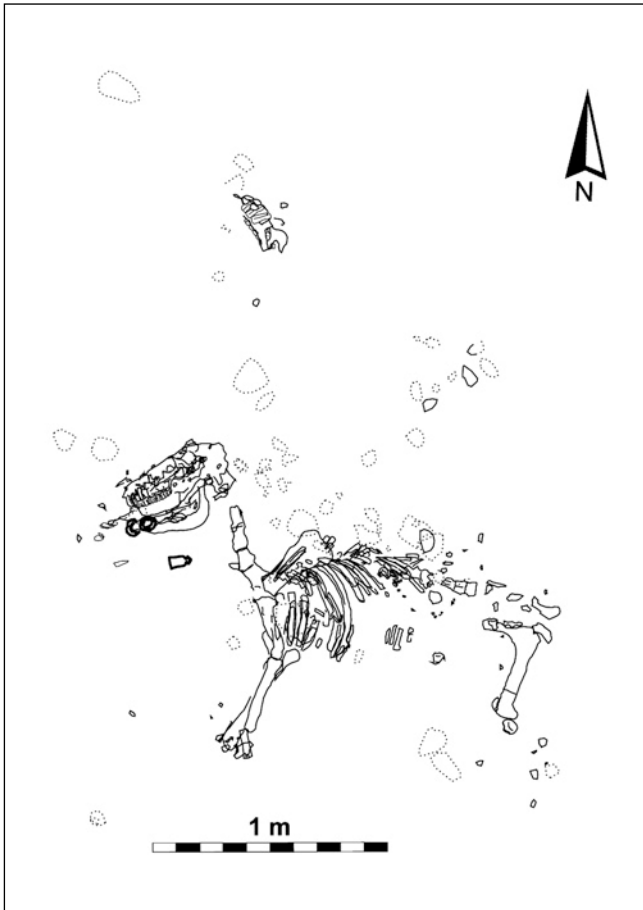


Fig. 11: Roman mule with iron rings of a bit and bronze bell; with limestone pieces among the bones, North of the mule are teeth of a second one.



Fig. 12: Human lower jaw and crest holder (iron) before conservation.



Iron nails of Roman sandals:
Fig. 13a: Situation during excavation.

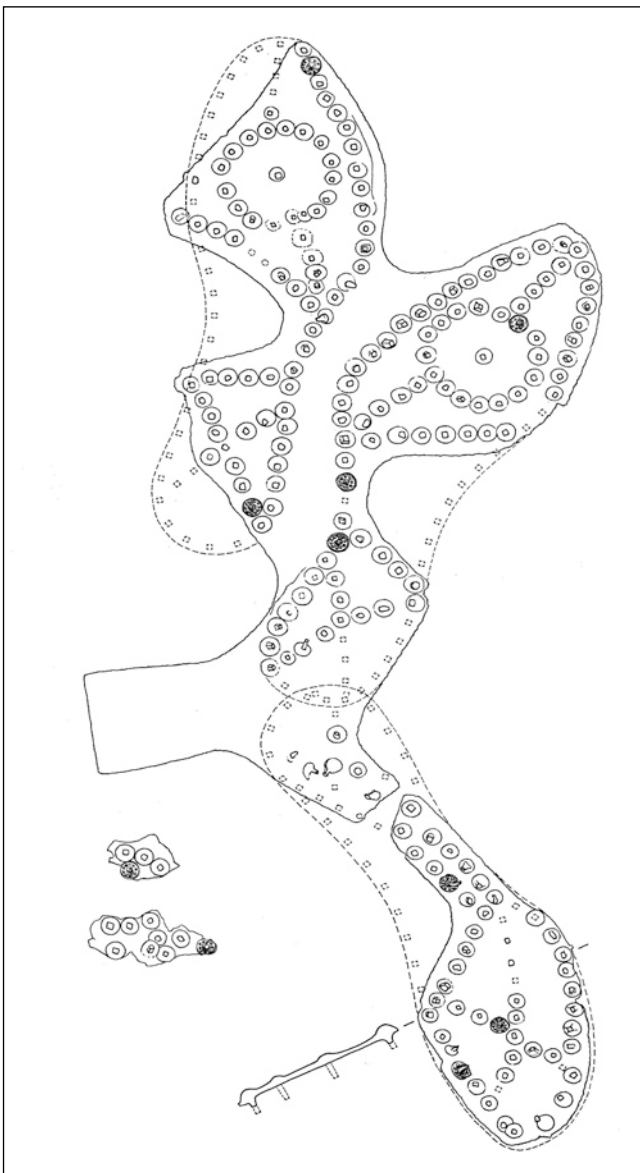


Fig. 13b: Nails after restoration (the sand between the nails was fixed, thus the nails were left in the original position).



Fig. 14: Adze-hammer and knife during excavation.

doned village of the Pre-Roman Iron Age there was grassland at the time of the battle, and the looting of the Germans could be much more effective⁹.

Together with the analysis of different signs of destruction which we noticed on many fragments the interpretation of distribution maps will help us to understand the complicated processes of looting - how it was done, the time it needed, and perhaps how the booty was distributed among the Germans.

SPECIAL FINDS AND FEATURES

Several finds from the "Oberesch" show that a battlefield in some cases preserves features which are not common at other sites like settlements or cemeteries. Thus investigations in Kalkriese may obtain new information about Roman military equipment and its function.

BONES AND HARNESS OF MULES

At the beginning of the excavations nobody expected bones at the site as the sandy ground would usually have destroyed bones. During the first years only a few single bones and teeth were found on the old surface, and then in 1992 the front part of a Roman mule with many pieces of its harness - a large bronze bell which was probably used as a top of a shaft, an iron chain, different pendants, glass beads and bronze fittings - was excavated exactly in front of the wall (Figs. 9, 10)¹⁰. The bones were preserved by the large metal objects, and it seems as if these pieces were not plundered since the dead mule was covered very quickly by the wall. From these finds, which were obviously laying in the original position, we can try to reconstruct the harness of a Roman mule which was used for a wagon.

During the last excavations more animal bones were found - some of horses, many of mules. They prove what some of the metal items tell us: that the Romans had a large



Fig. 15: Iron nails and fittings from the lid of a chest after restoration. The position of the objects was reconstructed according to measurements during the excavation; the distance between the pieces on the photo, however, is shorter. Original length: about 0,7 x 0,4 ms.

baggage train with them when they tried to pass the area between the Kalkriese Hill and the bog. One skeleton of a mule was nearly complete, with only very few bones were missing (Fig. 11)¹¹. A bronze bell and rings of an iron bit were preserved at the skull and below the neck. The mule died from a broken neck. It was also covered by material from the wall which had collapsed before wild animals could tear away bones and flesh or plunderers find the metal objects. This feature shows a “frozen” moment of the action, almost to be compared with the kind of preservation in Pompeii.

HUMAN TEETH AND PIECE OF A HELMET (Fig. 12)

A human lower jaw was found lying above an iron crest holder. They might belong together, which would mean that the teeth of a dead soldier and at least one piece of his equipment remained together in the wet sand of that area. The rest of his bones had disappeared, and all other pieces of this equipment might have been plundered by the Germans. Alternatively, the piece of the helmet might have been worn by another soldier, and the iron object and the human teeth came together by

chance. On a battlefield it is less certain than for instance in a grave that pieces which are found together during the excavation belonged to each other originally.

SANDAL HOBNAILS (Fig. 13).

Hobnails from two sandals and part of a third one were excavated near the wall, covered by wall material. We have to ask if they were lost during the fight, if they fell from a baggage wagon or if this feature is an evidence for looting and collecting the booty at special places for sorting.

ADZE-HAMMER AND KNIFE (Fig. 14)

These two items which belong to the larger finds from Kalkriese were found some metres behind the wall on the old surface, not covered by wall material. Romans might have lost them during the battle, if some were successful in getting behind the wall, or the Germans might have put them there, when they collected their booty for further distribution. The tools lay exactly beside each other, and their position suggests that they had not just fallen down; one gets the impression that they were hidden at that place, perhaps wrapped in a blanket¹².

CHEST LID (Fig. 15)

About 30 iron objects were found between stones in a v-shaped ditch in front of the wall at its eastern end. Mapping showed a rectangle, and conservation produced 28 nails and 4 fittings for corners¹³. We can reconstruct this as the lid of a chest of which the wood had completely gone while it was laying in the earth. The question we cannot yet answer is: did Germans lose this piece when they were plundering, or did Romans throw the object into the ditch which was about 1 m deep to fill it up when they wanted to get through and attack the wall? Perhaps further interpretation of finds, features and processes of looting will help to find out more details.

As we do not only want to get an answer to the question of whether Kalkriese is the place of the Battle of Varus, but we want to reconstruct the events during and after the battle we have to do a lot of theoretical and interdisciplinary work. In the future this might lead to a better understanding of the battle than was possible before when only written sources were known. Besides, research in Kalkriese might support “battlefield archaeology” since this place is the first ancient battlesite in the open field which can be investigated by archaeological methods.

NOTES

1. BERGER 1996, 58-59.
2. MOMMSEN 1885, For detailed information about modern research in Kalkriese compare SCHLÜTER 1992; 1993; WILBERS-ROST 1993; 1999; 2002; 2005; 2007; WILBERS-ROST u. a. 2007.
3. Tacitus, *Annales* I 59-62; WOLTERS 2003.
4. Tacitus, *Ann.* I, 60-62.
5. Compare the article of Norbert Hanel and Frank Willer (Untersuchungen zur Helmmaske von Kalkriese) in this volume. See also HANEL u. a. 2006.
6. FRANZIUS 1992.
7. ILKJAER 2002, 136-139.
8. WILBERS-ROST 2005, 587-588. Further ideas concerning processes of looting after a battle are discussed in the article of Achim Rost in this volume.
9. In some areas farther away from the wall, especially ditches 37 and 39, more objects were excavated than had been expected. Here wet ground might have caused another kind of vegetation - probably wood and bushes - where more objects were not noticed by the looters.
10. ROST-WILBERS-ROST 1993.
11. WILBERS-ROST 2002, 518, 526 Abb. 12.
12. Traces of organic structures seem to have been preserved on the surface of the knife.
13. WILBERS-ROST 2005, 587, 592 Abb. 7.

BIBLIOGRAPHY

- BERGER 1996: F. Berger, *Kalkriese 1. Die römischen Fundmünzen*. Römisch-Germanische Forschungen **55**, Berlin, 1996
- von CARNAP-BORNHEIM 1999: C. von Carnap-Bornheim, Archäologisch-historische Überlegungen zum Fundplatz Kalkriese-Niewedder Senke in den Jahren 9 n. Chr. und 15 n. Chr. In: WIEGELS-SCHLÜTER 1999, 495-508
- FRANZIUS 1992: G. Franzius, Die Fundgegenstände aus Prospektion und Grabungen in der Kalkrieser-Niewedder Senke bei Osnabrück. In: SCHLÜTER 1992, 349-383
- HANEL u.a. 2006: N. HANEL – S. WILBERS-ROST – F. WILLER, Die Helmmaske von Kalkriese, *Bonner Jahrbücher* **204**, 2004 (2006), 71-91
- HARNECKER – TOLKSDORF-LIENEMANN 2004: J. Harnacker – E. Tolksdorf-Lienemann, *Kalkriese 2. Sondierungen in der Kalkrieser-Niewedder Senke*. Archäologie und Bodenkunde, Römisch-Germanische Forschungen **62**. Mainz, 2004
- ILKJAER 2002: J. Ilkjaer: *Illerup Adal - ein archäologischer Zauberspiegel*, Moesgard, 2002
- MOMMSEN 1885: T. Mommsen, *Die Örtlichkeit der Varusschlacht*. Sitzungsberichte der Preußischen Akademie der Wissenschaften, Berlin, 1885, 63-92
- ROST-WILBERS-ROST 1992: A. Rost-S. Wilbers-Rost: Die vorgeschichtliche Besiedlung am Kalkrieser Berg zwischen Engter und Schwagstorf. In: SCHLÜTER 1992, 344-349
- ROST-WILBERS-ROST 1993: A. Rost-S. Wilbers-Rost, Fragmente eines römischen Zugtieres mit Resten der Anschirrung. In: SCHLÜTER 1993, 199-209
- SCHLÜTER 1992: W. Schlüter et.al., Archäologische Zeugnisse zur Varusschlacht? Die Untersuchungen in der Kalkrieser-Niewedder Senke bei Osnabrück, *Germania* **70**, 1992, 307-402
- SCHLÜTER 1993: W. Schlüter (Ed.), *Kalkriese - Römer im Osnabrücker Land*. Archäologische Forschungen zur Varusschlacht, Bramsche, 1993
- WIEGELS – SCHLÜTER 1999: R. Wiegels – W. Schlüter (Ed.), Rom, Germanien und die Ausgrabungen von Kalkriese. *Osnabrücker Forschungen zu Altertum und Antike-Rezeption*, Osnabrück, 1999
- WILBERS-ROST 1993: S. Wilbers-Rost, Geschichte und Ergebnisse der Ausgrabungen in Kalkriese. In: SCHLÜTER 1993, 53-72
- WILBERS-ROST 1999: S. Wilbers-Rost, *Die Ausgrabungen auf dem »Oberesch« in Kalkriese: Deponierungen von Menschen- und Tierknochen auf dem Schlachtfeld*. In: WIEGELS-SCHLÜTER 1999, 61-89
- WILBERS-ROST 2002: S. Wilbers-Rost, Kalkriese und die Varusschlacht - Archäologische Nachweise einer militärischen Auseinandersetzung zwischen Römern und Germanen, P. FREEMAN – J. BENNET – Z. T. FIEMA – B. HOFFMANN

- (Ed.), *Limes XVIII. Proceedings of the XVIIIth International Congress of Roman Frontier Studies held in Amman, Jordan (September 2000)*. BAR Internat. Ser. **1084 I**, Oxford, 2002, 515-526
- WILBERS-ROST 2003: S. Wilbers-Rost, Der Hinterhalt gegen Varus. Zur Konstruktion und Funktion der germanischen Wallanlage auf dem „Oberesch“ in Kalkriese, *Die Kunde N.F.* **54**, 2003, 123-142
- WILBERS-ROST 2005: S. Wilbers-Rost, Die Ausgrabungen zur Varusschlacht in Kalkriese bei Osnabrück. Neue Ansätze für die archäologische Auswertung des Kampfplatzes. In: *Limes XIX. Proceedings of the XIXth International Congress of Roman Frontier Studies held in Pécs, Hungary*. Pécs, 2005, 585-594
- WILBERS-ROST 2007: S. Wilbers-Rost, Total Roman Defeat at the Battle of Varus (9 AD). In: D. SCOTT – L. BABITS – CH. HAECKER (eds.), *Fields of Conflict: Battlefield Archaeology from the Roman Empire to the Korean War*. Westport, 2006, 121–132
- WILBERS-ROST u.a. 2007: S. Wilbers-Rost – H.-P. Uerpmann – M. Uerpmann – B. Großkopf – E. Tolksdorf-Lienemann, Kalkriese 3. Interdisziplinäre Untersuchungen auf dem „Oberesch“ in Kalkriese – Archäologische Befunde und naturwissenschaftliche Begleituntersuchungen. *Römisch - Germanische Forschungen* **65**, Mainz, 2007
- WOLTERS 2003: R. Wolters, Hermeneutik des Hinterhalts. Die antiken Berichte zur Varuskatastrophe und der Fundplatz von Kalkriese. *Klio* **85**, 2003, 131-170

Roman Decorated Daggers and Figural Sword Fittings from Mainz-*Mogontiacum* (*Germania superior*)

Michael J. Klein

The city of Mainz (Rhineland-Palatinate/Germany) has been well-known as a major find-spot of Roman daggers and swords since 1866 when the British Museum acquired the 'Sword of Tiberius' which had been discovered at Mainz 18 years before¹. Some 50 items are known all together many of which are in superb condition. In addition, a lot of handle assemblages, chapes, and other fittings have been found.

In the present paper some new results are published concerning four daggers with inlaid sheaths. Furthermore, three figural objects hitherto unpublished are introduced and discussed with regard to their possible function as sword fittings. All items are to be included in a critical catalogue of all daggers and swords from Mainz which is in progress². In the face of the large quantity and great variety of these weapons the catalogue is expected to serve as a useful handbook for the knowledge of Roman military equipment.

TWO DAGGERS OF THE DUNAFÖLDVÁR TYPE

There are 11 decorated daggers from Mainz³. Two of them are particularly well-preserved (Fig. 1-2)⁴. This is the result of their having been kept in the river bed of the Rhine under favourable conditions. The two daggers were acquired in 1917. A short acquisition report appeared one year after, comprising a drawing that showed idealised reconstructions of the sheath decorations⁵. Up until recently, these idealised reconstructions were reproduced time and again, for instance by E. B. Thomas when publishing the decorated dagger from the Danube near Dunaföldvár (Hungary) in 1969 (Fig. 3)⁶. She compared the sheath decoration to the two daggers from Mainz and some dozen other ones coming from various sites in Germany, Italy and Croatia; she denominated these daggers the Dunaföldvár type after their similar decorations⁷. Since then, more daggers with this kind of decoration have been found, including speci-

mens from Carnuntum (Austria)⁸, Hedegård (Denmark)⁹ and Hagenbach (Germany)¹⁰.

As for the decoration of the two sheaths from Mainz, the gold-coloured metal inlay of the complete one proved to be not gold but brass, with the usual addition of some lead, arsenic, tin and antimony (Fig. 1a)¹¹. This was to be expected after some daggers from other sites had been analysed with the same result, as Ian Scott reported¹². Besides the brass, there is abundant application of red and green enamel both in the panels and on the rivet heads. The enamel decoration extends to the rivets of the dagger handle as well. All layers of the handle are extant. The blade cannot be pulled out of the sheath the two parts being permanently linked to each other as a consequence of corrosion. As the iron back plate of the sheath perished for the most part, the blade can still be looked at as is apparent from this photograph published for the first time (Fig. 1b). The blade has a pronounced waist and an upstanding midrib which is only preserved at the top.

The metal and enamel inlay of the other dagger sheath, likewise coming from the Rhine, is just as abundant (Fig. 2a). This sheath shows an interesting peculiarity as regards the reconstruction of the decoration pattern. Although the upper part of the iron front plate perished almost completely the decoration is still preserved in its entirety on the two pieces of a broken corrosion lump of pebbles and sand from the river bed. This corrosion lump and the extant part of the sheath can be shut like the opposite pages of a book, overlapping each other at two spots (Fig. 2b). Thus it is possible to completely reconstruct the pattern of the sheath decoration. Seldom do the wooden liners that were fixed between the two iron plates of a dagger sheath survive. In this case the wooden liners are extant for the most part. The dagger blade, with a pronounced waist and an upstanding midrib, is well-preserved. Its handle is lost; there is a corrosion lump of pebbles and sand around the tang instead (Fig. 2a).



Fig. 1a-b: Decorated Dagger; L. 38 cm. From the Rhine at Mainz. Landesmuseum Mainz, inv. N° 1917/96



2a



2b

Fig. 2a-b: *Decorated Dagger; L. 34.5 cm*
From the Rhine at Mainz
Landesmuseum Mainz, inv. N° 1917/219



Fig. 3: *Decorated Dagger; L. (sheath) 28.4 cm*
From the Danube near Dunaföldvár
Magyar Nemzeti Múzeum, Budapest





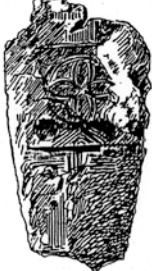
Nr.	Abbildung.	Gegenstand.
2575		Dolch (Eisen)
2576		Rückseite der Scheide (Holz, Metall und aufge- setzte Kieselsteine)
2577		Holzteil der Vorderseite der Dolchscheide
2578		Kieselsteintafel mit eingewetzter Vorderseite der Scheide (Reste von Silberausstattung)
2579		Bruchstück der vorderen Seite der Dolch- scheide (Eisen mit Silberausstattung)

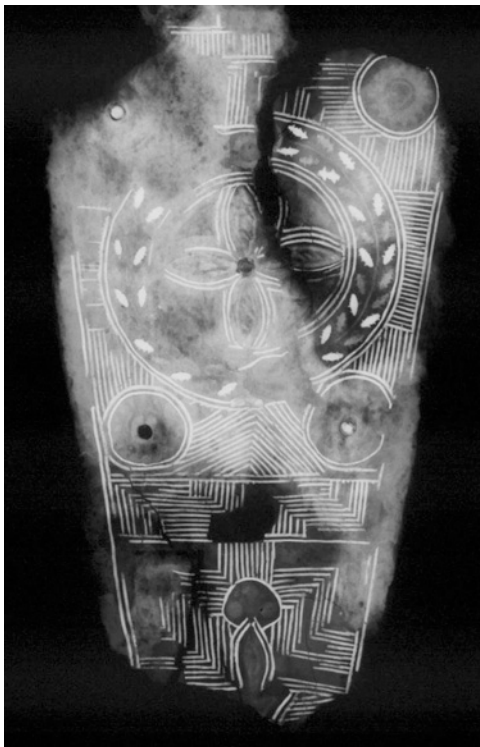
Fig. 4a: Decorated Dagger; L. (inv. no. R 2575) 31.1 cm. From the Rhine at Mainz. Landesmuseum Mainz, inv. No R 2575-2579



4b



4c



4d



Fig. 5: Decorated Dagger. From Nijmegen. Museum Het Valkhof, Nijmegen

Fig. 4b-d: Decorated Dagger. From the Rhine at Mainz. Landesmuseum Mainz. inv. N° R 2578-2579

TWO DAGGERS WITH TEMPLE DEPICTIONS

Another dagger from the Rhine at Mainz shows a similar state of preservation (Fig. 4a-b)¹³. Also in this case, the decoration of the upper part of the sheath is only preserved on a corrosion chunk of pebbles and sand. The decoration is different from the Dunaföldvár type and fits in with the appearance of some more daggers that show new features, like temples and hatched fields with silver inlay¹⁴. In addition, there is a rectangular panel with a six-petalled rosette, as a relic of the Dunaföldvár type. The decorative features mentioned are also to be found on a dagger from Carnuntum (Austria)¹⁵ and on another one from Velsen (Netherlands)¹⁶ which is said to be no later than about 28/30 AD. As regards the dimensions, the sheath from Mainz is much smaller than the above-mentioned ones of the Dunaföldvár type (Fig. 1-2) which becomes clear at first sight from a side-by-side comparison of the decoration patterns¹⁷.

The lower part of the sheath is preserved in the original (Fig. 4a+c). As the face of the iron plate, however, is considerably corroded, the decoration is barely visible except for some traces. A radiograph, taken recently, reveals that the decoration is completely extant save for a very few missing spots (Fig. 4d)¹⁸. This decoration pattern very much resembles a dagger from Nijmegen (Netherlands) (Fig. 5)¹⁹. Both daggers show the same decorative features: hatched fields, a four-petalled rosette encircled by a wreath, the latter consisting of oak-like leaves and surrounded by four small roundels. And another parallel, even if not as elaborate, comes from Carnuntum (Austria)²⁰.

Some illuminating information about the other components of the dagger from Mainz is provided by a hundred-year-old museum inventory (Fig. 4a). The entry shows that the wooden liners were extant when the dagger was found. Today, it is difficult as a consequence of war to identify these wooden liners among the collections. The inventory, however, reveals a certain detail of great significance. The back of the sheath (inv. no. R 2576) is described as made of wood as well as metal that combined with a layer of pebbles as a result of corrosion²¹. This points to an iron back plate, that is a type A sheath²². The illustration given in the inventory, and in the first publication of this piece as well²³, also seems to be in favour of a type A sheath. Finally, the dagger blade with a simple midrib is extant, but the edges are missing today.

The fourth decorated dagger from the Rhine at Mainz discussed here (Fig. 6a)²⁴ was believed to have been lost during the Second World War when the museum collections were badly damaged. The sheath, both front and back plates, was recently identified. But only scanty traces of the decoration are to be seen with the naked eye. With this sheath, the radiography did produce a result as interesting as in the previously mentioned case: a considerable part of the brass and silver inlay is extant (Fig. 6b)²⁵.

The decoration pattern (Fig. 6a) is closely paralleled by two daggers from the Magdalensberg in Austria (Fig. 7)²⁶. There is the same sequence of motifs: temples alternating with diamonds. The few differences are restricted to details. In addition to the general similarity of the decoration patterns it should be stressed that the parallels extend as far as a zigzag between straight lines which surrounds the decoration at the very edge of the sheath plate. This feature is to be found on some more daggers the closest parallels of which come from Lincoln (England) (Fig. 8)²⁷ and Vechten (Netherlands)²⁸.

Unlike the sheath, the blade of the dagger from Mainz has not been recovered. It was a slim blade with a midrib flanked and defined by grooves, a type that is younger than the broader blades with a simple upstanding midrib and did not come into use until the time of Tiberius²⁹.

THREE FIGURAL FITTINGS: TWO *PHALERAE* AND A SCABBARD CHAPE

The first figural object is a small *phalera* which is 3,6 cm in diameter and is made of non-ferrous heavy metal (Fig. 9a). Supposedly lost during the Second World War, an old drawing was long the only source to refer to (Fig. 9c)³⁰. A short time ago, the *phalera* was recovered. It shows the bare-headed portrait of Augustus with a *lituus* in front and an *aspergillum* behind; it is inscribed with CAES(AR) below. At first sight, this *phalera* is similar to some other ones supposed to have been fixed to scabbards of Mainz type swords, the 'Sword of Tiberius' being the only one with a *phalera* in its original position³¹. Some *phalerae* from Switzerland are very instructive as regards their fastening³². They were attached to the scabbard by means of a bronze pin on their back. As these pins could easily break, the *phalerae* were intentionally pierced from their faces so as to fasten them anew by means of rivets or nails.

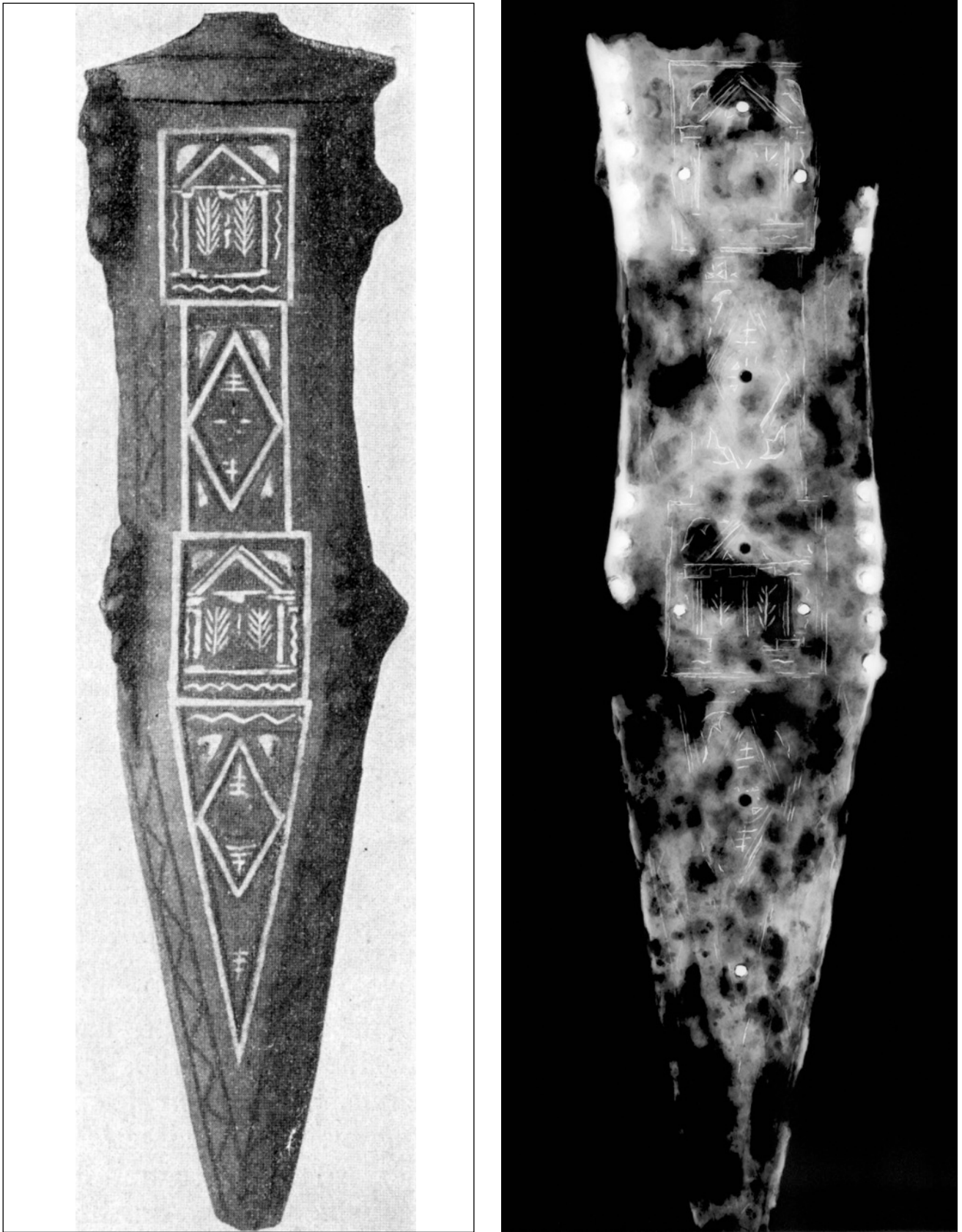


Fig. 6a-b: *Decorated Dagger; L. 24.5 cm. From the Rhine at Mainz. Landesmuseum Mainz, inv. N° 1917/97*

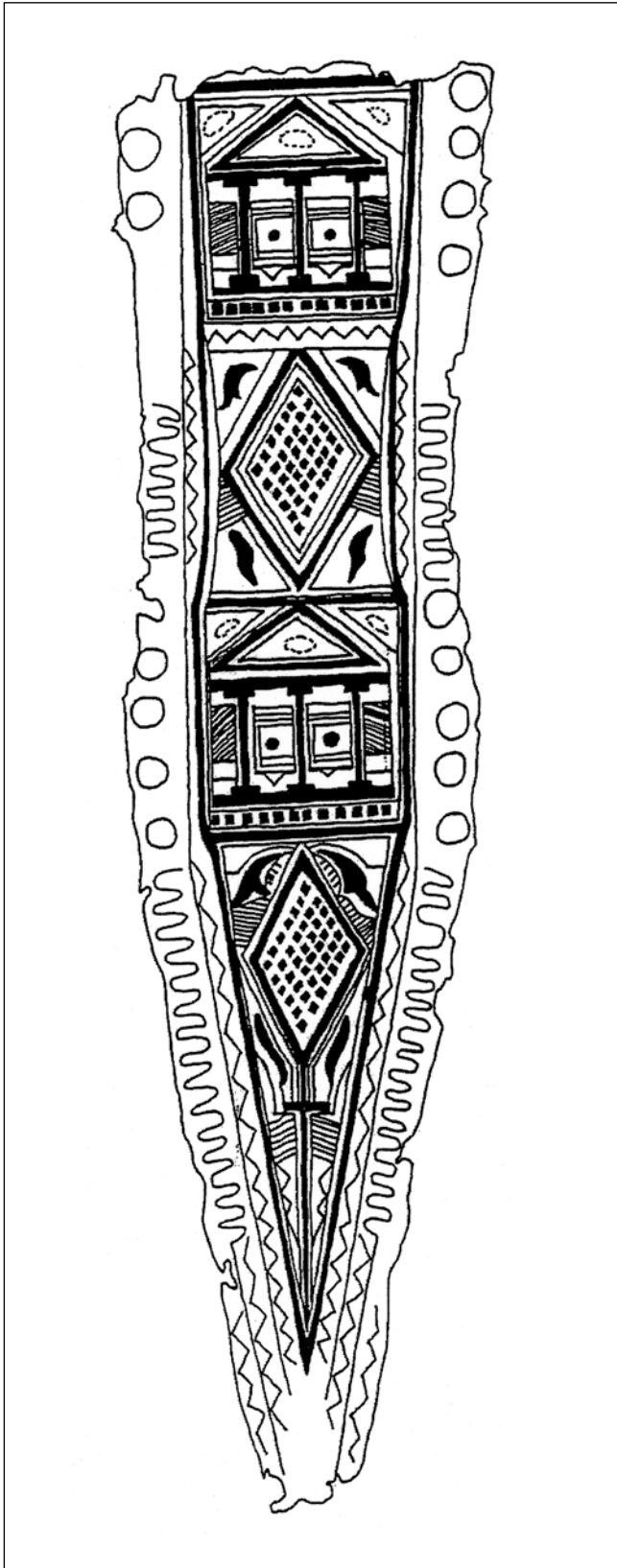


Fig. 7: *Decorated Dagger; L. 23.8 cm*
From the Magdalensberg
Landesmuseum Kärnten, Klagenfurt

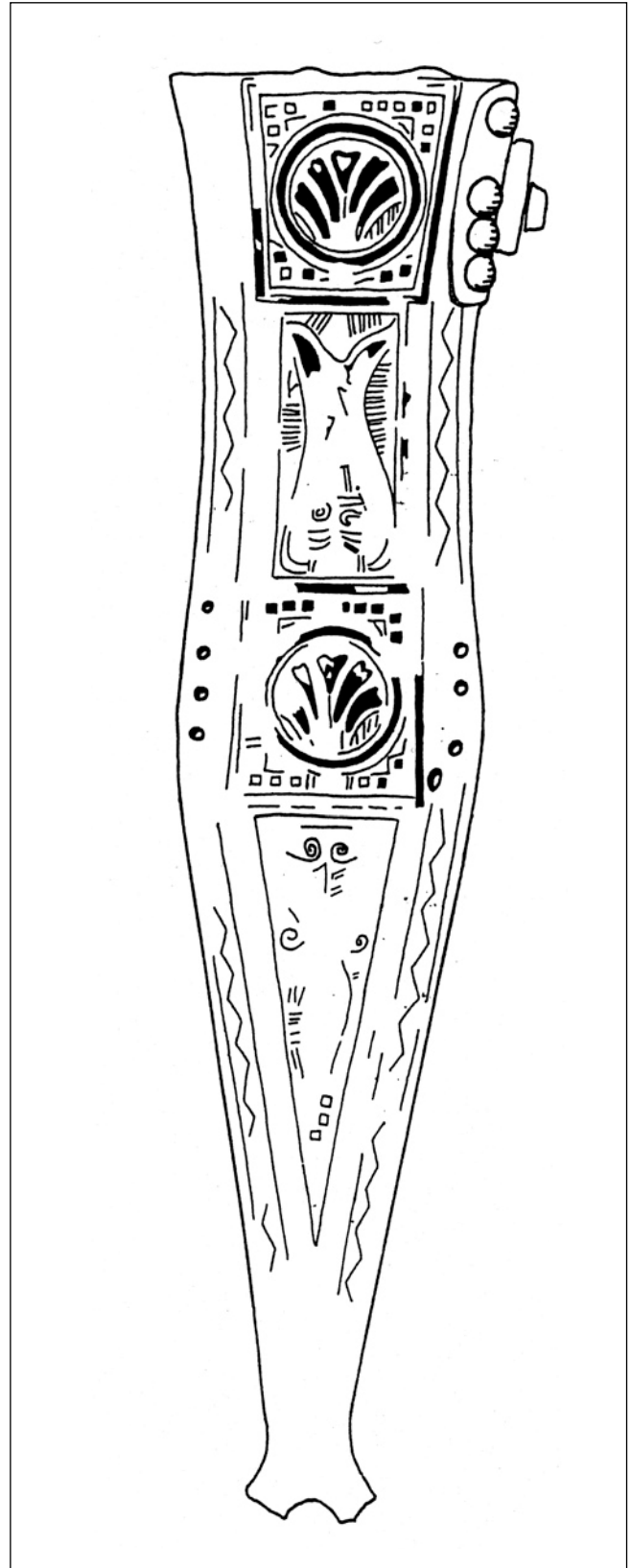


Fig. 8: *Decorated Dagger; L. 26 cm*
From Lincoln



9a



9b



9c

Fig. 9a-c: Figural phalera; D. 3.6 cm
From Mainz. Landesmuseum Mainz, inv.
N° 15.V.1896



Fig. 10: Figural phalera; D. 2.6 cm
Probably from Mainz. Landesmuseum Mainz,
inv. N° R 434, missing



Fig. 11: Figural Scabbard Chape; D. 4.5 cm
From Mainz?
Landesmuseum Mainz, inv. N° R 2038

The *phalera* that comes closest to the piece from Mainz was found on the battlefield of Kalkriese (Germany) providing us with a *terminus ante quem* for this particular type of *phalera*. The *phalera* from Kalkriese³³ is decorated in like manner: it shows the same head with the same liturgical objects, and there is also the inscription CAES below the head. A published drawing of the Kalkriese *phalera*³⁴ is not correct with regard to the inscription which is missing there. Even on photographs, however, this inscription is clearly visible. Finally, the *phalera* from Kalkriese has the same diameter as its parallel from Mainz.

So the front of the *phalera* from Mainz fits in with some *phalerae* that are supposed to be scabbard fittings. To the back, however, is attached a very big loop that does not go well with a scabbard fitting (Fig. 9b). There are more *phalerae* with single or double loops some of which are decorated³⁵. Unlike the piece from Mainz, their loops are generally of a different kind and project over the edge of the *phalera*. They are not likely to have been attached to scabbards. This can also be assumed to be the case with the *phalera* from Mainz just because of its loop.

There is another figural object of a similar kind that may also have been found at Mainz. As this object is lost, one has to refer to the entry and a drawing in the old museum inventory (Fig. 10). This small object was 2.6 cm in diameter. It shows a head, probably Augustus, with a *lituus* in front and a pitcher behind. It is said to have been made of tin and to have had a bronze fitting on its back the type of which we do not know³⁶. This figural object has a close parallel of unknown provenance; it is of about the same size and has a single loop projecting over the edge³⁷.

The last figural object to discuss is most likely to be a circular scabbard chape of the Middle Imperial period (Fig. 11). It is made of lead and is 4.5 cm in diameter. There is a long slot in the upper part of the chape through which the tip of a scabbard could be inserted. The chape was originally fixed to the scabbard by means of two rivets which were passed through either side. The figural decoration shows the bare-headed bust of a man whose cloak is fastened on his right shoulder with a brooch.

As chapes with figural decoration are extremely rare, it is not easy to draw a matching comparison. There seem to be no parallels but one. It comes from the Rhine near Leiderdorp (Netherlands)³⁸. This precious object is made of silver and depicts the portrait busts of Trajan and Hadrian. It

is 4.5 cm in diameter as is the lead object from Mainz which is also to be considered a scabbard chape even if it is much simpler both in material and manufacture.

SUMMARY

In this contribution on Roman military equipment from Mainz new results have been presented. They touch upon the technical construction as well as the decoration typology of four daggers with inlaid sheaths. As regards sword fittings, one of three figural objects hitherto unpublished has proved to be a scabbard chape. The other two are not likely to have been scabbard fittings.

NOTES

1. LERSCH 1849; KLEIN-BECKER 1850; WALTERS 1899, 157 no. 867.
2. Preliminary studies: KLEIN 2003a/b. - When I was preparing my paper for ROMEC XV, I got help from Thomas Grane, Copenhagen (Denmark), Susanna Künzl and Barbara Pferdehirt, Mainz (Germany), Ivan Radman-Livaja, Zagreb (Croatia), Hans-Peter Schnellbacher, Mainz (Germany). I owe a debt of thanks to them. I am particularly grateful to Peter Carrington, Chester (Great Britain), for the opportunity to examine the decorated daggers from Chester.
3. OBMANN 2000, 23-24 D 10-20.
4. KLEIN 2003b, 55-57.
5. NEEB 1917/18, 177, fig. 13. - The first photographs, however, were published only recently: ROME FACE AUX BARBARES, 1993, 62 N° 34.06; ROMAN REFLECTIONS, 1996, 133 N° 232; TRAIANO AI CONFINI 1998, 231 N° 98; KLEIN 2000a, 61 fig. 12; KLEIN 2000b, 27; KLEIN 2003b, 56 fig. 1; first photograph of the dagger inv. N° 1917/219: KLEIN 2003b, 57, fig. 2.
6. THOMAS 1969, 34, fig. 6; THOMAS 1971, pl. 75; OBMANN 2000, pl. 9 was the last to reproduce these ideal reconstructions.
7. THOMAS 1969, 28-36; THOMAS 1971, 48-50. - As regards the two daggers from the Kupa near Sisak cf now RADMAN-LIVAJA 2005, 51-54, 128 N° 59-60, pl. 15-16 for the knowledge of which I have to thank its author.
8. HEROLD 1990, 194-201, pl. 22-25; OBMANN 2000, 26, A 1.
9. MADSEN 1996/97, 76-83, fig. 22A, 24 for the knowledge of which I have to thank Thomas Grane, Copenhagen. - OBMANN 2000, 26 DK 1.
10. PETROVSZKY – BERNHARD 2003, 337.
11. I owe thanks for this to the laboratories of the Römisch-Germanisches Zentralmuseum Mainz.
12. SCOTT 1985, 197.

13. KLEIN 2003b, 62-63.
14. OBMANN 2000, 9.
15. NIEMEYER 1990; OBMANN 2000, 26 A 3, pl. 21.
16. MOREL – BOSMAN 1989, 177-188; OBMANN 2000, 23 NL 6.
17. KLEIN 2003b, 56 fig. 1.
18. I am grateful to the laboratories of the Römisch-Germanisches Zentralmuseum Mainz for X-raying this piece.
19. BOGAERS – YPEY 1962-1963, 96 fig. 8D; GERHARTL – WITTEVEEN – HUBRECHT 1990, 104-105, N° 10; OBMANN 2000, 23 NL 3, pl. 6.
20. JOBST 1992, 243, N°. 1, 254 fig; OBMANN 2000, 26 A 4, pl. 22.
21. “Rückseite der Scheide (Holz, Metall und aufgerostete Kieselschicht)”.
22. SCOTT 1985, 201-202, N° 38 considers it to be a type B sheath.
23. LINDENSCHMIT 1881, III, 2, pl. 3,2.
24. NEEB 1917/18, 177, fig. 14; KLEIN 2003b, 64.
25. As for the radiograph cf note 18.
26. DOLENZ 1998, 58-61, M 10-11, pl. 3; OBMANN 2000, 26 A 5-6, pl. 21-22.
27. SCOTT 1985, 201, N° 31, 209 fig. 2; OBMANN 2000, 22 GB 17, pl. 3.
28. YPEY 1960-1961, 347-352, 351, fig. 5F; OBMANN 2000, 23 NL 4, pl. 6.
29. SCOTT 1985, 162.
30. KÖRBER 1900, 106, N° 163.
31. KÜNZL 1996, 402-403, pl. 46.
32. UNZ 1972.
33. FRANZIUS 1993, 122 with fig; KÜNZL 1996, 403, pl. 46,2.
34. KÜNZL 1996, pl. 46,3 (drawing by G. Franzius, Osnabrück, cf p. 473).
35. FRANZIUS 1993, 122, fig. 13; SEIBT – BORSODORF – GRÜTTER 1997, 111 I/32; WAMSER – FLÜGEL – ZIEGAUS 2000, 323, N° 27b; DESCHLER – ERB 1998, 4, fig. 4,7.
36. “Zinn mit Bronzebeschlag auf d. Rückseite”
37. KÜNZL 1996, 434, pl. 50,7.
38. STUART 1986, 109-110, fig. 145; KÜNZL 1996, 434-435, pl. 63,1-2.
- DOLENZ 1998: H. Dolenz, *Eisenfunde aus der Stadt auf dem Magdalensberg*. Klagenfurt, 1998
- FRANZIUS 1993: G. Franzius, Die römischen Funde aus Kalkriese. In: *Kalkriese - Römer im Osnabrücker Land. Archäologische Forschungen zur Varusschlacht*. Bramsche, 1993, 107-195
- GERHARTL-WITTEVEEN – HUBRECHT 1990: A. M. Gerhartl-Witteveen – A. V. M. Hubrecht, Survey of Swords and Daggers in the Provinciaal Museum G. M. Kam, Nijmegen. *Journal of Roman Military Equipment Studies* 1, 1990, 99-107
- HEROLD 1990: K. Herold, *Konservierung von archäologischen Bodenfunden: Metall, Keramik, Glas*. Wien, 1990
- JOBST 1992: W. Jobst, *Carnuntum. Das Erbe Roms an der Donau*. Bad Deutsch Altenburg, 1992
- KLEIN 2000a: M. J. Klein, Der Rhein bei Mainz als Fundstelle: Brücken, Häfen und Zeugnisse des römischen Heeres. In: L. BONNAMOUR (ed.), *Archéologie des fleuves et des rivières*. Paris, 2000, 56-64
- KLEIN 2000b: M. J. Klein, Die Römerzeit. In: *Landesmuseum Mainz*. München, Berlin, 2000, 20-35
- KLEIN 2003a: M. J. Klein, Römische Schwerter aus Mainz. In: M. J. KLEIN (ed.), *Die Römer und ihr Erbe. Fortschritt durch Innovation und Integration*, Mainz, 2003, 43-54
- KLEIN 2003b: M. J. Klein, Römische Dolche mit verzierten Scheiden aus dem Rhein bei Mainz. In: M. J. KLEIN (ed.), *Die Römer und ihr Erbe. Fortschritt durch Innovation und Integration*, Mainz, 2003, 55-70
- KLEIN – BECKER 1850: K. Klein – J. Becker, *Abbildungen von Mainzer Alterthümern, II. Schwert des Tiberius*, Mainz, 1850
- KÖRBER 1900: K. Körber, *Inschriften des Mainzer Museums. Dritter Nachtrag zum Becker'schen Katalog*, Mainz, 1900
- KÜNZL 1996: E. Künzl, Gladiusdekorationen der frühen römischen Kaiserzeit: Dynastische Legitimation, Victoria und Aurea Aetas, *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz*, 43, 1996, 383-474
- LERSCH 1849: L. Lersch, *Das sogenannte Schwert des Tiberius. Ein römischer Ehrendegen aus der Zeit dieses Kaisers, im Besitze des Herrn Kunsthändlers Josef Gold in Mainz*. Bonn, 1849
- LINDENSCHMIT 1881: L. Lindenschmit, *Die Alterthümer unserer heidnischen Vorzeit*. Vol. III. Mainz, 1881
- MADSEN 1996/97: O. Madsen, Hedegård - a rich village and cemetery complex of the Early Iron Age on the Skjern river, *Journal of Danish Archaeology* 13, 1996/97, 57-93
- MOREL – BOSMAN 1989: J. M. A. W. Morel – A. V. A. J. Bosman, An Early Roman Burial in Velsen I. In: C. van DRIEL-MURRAY (ed.), *Roman Military Equipment: the Sources of*

BIBLIOGRAPHY

- BOGAERS – YPEY 1962-1963: J. E. Bogaers – J. Ypey, Ein neuer römischer Dolch mit silbertauschierter Scheide aus dem Legionslager Nijmegen, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 12-13, 1962-1963, 87-98
- DESCHLER-ERB 1998: E. Deschler-Erb, Vindonissa (Windisch AG - Switzerland). A gladius with a relief decorated sheath and belt pieces from the legionary camp. *Arma* 10, nos. 1-2, 1998, 2-5

- Evidence. Proceedings of the Fifth Roman Military Equipment Conference*, Oxford, 1989, 167-191
- NEEB 1917/18: E. Neeb, Jahresbericht des AltertumsMuseums der Stadt Mainz, 1. April 1917 bis 1. April 1918, *Mainzer Zeitschrift* **12/13**, 1917/18, 170-179
- NIEMEYER 1990: B. Niemeier, Eine tauschierte und mit Email verzierte Dolchscheide aus Carnuntum, *Carnuntum Jahrbuch* 1990, 297-301
- OBMANN 2000: J. Obmann, *Studien zu römischen Dolchscheiden des 1. Jahrhunderts n. Chr. Archäologische Zeugnisse und bildliche Überlieferung*, Rahden, 2000
- PETROVSZKY – BERNHARD, 2003: R. Petrovszky – H. Bernhard, Der Hortfund aus Hagenbach. In: *Archäologie in der Pfalz. Jahresbericht 2001*, Rahden, 2003, 336-339
- RADMAN-LIVAJA 2004: I. Radman-Livaja, *Militaria Sisciensia. Nalazi rimske vojne opreme iz Siska u fundusu Arheološkog muzeja u Zagrebu = Militaria Sisciensia. Finds of the Roman Military Equipment in Sisak in the holdings of the Archaeological Museum in Zagreb*, Zagreb, 2005
- ROMAN REFLECTIONS 1996: *Roman Reflections in Scandinavia*. Roma, 1996
- ROME FACE AUX BARBARES 1993: *Rome face aux barbares. 1000 Ans pour un Empire*. Daoulas, 1993
- SCOTT 1985: I. R. Scott, First Century Military Daggers and the Manufacture and Supply of Weapons for the Roman Army. In: M. C. BISHOP (ed.), *The Production and Distribution of Roman Military Equipment. Proceedings of the Second Roman Military Equipment Research Seminar*. Oxford, 1985, 160-213
- SEIBT – BORSDORF – GRÜTTER 1997: F. SEIBT – U. BORSDORF – H. Th. GRÜTTER (ed.), *Transit Brügge-Novgorod. Eine Straße durch die europäische Geschichte*. Bottrop/Essen, 1997
- STUART 1986: P. Stuart, *Provincie van een imperium. Romeinse oudheden uit Nederland in het Rijksmuseum van Oudheden te Leiden*, Leiden, 1986
- THOMAS 1969: E. B. Thomas, Römischer Legionärsdolch von Dunaföldvár, *Folia Archaeologica* **20**, 1969, 25-46
- THOMAS 1971: E. B. Thomas, *Helme, Schilde, Dolche*, Budapest, 1971
- TRAIANO AI CONFINI 1998: *Traiano ai Confini dell'Impero*. Milano, 1998
- UNZ 1972: Ch. Unz, Zu den Schwertscheidenmedaillons aus Vindonissa. *Jahresbericht der Gesellschaft Pro Vindonissa* 1972, 43-48
- WALTERS 1899: H. B. Walters, *Catalogue of the Bronzes, Greek, Roman, and Etruscan, in the Department of Greek and Roman Antiquities, British Museum*. London, 1899
- WAMSER – FLÜGEL – ZIEGAUS 2000: L. Wamser – Ch. Flügel – B. Ziegau, *Die Römer zwischen Alpen und Nordmeer. Zivilisatorisches Erbe einer europäischen Militärmacht*, Mainz, 2000
- YPEY 1960-1961: J. Ypey, Drei römische Dolche mit tauschierten Scheiden aus niederländischen Sammlungen, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* **10-11**, 1960-1961, 347-362

New Data on the Question of Morphology and Dating of the *Intercisa III* type Helmets

László Kocsis

Two groups of helmets can be distinguished on the basis of the analysis of *Intercisa* type helmets¹. On the one hand, we should note **Types I and II**, which were originally covered with silver sheets. The cheek-pieces and the neck guard were not firmly tied to the lower rim of the bowl which lacked a lower band, but were fixed with wire or leather thong. (Fig.1)

On the other hand, helmets belonging to **Types III and IV** were partly made according to a similar technology but also partly to a different one. As regards ornamentation, the so-called Late Roman Court Style which

seems to become prevalent can be identified with barbaric, heavily decorated surfaces². The cheek-pieces (which curve outwards and down and the bands added to them including the lower bands acting as a stiffener), as well as the profile-protecting nasals, do not seem to follow the rules of traditional Roman helmet-making. On the contrary, they tend to show the characteristics of types used during the Great Migration. In addition to the structural characteristics of the second group, the appearance of the long cheek-piece, the fixing of the lower band, and the presence of a nasal, corroborates this conclusion.

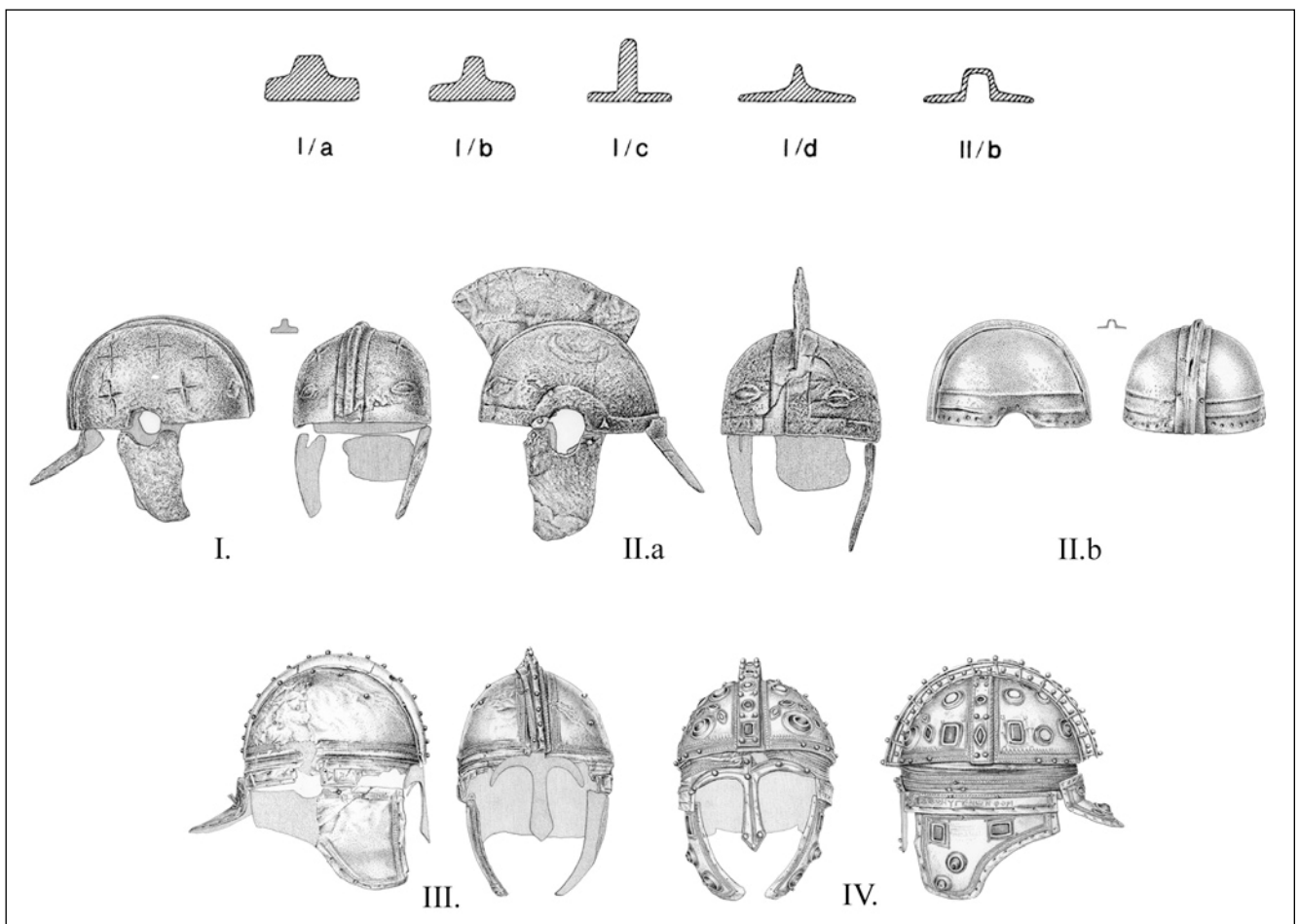


Fig. 1: *Intercisa* types of Late Roman Helmets

The nasal, as its name denotes, had the function of protecting the uncovered part of the face, nose from the cross-cuttings of sword. The helmet itself gave protection against other assault weapons used within a close range, but only nasals were able to protect the face from cross cuttings which were aimed at the uncovered parts of the face.

However, nasals had their own limitations. If the helmet does not fit well on the head of the user, for example, sliding backwards, forwards, or sideways, as may have happened to horsemen, nasals might pose a real hazard in hindering the view of the soldier. Consequently, helmets with nasals needed long cheek-pieces and stronger rims. This new type of helmet suited the cavalry, because it could be firmly placed on the user's head. Although nasals hindered the view to some extent, they were supposed to increase the protective function of the helmet³.

Researchers⁴ have come to the conclusion that the cavalry used the second group of helmets (Gardehelme) and the infantry used the first group.

All these characteristics had to be taken into account when we began to re-restore the Eskü Square helmet from Budapest because of its poor condition. (Fig. 2)

The helmet, restored with the active collaboration of Katalin T. Bruder⁵, Senior Conservator and Chief Assistant of the Conservation Department of the Hungarian National



Fig. 2: Budapest "Eskü tér" Helmet before restoration in 2000

Museum, was found at Eskü Square in 1898 when the foundations were laid for the bridgehead of the Elisabeth Bridge on the left (Pest) side of the Danube⁶. This was the 'barbarian' side of the river where the late Roman fortress, Contra Aquincum⁷ was located. József Hampel, one of the first to publish the helmet, wrote the following about its condition at the time of its discovery. "When the Helmet was found, its exterior was covered with a layer of pebbles and sand. A similar mass filled up its interior with some broken-off helmet fragments stuck to the surface bound by rust....The coloured plate gives an impression of how colourful it once was although the gilded surface was mostly worn off or its shine has faded. Many of the glass inlays are missing or their gleam and translucence have been dimmed by oxidation"⁸.

The condition of the helmet is obviously determined by the fact that it laid on the bed of the Danube or in the flood plain of the river for many centuries. The iron base of the bowl of the helmet was corroded throughout its entire thickness. The poor corrosion layer was cemented together with pebbles. The gilded-silver coating of the helmet had become crystallised, very brittle and vulnerable to injury.

It is not known what treatments were applied to the artefact right after it came to light. The last known treatment occurred at the end of the 1950s - beginning of the 1960s. Cleaning was followed by conservation with cerezine in a vacuum, which had consequences for the present restoration. The gaps were filled in with gypsum, which was painted a neutral colour. The filling-in was correctly executed but cracked in many places and was not wholly accurate from the point of view of modern archaeological information.

The neck guard and the nasal were missing. A large part of the cheek-piece had sunk into the bowl of the helmet and was corroded onto its interior.

It was easy to remove the gypsum since it had never stuck strongly to the helmet, that had regrettably been soaked in wax. However we could not even partially remove the cerezine from the fabric of the helmet. The inside of the bowl contained the imprints of pebbles, the collapsed fragments of the cheek-piece, and corrosion soaked with cerezine as well as celluloid and pebbly loam. Unfortunately, the dirt soaked in wax could not be completely removed mechanically from the original surface.

In spite of these difficulties, one of the cheek-pieces could be removed from the inside of the helmet in a relatively intact condition and put into its original position. It seems that the other cheek-piece cannot be removed from the inside of the helmet's bowl, and therefore it was not forced.

The new restoration work on the helmet and additional details observed:

- The lower band running around the helmet was cut out in an arch at the front, corresponding to the line of eyebrows. Its width was 49 mm. Two ribs run parallel, at a distance of 24 mm from each other, on both the bottom and top of the lower band.
- The arch of the eyebrows ends in a rim at the bottom, where a nose guard was attached.(Fig. 3)
- The shape of the nose guard was also followed by a row of beads applied on a gilded silver plate that covered the rim.
- An approximately 5 mm wide and 2.5-3 mm long tube or sheath may have sat on the helmet's top in the middle, along the long axis that held the nose guard. This sheath is some 15 mm long and extends to the lower end of the crest

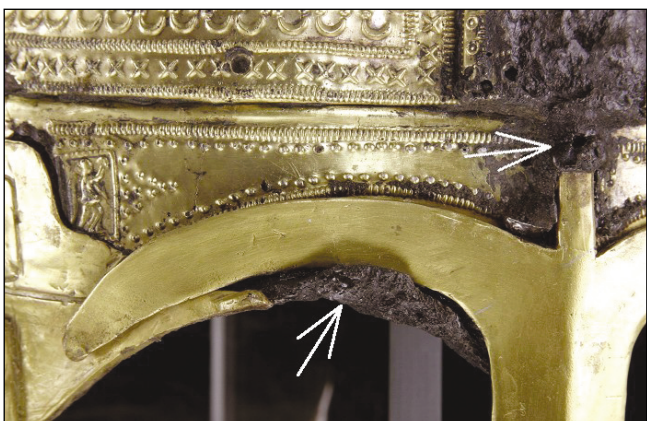


Fig. 3: A rim at the bottom of helmet bowl and the tube where the removable nose guard was fastened

band where it was perforated by a hole of approximately 2 mm. This is the place where the removable nose guard was fastened by a rivet or a screw. (Fig. 3)

- The lower edge of the helmet's bowl overlaps by 7 mm with



Fig. 4: The lower edge of the helmet's bowl overlaps the lower band



Fig. 5: The plating that covered the hinge of the cheek-piece

the lower band that holds the structure together. A similar overlap may be observed where the crest band meets the bowl of the helmet. This latter measures 7-8 mm. (Fig. 4) At the same time we could check and see the real thickness of the helmet bowl⁹.

- The width of the plate that covered the hinge of the cheek-piece was 24 mm. It was 169 mm long, while its thickness varied between 1.2 to 1.5 mm. The plating that forms the cheek-piece stretches to the arch of the eyebrow in the front to the neck-guard in the region of the nape. Its surface was decorated with patterns similar to that on the crest band. A rib, similar to the helmet's rim, runs around here. However, only the negative imprint of decorative cover plates can be recognised here. (Fig. 5)
- Between the decorative pattern there had been an inscription¹⁰ (Fig. 6) but today we could find only the imprint of the letter "N" in the iron corrosion. (Fig. 7)

Various pieces of the helmet were covered and decorated in turn by gilded silver-plating. Thereafter the step-by-step assembly of the helmet could be reconstructed:



Fig. 6: Fragment of an inscription on the plate-covered hinge, visible at the beginning of the 20th century

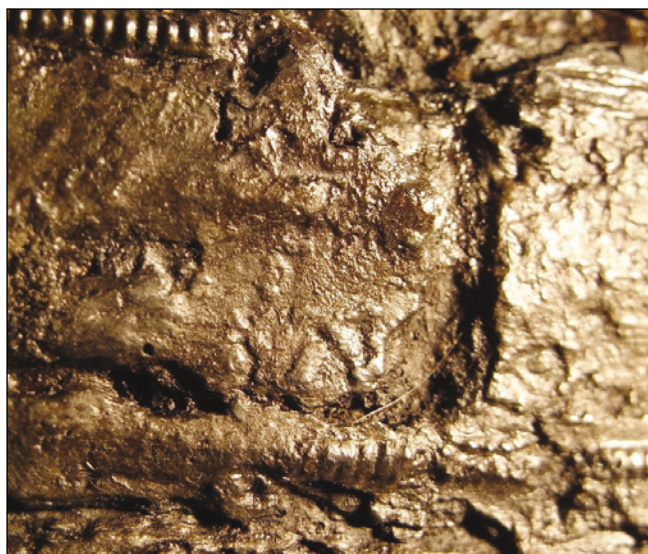


Fig. 7: Imprint of the letter “N” on the iron corrosion

Step 1: Assembly of the bowl from two quarter-spheres, fastened by three connecting plates on the inside

Step 2: fastening the bowl to the lower band

Step 3: fastening the crest band

Step 4: fastening the cheek-pieces

Step 5: fastening the cover plate of the cheek-pieces

Step 6: connecting the neck guard

The reconstruction was made using a galvanoplastic method. In-fills and the missing neck guard and nasal were made from plasticine. During the formation of the neck guard we kept in mind the observations concerning the form and method of fastening of the neck guard to the bowl of *Intercisa* type helmets. In the case of **I** and **II** type iron infantry helmets, the neck guard was fixed to the bowl with a riveted leather strip, while on the **III** and **IV** types which are cavalry helmets, small buckles were used for the same purpose.

The shape of the nose guard could be determined using a number of typological parallels as well as the relevant patterning found on the rim¹¹. The arch at the eyebrows was shaped so that the lower edge of the rim was bent upwards, serving as an attachment for the nose guard. It turns out that the tube-like feature observed during the cleaning of the bowl's crest band held the upper, pointed process of the nose guard. Thus, the easily removable nose guard was attached at two points: it sat on the edge of the rim between the eyebrows and was fastened by a rivet or screw into the small hole discovered on the crest band.

The shaped fills were coated with silver and gold according to the helmet's original state. The degree of filling was influenced by both aesthetic and ethical considerations and we chose the absolutely simplest mode of filling. (Figs. 8)

* * * *

On the basis of the knowledge gained during the re-restoration of the Budapest Eskü-tér Helmet we started work on the gilded silver treasure.

It consists of two parcels of folded silver sheets. They came to light during the identification of the western gate of the fortress in Alsóhetény which took place during the 1991 excavation programme to research the western defence systems. During the excavation of the side towers of the fortress walls, north of the gate (Fig. 9) two blocks of multi-folded, gilt silver sheet came to light hidden in the ground next to the walls of the tower N° 9¹².

Inside the tower, under the 25 cm-thick topsoil layer and 20 cm-thick building debris (the collapse and destruction layer of the tower wall) a 15-20 cm-thick layer of burnt roofing tiles (deterioration layer) was found. There was no observable floor layer. The folded blocks of the sheet came to light from the jointing of the wall bending south close the entrance of the tower during the cleaning of the wall at a depth of 55 cm from the surface¹³.

During the cleaning of block N° 1 (Fig. 10) folded into an almost regular rectangle of 56×41×12 mm and block N° 2 (Fig. 11) folded into a similar but more irregular rectangle of 53×38×14 mm, traces of gilding could be seen on the inner sides of the sheet, having previously only shown silver surfaces. On a small part broken off the sheet, a press-forged border motif was perceptible. All these primary observations lead us to the conclusion that the gilt silver sheet may have been the remains of the coating sheet of a helmet. After the necessary preparations,¹⁴ we took the two blocks to pieces. During this we numbered the individual fragments of the sheets in the order of their recovery.

Block N° 1

The sheets were carefully folded upon each other, with their gilt sides turned inside, in a way like a sheet of paper being folded into half and half again in smaller and smaller rectangles. The smaller fragments of the sheets were enclosed in the bigger ones and folded in a similar manner. In this way, when unfolding the sheets, the smaller fragments came to light first.

Sheet N° 1/1: the coating of the nasal of the helmet. (Fig.12, 1/1- Fig.13, 1/1)

Dimensions: Width: 116 mm
Height: 81 mm
Thickness: 0.18 mm

It was made of a gilt silver sheet thinner than the others. Its surface is rather creased. The sheet follows the lines of the superciliary ridge and the nose. At the top, in the axis of the sheet, the remnant of the pin for fastening the nasal can be seen. In the central part, on the ridge of the nose, embossed from behind, there is an early Christian *chi* and *rho* monogram with no frame. The original, slightly asymmetrical border of the nasal is marked with an embossed pattern of cogged wheels or bead moulding. On the side of the fragment of the coating sheet, a fold indicating the 0.8 mm thickness of the iron nasal plate can still be seen. Beyond the damage, on the superciliary ridge, there are two 2 mm rivet-holes.

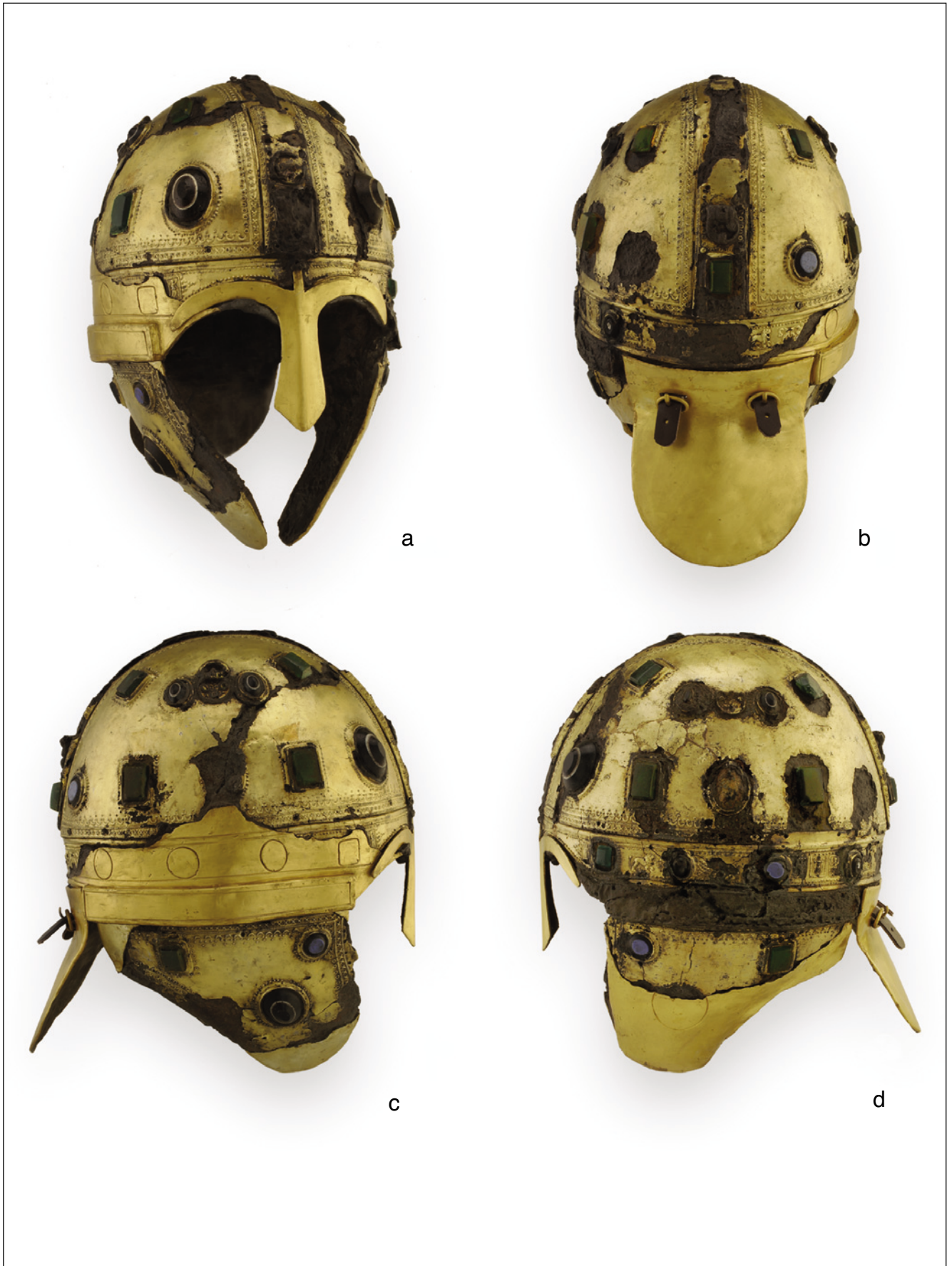


Fig. 8: Eskü squer Helmet, a, front side; b, back side; c, right side; d, left side

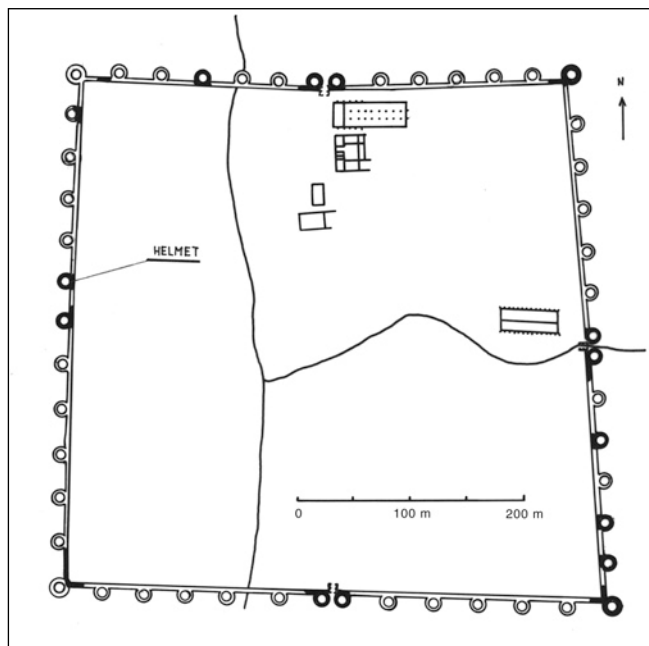


Fig. 9: The Late Roman fortress at Alsóhetény after TÓTH 1988, 24, Fig.3

Sheet No 1/2: presumably the fragment of the coating sheet of the neck-guard. (Fig. 12, 1/2 – Fig. 13, 1/2)

Dimensions: Length: 96 mm
Width: 25 mm
Thickness: 0.15 mm

The thin, fragmentary, silver sheet of quite scratched gilding and decoration remained in a rectangular shape. The left, presumably intact corner and the arched side belonging to it, that is also followed by the aurous line of “X” patterns of polychrome effect projecting from the silver surface, meet at an obtuse angle¹⁵. On the inner side of the sheet the “X” pattern is emphasized by stylised bead mouldings. Under the decorative band, two rivet-holes of about 1.5 mm can be seen.

The quality of this sheet is different from that of the others. This can be seen from the appearance of the decoration¹⁶ that it was made of softer silver. The gilding is fainter than observed on the other sheet.

Sheet N° 1/3: presumably the piece of sheet coating the right side cheek-piece. (Fig. 12, 1/3 – Fig. 13, 1/3)

Dimensions: Length: 123 mm
Width: 85 mm
Thickness: 0.18 mm

On one edge of the fragment of the gilt silver sheet which survived in the shape of a triangle, the traces of the original border can be perceived. This may be the top part of the coat of the right cheek piece. The evidence for this is the elaboration of the border, where traces of the fastening of the sheet onto the iron under-plate, as well as the regular 2.5 mm diameter hole together with another hole probably present in a defect 31 mm away, that may have served for

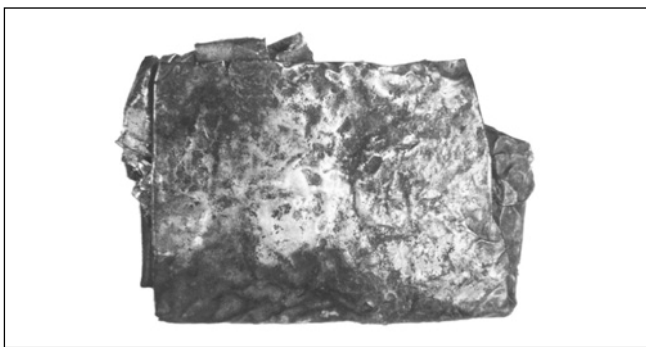


Fig. 10: The folded block of the gilded silver sheets N° 1



Fig. 11: The folded block of the gilded silver sheets N° 2

fastening the cheek-piece to the bowl of the helmet. Besides these perceptions, the suspicions mentioned above are also supported by the decoration. The “X” pattern, elaborated in the stripe framed by the stylised bead mouldings, borders the top part of the sheet and, by the evidence of sheet N° 1/5, also the missing front border. Under and behind this decorative stripe, after a 3-6 mm undecorated dividing stripe and another string of stylised bead mouldings, there is a line of “raindrop” or “dotted circle” pattern. The quality of this coating sheet is identical to that of N° 1/2.

Sheet N° 1/4: (?) (Fig. 12, 1/4 – Fig. 13, 1/4)

Dimensions: Length: 39 mm
Width: 23 mm
Thickness: 0.14 mm

A gilt silver sheet fragment survived as a rectangular shape, whose original border is marked with a pattern of small “circles”, framed by stylised bead mouldings. On the bottom part of the fragment, two 3mm holes can be seen 30 mm from each other.

Sheet N° 1/5: presumably the piece of the sheet coating the left side cheek-piece. (Fig. 12, 1/5 – Fig. 13, 1/5)

Dimensions: Length: 80 mm
Width: 55 mm
Thickness: 0.18 mm

On two sides of the gilt silver coating sheet that survived as a triangular shape, the original trace of the border can be seen. The top and front edge of the sheet coating the left cheek-piece is also observable on the remaining fragments. On the top part, in a defect, we may suspect the fastening hole, that is located in a rim of “X” patterns framed by stylised bead mouldings, in the same way as on sheet N° 1/3. This decorative stripe is also apparent on the front part of the coating sheet. Under and behind this decorative stripe, after a 3-6 mm, undecorated dividing stripe and another string of stylised bead mouldings, there is a line of “raindrop” pattern on the top and a line of “dotted circle” pattern in the front. The quality of this coating sheet is identical to that of N° 1/2 and 1/3.

Sheet N° 1/6: the left coating sheet of the bowl of the helmet. (Fig. 14, 1/6 – Fig. 15, 1/6)

Dimensions: Length: 199 mm
Height: 177 mm
Thickness: 0.22 mm

The gilt silver coating sheet that survived almost in its entirety, follows the same pattern design as the left side of the bowl of the helmet. The missing back part of this coating sheet figures separately (sheet N° 1/7). All along the border of the sheet, including the cut-out for the ear, a line of plastic “dot-comma” pattern between two lines of stylised bead mouldings is placed. On the bottom edge a defect can be seen, showing the original 0.8-1 mm thickness of the iron helmet, and the recurved rim, which survived as a 3-5 mm stripe.

There are regular holes of 2.5-3 mm between the bottom border of the sheet and the pair of stylised bead mouldings. These fastening holes are 1.2-1.3 mm from each other around the cut-out for the ear while along the rest of the rim they are 42-48 mm apart. On the top of the helmet-bowl they are 39-49 mm apart. There are 8 holes around the cut-out for the ear, 3 on the front border, 2 on the back border while there are 5 on the bowl. There are smaller cracks of a different character on the front border, as well as in the central field of the sheet. These holes may result from damage caused while folding the sheet.

The damage caused to the gilding can be perceived in several places. This mainly relates to the technique of the gilding – fire gilding¹⁷ –, as well as

to the technological process during which the iron plates of the helmet were coated with the silver sheets before the final assembling. After the parts were assembled, only the visible surfaces were gilded.

On the front, above the superciliary ridge, in the front corner of the inner helmet field, there is a punched inscription:

“O F(ficina) G A I A N I”¹⁸ (Fig. 15, 1/6,a)

Sheet N° 1/7: the back fragment of the left coating sheet of the bowl of the helmet.(Fig.14, 1/7 – Fig.15, 1/7)

Dimensions: Length: 110 mm
Height: 88 mm
Thickness: 0.24 mm

It is a gilt silver sheet surviving in the shape of a fragmentary triangle, part of sheet N° 1/6. In its right corner the broken thickness of the under plate, as well as the size of the recurved rim (that reaches 5 mm in this case) can clearly be seen.

Between a pair of stylised bead mouldings following the border of the fragment, a line of plastic “dot-comma” pattern is placed. In the back bottom corner, there are three rivet-holes of 2mms. On the bottom rim, we can suspect rivet-holes for fastening the coat sheet onto the bowl of the helmet in a defect 38 mm from the corner, as well as in another crack 38 mm further on. Rivet-holes of similar function can be seen on the back part of the sheet coating the helmet-bowl where the holes are placed 45 mm from each other. On this bent, refracted sheet, the thickness of the under plate of the bowl of the helmet, as well as the recurved rim of 4-5 mm also appear.

Sheet N° 1/8: fragment of the coating sheet of the cover of the cheek-piece hinge. (Fig. 14, 1/8 – Fig. 15, 1/8)

Dimensions: Length: 30 mm
Width: 16 mm
Thickness: 0.22 mm

A gilt silver sheet fragment that coated the covering plate of the cheek-piece hinge. On the rim, above the remnant of the recurved sheet, stylised bead mouldings frames the coating sheet. This decorative line is followed by the “dot-comma” pattern from inside.

Block N° 2

Unfolding block N° 2 we could not observe a similarly careful folding as in the case of the former one. Here the smaller pieces were also placed into the bigger ones folded with their gilt sides towards each other, and here we found some of those round-headed rivets that had been used to fasten the decorative, coating sheets to the helmet. These rivets penetrated and tore through the other layers, when the sheets were folded, contributing to the damage of the already fragmentary, gilt silver sheets. On one surface of the block, the imprints of three rivet heads can be seen, which indicates that the block may have been bigger. The top layer of the sheet however, that also contained these three rivets, has been lost together with the rivets.

Sheet N° 2/1: fragment of the coating sheet of the cover of the cheek-piece hinge.(Fig. 16, 2/1 – Fig. 17, 2/1)

Dimensions: Length: 76 mm
Width: 38 mm
Thickness: 0.25 mm

It is a gilt silver fragment of a sheet, which survived as an irregular, quadrangular shape; the fragmentary border of the coating sheet of the cover of the cheek-piece hinge. The sheet, which shows its original border on three sides, is straight along the top while widening out at the bottom. Its edge is marked with stylised bead mouldings and decorated with a “dot-comma” pattern running parallel to it. On the verge the impression of the 0.8-1 mm thick under plate and the 3mm wide, recurved stripe can be clearly followed. Inside the sheet, the imprints of two rivet heads can be seen.

Sheet N° 2/2: fragment of the coating sheet of the cover of the cheek-piece hinge. (Fig. 16, 2/2 – Fig. 17, 2/2)

Dimensions: Length: 40 mm
Height: 36 mm
Thickness: 0.20 mm

It is a gilt silver fragment of a sheet, which survived as an irregular, triangular shape; the fragment of the coating of the covering plate of the cheek-piece hinge. Its edge is marked with stylised bead mouldings and decorated with a “dot-comma” pattern running parallel to it. Inside the sheet, the imprint of a rivet head can be seen, while a 3-4 mm recurved stripe on the border.

Sheet N° 2/3: presumably part of the sheet coating the crest. (Fig. 16, 2/3 – Fig. 17, 2/3)

Dimensions: Length: 40 mm
Width: 37 mm
Thickness: 0.14 mm

It is an undecorated, gilt silver sheet, which survived in the shape of an irregular, quadrangular fragment, and bears traces of wrinkles and streaks pressed through the material; similar to those we can see in the longitudinal axis of the sheet N° 2/10. It is supposedly the piece of the sheet coating the crest.

Sheet N° 2/4: a fragment of the sheet coating the crest. (Fig. 16, 2/4 – Fig. 17, 2/4)

Dimensions: Length: 103 mm
Width: 53 mm
Thickness: 0.21 mm

It is a gilt silver sheet from the coating of the middle part of the crest, and survived as an irregular, quadrangular shape. On the top, on the straight section, as well as on the bottom (on the fragmentary part), the “dot-comma” pattern running parallel to the stylised bead mouldings marking the border of the sheet, can clearly be seen. Although the sheet is considerably creased and damaged, the 3 mm recurved stripe of the sheet can still be seen on the top rim. The parallel stripes 18 mm from each other probably mark the crest part of the rib on the coating. There are two round and one flat imprint of rivet heads visible on the gold sheet.

Sheet N° 2/5: fragment of the coating sheet of the cover of the cheek-piece hinge.(Fig. 16, 2/5 – Fig. 17, 2/5)

Dimensions: Length: 97 mm
Width: 37 mm
Thickness: 0.26 mm

It is a gilt silver sheet, which survived as an irregular, triangular shape; the border fragment of the coating sheet of the covering plate of the cheek-piece hinge. The sheet, that shows its original border on three sides, is straight on the top while widening out at the bottom. Its edge is marked with stylised bead mouldings and decorated with a “dot-comma” pattern running parallel to it. Inside the sheet, the imprints of two rivet heads and apparently two regular rivet-holes can be seen. The sheet is badly wrinkled and damaged.

Sheet N° 2/6: the front fragment of the coating sheet of the right side of the bowl of the helmet.(Fig. 16, 2/6 – Fig. 17, 2/6)

Dimensions: Length: 125 mm
Height: 98 mm
Thickness: 0.22 mm

The gilt silver coating sheet, that survived as an irregular triangular shape, follows the pattern design of the right side of the helmet-bowl. The back part of the coating sheet missing here is figured separately (sheet N° 2/9). Around the border of the coating sheet, a plastic “dot-comma” pattern is placed between a pair of stylised bead mouldings. On the bottom edge, the beginning of the stripe decorating the rim of the cut-out for the ear can clearly be seen.

Between the bottom border of the sheet and the decorative stripe framed by the pair of bead mouldings, there are 1.5-2 mm regular holes 20-22 mm apart. On the bowl, there are two holes placed 32 mm apart. Here the defect of the gilding can also be perceived. There are smaller holes of different character on the front border and the inside of the coating sheet. These holes, such as the 11 imprints of the rivet heads, result from the folding of the sheet.

Sheet N° 2/7: a fragment of the coating sheet of the right side of the bowl of the helmet. (Fig. 16, 2/7 – Fig. 17, 2/7)

Dimensions: Length: 46 mm
Height: 51 mm
Thickness: 0.21 mm

It is a gilt silver sheet fragment of the ear cut-out, which survived in the shape of an irregular square. The “dot-comma” pattern between the pair of bead mouldings following the cut-out for the ear in an arched way determined the identification of the fragment. Between the border of the sheet and the



Fig. 12: Coating sheets photos from block N° 1, 1-5

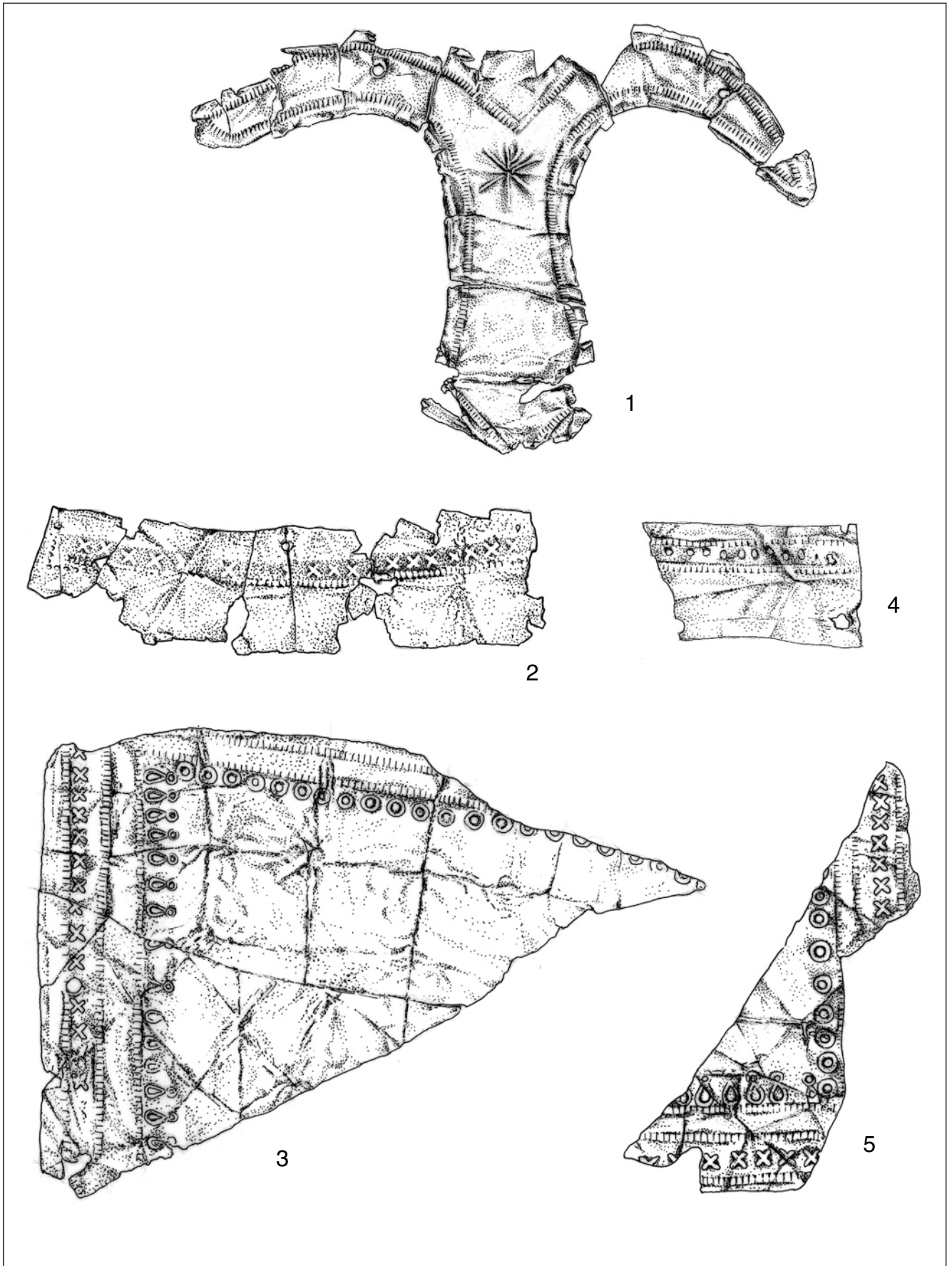


Fig. 13: Coating sheets drawings from block N° 1, 1-5

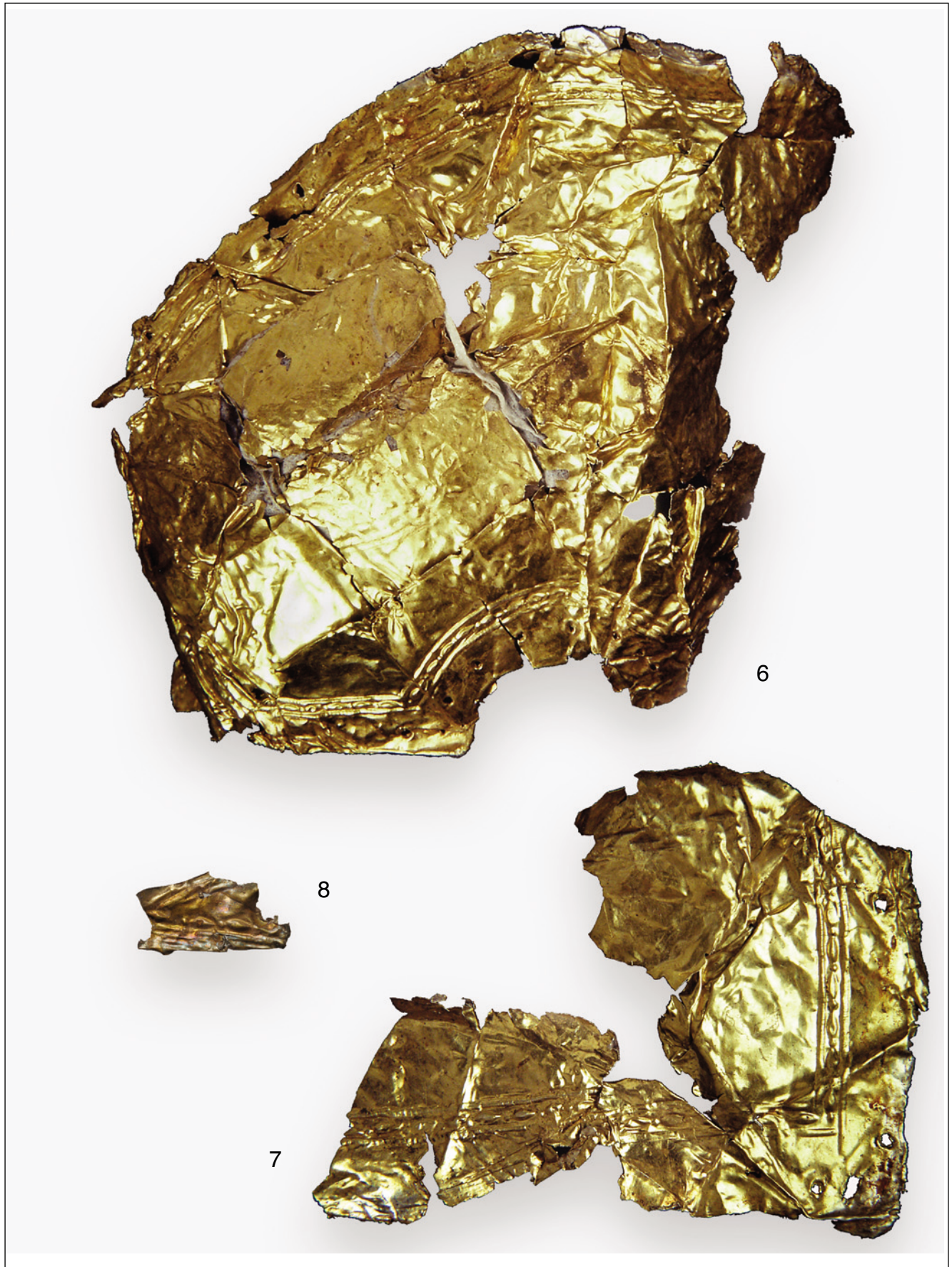


Fig. 14: Coating sheets photos from block N° 1, 6-8

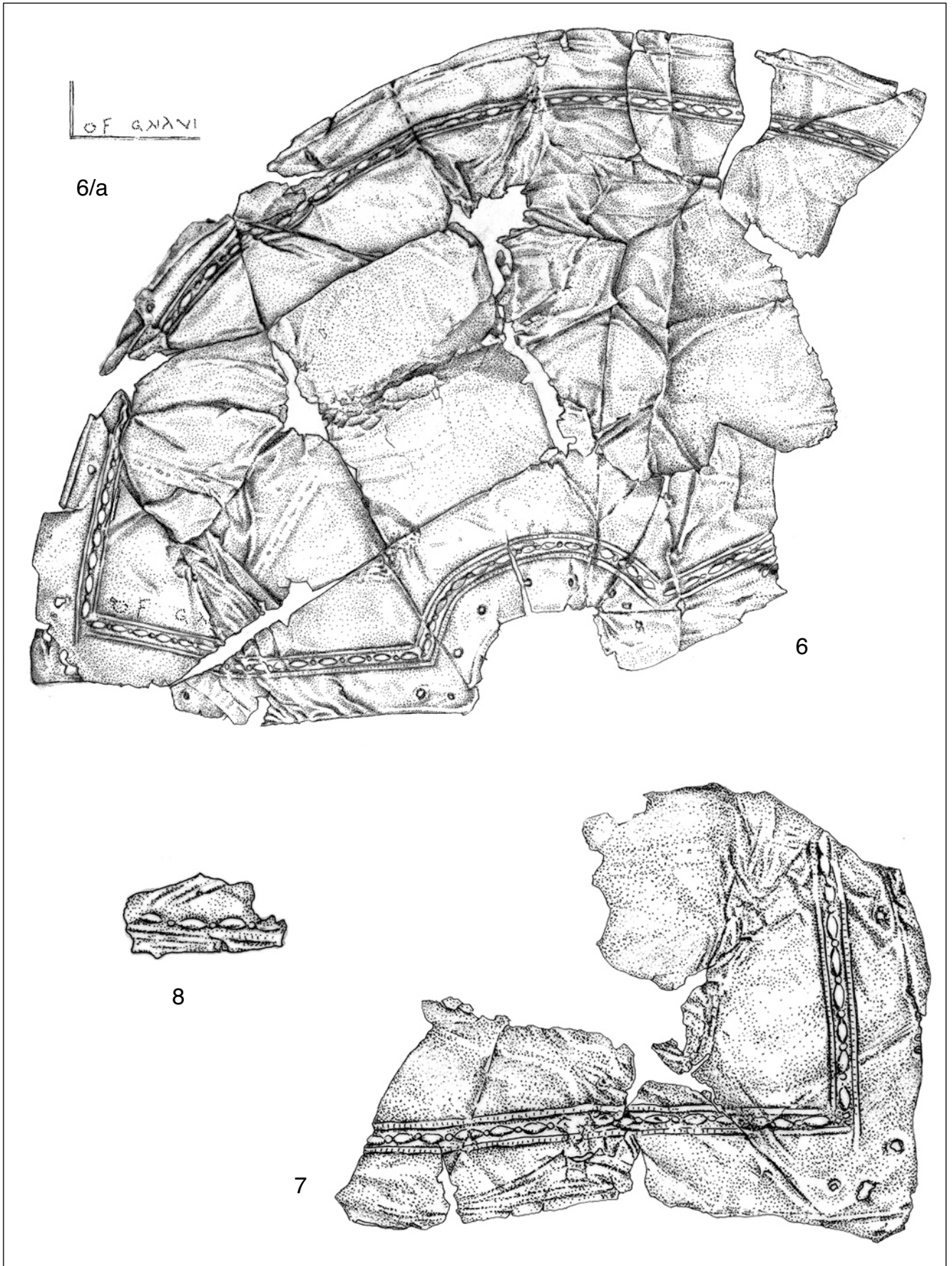


Fig. 15: Coating sheets drawings from block N° 1, 6-8



Fig. 16: Coating sheets photos from block N° 2, 1-7

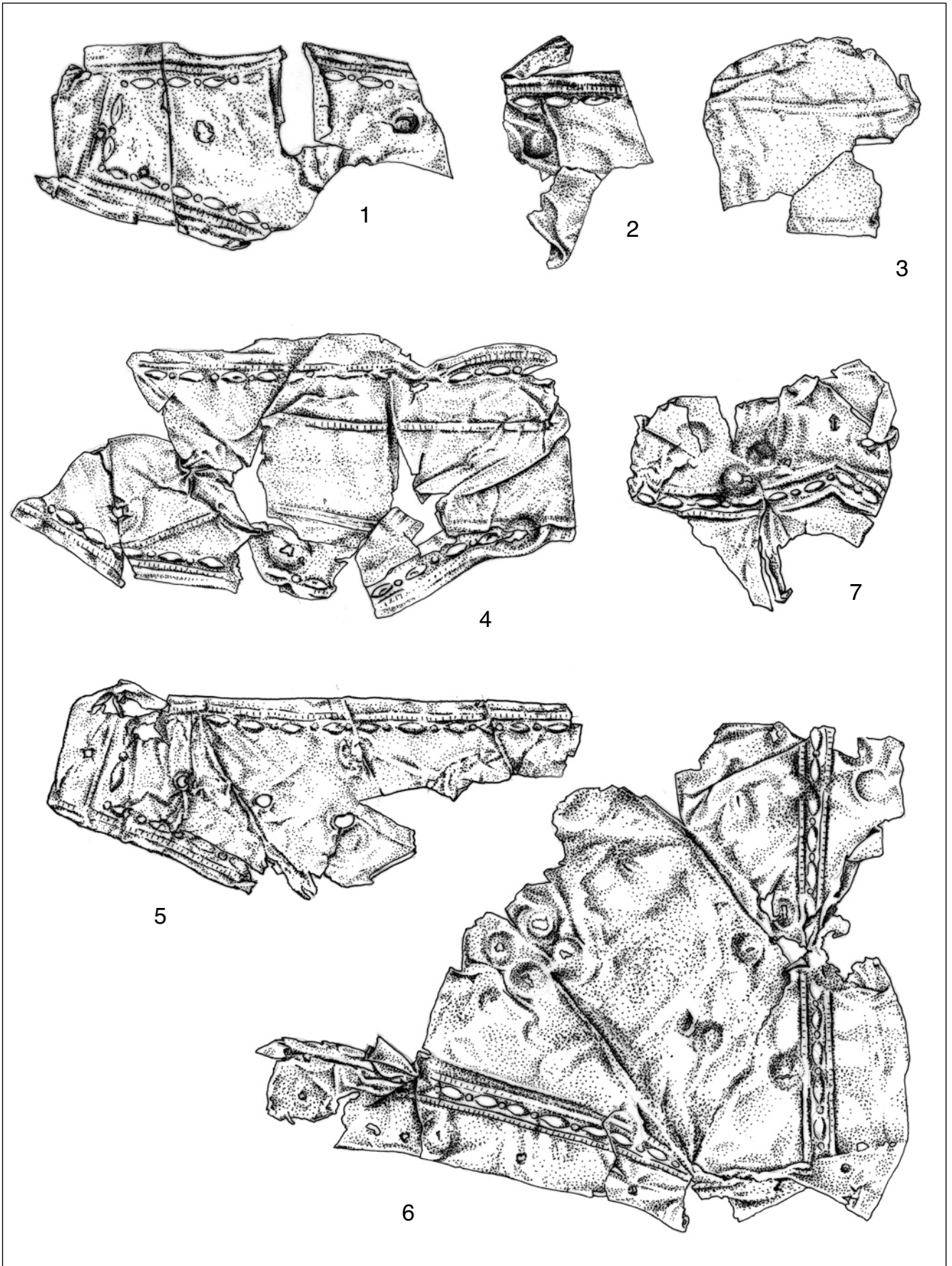


Fig. 17: Coating sheets drawings from block N° 2, 1-7

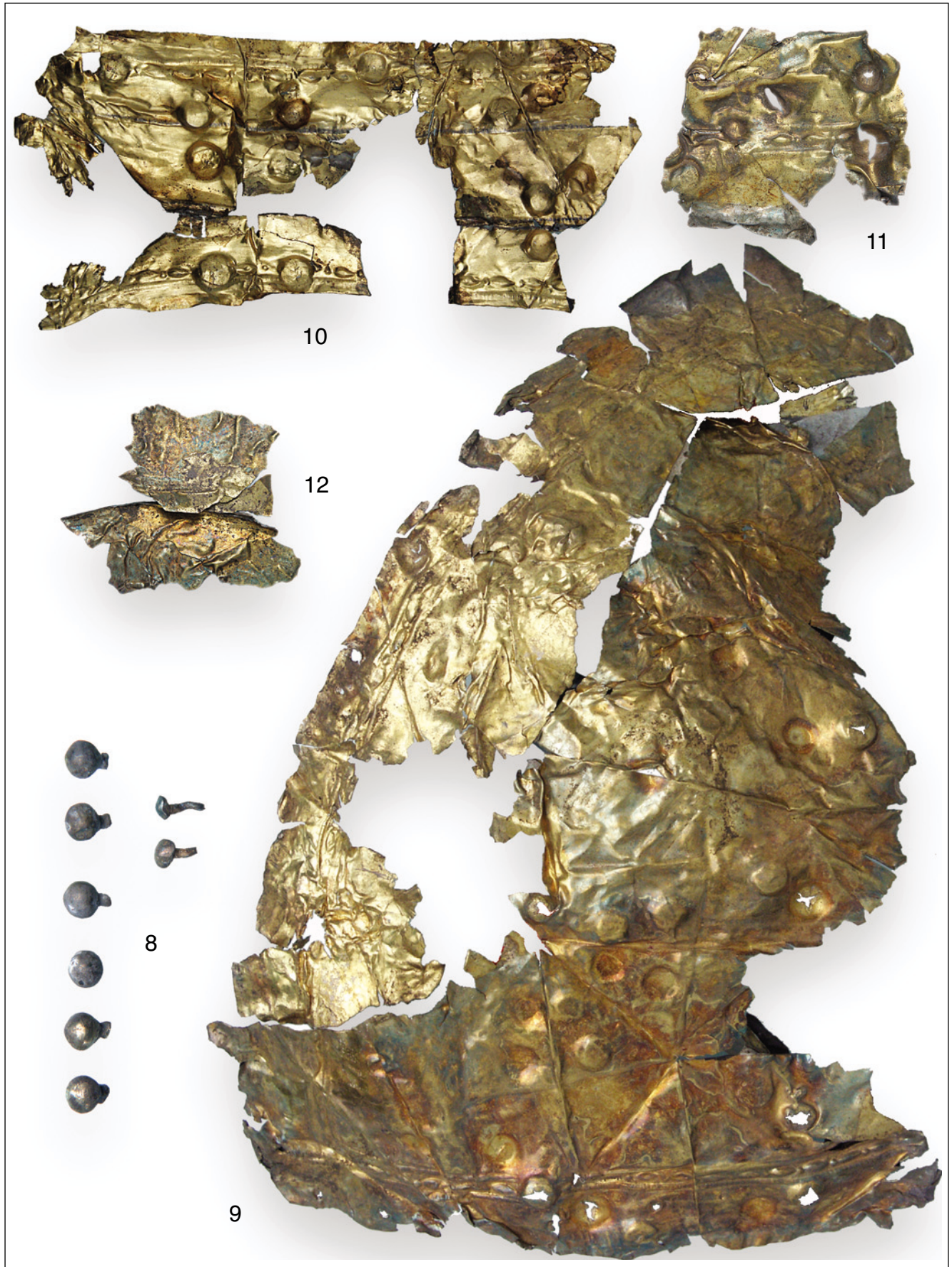


Fig. 18: Coating sheets photos from block N° 2, 8-12

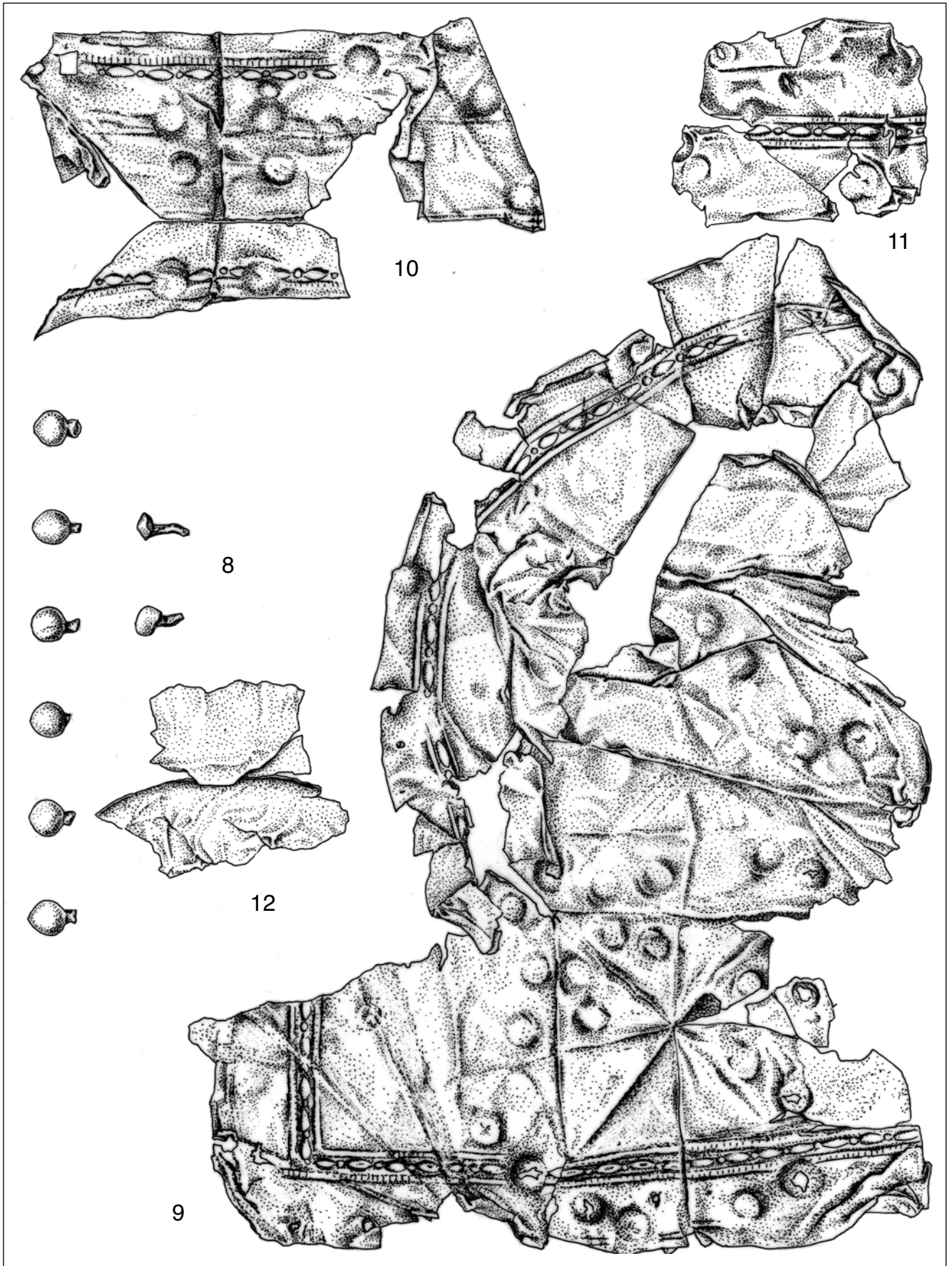


Fig. 19: Coating sheets drawings from block N° 2, 8-12

decorative stripe framed by the stylised bead mouldings, there are 1-1.5 mm rivet-holes 9-11 mm from each other. Three imprints of round rivet heads can be seen on the considerably wrinkled sheet with rather torn border.

Rivets N° 2/8: silver rivets to fix the gilt, silver coating sheet and other parts of the bowl of the helmet. (Fig. 18, 2/8 – Fig. 19, 2/8)

6 pieces of round head rivets.

Dimensions:

Heads:

Diameter: 6-6.5 mm

Length: 9 mm

Shanks:

Diameter: 2-2.5 mm

Length: 2-2.2 mm

2 pieces of lentil head rivets

Dimensions:

Heads:

Diameter: 4-6 mm

Length: 9 mm

Shanks:

Diameter: 1.5-2 mm

Length: 5-7 mm

The round- and lentil-headed solid silver rivets were placed in block N° 2, and caused damaged by pressing through almost all the folded layers and in some places tearing through the sheets. The round-headed rivets, fixed the gilt silver coating sheet to the iron under plate, as shown by the sizes of the shanks. The remaining shank is about 2 mm long, and indicates the thickness of the iron plate of the helmet, which may have been 1-1.5 mm. The additional thickness consists of the adhesive needed for fastening the coating sheet and the gilt silver sheets (0.2 mm thick on average). The shank was tilted inside the helmet-bowl, fixing the coating sheet to the iron helmet in this manner. Presumably more rivets were used for fastening the coating sheet than have survived¹⁹. The round-headed rivets, besides their fastening function, also performed an aesthetic role.

The two flat, lentil-headed rivets that turned up in the block may have fulfilled a different function. The length of the shanks lets us conclude that under the heads, there may have been a thicker material, such as some organic tissue, namely leather. The slight breaks observable on the shanks²⁰ suggest 3 mm thick leather straps holding the neck guard or the cheek-piece plates.

Sheet N° 2/9: a fragment of the coating sheet of the right side of the bowl of the helmet. (Fig. 18, 2/9 – Fig. 19, 2/9)

Dimensions: Length: 135 mm

Height: 188 mm

Thickness: 0.24 mm

The protracted, rectangular, gilt silver sheet with rather torn borders coated the back part of the right side of the bowl of the helmet. Around the edge of the coating sheet, a plastic, “dot-comma” pattern is placed between stylised bead mouldings following the edge of the sheet.

Between the bottom border of the sheet and the decorative stripe framed by the stylised bead mouldings, there are cracks and holes 14-15 mm apart some of which had a function in the fastening of the coating sheet. On the sheet coating the bowl, due to the numerous damages, only one intact hole can be seen. In the top part of the sheet coating the bowl, the defect of the gilding could be observed.

The damage to the rather defective sheet was increased by the imprints of 32 round head rivets that tore through the sheet in some places, which was caused by the repeated folding of the sheet.

Sheet N° 2/10: a fragment of the sheet coating the crest. (Fig. 18, 2/10 – Fig. 19, 2/10)

Dimensions: Length: 125 mm

Width: 55 mm

Thickness: 0.25 mm

The considerably damaged, gilt silver sheet, which survived in the shape of a long rectangle, is the middle fragment of the sheet coating the crest. The sheet has its original borders on both sides. The edge of it is marked with stylised bead mouldings, in parallel, which it is decorated with a “dot-comma” pattern. The 19 mm wide wrinkles and abrasions that run in parallel with each other in the longitudinal axis of the sheet and mark the rib of the crest can clearly be seen. The base of the crest is 16-18 mm wide on both sides, while the back part of the sheet is recurved by 3 mm. The imprints of 14 rivet heads can be perceived inside the sheet.

Sheet N° 2/11: a border fragment of the sheet coating the right side of the bowl of the helmet. (Fig. 18, 2/11 – Fig. 19, 2/11)

Dimensions: Length: 47 mm

Height: 37 mm

Thickness: 0.25 mm

The gilt, silver sheet, which survived as a rectangular shape, is the edge fragment of the sheet coating the right side of the bowl of the helmet. In the middle of the fragment, between a pair of stylised bead mouldings following the border of the sheet, a “dot-comma” pattern is situated. We may surmise the trace of the fastening rivet in a crack on the bottom rim. There are imprints of five round head rivets on the sheet.

In a 5-6 mm stripe in the middle of the sheet, the defect of the gilding is perceivable.

Sheet N° 2/12: supposedly a part of the sheet coating the bowl of the helmet. (Fig. 18, 2/12 – Fig. 19, 2/12)

Dimensions: Length: 46 mm

Width: 36 mm

Thickness: 0.14 mm

It is an undecorated, gilt silver sheet of an irregular shape, with rough traces of wrinkles. The approximately 150 mm diameter arched bend may have occurred when the sheet was folded. It is presumably part of the coating sheet of the helmet-bowl.

Analysing the gilded silver sheets we have the opportunity to identify the original object that bore them. Most of the individual fragments bear those morphological marks, which provide with the relevant proofs concerning their original shape. Moreover, the examination of the decoration extant on or even absent from the sheets allows us to unerringly determine their original position and arrangement

On the basis of everything written above, one or perhaps two helmets were hidden in the two blocks of folded gilt silver sheets. The sheets were peeled off the component parts of the helmet in a rough manner. In the process the originally intact, thin, coating sheet got torn and deformed, and finally the precious metal obviously taken as treasure,²¹ was even more damaged when being folded into blocks.

On some fragments, different decoration can be observed. In these cases, almost on every occasion, they are from the moving parts of the helmet, which were added to the bowl of the helmet, such as the cheek-pieces or the neck-guard. In these cases the suggestion presents itself that we may have parts of another helmet²². We cannot exclude the possibility, and it is more than likely that in this case they are the dismantled parts of another helmet with which the helmet was mended in the Roman period. This possibility is supported by the fact that we could only identify coating sheet with different decoration in case of the moving parts of the helmet.

After the analysis of the sheets, a helmet of Intercisa III type²³ unfolds itself before us. (Fig. 20)

This type consists of a bowl of a helmet forged into two quarters spheres of iron plates, which are clamped together by a longitudinal, crested or plain rib on the top of the helmet bowl. At the bottom, on the edge of the helmet, the iron

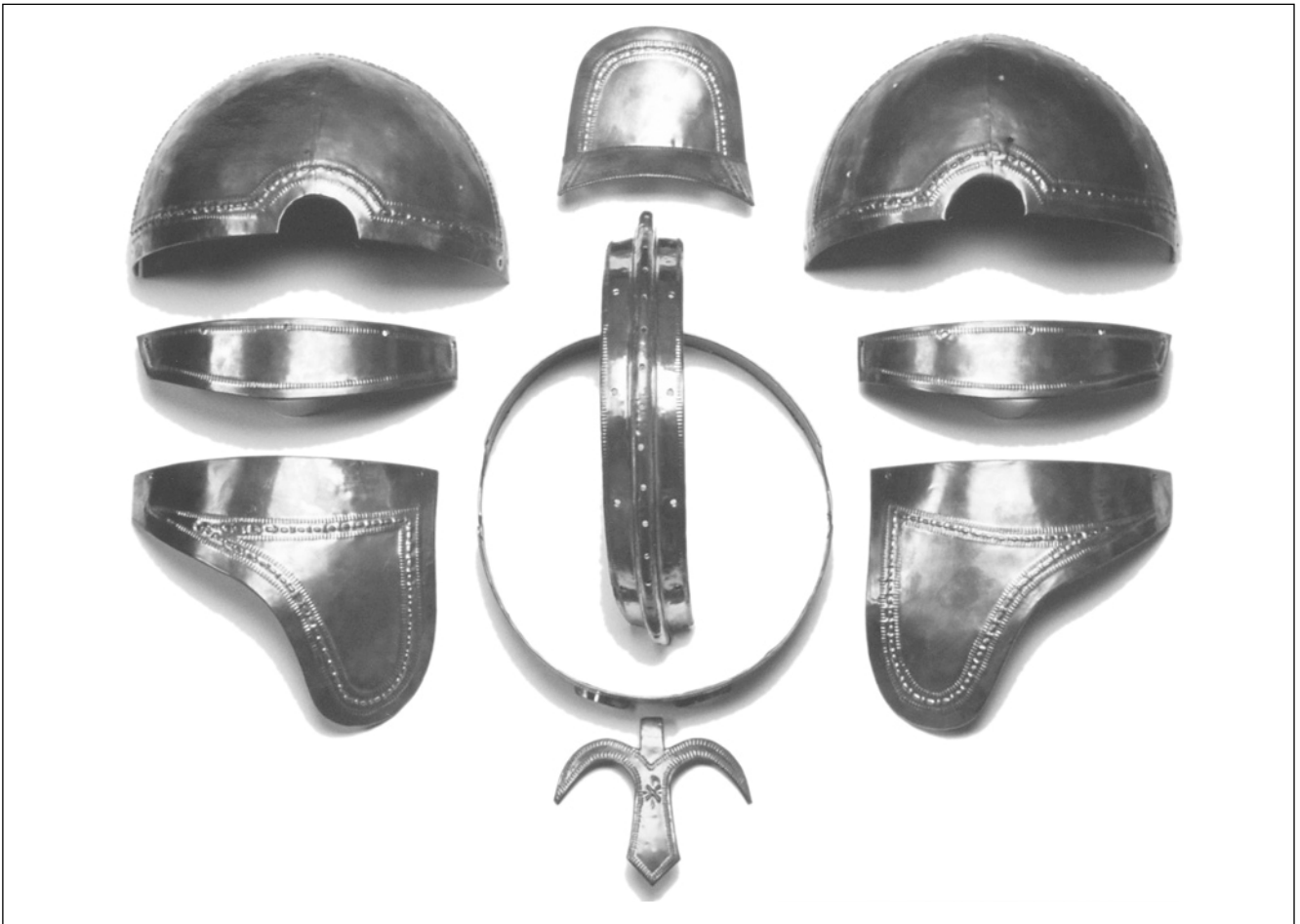


Fig. 20: The reconstructed parts of the Helmet from Alsóhetény

bowl is attached to a lower band, to a hoop. The nasal in the front, the cheek-pieces reaching far back on the sides and the neck guard at the back were all attached to this hoop. On *Intercisa III* and *IV* type helmets, plates protecting the hinges of the cheek-pieces were also fixed on the sides at the bottom of the helmet bowl.

Production of the Helmet

According to the punched inscription OF(icina) GAIANI located on the left side of the silver covering plate of the helmet, the gilding of the iron parts of the helmet bowl, the cheek-pieces, the nose and neck-guard with gilded silver plate was made in a workshop (*fabrica*) under the auspices of a certain Gaianus, *magister officiorum*²⁴. The work was accomplished by a *barbaricarius*²⁵, with considerable care and skill, supervised by a *praepositus fabricarum*²⁶.

On the strength of the inscription, the helmet was made in a workshop under control of an *officium* typical of the eastern parts of the empire²⁷. We can get even closer to the solution since we know the name of the *magister*, though his person can not be identified as yet.

Summarizing Conclusions

- The left side of the bowl of the helmet consists of the fragments N° 1/6 and 1/7 while the right side is composed of the sheet N° 2/6, 2/7, 2/9, 2/11 and 2/12.
- The longitudinal, crested rib clamping the bowl of the helmet on the top was decorated with the sheet N° 2/3, 2/4 and 2/10.
- The plates defending the hinges of the cheek pieces-were coated with the fragments of the sheet N° 1/8, 2/1, 2/2 and 2/5.
- The gilt silver sheet were fastened to the helmet with the silver, round or lentil-headed rivets under N° 2/8.
- Sheet N° 1/1 provides the evidence for the shape of the iron nasal where it was fixed at the front at the meeting point of the lower band and the crest.
- Presumably neither the gilt silver sheet N° 1/3 constituting part of the coating of the right cheek-piece, nor the sheet N° 1/5 coating the left cheek-piece were made for this helmet. The material of these sheets is softer, so their decoration of pressed technique is also fainter than what was perceived in case of the above-mentioned sheet constituting the coating of the helmet bowl.



Fig. 21: The reconstruction of the Helmet from Alsóhetény, a, front side; b, back side; c, right side; d, left side

- The position of the gilt silver sheet N° 1/2 is not solved. By the intact border of the fragment, the appearance of the decoration on it and by the fact that it is a closed find, in which the individual fragments reproduced almost all parts of the helmet, we may render a sheet coating the neck guard probable.
- The fragment of sheet N° 1/4 has a third pattern of decoration. However the small size of the sheet does not allow us to determine its function more accurately.
- The helmet itself was made in the Eastern part of the Empire in the Danube area (Fig. 21)

The characteristics of the finds affords possibilities for further conclusions:

- 1, The sheets are from a helmet of Intercisa III type.
- 2, The Christ monogram is placed on the nasal.
- 3, Originally, the sheets had decorated more at least two helmets.
- 4, The closed treasure trove bears witness to repairs and alterations carried out in the Roman period.
- 5, It postulates the presence of Roman military units in the fortress or its vicinity.
- 6, The commander, the former wearer of the helmet, might be Christian.
- 7, The silver taken as treasure from the looted helmet was hidden by a poor, presumably not Roman, person.

As we have seen above, the gilt silver sheets that coated the helmet came to light from a crack in the wall of the tower N° 9, at a depth of 55 cm measured from the surface, from the lower plane of a burnt debris layer of *tegulae*, i. e. from the border with another layer of a different material, possibly the original ground surface²⁸.

This observation provides information on two facts:

- a, The sheets were hidden after the 2nd construction period of the fortress in Alsóhetény, dated between 375 and 380²⁹;
- b, The sheets were hidden into the crack of the wall prior to the destruction of the tower by fire and its final dilapidation.

The Christ Monogram on the Nasal.

The nasal was imposing even in its wrinkled condition and the Christ monogram on it repoussé from behind is extraordinary³⁰ in this kind of artefact. According to our knowledge a Christ monogram has been identified in only one other case; so far, from a late Roman helmet find from the Netherlands³¹. In that case however the monogram was fixed onto the crest of a high crested helmet of Intercisa II type³².

The Christ monogram is formed from the two initial letters of Christ's name. the X (chi) and P (rho). Its first pictorial occurrence is known from the miraculous scene prior to the battle of the Pons Milvius between Constantine the Great

and Maxentius on 28th October, 312³³. The legendary story is known from Eusebius of Caesarea,³⁴ who was a contemporary of Constantine.

“... ‘You will win in this sign.’ The emperor – who confirmed the official grade of his report by oath before Eusebius – had not known the meaning of this until Christ appeared to him in his sleep, and instructed him to copy the sign seen in the sky and use it as a defence against his enemies. So he did; he got the redeeming and protective martial sign adorned with the initials of Christ made of gold and ornamented with precious stones, and from that time forth it was carried before his legions. He got the initials of Christ put onto his helmet, as he also wore it on it...”³⁵ end of quotation.

The Christogram first appears on a Constantinian coin in 315. After this it rapidly came into general use and appeared on numerous objects. In the series of coins³⁶ minted in 315 and on the decennial of the reign of Constantine, the placement of the Christ monogram onto the front of the helmet is unparalleled. In most of the cases³⁷ we can see helmets of type Intercisa IV type with helmet-bowls formed with ribs on both the longitudinal and diagonal axes of the helmet. The Christ monogram appears on the diagonal axis, above the exsection for the ears. We know the only exception is when the helmet belongs to type Intercisa III type, and the monogram is placed in the front of the helmet in front of the crest. This coin picture is known from the silver medallion of Constantine. (Fig. 22)



Fig. 22: The silver stamp of Constantine the Great from 315 AD. *Staatl. Münzsammlung München. KLUMBACH 1973, Taf 65/1 (M 3:1)*

Three specimens of the medallion or coin worth two silver coins are known. One is in Vienna, another is in Munich and the third is in St. Petersburg³⁸. All the three specimens were made by different dies.

In the inscription of the front of the coin we can read IMP CONSTANTINUS P F AUG, and the bust representa-

tion of emperor Constantine. He appears in full armament though not in the usual posture; in profile or frontal but we can see the face almost frontal and the body from half-profile. The Emperor, wearing armour, is holding the bridle of his horse in the background in his right hand. At his right shoulder, on the top part of his ornamented shield, the she-wolf, as well as

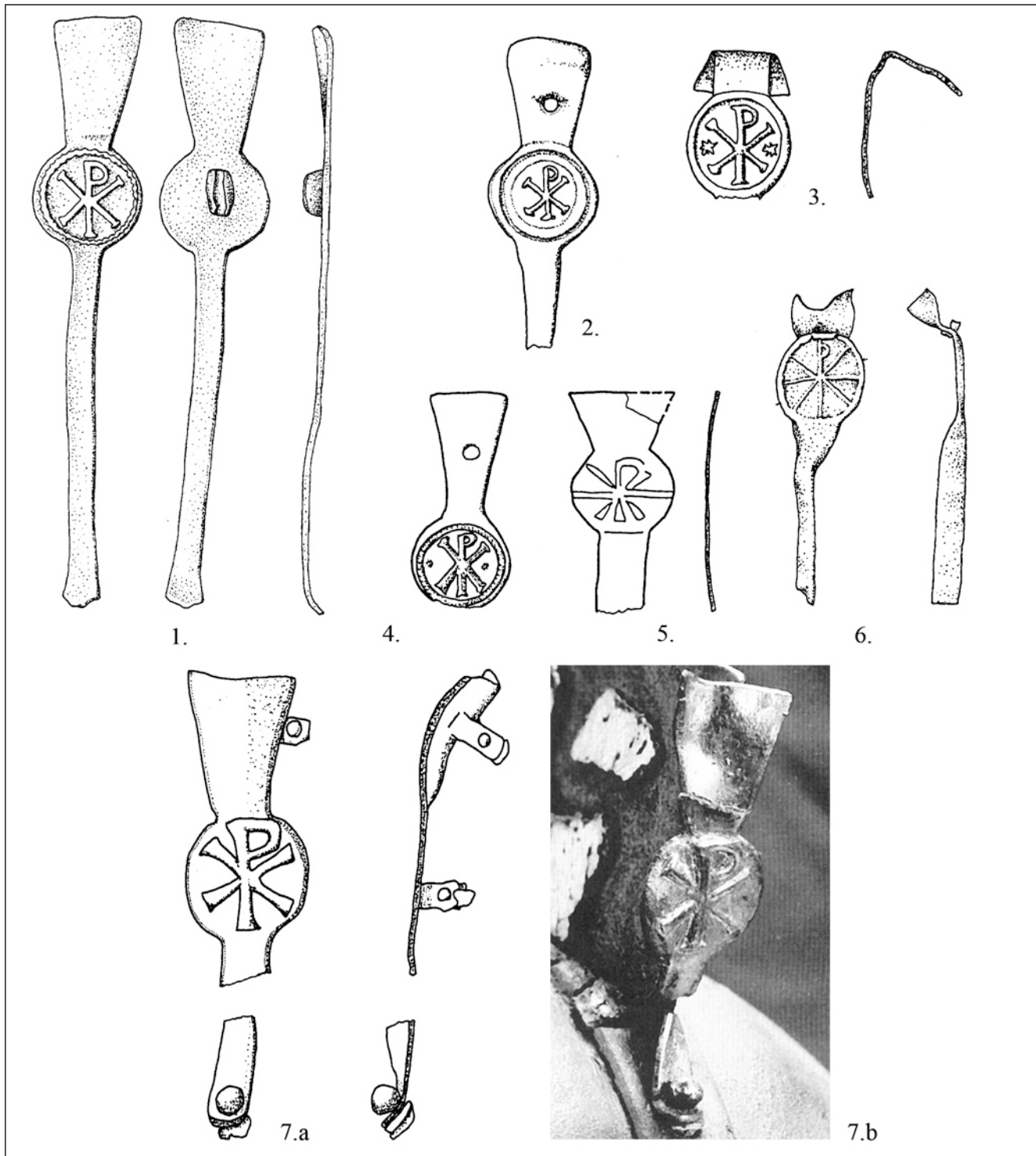


Fig. 23: The badges with chi-rho monogram from: 1. Alsóhetény, 2. Siscia, 3. Siscia, 4. München(?), 5. Richborough, 6. Savaria, 7a-7b. Meuse walley (The Netherlands)

Romulus and Remus are depicted. The emperor is holding a cross-shaped, monarchic sceptre in his left hand, behind the shield. On his head he is wearing a little distorted helmet of type Intercisa III type abundantly adorned with precious stones. The crest is decorated with two (or three)³⁹ rows of presumably peacock feathers while on the front, fixed onto the fore-part of the crest, the Christ monogram of the *chi* and *rho* is placed.

The medallion was most probably made in the mint of Ticinum in 315, for the 10th anniversary, *decennalia* of Emperor Constantine's reign⁴⁰.

Recently, from the discovery of a late Roman treasure, fragments of objects depicting also Christ monogram have been found⁴¹. They were identified as brooches for liturgical use before can be finally interpreted with the help of this peculiar group of finds, The first student⁴² of this group of objects, who first identified them as brooches, gave voice to his doubts and discussed the question of the brooch from Alsóhetény further, putting forward the possible correct interpretation⁴³ with a note: "it may have rather been an badge than an article of use"⁴⁴.

The artefact got into the collection of the Hungarian National Museum by purchase, labelled Heténypuszta (Alsóhetény) as its provenance. (Fig. 23,1) In the flat, rounding disc with a diameter of 21 mm set in the upper third of the 102 mm long, asymmetrical, propeller-shaped, gilded bronze badge, a plastically elaborated Christ monogram is placed inside a frame of stylised bead mouldings. On the back of the disc, a "U" shaped fastening clasp can be seen. Its tapering strip curves forward a little at the end⁴⁵. The fastening clasp on the back of the disc and the curving strip at the bottom of the badge, though broken at the end, show that it was originally attached to a helmet.

The next, similarly shaped, gilt, bronze badge is from Southwest Pannonia (Fig. 23,2) with its more specific provenance unknown, but probably Siscian⁴⁶. The diameter of the middle part of the propeller shape, (83 mm) 51 mm⁴⁷ long badge that expands into a disc is 22 mm. The plastically elaborated Christ monogram is placed here, in the disc with a double circle frame. In the monogram, to the sides, the traces of a pattern of two stylised stars can be seen. Its bottom part is missing. In the top part of the badge, above the disc, a big rivet-hole can be seen. The badge was fixed to the crest of the helmet with the missing rivet, as it can be seen in the case of the one from Szombathely.

The next badge belonging to this group of artefacts (Fig. 23,3) comes from Siscia (Sisak) and is now in the Municipal Museum in Sisak⁴⁸. In the middle part of the propeller shape badge (whose remained length is 41 mm) made of gilt bronze plate, a plastically elaborated Christ monogram is placed on a plain, framed disc with a diameter of 17 mm.

The propeller part curves back almost entirely. The lower part down from the central, medallion part of the badge is missing⁴⁹. The holders for fastening it onto the crest or the traces of the rivets are not shown in the published report.

The fourth badge was published as an artefact of unknown provenance from the private collection of München, Sammlung c.s.⁵⁰. (Fig. 23,4) There is a plastically elaborated christogram with a round frame on the bronze badge with gilded surface. On the upper part of the badge there is a rivet hole. The bottom part of the propeller shaped sign is missing. The fragment length is 37 mm, the diameter of the disc part is 17 mm.

The fifth badge fragment came to light in England at Richborough (Fig. 23,5) near the high crested iron Helmet fragment N° 2⁵¹. This fragment of the badge was made of bronze. There is no information about the gilding of the surface. In the central part of the 38 mm long fragment of the badge of propeller-shaped badge we can find the Christ monogram elaborated plastically in the flat disc without a frame (diameter 18 mm).

The sixth badge belonging to this group of objects came to light in Savaria (Szombathely)⁵². (Fig. 23,6) In the central part of the 54 mm long, bronze propeller-shaped badge we can also find the Christ monogram in the plain frame of disc shape with a (diameter of 16 mm), as well as the tapering lower part. The conspicuous, "U" shape curving of the object on the top propeller part and on the lower strip is not damages but traces of the method of fastening the object onto the crest of the helmet. The same purpose, fastening



Fig. 24: The helmet reconstruction from Meuse Walley after JUNKELMANN 1998, 10

onto the crest of the helmet, was served by the rivet above the central disc, as was the case with the rivet-hole in nos two and four (Fig. 23).

The seventh badge is in the treasure trove in the Netherlands (province of Limburg, from the valley of the Meuse) dated by the coin found in 1994-95⁵³. (Fig. 23,7a-7b) There is also a fragment of a crest of a helmet where a coating silver sheet was also found on the fragment of the iron helmet-bowl. The cheek-pieces and neck-guard were missing, but the brass crest of the iron helmet was found. A silver-chloride badge, that was coated with silver-amalgam, with a propeller shape top part and a Christ monogram elaborated plastically in the flat disc with no frame was riveted onto the crest⁵⁴. The badge is superficially worked, and was fixed to the longitudinal rib of the crest with rounded head, silver rivets through the two back lugs on either the propeller part and the lower strip, as well as through the lower, recurved support. The helmet reconstructed from the fragments only roughly resembles the late Roman, Intercisa type helmets⁵⁵. (Fig. 24)

There is no further information about the eight badge mentioned by Driel Muray from Betuwe (The Netherlands)⁵⁶.

Some of the badges listed above⁵⁷ and decorations of the helmets were made of bronze. Neither on the bronze one from Szombathely nor on the silver fragment of the one from the Netherlands were any traces of gilding. All the known seven pieces are different and not mass produced and we can divide them to two main groups: the ones with the frame around the *chi-rho* disc, and pieces without a frame. The pieces with the frame around the *chi-rho* have a Pannonian provenance⁵⁸, and they could be dated to third quarter of the 4th century, while the badges without a frame are from the western part of the Empire (Britannia, Germania) and could be dated to the late 4th century.

The Pannonian pieces are uniformly dated to the second half of the 4th century by researchers. In the case of the treasure from the Netherlands, the time lapse of 45 years amongst the 10 pieces of *solidi* found with the fragment of the helmet covers the use of the group of artefacts. The earliest piece of the coin find is the *solidus* of Valens and Valentinian I dated between 364-367, while the latest is the gold Victoria Auggg of Constantine III minted between 408-411. The rest of the *solidi* were from the mints of Theodosius I, Arcadius, 3 pieces of Honorius, and finally Eudoxia and Theodosius II⁵⁹. The remains of the probable leather helmet from Richborough with the *chi-rho* badge could be dated to the early 5th century⁶⁰.

The dating of the helmets crests decorated with the monogram *chi* and *rho* does not modify the dating suggestion having been accepted so far for the base material, the helmets of Intercisa types.

According to a former idea the beginning of production of the Intercisa types of Helmets should be dated to the late 3rd century. While the year 315 is the *postquem* date for use of the monogram *chi* and *rho* on these helmets the *antequem* date for use and repairing of the Intercisa types of helmets is the first quarter of 5th century.

NOTES

1. KOC SIS 1994, 12-123; KOC SIS 2000, 38.
2. ALFÖLDI 1934, 102-103; THOMAS 1973, 48.
3. KOC SIS 1994, 122.
4. KLUMBACH 1973, 9; with further literature
5. BRUDER 2001, 64-71.
6. NAGY 1900, 45.
7. NAGY 1946; PÓCZY 1970.
8. HAMPEL 1900, 361; THOMAS 1973, 39-.
9. The thickness of the iron core of the helmet bowl is 1,2-1,5 mm. The previous information, 5 mm thickness of the iron bowl, was mistaken: See: HAMPEL 1900, 361; THOMAS 1973, 42.
10. HAMPEL 1900, 366, Fig. 8; ALFÖLDI 1934, 106, Abb. 6a; MacMULLEN 1960, 37; THOMAS 1973, 45, Taf. 18/4
11. A removable iron nasal was found at *Cibalae* (Vinkovci) beside an Intercisa type III-IV form of cheek-piece. See: BRUNŠMID 1902, 158, Fig. 87; KLUMBACH 1973, 12, Abb.1.
12. TÓTH 1993, 39.
13. The verbal information of E. Tóth, excavating archaeologist, to whom I express my thanks also this way. At the same time I owe a debt of gratitude to him for abandoning the publication to me as well.
14. Katalin T. Bruder, chief restorer of the HNM, was my assistant at the cleaning and examination of the sheets, in the course of which it turned out that the sheets only crystallized to a certain extent, so it is possible to unfold the layers without breaking the sheets.
15. A fragment formed similar to the widening sheet of the neck-guard.
16. Here the decorative pattern, as opposed to what was observed on the other sheets, is hardly visible, and almost merges with the surface of the sheet.
17. The gold melted in mercury (amalgam; 10% gold and 90% mercury) was spread onto the surface of the silver, then the mercury was evaporated by heating (350 C°) and the gold remained. For more details see: Vegyészeti lexikon I. Budapest 1960, 82-83.
18. The appearance of the marks of the *officinae*, the mints, on the coins is almost obligatory though its nomination with a separate name is very rare. In the case of metal objects it can only be imaginable on non-series makes, as in this case. See: PWRE 17/2, 2034, and the section on the „Production of the Helmet” in this contribution.
19. See what was written in the description of block N° 2.

20. The break may have resulted from the bending of the shanks in a soft, not solid material.
21. A similar treasure trove was also found in the Meuse (Maas) Valley (Limburg Province, the Netherlands), where besides the gilt silver sheets of a presumably Intercisa II type helmet, a silver helmet badge with a *chi-rho* monogram and 10 pieces of coins, covering a 45 year long period from the mints of Valens and Valentinian I (364-367) to Constantine III (408-411), were found. See: PRINS 1998, 52.
22. In the design of the late Roman helmets it has not been observable that the decoration of the certain composite parts can be different. However, there are helmets which have survived with incomplete elements. See comprehensively: KUMBACH 1973; KOCSIS 1994.
23. KOCSIS 2000, 38.
24. The position of *magister officiorum* was in functioned in the Eastern part of the Empire while the same rank with similar function was known in the Western parts as *comes sacrarum largitionum*. See: MacMULLEN 1964, 31.
25. PWRE 4, 2857.
26. The *barbaricarius* had to cover a monthly amount of 6 helmets and their accoutrements by gilded silver plate under strict control „*multo sudore*” (Codex Theodosianus X, 22). See: KLUMBACH 1973, 12.
27. PWRE 17/2, 2048.
28. Floor level was not perceivable.
29. The gilt silver lamellae for coating the helmet came to light from the crack of the wall in the round tower of the 2nd period.
30. The *Chi-Rho* monogram in this position is on the „chakra” point. This fact need more study and is outside the scope of our theme at the present moment.
31. PRINS 1998, 52.
32. KOCSIS 2000, 38.
33. ALFÖLDI 1943, 13; RIC VII. 1966, Silver 315; ALFÖLDI R. M. 2001, 51.
34. EUSEBIUS, *Vita Constantini* 28-29.
35. ALFÖLDI 1943 14.
36. ALFÖLDI 1932, 9-23; BASTIEN 1992-1994, I. 222-223.
37. In some cases the head of the emperor appearing in profile is covered by a Corinthian or Attican helmet. In the place of the Christogram a star or a rosette appears. See: BASTIEN 1992-1994, 220-221, Tab.170/10.
38. BRUUN 1966, 364, N° 36.
39. There are traces of the existence of the third row of the feathers on the specimen in St Petersburg. See: KRAFT 1954-55, Tab. XI/7.
40. For the dating and location of the mint of the medallion see comprehensively and with rich literature: BRUUN 1966, 364.
41. PRINS 1999, 52; DRIEL-MURRAY 2000, 22; PRINS 2000, 309.
42. TÓTH 1988.
43. D. Gáspár has a similar point of view, too. See: GÁSPÁR 2002, 50.
44. TÓTH 1988, 59.
45. TÓTH 1988, 58, pic. 24-25; TÓTH 1989, 385; GÁSPÁR 2002, 50, Fig. 110.
46. TÓTH 1988, 59, Fig. 26.; MIGOTTI 1997, 7, 58; RADMANN-LIVAJA 2004, 130, Tab.27.
47. In the recent publication the length of the piece is 51 mm. Inv. N° 9984. See: RADMANN-LIVAJA 2004, 130.
48. MIGOTTI 1999, 14.
49. MIGOTTI 1997, 6, 58.
50. KONSTANTIN DER GROSSE 2007, Kat N° 1.13.124.
51. LYNE 1994, 100, Fig.2/7.
52. SOSZTARITS 1996, 311 Fig. 2-3.
53. PRINS 1998, 52; PRINS 2000, 309.
54. PRINS 1998, 53.
55. There are no references to what the reconstruction of the helmet is based In the published picture there is a helmet with a thickened edge and crest rib, which, in this way, is a superficial and mistaken reconstruction. The prototype of the reconstruction may well have been that Intercisa II/a type helmet where, in the publications, in the place of the thickened edge and rib, the chiselled groove for fastening the coating of silver lamellae can be seen. The groove was forged into the iron plate constituting the helmet-bowl, and there is no separate, strengthening rib that is already present on the helmets of Intercisa III and IV types. See: THOMAS 1971, table XXIII-XXVII; JUNKELMANN 1998, Fig. 10, 10-11.
56. DRIEL-MURRAY 2000, 22.
57. After the submission of the present article, a comprehensive paper was published by Mr. Mackensen on these types of objects (MACKENSEN 2007) with four further helmet ornaments (altogether 12) with Christogram, in addition to the known examples.
58. The origin of the badge from a private collection in München is unknown but it is not hard to believe that it is also of Pannonian provenance.
59. PRINS 1998, 52.
60. LYNE 1994, 105.

BIBLIOGRAPHY

- ALFÖLDI 1932: A. Alföldi, The Helmet of Constantine with the Christian Monogram. *The Journal of Roman Studies* **XXII**, London, 9-23
- ALFÖLDI 1934: A. Alföldi, Eine Spättrömische Helmform und ihre Schicksale im germanisch-romanischen Mittelalter, *Acta Archaeologica* **V**, 1934 København, 99-144
- ALFÖLDI 1943: A. Alföldi, Nagy Konstantin megtérése. *Olasz Szemle, Studi Italiani in Ungheria*. **6**. (1942), Budapest, 1943, 1-42
- ALFÖLDI R.M. 2001: M. R. Alföldi, Zu P. Bruuns Datierung der Schlacht an der Milvischen Brücke. *Gloria Romanorum*.

- Schriften zur Spätantike*. Zum 75. Geburtstag der Verfasserin am 6. Juni 2001. Stuttgart, 2001, 44-51
- ArchÉrt: Archaeológia Értesítő, Budapest
- BAR: British Archaeological Reports
- BASTIEN 1992-1994: P. Bastien, Le buste monétaire des Empereurs romains, II. Wetten, *Numismatique Romaine* **19**, 1992-1994
- BRUDER 2001: K. T. Bruder, Re-restoration of two Roman Helmets. *Conservation around the Millennium*. K. TÖRÖK (ed) Budapest, 2001, 61-71
- BRUNŠMID 1902: J. Brunšmid, Colonia Aurelia Cibalae. Vinkovci u staro doba. *Vjesnik Hrvatskoga Arheološkoga društva* **NS. VI**, 1902, Zagreb, 117-166
- BRUUN 1966: P. M. Bruun, *The Roman Imperial Coinage*. Vol. VII. Constantine and Licinius. A.D. 313-337. London, 1966 Bud. Rég: Budapest Régiségei
- DRIEL-MURRAY 2000: C. van Driel-Murray, More so-called "liturgical brooches" from the Netherlands, *Instrumentum* **11**, 2000, 22
- GÁSPÁR 2002: D. Gáspár, *Christianity in Roman Pannonia*. An Evaluation of Early Christian Find and Sites from Hungary, *BAR International Series* **1010**, Oxford, 2002
- HAMPEL 1900: J. Hampel, Ó-kori sisak, [Helmet from the Antiquity] *Arch.Ért* **20**, 1900, 361-374
- JUNKELMANN 1998: M. Junkelmann, Imperium et Pax. Roms Legionen – Eroberer eines Weltreichs, Hüter des Friedens? *Praxis Geschichte* 1998/6, 4-12
- KLUMBACH 1973: H. Klumbach (Hrg), *Spätromische Gardehelme*, München, 1973
- KOCSIS 1994: L. Kocsis, *Római védőeszközök Pannoniában. Pajzsok, sisakok, [Roman protective equipment in Pannonia. Shields, Helmets.]* CSc. Dissertation, Budapest, 1994, Manuscript
- KOCSIS 2000: L. Kocsis, Helme vom Type Intercisa in Pannonien, *Von Augustus bis Attila. Leben am ungarischen Donaulimes*. M. KEMKES (Hrg) *Schriften des Limesmuseum Aalen* **53**, 2000, Stuttgart, 37-40
- KOCSIS 2003: L. Kocsis, A new late roman Helmet from Hetény in the Hungarian National Museum. The coating sheets of the Helmet. *Pannonica provincialia et archaeologia. Studia solemnna auctorum Hungarorum Eugenio Fitz octogenario dedicata. Libelli Archaeologici Ser. Nov. N° 1, Budapest 2003, 521-552*
- KONSTANTIN DER GROSSE 2007: A. DEMANDT–J. ENGE-MANN, (Hrg) Konstantin Der Grosse, Ausstellungskatalog, Trier, 2007
- KRAFT 1954-55: K. Kraft, Das Silbermedaillon Constantins des Grossen mit dem Christusmonogramm auf dem Helm. *Jahrbuch für Numismatik und Geldgeschichte*. **5/6**, 1954-1955, 151-178
- LYNE 1994: M. Lyne, Late Roman helmet fragments from Richborough, *JRMES* **5**, 1994, 97-105
- MACKENSEN 2007: M. Mackensen, Vergoldete Bronzeshläge mit Christogramm von spätromischen Kammhelmen aus dem mittleren und unteren Donauraum. *Bayerische Vorgeschichtsblätter*, **72**, 2007, 355-365
- MacMULLEN 1960: R. MacMullen, Inscriptions on Armor and the Supply of Arms in the Roman Empire, *American Journal of Archaeology* **64**, 1960, 23-40
- MIGOTTI 1997: B. Migotti, *Evidence for Christianity in Roman Southern Pannonia (Northern Croatia)*. A catalogue of finds and sites, *BAR International Series* **684**, 1997
- MIGOTTI 1999: B. Migotti, Liturgical (?) brooches from Pannonia, *Instrumentum* **10**, 1999, 14
- NAGY 1900: G. Nagy, Az Eskü téri sisak, (Helmet from the Eskü Squer) *Bud.Rég* **7**, 1900, 45
- NAGY 1946: L. Nagy, Az eskü-téri római erőd, Pest város őse. (The Roman Castellum at Eskü-squer, the ancestor of Pest town), Budapest, 1946
- PÓCZY 1970: K. Póczy, *Contra Aquincum*, Budapest, 1970
- PRINS 1998: J. Prins, The „Fortune” of a late-Roman officer. *Assosiation pour l'Antiquité tardive, Bulletin* **7**, 1998, 52-53
- PRINS 2000: J. Prins, The “fortune” of a late Roman officer. A hoard from the Meuse Valley (Netherlands) with helmet and gold coins, *Bonner Jahrbucher* **200**, 2000, 309-328
- RADMAN-LIVAJA 2004: I. Radman-Livaja, *Militaria Sisciensia*. Nalezi rimske vojne opreme iz Siska u fundusu Arheološkoga muzeja u Zagrebu (Finds of the Roman military equipment in Sisak in the holdings of the Archaeological Museum in Zagreb), Zagreb, 2004
- RIC VII, 1966: The Roman Imperial Coinage. Vol. VII. Constantine and Licinius. London, 1966
- PWRE: G. Wissowa, *Paulys Real Encyclopädie*, Stuttgart
- SOSZTARITS 1996: O. Sosztarits, Urchristliche Kleidungsnael aus Savaria, *Specimina Nova Universitatis Quinqueecclesiensis* **XII**, 1996, 311-317
- THOMAS 1971: E.B.Thomas, *Helme, Schilde, Dolche, Studien Über Römisch-pannonische Waffenskunde*. Budapest, 1971, 17-27
- THOMAS 1973: E. B. Thomas, Der Helm von Budapest, Ungarn. H. KLUMBACH (Hrg), *Spätromische Gardehelme*, München, 1973, 39-50
- TÓTH 1988: E. Tóth, Az alsóhetényi 4. századi erőd és temető kutatása, 1981-1986. Eredmények és vitás kérdések. (Vorbericht über die Ausgrabung der Festung des Gräberfeldes von Alsóhetény 1981-1986. Ergebnisse und umstrittene Fragen.) *ArchÉrt* **114-115**, 1987-1988, 22-61
- TÓTH 1989: E. Tóth, Liturgic Brooch from Alsóhetény (Iovia), *Studia Aegyptica* **XII**, 1989, 385-394
- TÓTH 1993: E. Tóth, 56. Kapospula – Alsóhetény (Tolna m.) Az 1991. év régészeti kutatásai. *Régészeti Füzetek Ser.1. N° 45*. Budapest, 1993, 39-40

Militaria from *Annamatia*

Péter Kovács

During the excavations of the Roman auxiliary fort of Annamatia (Baracs, Pannonia Inferior) between 1999 and 2005 part of the headquarters-building, the SW and the NW angle towers, the northern (*porta principalis sinistra*) and the western (*porta decumana*) gates were revealed (Fig. 1)¹. No previous excavations have been carried out here. The archaeological investigation of the area was begun in 1999 with the support of the Pázmány Péter Catholic University and the Intercisa Museum. Since 1999 several military finds came to light². In this short paper I will publish these selected finds.

THE FINDS

Metal finds

1. Miniature ring-pommel sword pendant. Bronze. The loop and the lower part of the scabbard with the chape (Dosenortband) are missing. Remaining length: 3,8, cm the hilt: 1,4 cm. Lit: KOVÁCS 2005a, Fig. 2
2. Three scale fragments of iron scale armour (*lorica squamata*) with bronze rivets. 5 x 6,5, 2 x 3 cm, scale: 3 x 4,5 cm. Northern part of trench II, mixed layer, -0,8 m³. (Fig. 3/2)
3. Bronze spur. 8 x 5 cm. Section I, below the floor-level⁴. (Fig. 3/3)
4. Bronze spearhead (or drop)-shaped strap-terminal. Section III, grey mixed layer, -1,2 m⁵. (Fig. 3/4)
5. Fragment of iron *caliga*-nail. Section I, upper mixed layer, - 0,8 m.
6. Bronze stud. D: 1,3 cm, H: 1,5 cm. Trench V, upper mixed layer⁶.
7. Scale fragment of an iron scale armour (*lorica squamata*). 2,2 x 3,1 cm. Section IV, yellow mixed layer, -1,5 m.
8. Bronze, double-plated strap-terminal with a rivet. L: 3,8 cm. Ibid⁷. (Fig. 3/8)
9. Mushroom-shaped bronze mount. Diam: 2,5 cm H: 1,8 cm. Section II, inside the gate tower, sandy fill⁸. (Fig. 3/9)
10. Bronze rivet (belt mount). H: 1,3 cm diam: 1,5 cm. Section V, above the road-level.
11. Fragments of iron *caliga*-nails. Section V, road-level⁹.
12. Iron arrowhead. L: 8,3 cm d: D: 1,4 cm. Trench IX, upper mixed layer¹⁰. (Fig. 3/12)
13. Scale fragment of an iron scale armour (*lorica squamata*). 3,3x3 cm. Trench VIII, humus soil.
14. Bronze, double-plated strap-terminal with a rivet. L: 4,2 cm. Ibid¹¹. (Fig. 3/14)
15. Iron leaf-shaped spearhead. L: 28,2 cm, D: 2,4 cm. *Praetentura*, fill of the N fossa¹². (Fig. 3/15)
16. Bronze propeller-stiffener with a rivet. L: 3,3 cm. Middle of trench XIV, demolition layer of the gate tower¹³.
17. Iron spear butt. L: 8 cm. Section IX, upper mixed layer¹⁴.
18. Bronze D-shaped belt buckle. L: 3,2 cm. Ibid¹⁵.
19. Pelta-shaped bronze belt buckle with quadrangular plate. L: 2,9 cm¹⁶. Stray find.
20. Fragmentary pelta-shaped bronze belt buckle with open work quadrangular plate. L: 2,5 cm¹⁷. Stray find.
21. Silver gilded crossbow-brooch. Trench I, rubble layer above the 2nd floor-level¹⁸. (Fig. 3/21)
22. "Kräftig profilierte" bronze brooch. N part of trench II, dark brown clayey layer, -1,4 m¹⁹. (Fig. 3/22)
23. "Kräftig profilierte" bronze brooch. N part of trench II, dark brown clayey layer, -1,5 m²⁰. (Fig. 3/23)
24. Bronze knee-shaped brooch. N. part of Trench II, upper rubble layer²¹. (Fig. 3/24)
25. Bronze knee-shaped brooch. Ibid²². (Fig. 3/25)
26. Fragmentary bronze crossbow brooch with the catch. The foot and the arch are decorated. L: 5,3 cm. Section VIII, demolition layer of the tower wall.
27. Silver brooch with inverted foot (without the pin). L: 5,6 cm. Trench XIV, from the layer 2nd yellow clayey floor-level of the late Roman tower²³. (Fig. 3/27)

Bone

1. Rectangular bone plate with horizontal incised line. Reverse of a scabbard chape. 5,8 x 3,1-2,2 x 0,4 cm. Section I, under the floor-level²⁴. (Fig. 3/1)

Stone

1. Circular slingshot. Diam: 2,5 cm. Stray find.

SUMMARY

The antique Annamatia lies in Pannonia Inferior on the Eastern Pannonian *limes*, south of Intercisa. The antique literary sources only mention the fort (It. Ant. 245.5, Tab. Peut. Seg. IV, Not. Dig. occ. XXXIII.18, 39, Geogr. Rav. 220.2), inscriptions: CIL III 3326=10302, 3333, 10639-10641 (milestones-55 MP of Aquincum), IGRR I 534 = CIGP Cat N° 120, RIU 1468-1472²⁵, TRH 166, RMD 113.

The *praetentura* of the fort is already destroyed because the river Danube has eroded its eastern part. (Fig. 4) The full length of the fort is approx. 165 m (N-S direction). Its surviving E-W length is approx. 95 m on the northern side and 40 m on the southern side because of the erosion. The earth-timber period fort was built in the same place as the stone fort, probably during the Claudian-Neronian period (on the basis of the Samian ware finds), and it had at least two phases. Two ditches were observed under the stone fort. The castellum was most probably built in stone in the middle 2nd century before the Marcomannic wars. In the first period it had quadrangular angle towers with double, V-shaped ditches but under Constantius II fan-shaped ones were added to the fort wall constructed over the earlier ditches filled by the Romans. On the basis of a coin of Constantius II (337-341) it was built in the middle of the 4th century. Similar to the fort of Intercisa, only the western

gate, the *porta decumana* was blocked by a U-shaped tower in the same period. Several earlier stone monuments were found reused in the walls of the gate tower.

GARRISONS:

- Claudian-Neronian period (after 50 AD) *cohors* ?
- 70-106 AD *cohors* ?²⁵
- 106-118/119 AD *cohors I Thracum c. R. p. f.*²⁶
- 118/119-131/132 AD *cohors* ?²⁷
- 131/132-260 AD *cohors I Thracum Germanica eq.*²⁸ last mention: CIL III. 10639 from the year 237 AD)
- Second half of the 3rd -first half of the 4th century: ?
- End of the 4th century: *equites Dalmatae* (Not. Dig. occ. XXXIII, 39)²⁹.

The finds from the fort, which was garrisoned by of a *cohors quingenaria* from the middle of 1st to the 5th century do not differ from the finds of other Pannonian auxiliary



Fig. 1: Auxiliary Fort of Annamatia

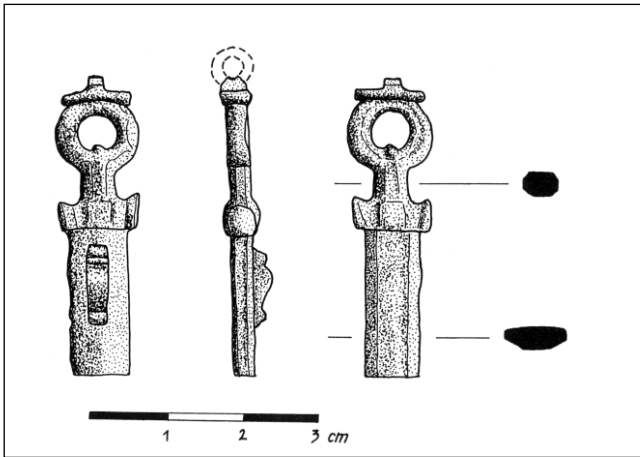


Fig. 2: Miniature ring-pommel sword pendant

castella. The biggest part of the militaria finds belong to defensive armour (*arma*). Most of the finds can be identified as part of military belts: mounts (Cat N^os 6, 9-10), buckles (Cat N^os 18-20), strap-terminals (Cat N^os 4, 8, 14), pendant (Cat N^o 1). The spearhead (or drop)-shaped (Cat N^o. 4) and the double-plated strap-terminals (Cat N^os 8, 14) dated to the 1st and 2nd centuries are known in almost all European provinces and they occur several times in Pannonia along the *limes* and inside the province as well³⁰. The pelta-shaped buckles belonged typically to the *cingulum militare* of an auxiliary soldier in the 3rd century but they could be used as part of equine equipment as well³¹. They are frequently found in Pannonia as well³². The “Kräftig profilierte” and the knee-shaped bronze brooches (Cat N^os 22-25) from the fort also belonged to the equipment of an auxiliary soldier of the early principate³³. The gilded silver crossbow brooch (Cat N^o 21) was obviously used by an officer at the end of the 3rd or in the beginning of the 4th century. The characteristic propeller-stiffener (Cat N^o 16) and the crossbow brooch (Cat N^o 26) show the late Roman period. The brooch with inverted foot from the area of the *porta decumana* blocked by a U-shaped tower is the latest piece from Annamatia (Cat N^o 27)³⁴. In the whole area of the fort several fragments of *loricae squamatae* were found (Cat N^os 2, 7, 13). From the road-level of the *via principalis* and the *via decumana* several *caliga*-nails came to light (e. g. Cat N^os 5, 11). The bronze spur from the SW angle tower of the fort (Cat N^o 3) clearly shows that a *cohors equitata* was garrisoned here, the *cohors I Thracum Germanica eq.* (see below)³⁵. Among the weapons (*tela*) an intact spearhead from the first period *fossa* of the stone fort filled by the Romans (Cat N^o 15)³⁶, a spearbutt (Cat N^o 17) and a socketed arrowhead (Cat N^o 9)³⁷ can be mentioned. It is also noteworthy to mention the bone reverse of a scabbard chape. It is a striking fact that in the

find material *ballista* balls were hardly revealed. The finds can be found in the collection of the Intercisa Museum at Dunaújváros.

The most important find is the miniature ring-pommel sword pendant (Cat N^o 1)³⁸. This is the 17th piece from the Roman world and the second one which was found outside Germania Superior. If we consider the fact that the number of the pendants is below 20 pieces and almost all of them are from Germania Superior it is obvious that the example from Annamatia was also made in this province. In my opinion the reason for this find-spot can be only the fact that the permanent garrison of the auxiliary fort of Annamatia was the *cohors I Thracum Germanica eq.* which was transferred from Germania Superior to Annamatia in 130-132 and stationed here permanently to 260 (cp. CIL III 10639)³⁹. This fact would mean that the pendant would have been made before this date and one of the soldiers would have brought it into Pannonia. This date is much earlier than it was thought it for the spear and sword miniatures (approx. AD 170-260) therefore another possibility must be taken into account. It cannot be excluded that soldiers from Germania were later enlisted in the Thracian troop as well. On the other hand, we have no epigraphic evidence for this hypothesis (in the 130s already Pannonians were enlisted: RMD 102-103) and in this case the pendants were not badges they had only the supposed magical character. If the first possibility is true on the basis of the piece from Baracs the pendants were used much earlier (from the beginning of the 2nd century) than was supposed.

NOTES

1. KOVÁCS 2001, KOVÁCS 2003, KOVÁCS 2005a.
2. KOVÁCS 2005a.
3. BISHOP – COULSTON 1993, 46, Fig. 33, 2-3; ROBINSON 1975, 153-159, Pl. 436.
4. Carnuntum I. Das Erbe Roms an der Donau. Wien 1992, 200, N^os 202, 204-206; RADMAN-LIVAJA 2004, N^o 394. There is an unpublished spur from Annamatia in the Intercisa Museum (Inv. no. 74.27.42).
5. OLDENSTEIN 1976, 142-147, N^o 294-295.
6. OLDENSTEIN 1976, 170-171, 257, N^o 504.
7. OLDENSTEIN 1976, 142-147, N^os 307-308, 317.
8. OLDENSTEIN 1976, 168, 256, N^o 483.
9. OLDENSTEIN 1976, 170-171, N^o 504.
10. BISHOP – COULSTON 1993, 138, Fig. 97/7, 9.
11. OLDENSTEIN 1976, 142-147, N^os 307-308, 317.
12. GROLLER 1901, T. XXII/11, RADMAN-LIVAJA 2005, N^os 8-9, T. 2.
13. BISHOP – COULSTON 1993, 173-174, Fig. 125/3, 5, 7; SOMMER

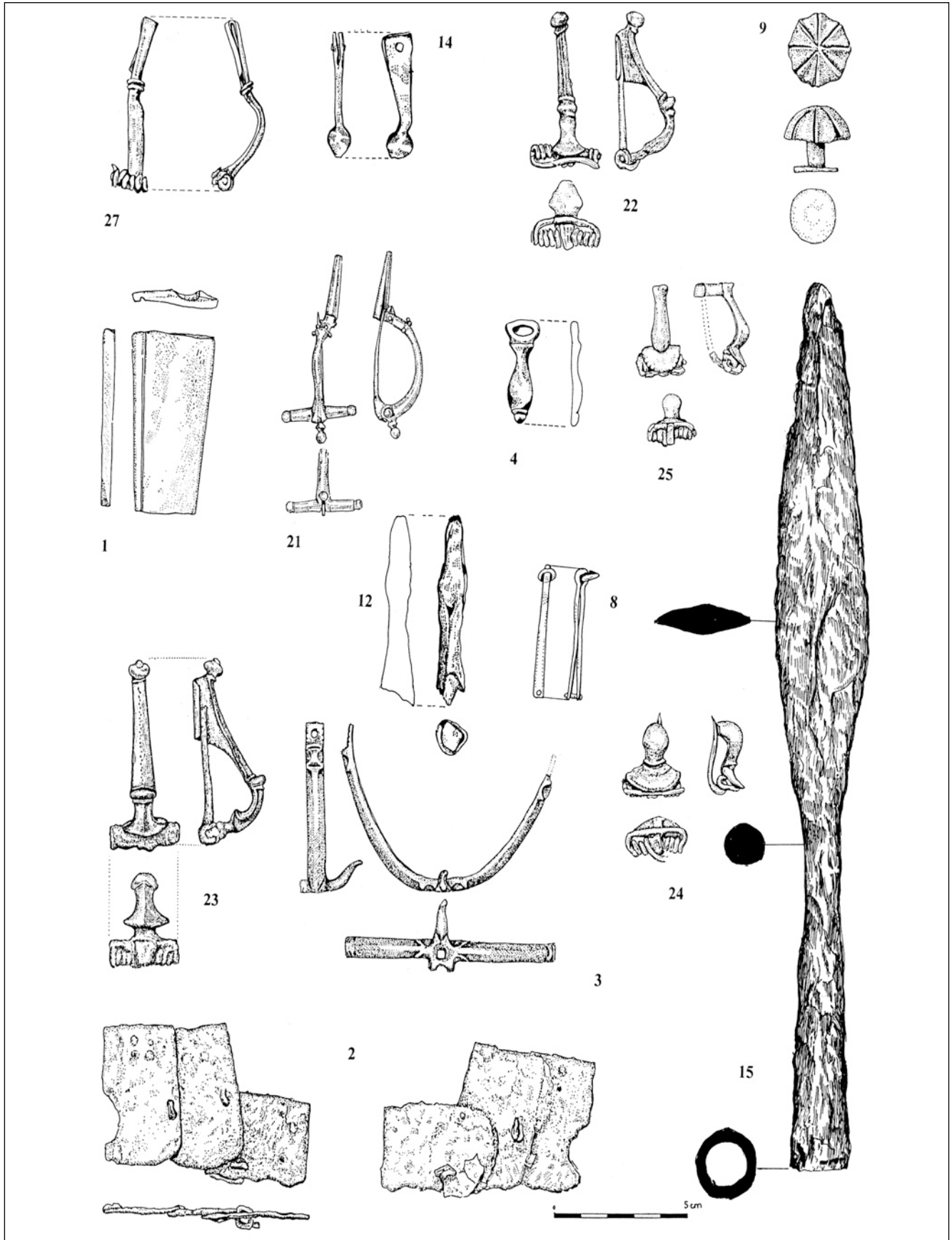


Fig. 3: Metal and bone finds

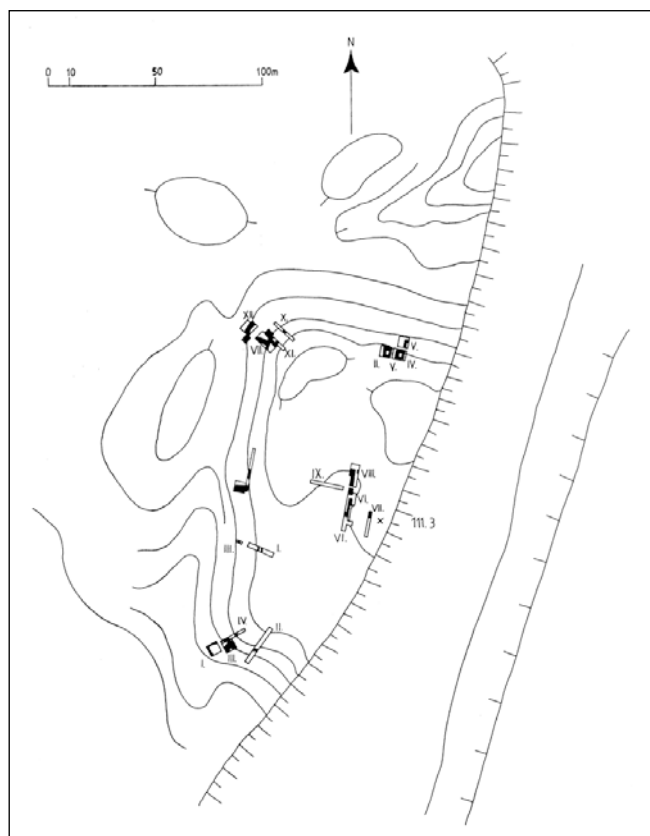


Fig. 4: *Annamatia Castellum*

1984, 5; L. BARKÓCZI, Beiträge zur Geschichte der Provinz Valeria im IV-VI. Jh. *Specimina* 10, 1994, 59-78; J. TEJRAL, Die spätantiken militärischen Eliten beiderseits der norisch-pannonischen Grenze aus der Sicht der Grabfunde. In: *Germanen beiderseits der spätantiken Limes*, Köln-Brno 1999, 224-228.

14. BISHOP-COULSTON 1993, 69, Fig. 35/21-24.
15. INTERCISA II, 460, Abb. 102/10-11.
16. OLDENSTEIN 1976, 214-216, N° 1024.
17. OLDENSTEIN 1976, 214-216.
18. TÓTH 1985, 33, 58, T. 20. a; JOBST 1975, 90-91, 181, N° 222, T. 30, 62.
19. PATEK 1942, 21-26, 91-97, 283, 172-174, T. IV. 2-5; JOBST 1975, N°s 14, 133, 33-34.
20. JOBST 1975, N°s 52, 41-42, 142.
21. PATEK 1942, 56-62, 130-137, 298, T. XXIII. 11-12; JOBST 1975, N°s 162, 166-167, 66-67.
22. JOBST 1975, 66-67, N°s 158, 166.
23. PATEK 1942, 62, 246-247, T. XXVI/1-2.
24. OLDENSTEIN 1976, 245, N°s 166-167; BÍRÓ 1994, 70, N° 20, Pl. IV.
25. See on the inscriptions RIU 1469-1471: G. ALFÖLDY, Epigraphica Pannonica II. Inschriften aus der niederpannonischen Limeszone zwischen Matrica und Intercisa, *Specimina Nova* 16, 2000, 65.
26. LÓRINCZ 2001, 62, 104.

27. LÓRINCZ 2001, 42, N° 43.
28. LÓRINCZ 2001, 88, 104.
29. LÓRINCZ 2001, 43, N° 45.
30. On the late Roman army in Pannonia see P. KOVÁCS, Late Roman army in Pannonia, *Acta Arch Hung* 44, 2004, 115-122.
31. OLDENSTEIN 1976, 143-147; TOPÁL 1981, 73, Pl. LXXII/216; RADMAN-LIVAJA 2004, N°s.314-343; RADMAN-LIVAJA 2005, 945, N° 20, Fig. 3; SAGADIN 1979, T. 3/9, 12-18, 4/1-11; PALÁGYI 2003, 9, 2.3.1, 13, 4.1; PALÁGYI 2005, 42.14.4.5, 45, 14.4.8.1, 56, 24.1.1, 107, 5.232.
32. OLDENSTEIN 1976, 214-216; BISHOP-COULSTON 1993, 157, Fig. 112.
33. E. g. INTERCISA II, 456, Abb. 97/1-2; SAGADIN 1979, T. 9/9-17; PALÁGYI 2005, 55, 21.8, 56-57, 24.1.3, 91, 53.99.
34. BISHOP-COULSTON 1993, 100.
35. KOVÁCS 2000, 127-128.
36. RADMAN-LIVAJA 2004, 102-104.
37. RADMAN-LIVAJA 2004, 59-62.
38. RADMAN-LIVAJA 2004, 55-58.
39. KOVÁCS 2005a in detail.
40. LÓRINCZ 2001, 43, 88, N° 45; SPAUL 2000, 364-365.

BIBLIOGRAPHY

- ArchHung – Archaeologia Hungarica, Budapest
- ArhVest – Arheološki Vestnik, Ljubljana
- BÍRÓ 1994: M. T. Bíró, The bone objects of the Roman Collection, *Catalogi Musei Nationalis Hungarici. Series Arch. II*. Budapest, 1994
- BISHOP – COULSTON 1993: M. C Bishop – J. C. Coulston, *Roman military equipment from the Punic wars to the fall of Rome*, London, 1993
- BRGK – Bericht der Römisch-Germanischen Kommission
- DissPann – Dissertationes Pannonicae Ex Instituto Numismatico et Archaeologico Universitatis de Petro Pázmány nominatae Budapestinensis Provenientes. SER II.
- GROLLER 1901: M. Groller, Römische Waffen. *RLiÖ* 2, 1901, 85-132
- JOBST 1975: W. Jobst, Die römischen Fibeln aus Lauriacum, *Forschungen in Lauriacum* 10, Linz, 1975
- KOVÁCS 2000: P. Kovács, Matrica - Excavations in the Roman fort at Százhalombatta (1993-1997). *Studia Classica - Series Historica* 3, Budapest, 2000
- KOVÁCS 2001: P. Kovács, Annamatia (Baracs) - A Roman auxiliary fort in Pannonia, *Acta Antiqua Hungarica* 41, 2001, 55-80
- KOVÁCS 2003: P. Kovács, Annamatia (Baracs). *The Roman army in Pannonia*. Ed. ZS. VISY. Pécs, 2003, 119-121
- KOVÁCS 2005: P. Kovács, Annamatia and Matrica. Excavations in two auxiliary forts along the Eastern Pannonian limes (1993-

- 2003). *Römische Städte und Festungen an der Donau. Akten der regionalen Konferenz Beograd 16-19 Oktober 2003*. Beograd, 2005, 97-106
- KOVÁCS 2005a: P. Kovács, Beneficiarius lances and ring-pommel swords in Pannonia, *Limes XIX. Proceedings of the XIXth International Congress of Roman Frontier Studies*, Pécs, 2005, 955-970
- LŐRINCZ 2001: Lőrincz B.: *Die Hilfstruppen der römischen Provinz Pannonien in der Prinzipatszeit*, Wien, 2001
- OLDENSTEIN 1976: J. Oldenstein, Zur Ausrüstung römischer Auxiliareinheiten. Studien zu Beschlägen und Zierat an der Ausrüstung des römischen Auxiliareinheiten des obergermanisch-raetischen Limesgebietes aus dem zweiten und dritten Jahrhundert n. Chr. *BRGK* **57**, 1976, 49-284
- PALÁGYI 2003: S. Palágyi, *Római kori lószerszám- és járomveretek a veszprémi Laczkó Desző Múzeum gyűjteményéből - Römerzeitliche Pferdegeschirr- und Jochbeschläge des Museums "Laczkó Desző" von Veszprém*, Veszprém, 2003
- PALÁGYI 2005: S. Palágyi, *Római kori ékszerek és viseleti tárgyak a veszprémi Laczkó Desző Múzeum gyűjteményéből - Römerzeitliche Schmuck- Trachtgegenstände des Museums "Laczkó Desző" von Veszprém*, Veszprém, 2005
- PATEK 1942: E. Patek, *A pannoniai fibulatípusok elterjedése és eredete - Verbreitung und Herkunft der römischen Fibeltypen von Pannonien*, *DissPann II/19*, Budapest, 1942
- RADMAN-LIVAJA 2004: I. Radman-Livaja, *Militaria Sisciensia. Nalazi rimske vojne opreme iz Siska u fundusu Arheološkoga Muzeja u Zagrebu*, Zagreb, 2004
- RADMAN-LIVAJA 2005: I. Radman-Livaja, Finds of Roman military equipment from Teutoburgium. *Limes XIX. Proceedings of the XIXth International Congress of Roman Frontier Studies*. Ed. ZS. VISY. Pécs, 2005, 941-953
- SAGADIN 1979: M. Sagadin, Antiène pasne spone in garniture v Sloveniji - Antike Gürtelschnallen und -Garnituren in Slowenien, *ArhVest* **30**, 1979, 294-338
- SPAUL 2000: J. Spaul, Cohors 2. The Evidence for, and a short history of the auxiliary infantry Units of the imperial Roman army *BAR IS* **841**, Oxford, 2000
- TOPÁL 1981: J. Topál, *The southern cemetery of Matrica*. *Fontes ArchHung* **15**, Budapest, 1981

Beschläge eines flavierzeitlichen Schurzcingulums aus Baláca (Komitat Veszprém, Ungarn)

Zsolt Mráv

Aus Veteranen-Inschriften haben mehrere Forscher, so zuerst A. Alföldi¹, dann A. Mócsy² und D. Gabler³ den Schluß gezogen, dass Auxiliar- und Legionsveteranen bereits in der zweiten Hälfte des 1. Jhs. n. Chr. im vom Plattensee (Balaton) nördlich liegenden Gebiet der Provinz Pannonien (Plattensee-Oberland, Balaton-felvidék) angesiedelt worden sind. Die Existenz der Veteranenparzellen und Veteranensiedlungen im 1–2. Jh. n. Chr. ist allerdings nicht nur inschriftlich nachweisbar, sondern auch durch die aus nichtmilitärischen Kontext stammenden Militaria, die in großer Zahl in der Gegend der Plattensee, vor allem in Waffengräbern sowie in Siedlungen und Villen vorkommen⁴. Gegenstand dieses Artikels sind zwei bisher unbeachtete, bzw. missverstandene frühkaiserzeitliche Militaria, die das frühe Dasein von Veteranen im Gebiet der römerzeitlichen Siedlung und späteren Villa von Nemesvámos-Balácapuszta (im Folgenden: Baláca), in der Nähe von Veszprém, bestätigen (Abb. 1).

FLAVIERZEITLICHE CINGULUMBESCHLÄGE AUS BALÁCA

1. **Nielliertes Cingulublech:** Während der Ausgrabungen von Gy. Rhé am Beginn des 20. Jhs in Baláca ist ein recht-eckiges Bronzeblech gefunden worden, deren verzinnte Oberfläche mit niellierten Motiven verziert ist⁵. Die Einlage besteht aus einerseits nach Außen sehenden Dreiecksmotiven und andererseits aus pflanzlicher Ornamentik im dadurch umrahmten rechteckigen Feld (Abb. 2). Die vier Niete mit Unterlegscheiben, die in den Ecken der Rückseite erhalten geblieben sind, deuten darauf hin, dass das Blech ursprünglich auf einem Lederriemen befestigt worden war. Parallelen zur Form und Nielloverzierung des Blechs finden sich eindeutig unter den frühkaiserzeitlichen niellierten Cingulumbeschlägen. Von diesen niellierten Gürtelblechen sind heute mehrere Hunderte bekannt⁶, fast ausschließlich vom Gebiet der westlichen Militärprovinzen

(Britannien, Germanien, Raetien)⁷. Die geometrischen und pflanzlichen Motive, die mit der Kombination von verschiedenen Elementen (Blätter, Kommas, Schnörkel, Tropfen, Flügel, Kandelaber, Sternchen) gebildet und zur Verzierung gebraucht sind, sind von E. Deschler-Erb in den folgenden sechs Gruppen eingeordnet: 1. Stern-/Kreuzmotiv; 2. Lorbeer-/Eichenkranzmotiv; 3. Efeu-/Weinrankenmotiv; 4. Wellenmotiv; 5. geometrische Motive und 6. Sondermotive. Aufgrund der 54 datierten Stücke ist der Zeitraum, in denen die niellierten Cingulumbeschläge gebraucht waren, mit Sicherheit einzugrenzen. Abgesehen von einigen Ausnahmen stammen alle Gürtelbleche aus einem ins 1. Jh. n. Chr. datierten Fundkomplex. Sie sind wohl in der spätaugusteischen bzw. tiberischen Zeit erschienen⁸, ihre Mehrzahl war jedoch in den mittleren Dezennien des 1. Jhs n. Chr. (d.h. während der Regierungszeit von Claudius und Nero) in Gebrauch. Im letzten Drittel des 1. Jhs n. Chr. sind sie allmählich verschwunden. Dasselbe gilt für die Niellierung von Militaria aus Buntmetall⁹, denn diese Technik wurde ab die Flavierzeit immer mehr durch emailierte oder punzierte Gegenstände abgelöst¹⁰. (Bei den Pferdegeschirren ist allerdings die Nielloeinlage auch noch im 2. Jh. n. Chr. vereinzelt nachweisbar¹¹.)

E. Deschler-Erb hat es bereits erkannt, dass das Gürtelblech von Baláca zu diesen gut definierbaren niellierten Cingulublechen gehört, und dass seine Verzierung zur sechsten, Sonderformen gebrauchenden Motivgruppe passt¹². Aufgrund des Zeitraums wo Gürtelbleche mit Nielloeinlagen gebraucht wurden, ist auch das Gürtelblech von Baláca nicht später als ins letzte Drittel des 1. Jhs n. Chr. zu datieren.

2. **Schurzendbeschlag mit blattförmigem Anhänger:** Im Gebiet des Hauptgebäude hat Gy. Rhé während seiner Ausgrabungen von 1906 oder 1907 noch ein anderes, zweifellos militärisches Ausrüstungselement gefunden¹³ (Abb. 3). Der Beschlag besteht aus zwei ineinandergreifenden Teilen.

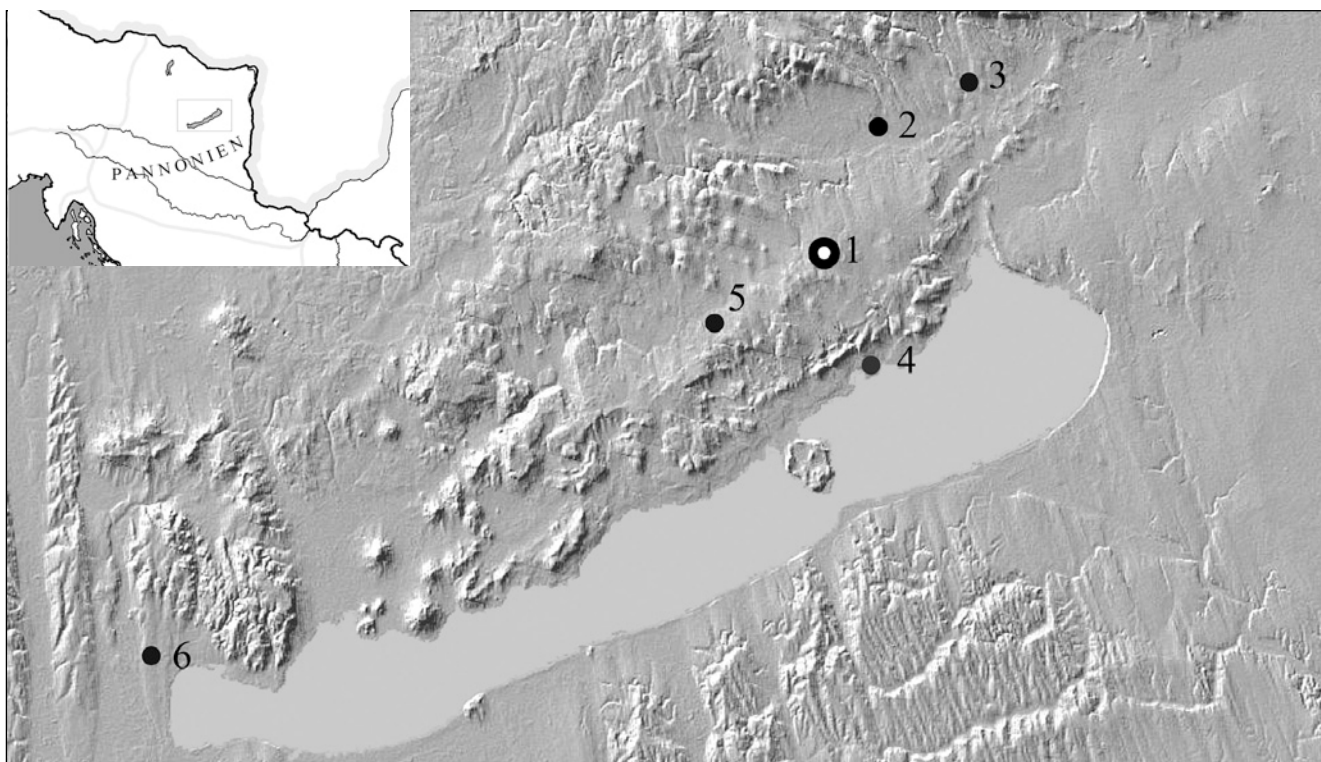


Abb. 1: Die Lage der römischen Siedlung von Balácsa im Plattensee-Oberland und die im Text erwähnten Fundstellen, wo Waffengräber, Militärdiplome oder Militariafunde von Veteranen wahrscheinlich machen. 1- Balácsa, 2 – Gyulafirátót-Pogánytelek, 3 – Öskü, 4 – Csopak, 5 – Tótvázsony, 6 – der teils zum Gebiet von Czerszegtomaj, teils zum Gebiet von Keszthely gehörende Dobogódomb.

Die obere Riementülle aus Bronzeblech besteht aus Vorder- und Rückseite, an deren oberer Hälfte ein Nietstift zur Befestigung des Lederriemens diente. Das obere Ende des Hängerteils weitet sich zu einem Dreieck mit Ösen in den Ecken. Die Ränder seines oval ausbreitenden unteren Endes sind nach unten mit je einem rankenartigen Fortsatz verziert. In der Mitte, etwas nach unten verschoben befindet sich ein waagrecht liegendes rechteckiges Loch, in dem ein gegossener Bronzeanhänger eingehängt ist. Dieser formt einen sich stark ausbreitenden Tropfen oder Blatt, mit einer Kugel am Ende. Das durchbrochene Loch des blattförmigen Anhängers ist ebenfalls tropfen- oder blattförmig. Darüber, in der Längsachse des Anhängers ist ein kleineres rundes Loch zu sehen. Die schwarze Verfärbung an der Oberfläche des Beschlags weist auf Verzinnung hin¹⁴.

Die bronzene Riementülle und Schurzanhänger sind ins zuletzt von S. Palágyi als ein ins 2-3. Jh. datierbarer Pferdegeschirrbeschlagn identifiziert worden¹⁵. Ihr Identifikations- und Datierungsvorschlag braucht jedoch eine Modifikation. Die Größe und typische Form des Beschlags ist nämlich nicht für Pferdegeschirrbeschlagn, sondern für diejenigen Beschlagn mit blatt- oder

lunulaförmigen Anhängern charakteristisch, mit der die militärische Riemenschurz dekoriert war. Die Zahl der bekannten zweiteiligen, aus Riementülle und Schurzanhänger bestehenden Riemenschürzenbeschlagn ist zwar niedrig, aufgrund der Darstellungen und der vorgefundenen Stücken lässt sich aber ihre Form und Funktion einfach bestimmen. Die Länge der zweiteiligen (Riementülle + Schurzanhänger) Beschlagn bewegt sich normalerweise zwischen 8 und 10,5 cm. Das kleinste Stück, aus Siscia, ist 8,2 cm¹⁶, das größte, aus Tekija 10,5 cm¹⁷, die fünf Riemenschürzenbeschlagn aus Aznalcazar 8,1-9,8 cm lang¹⁸. Auch der Beschlagn von Balácsa, mit seiner Länge von 9,9 cm, passt sich gut zu diesen Schürzenbeschlagn. Die bekannten Schürzenbeschlagn sind entweder aus Silber, wie der von Tekija (Abb. 4/1) und der von Köln (Abb. 5/5)¹⁹, oder ihre Oberfläche hat einen Überzug aus Weissmetall als Silberimitation, dessen Spuren in der Form einer schwarzen Verfärbung auch beim Beschlagn von Balácsa erkennbar sind²⁰. Besonders kennzeichnend für diese Schürzenbeschlagn sind noch die zwei, aus der unteren Öse des Hängerteils nach unten ziehenden Fortsätze, die wie beim Exemplar von Balácsa, auch bei den Riementüllen

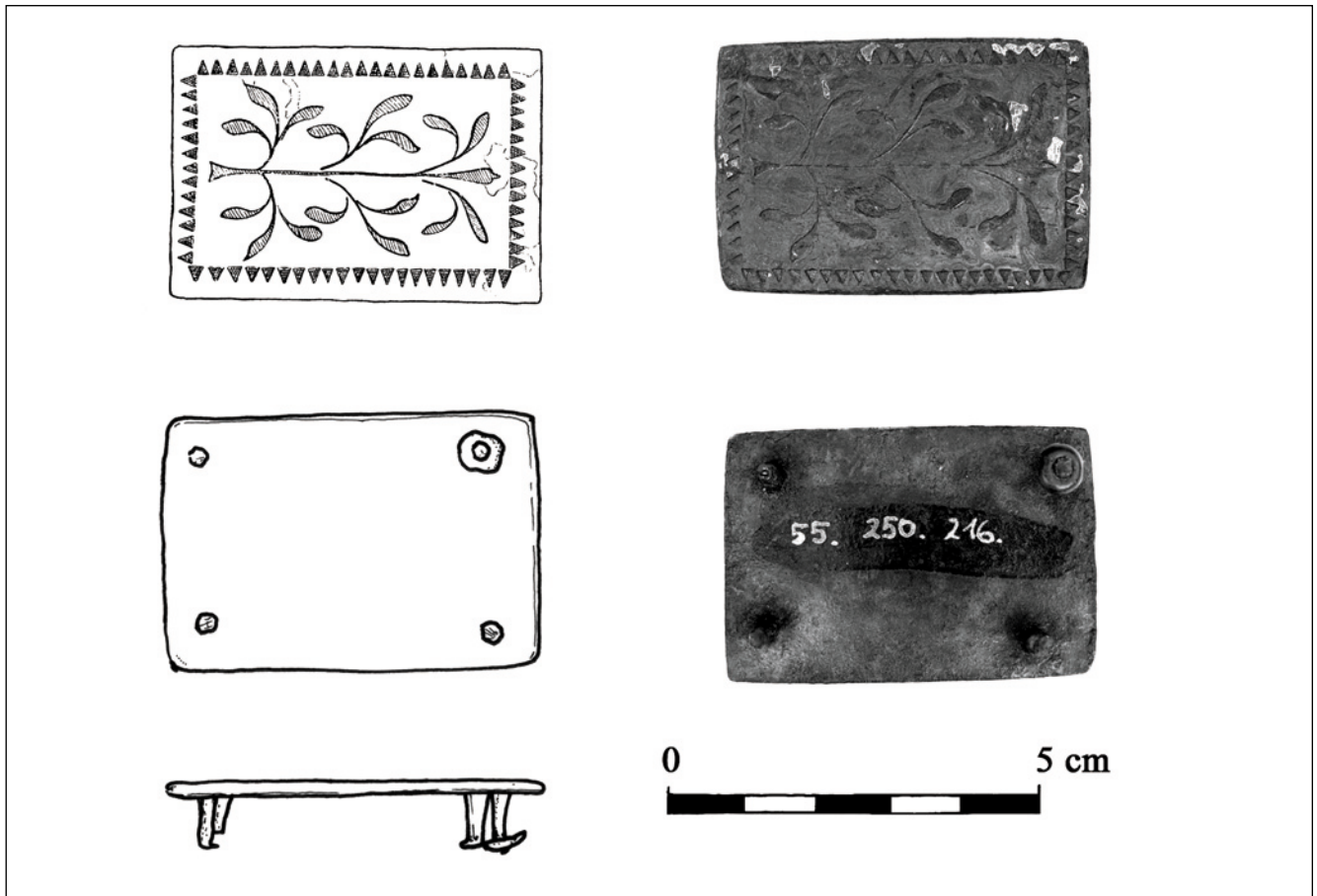


Abb. 2: Photo und Zeichnung des in Baláca gefundenen Gürtelblechs mit Nielloeinlage (Foto: Zs. Oszkó; Zeichnung: Zs. Mráv). M 1: 1.

von allen bekannten Schurzendbeschlägen, so bei den Beschlägen von Aznalcazar, Tekija und Siscia zu finden sind. Nach den Funden von Aznalcazar (Sevilla, Sp.)²¹, Teba (Málaga, Sp.)²², Tekija²³ und Siscia²⁴, sowie nach einigen Schurzcingulum-Darstellungen²⁵ – war auch ein blattförmiger sog. Sekundäranhänger („secondary pendant“) ins kleinere Loch (bzw. Löcher) in der Oberfläche des gegossenen Schurzanhängers gehängt, der die größere durchbrochene blattförmige Fläche unter sich mehr oder weniger ausfüllte. Ein kleinerer Sekundäranhänger scheint – wegen des kleinen Loches des Schurzanhängers – ursprünglich auch dem Beschlag von Baláca zugehört zu haben, ist aber heute verloren gegangen (Abb. 3/2). Das waagrecht ausgeprägte Loch des Kugelkopfes des den Hängerteil festhaltenden Nietes ist auch aufgrund der militärischen Schurzbeschläge zu interpretieren. In die Nietköpfe der Riementülle der Schurzbeschläge von Aznalcazar waren durch ein waagrechtes Loch je ein Ring aus Bronzedraht eingefügt, worin sich ein kleineres Anhängsel befand (Abb. 4/3-4, 7)²⁶. Diese Anhängsel hatten verschiedene Formen, obwohl die

Beschläge sicher Teil ein- und derselben Schurzgarnitur waren. Aufgrund des Fundes von Aznalcazar kann man mit Recht vermuten, dass auch das Loch des Nietkopfes des Beschlages von Baláca ursprünglich ein solches, an einen Bronzering gehängtes Anhängsel getragen haben kann (Abb. 6). Diese formentypischen Kennzeichen lassen den Beschlag von Baláca eindeutig zu den Schurzriemenbeschlägen der Cingula zuordnen. Wegen der Größe und Blattform des Anhängers kann ein Beschlag mit blattförmigem Anhängler aus dem Fund von Aznalcazar als nächste Parallele zum Fund von Baláca angesehen werden, obwohl sein Rand – wie der von einigen Blättertypen – gezackt ist (Abb. 7)²⁷. Die Zahl der Schurzriemen bewegt sich auf Grund der Darstellungen normalerweise zwischen 3 und 6/8, meistens gibt es aber 4. Vier von den fünf Schurzendbeschlägen des Fundes von Aznalcazar hatten lunulaförmige, und der fünfte einen blattförmigen Anhängler. Nach J. A. Fernández kann letzterer eher ein „leaf-shaped belt terminal“ gewesen sein, was jedoch wegen der Gleichheit mit der Größe und Riementülle der Lunulabeschläge ausgeschlossen werden



Abb. 3: Foto und Zeichnung des Schurzanhängers von Baláca (Foto: Zs. Oszkó; Zeichnung: Zs. Mráv). M 1 : 1.

kann. Es ist wahrscheinlicher, dass alle fünf Beschläge mit Anhänger Dekoration von Schurzriemenbeschlägen waren. Auf der Cingulumdarstellung von Pula sind drei lunula- und ein blattförmiger Anhänger zu sehen²⁸, was die Kombination und gleichzeitigen Gebrauch von Beschlägen mit verschiedenen Anhängern sogar in einer Gürtelgarnitur beweist. Ähnliches ist auch beim Gürtel von Baláca denkbar.

Den Zeitraum, wo die Schurzriemen mit blatt-, lunula- oder rhomboidförmigen Anhängern in Gebrauch waren, haben M. C. Bishop und später J. A. Fernández genau eingegrenzt. Dabei stützten sie sich einerseits auf Darstellungen, andererseits auf archäologische Angaben, d.h. auf Fundstücke die aus einem gut datierbaren Fundkomplex stammen. M. C. Bishop hat 45 Darstellungen von Schurzcingula, die sich vor allem auf Soldatengrabsteinen des Rheingebietes, auf Sepulchraldenkmälern in Britannien und Italien, sowie auf stadtrömischen und provinzialen Reliefs historisch-

er oder triumphaler Themen befinden, zusammengestellt. Keine von diesen ist jünger als Beginn des 2. Jhs n. Chr., ihre Mehrheit ist aber mit Sicherheit ins 1. Jh. n. Chr. datierbar. Dasselbe gilt für die Schurzriemenbeschläge die aus einem geschlossenen Fundkomplex stammen. Der Schatzfund von Tekija ist wohl zwischen 83 und 89 n. Chr. versteckt worden²⁹, der „Soldat“ von Herculaneum ist 79 n. Chr. gestorben³⁰. Die Exemplare von Vindonissa³¹ waren vor 101 n. Chr. in Gebrauch, bevor die Armee abzog³². Der Beschlag von Siscia³³ ist wahrscheinlich älter als die Flavierzeit, denn diese Siedlung, die anfangs als Militärstandort diente, war ab Beginn der 70er Jahre n. Chr. schon colonia Flavia³⁴. Der Legionslager von Caerleon ist gegen 75 n. Chr. durch die *legio II Augusta* aufgebaut worden³⁵, weshalb der von dort stammende Lunulaanhänger³⁶ etwas jünger sein sollte. Der silberne Anhänger von Köln mag auf Grund des Kaiserporträts des Sekundärhängels in die flavische bis trajanische Zeit zu datieren sein³⁷. Das die zum Cingulum gehörenden

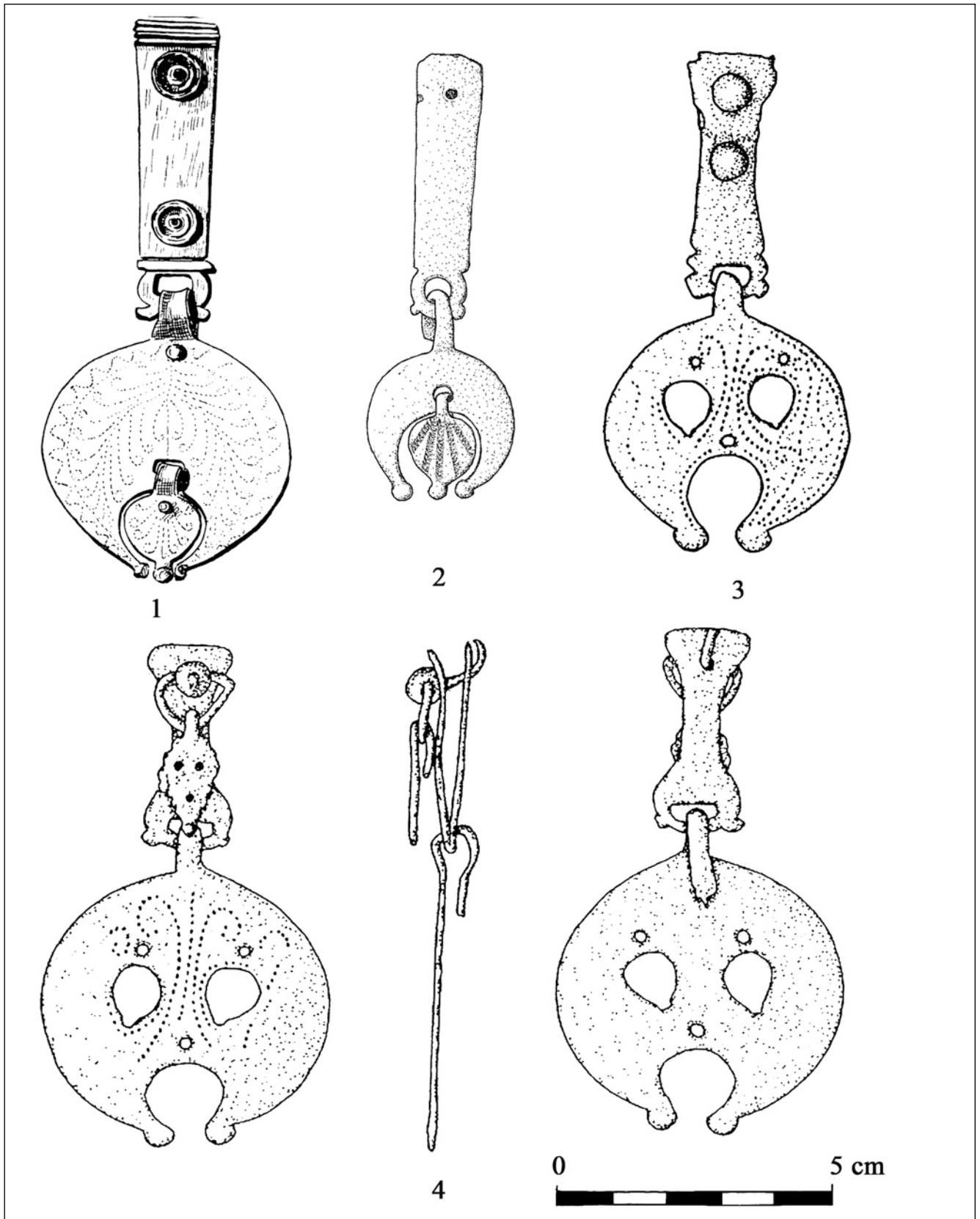


Abb. 4: Parallele zur Riementülle des Schurzendbeschlags von Baláca auf Schurzbeschlügen mit lunulaförmigen Anhänger: 1. Tekija (nach MANO-ZISI 1957, Pl. XIV); 2. Siscia (nach RADMAN-LIVAJA 2004, Kat. 149.); 3-4 Aznalcazar (Sevilla, Sp.) (nach FERNÁNDEZ 1998, 38 fig. 1/1 und 39 fig. 2/3). M 1:1.

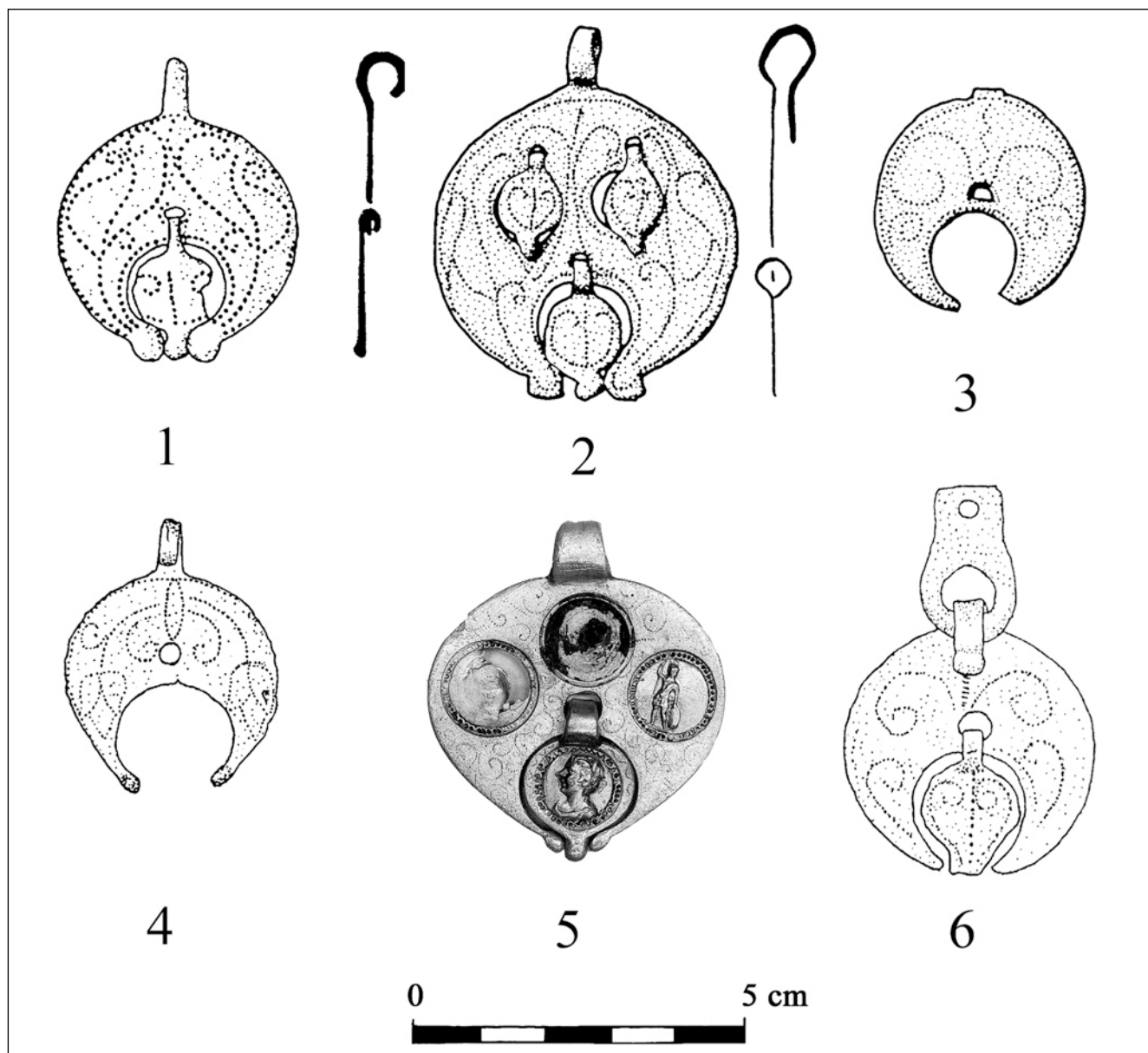


Abb. 5: Lunulaförmige Schurzanhänger 1. Teba (Málaga, Sp.) (nach FERNÁNDEZ 1998, 41 fig. 3/1); 2. Caerleon (Gb.) (nach BISHOP 1992, 97 fig. 16/7); 3. Wroxeter (Gb.) (nach BISHOP 1992, 97 fig. 16/5); 4. Vindonissa (Sch.) (nach UNZ – DESCHLER-ERB 1997, Taf. 46/ 1275); 5. Unbekannter Provenienz im Römisch-Germanischen Museum in Köln (nach SCHLEIERMACHER 1996, 294 Abb. 120); 6. Vindonissa (Sch.) (nach UNZ – DESCHLER-ERB 1997, Taf. 46/1277). M 1 : 1.

Schurzanhänger – unter denen auch die nächste bekannte Parallele des Fundes von Baláca – beinhaltende Grab von Aznalcazar ist von J. A. Fernández in die Flavierzeit datiert worden³⁸. Demzufolge kann man vermuten, dass die mit Beschlägen verzierten Schürzriemen in der ersten Hälfte des 1. Jhs v. Chr. auf Militärgürteln erschienen sind, ihr Gebrauch in der zweiten Hälfte des 1. Jhs. n. Chr. am üblichsten war, und dass sie nach dem Beginn des 2. Jhs n. Chr. allmählich verschwunden sind³⁹. Die näheren Analogien des Fundes von Baláca, d.h. die von Aznalcazar, Vindonissa, Caerleon und Tekija stammen eindeutig aus

der Flavierzeit, weshalb auch der Schurzendbeschlag von Baláca nicht später zu datieren ist.

Ein Veteranensiedlung aus der Flavierzeit in Baláca?

Aufgrund ihrer Datierung und Funktion scheint es möglich, dass die zwei Cingulumbeschläge von Baláca, deren Oberfläche ursprünglich verzinkt waren, zu ein und demselben Militärgürtel gehörten. (Auch ihre Fundstellen sind unweit voneinander entfernt, denn das Gürtelblech und der Schurzanhänger sind ebenfalls auf der Stelle der Hauptgebäude Nr. I., während den Ausgrabungen

von 1906 und 1907 gefunden worden⁴⁰.) Einen weiteren Beweis dafür, dass die Beschläge zum selben Gürtel gehörten, liefern die Soldatendarstellungen der Grabdenkmäler aus dem 1. Jh. n. Chr., wo die gleichzeitige Tracht der mit Gürtelblechen dekorierten Cingula und der Schurzriemen mit Anhängerbeschlägen klar zu sehen ist (Abb. 8)⁴¹. Der Besitzer des in Baláca gefundenen Militärgürtels diente wohl irgendwann in der zweiten Hälfte des 1. Jhs n. Chr. in der römischen Armee. Die aus Lederriemen bestehenden Schurze der Cingula wurden nur von Infanteristen getragen⁴², daher war der Besitzer des Gürtels wohl Fußsoldat, und zwar – aufgrund der Größe und der Bearbeitung des Schurzanhängers – am wahrscheinlichsten in einer Legion. Wegen der Verbreitung der niellierten Gürtelbleche⁴³ ist es auch denkbar, dass der Soldat früher in einer der westlichen Grenzprovinzen, am wahrscheinlichsten bei einer im Rheingebiet stationierten Einheit diente. Von dort wurde er aber nach Pannonien versetzt, und auch seine Entlassung kann hier stattgefunden haben, irgendwann in der letzten Drittel des 1. Jhs n. Chr. oder spätestens am Beginn des 2. Jhs. Das entspricht auch den in den letz-

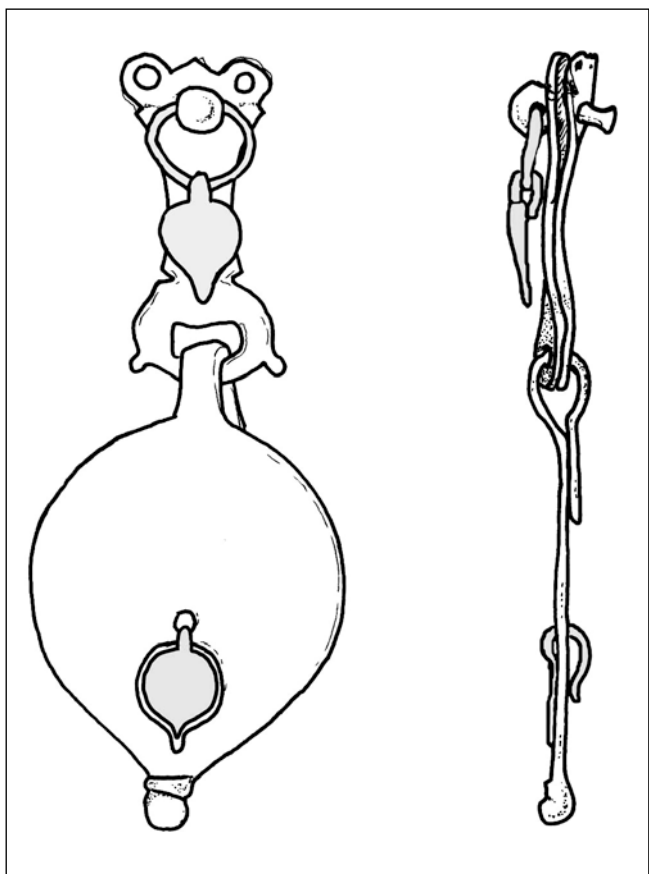


Abb. 6: Rekonstruktion des Schurzanhängers von Baláca mit den Sekundäranhängern M 1 : 1.

ten Dezennien des 1. Jhs n. Chr. in Pannonien und ihrem Vorraum stattgefundenen geschichtlichen Ereignissen, d.h. den Donaukriegen Domitians und den Dakerkriegen Trajans, zu deren Durchführung Truppen – mehrheitlich Legionen – aus Britannien und vom Rheingebiet nach Pannonien abkommandiert worden sind⁴⁴. Die ins ausgehende 1. Jh. n. Chr. zu datierende Grabstele des C. Castricius Victor, Soldat der *legio II adiutrix* in Aquincum (Abb. 9), illustriert die Zusammenhang der pannonischen Schurzcingula und der in der spätflavischen Zeit von Westen nach Pannonien gekommenen Truppen. Die *legio II adiutrix* wurde 86 n. Chr. von Britannien nach Pannonien abkommandiert, ab 89 stationierte sie in Aquincum. Es ist kein Zufall, dass C. Castricius Victor auf dem nicht viel später gehobenen Grabdenkmal ein Schurzcingulum mit lunulaförmigen Schurzanhängern trägt⁴⁵.

Im Gegensatz zu den früheren Ansichten diente der Schurz des Cingulum weniger zur Verteidigung des Unterkörpers⁴⁶, sondern er war vielmehr ein Ausdruck der Angehörigkeit der Soldaten zur Armee und ihres privilegierten gesellschaftlichen Status⁴⁷. Durch diese Tracht unterschieden sie sich deutlich von den Zivilisten. Es ist

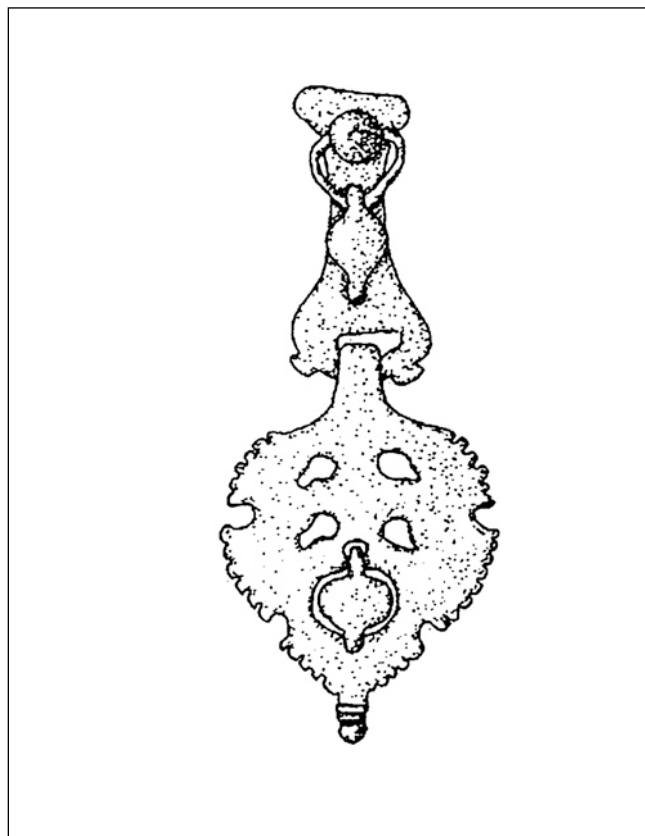


Abb. 7: Blattförmiger Schurzanhänger des Cingulums von Aznalcazar (Sevilla, Sp.) (nach FERNÁNDEZ 1998, 40 n. 5, 39 Fig. 2, 2). M 1 : 1.

also kein Zufall, dass Schurze oft auf Grabdenkmälern von Soldaten und Veteranen dargestellt sind⁴⁸, und die Soldaten ihren Militärgürtel, die ihr Eigentum waren, als Symbol ihres Diensts und Status oft auch nach ihrer Entlassung behielten⁴⁹. So können die zu den Militärgürteln gehörenden Beschläge als Motivgaben aus versteckten Inventaren von Heiligtümern (Tekija⁵⁰), oder als Grabbeigaben aus Bestattungen (wie etwa in Aznalcazar [Sevilla, Sp.]⁵¹, Chassenard [Allier, F.]⁵²; Verdun [Slowenien] Grab Nr. 1.5⁵³) sowie auf dem Gebiet ziviler Siedlungen, u.a. in Villen vorkommen. Auch die Fundstätte des Cingulum von Baláca befindet sich weit von der Ripa entfernt, in einer Zivilsiedlung im Inneren der Provinz, deshalb kann er den zahlreichen, aus nichtmilitärischem Kontext stammenden Waffen und Ausrüstungsgegenständen zugeordnet werden. Interpretationsprobleme der in zivilem Kontext gefundenen Militaria gelten als besonderer Forschungsschwerpunkt in den letzten Jahrzehnten⁵⁴.

Solche Waffenfunde sind für einige Gebiete, z.B. das Loiregebiet⁵⁵, das Hinterland des obergermanischen Limes⁵⁶, oder für die Stammesgebiete der Batavi⁵⁷ schon zusammengestellt und einer komplexen Auswertung unterstellt worden, während man sich anderswo noch nur mit Einzelfragen, wie etwa den Militariafunden von einzelnen Zivilsiedlungen (Villen, Vici, Städte)⁵⁸ oder den Waffengräbern in Pannonien oder Dazien⁵⁹ beschäftigte.

Auf Grund der neueren Forschungen ist es heute schon nachweisbar, dass ein Teil der im Hinterland in nichtmilitärischem Kontext gefundenen Militaria sich direkt an die Armee, an die aktiven Soldaten oder an die paramilitären Streitkräfte (im 3. Jh. n. Chr. sogar an bewaffnete Zivilisten⁶⁰) anknüpft⁶¹. Diese lassen sich u.a. mit dem Dasein durchziehender, vorübergehend oder dauerhaft in den Zivilsiedlungen stationierter Soldaten (insbesondere in größeren Städten, die Hauptstrassen entlang),



Abb. 8: Das Cingulum mit Gürtelblechen zusammen mit dem mit Beschlägen dekorierten Schurz auf einem Grabdenkmal aus dem 1. Jh. n. Chr. aus Andernach (nach KÜNZZL, Bonn 22-23 Nr. 7) und auf einer modernen Trachtrekonstruktion (nach ZIENKIEWICZ 1994, 10 fig. 1)

sowie als Hinterlassenschaft von Waffenwerkstätten⁶² oder Straßenkämpfen⁶³ erklären. Teilweise waren sie aber sicherlich im Besitz von Veteranen, die in ihrem Zivilleben diese Militaria nicht ihrer Funktion entsprechend, sondern meistens als Prestigegegenstände gebrauchten. J. Nicolay nannte das den sog. sozialen, zivilen Gebrauch der Ausrüstungsgegenstände („social use of equipment“)⁶⁴. Einige Veteranen behielten ihre Waffen und Ausrüstungsgegenstände, für die sie eine Vorliebe hatten, auch nach ihrer Entlassung. Diese Gegenstände haben sie in einem Heiligtum oder Kultplatz angeboten oder sie brachten sie als Andenken nach ihrem neuen Wohnort mit. Nach dem Tod eines Veteranen blieben die mitgebrachten Ausrüstungsgegenstände als Familienreliquien weiter im Besitz der Erben, oder wenn



Abb. 9: Grabdenkmal des C. Castricius Victor, Soldat der 86 n.Chr. von Britannien nach Pannonien abkommandierten und ab 89 in Aquincum stationierten legio II adiutrix, Ende des 1. Jhs n.Chr. Der Soldat trägt ein Schurzcingulum mit lunulaförmigen Anhängern (Foto: O. Harl).

Glaube und Identität des Verstorbenen es verlangten, wurden sie in seinem Grab mit gegeben. Im ersten Fall sind die nach mehreren Generationen belanglos gewordenen Gegenstände – falls nicht umgestaltet oder eingeschmolzen – oft von der Nachkommenschaft als nutzloses Gerümpel betrachtet und weggeworfen worden⁶⁵.

Auch beim Cingulum von Baláca ist es nach aller Wahrscheinlichkeit auszuschließen, dass es im Besitz eines aktiven Soldaten war. In Baláca kam nämlich kein Objekt oder Fund vor, der auf einen vorübergehenden oder dauerhaften militärischen Stationierungsort hinweisen würde, sondern nur frühe, teilweise erdgetiefte Häuser, die zu einer Zivilsiedlung gehörten (s. unten). (Die den Soldat der *legio II adiutrix*, Cep(h)alo erwähnende eingeritzte Gefäßinschrift⁶⁶ wird neuerdings in die Epoche der Siedlung von Baláca nach den Markomannenkriegen datiert⁶⁷, als der Gutshof wahrscheinlich kaiserliches Besitzgut wurde⁶⁸.) Das Vorkommen der Cingulumbeschläge in Baláca ist also mit dem gesellschaftlichen Gebrauch militärischer Ausrüstungsgegenstände zu erklären, wonach ihr Inhaber ein entlassener Soldat gewesen sein kann. Der Veteran kann eine besondere Vorliebe für sein Cingulum gehabt haben, denn er hat das Symbol seines ehemaligen Soldatenstatus, seinen Gürtel (vielleicht zusammen mit seinem Schwert) als persönliches Andenken (*memorabilia*) beibehalten und in seinem Wohnort ausgehängt. Dass der Inhaber des Gürtels ein Veteran war, zeigt bereits sein Wohnort im Plattensee-Oberland. Auf dem Plattenseegebiet, und vor allem in der Gegend nördlich des Sees sind nämlich im letzten Drittel des 1. Jhs n. Chr. sowie während des ganzen 2. Jhs n. Chr. nicht nur Auxiliaveteranen verschiedenen Ursprungs (wie Treveri, Ituraei, Azali), sondern auch Legionsveteranen, wahrscheinlich in einer größeren Zahl angesiedelt worden⁶⁹. Das beweisen sowohl die relativ große Zahl von Militärdiplomen⁷⁰ und die Veteranen erwähnenden Grabinschriften⁷¹, als auch die Waffengräber⁷² und die auf dem Gebiet der Siedlungen und Villen gefundenen Militaria.

Wie kann aber das Dasein eines Soldaten, der in der zweiten Hälfte des 1. Jhs n. Chr. oder spätestens am Beginn des 2. Jhs n. Chr. entlassen worden ist, in die heute bekannte früheste Phase der römerzeitlichen Siedlung von Baláca hineinpassen? Im bedeutendsten Gutshof des Plattensee-Oberlandes, in Baláca ist der älteste aus Stein gebaute Herrensitz, der mit Fresken dekorierte Nr. XIII.⁷³ teilweise unter dem Garten des in der Severerzeit

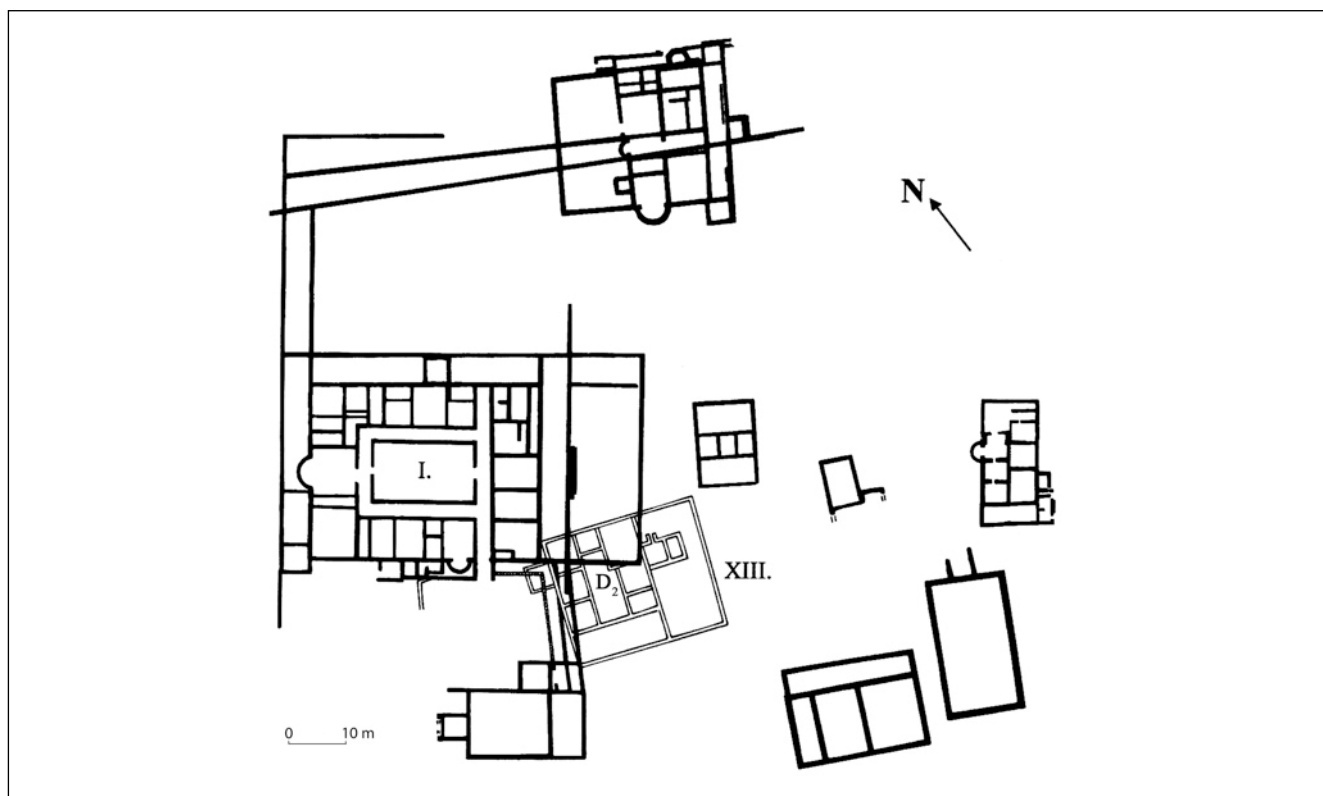


Abb. 10: Grundriss des Gutshofes von Balácsa mit der Gebäude Nr. XIII., deren Orientierung von der des Herrensitz Nr. I. aus der Severerzeit abweicht.

gebauten Hauptgebäude Nr. I., teilweise aber südlich davon freigelegt worden; seine Bauarbeiten sind in die Wende vom 1. zum 2. Jh. n. Chr. oder in die ersten Jahrzehnten des 2. Jhs n. Chr. zu datieren (Abb. 10)⁷⁴. 1984 und 1986 sind unter Raum D2 des Villengebäudes Nr. XIII. zwei halb erdgetiefte Wohnhäuser von Sylvia Palágyi freigelegt worden, die auf Grund ihrer stratigraphischen Lage sicherlich älter als die Gebäude Nr. XIII. sein sollen (Abb. 11)⁷⁵. Die Gruben der Häuser sind nämlich aufgefüllt und ihre Reste planiert worden, unmittelbar vor dem Bau des Herrensitz Nr. XIII. Die Auffüllung beider Häuser sowie die über ihnen gefundene Planie beinhaltete eine große Menge Fundstücke, unter denen die hohe Anzahl der Terra-Sigillata-Bruchstücke besonders bemerkenswert ist. Während der Ausgrabungssaison von 1984 wurden 20, im Jahre 1986 noch drei nord- bzw. südgalischen Terra-Sigillata-Bruchstücke gefunden, die einheitlich in die flavische bzw. trajanische Zeit zu datieren sind⁷⁶. Italienische TSTP (= *terra sigillata tardo padana*) der Form Consp. 39/43 und südgalische Terra-Sigillata-Fundstücke vergleichbaren Alters sind – allerdings in recht niedriger Zahl – auch schon früher im Gebiet des Hauptgebäudes Nr. I. gefunden worden (im *peristylum* sowie unter den Mosaikböden der Räume

Nr. 10. und 13.)⁷⁷, die D. Gabler zu der Ansicht führten, dass „die früheste Periode der Hauptgebäude Nr. I. in die Flavierzeit, am spätesten aber in die 80er Jahren des 1. Jhs zu datieren ist“⁷⁸. Allerdings ist es wahrscheinlicher, dass auch diese Fundstücke aus solchen, unter dem Hauptgebäude liegenden Objekten und Schichten stammen, die gleich alt sind wie die unter dem Gebäude Nr. XIII. freigelegten, erdgetieften Häuser.

Die aus der Auffüllung und Planierung der frühen erdgetieften Häuser stammenden Fundstücke der domitianisch-trajanischen Epoche beweisen also, dass auf dem Gebiet des Gutshofes von Balácsa spätestens am Ende der flavischen Epoche teilweise erdgetiefte Wohnhäuser lokaler Tradition standen, vor und auf der Stelle des ersten Steingebäudes, Nr. XIII., das bereits als Herrensitz einer Villa diente. Es ist zu betonen, dass die Nutzung dieser Häuser mit dem Alter des in Balácsa gefundenen Militärgürtels zusammenfällt, was auf einen direkten oder indirekten Zusammenhang dieser Häuser mit den in der Nähe gefundenen Cingulumbeschlügen hinweist. Das frühkaiserzeitliche Schurzcingulum von Balácsa und der dadurch postulierte Veteran ist demnach am ehesten zur frühesten Periode der Siedlung von Balácsa in der flavischen oder trajanischen Zeit zu datieren. Die Ansiedlung eines

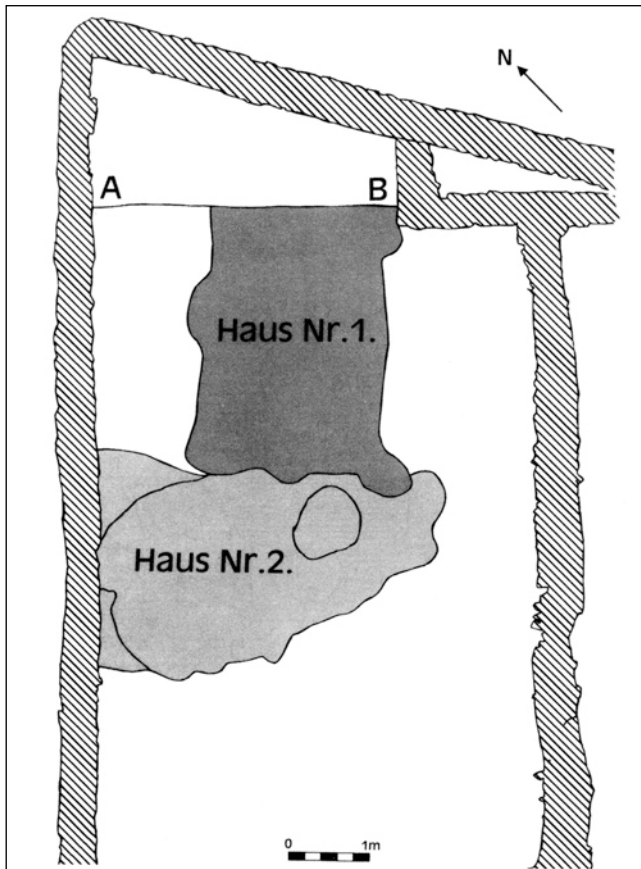


Abb. 11: Grundriss der zwei, unter Raum D2 der Gebäude Nr. XIII. freigelegten, teilweise erdgeteften Wohnhäuser aus der spätflavischen–trajanischen Zeit (nach CSIRKE 2005, 40 Abb 5.)

oder mehrerer Veteranen in Baláca würde auch die auffallend große Zahl – im Vergleich mit der einheimischen Siedlungen – der spätflavischen–traianischen Terra-Sigillata-Fragmente erklären, denn aktive und entlassene Soldaten bedeuteten zahlungsfähige Nachfrage für dieses teure Importgut⁷⁹. (Das bestätigen auch die frühkaiserzeitlichen Waffengräber in Pannonien mit Terra-Sigillata Beigabe wie auf dem Plattenseegebiet die Gräber von Cserszegtomaj-Dobogódomb oder Csopak-Kökoporsódomb⁸⁰.) Allerdings ist es uns heute noch unbekannt, wie groß die Ausdehnung dieser frühen Siedlung war, und wir wissen auch nicht, ob es ein von einer Veteranenfamilie bewohnter Ackerhof, ein aus mehreren Häusern bestehendes Dorf, oder sogar eine größere Veteranensiedlung war. Diese Frage wird erst nach weiteren Ausgrabungen beantwortet werden können⁸¹.

Auf Grund der zwei erhalten gebliebenen Beschläge des in Baláca gefundenen flavierzeitlichen Militärgürtels wurde also die Geschichte der ersten Jahrzehnten eines Gutshofes rekonstruierbar, die aus einem in der spätflavischen Zeit entstandenen Veteranenparzelle oder

Veteranensiedlung um die Wende vom 1. zum 2. Jh. n. Chr. – wohl durch die Konzentration mehrerer angrenzenden Veteranenparzellen – sich zu einer der bedeutenden Gutshöfe im Plattensee-Oberland entwickeln konnte. Baláca ist damit kein Einzelfall, denn die frühesten Perioden von mehreren Villen im Plattensee-Oberland sind auf eine Veteranenduktion zurückzuführen⁸². Ein ähnlicher Vorgang wie in Baláca kann auch im Fall der Villa von Gyulafirátót-Pogánytelek stattgefunden haben. Eine Villasiedlung, die nach einem Terra-Sigillata-Tellerfragment der Form Consp. 20 vom Pogegebiet⁸³ eine frühere Phase hatte, kann aus einem – am spätesten in der Flavierzeit bereits existierenden – Veteranenlandgut zustande gekommen sein⁸⁴. Das bestätigt auch die auf dem Grund der Villa gefundene, mit Sicherheit vor der Mitte des 2. Jhs n. Chr. zu datierende Cingulumschnalle⁸⁵, die nach der Klassifikation von St. Hoss zu den D-förmigen Scharnierschnallen mit Innenvoluten ohne Quersteg und Scharnieröse direkt am Bügel (Form 2) eingeordnet werden kann⁸⁶.

Im Fall von Baláca ist es auch nicht auszuschließen, dass die Familie, die den Herrensitz Nr. XIII. aufgebaut hatte und dort vom Beginn des 2. Jhs bis zu den Markomannenkriegen wohnte, die von den Inschriften des Grabhügels der nahen „Likasdomb“ bekannten Tiberii Claudii⁸⁷, in Verwandtschaft mit dem/den einige Jahrzehnte früher hier angesiedelten Veteran(en) standen. Der erste Inhaber des auf der Stelle der erdgeteften Häuser am Beginn des 2. Jhs aufgebauten Herrensitz Nr. XIII. kann auch ein Nachkomme eines dort angesiedelten Legionsveteranen gewesen sein.

Zusammenfassend können wir also Folgendes feststellen:

1. Gyula Rhé hat während seiner Ausgrabungen auf dem Grund des Hauptgebäudes Nr. I. des römischen Gutshofes von Baláca im Plattensee-Oberland zwei Militaria gefunden. Das Eine ist ein verzinntes Gürtelblech mit Nielloeinlagen von geometrischen und pflanzlichen Motiven (Abb. 2), das Andere ist ein aus einem blattförmigen Schurzanhänger und einer Riementülle bestehender Endbeschlag des Schurzcingulum (Abb. 3).

2. Beide Beschläge sind ähnlichen Alters (nicht später als Ende des 1. Jhs n. Chr.) und gleicher Funktion, und sind – auf Grund ihrer Parallelen (Abb. 4, 5, 7) – als Bestandteile eines Schurzcingulum aus der Flavierzeit zu identifizieren.

3. Der Besitzer des Cingulum – auf Grund der Verbreitung der niellierten Gürtelbleche – kann früher in einer in den westlichen Grenzprovinzen, in Britannien, Germanien oder Raetien stationierten Truppe gedient haben, die in Bezug mit den Donaukriegen Domitians oder spätestens den

Dakerkriegen Trajans nach Pannonien abkommandiert worden sind.

4. Der Fundort der Cingulumbeschläge ist eine Zivilsiedlung im Inneren Pannoniens (Abb. 1, 9), im Plattensee-Oberland, auf einem Gebiet, wo eine große Zahl entlassener Soldaten bereits in der zweiten Hälfte des 1. Jhs n. Chr. angesiedelt worden sind. Deshalb kann der Besitzer des Schurzcingulum von Baláca am wahrscheinlichsten ein Veteran gewesen sein.

5. Das Cingulum ist gleichen Alters wie die zwei teilweise erdgetieften Wohnhäuser, die unter Raum D2 des ersten Herrensitzes (Nr. XIII.) des Gutshofes von Baláca freigelegt worden sind (Abb. 11), und daher in die früheste Periode der Siedlung von Baláca zu datieren. Aus der Auffüllung und Planierung der Häuser sind nämlich besonders zahlreiche Terra-Sigillata-Bruchstücke zutage gekommen, meistens aus der spätflavischen–trajanischen Zeit. Demnach kann der Besitzer der Cingulumbeschläge während der frühesten Periode der Siedlung, in der Flavierzeit in Baláca gewohnt, und als Veteran das parzellierte Landstück um den späteren Gutshof erworben haben.

6. All dies bedeutet, dass die Villa von Baláca sich von einer in der spätflavischen Zeit gegründeten Veteranensiedlung – wohl durch die Konzentration mehrerer Veteranenparzellen – zum bedeutendsten Gutshof des Plattensee-Oberlandes entwickelte. Allerdings muss die Frage ob dieser Wandel durch ein Inhaberwechsel oder als Ergebnis der Bereicherung und des gesellschaftlichen Aufstiegs der Nachkommen des (eines?) sich dort angesiedelten Veteranen erfolgte, noch offen bleiben⁸⁸.

NOTES

1. ALFÖLDI 1936, 37.
2. MÓCSY 1959, 39-43.
3. GABLER 1993-1994, 149-151; GABLER 1994, 394.
4. Die im Plattenseegebiet gefundenen frühkaiserzeitlichen Waffen und Ausrüstungsgegenstände werden in einem anderen Aufsatz besprochen.
5. Inv. Nr.: LDM Veszprém 55.250.216; H.: 3,5 cm; B.: 5,1 cm; Blechdicke.: 0,2 cm. RHÉ 1912, 74 Kat. Nr. 2, Abb. 9.; THOMAS 1964, Taf. LXXXIV.
6. Die umfassenden Aufsätze von F. Grew und N. Griffiths (GREW – GRIFFITHS 1991, 47-84), und E. Deschler-Erb (DESCHLER-ERB 2000, 383-396) beinhalten 212 niellierte Gürtelbleche.
7. DESCHLER-ERB 2000, 388, Verbreitungskarte s. ebd. 390 Abb. 9.
8. Das älteste bekannte Exemplar wurde in dem zwischen 8/5 v. Chr. – 6/9 n. Chr. bestehenden militärischen Stützpunkt von Augsburg-Oberhausen gefunden: DESCHLER-ERB 2000, 389.
9. DESCHLER-ERB 2000, 389.
10. Zu den Gürtelblechen mit Emailleinlage und ihrer Datierung s. zusammenfassend: FLÜGEL – BLUMENAU - DESCHLER-ERB – HARTMANN – LEHMANN 2004, 531-546.
11. DESCHLER-ERB 2000, 390-391.
12. DESCHLER-ERB 2000, 395. Die Pferdegeschirr-Garnitur des unter dem Hügelgrab von Baláca freigelegten Pferdegrabes beinhaltete auch fünf verzinnte, durch vier Niete mit Unterlegscheiben befestigte, rechteckförmige Bronzebeschläge (PALÁGYI 1996, 40 L14, 70 Abb. 45/13-16; PALÁGYI 2003, 13 kat. 2.8.14), die dem im Gebiet der Hauptgebäude gefundenen Beschlag von Baláca ähnlich sind. Die niellierte Verzierung des Beschlags von Baláca folgt jedoch eindeutig den Verzierungsschemen der militärischen Gürtelbleche, und kann daher nicht als Pferdegeschirrbeschlag identifiziert werden.
13. Inv. Nr.: LDM Veszprém 1220 = 55.250.213; H.: 9,9 cm; B.: 4,1 cm. RHÉ 1912, 75 Abb. 11/9; PALÁGYI 2003, 8 Kat. Nr. 2.1.
14. PALÁGYI 2003, 8.
15. PALÁGYI 2003, 8 Kat. Nr. 2.1.
16. RADMAN-LIVAJA 2004, 91, 133 Kat. 149.
17. MANO-ZISI 1957, 84-86 Pl. XIV-XV.
18. FERNÁNDEZ 1998, 37-40.
19. SCHLEIERMACHER 1996, 294-295 Abb. 120-122. Der silberne Lunulaanhänger ist auf Grund seiner Form, Größe (H.: 5,2; W.: 4,5 cm) und punzierten Rankenverzierung sicherlich nicht als Pferdegeschirr, sondern als Schurzanhänger zu identifizieren.
20. PALÁGYI 2003, 8.
21. FERNÁNDEZ 1998, 37-40.
22. FERNÁNDEZ 1998, 40, 41 Fig. 3/1.
23. MANO-ZISI 1957, 84-86 Pl. XIV-XV.
24. RADMAN-LIVAJA 2004, 91, 133 Kat. 149.
25. Wie an der in die letzten Jahren des 1. Jhs n. Chr. datierten Grabstele des C. Castricius Victor in Aquincum: UBL 1969, 220-223 Taf. 2 Kat. 4 und SZIRMAI 2005, 173 Nr. 5.
26. FERNÁNDEZ 1998, 39 Fig. 2/1-2. Der Fund von Teba (Málaga, Sp.) beinhaltet auch einen solchen, vom Bronzering schon abgefallenen, kleinen blattförmigen Sekundärhänger: FERNÁNDEZ 1998, 41 Fig. 3/2.
27. FERNÁNDEZ 1998, 40 n. 5, 39 Fig. 2, 2.
28. BISHOP 1992, 91 Nr. 44, 93 Fig. 12/44.
29. Die neuesten unter den im Schatzfund gefundenen 92 Denare sind die Gepräge Domitians: MANO-ZISI 1957, 70, zur Datierung des Fundes s. ebd. p. 110-111.
30. Zu den m. W. immer noch unpublizierten Schurzanhängern von Herculaneum s. bis auf weiteres: BISHOP 1992, 94-94; FERNÁNDEZ 1998, 42.
31. UNZ – DESCHLER-ERB 1997, 38, Kat. 1275, 1277-1283.
32. SCHÖNBERGER 1985, 367.
33. RADMAN-LIVAJA 2004, 91, 133 Kat. 149.

34. KOVÁCS 2005, 114.
35. BREWER 2002, 3.
36. BISHOP 1992, 97 Fig. 16, 7.
37. SCHLEIERMACHER 1996, 295.
38. FERNÁNDEZ 1998, 42.
39. Zur Gebrauchsdauer der Schurzcingula: BISHOP 1992, 101.
40. Zur Geschichte der Ausgrabungen von Gy. Rhé in Baláca in den Jahren 1906. und 1907. s. THOMAS 1964, 76; ausführlicher: PALÁGYI 1984, 28-29. 1906 hat er die Mosaikböden der Räume 8. und 10. freigelegt und sammelte aus Gebäude Nr. XIII. knüpfende Fragmente abgeschlagener Wandmalerei unter dem Terrazzo der Korridor Nr. 4. 1907 hat er auch die Mauer der Gebäude Nr. XIII. gefunden. (Jenes Jahr sind 11 db bronzene Gegenstände gefunden worden, unter denen – und weniger unter der „40 St. Kleinigkeiten“ von 1906 – die Cingulumbeschläge vermutet werden können.) Das Gürtelblech ist in RHÉ 1912, 42, nach den Ereignissen der Ausgrabungen von 1909 und 1910 unter mehreren Gegenständen aufgezählt. Auf Grund dessen kann aber die Auffindung des Blechs nicht ins Jahr 1909 datiert werden, denn Gy. Rhé erwähnt a.a.O. die bedeutendsten Fundstücke der vorigen Jahre, so z.B. die sicherlich 1906 gefundene Ziegenstatue.
41. Die Darstellungen sind zusammengestellt in BISHOP 1992, 81-91; in Noricum und Pannonien kam es bisher nur auf drei Grabdenkmälern vor: UBL 1969, 216-224.
42. BISHOP 1992, 81, 101.
43. DESCHLER-ERB 2000, 390 Abb. 9. Das Gürtelblech von Baláca ist das östlichste bekannte Exemplar der niellierten Gürtelbleche, und bisher das einzige das in Pannonien gefunden wurde. S. noch: „Es scheint gut möglich, dass hier eine Ausrüstungsgrenze fassbar wird und Gürtelbeschläge mit Niellierung nur von den an der Rheingrenze stationierten Einheiten getragen wurden.“ DESCHLER-ERB 2000, 389.
44. Zum Schurzcingulum auf der Stele des C. Castricius Victor s.: UBL 1969. 220-223 Taf. 2 Kat. 4 und SZIRMAI 2005. 173 Nr. 5. Zur Abkommandierung der *legio II adiutrix* von Britannien nach Pannonien: LÓRINCZ 2000, 160-161.
45. Zusammenfassend zu den – meistens west-östlichen – Truppenbewegungen während der Donaukriege Domitians und der Dakerkriege Trajans s.: MÓCSY 1974, 90-95; STROBEL 1988; LÓRINCZ 1990, 71-72.
46. BISHOP 1992, 100-101; FERNÁNDEZ 1998, 40.
47. BISHOP 1992, 100-101; FERNÁNDEZ 1998, 40.
48. BISHOP 1992, 81-91.
49. Zur Frage des Eigentumsrechts der Waffen und militärischen Ausrüstungsgegenstände: SPEIDEL 1992, 131-134; NICOLAY 2002, 60-61; NICOLAY 2007.
50. MANO-ZISI 1957, 84-86; BISHOP 1992, 93-94.
51. FERNÁNDEZ 1998.
52. BECK – CHEW 1991, 57-65.
53. BREŠČAK 1989, 1, 10; BREŠČAK 1990, 102; BREŠČAK 1995, 18.
54. Ld. PFAHL – REUTER 1996, 119-167; NICOLAY 2002, 53-65; FISCHER 2002, 13-18; NICOLAY 2007.
55. FEUGÈRE 1983, 45-66.
56. PFAHL – REUTER 1996, 119-167.
57. NICOLAY 2007.
58. Wie bei Städten: Pompeji: Aventicum/Avenches: VOIROL 2000; im Gebiet von Villen: Treuchtlingen-Weinbergshof: GRABERT – KOCH 1986, 325-336
59. In Pannonien: MÁRTON 2002, 133-144 (unvollkommen); in Dazien: PETCULESCU 1995, 105-145.
60. PFAHL – REUTER 1996, 138-140.
61. PFAHL – REUTER 1996, 134-136; FISCHER 2002, insb. 13-14.
62. FISCHER 2002, 15.
63. S.: FISCHER 2002, 15-16 und die Konferenzbeiträge der 14. ROMEC über das Thema „Archäologie der Schlachtfelder – Militaria aus Zerstörungshorizonten“ im Carnuntum Jahrbuch 2005.
64. NICOLAY 2002, 57 Fig. 6, 62-63.
65. NICOLAY 2002, 63.
66. VBM Inv. Nr. 55.250.177; MRT 2, 34/14, 151 29.kép; KOVÁCS – FEHÉR 2001, 170 Nr. 17, 180 Abb. 3/17. Zuletzt zur Datierung und Interpretation des Gefäßfragments und der Inschrift: KOVÁCS – FEHÉR 2001, 165-166 und NAGY 2007, 155 Anm. 53.
67. Es ist jedoch zu betonen, dass der beschriftete gelbe Krug auch eine frühere Datierung zum Ende des 1. Jhs bis zum Beginn des 2. Jhs n. Chr. erlaubt, weshalb es auch vorstellbar ist, dass der Krug und sein Ritzinschrift sich an die früheste Periode der Siedlung knüpfen, wann man noch mit der Präsenz von Veteranen in Baláca rechnen kann. Auch die Erwähnung *legio II [adiutrix?]* spricht nicht dagegen, denn während des Bestehens der einheitlichen Pannonien konnten von *legio II adiutrix*, die von 89 n.Chr. ab in Pannonien stationierte, entlassene Soldaten im Plattensee-Oberland angesiedelt werden. Auch diese Veteranen können solche Keramikgefäße gehabt haben, auf die sie die Eigentumsinschrift vorher als Soldate eingeritzt hatten. Das Krugfragment mit der einen bestimmten Cep(h)alo erwähnenden Inschrift wurde 1909 – fast gleichzeitig mit den Beschlägen des Schurzcingulum aus der Flavierzeit – ebenfalls von Gyula Rhé gefunden (PALÁGYI 1984, 31).
68. Baláca, als kaiserlicher Gutshof kann mit dem Zentrum des im Itinerarium Antonini benannten, vermutlich um Veszprém liegenden kaiserlichen saltus Caesariana (It. Ant. 263, 6) identifiziert werden: KOVÁCS – FEHÉR 2001, 163-165.
69. Zur Rolle der Veteranen im Plattensee-Oberland s.: KUZSINSZKY 1920, 75; MÓCSY 1959, 39-43; GABLER 1994, 394 und bald MRÁV i. Dr.

70. Die bisher im Plattensee-Oberland gefundenen Militärdiplome: 1. CIL XVI 84 (16. Juni 138. n.Chr.): *Sex. Iul. Primus, Trever, eq. coh. I. Thracum* (Tótvázsony); 2. CIL XVI 104 (3. November 154 n. Chr.): *Ursio Bustoronis f., Azalus* (Öskü); 3. CIL XVI 57 (110 n.Chr.): *Thaemus Horati f., Ituraeus, eq. alae I Aug. Itur.* (Öskü).
71. *C. Iulius Severinus, vet(eranus) legionis I adiut(ricis)*: RIU 293 (Zalavár); *M(arcus) Magiu(s) Marci filius Pup[ina I]ngenu(u)s B(a)eter(ri)s veteranus*: RIU 952 (Somogyvár).
72. Zusammenfassend zu den Waffengräbern im Plattensee-Oberland s.: MRÁV im Druck.
73. Zur Datierung der Gebäude Nr. XIII.: PALÁGYI 1994, 12. Zuletzt zu ihren Fresken: GESZTELYI 1994, 22-28 (zu den Fresken des sog. gelb-lila Zimmers aus der Zeit Hadrians); KIRCHHOF 2005, 173-198 (bacchische Deckengemälde mit Weinleseszene).
74. PALÁGYI 1994, 12.
75. Die Planierungsschicht der Häuser liegt unter dem Sockel der Hauptgebäude Nr. XIII. Die Ergebnisse der Ausgrabung hat O. Csirke veröffentlicht: CSIRKE 2005, 25-51.
76. S. die Ergebnisse von D. Gabler bei CSIRKE 2005, 26-32.
77. GABLER - PALÁGYI 1989, 119, 126; GABLER 1992, 293-294, 299-300, 302; GABLER 2001, 97-99.
78. GABLER 2001, 117.
79. GABLER 1971, 199-200; GABLER 2006, 122-123. In Pannonien bedeutete anfangs die Armee die wichtigste Nachfrage für die südgalische Terra-Sigillata: MEES 1993, 61-62.
80. Zum Waffengrab von Cserszegtomaj-Dobogódomb bis auf weiteres: MRT 1, 10/4; zum Grab von Csopak: KUZSINSZKY 1920, 174-175; MRÁV im Druck.
81. Die im Peristylum des Herrensitzes Nr. I. gefundene frühe Terra-Sigillata kann für eine größere Ausdehnung der Siedlung sprechen. S. dazu GABLER - PALÁGYI 1989, 119, 126; GABLER 1992, 293-294, 299-300, 302; GABLER 2001, 97-99.
82. MÓCSY 1959, 41; GABLER 1994, 149.
83. Zum Tellerfragment Form Consp. 20, das zur claudischen-flavischen Zeit zu datieren ist, s.: GABLER 1971, 211-212; CSIRKE - GABLER - PALÁGYI 2006, 176 kat. 17.24.
84. MÓCSY 1959, 41; GABLER 1971, 211-212; GABLER 1994, 149.
85. Für die Cingulumschnalle mit Innenvoluten s. RHÉ 1905, p. 19 Abb. 13.
86. Diese Art Cingulumschalen gehört zu den frühen Militaria: s. bis auf weiteres DESCHLER-ERB (E.) - PETER - DESCHLER-ERB (S.) 1991, 22-23 (FORM. B); UNZ - DESCHLER-ERB 1997, 36-37; FLÜGEL - BLUMENAU - DESCHLER-ERB - HARTMANN - LEHMANN 2004, 539. Sein Gebrauch ist von der augusteischen Zeit (s. die Fundstücke von Kalkriese und Haltern) bis zur Mitte des 2. Jhs n.Chr. nachgewiesen.
87. Die von J. Fitz veröffentlichten und ergänzten Inschriftenfragmente (s.: AE 1996, 1224-1232 vgl. FITZ 1996, 199-236; FITZ 2000, 115-136) des zum Villa gehörenden großen Hügelgrabes (Likasdomb) revidierend hat Géza Alföldy bewiesen, dass die im Hügelgrab beigesetzte Familie nicht aus Picenum, Mittelitalien stammte, sondern eine der lokalen vornehmen Familien waren, die ihr Bürgerrecht von Claudius erhielten. Auf Grund epigraphischer Datierungskriterien hat er auch überzeugend demonstriert, dass die sich an drei (mit den Aufstellern der letzten Altaren vier) Generationen knüpfenden Grabaltäre sicherlich nicht nach den Markomannenkriegen, am Ende des 2. Jhs n.Chr. oder im 3. Jh., sondern in der Periode zwischen cca. 100 n.Chr. und den Markomannenkriegen errichtet worden sind (ALFÖLDY 2004, 23-122; AE 2003, 1352-1362). Auf Grund der Pferdegeschirrbeschläge des unter dem Tumulus gefundenen Pferdegrabes haben S. Palágyi (PALÁGYI 1996, 17, 21, 41-51), und ihre Ansicht bestätigend Levente Nagy - mit Bezug auf die bacchischen Fresken des Hauptgebäude Nr. XIII. aus der hadrianischen Zeit (NAGY 2007 157) - die Bauzeit des als Ruhestätte der Familie gebauten Hügelgrabes von Likas-domb in die Regierungszeit Hadrians datiert.
88. Hiermit möchte ich mich für die Hilfe von Sylvia Palágyi (Veszprém), E. Deschler-Erb und András Márton (Budapest) bedanken, die mein Manuskript gelesen und mir nützliche Ratschläge erteilt haben. Auch Ivan Radman-Livaja (Zagreb), der einige in Ungarn unzugängliche Werke mir zur Verfügung gestellt hat, schulde ich herzlichen Dank.

BIBLIOGRAPHY

- ALFÖLDY 2004: G. Alföldy, Die Inschriften des Hügelgrabes von Baláca - A balácai halomsír feliratai. *Balácai Közlemények* 8, 2004, 23-122
- BECK - CHEW 1991: F. Beck - H. Chew, *Masques de fer. Un officier romain du temps de Caligula*, Paris, 1991
- BISHOP 1992: M. C. Bishop, The early imperial 'apron'. In: *JRMES* 3, 1992, 81-104
- BREŠČAK 1985: D. Breščak, Verdun pri Stopičah. Zgodnjerimska nekropola - Early Roman Cemetery, *Arheoloski Pregled* 1985, 120-121
- BREŠČAK 1989: D. Breščak, Verdun pri Stopičah. Arheološke raziskave antičnega gronišča 1983-1988. In: *Katalog razstave*, Novo Mesto, 1989
- BREŠČAK 1990: D. Breščak, Verdun pri Stopičah. In: *Arheološka najdišča Dolejnske*, Novo Mesto, 1990, 99-102
- BREWER 2002: R. J. Brewer, Legio II Augusta and Caerleon. In: R. J. Brewer (ed.), *The Second Augustan Legion and the Roman Military Machine*, Dorchester, 2002, 1-9
- CSIRKE 2005: O. Csirke, Erdgetiefte Häuser in Baláca, *Balácai Közlemények* 9, 2005, 25-51
- DESCHLER-ERB 2000: E. Deschler-Erb, Niellierung auf Buntmetall: Ein Phänomen der frühen römischen Kaiserzeit, *Kölner Jahrbuch für Vor- und Frühgeschichte* 33, 2000, 383-396

- DESCHLER-ERB – PETER – DESCHLER-ERB 1991: E. Deschler-Erb – M. Peter – S. Deschler-Erb, Das frühkaiserzeitliche Militärlager in der Kaiseraugster Unterstadt, *Forschungen in Augst*, Band 12, Augst, 1991
- FERNÁNDEZ 1998: J. A. Fernández, Aprons fittings from Flavian times found in Spain, *JRMES* 9, 1998, 37-41
- FEUGÈRE 1983: M. Feugère, L'équipement militaire romain dans le Département de la Loire. Contribution à l'étude de la romanisation en pays ségusiave, *Cahiers Archéologiques de la Loire* 3, 1983, 45-66
- FEUGÈRE 1996: M. Feugère, Les tombes à armes et l'aristocratie gauloise sous la paix romaine. In: M. REDDÉ (dir.), *L'armée romaine en Gaule*, Paris, 1996, 165-176
- FISCHER 2002: Th. Fischer, Waffen und militärische Ausrüstung in zivilem Kontext – grundsätzliche Erklärungsmöglichkeiten. In: ROMEC XIII. Jahresbericht 2001, *Gessellschaft Pro Vindonissa*, Brugg, 2002, 13-18
- FITZ 1996: J. Fitz, A balácai tumulus feliratai – Inschriften vom Hügelgrab bei Baláca, *Balácai Közlemények* 4, 1996, 199-236
- FITZ 1998: J. Fitz: Inschriften des Tumulus von Baláca, *Alba Regia* 27, 1998, 89-121
- FLÜGEL – BLUMENAU – DESCHLER-ERB – HARTMANN – LEHMANN 2004: CH. Flügel – E. Blumenau – E. Deschler-Erb – S. Hartmann – E. Lehmann, Römische Cingulumbeschläge mit Milleforieinlagen, *Archäologisches Korrespondenzblatt* 34, 2004, 531-546
- GABLER – PALÁGYI 1989: D. Gabler – S. Palágyi, A balácai terra sigillaták 1. – Terra Sigillaten aus Baláca 1. *Balácai Közlemények* 1, 1989, 109-134
- GABLER 1979: D. Gabler, Pannonia megszállásának néhány kérdése a terra sigillaták tükrében – Die Besitznahme Pannoniens im Spiegel der Sigillaten, *Archaeologiai Értesítő* 106, 1979, 199-217
- GABLER 1992: D. Gabler, A balácai terra sigillaták 2. – Terra Sigillaten aus Baláca 2. *Balácai Közlemények* 2, 1992, 293-316
- GABLER 1993-1994: D. Gabler, A Balatontól Északra levő terület római-kori teleüléstörténetének néhány kérdése – Einige Frage über die Geschichte der römischen Siedlungen auf dem Territorium nördlich von Balaton. *Veszprém Megyei Múzeumok Közleményei* 19-20, 1993-1994, 149-155
- GABLER 1994: D. Gabler, Die ländliche Besiedlung Oberpannoniens, H. BENDER – H. WOLFF (Hrsg.), *Ländliche Besiedlung und Landwirtschaft in den Rhein-Donauprovinzen des römischen Reiches*. Passauer Universitätsschriften zur Archäologie 2, 1994, 377-419
- GABLER 2001: D. Gabler, A balácai terra sigillaták 3. – Die Balácaer Terra Sigillata 3. *Balácai Közlemények* 6, 2001, 97-140
- GABLER 2006: D. Gabler, *Terra Sigillata, a rómaiak luxuskerámiaja*. MOYSEION 6, Budapest, 2007
- GESZTELYI 1994: T. Gesztelyi, Das Bildprogramm des gelb-lila Zimmers in Baláca, *Balácai Közlemények* 3, 1994, 22-28
- GRABERT – KOCH 1986: W. Grabert – H. Koch, Militaria aus der villa rustica von Treuchtlingen-Weinbergshof. *Bayerisches Vorgeschichtsblätter* 51, 1986, 325-336
- GREW – GRIFFITHS 1991: F. Grew – N. Griffiths, The Pre-Flavian Military Belt: the Evidence from Britain, *Archaeologia* 109, 1991, 47-84
- KIRCHHOF 2002: A. Kirchhof, A balácai szüret-jelenetes falfestmény rekonstrukciós problémái (Die Rekonstruktionsprobleme der Wandmalerei mit Weinlesedarstellung), *Balácai Közlemények* 7, 2002, 173-198
- KOVÁCS 2005: P. Kovács, The History of Pannonia between 54 and 166 A.D. in the light of the Sources. In: *Fontes Pannoniae Antiquae* II, Budapest, 2005, 110-143
- KOVÁCS – FEHÉR 2001: P. Kovács – B. Fehér, Feliratos téglá- és edénytöredékek a balácai római kori villából. I. Vicus Augusti Pannoniában? – Vicus Augusti in Pannonien? *Balácai Közlemények* 6, 2001, 159-181
- KUZSINSZKY 1920: B. Kuzsinszky, *A Balaton-környékének archaeologiaja*, Budapest, 1920
- LŐRINCZ 1990: B. Lőrincz, Legiók, J. FITZ – A. MÓCSY (Hrsg.), *Pannonia Régészeti Kézikönyve*, Budapest, 1990, 71-72
- LŐRINCZ 2000: B. Lőrincz: Legio II Adiutrix. In: *Les légions de Rome sous le Haut-Empire. Actes du Congrès de Lyon (17-19 septembre 1998)* (ed. par Y. Le BOHEC) Collection du Centre d'Études Romaines et Gallo-Romaines Nouv. sér. N° 20, 2000, Lyon, 159-168
- MANO-ZISI 1957: Đ. Mano-Zisi, Nalaz iz Tekije – *Les trouvailles de Tekiya*, Beograd, 1957
- MÁRTON 2002: A. Márton, Roman Burial with a weapon from the Bécsi road cemetery (Aquincum-Budapest). *Communicationes Archaeologicae Hungariae* 2002, 117-152
- MEES 1993: A. Mees, Probleme um die Anfangsdatierung von Aquincum, *Budapest Régiségei* 30, 1993, 61-85
- MÓCSY 1959: A. Mócsy, Die Bevölkerung von Pannonien bis zu den Markomannenkriegen, Budapest, 1959
- MRÁV im Druck: Zs. Mráv, Kora császárkori auxiliáris lovaskatona fegyveres sírja Cserszegtomaj, Dobogódombról. Katonák és veteránok a Balaton-felvidéken a Kr.u. 1-2. században. im Druck.
- NAGY 2007: L. Nagy, Beiträge zur Frage der gesellschaftlichen Stellung in den römerzeitlichen Hügelgräbern Bestatteten in Transdanubien. *Acta Archaeologica Academiae Scientiarum Hungaricae* 58, 2007, 145-163
- NICOLAY 2002: J. Nicolay, Interpreting Roman military equipment and horse gear from non-military contexts. The role of veterans. In: *ROMEC XIII. Jahresbericht 2001. Gessellschaft Pro Vindonissa*, Brugg, 2002, 53-65
- NICOLAY 2007: J. Nicolay, *Armed Batavians. Use and Significance of Weaponry and Horse Gear from Non-military Contexts in the Rhine Delta (50 BC to AD 450)*. Amsterdam, 2007, im Druck. – non vidi.

- PALÁGYI 1984: S. Palágyi, A balácai kutatások története (1904-1976). *Veszprém Megyei Múzeumok Közleményei* **17**, 1984, 27-51
- PALÁGYI 1994: S. Palágyi, Schwerpunkte der neuen Ausgrabungen im Gutshof von Baláca, *Balácai Közlemények* **3**, 1994, 10-21
- PALÁGYI 1996: S. Palágyi, A balácai római kori halomsír kutatása – Erforschung des Hügelgrabes von Baláca, *Balácai Közlemények* **4**, 1996, 7-72
- PALÁGYI 2003: S. Palágyi, *Római kori lószerszám- és járomveretek a veszprémi Laczkó Dezső Múzeum gyűjteményéből – Römerzeitliche Pferdegeschirr- und Jochbeschlüge des Museums „Laczkó Dezső” von Veszprém. A Laczkó Dezső Múzeum régészeti gyűjteményeinek katalógusai. Római kor 2, Veszprém, 2003*
- PETCULESCU 1995: L. Petculescu, Military equipment graves in Roman Dacia, *JRMES* **6**, 1995, 105-145
- PFAHL – REUTER 1996: S. F. Pfahl – M. Reuter, Waffen aus römischen Einzelsiedlungen rechts des Rheins. Ein Beitrag zum Verhältnis von Militär und Zivilbevölkerung im Limeshinterland, *Germania* **74**, 1996, 119-167
- RADMAN-LIVAJA 2004: I. Radman-Livaja. *Militaria Sisciensia. Nalazi rimske vojne opreme iz Siska u fundusu Arheološkoga muzeja u Zagrebu – Militaria Sisciensia. Finds of the Roman military equipment in Sisak in the holdings of the Archaeological Museum in Zagreb. Musei Archaeologici Zagrabienensis, Catalogi et Monographiae I, Zagreb, 2004*
- RHÉ 1905: Gy. Rhé, *Ős- és ókori nyomok Veszprém környékén*, Budapest, 1905
- RHÉ 1912: Gy. Rhé, A baláczai ásások eredményei. In: *Balácza, Veszprém, 1912*, 31-104
- SCHLEIERMACHER 1996: M. Schleiermacher, Wagenbronzen und Pferdegeschirr im Römisch-Germanischen Museum Köln, *Kölner Jahrbuch für Vor- und Frühgeschichte* **29**, 1996, 205-295
- SCHÖNBERGER 1985: H. Schönberger, Die römischen Truppenlager der frühen und mittleren Kaiserzeit zwischen Nordsee und Inn, *Bericht der Römisch-Germanischen Kommission* **66**, 1985, 321-495
- SPEIDEL 1992: M. P. Speidel, The weapons keeper, the fisci curator, and the ownership of weapons in the Roman army. In: *Roman Army Studies II. Mavors VIII.*, Stuttgart, 1992, 131-136
- STROBEL 1988: K. Strobel, Zur Dislozierung der römischen Legionen in Pannonien zwischen 89 und 118 n. Chr., *Tyché* **3**, 1988, 193-219
- SZIRMAI 2005: K. Szirmai, A katonai felszerelés korai ábrázolásai Aquincumban – Early depictions of military equipment in Aquincum, *Budapest Régiségei* **39**, 2005, 173-185
- THOMAS 1964: E. Thomas, *Römische Villen in Pannonien*, Budapest, 1964
- UBL 1969: H. J. Ubl, *Waffen und Uniform des römischen Heeres der Prinzipatsepoche nach den Grabreliefs Noricums und Pannoniens*. Diss. Univ. Wien, 1969
- UNZ – DESCHLER-ERB 1997: Ch. Unz – E. Deschler-Erb, *Katalog der Militaria aus Vindonissa*. Veröffentlichungen der Gesellschaft pro Vindonissa Band **14**, Brugg, 1997
- VOIROL 2000: A. Voirol, „Etats d’armes”. Les militaria d’Avenches/Aventicum. *Bulletin de l’Association pro Aventico* **42**, 2000, 7-92
- ZIENKIEWICZ 1994: D. Zienkiewicz, *Roman Legion*, 1994

Roman belt-fittings from *Burgenae*

Ivan Radman-Livaja

The site of Novi Banovci on the Danube river, in the south-western part of the Serbian province of Vojvodina, has yielded a very large number of Roman finds since the 19th century. This is quite understandable since the village occupies the spot of a Roman frontier fort, *Burgenae*. In the decades preceding the collapse of the Austro-Hungarian Empire the archaeological finds from that area were usually dispatched to the Archaeological department of the Croatian National Museum. Nowadays, due to that fact, a great number of archaeological finds discovered on the sites of the Srijem region, as this part of Vojvodina is called, are kept in the Archaeological Museum in Zagreb. Among them is a fairly large collection of Roman finds from Novi Banovci, i.e. *Burgenae*. Some of them have since been published, but the majority still awaits a thorough analysis and publication. Considering the extent of that collection, and the limited amount of space for this paper, obviously a selection had to be made. For this occasion, I have chosen to present the finds of belt fittings, most of which can be attributed with a high level of certainty to the Roman military dress.

Since those are only stray finds, lacking any clear archaeological context, one cannot expect far-reaching conclusions, but their study can nevertheless give us an interesting insight about the presence of the Roman military units on that site.

The history of *Burgenae* and the military units that garrisoned the fort have been extensively discussed in several publications¹. Due to that, only a short introductory overview seems necessary in the present article. Most authors seem to agree that the fort was built during the Flavian period at the latest but nothing is known for sure about its garrisoning troops in the first decades of its existence. The *cohors II Asturum et Callaecorum* might have been the first unit stationed there, but this assumption is far from being certain². It could have been replaced by the *cohors V Gallorum*, which might have been in *Burgenae* during Trajan's reign³. The *ala I civium Romanorum* is thought to have garrisoned *Burgenae* between AD 118 or 119 and 138⁴.

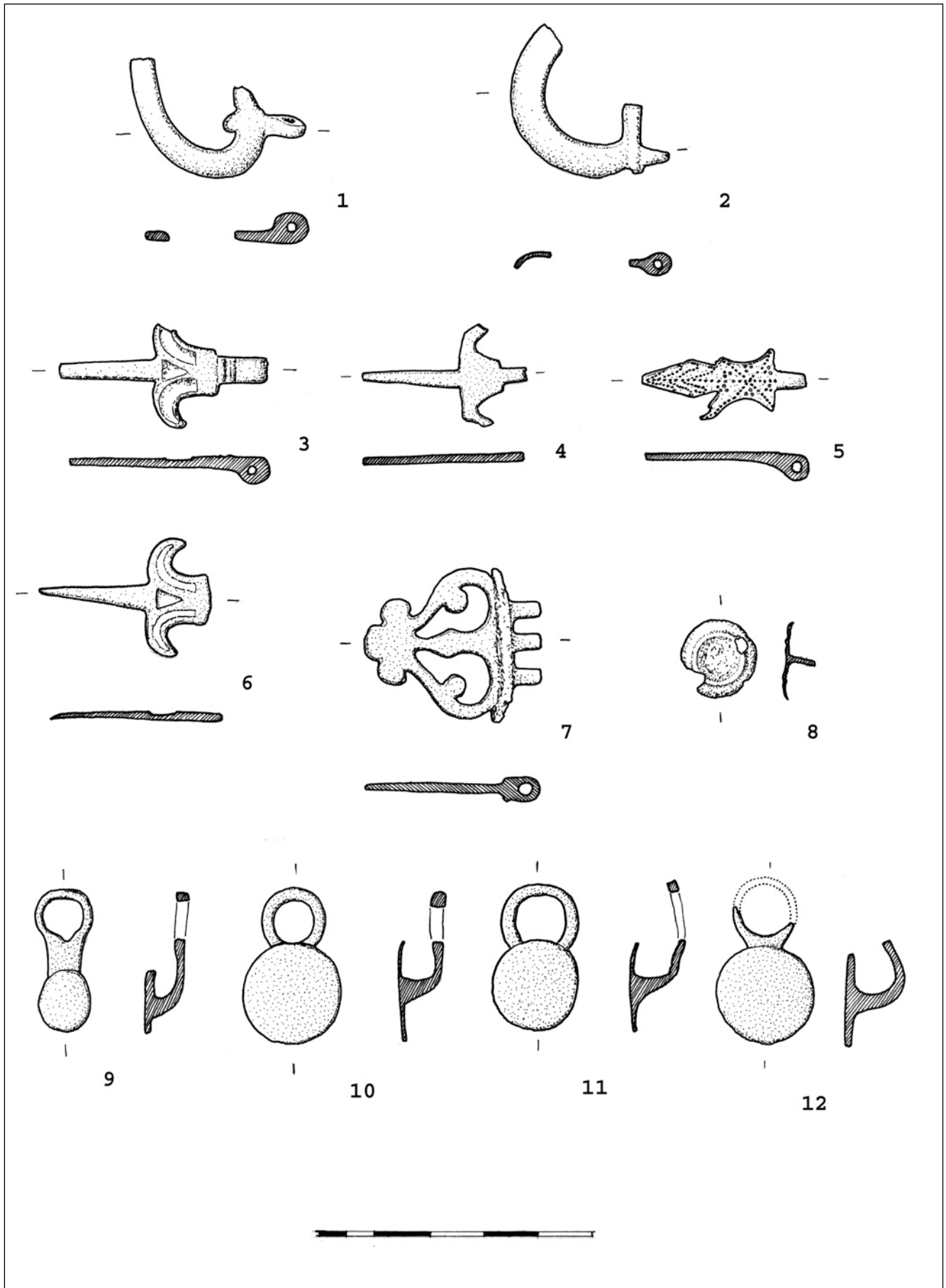
While one can only guess which units had been stationed in *Burgenae* during the 1st and early 2nd century AD, most

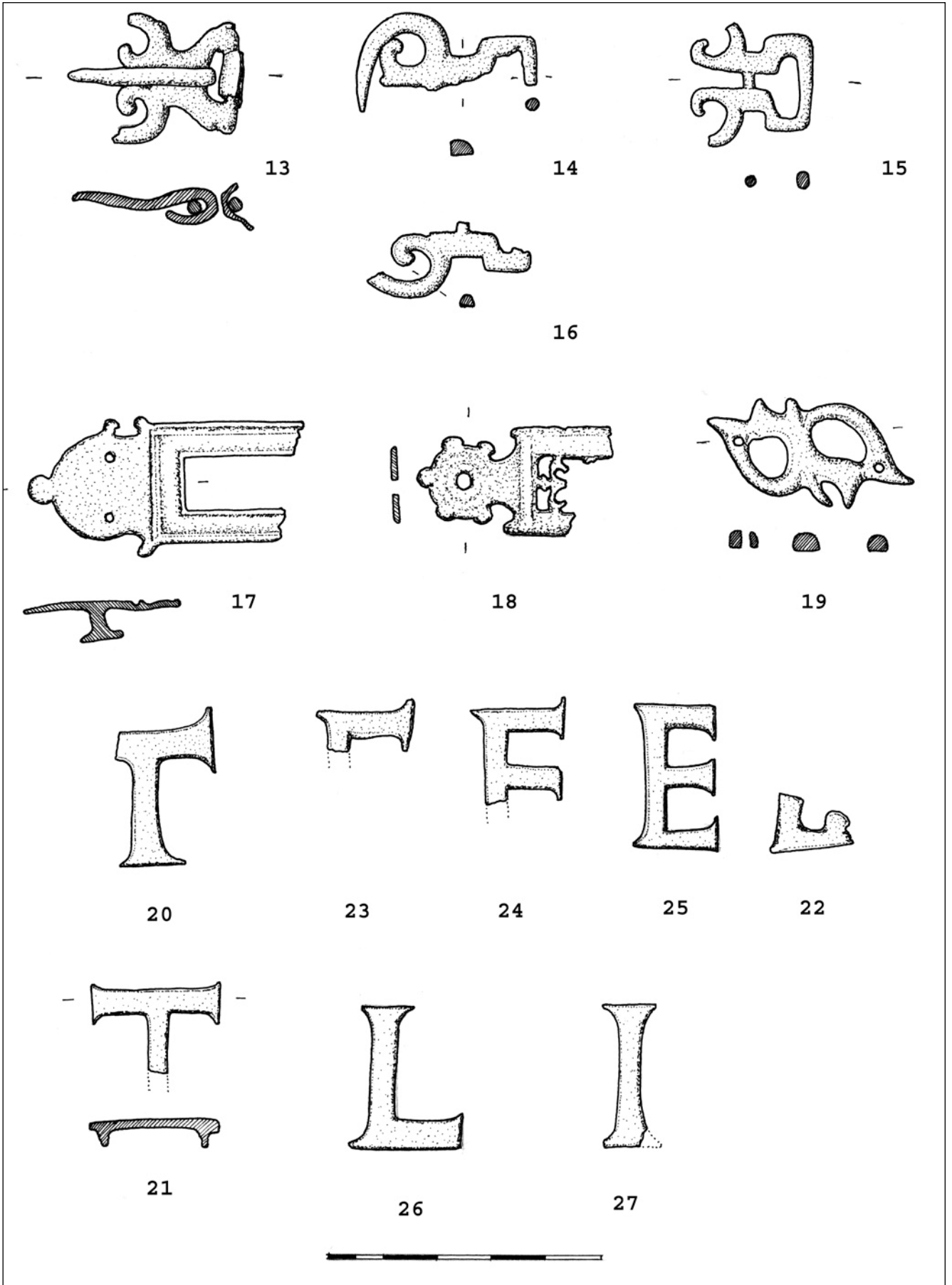
authors agree that the *cohors I Thracum civium Romanorum pia fidelis* was stationed in *Burgenae* after AD 138. It would seem that it remained there for a very long period of time, probably until the second half of the 3rd century AD, when it was moved to *Bassianae*⁵. The names of some units are recorded for the 4th century AD as well: one detachment of the *legio V Iovia*, the *equites Dalmatae* and the *cuneus equitum Constantianorum* were stationed in *Burgenae* according to the *Notitia Dignitatum*⁶. As one can see, the history of the site and its garrisoning troops is full of uncertainties, despite the fact that the fort was continuously garrisoned for almost four centuries. The long presence of the Roman army on that spot is corroborated by numerous finds, many of which were undeniably part of military equipment and dress.

The two fragmented buckles N° 1-2 can be dated to the first two centuries AD. Such belt buckles of "D" shape joined by a hinge with a belt fitting are very typical of that period⁷. It should be pointed out that earlier hinged buckles, i. e. those dated to the 1st century AD, have a hinged joint set wide apart in contrast to later two-piece buckles of similar shape, from the late 2nd and 3rd century, whose small hinge is placed right at the centre of the back part of the buckle. Since the hinged joint of the buckle N° 1 is set closer to the centre, that buckle is probably later in date than the buckle N° 2, which could be broadly dated to the 1st century AD. Thus, the buckle N° 1 could be dated to the 2nd century AD.

The four *fleur-de-lys* shaped buckle tongues are typical for the aforementioned buckles and the four specimens N° 3, 6 can therefore be dated within the same time-frame, i.e. the 1st century AD⁸. Especially interesting is the finely crafted specimen N° 5, which seems to have been silvered and whose surface is decorated with a punched vegetal design. Such a decoration is not unusual and has already been seen elsewhere, for example in Magdalensberg and Augst⁹.

It seems that the fragmented item N° 7 could be interpreted as a fragmented hinged fitting of a dagger suspension belt, i.e. a frog. Initially it most certainly had a suspension disc at the end, but no traces of it are now visible¹⁰. One might also think that it is a miscast. Similar suspension fittings were found on several sites like for example Augusta





Raurica or Vindonissa,¹¹ and a complete set has been discovered in Velsen¹².

The circular rivet N° 8 most probably belonged to the decorative stripes of a military belt, i.e. an apron¹³. Its poor state of preservation does not allow us to discern the original decoration but one can suppose that there was a portrait on it, just as was usually the case on similar rivets. Many such rivets with a stylised portrait in profile, done by repoussé, are found on Roman sites and they are dated to the second half of the 1st century AD, more precisely to the Flavian period, or in a somewhat larger time-span from the reign of Nero to that of Trajan. As the represented figure generally wears a wreath and a band tied at the back, it can be considered as an imperial portrait but because of the extreme stylisation it is most often impossible to identify the emperor represented on the rivet¹⁴.

The button-shaped fasteners with a single loop N° 9-12 are often found on Roman sites, but uncertainty regarding their exact function still remains. In all probability, they were multi-functional objects, probably used also in a civilian context. Apart from the assumption that they served for fastening a cloak, such fasteners with a single or a double loop were undoubtedly also used for hanging weapons, that is a sword or a dagger, to a belt, and the larger specimens may have also served for packing loads such as tents or linen transport bags¹⁵. Specimens like those from Burgenae find many parallels and according to Wild's typology of such fasteners, buttons N° 10-12 can be classified as type VIII, dated to the 1st century, which has both a button and a loop of circular shape¹⁶. Specimen N° 9 would perhaps be closer to Wild's type IV, but the dating remains identical to the others.

The four rather badly preserved buckles N° 13-16 belong to a later period. They are typical of the second half of the 2nd century AD, and were used in the first decades of the 3rd century as well. They are no longer attached to the belt fitting by a hinge but have a frame (mostly of a rectangular shape) behind the pin through which a sheet metal plate passed, which was bent around the edges and welded or riveted to the belt fitting¹⁷.

The two fragmented openwork fittings N° 17-18 are not uncommon finds either. One can find quite similar although not identical fittings on several Roman sites. One can mention similar belt plates from Germany,¹⁸ Romania,¹⁹ and Dura Europos²⁰.

It seems that they could be dated from the last decades of the 2nd century to the middle of the 3rd century AD²¹.

The fitting N° 19 is a rather crudely made trumpet-shaped fitting (unless this is an unfinished piece). Trumpet-shaped

fittings are quite common and are widely encountered on many sites, from one end of the Empire to the other. They are usually dated to the second half of the 2nd century AD and the early 3rd century AD²².

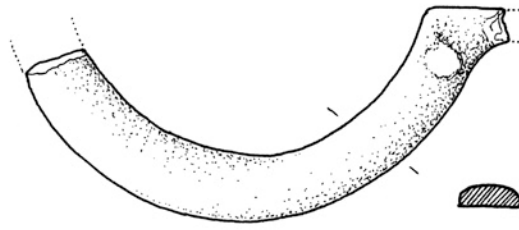
Fittings in the shape of letters appear in the second half of the 2nd century. When together on the belt, they form a word or a sentence, generally a message invoking luck, such as "VTERE FELIX", thus lending the belt a certain apotropaic function²³. Among the finds from Burgenae such letter-shaped fittings are found in relatively large numbers, with a total of 8 pieces in different states of preservation N° 20-27. Considering the variety of shapes, it is definitely unlikely that they belonged to the same set, even more so since the same letters appear in different forms. Thus, it would seem that these are the remains of several different belt sets, based on the same general idea but produced in a variety of ways. There are two fragmentary letters T, one fragment that might have been the lower part of a letter E or L, another one that could have been the upper part of an E or F, a slightly better preserved piece that might have been either a letter E or F, two fully preserved letters, an E and a L, and a slightly damaged letter I.

The ring buckles are also quite well represented among the Burgenae finds N° 28-32. Despite some opinions that they were used as brooches, i.e. *fibulae*, it seems more likely that the larger specimens served as buckles for a leather belt. They are characterized by an extension on the ring with an opening for the pin, and are dated to the 3rd and early 4th century²⁴.

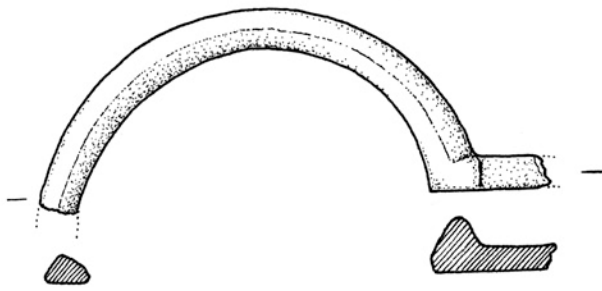
The double buttons N° 33-39 are quite a frequent find on Roman sites, and even though their use on the straps of a horse harness cannot be ruled out, it is more than likely that they served for fastening a belt with a ring- or rectangular buckle. Such fungiform studs with two circular heads linked by a shaft can be dated from the second half of the 2nd to at least the middle of the 3rd century²⁵. These specimens could have been used as belt fasteners since they seem to be large enough for two overlapping straps of leather.

Small pendants in the shape of a phallus, such as the eight Burgenae specimens N° 40-47 are roughly dated to the 2nd century, that is from the last decades of the 1st to the early 3rd century. Considering that such pendants were worn as amulets, it is certain that not only soldiers possessed them, but since many similar pendants were found in military camps, there was no reason to omit them within the scope of this paper²⁶.

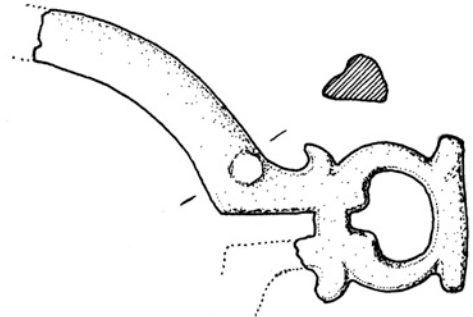
Teardrop-shaped pendants N° 48-65 are by far the most frequent strap terminal type on the belts from the end of the



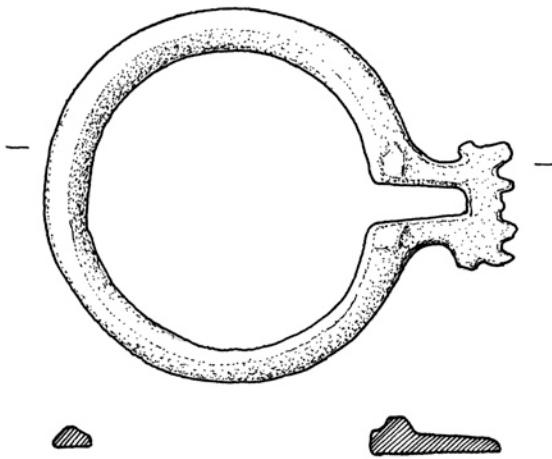
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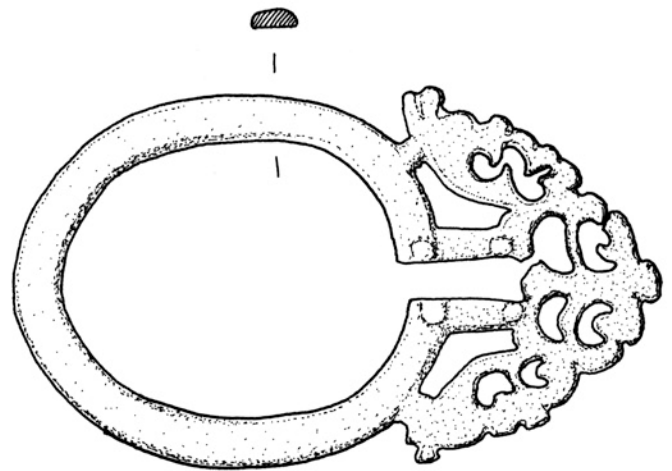
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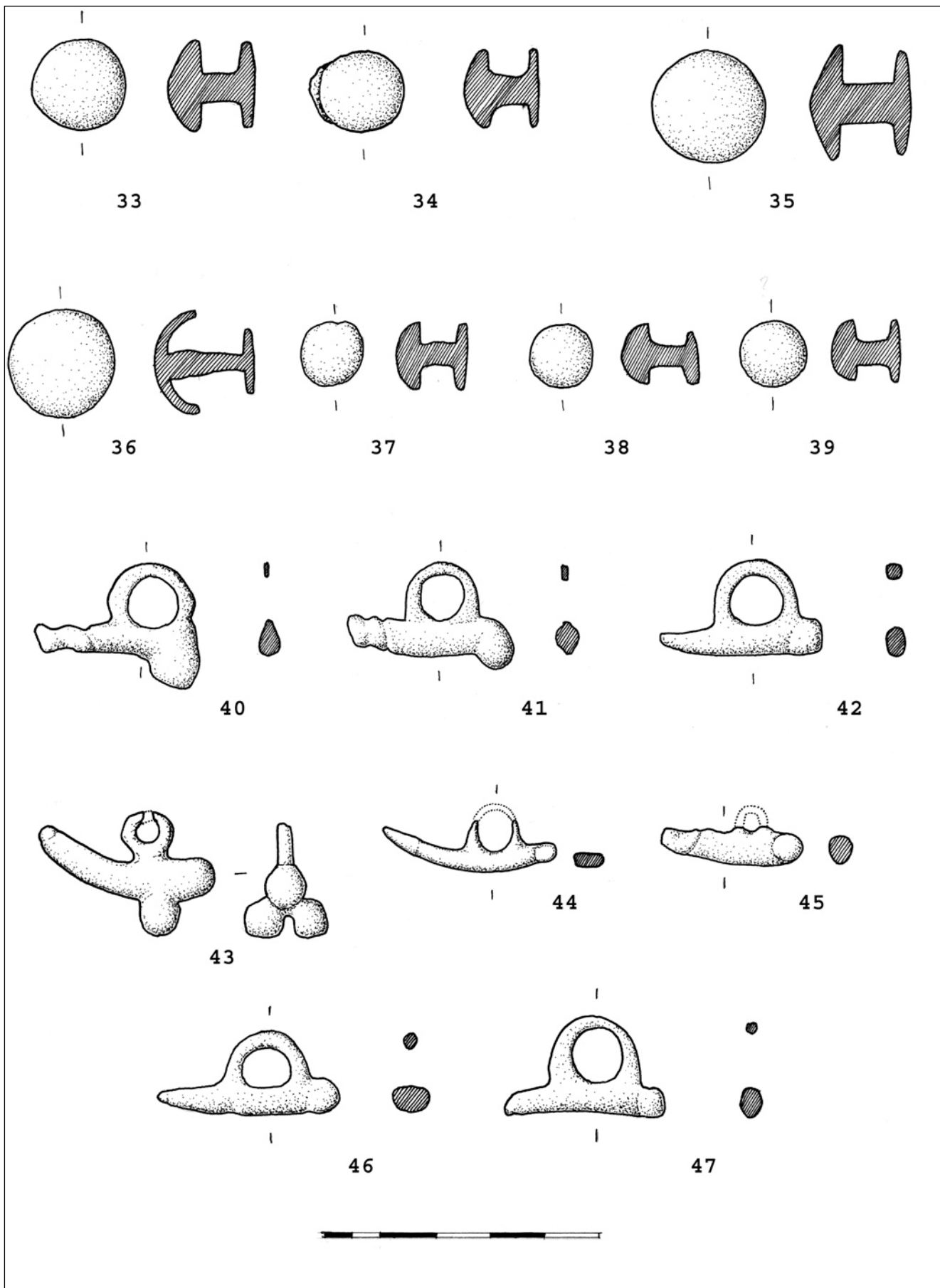


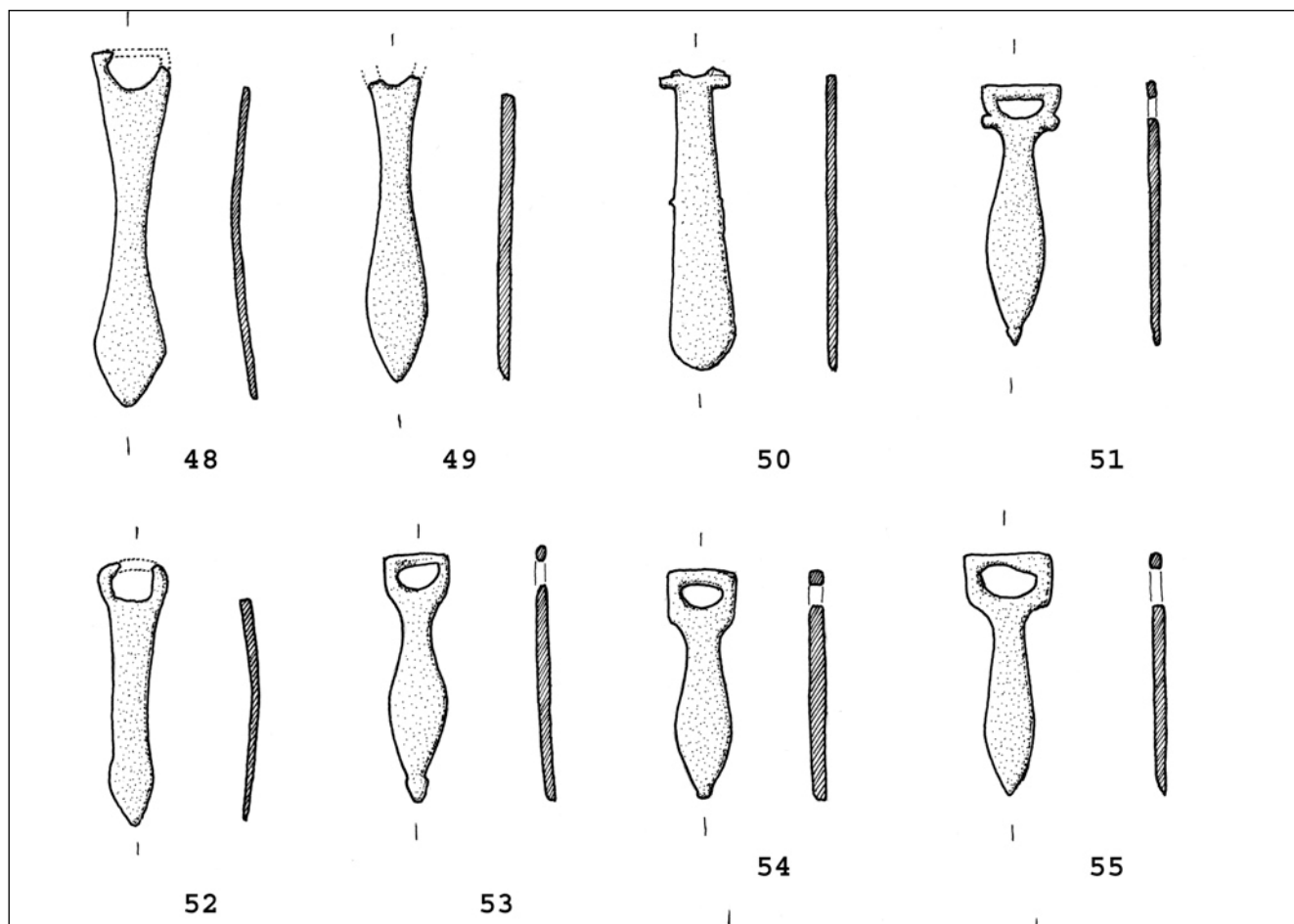
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2nd and from the 3rd centuries AD,²⁷ so that a large number of such strap terminals among the material from Burgenae is hardly surprising. They were generally worn in pairs, at the ends of the belt terminals, but are also encountered as pendants on horse harness²⁸. Although the majority of such strap ends are associated with the military, one cannot exclude the possibility that the civilians also sometimes used them,²⁹ so that not every find necessarily indicates the presence of soldiers. However in this context, it is quite likely that they belonged to military belts.

It should be mentioned that decorative fittings were also used on belts for swords as well. Namely, from the end of the 2nd and through the 3rd century a sword was not worn on the belt but hung from a wide baldric worn over a shoulder (in the contemporary literature it is customary to call this belt *balteus*)³⁰.

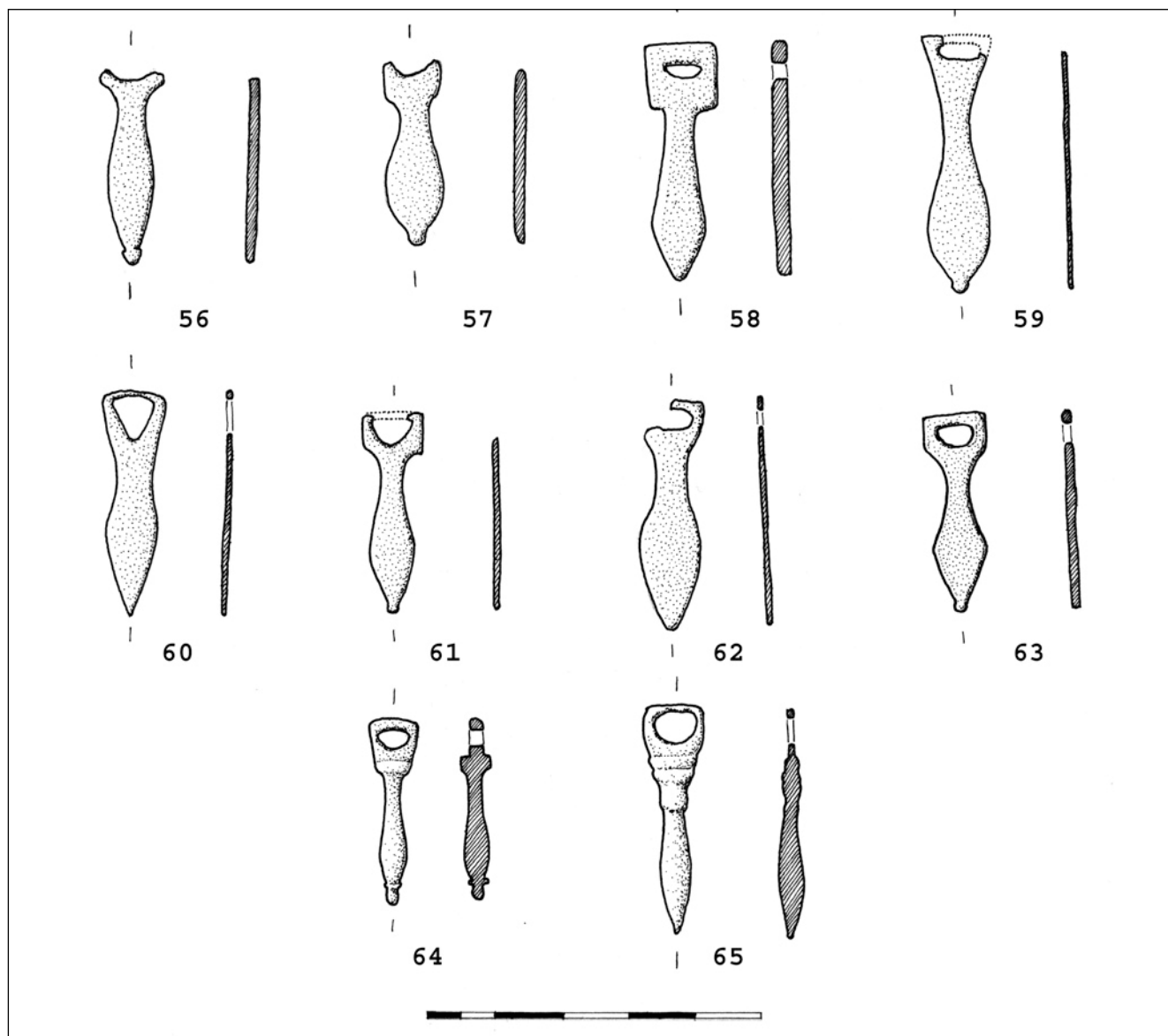
Five of the fittings from Burgenae could be associated to the baldric fittings N° 66-70.

The hinged fragmented terminal N° 66 seems to have been designed around a pelta motif. Many baldric strap terminals were hinged,³¹ and it is not unlikely that this pendant might have been a baldric terminal. It would also seem that some baldrics used to be decorated with pelta

shaped terminals, if some finds from Dura Europos were correctly interpreted³². If this is the case, the three fragmented fittings N° 67-69 might have served that purpose as well³³. Their similarity is quite striking and although one cannot be absolutely certain that they were cast in the same mould, it is quite likely that they were produced in the same workshop, perhaps even in Burgenae since they might be miscasts.

The copper alloy mount with two shanks on its rear N° 70 could be some kind of strap terminal since its voluted decoration is arranged only on one side of its long axis. Analogous pieces have been interpreted as baldric terminals, and thus the Burgenae specimen could also be interpreted as a baldric fitting³⁴. The probable dating would most likely be the 3rd century AD. It should be pointed out that this item seems to have a tinned surface, but since no analysis has been done yet, we can not be absolutely certain in which manner has this fitting been plated.

The Greek and Roman Collection of the Archaeological Museum in Zagreb also contains some pieces of belt sets from Burgenae that can be dated to the 4th or the beginning of the 5th century AD. The most numerous among them are the propeller fittings. Belt sets of that time were often equipped



with such fittings, which alongside a decorative also had a practical function, adding to the structural stiffness of the belt³⁵. There are 6 propeller fittings from Burgenae in the Museum Collection, N° 71-76. With the exception of the propellers N° 73 and 76, which might have formed part of the same set, they all belonged to different sets. Generally speaking, the propeller fittings show little variation in comparison with the basic form, and differ from one another in dimensions and simple ornaments, mostly limited to concentric circles in the central part (such as on specimens 73, 74 and 76)³⁶ or details in relief such as the central narrow rectangular bulge, placed vertically along almost the entire length of the propeller fitting N° 71-72³⁷.

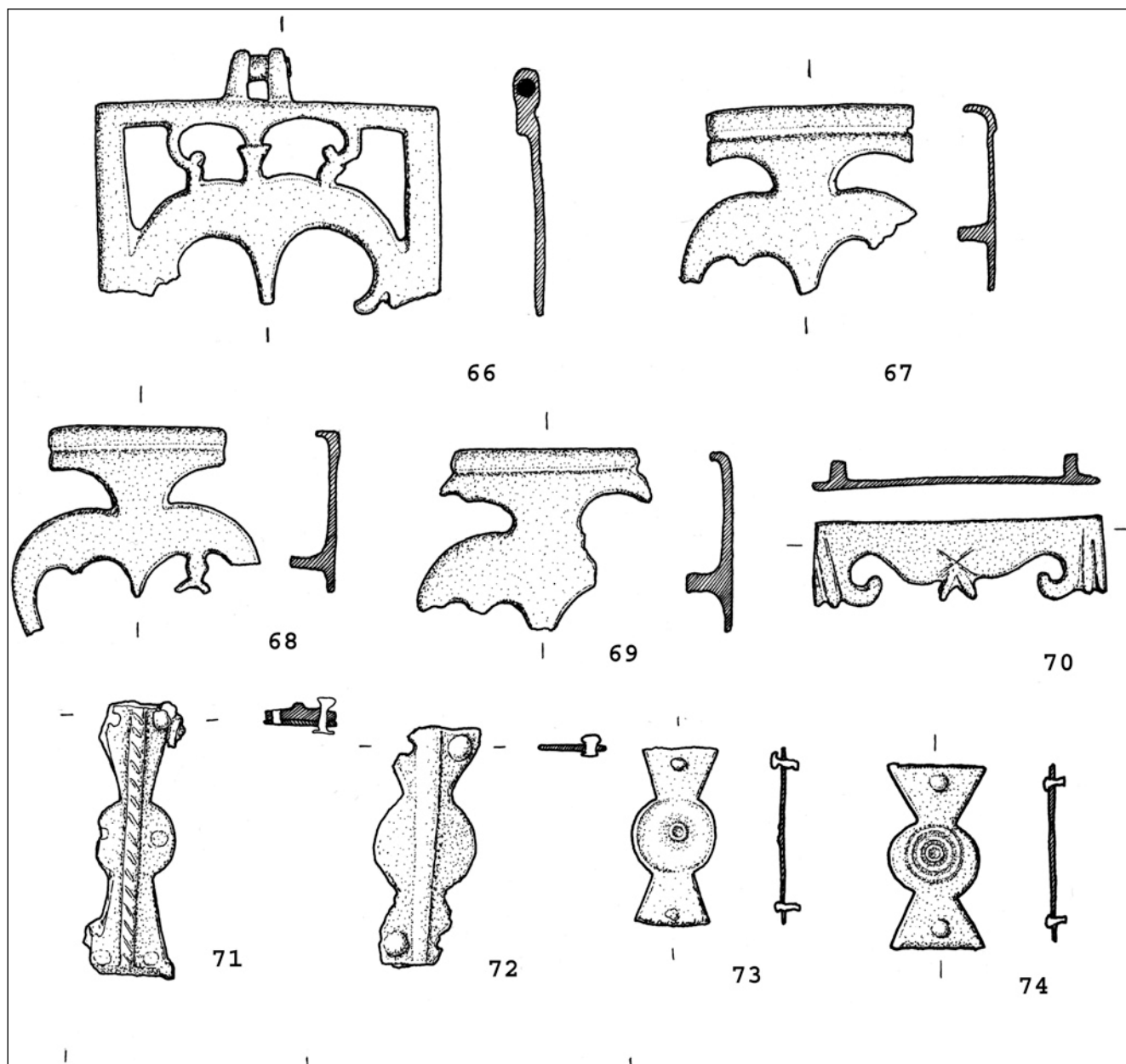
The propeller fittings were apparently more often used during the first half of the 4th century, although their use lasted until the beginning of the 5th century³⁸.

Strap ends rank among the most frequent finds of parts of Late Antiquity belt sets in the territory of the former

Roman Empire and the Greek and Roman Collection of the Zagreb Archaeological Museum contains several typical pieces originating from Burgenae.

Fragmentary strap ends N° 77-78 belong to the heart-shaped type of the belt strap ends of Late Antiquity. These simple strap ends, sometimes decorated with circular motifs as in the case of N° 77 are well represented among the Pannonian finds, and are also present in the other parts of the Empire. They are dated to the 4th and the beginning of the 5th century AD³⁹. According to the Sommer's typology those strap ends could be classified as belonging to the form A⁴⁰.

The last three pieces to be presented in this paper belong to a very widely distributed type of strap end from Late Antiquity, the so-called amphora-shaped strap ends N° 79-81. Within this type there are considerable variations, detectable on these specimens as well, but all the strap ends

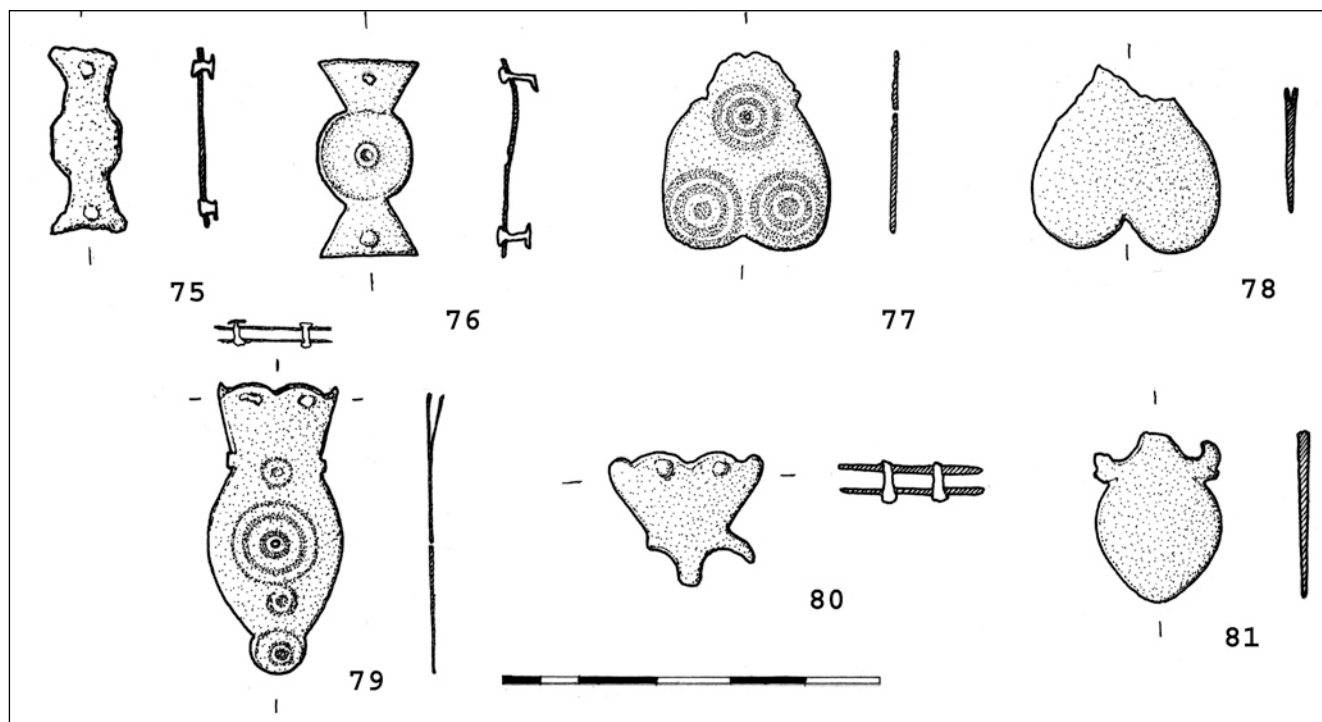


share the same basic shape. Variations primarily apply to decoration and method of attaching to the belt⁴¹. Strap ends of this type generally have a slot near the top into which the belt was inserted and riveted N° 79-80, but sometimes the strap end was hooked to the belt by a hinge. In the case of fragmentary strap end N° 81 the precise method of attachment can not be established. Following Sommer's typology, all of the Burgenae amphora-shaped strap ends belong to the form B, N° 80 and 81 could belong to the type a, while N° 79 seems related to the type b⁴². The amphora-shaped strap ends are placed within the frame of the 4th century AD⁴³.

Due to the circumstances of discovery, it would be irrelevant to make any kind of statistical analysis. Not only is this a rather limited sample but also these are exclusively stray finds, and their discovery owes far more to pure luck

than to a meticulous survey of the site. Nevertheless one can conclude that the finds, despite their limited scientific value, do corroborate the few facts we know about the site. According to the finds of belt fittings, it seems more than likely that Roman troops were present in Burgenae from the last decades of the 1st century to the 4th or even 5th century AD.

One can only hope that work will continue, if not on the site, then at least in museum collections. There are over a thousand Roman finds from Burgenae in the Archaeological Museum in Zagreb, and a thorough analysis of these items, followed by a detailed catalogue would certainly give us a good insight into the life of the Roman fort and the civilian settlement in its neighbourhood. Hopefully, one will not have to wait too long for such a publication.

**CATALOGUE** (drawings by Miljenka Galić):

1. fragmentary buckle, copper alloy, width 23 mm
2. fragmentary buckle, copper alloy, width 28 mm
3. buckle tongue, copper alloy, length 39 mm
4. buckle tongue, copper alloy, length 31 mm
5. buckle tongue, silvered copper alloy, length 30 mm
6. buckle tongue, copper alloy, length 32 mm
7. frog, copper alloy, length 33 mm, width 28 mm
8. apron, copper alloy, diameter 14 mm
9. button-shaped fastener with a single loop, copper alloy, length 21 mm
10. button-shaped fastener with a single loop, copper alloy, length 29 mm
11. button-shaped fastener with a single loop, copper alloy, length 27 mm
12. fragmentary button-shaped fastener with a single loop, copper alloy, length 26 mm
13. fragmentary buckle, copper alloy, length 32 mm
14. fragmentary buckle, copper alloy, length 34 mm
15. fragmentary buckle, copper alloy, length 23 mm
16. fragmentary buckle, copper alloy, length 30 mm
17. belt fitting, copper alloy, length 52 mm, width 26 mm
18. belt fitting, copper alloy, length 32 mm, width 20 mm
19. trumpet-shaped belt fitting, copper alloy, length 37 mm, width 21 mm
20. fragmented T letter belt fitting, copper alloy, length 29 mm
21. fragmented T letter belt fitting, copper alloy, length 11 mm
22. fragmented letter belt fitting, copper alloy, width 9 mm
23. fragmented letter belt fitting, copper alloy, width 11 mm
24. fragmented letter belt fitting, copper alloy, length 19 mm
25. E letter belt fitting, copper alloy, length 27 mm
26. L letter belt fitting, copper alloy, length 27 mm
27. I letter belt fitting, copper alloy, length 26 mm
28. fragmentary ring-buckle, copper alloy, length 65 mm
29. fragmentary ring-buckle, copper alloy, length 67 mm
30. fragmentary ring-buckle, copper alloy, length 55 mm
31. ring-buckle, copper alloy, diameter 49 mm
32. ring-buckle, lead, diameter 50 mm, length 86 mm
33. double button, copper alloy, diameter 11 mm
34. double button, copper alloy, diameter 10 mm
35. double button, copper alloy, diameter 21 mm
36. double button, copper alloy, diameter 20 mm
37. double button, copper alloy, diameter 7 mm
38. double button, copper alloy, diameter 7 mm
39. double button, copper alloy, diameter 8 mm
40. phallic pendant, copper alloy, length 30 mm
41. phallic pendant, copper alloy, length 30 mm
42. phallic pendant, copper alloy, length 30 mm
43. phallic pendant, copper alloy, length 33 mm
44. phallic pendant, copper alloy, length 32 mm
45. phallic pendant, copper alloy, length 26 mm
46. phallic pendant, copper alloy, length 33 mm
47. phallic pendant, copper alloy, length 30 mm
48. teardrop-shaped pendant, copper alloy, length 48 mm
49. fragmentary teardrop-shaped pendant, copper alloy, length 42 mm
50. fragmentary teardrop-shaped pendant, copper alloy, length 41 mm
51. teardrop-shaped pendant, copper alloy, length 31 mm
52. teardrop-shaped pendant, copper alloy, length 32 mm
53. teardrop-shaped pendant, copper alloy, length 29 mm
54. teardrop-shaped pendant, copper alloy, length 31 mm
55. teardrop-shaped pendant, copper alloy, length 33 mm
56. fragmentary teardrop-shaped pendant, copper alloy, length 30 mm
57. fragmentary teardrop-shaped pendant, copper alloy, length 28 mm
58. teardrop-shaped pendant, copper alloy, length 31 mm
59. teardrop-shaped pendant, copper alloy, length 40 mm
60. teardrop-shaped pendant, copper alloy, length 29 mm
61. teardrop-shaped pendant, copper alloy, length 31 mm
62. teardrop-shaped pendant, copper alloy, length 30 mm
63. teardrop-shaped pendant, copper alloy, length 30 mm
64. teardrop-shaped pendant, copper alloy, length 28 mm
65. teardrop-shaped pendant, copper alloy, length 30 mm
66. fragmentary *balteus* fitting, copper alloy, width 54 mm, length 42 mm
67. fragmentary *balteus* fitting ?, copper alloy, width 32 mm
68. fragmentary *balteus* fitting ?, copper alloy, width 29 mm
69. fragmentary *balteus* fitting ?, copper alloy, width 29 mm
70. *balteus* fitting, copper alloy, width 45 mm
71. fragmentary propeller fitting, copper alloy, length 43 mm
72. fragmentary propeller fitting, copper alloy, length 37 mm
73. propeller fitting, copper alloy, length 28 mm
74. propeller fitting, copper alloy, length 29 mm
75. propeller fitting, copper alloy, length 24 mm
76. propeller fitting, copper alloy, length 26 mm
77. fragmentary heart-shaped belt strap end, copper alloy, length 27 mm, width 22 mm
78. fragmentary heart-shaped belt strap end, copper alloy, length 24 mm, width 25 mm
79. amphora-shaped strap end, copper alloy, length 38 mm, width 18 mm
80. fragmentary amphora-shaped strap end, copper alloy, width 20 mm
81. fragmentary amphora-shaped strap end, copper alloy, width 17 mm

NOTES

1. LJUBIĆ 1879, 99-100; LJUBIĆ 1889, 62-63; BRUNŠMID 1895, 172-180; FRÖHLICH 1892, 40-44; PATSCH 1899, 1062; BRUNŠMID 1901, 156-168; RADNÓTI-BARKÓCZI 1951, 215-216; DIMITRIJEVIĆ 1961, 93-94; KLEMENC 1961, 22; PILETIĆ-RAŠIĆ 1961, 87; KLEMENC 1963, 66; PILETIĆ 1972, 7-14; PILETIĆ 1986, 138-140; PILETIĆ 1989, 82-85; LŐRINCZ 2001, 61, 63, 66, 69, 72, 75, 80, 82.
2. SPAUL 2000, 81; LŐRINCZ 2001, 29, 63.
3. SPAUL 2000, 168-169; LŐRINCZ 2001, 34-35, 80, 82.
4. SPAUL 1994, 85-86; LŐRINCZ 2001, 18, 88-89.
5. RADNÓTI-BARKÓCZI 1951, 215-216; DIMITRIJEVIĆ 1961, 94; KLEMENC 1961, 22; DUŠANIĆ 1968, 96-97; VISY 1988, 130; SPAUL 2000, 361-362; LŐRINCZ 2001, 42, 90, 99-101; VASIĆ 2003, 149-150; DAUTOVA RUŠEVLJAN-VUJOVIĆ 2006, 61-62; The older authors believed that it could have been replaced by the *cohors III Alpinorum* after the reign of Marcus Aurelius, but that seems quite unlikely; WAGNER 1938, 85-86, 189-190; DIMITRIJEVIĆ 1956-1957, 299-300; KLEMENC 1963, 66.
6. *Notia Dignitatum*, (Pann. II) Oc XXXII, 5=24, 18=37, 46; DIMITRIJEVIĆ 1961, 94; KLEMENC 1961, 22; VISY 1988, 130.
7. OLDENSTEIN 1976, 212, KatNr. 971-973; DEIMEL 1987, 88, Taf. 74, 3, 6, 7; GREW – GRIFFITHS 1991, 49-50; KOŠČEVIĆ 1991, 67, 94, sl. 442-449; BISHOP – COULSTON 1993, 98; UNZ – DESCHLER-ERB 1997, 34, Kat. 1045-1054, 36, Kat. 1138-1209; DESCHLER-ERB 1999, 40-42, Kat. Nr. 275-296; RADMAN-LIVAJA 2004, 87-88.
8. DEIMEL 1987, 88; UNZ – DESCHLER-ERB 1997, 36-37, Kat. 1186-1188; DESCHLER-ERB 1999, 42.
9. DEIMEL 1987, Kat. 77/4; DESCHLER-ERB 1999, Kat. 304.
10. Just as in the case of one fragmentary specimen from Wijk bij Duurstede; NICOLAY 2001, 54-55, Fig. 3.6.
11. UNZ – DESCHLER-ERB 1997, 37, Kat. 1210, 1214, 1216, 1218, 1243-1270; DESCHLER-ERB 1999, 42-43.
12. MOREL – BOSMAN 1989, 180-181.
13. JUNKELMANN 1986, 161; GREW – GRIFFITHS 1991, 52-53; KOŠČEVIĆ 1991, 94; BISHOP 1992, 81-91; BISHOP-COULSTON 1993, 98; FEUGÈRE 1993, 229; RADMAN-LIVAJA 2004, 89-90.
14. ULBERT 1971, 290-294; FEUGÈRE 1985, 119-136; FÜNFSCHILLING 1994, 204; KAUFMANN-HEINIMANN 1994, 107-108; KÜNZL 1996, 433-434; FERNÁNDEZ 1998, 40; DESCHLER-ERB 1999, 47-48; VOIROL 2001, 33-34.
15. DESCHLER-ERB 1991, 36; BOUBE-PICCOT 1994, 90-92; DESCHLER-ERB 1996, 28; DESCHLER-ERB 1999, 68; RADMAN-LIVAJA 2004, 92-94.
16. WILD 1970, 143, 153-154; UNZ – DESCHLER-ERB 1997, 53-54, Kat. 2058-2087, 2103-2105.
17. OLDENSTEIN 1976, 214-216; KOŠČEVIĆ 1991, 67; CRNOBRNJA – KRUNIĆ 1997, 266, 273-274; KOŠČEVIĆ 2000, 24, 16; JAMES 2004, 79, cat. 72-74; RADMAN-LIVAJA 2004, 94.
18. OLDENSTEIN 1976, 193-197, Kat. 780 (Kösching), 791 (Osterburken), 795 (Zugmantel).
19. PETCULESCU 1995, 134-137 (Lechința de Mureș).
20. JAMES 2004, 80, cat. 85, 89.
21. OLDENSTEIN 1976, 197.
22. OLDENSTEIN 1976, 203-207.
23. ULBERT 1974, 213, Abb. 4 (Lyon); PETCULESCU 1991, 392-394; BISHOP – COULSTON 1993, 133, Fig. 92 (Lyon); PETCULESCU 1995, 119, 123; STEPHENSON 1999, 100 (Dura Europos, Lyon); JAMES 2004, 61; RADMAN-LIVAJA 2004, 95; GALIĆ – RADMAN-LIVAJA 2006, 166-175; HOSS 2006, 240-245.
24. SÁGI 1954, 97-99; BÖHME 1972, 46; OLDENSTEIN 1976, 218-219; SAGADIN 1979, 307-308; KOŠČEVIĆ 1991, 65-66, 94; WIEWEGH 2003, 77-79; RADMAN-LIVAJA 2004, 95.
25. OLDENSTEIN 1976, 167-169; SCHWARZ 2002, 235-236.
26. OLDENSTEIN 1976, 158-160, Kat. 403-407; KOŠČEVIĆ 1991, 45, sl. 239, sl. 240; KAUFMANN-HEINIMANN 1994, 196-197; KOŠČEVIĆ 2000, 17-18, 95, Kat. br. 131, 132; RADMAN-LIVAJA 2004, 95.
27. OLDENSTEIN 1976, 142-144, Kat. 291-304; DAWSON 1989, 364, Fig. 4, 3-4; DAWSON 1990, 7, cat. 22-24; BISHOP 1992, 99; BISHOP – COULSTON 1993, 119-120, Fig. 80, 4, 12; KREKOVIĆ 1994, 216-217, Fig. 5, 13, Fig. 6, 1-2, Fig. 9, 2; RAJTÁR 1994, 92-93, Abb. 8, 4; TEJRAL 1994, 45, 47, 49, Abb.10, 10-13; PETCULESCU 1995, 124, 128, Plate 1, 3-4, Plate 2, 2; JAMES 2004, 85, cat. 152-158.; RADMAN-LIVAJA 2004, 96.
28. PALÁGYI 1997, 467, Fig. 6.73.
29. OLDENSTEIN 1976, 144.
30. BISHOP – COULSTON 1993, 130-135; SOUTHERN – DIXON 1996, 105-109; STEPHENSON 1999, 68-70.
31. OLDENSTEIN 1976, 223-234; STEPHENSON 1999, 69-70.
32. JAMES 2004, 76, cat. 33-35.
33. Very similar fittings were presented by Paula Zsidi during the 15th ROMEC congress in Budapest (*Bestandteile der Militärtracht aus dem Nordgräberfeld der Militärstadt von Aquincum*). Those items were interpreted as belt fittings and not terminals. However, the fact that the lower end of the *Burgenae* fittings are bent might indicate that they were intended as strap terminals and not as simple belt fittings.
34. BISHOP 1996, 71, cat. 439; JAMES 2004, 76, cat. 36.
35. BULLINGER 1969, 36-37, 45-47, 67; KOŠČEVIĆ 1991, 73-74, 100; BISHOP – COULSTON 1993, 173; FERNÁNDEZ 1996, 102-103; RADMAN-LIVAJA 2004, 97.
36. BULLINGER 1969, 89, cat. 103, (Pécs); 93, cat. 175, (Vermand); 93, cat. 176, (Vert-la-Gravelle), etc.

37. BULLINGER 1969, 85, cat. 4, (Altenstadt); 88, cat. 69, (Jambes).
37. BULLINGER 1969, 67; SAGADIN 1979, 314-315; BISHOP – COULSTON 1993, 173; FEUGÈRE 1993, 252; FERNÁNDEZ 1996, 103; SOUTHERN – DIXON 1996, 118-119.
39. BULLINGER 1969, 47, 93, cat. br. 175, (Vermand); 87, cat. br. 56, (Gellep); SIMPSON 1976, 201-202; KOŠČEVIĆ 1991, 69, 100; BISHOP – COULSTON 1993, 175; RADMAN-LIVAJA 2004, 98.
40. SOMMER 1984, 49.
41. BULLINGER 1969, 31; SIMPSON 1976, 198-200; KOŠČEVIĆ 1991, 70-71.
42. SOMMER 1984, 49-51.
43. SAGADIN 1979, 315; KOŠČEVIĆ 1991, 70; BISHOP – COULSTON 1993, 174-175; RADMAN-LIVAJA 2004, 99
- BIBLIOGRAPHY**
- BISHOP 1992: M.C. Bishop, The early imperial “apron”, *Journal of Roman Military Equipment Studies* **3**, 1992, 81-104
- BISHOP 1996: M.C. Bishop, *Finds from Roman Aldborough, A Catalogue of Small Finds from the Romano-British Town of Isurium Brigantum*, Oxford, 1996
- BISHOP – COULSTON 1993: M. Bishop – J. C. N. Coulston, *Roman Military Equipment*, London, 1993
- BÖHME 1972: Astrid Böhme, Die Fibeln der Kastele Saalburg und Zugmantel, *Saalburg Jahrbuch* **29**, 1972, 5-112
- BOUBE-PICCOT 1994: Christiane Boube-Piccot, *Les bronzes antiques du Maroc, IV. L'équipement militaire et l'armement*, Paris, 1994
- BRUNŠMID 1895: Josip Brunšmid, Arheološke bilješke iz Dalmacije i Panonije, *Viestnik Hrvatskog Arheološkoga Društva*, Nova Serija, **I**, 1895, 148-183
- BRUNŠMID 1901: Josip Brunšmid, Arheološke bilješke iz Dalmacije i Panonije IV, *Viestnik Hrvatskog Arheološkoga Društva*, Nova Serija, **V**, 1901, 87-168
- BULLINGER 1969: Hermann Bullinger, *Spätantike Gürtelbeschläge*, Brugge, 1969
- CRNOBRNJA – KRUNIĆ 1997: Adam Crnobrnja – Slavica Krunić, *Vojna oprema i konjska orna*, Antička bronza Singidunma, ed. Slavica KRUNIĆ, Beograd, 1997, 261-302
- DAUTOVA RUŠEVLJAN – VUJOVIĆ 2006: Velika Dautova Ruševljan – Miroslav Vujović, *Roman Army in Srem*, Novi Sad, 2006
- DAWSON 1989: M. Dawson, *A review of the equipment of the Roman army of Dacia*, *British Archaeological Reports* **476**, 1989
- DAWSON 1990: M. Dawson, Roman military equipment on civil sites in Roman Dacia, *Journal of Roman Military Equipment Studies* **1**, 1990
- DEIMEL 1987: Martha Deimel, *Die Bronzekleinfunde vom Magdalensberg*, Klagenfurt, 1987
- DESCHLER-ERB 1991: Eckhard Deschler-Erb – Peter Markus und Sabine Deschler-Erb, Das frühkaiserzeitliche Militärlager in der Kaiseraugster Unterstadt, *Forschungen in Augst*, Band **12**, 1991
- DESCHLER-ERB 1996: Eckhard Deschler-Erb, Vindonissa: *Ein Gladius mit reliefverzierter Scheide und Gürtelteilen aus dem Legionslager*, Jahresbericht 1996, Gesellschaft Pro Vindonissa, 1997, 13-31.
- DESCHLER-ERB 1999: Eckhard Deschler-Erb, Ad arma, Römischer Militär des 1. Jahrhunderts n. Chr. in Augusta Raurica, *Forschungen in Augst*, Band **28**, 1999
- DIMITRIJEVIĆ 1956-1957: Danica Dimitrijević, Rad zemunskog Narodnog muzeja na rimskom limesu u Sremu, *Starinar*, Nova serija, **VII-VIII**, 1956-1957, 299-308
- DIMITRIJEVIĆ 1961: Danica Dimitrijević, Nekoliko podataka o rimskom limesu u Istočnom Sremu, Limes u Jugoslaviji I, *Zbornik radova sa simposiuma o Limesu 1960. godine*, Beograd, 1961, 93-107
- DUŠANIĆ 1968: Slobodan Dušanić, Rimski vojska u istočnom Sremu, Beogradski Univerzitet, *Zbornik Filozofskog Fakulteta*, **X-1**, 1968, 87-113
- FERNÁNDEZ 1996: Joaquín Aurrecochea Fernández, Bronze studs from Roman Spain, *Journal of Roman Military Equipment Studies* **7**, 1996, 97-146
- FERNÁNDEZ 1998: Joaquín Aurrecochea Fernández, Aprons fittings from Flavian times found in Spain, *Journal of Roman Military Equipment Studies* **9**, 1998, 37-41
- FEUGÈRE 1985: Michel Feugère, Nouvelles observations sur les cabochons de bronze estampés du cingulum romain, *British Archaeological Reports* **275**, 1985, 117-141
- FEUGÈRE 1993: Michel Feugère, *Les armes des Romains*, Paris, 1993
- FRÖHLICH 1892: Róbert Fröhlich, Emlékek és leletek. Acumincum vidéke és a régi Pannoniai Limes, *Archaeologiai Értesítő* **XII**, 1892, 34-44
- FÜNFSCHILLING 1994: Sylvia Fünfschilling, Zu einigen ausgewählten Altfunden aus Augusta Raurica, *Jahresberichte aus Augst und Kaiseraugst* **15**, 1994, 187-210
- GALIĆ – RADMAN-LIVAJA 2006: Miljenka Galić – Ivan Radman-Livaja, VTERE FELIX belt set from Varaždinske Toplice, *Vjesnik Arheološkog muzeja u Zagrebu* **39**, 2006, 165-186
- GREW – GRIFFITHS 1991: Francis Grew – Nick Griffiths, The pre-Flavian military belt: the evidence from Britain, *Archaeologia*, Volume **109**, 1991, 47-84
- HOSS 2006: Stefanie Hoss, VTERE FELIX und MNHMΩN – zu den Gürteln mit Buchstabenbeschlägen, *Archäologisches Korrespondenzblatt* **36/2**, 2006, 237-253

- JAMES 2004: Simon James, *Excavations at Dura-Europos 1928-1937, Final Report VII, The Arms and Armour and other Military Equipment*, London, 2004
- JUNKELMANN 1986: Marcus Junkelmann, *Die Legionen des Augustus*, Mainz am Rhein, 1986 (7. durchgesehene Auflage, 1997)
- KAUFMANN-HEINIMANN 1994: Annemarie Kaufmann-Heinimann, *Die römischen Bronzen der Schweiz 5*, Neufunde und Nachträge, Mainz, 1994
- KLEMENC 1961: Josip Klemenc, Limes u Dolnjoj Panoniji, Limes u Jugoslaviji I, *Zbornik radova sa simposiuma o Limesu 1960. godine*, Beograd, 1961, 5-34
- KLEMENC 1963: Josip Klemenc, Der pannonische Limes in Jugoslawien, *Arheološki radovi i rasprave* 3, 1963, 55-68
- KOŠČEVIĆ 1991: Remza Košćević, *Antička bronca iz Siska*, Zagreb, 1991
- KOŠČEVIĆ 2000: Remza Košćević, *Arheološka zbirka Benko Horvat*, Zagreb, 2000
- KREKOVIČ 1994: E. Krekovič, Military equipment on the territory of Slovakia, *Journal of Roman Military Equipment Studies* 5, 1994, 211-225
- KÜNZL 1996: Ernst Künzl, Gladiusdekorationen der frühen römischen Kaiserzeit: dynastische Legitimation, Victoria und Aurea Aetas, *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 43, 1996, 383-474
- LJUBIĆ 1879: Šime Ljubić, Rittium (Surduk), *Viestnik Hrvatskoga Arheološkoga Društva* I/4, 1879, 97-101
- LJUBIĆ 1889: Šime Ljubić, Rimske starine u Novih Banovcih, *Viestnik Hrvatskoga Arheološkoga Društva* XI/2, 1889, 62-63
- LŐRINCZ 2001: Barnabás Lőrincz, *Die römischen Hilfstruppen in Pannonien während der Prinzipatszeit*, Teil I: Die Inschriften, Wien, 2001
- MOREL – BOSMAN 1989: J. M. A. W. Morel – A. V. A. J. Bosman, An early Roman Burial in Velsen, *Roman Military Equipment: The Sources of evidence, Proceedings of the Fifth Roman Military Equipment Conference*, C. van DRIEL-MURRAY, ed. BAR International Series 476, 1989, 167-191
- NICOLAY 2001: Johan A. W. Nicolay, Interpreting Roman military equipment and horse gear from non military contexts. The role of veterans, *Jahresbericht 2001 (ROMECS XIII 2001)*, Gesellschaft Pro Vindonissa, 2002, 53-66
- OLDENSTEIN 1976: Jürgen Oldenstein, Zur Ausrüstung römischer Auxiliareinheiten, *Bericht der Römisch-Germanischen Kommission* 57, 1976, 51-284
- PALÁGYI 1997: Sylvia Palágyi, Rekonstruktionsmöglichkeit des Zaumzeuges aus dem Wagengrab von Kozármisleny (Pannonia), *Proceedings of the XVIth International Congress of Roman Frontier Studies*, ed. W. GROENMAN-van WAATERINGE, Oxford, 1997, 467-471
- PATSCH 1899: Carl Patsch, s.v. Burgenae, *RE*, III, 1062
- PETCULESCU 1991: Liviu Petculescu, Vtere felix and optime maxime con(serva) mounts from Dacia, ed. V.A. MAXFIELD and M. J. DOBSON, *Roman Frontier Studies* 1989, Exeter, 1991, 392-396
- PETCULESCU 1995: Liviu Petculescu, Military equipment graves in Roman Dacia, *Journal of Roman Military Equipment Studies* 6, 1995, 105-145
- PILETIĆ – RAŠIĆ 1961: Dragoslav Piletić – Bogdan Rašić, Pregled radova Vojnog muzeja na Limesu od Novih Banovaca do Sremskih Karlovaca, Limes u Jugoslaviji I, *Zbornik radova sa simposiuma o Limesu 1960. godine*, Beograd, 1961, 87-92
- PILETIĆ 1972: Dragoslav Piletić, Preliminarni rezultati istraživanja rimskog kastruma Burgenae u Novim Banovcima 1971. godine, *Vesnik Vojnog muzeja* 18, 1972, 7-26
- PILETIĆ 1986: Dragoslav Piletić, Acumincum i Burgenae - dva važna uporišta na donjopanonskom limesu, Odbrambeni sistemi u praistoriji i antici na tlu Jugoslavije, *Materijali XXII, Referati XII Kongresa arheologa Jugoslavije* (Novi Sad, 1984.), Novi Sad, 1986, 137-144
- PILETIĆ 1989: Dragoslav Piletić, Rimske fortifikacije na teritoriji SR Srbije, *Vesnik Vojnog muzeja* 33, 1989, 79-104
- RADMAN-LIVAJA 2004: Ivan Radman-Livaja, Militaria Sisciensia, *Musei Archaeologici Zagrabienensis Catalogi et Monographiae*, Vol. 1, 2004
- RADNÓTI – BARKÓCZI 1951: A. Radnóti – L. Barkóczi, The Distribution of Troops in Pannonia Inferior during the 2nd Century AD, *Acta Archaeologica Academiae Scientiarum Hungaricae* I, fasciculi 3-4, 1951, 191-230
- RAJTÁR 1994: Ján Rajtár, Waffen und Ausrüstungsteile aus dem Holz-Erde Lager von Iža, *Journal of Roman Military Equipment Studies* 5, 1994, 83-95
- SAGADIN 1979: Maksimiljan Sagadin, Antične pasne spone in garniture v Sloveniji, *Arheološki vestnik* 30, 1979, 294-338
- SÁGI 1954: Károly Sági, Die Ausgrabungen im römischen Gräberfeld von Intercisa im Jahre 1949, *Intercisa I*, Dunapentele-Sztálinváros, Geschichte der Stadt in der Römerzeit, L. BARKÓCZI, G. ERDÉLYI, E. FERENCZY, F. FÜLEP, J. NEMESKÉRI, M. R. ALFÖLDI, K. SÁGI, Budapest, 1954, 61-123
- SCHWARZ 2002: Peter-Andrew Schwarz, Kastelen 4, Die Nordmauer und die Überreste der Innenbebauung der spätrömischen Befestigung auf Kastelen, Die Ergebnisse der Grabung 1991-1993 im Areal der Insulae 1 und 2 von Augusta Raurica, *Forschungen in Augst* 24, August, 2002
- SIMPSON 1976: C. J. Simpson, Belt-buckles and strap-ends of the later Roman Empire: a preliminary survey of several new groups, *Britannia* 7, 1976, 192-223

- SOMMER 1984: Markus Sommer, Die Gürtel und Gürtelbeschläge des 4. und 5. Jahrhunderts im römischen Reich, *Bonner Hefte zur Vorgeschichte* **22**, Bonn, 1984
- SOUTHERN – DIXON 1996: Pat Southern – Karen R. Dixon, *The late Roman army*, London, 1996
- SPAUL 1994: John Spaul, *Ala 2*, Andover, 1994
- SPAUL 2000: John Spaul, *Cohors 2*, British Archaeological Reports, International Series **841**, 2000
- STEPHENSON 1999: I.P. Stephenson, *Roman Infantry Equipment – The Later Empire*, Stroud, 1999
- TEJRAL 1994: Jaroslav Tejral, *Römische und germanische Militärausrüstungen der antoninischen Periode im Licht norddanubischer Funde*, in von CLAUS von CARNAP-BORNHEIM (ed.), Beiträge zur römischer und barbarischer Bewaffnung in den ersten vier nachchristlichen Jahrhunderten, Akten des 2. Internationalen Kolloquiums in Marburg a. d. Lahn, Lublin/Marburg, 1994, 27-60
- ULBERT 1971: Günter Ulbert, Römische Bronzекnöpfe mit Reliefverzierung, *Fundberichte aus Schwaben* **19**, 1971, 278-297.
- ULBERT 1974: Günter Ulbert, *Straubing und Nydam, Zu römischen Langschwerten der späten Limeszeit*, Studien zur Vor- und Frühgeschichtlichen Archäologie, Festschrift für Joachim Werner zum 65. Geburtstag, München, 1974
- UNZ – DESCHLER-ERB 1997: Christoph Unz – Eckhard Deschler-Erb, Katalog der Militaria aus Vindonissa, *Veröffentlichungen der Gesellschaft pro Vindonissa*, Band **XIV**, Brugg, 1997
- VASIĆ 2003: Miloje Vasić, *The Ripa Pannonica in Serbia*, in ed. Zsolt VISY, *The Roman Army in Pannonia, An Archaeological Guide of the Ripa Pannonica*, Pécs, 2003, 143-150
- VISY 1988: Zsolt Visy, *Der pannonische Limes in Ungarn*, Stuttgart, 1988
- VISY 2003: Zsolt Visy ed., *The Roman Army in Pannonia, An Archaeological Guide of the Ripa Pannonica*, Pécs, 2003
- VOIROL 2001: A. Voirol, Etats d'armes. Les militaria d'Avenches/Aventicum, Jahresbericht 2001 (ROMECS XIII 2001), *Gesellschaft Pro Vindonissa*, 2002, 31-40
- WAGNER 1938: Walter Wagner, *Die Dislokation der römischen Auxiliarformationen in den Provinzen Noricum, Pannonien, Moesien und Dakien von Augustus bis Gallienus*, Berlin, 1938
- WIEWEGH 2003: Zoran Wiewegh, *Rimske prstenaste fibule iz antičke zbirke Gradskog muzeja Sisak*, Godišnjak Gradskog muzeja Sisak, III-IV, 2002.-2003, 75-88
- WILD 1970: J. P. Wild, Button- and Loop-Fasteners in the Roman provinces, *Britannia* **1**, 1970, 137-155

Das Projekt *Tilurium*

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Der Lehrstuhl für antike und provinzialrömische Archäologie des Instituts für Archäologie der Philosophischen Fakultät Zagreb leitet seit acht Jahren das Projekt Tilurium. Die archäologischen Grabungsarbeiten werden vom Ministerium für Wissenschaft, Bildung und Sport der Republik Kroatien, vom Ministerium für Kultur der Republik Kroatien, der Stadt Trilj und der Gespanschaft Split-Dalmatien unterstützt.

Das römische Legionslager Tilurium liegt im nordöstlichen Teil eines Plateaus, das sich über dem rechten Ufer der Cetina (Hyppus) erhebt. Auf dem Lagergebiet liegt heute der zentrale Teil des Dorfes Gardun, das administrativ an die benachbarte Stadt Trilj gebunden ist. An der Stelle, an der heute die Kirche des Hl. Petrus steht, erreicht das Gelände eine Höhe von 429 Metern über dem Meeresspiegel. Von diesem dominanten und strategisch wichtigen Ort aus erblickt man den Fluss Cetina, Brücken über die Cetina, sowie alle umliegenden Ebenen und Plateaus. Selbstverständlich konnte man von diesem Ort aus sämtliche Verkehrsverbindungen kontrollieren. Dies war insofern von Bedeutung, als Richtung Tilurium eine Straße aus Salona führte, die hier auf dem Gebiet der Stadt Trilj, welche auf der *Tabula Peutingeriana* als Tilurium erwähnt wird, in zwei Richtungen weiterführte, und zwar in Richtung Nordosten zum einstigen Delminium und in Richtung Südosten nach Narona.

Überzeugt von der Bedeutung des archäologischen Fundortes, auf dem sich einst das Legionslager befand, wurde 1996 mit Feldbegehungen und dem Studium jener Literatur begonnen, die sich mit zahlreichen Funden aus Tilurium bzw. aus dem heutigen Dorf Gardun und seiner Umgebung auseinandersetzt. Diese einleitenden Studien wiesen bereits auf einen Großteil der vielschichtigen archäologischen Probleme der künftigen Grabung hin. Auf Grund dieser Vorbereitungen wurde ein Projekt mit klar festgelegten, auf archäologischen Grabungen basierenden, primären Zielen definiert.

Das erste Ziel war, den einstigen Umfang des Lagers und den Lageplan der Gebäude im Inneren des Lagers festzustellen. Als Zweites galt es, die für jeden einzelnen Gebäudekomplex ausgeführten Bautechniken und architektonischen Merkmale zu definieren. Das dritte Ziel war,

so exakt wie möglich, Entstehungszeit, Bestanddauer bzw. mögliche Entwicklungsphasen zu bestimmen.

Nach dem Erreichen dieser primären Ziele konnten andere komplexe Fragenbereiche angegangen werden. Um das Projekt verwirklichen zu können, wurde eine multidisziplinäre Arbeitsgruppe geschaffen. In diese waren Fachleute verschiedener archäologischer Disziplinen (Prospektion, Numismatik, Keramik, Glas, Metall und andere Materialien) eingebunden. Für die Beantwortung komplexer Fragen benötigten wir allerdings zusätzlich Experten verschiedenster wissenschaftlicher Disziplinen, Anthropologen, Zoologen, Pollen- und Samenanalytiker, die bei Bedarf hinzugezogen wurden. Zudem war es nicht möglich ein derartiges Projekt ohne Anwendung moderner Technologien durchzuführen. So waren etwa Computertechnologien in der Zusammenarbeit mit Geodäten und Architekten hilfreich.

Das Projekt wurde letztendlich dem Ministerium für Wissenschaft und Technologie der Republik Kroatien vorgestellt und von diesem 1997 unter dem Titel **“Rimski vojni logori u Hrvatskoj - Tilurij/ Römische Militärlager in Kroatien - Tilurium”** (0130460) bewilligt.

DIE METALLFUNDE

Vom Beginn der Grabungsarbeiten 1997 wurden in Tilurium zahlreiche Metallgegenstände gefunden, die, wie andere Fundgattungen auch, systematisch bearbeitet, studiert und veröffentlicht werden¹. Es handelt sich um verschiedenartige Funde, die zum größten Teil der Zeit der römischen Antike angehören, insbesondere der Zeit des frühen Prinzipats, als hier ein Legionslager bestand.

Unter den Funden sind Fibeln, Fingerringe, Nadeln, Gürtelschnallen, Ösenknöpfe, Nieten, Waffen bzw. Rüstungsgegenstände, Werkzeug, Pferdegeschirr und verschiedene andere Gegenstände zu nennen. Darunter nehmen Fibeln eine herausragende Stellung ein. Es dominieren Aucissafibeln (Abb.1.1-9). Analogiefunde werden im Archäologischen Museum in Split (AMS) aufbewahrt. Neben bereits bekannten Funden aus Tilurium befinden sich hier auch Funde aus anderen Teilen der Provinz Dalmatien². Im Museum der kroatischen archäologischen Denkmäler (MHAS) werden Exemplare aus dem Legionslager Burnum, Bendersa bei

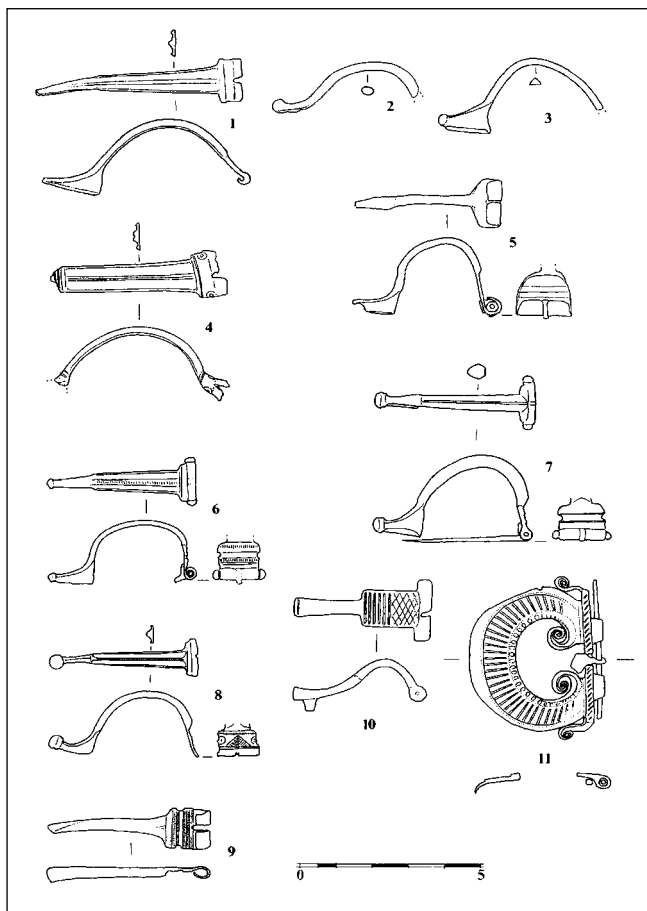


Abb. 1: Metallfunde aus Tilurium
(Zeichnung Marta Bezić, 2001)

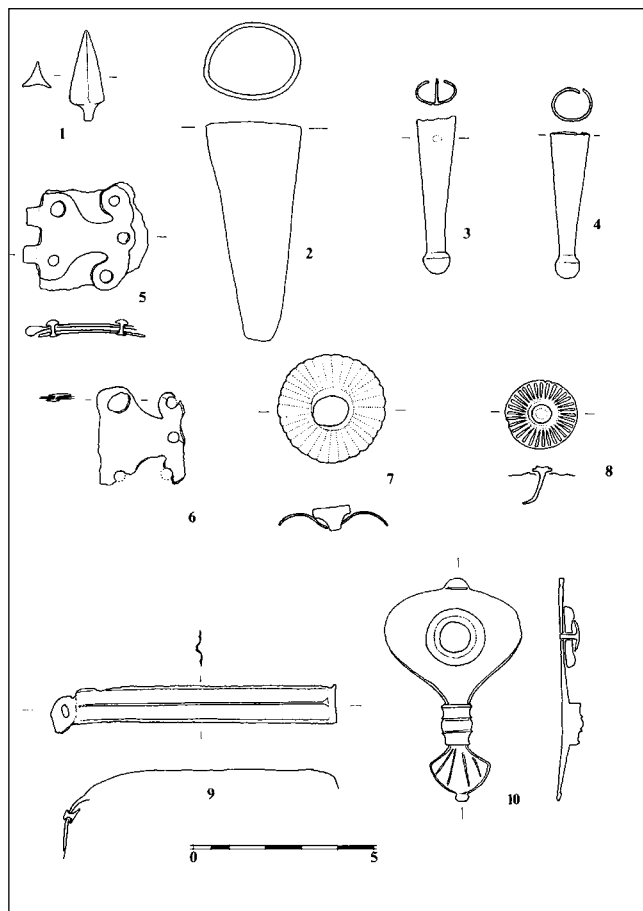


Abb. 2: Metallfunde aus Tilurium
(Zeichnung Marta Bezić, 2001)

Knin und Bribir aufbewahrt³. Für das Gebiet von Dalmatien kann der Gebrauch dieser Fibeln in die Zeitspanne vom Ende des 1. Jh. v. Chr. bis Anfang des 2. Jh. datiert werden⁴.

Die Kniefibel aus Tilurium (Abb. 1.10) gehört zu einer etwas selteneren Variante, deren Hauptmerkmal der rechteckige Bügelquerschnitt ist. Analogiefunde stammen aus Salona und werden im Archäologischen Museum in Split aufbewahrt⁵. Im MHAS wird ein sehr ähnliches, aus Burnum stammendes, Exemplar aufbewahrt.

Eine sehr schöne und reich verzierte Gürtelschnalle gehört zur Ausrüstung eines römischen Soldaten des 1. Jh. (Abb. 1.11)⁶. Der dazugehörige Gürtel wurde über den Panzer gelegt und diente zum Aufhängen einer Waffe (Dolch, Schwert)^{7[14]}. Eine ähnliche doch etwas einfachere Gürtelschnalle stammt aus Burnum⁸.

Unter den als Waffen bezeichneten Funden sind dreiflügelige Pfeilspitzen (Abb. 2.1), Lanzen- (Abb. 2.2) und Wurfspeerschuhe (Abb. 2.3-4), Schwertscheidenbeschläge (Abb. 2.9) sowie Panzerschnallen und Beschläge (Abb. 2.5-8) zu nennen. Die Wurfspeerschuhe (Abb. 2.3-4) werden in der Fachliteratur auch als Bogenbeschläge bezeichnet⁹. Vertreten

sind aber auch andere Bezeichnungen, wie Trainingspfeilspitzen sowie Pfeilspitzen die bei der Jagd auf Vögel und Kleinwild benutzt wurden. Für die letztgenannte Bezeichnung gibt es Parallelen in der Ethnologie¹⁰. Die Schnallen (Abb. 2.5-6) und Niete (Abb. 2.7-8) gehören zu jenem Panzer, der als *lorica segmentata* bekannt ist¹¹. Schnallen dieser Art wurden in römischen Militärlagern in ganz Europa häufig gefunden. In Kroatien stammen Analogiefunde aus Burnum. Diese noch unveröffentlichten Exemplare werden im MHAS aufbewahrt.

Vom Pferdegeschirr können die blattartig geformten Anhänger, für die wir Analogiefunde in Burnum, Nin (Aenona) und in Benkovačko selo finden¹², ins 1. Jh. datiert werden. Das besonders schöne, mit einer Palmette geschmückte, Exemplar kann präzise in die claudisch-neronische Zeit datiert werden (Abb. 2.10)¹³.

Als getrennte Gruppe sind Werkzeuge zu betrachten, die chronologisch sehr schwer festzusetzen sind, da einige Beispiele unverändert mehrere Jahrhunderte lang existierten. Darunter sind Meißel (Abb. 3.2-3), eine Kreuzhacke (Abb. 3.1) und ein Zirkel (Abb. 3.4) zu nennen. Die Kreuzhacke war Teil der Legionärsausrüstung, die zum Graben, Roden, als Meißel bei

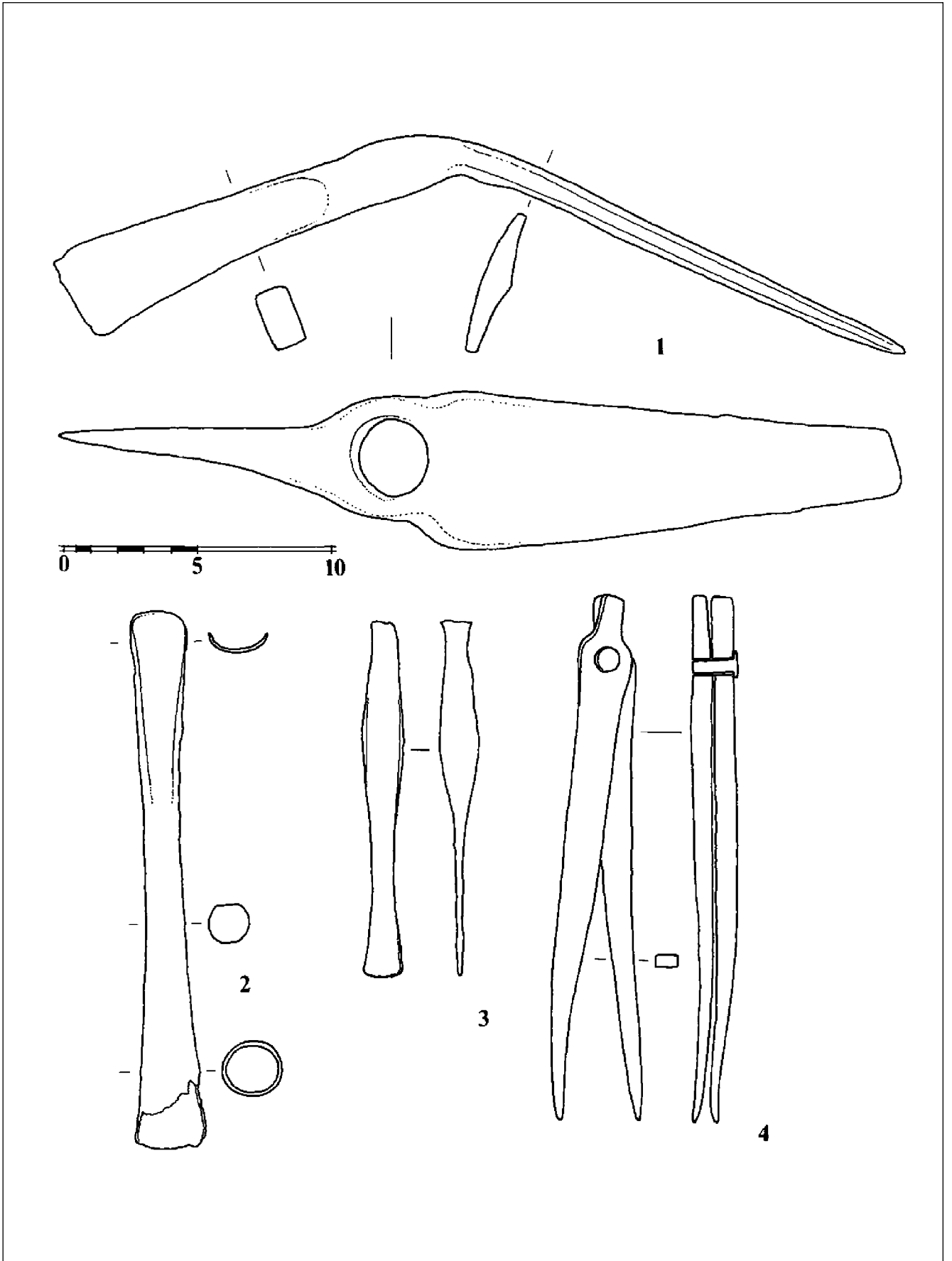


Abb. 3: Metallfunde aus Tilurium (Zeichnung Marta Bezić, 2001)



Abb. 4: Bruchstück eines Postaments (GAR99PN8;
Foto: Darko Bavoľjak, 2001)



Abb. 5: Brustbild eines Satyrs (GAR00PN69; Foto:
Darko Bavoľjak, 2001)

der Holzbearbeitung und auch als Waffe im Kampf diente¹⁴. Obwohl die Kreuzhacke während des ganzen Prinzipats in Gebrauch war, gehört das Exemplar aus Tilurium der Form nach höchstwahrscheinlich ins 1. Jh. Bei der Datierung des Zirkels aus Tilurium muss berücksichtigt werden, dass es sich um ein einfaches, unverziertes Exemplar aus Eisen handelt. Es zeigt Eigenschaften älterer Exemplare, die anhand einiger Analogien in die Zeit des frühen Prinzipats datiert



Abb. 6: Stempel (GAR99PN33a-c; Foto: Darko
Bavoľjak, 2001)

werden¹⁵. Aus Tilurium stammt auch ein von früher bekannter Bronzezirkel, der im AMS aufbewahrt wird¹⁶.

Zwei Gegenstände zählen zu der bei den Römern sehr beliebten Kleinkunst aus Bronze. Das Bruchstück mit einem Bein in Form einer Tierkralle eines Panthers oder Löwen ist Teil eines Postamentes, das wahrscheinlich die Statuette einer Gottheit getragen hat (Abb. 4). Ein nahezu identisches Exemplar wird im Museum in Treviso aufbewahrt¹⁷. Anhand des Vergleichs mit ähnlichen Exemplaren aus Pompei kann dieses Bruchstück mit Gewissheit ins 1. Jh. datiert werden¹⁸.

Das Brustbild eines Satyrs mit einem Nagel in der Mitte hat wahrscheinlich dem Schmuck eines Möbelteils oder einer Tür gedient (Abb. 5). N. Cambi vertritt die Meinung, dass einige Details, die mit der Größe des Brustbildes in Zusammenhang stehen, für eine Datierung ans Ende des 1. und den Anfang des 2. Jh. sprechen¹⁹.

Abschließend behandeln wir als besonderen Fund von Gardun einen Stempel aus Bronze, der zum Markieren verschiedener Erzeugnisse gedient hat (Abb. 6). Ähnliche Exemplare finden wir in Carnuntum²⁰. Auf der Vorderseite befindet sich der Name bzw. das Cognomen des Herstellers *Iucundus*, welches auf Stempeln aus Italien und Westeuropa auftritt²¹. Der letzte ungewöhnliche Buchstabe ist eine Ligatur der Buchstaben D und I. Das bedeutet, dass der Name im Genitiv angeführt ist. Da das Cognomen während des ganzen Prinzipats wiederkehrt, bietet es keinen Anhaltspunkt für eine genauere Datierung des Stempels. Anhand der Buchstabenform kann man ihn trotzdem in die frühe Kaiserzeit datieren.

KATALOG

1. Fibel, Abb. 1. 1, GAR 98 PN 13, Material: Bronze, Dimensionen: 5,7 × 2 cm, 4,13 g, Beschreibung: Aucissafibel mit bandförmigem Fibelbogen. Die Nadel ist nicht erhalten. Unverziert.
Datierung: 1. Jh.
Literatur: MAROVIĆ 1959, 48, Abb. 30. 5; KOŠČEVIĆ 1980, 46, T. IV, 29; ŠEPAROVIĆ 2003, Kat. Nr. 1, 228.
2. Fibel, Abb. 1. 2, GAR 99 PN 14, Material: Bronze, Dimensionen: 4 × 1,3 cm, 1,61 g, Beschreibung: Aucissafibel. Fibelbogen im Querschnitt halbkreisförmig, die Nadel ist nicht erhalten, die Kopfplatte und der Nadelträger sind abgebrochen, der Fibelfuß endet mit einem Fußknopf. Unverziert.,
Datierung: 1. Jh.
Literatur: MAROVIĆ 1959, 76, Abb. 22. 3; KOŠČEVIĆ 1980, 46, T. VI, 4; NEDVED 1981, 169, Abb. 5. 227; ŠEPAROVIĆ 2003, Kat. Nr. 2, 228.
3. Fibel, Abb. 1. 3, GAR 01 PN 12, Material: Bronze, Dimensionen: 4,6 × 2,2 cm, 2,10 g, Beschreibung: Aucissafibel. Fibelbogen im Querschnitt halbkreisförmig, die Nadel ist nicht erhalten, die Kopfplatte ist abgebrochen, der Fibelfuß endet mit einem Fußknopf. Unverziert.,
Datierung: 1. Jh.
Literatur: siehe oben; ŠEPAROVIĆ, 2003, Kat. Nr. 3, 228-229.
4. Fibel, Abb. 1. 4, GAR 99 PN 15, Material: Bronze, Dimensionen: 4,9 × 2 cm, 4,83 g, Beschreibung: Aucissafibel mit bandförmigem Fibelbogen. Die Nadel und der Fibelfuß sind nicht mehr vorhanden, die Kopfplatte ist deformiert und mit konzentrischen Kreisen geschmückt, der Übergang vom Fibelbogen zum Fuß ist mit querliegend eingravierten Linien verziert.,
Datierung: 1. Jh.
Literatur: MAROVIĆ 1959, 48, 50, Abb. 31. 3, 4; KOŠČEVIĆ 1980, 15, 45, T. III, 19; ŠEPAROVIĆ 2003, Kat. Nr. 4, 229.
5. Fibel, Abb. 1. 5, GAR 00 PN 66, Material: Bronze, Dimensionen: 4,1 × 2,4 cm, 5 g, Beschreibung: Aucissafibel. Fibelbogen im Querschnitt halbkreisförmig, die Nadel und der Fußknopf sind nicht mehr vorhanden, die Kopfplatte ist breit gestaltet und mit parallelen waagrechten Linien verziert, der Bügel ist unverziert.
Datierung: 1. Jh.,
Literatur: MAROVIĆ 1959, 25, Abb. 13. 6; ŠEPAROVIĆ 2003, Kat. Nr. 5, 229.
6. Fibel, Abb. 1. 6, GAR 00 PN 69, Material: Bronze, Dimensionen: 4,1 × 2 cm, 3,81 g, Beschreibung: Aucissafibel mit bandförmigem Fibelbogen. Die Nadel und der Nadelhalter sind abgebrochen, die Kopfplatte ist profiliert und wie der Bügelrücken mit winzigen parallelen Linien verziert, der Fibelfuß endet mit einem profilierten Fußknopf.
Datierung: 1. Jh.
Literatur: KOŠČEVIĆ 1980, 15, 45, T. III, 21; NEDVED 1981, 170, Abb. 5., 229; ŠEPAROVIĆ 2003, Kat. Nr. 6, 229-130.
7. Fibel, Abb. 1. 7, GAR 00 PN 72, Material: Bronze, Dimensionen: 4,3 × 2,6 cm, 7,35 g, Beschreibung: Aucissafibel. Zur Gänze erhalten. Profilierte Kopfplatte, eine seichte Rille verläuft entlang des im Querschnitt halbkreisförmigen Fibelbogens, der Fibelfuß endet mit einem profilierten Fußknopf.
Datierung: 1. Jh.
Literatur: MAROVIĆ 1959, 76, Abb. 14. 3; NEDVED 1981, 170, Abb. 5. 232; ŠEPAROVIĆ 2003, Kat. Nr. 7, 230.
8. Fibel, T. 1. 8, GAR 00 PN 43, Material: Bronze, Dimensionen: 4,2 × 2,2 cm, 2,44 g, Beschreibung: Aucissafibel. Eine mit winzigen parallelen Linien verzierte Rille verläuft entlang des bandförmigen Fibelbogens. Die Nadel und der Nadelhalter sind nicht mehr vorhanden, die Kopfplatte ist mit einer Palmette, konzentrischen Kreisen und winzigen parallelen Linien verziert, der Fibelfuß endet mit einem profilierten Fußknopf.
Datierung: 1. Jh.
Literatur: KOVRIG 1937, T. IV, 36; MAROVIĆ 1959, 75, Abb. 15. 4; KOŠČEVIĆ 1980, 15, T. IV, 24; ŠEPAROVIĆ 2003, Kat. Nr. 8, 230.
9. Fibel, Abb. 1. 9, GAR 00 PN 4, Material: Bronze, Dimensionen: 4,5 X 1,1 cm, 3,94 g, Beschreibung: Aucissafibel. Erhalten ist der im Querschnitt halbkreisförmige Fibelbogen und die Kopfplatte, verziert mit parallel verlaufenden, waagrechten Bändern, die mit winzigen Linien ausgefüllt sind.
Datierung: 1. Jh.
Literatur: NEDVED 1981, 168, Abb. 5. 213; ŠEPAROVIĆ 2003, Kat. Nr. 9, 231f.
10. Fibel, Abb. 1. 10, GAR 98 PN 12, Material: Bronze. Dimensionen: 3,7 × 1,4 cm, 9,55 g, Beschreibung: Kniefibel. Schließmechanismus in Form eines Scharniers. Die Nadel ist nicht erhalten. Breite, im Querschnitt rechteckige, mit parallel verlaufenden Linien und einem Netz verzierte Bügelplatte.
Datierung: 2-3. Jh.
Literatur: KOVRIG 1937, T. XI, 120; JOBST 1975, 59, 64, T. 19 und 58. 135; ŠEPAROVIĆ 2003, Kat. Nr. 10, 231f.
11. Gürtelschnalle, Abb. 1.11, GAR 00 PN 2, Material: Bronze, Dimensionen: 5 × 3,8 cm, 13,44 g, Beschreibung: Der halbkreisförmige Bügel ist mit Silber überzogen und mit eingravierten Linien verziert. Beide Enden des Bügels sind nach innen eingerollt, sodass die Öffnung eine nierenähnliche Form annimmt. Auf der Querleiste befinden sich zwei Rohre des Scharniers, durch welche die Achse gelegt ist. Die Enden der Querleiste sind nach außen eingerollt.
Datierung: 1. Jh.
Literatur: NEDVED 1981, 179-180, Abb. 8. 316; KOŠČEVIĆ 1991, 66-67, T. 26. 364, 365; BISHOP – COULSTON 1993, 96-98; UNZ – DESCHLER-ERB 1996, 34, T. 43-44; ŠEPAROVIĆ 2003, Kat. Nr. 17, 233.
12. Dreieckige Pfeilspitze, Abb. 2.1, GAR 98 PN 4, Material: Eisen, Dimensionen: 2,5 × 1,2 cm, 1,08 g, Beschreibung: Dreieckige Pfeilspitze mit kurzem Stift.
Datierung: vielleicht 1. Jh.
Literatur: UNZ – DESCHLER-ERB 1996, T. 20. 336; HARNECKER 1997, 33, T. 78. 828; ŠEPAROVIĆ 2003, Kat. Nr. 32, 237.
13. Lanzenschuh, Abb. 2.2, GAR 00 364, Material: Eisen, Dimensionen: 5,9 × 2,6 cm, 29,34 g, Beschreibung: Lanzenschuh in Form einer Tülle. Unverzierte, glatte Oberfläche.
Datierung: 1. Jh.
Literatur: HARNECKER 1997, 33, T. 78. 825; DESCHLER-ERB 1999, T. 7. 78-83; ŠEPAROVIĆ 2003, Kat. Nr. 33, 237-238.
14. Wurfspeerschuh, Abb. 2.3, GAR 99 592, Material: Eisen, Dimensionen: 4,5 × 1,1 cm, 5,22 g, Beschreibung: Wurfspeerschuh. Tülle mit halbkugelförmiger Kegelspitze.
Datierung: 1. Jh.
Literatur: PETCULESCU 1991, T. 6. 65-69, T. 7. 75-76; UNZ – DESCHLER-ERB 1996, T. 21. 399-406; ŠEPAROVIĆ 2003, Kat. Nr. 34, 238.
15. Wurfspeerschuh, Abb. 2.4, GAR 99 585, Material: Eisen, Dimensionen: 4 × 1,1 cm, 3,66 g, Beschreibung: Wurfspeerschuh. Tülle mit kugelförmiger Kegelspitze.
Datierung: 1. Jh.
Literatur: siehe oben; ŠEPAROVIĆ 2003, Kat. Nr. 35, 238.

16. Schienenpanzerschnalle, Abb. 2.5, GAR 98 PN 20, Material: Bronze und Eisen, Dimensionen: 3,5 × 3 cm, 8,72 g, Beschreibung: Schienenpanzerbeschlag. Erhalten sind fünf bronzene Niete und zwei Rohre des Schamiers, die auf einem Bruchstück der Panzerschiene aus Eisen befestigt sind.
Datierung: 1. Jh.
Literatur: BISHOP – COULSTON 1993, 85-87, Abb. 52. 1-7; DESCHLER-ERB 1999, T. 15. 252-256; ŠEPAROVIĆ 2003, Kat. Nr. 36, 238.
17. Schienenpanzerschnalle, Abb. 2.6, GAR 99 PN 4, Material: Bronze, Dimensionen: 2,7 × 2,3 cm, 2,40 g, Beschreibung: Schienenpanzerbeschlag, zum Teil beschädigt, ein Niet ist erhalten.
Datierung: 1. Jh.
Literatur: siehe oben; ŠEPAROVIĆ 2003, Kat. Nr. 37, 239.
18. Schienenpanzerbeschlag, Abb. 2.7, GAR 99 PN 15, Material: Bronze, Dimensionen: Durchmesser: 3,1 cm, 3,64 g, Beschreibung: Schienenpanzerbeschlag in Form einer Rosette. Gerillte Oberfläche. Erhalten ist ein Niet mit flacher Kopfplatte und rechteckigem Querschnitt.
Datierung: 1. Jh.
Literatur: BISHOP – COULSTON 1993, 85-87, Abb. 52. 8-12; DESCHLER-ERB 1999, T. 15. 265; ŠEPAROVIĆ 2003, Kat. Nr. 38, 239.
19. Schienenpanzerbeschlag, Abb. 2.8, GAR 98 PN 18 und 24, Material: Bronze, Dimensionen: Durchmesser 2 cm, 0,84 g, Beschreibung: Schienenpanzerbeschlag in Form einer Rosette. Gerillte Oberfläche. Erhalten ist ein Niet mit langem Nietstift und runder Kopfplatte.
Datierung: 1. Jh.
Literatur: siehe oben; ŠEPAROVIĆ 2003, Kat. Nr. 39, 239.
20. Schwertscheidenbeschlag, Abb. 2.9, GAR 00 PN 3, Material: Bronze, Dimensionen: 7,9 × 1,1 cm, 3,74 g, Beschreibung: Bandförmiger Schwertscheidenbeschlag verziert mit einer entlanglaufenden Rippe., Erhalten ist ein Niet.
Datierung: 1. Jh.
Literatur: UNZ – DESCHLER-ERB 1996, T. 6. 78-85, T. 7. 86-110; DESCHLER-ERB 1999, T. 9. 113-116; ŠEPAROVIĆ 2003, Kat. Nr. 40, 239.
21. Meißel, Abb. 3.2, GAR 01 PN 17, Material: Eisen, Dimensionen: 22 × 2,5 cm, 181,5 g, Beschreibung: Hohlmeißel. Grifffläche in Form einer Tülle und gerundete Klinge.
Datierung: vielleicht 1. Jh.
Literatur: HARNECKER 1997, 8, T. 6-8, 16; GAITZSCH 1978, Abb. 16; ŠEPAROVIĆ 2003, Kat. Nr. 41, 240.
22. Meißel, T.3.3, GAR 99 Vod 166, Material: Eisen, Dimensionen: 13,3 × 1,5 cm, 73,49 g, Beschreibung: Meißel mit massiver, im Querschnitt rechteckiger, sich stark zur breitgestalteten Klinge verjüngender Greiffläche.
Datierung: vielleicht 1. Jh.
Literatur: HARNECKER 1997, 8, T. 6-8, 16; GAITZSCH 1978, Abb. 16; ŠEPAROVIĆ 2003, Kat. Nr. 42, 240.
23. Kreuzhacke, Abb. 3.1, GAR 98 PN 2, Material: Eisen, Dimensionen: 31 × 6 cm, 820 g, Beschreibung: Die Kreuzhacke besteht aus zwei geneigten Enden und einem runden Schaftloch. Das eine Ende ist trapez-förmig geschmiedet, das andere zugespitzt.
Datierung: 1. Jh.
Literatur: BISHOP – COULSTON, 1993, 104, Abb. 63; ŠEPAROVIĆ 2003, Kat. Nr. 43, 240.
24. Zirkel, Abb. 3.4, GAR 99 PN 39, Material: Eisen, Dimensionen: 20 × 2 cm, 166,5 g, Beschreibung: Zum größten Teil rekonstruierter Zirkel. Zwei mit einem runden Niet verbundene Teile. Unverziert.
Datierung: wahrscheinlich 1. Jh.
Literatur: GAITZSCH 1978, 28, Abb. 20; PIETSCH 1983, 61; ŠEPAROVIĆ 1999-2000, S. 219 und 221; ŠEPAROVIĆ 2003, Kat. Nr. 44, 240.
25. Anhänger, Abb. 2.10, GAR 00 PN 44, Material: Bronze, Dimensionen: 3,9 × 6,5 cm, 19,34 g, Beschreibung: Blattförmiger Anhänger mit einem Niet auf rundem Untergrund. Das Blatt läuft in einer profilierten Verdickung aus, an die eine mit eingravierten Linien verzierte Palmette ansetzt.
Datierung: Mitte des 1. Jh.
Literatur: KOŠČEVIĆ 1991, 48-49; UNZ – DESCHLER-ERB 1996, 40, T. 50. 1372; ŠEPAROVIĆ 2003, Kat. Nr. 50, 243.
26. Bruchstück eines Postaments, Abb. 4, GAR 99 PN 8, Material: Bronze, Dimensionen: 5,8 × 2,8 × 3,7 cm, 56,77 g, Beschreibung: Bruchstück eines Postaments mit profiliertem Rand. Erhalten ist ein Bein in Form einer Tierkralle, verziert mit Blättern und Voluten.
Datierung: 1. Jh.
Literatur: GALLIAZZO 1979, 137; ŠEPAROVIĆ 2003, Kat. Nr. 64, 247.
27. Brustbild eines Satyrs, Abb. 5, GAR 00 PN 65, Material: Bronze, Dimensionen: 4,5 × 2,9 cm, 44,41 g, Beschreibung: Brustbild eines Satyrs mit einem Nagel in der Mitte. Über die Schulter gelegter Umhang, das Haar ist struppig und nur auf der Vorderseite ausgeführt. Auf den Seiten befinden sich Ziegenohren.
Datierung: Ende des 1, Anfang des 2. Jh.
Literatur: BABELON – BLANCHET 1895, 192-194; ŠEPAROVIĆ 2003, Kat. Nr. 65, 247.
28. Stempel, Abb. 6 a-c, GAR 99 PN 33, Material: Bronze, Dimensionen: 5,5 × 1,7 cm, Durchmesser der Öse 1,6 cm, 37,40 g, Beschreibung: Stempel mit einem durch eine runde Öse durchbrochenem Griff. Auf der viereckigen Vorderseite steht die Innschrift IVCVNDI, am Griff befinden sich die Buchstaben SCL.
Datierung: 1.-2. Jh.
Literatur: OXÉ – COMFORT 1968, 230; RÖMER-MARTIJNSE 1992, 349-350; ŠEPAROVIĆ 2003, Kat. Nr. 66, 247.

ANMERKUNGEN

- SANADER 2000, 225-236; ŠEPAROVIĆ 2003, 219-267. Parallel zur Veröffentlichung der Neufunde wurden von früher bekannte Metallfunde aus Tilurium bearbeitete: RADMAN-LIVAJA, 1998, 219-231; BEKIĆ 1998, 233-242; IVČEVIĆ 2004, 159-191.
- MAROVIĆ 1959, 76. Für die Informationen über noch unveröffentlichte Exemplare aus Salona danke ich der Kollegin Sanja Ivčević.
- ŠEPAROVIĆ 1998, 183.
- MAROVIĆ 1959, 75; ŠEPAROVIĆ 1998, 186.
- Information von Sanja Ivčević.
- BISHOP-COULSTON 1993, 96.
- KOŠČEVIĆ 1991, 94.
- NEDVED 1981, 180.
- UNZ-DESCHLER-ERB 1996, T. 21. 399-406.
- CZARNECKA 2003, 145-151. Wir danken Frau Dr. Czarnecka für ihre Anregung und den Literaturhinweis.
- BISHOP-COULSTON 1993, 85.
- NEDVED 1981, 156-157.
- KOŠČEVIĆ 1991, 49.
- BISHOP-COULSTON 1993, 104.
- ŠEPAROVIĆ 2000, 221.
- ŠEPAROVIĆ 2000, 219, 221, Abb. 1.
- GALLIAZZO 1979, 137.
- GALLIAZZO 1979, 137.
- Für die Zusammenarbeit danken wir dem Mitglied der Kroatischen Akademie der Wissenschaft und Kunst (HAZU) Nenad Cambi.
- RÖMER-MARTIJNSE 1992, 349-350.
- OXÉ – COMFORT 1968, 230.

BIBLIOGRAPHIE

- BABELON – BLANCHET 1895: E. Babelon – J. A. Blanchet, *Catalogue des Bronzes Antiques de la Bibliotheque Nationale*, Paris 1895
- BEKIĆ 1998: L. Bekić, Tri manje privatne zbirke s Garduna, *Opuscula Archaeologica* **22**, 1998, 233-242
- BISHOP – COULSTON 1993: M. C. Bishop–J. C. N. Coulston, *Roman Military Equipment*, London, 1993
- CZARNECKA 2003: K. Czarnecka, Zagadkowe tulejki zakończzone kulką. Nieudana próba interpretacji, A. BURSCHE – R. CIOŁEK (edd.), *Antyk i Barbarzyńcy. Księga dedykowana Profesorowi Jerzemu Kolendo w siedemdziesiątą rocznicę urodzin*, Warszawa, 2003, 146-151
- DESCHLER-ERB 1999: E. Deschler-Erb, *Ad Arma, Römischer Militär des 1. Jahrhunderts n. Chr. in Augusta Raurica*, Augst, 1999
- GAITZSCH 1978: W. Gaitzsch, *Römische Werkzeuge*, 1978
- GALLIAZZO 1979: V. Galliazzo, *Bronzi romani del Museo Civico di Treviso*, Roma, 1979.
- HARNECKER 1997: J. Harnecker, *Katalog der römischen Eisenfunde von Haltern*, Paderborn, 1997
- IVČEVIĆ 2004: S. Ivčević, Components of Roman military equipment from Gardun, *Opuscula archaeologica* **28**, 2004, 159-191
- JOBST 1975: W. Jobst, *Die römischen Fibeln aus Lauriacum*, Linz, 1975
- KOŠČEVIĆ 1980: R. Košćević, *Antičke fibule s područja Siska*, Zagreb, 1980
- KOŠČEVIĆ 1991: R. Košćević, *Antička Bronze iz Siska*, Zagreb, 1991
- KOVRIG 1937: I. Kovrig, Die Haupttypen der Kaiserzeitlichen Fibeln in Pannonien, *Dissertationes Pannonicae* **II/4**, Budapest, 1937
- MAROVIĆ 1959: I. Marović, Iskopavanja kamenih gomila oko vrela rijeke Cetine god. 1953., 1954. i 1958., *Vjesnik za arheologiju i historiju dalmatinsku* **LXI**, Split, 1959, 5-80
- NEDVED 1981: B. Nedved, *Nakit rimskog razdoblja u: Nakit na tlu sjeverne Dalmacije od prapovijesti do danas (Ausstellungskatalog)*, Zadar, 1981, 151-182
- OXÉ-COMFORT 1968: A. Oxé - H. Comfort (ed.), *Corpus vasorum arretinorum*, A Catalogue of the Signatures, Shapes and Chronology of Italian Sigillata, Bonn, 1968
- PETCULESCU 1991: L. Petculescu, Bronze spearheads and spear butts from Dacia, *Journal of Roman Military Equipment Studies* **2**, 1991, 35-58
- PIETSCH 1983: M. Pietsch, Die römischen Eisenwerkzeuge von Saalburg, Feldbergund Zugmantel, *Saalburg Jahrbuch* **39**, 1983, 5-132
- RADMAN-LIVAJA 1998: I. Radman-Livaja, Rimska streljačka oprema nađena na Gardunu kod Trilja, *Opuscula Archaeologica* **22**, 1998, 219-231
- RÖMER-MARTIJNSE 1992: E. Römer-Martijnse, *Schrift und Sprache u: Carnuntum*, das Erbe Roms an der Donau (Ausstellungskatalog), Carnuntum, 1992
- SANADER 1999-2000: M. Sanader, Kasnocarska grobnica iz Vojnića, *Opuscula archaeologica* **23-24**, 1999-2000, Zagreb, 225-236
- SANADER 2003: M. Sanader, Tilurium I. Istraživanja - *Forschungen 1997-2001*, Zagreb, 2003
- ŠEPAROVIĆ 1998: T. Šeparović, Aucissa fibule s natpisom iz zbirke Muzeja hrvatskih arheoloških spomenika, *Starohrvatska prosvjeta* **III/25**, 1998, Split, 177-187
- ŠEPAROVIĆ 1999-2000: T. Šeparović, Neki neobjavljeni rimski šestari iz Dalmacije, *Opuscula archaeologica* **23-24**, 1999 - 2000, Zagreb, 217-224
- ŠEPAROVIĆ 2003: T. Šeparović, Metallfunde. In: M. SANADER, *Tilurium I. Istraživanja - Forschungen 1997-2001*, Zagreb, 2003, 219-267
- UNZ – DESCHLER-ERB 1996: C. Unz – E. Deschler-Erb, *Katalog der Militaria aus Vindonissa*, 1996



A well-preserved 1st-Century torsion-weapon found at Xanten

Hans-Joachim Schalles

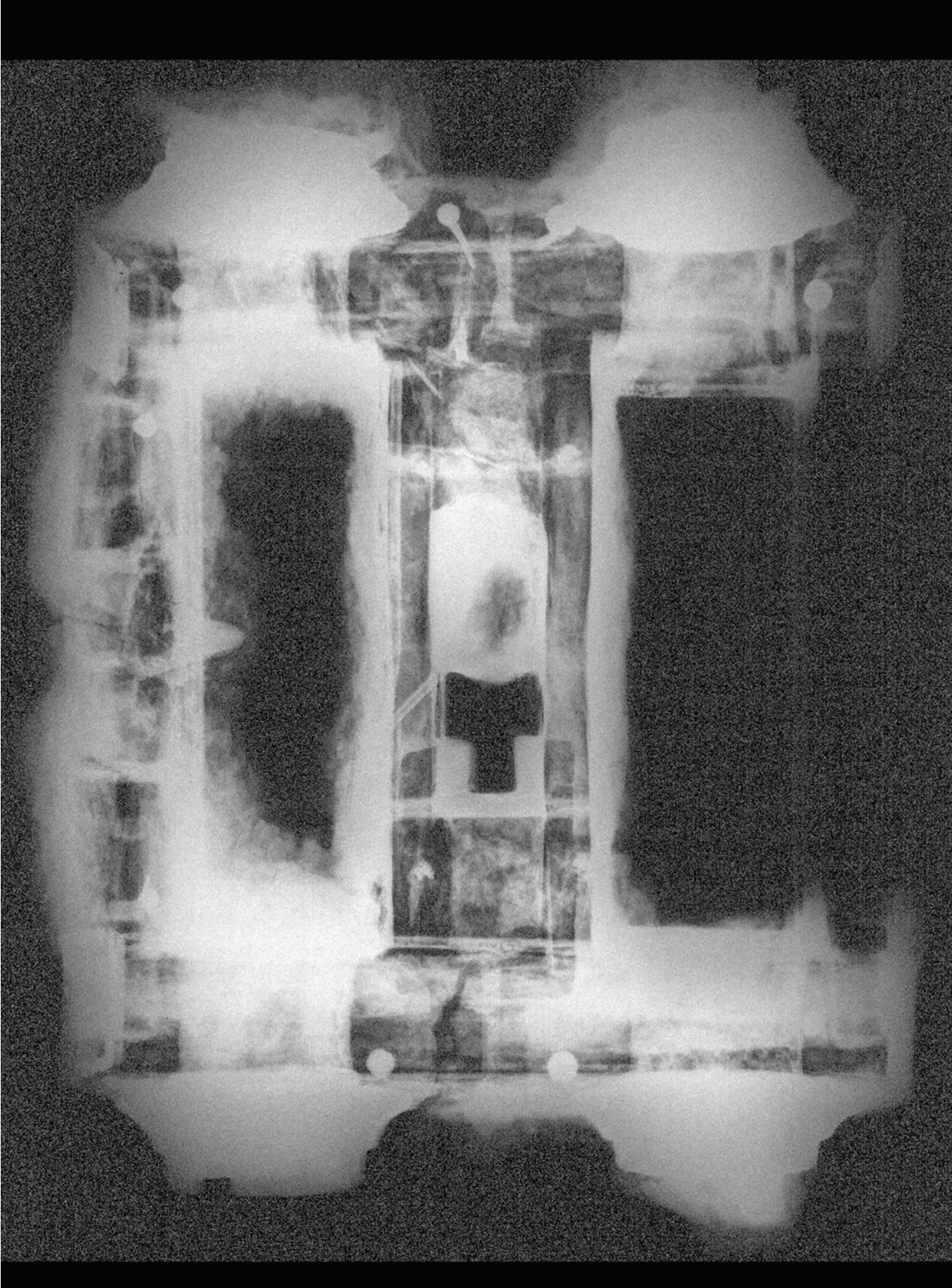
The town of Xanten with its remains of the legionary fortress Vetera I and the civilian settlement Colonia Ulpia Traiana lies some 100 km north of Cologne on the river Rhine. The gravel-quarry at Wardt in its immediate vicinity has been known for many years for its remarkable number of important Roman finds, among them silver and bronze vessels, legionary and auxiliary helmets, weapons and tools. In 1999 an item came to light that turned out to be the remains of a small Roman torsion-weapon. Besides the catapults from Ampurias (Spain), Hatra (Iraq) and La Caridad (Spain), it is only the fourth discovery of this rare weapon and the best preserved, too. Covered by a thick layer of sand and grit, the appearance of the item and its function were not at first evident. Before clearing and conservation work started in 2003, X-ray screenings and computed tomography scans (CT) were made. They showed the frame (*capitulum*) of the weapon to be complete except one of the lateral wooden struts. The frame, which measures only 28 x 21 cm, was made of ash (*fraxinus*

excelsior). It is cased by sheets of bronze and iron, fixed by nails. All four bronze washers and three of the four iron levers are still preserved. The scans showed the frame's shrunken wood and rectangular voids it had left. Together with the nails and metals sheets in its original positions, they formed an exact image of the frame's construction. All this information made it possible to rebuild the weapon to a degree of accuracy hitherto unknown. Formal details of the washers and comparisons with other finds date the Xanten weapon somewhere in the middle of the 1st century AD. It is the first proof for the existence of a small torsion weapon in the early Empire - the forerunner of the better known late-antique *cheiromballistra*. The conservation and preparation work was done by Restauratiewerkplaats Jo Kempkens en co, Haalen (The Netherlands). Frank Willer, The Rheinisches Landesmuseum Bonn (Germany) analysed the bronze washers, Ursula Hendriks, Berlin (Germany) the organic remains within the washers. The reconstruction was made by Alexander Zimmermann, Pliezhausen (Germany).

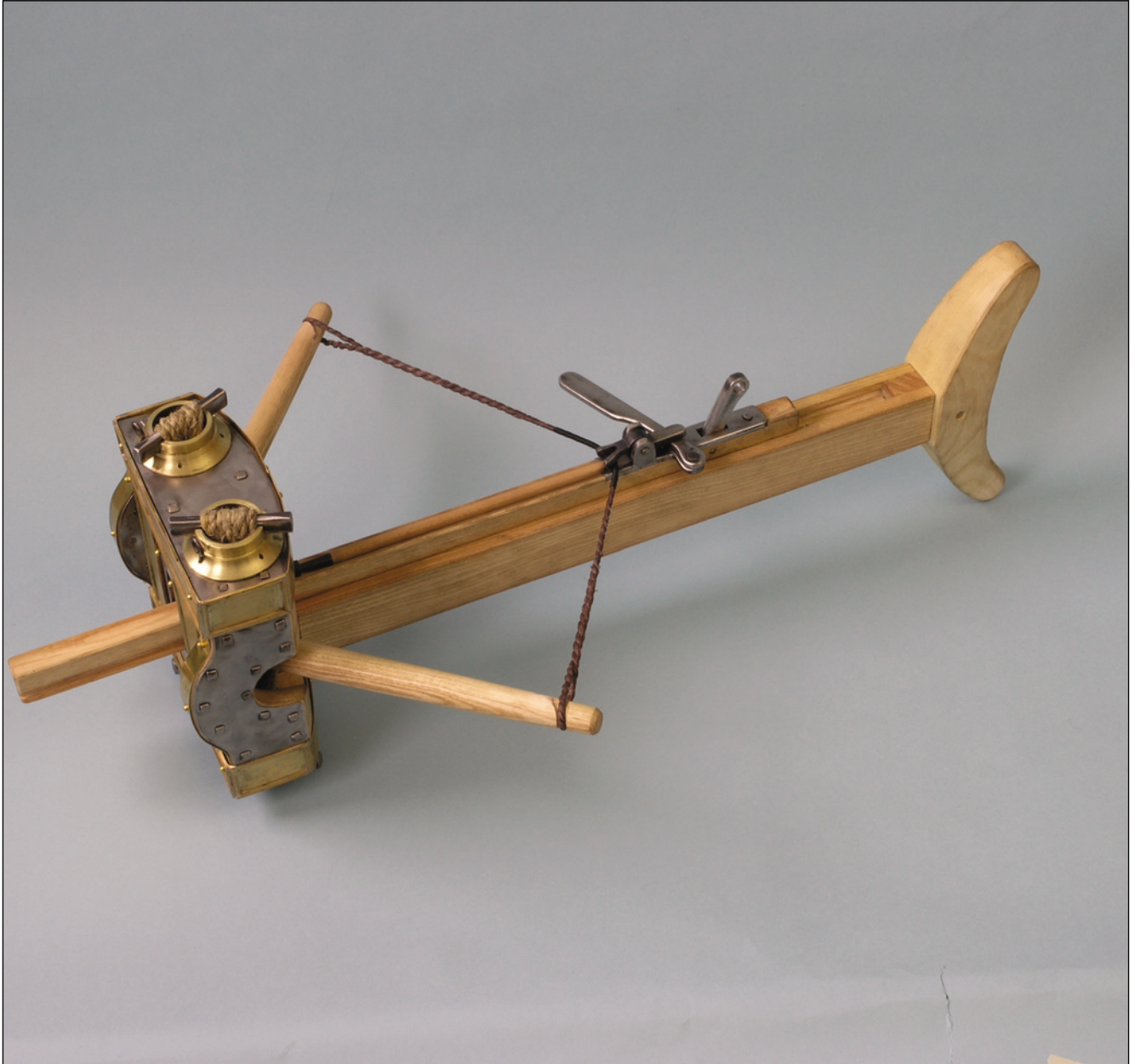


RESTAURATIEWERKPLAATS JO KEMPKENS & CO

RMX 26







Early Depictions of Military Equipment in *Aquincum*

Krisztina Szirmai

Victor Hoffiler from Zagreb reviewed Roman weapons in his Hungarian language study about stone monuments in the Hungarian National Museum. In his work the author dealt with 14 Pannonian stones, but in this article he wrote about only two of the early Aquincum stone monuments¹. This fact and the 100 years that have passed since this publication encouraged me to pick up the topic again.

CATALOGUE

- N^o 1. The gravestone of Tiberius Claudius (Fig. 1)
In this gravestone, under the bust, in the narrow field, there is a cavalry soldier. There is a spear and a large oblong shield in his hand² The gravestone must have been carved in the Claudian period, based on the epigraphic data and style.
- N^o 2. A gravestone fragment with bust and cavalry scene (Fig. 2)
The cavalry soldier is holding an oblong shield in his hand³. Based on the carving style this stone monument was erected at the end of the 1st century AD.
- N^o 3. A gravestone fragment with cavalry scene (Fig. 3)
In this fragment the figure holds a spear with a ribbon in his left hand⁴. This gravestone must have been also carved by the end of the 1st century AD.
- N^o 4. A gravestone fragment (Fig. 4)
Under the inscription there is a figure⁵. Based on the text, this fragment dates from the end of the 1st. century AD⁶.
- N^o 5. The gravestone of Caius Castricius Victor miles (Fig. 5)
Most types of military equipment are depicted on this tombstone: a helmet with horns, an oval shield, a mail shirt, a *balteus*, a sword with ring pommel, a *pugio*, two *pila* and an apron. The gravestone of Caius Castricius Victor miles must have been carved around AD 90, based on its epigraphic and style⁷.
- N^o 6. The bust of Titus Claudius Victor centurio (Fig. 6a-b)
A head with a helmet is carved on the disc-brooch of this bust. The bust was erected at the beginning of the 2nd century AD⁸.
- N^o 7. A gravestone fragment with *protomae* (Fig. 7)
This soldier has a sword with ring pommel on his right side. The figure is carved under the bust, in the narrow field. He holds a spear in his left hand. This stone monument based on its style was made in the Traianic period⁹.
- N^o 8. Medallion (Fig. 8)
Behind the soldier is carved, the upper part of a spear. The medallion dates from the Traianic period¹⁰.
- N^o 9. A gravestone fragment with bust and cavalry scene (Fig. 9)
This soldier here holds a sword with ring pommel in his right hand. Under the bust - in the narrow field - a cavalry soldier with an oval shield and with two *pila* are depicted. According to its style it must have been made in the Traianic period¹¹.

- N^o 10. A tombstone with a cavalry soldier (Fig. 10)
The spear with a ribbon in the hand of this cavalry soldier points forward in the direction he is moving. Based on the carving style the fragment comes from the Traianic period¹².
- N^o 11. The gravestone of Publius Aelius Mestrius optio (Fig. 11)
A spear in the right hand of the figure and a sword's ring pommel can be recognized. This stone monument was made in the Hadrianic period¹³.
- N^o 12. The gravestone of Marcus Lucillius Germanus signifer (Fig. 12)
The lower part of a *signum*, with *phalerae* can be seen in the right hand of the soldier. The tombstone is a product of the Hadrianic period based on its epigraphic data and style¹⁴.
- N^o 13. A tombstone without inscription (Fig. 13)
Under the bust, in the narrow field the cavalry soldier is raising a great oval shield in his right hand. This gravestone comes from the Hadrianic period¹⁵.
- N^o 14. The gravestone of Aelius Quintus cornicen (Fig. 14)
A bugle can be recognized on the right shoulder of this soldier. This stone monument dates from the first half of the 2nd century AD¹⁶.
- N^o 15. A gravestone fragment with soldier (Fig. 15)
A sword with ring pommel is carved on the right side of the soldier. This tombstone must have been erected in the first half of the 2nd century AD¹⁷.
- N^o 16. A side wall of the sepulchral monument of Titus Flavius Magnus centurio (Fig. 16)
A painted *signum* with a half moon on it can be seen on the narrow side of this side-wall. It must have come from the first half of the 2nd century AD¹⁸.

On the basis of the table (Fig. 17) we can state the following facts:

1. There are 16 stone monuments from Aquincum depicting military equipment from the early period (from Claudian- until middle of 2nd century AD).

2. The oblong, large shield and spear were carved in the Claudian period. (N^o 1) The new types of military equipment appearing from the end of the 1st century AD: a helmet¹⁹ with horns (N^o 5), an oval shield²⁰ (Nos 4, 5, 9, 13), a mail shirt²¹ (N^o 5.) a *balteus* (N^o 5), a spear with ribbon (N^{os} 3, 10), a sword with ring pommel²² (Nos 5, 7, 9, 11, 15), a *pugio*²³ (N^o 5), two *pila*²⁴ (No 5, 9), and an apron²⁵ (N^o 5). A head with a helmet is carved, on the disc-brooch of Titus Claudius Victor centurio's bust found in the beginning of the 2nd century. (N^o 6) In the Hadrianic period the new military equipment consists of a *signum* with *phalerae*. (N^o 12) In the first half of the 2nd century AD (Nos 12-16), there are also new types of military equipment to be found: a bugle,²⁶ a *signum*²⁷ with a half moon. (Nos 14, 16)

3. The second table (Fig. 18) shows the names of the troops: *cohors I. Vindellicorum* (N° 4) and *legio II adiutrix* (Nos 5,11,12,16) and the names of soldiers: Tiberius Claudius (N° 1) Caius Castricius Victor (N° 5), Titus Claudius Victor (N° 6), P. Aelius Mestrius (N° 11), Marcus Lucillius Germanus (N° 12), Aelius Quintus (N° 14) and Titus Flavius Magnus (N° 16).

The total number of stone monuments in Aquincum from early and later periods is 28. A total of 61 depictions of military equipment were also found on these stones. The depictions of military equipment show a variety of types: helmet, mail shirt, shield, *pilum*, *signum*, and belt (Fig. 19). The last table (Fig. 20) shows the different positions for the military equipment in the early and later periods.

Lately, there have been a number of publications about the new military equipments from Pannonia²⁸. Our work is meant to be contribution to this great publication of military equipment from Pannonia²⁹.

NOTES

1. HOFFILER 1909, 314-328; SZIRMAI 2002b, 131-133; SZIRMAI 2002a, 600-608.
2. BURGER 1956, 192; NÉMETH 1999, 17. Nr. 23
3. BURGER 1956, 192; NÉMETH 1999, 16. Nr. 20.
4. NÉMETH 1999, 18, Nr. 26.
5. RÓMER-DESJARDINS 1873, Nr. 173.
6. LÓRINCZ 2001, 294. Nr. 468.
7. NAGY 1943, 469.
8. AUGUSTUS-ATTILA 2000, 39. Nr. 282; AQUINCUM 2003, 66. Cat. Nr. 26.
9. NAGY 1971, 113.
10. NAGY 1971, 119.
11. NAGY 1971, 112.
12. SCHOBBER 1923, Nr. 255.
13. NÉMETH 1999, 23. Nr. 45.
14. NÉMETH 1999, 26. Nr. 52.
15. SCHOBBER 1923, Nr. 255.
16. NÉMETH 1999, 23. Nr. 45.
17. NAGY 1971, 30.
18. KUZSINSZKY 1900, 49-50; NAGY 1928, 69-70; NÉMETH 1999, 29-30., Nr. 62. - I have to mention that we were not able to document this stone in Aquincum.
19. KOCSIS 1984, 227-246.
20. BISHOP – COULSTON 1989, 29-30, 42; AQUINCUM 1995, 42, Nr. Kat. 41.
21. BISHOP – COULSTON 1989, 45.
22. BISHOP – COULSTON 1989, 49, GERHARTL – HUBRECHT 1990, 99-102; BIBORSKI 1993, 91-130; SZIRMAI 1997, 155-161.

23. BISHOP – COULSTON 1989, 28-29; GERHARTL – HUBRECHT 1990, 102-107; AQUINCUM 1986, 163, Nr. Kat. 37; SZIRMAI 1997, 155-161.
24. AQUINCUM 1995, 41. Nr. Kat. 36-37; MARCHANT 1990,1-6; PETULESCU 1991, 35-58.
25. BISHOP – COULSTON 1989, 11.
26. PÓCZY 1997, 215-219; TOPÁL 2002, 1-15; TOPÁL 2003, 254-258.
27. AQUINCUM 1995, 42. Nr. Kat. 53-54; SZIRMAI 1999, 691-697; SZIRMAI 2000, 161-167; KOVÁCS 2004, 91.
28. PALÁGYI – NAGY 2002, 86-91.; MÁRTON 2002, 117-152; AUGUSZTUS – ATTILA 2000, 11-32, 37-40; AUGUSZTUS – ATTILA 2000, 8, 11, 15, 32-34; LYON 2001, Cat. Nr. 22-27, 72-75; KOCSIS 1998, 138-142; KOCSIS 2003, 521-552; KOVÁCS 2005, 955-965. For recent military equipments from Aquincum see: KOCSIS 2000, 98; KOCSIS 2001, 112.; HABLE – MÁRTON 2001, 26; ZSIDI 2001, 80-81; HABLE 2003, 46; KIRCHHOF 2003, 189; MADARASSY – KIRCHOFF 2003, 190-191; FORSCH. AQ. 261. Abb. 3.
29. Contributors to the present article: A. DABASI, K. KOLOZSVÁRI, P. KOMJÁTHY, É. MÁLIK, A. TOMA. Many thanks for the help of L. KOCSIS, ZS. MRÁV, Á. SZABÓ

BIBLIOGRAPHY

- AAH: Acta Archaeologica Academiae Scientiarum Hungarica, Budapest
- Arch Ért.: Archelógiai Értesítő
- AQUINCUM 1986: Das Römische Budapest (hrsg: H. POLENZ) Münster, 1986
- AQUINCUM 1995: *Gold, soldiers, citizens in Aquincum*. An Exhibition to celebrate the 100 year Centennial of the Founding of the Aquincum Museum (ed. P. ZSIDI) Budapest, 1995
- AQUINCUM 2003: Aquincum. Rimania v Budapesti: A rómaiak Budapestén (Ed. A. ENDRÓDI – A. FACSÁDY – P. ZSIDI) Budapest, 2003
- AQ. FÜZ: Aquincumi Füzetek. Excavations and rescue work at the Aquincum Museum
- FORSCH. AQ 2003 FORSCHUNGEN IN AQUINCUM 1969-2002: *Aquincum Nostrum II. 2.* (Red. P. ZSIDI)
- AUGUSTUS-ATTILA 2000: *Von Augustus Bis Attila, Leben am ungarischen Donaulimes*. Stuttgart, 2000
- AUGUSTUS-ATTILA 2000: *Von Augustus Bis Attila*, Ausstellungskatalog. Budapest, (ed) L. KOCSIS
- BIBORSKI 1993: M. Biborski, Die Schwester des 1. und 2. Jahrhunderts n.Chr. aus dem römischen Imperium und dem Barbaricum, *Specimina Nova* (1994) 91-130
- BISHOP – COULSTON 1989: M. C. Bishop – J. C. Coulston, *Roman Military Equipment*. Shire Archaeology, 1989 Bud Rég.: Budapest Régiségei, Budapest

- BURGER 1956: A. Burger, Lovas sírkövek Pannoniában az i. u. 1. századból. (Reitergrabsteine aus Pannonien im 1. Jahrhundert n.u.z.) *Arch Ért.* **83**, 1956, 191-197
- Com Arch Hung: Communicationes Archaeologicae Hungariae, Budapest
- GERHARTL – HUBRECHT 1990: A. M. Gerhartl-Wittewen – A. V. M. Hubrecht, Survey of swords and daggers in the Provinzial Museum G. M. Kam. Nijmegen, *Journal of Roman Military Equipment Studie* **1**, 1990, 99-107
- HABLE 2003: T. Hable, Két ásátás - az aquincumi canabae déli szélén (Two excavations in the southern part of the Aquincum canabae) *AQ. FÜZ.* **9**, 2003, 33-47
- HABLE – MÁRTON 2001: T. Hable – A. Márton, Újabb sírok Az aquincumi katonaváros nyugati temetőjéből. (New graves from the western cemetery of the Aquincum Military Town) *AQ. FÜZ.* **7**, 2001, 21-37
- HOFFILER 1909: V. Hoffiler, Római fegyverek a Magyar Nemzeti Múzeum emlékei. (ung) *Arch Ért* **29**, 1909, 314-328
- KIRCHHOF 2003: A. Kirchof, Budapest III. Selmeci utca 17- Zápor utca 23, *AQ. FÜZ.* **9**, 2003, 188-189
- KOCSIS 1984: L. Kocsis, I. századi sisak az aquincumi legióstáborból (Ein Bronzehelm aus dem 1.^h vom Legionslager zu Aquincum.) *Bud Rég.* **25**, 1984, 227-246
- KOCSIS 1998: L. Kocsis, Lovassági sisak Albertfalváról. (A new cavalry sports helmet find in the collection of the Budapest Historical Museum) *Bud Rég.* **XXXII**, 1998, 135-142
- KOCSIS 2000: L. Kocsis, Nagytétény-Campona, *AQ. FÜZ.* **6**, 2000, 91-101
- KOCSIS 2001: L. Kocsis, Nagytétény. Campona, *AQ. FÜZ.* **7**, 2001, 103-114
- KOCSIS 2003: L. Kocsis, A new late Roman Helmet From Hetény in the Hungarian National Museum. *Pannonica Provincialia et Archaeologia. Eugenio Fitz octogenario dedicata.* Hrg: Á. SZABÓ-E. TÓTH. *Libelli Archaeologici. Ser. Nov. No. 1*, 2003, 521-552
- KOVÁCS 2004: P. Kovács, Hasta pura. *AAH.* **55**, 2004, 81-92
- KOVÁCS 2005: P. Kovács, Beneficiarius Lances and Ring-pommel swords in Pannonia. *Proceedings of the XIXth International Congress of Roman Frontier Studies.* (Ed. ZS. VISY) Pécs 2005, 955-965
- KUZSINSZKY 1900: B. Kuzsinszky, Újabb emlékek az Aquincumi Múzeumban (ung) *Bud Rég.* **VII**, 1900, 1-66
- LÓRINCZ 2001: B. Lőrincz, Die römischen Hilfstruppen in Pannonien während der Principatszeit Teil I. Die Inschriften. *Wiener Archäologische Studien* **3**, Wien, 2001
- LYON 2001: Romains de Hongrie. Ier-V.e siècles après J.C. Coord. techn. A. FACSÁDY – P. ZSIDI Lyon, 2001
- MADARASSY – KIRCHHOF 2003: O. Madarassy – A. Kirchof, Budapest III. Selmeci utca 29. *AQ. FÜZ.* **9**, 2003, 190-191
- MARCHANT 1990: D. Marchant, Roman weapons in Great Britain a case study: spearheads. Problems in dating and typology, *Journal of Roman Military Equipment Studies* **I**, 1990, 1-16
- MÁRTON 2002: A. Márton, Roman Burial with a Weapon from the Bécsi road cemetery (Aquincum - Budapest) *Comm Arch Hung* 2002, 117-152
- NAGY 1928: L. Nagy, Pelta díszítés a pannoniái Kőemlékeken, (Das Peltamotiv in der Ornamentik pannonischer Steindenkmäler) *Arch Ért.* **XLII**, 1928, 68-95, 314-315
- NAGY 1943: T. Nagy, A Castricius stélé kora. (Das Alter der Castricius stele) *Bud Rég.* **XIII**, 1943, 463-470, 569-572
- NAGY 1971: T. Nagy, Kőfaragás és szobrászat Aquincumban. (Taille de pierre sculpture a Aquincum) *Bud Rég.* **XXII**, 1971, 103-160
- NÉMETH 1999: M. Németh, *Vezető az Aquincumi Múzeum kőtárában*, Budapest, 1999
- PALÁGYI – NAGY 2002: S. Palágyi – L. Nagy, *Römerzeitliche Hügelgräber in Transdanubien.* (Ungarn) Budapest, 2002
- PETULESCU 1991: L. Petulescu, Bronze spearheads and Spear butts from Dacia, *Journal of Roman Military Equipment Studies* **2**, 1991, 35-58
- PÓCZY 1997: K. Póczy, Berufsmusiker aus pannonischen Städten. KOMOS. Festschrift für Thuri Lorenz zum 65. Geburtstag. Wien, 1997
- RÓMER – DESJARDINS 1873: F. Rómer – E. Desjardins, *A Magyar Nemzeti Múzeum feliratos emlékei. (Les Monuments Epigra-phiques Romains dans le Musée National Hongrois)*, Budapest, 1873
- SCHOBBER 1923: A. Schober, *Die römische Grabsteine von Noricum und Pannonien.* Wien, 1923
- SZIRMAI 1997: K. Szirmai, Adlocutio Aquincumban (Adlocutio in Aquincum), *Comm Arch Hung.* 1997, 155-161
- SZIRMAI 1999: K. Szirmai, A new find from the military vicus of Budapest-Albertfalva, *Roman Frontier Studies* **XVII**, (1997) Zalau, 1999, 691-698
- SZIRMAI 2000: K. Szirmai, Jelvény (signum) Albert-falváról. (Zeichen (signum) aus Albertfalva), *ArchÉrt* **123-124**, 2000, 161-167
- SZIRMAI 2002a: K. Szirmai, A katonai felszerelés ábrázolásai Aquincumban a markomann háborúk után, *Specimina Nova* **XVI**, 2000, 131-152.
- SZIRMAI 2002b: K. Szirmai, Military equipment depicted in Aquincum after the Marcomannic Wars I. *Bronzi Antichi. Produzione e tecnologia cura di Alessandra Giunilia Mair. Monographies, Instrumentum* **21**, Montagnac 2002, 600-608
- TOPÁL 2002: J. Topál, Musikalische Denkmäler in Der römische Sammlung von Aquincum (Budapest), *Studia Musicologia Academiae Scientiarum Hungaricae* **43**, (1-2) 2002, 1-15
- TOPÁL 2003: J. Topál, Musikdenkmäler aus Aquincum, *FORSCH. AQ.* Budapest, 2003, 254-258
- ZSIDI 2001: P. Zsidi, Kutatások az aquincumi polgárvárostól keletre lévő területen. (Research in the territory east of the Aquincum Civil Town) *AQ. FÜZ.* **7**, 2001, 76-84



Fig. 1: The gravestone of Tiberius Claudius



Fig. 2: A gravestone fragment with bust and cavalry scene

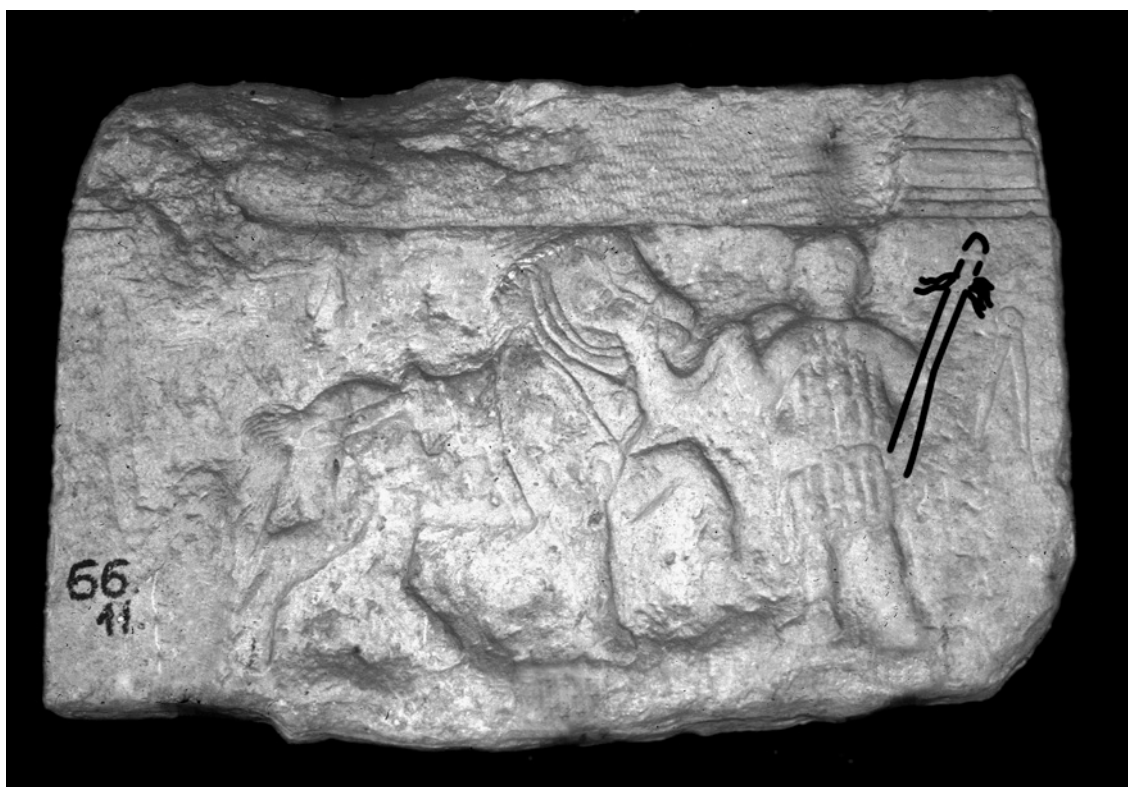


Fig. 3: A gravestone fragment with cavalry scene



Fig. 4: A fragmentary gravestone

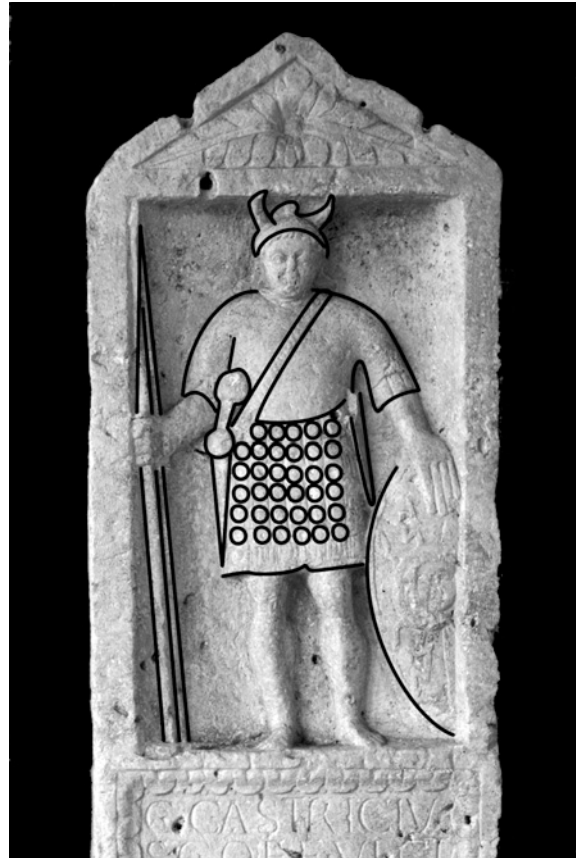


Fig. 5: The gravestone of Caius Castricius Victor miles



Fig. 6a: The bust of Titus Claudius Victor centurio



Fig. 6b: Detail of the bust of Titus Claudius Victor centurio



Fig. 7: A gravestone fragment with protomae



Fig. 8: Medallion



Fig. 10: A tombstone with cavalry soldier

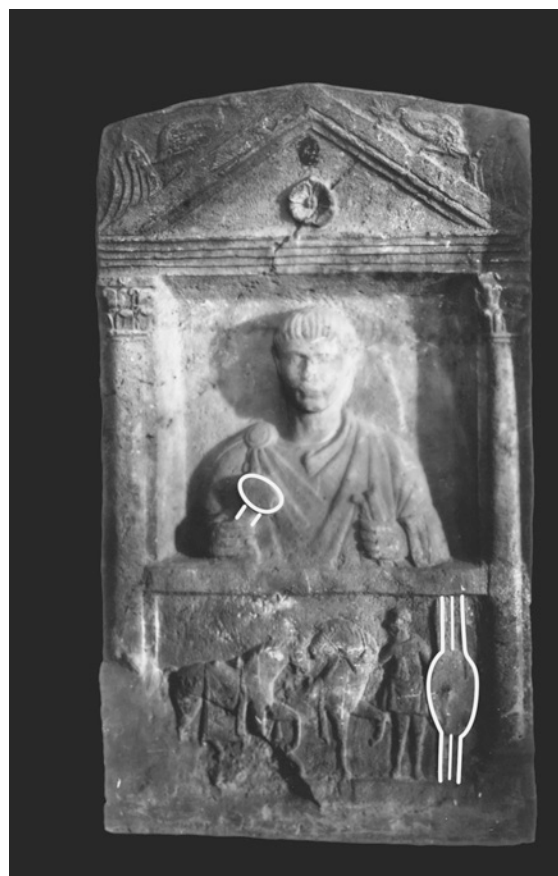


Fig. 9: A gravestone fragment with bust and cavalry scene



Fig. 11: The gravestone of Publius Aelius Mestrius optio

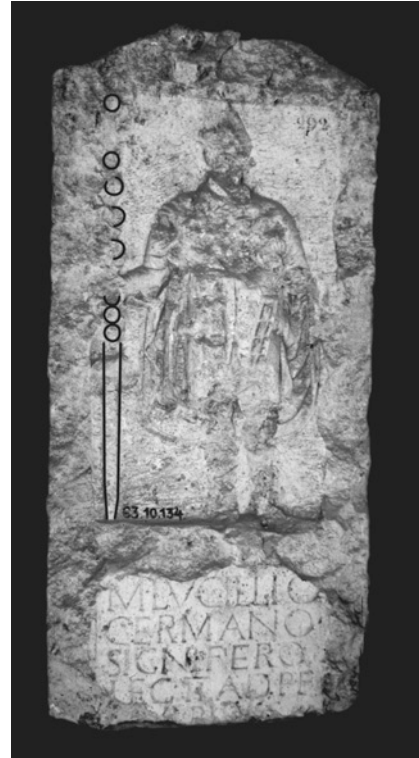


Fig. 12: The gravestone of Marcus Lucillius Germanus signifer



Fig. 13: A tombstone without inscription



Fig. 14: The gravestone of Aelius Quintus cornicen



Fig. 15: A gravestone fragment with soldier



Fig. 16: A side wall of the sepulchral monument of Titus Flavius Magnus centurio

STONE MONUMENTS	INV. NO.															DATE		
1. STELE	63.10.19.						X		X							CLAUDIAN	2	
2. STELE	66.11.45.						X									FLAVIAN	1	
3. STELE	66.11.46.								X							FLAVIAN	1	
4. STELE	R-D 173.				X											FLAVIAN	1	
5. STELE	64.10.2.	X	X		X	X				XX	X	X	X			FLAVIAN	9	
6. BUST	97.12.3.			X												TRAJANIC	1	
7. STELE	52.69.1.								X	X						TRAJANIC	2	
8. MEDALLION	13.1882.89.								X							TRAJANIC	1	
9. STELE	62.58.1.				X					X		X				TRAJANIC	3	
10. STELE	72.1857.2.								X							TRAJANIC	1	
11. STELE	R-D 138.							X	X							HADRIANIC	2	
12. STELE	63.10.134.													X		1st.HALF 2nd c. AD	1	
13. STELE	62.48.1.				X											1st.HALF 2nd c. AD	1	
14. STELE	63.10.137.													X		1st.HALF 2nd c. AD	1	
15. STELE	73.9.32.								X							1st.HALF 2nd c. AD	1	
16. SIDEWALL	64.10.68.						X						X			1st.HALF 2nd c. AD	2	
		1	1	1	1	4	2	1	4	2	6	1	2	1	1	1		30

Fig. 17: Early types of military equipment from Aquincum

	STONE MONUMENTS	INV. NO.	INSCRIPTION	NAME	RANK	TROOP	DATE
1.	STELE	63.10.19.	X	TI. CLAUDIUS			CLAUDIAN
2.	STELE	66.11.45.					FLAVIAN
3.	STELE	66.11.46.					FLAVIAN
4.	STELE	R-D 173.	X			COHORS. I VINDELICORUM	FLAVIAN
5.	STELE	64.10.2.	X	CAIUS CASTRICIUS	MILES	LEG. II. AD.	TRAJANIC
6.	BUST	97.12.3.	X	T. CLAUDIUS VICTOR	CENTURIO		FLAVIAN-TRAJANIC
7.	STELE	52.69.1.					TRAJANIC
8.	MEDALLION	13.1882.89.					TRAJANIC
9.	STELE	62.58.1.					TRAJANIC
10.	STELE	72.1857.2.					TRAJANIC
11.	STELE	R-D 138.	X	P.AELIUS MESTRIUS	OPTIO	LEG.II. AD.	HADRIANIC
12.	STELE	63.10.134.	X	M.LUCILLIUS GERMANUS	SIGNIFER	LEG.II. AD. PF.	1st.HALF 2nd c. AD
13.	STELE	62.48.1.					1st.HALF 2nd c. AD
14.	STELE	63.10.137.	X	AELIUS QUINTUS	CORNICEN		1st.HALF 2nd c. AD
15.	STELE	73.9.32.					1st.HALF 2nd c. AD
16.	SIDEWALL	64.10.68.	X	TITUS FLAVIUS MAGNUS	CENTURIO	LEG.II. AD.	1st.HALF 2nd c. AD
			8	7	6	5	

Fig. 18: Inscriptions on early stone monuments from Aquincum

MILITARY EQUIPMENT	EARLY STONE MONUMENTS					LATER MONUMENTS			SUM TOTAL
	CLAUDIAN	FLAVIAN	TRAJANIC	HADRIANIC	1st.HALF 2nd.c. AD	2nd. HALF 2nd.c. AD	2nd-3rd. c.	3rd. c.	
HELMET I.		X							1
HELMET II.			X					X	2
SHIRT OF MAIL I.		X					X	X	3
SHIRT OF MAIL II.								X	1
BALTEUS		X					X	X	3
KEY						X			1
SHIELD I.	X	X							2
SHIELD II.		XX	X		X			X	5
SHIELD III.					X				1
LANCE I.	X		XX	X				X	5
LANCE II.		X	X						2
SWORD		XX	XX	X	X	XX		XXX	11
DAGGER		X						XX	3
SPEAR		X	X						2
HORN					X			XX	3
SIGNUM I.					XX				2
SIGNUM II.								X	1
SIGNUM III.								X	1
SIGNUM IV.								X	1
BELT I.								XXXXX	5
BELT II.							X		1
APRON		X						XX	3
GREAVES								X	1
SUM TOTAL	2	12	8	2	6	3	3	25	61

Fig. 19: The depiction of military equipment on monuments in Aquincum

DEPICTIONS OF THE MILITARY EQUIPMENT	EARLY PERIOD			LATER PERIOD		
	POSITION			POSITION		
	LEFT	RIGHT	SPECIAL	LEFT	RIGHT	SPECIAL
SHIELD I.	N° 1,2					
SHIELD II.	N° 4,5,9	N° 13		N° 7,12		
SHIELD III.			N° 16			
LANCE I.	N° 7,8	N° 1,11			N° 12	
LANCE II.	N° 3,10					
SWORD		N° 5(2x) 7,9,11,15			N° 2.(2x) 7,9	N° 5
DAGGER	N° 5			N° 7,12		
SPEAR	N° 9	N° 5				
HORN		N° 12		N° 7,8		
SIGNUM I.		N° 12				
SIGNUM II.			N° 16			
SIGNUM III.						N° 6
SIGNUM IV.					N° 11	

Fig. 20: The position of military equipment on monuments from Aquincum



The Historical Context

Dorottya Gáspár
Alexei Kozlenko

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Barbarian Throwing Clubs and the origins of Roman Plumbatae 341

Oath and Punishment with the Roman Army (Dasius-acta)

Dorottya Gáspár

”Das im *sacramentum* verfasste Gelübde gebietet den Soldaten, ihren Führer unablässig zu unterstützen und nicht von seiner Seite zu weichen; sie mussten bis in den Tod kämpfen, und durften nicht auf Rettung des eigenen Leibes hoffen, bevor sie gesiegt hatten”¹. That is why the wars of Imperium Romanum sometimes demanded an enormous blood sacrifice. This death, however, did not mean ‘public mourning’; contrary it signalled the heroic defence of *Populus Romanus*. The *Populus Romanus* was protected by *Iupiter Optimus Maximus*. For this reason no single human was important, but the whole *Populus Romanus*². The *sacramentum* was not a simple oath it consisted of the oath itself, the ceremonials of taking the oath, and the obligations of both the soldiers and the commander, as well³. The relationship between the commander and the soldiers was the *fides*⁴, which obliged the soldiers to obey the commander and at the same time, the commander to be responsible for the soldiers. Generally, we consider whether the *fides* had been kept during the war, but we do not consider, whether it was kept at work in the camp, or during leisure time, or in carrying out religious rites, although the *fides* ought to be kept on these occasions in the same way, as during the war.

We can see a similar phenomenon in the story of Dasius who was a soldier of the *legio XI Claudia*⁵ in Durostorum⁶, Moesia Inferior. He died as a martyr⁷. According to the *acta*, *Saturnalia* or *Kronos* festival was celebrated in the fortress⁸; they, however, did not celebrated it in Roman custom but by serious rite⁹. The soldiers chose a king thirty days before the fest, who might live as a king during this time. He could do anything; what is he had to do shameful things, which were forbidden in daily life, for instance debauchery¹⁰. Over the thirty days, however, he must sacrifice himself to *Kronos*. There was a requirement for king, namely the person in question had to be handsome and young¹¹. At that moment, the lot fell upon Dasius who refused to play the role the king. They put Dasius in prison at once, and arrested him on the next day, took him to Bassus, the commander, whose title was *legatus* – ληγάτος. Bassus ordered to pray to *imagines*

of Emperors Diocletianus and Maximianus. Dasius refused. For refusing he was executed then beheaded. The narrative of the martyrdom, and other data, however, are strongly debated. The points of controversy are as follows:

- The description of the execution does not fit usual *acta*. That is why it was questioned whether Dasius is a historical person or the *acta* is authentic¹²?
- For what reason was he martyred: refusing the role of king or refusing to pray to the *imagines* of the Emperors? This question emerged, because Bassus never mentioned the role of king¹³. And we do not know any similar events. According to Helgeland, the martyrdom is authentic as Dasius refused to pray to the *imagines*¹⁴.
- How could the dogmatic formulated only at the council of Nicaea (325) occur in the *acta*? This dogmatic concerns the Holy Trinity¹⁵.
- The time of the death is given very precisely. Why did not the anonymous author tell us also the whole date, the year of the event by the names of the consuls¹⁶? Dasius was beheaded on the twentieth of November. This is the day of preparation, the fourth hour, on the twenty-fourth day of the moon. The word παρασκευη is used in the text, which means the day of preparation. Some determine the day of preparation Friday, but the others Saturday. The first solution corresponds to the Jewish customs,¹⁷ the second one, however, to the Christian preparation¹⁸. Other researchers state that the word παρασκευη never meant Saturday¹⁹.
- Why was Bassus said to be *legatus* although a legio had only *praefectus* from the rule of Gallienus (260-268). The solution is given by Hegeland: he was *legatus Moesiae Inferioris*²⁰.
- Also disputed is Bassus’ person, since he is not mentioned by any other sources. This is true, but Arthur Stein did not regard as questionable information²¹.

First of all, let us review the historical events. Wolfgang Kuhoff writes the following: “Eusebios spricht des weiteren davon, daß sich Diokletian am 23. Februar und 12. März

noch in Nicomedia aufgehalten habe, um den Ablauf der Verfolgung zu beaufsichtigen. Hierzu tritt die Aussage von Lactantius, daß der Kaiser am Feste der *Terminalia*, eben am 23. Februar, die Kirche in seiner Residenzstadt habe abbrechen lassen, worauf auch eine Angabe in der Chronik des Hieronymus verweist, daß im März während der anlaufenden Verfolgungsmaßnahmen die christlichen Kirchen zerstört wurden. Einige Zeit nach der Märzmitte muß Diokletian seine Reise nach Westen angetreten haben, denn er ist durch ein Reskript am 8. Juni in der Grenzstadt Durostorum an der Donau, im Osten der Provinz Moesia II, zugleich Garnison der *legio XI Claudia*, bezeugt²². Diocletianus stayed in Durostorum for military reason. He organized and commanded the campaign against the Carpi in the Balkans. He was even on 8th of November in Sirmium, though he knew well he must arrive at Rome by 20th of November to celebrate the festival *vicennalia*. If we take seriously these historical events, we can see some data would be outstanding, which might allow us to think that the narrative of *Dasius-acta* is not an “amazing tale”²³. The 20th November is an important date because of the *vicennalia*. And it was the day of *Dasius*’ martyrdom. It is also not uninteresting that Diocletianus has been staying in the provinces along the Danube for nearly five months; including time in Durostorum. It is known the soldiers of *legio XI Claudia* were prominent. They were engaged in the battle at Actium; for that they obtained the honour *pia fidelis*²⁴. They took part in the Dacian wars with Traianus and in the Jewish war under Hadrianus²⁵. Their vexillatio was several times directed to fight mainly in the Eastern part of the Empire²⁶. That is why we can recognize oriental customs in the ritual of Kronos-king in Durostorum. The controversy, which states that no similar event has been mentioned, may be right, but it is a fact that Hadrianus abolished the human sacrifices and prohibited the soldiers to kill each other upon the religious rite²⁷. The latter was a military law, which shows us this rite was in fashion.

Let me return to the oath and the *sacramentum* at this point. The *sacramentum* belonged to the religious sphere, and was unchangeable thing for the Roman army. But the oath (*iusiurandum*) could partly changed, for instance, it could be terminated on the death of the commander during the republic period. The *iusiurandum* is the greatest link, in both military and life²⁸. Who injures the oath injures the *fides*, an action is accounted to be ignominy (*infamia*)²⁹. The violation of the solemn pledge or promise was the greatest crime. The story of *Mettius Fufetius* might convince us of this fact³⁰. The soldiers could take an oath even among them for a current task³¹; at other occasion, they took the oath to their commander, e. g.

to Caesar³². But another oath was taken to Pompeius wher we can read the wording *nova religio iusiurandi*. This wording shows us repeating of the oath³³. Sulla, Pompeius and Caesar were the outstanding characters of the republic period, each of them with proper army. That is why the oath and also the *sacramentum* have become ethic questions; since the *sacramentum* belonged to the *Populus Romanus*, while the oath belonged only to the commander. Consequently, the unity (between the *iusiurandum* and *sacramentum*) has been broken up, which caused a moral problem. To induce the *principatus* was claimed for restoring this unity³⁴. The unity between the *sacramentum* and the *iusiurandum* safeguarded military discipline. We should not forget that both *iusiurandum* and *sacramentum* bound the commander also. There was a single commander (*imperator*) during the imperial period, the Emperor himself. The *legati* and *praefecti* obeyed the Emperors, but the soldiers obeyed their commanders. This was a hierarchic order according to which everybody obeyed his superiors, who, on the other hand, were indebted to the subordinated persons through responsibility³⁵. The Emperor as a ruler according to the divine right was more than a human. His *imago* was he himself.³⁶ The Emperor was present everywhere in his *imago*. He who did not venerate the *imago* did not venerate the Emperor himself; everybody who refused to venerate the *imago*, refused to keep the order, the order of the cosmos itself. This idea was valid even during the *dominatus*. What is more, Diocletianus consciously came back to the customs of the ancestors, the *mos maiorum*. That is why keeping military discipline, confirming obedience were strongly required during his reign.

Let me return to the *Dasius-acta*. The soldiers prepared for this or that reason a human sacrifice, nevertheless they knew very well, that it had been forbidden. Also Bassus knew the prohibition well. The serious historical circumstances gave grounds to be present as a *legatus*, *legatus Moesiae Inferioris* in the *praetorium*. Also he himself was responsible for the action of the soldiers, at this occasion for their disobedience. The disobedience meant violating the oath. Therefore, it was in interest of Bassus to be silent, and to leave unsaid the human sacrifice. I think that is why no word was said about human sacrifice and the kingship in the *acta*. That is why Bassus did not say any word about the ritual king. But the other side of the coin is the fact that the soldiers threw one of their fellows into prison. But there was no motivation if the kingship had to be not mentioned. The *praetorium* was the place where they were praying or offering oblations, too. So, Bassus chose the best solution to calm the anxious and turbulent soldiers; he commanded to pray *imagines* of the Emperors. From this

point, it was not necessary to mention the kingship. Now it is clear that refusing to pray the *imagines* formed the reason for the execution. It appears that people knew what was really happening, because the civil inhabitants honoured Dasius very well; his translation indicates this. But the anonym author, who probably compiled the *acta* later, did not know every part of the events. I think, this is why the narrative of the *acta* is so odd and individual, but the martyrdom and the persons are real.

As regard the wording of the *acta*, I agree with Helgeland that the narrative of the martyrdom consists of 'hagiographical commonplaces'³⁷ except the formula of the Holy Trinity. The *acta* must be worded after the Council of the Nicaea and author put this formula into the mouth of Dasius.

At last, let me mention one of the 'hagiographical commonplaces', namely the word Christian. When Bassus asked: 'τίς καλεῖ – what is your name?'; he answered the followers: 'τὸ; μὲν ἐξαίρετόν μου ὄνομα Χριστιανός εἰμι, τὸ δὲ ἐκ γονέων ἐπιτεθέν μοι Δάσιος καλοῦμαι. – I have the excellent one of Christian; but the name given me by my parents is Dasius' (caput 6). It was a familiar expression for giving name that he or she was a Christian or they were Christians. Now we have to emphasise, that the name itself was in question. Generally they said instead of their proper names that they were Christians. Seemingly the opposition between the Romans and the Christians was only the name. That is why we can say that the Romans persecuted the name 'Christian', but Romans did not persecute the Christian religion. Church or Christians might be for Romans as a political club³⁸. We ought to take this possibility into account.

NOTES

- JANSSEN 1975, 175.
- JANSSEN 1975, 176.
- GÁSPÁR 1982.
- JANSSEN 1975, 176. About *fides* see EARL 1970.
- RITTERLING 1925, 1360: legio in Moesia Inferior; 1365: The legio is first mentioned here, in 111; 1366: it stationed here steadily even during the Diocletianus. 1691-1699: when where the legio or its vexillatio fought.
- PATSCH 1905, 1863-1864; BURIAN 1997, 851: now Silistra in North Bulgaria. This town was a station alongside the road, which started at Marcianopolis to the Delta. The *canabae* were given the title of *municipium* during the reign of Marcus Aurelius, and it became the capital of Scythia at the reorganization of Diocletianus. The many finds which have come to light at the excavations, verify the prosperity of the inhabitants on the one hand, and the fact that the settlement was a Christian centre of the 4th century in Scythia Minor.
- CUMONT 1897; in German: PILLINGER 1988, 18-21. In English and in Greek: MUSURILLO 2000, 272-279; CUMONT 1908, 369-372; DELEHAYE 1912a., 284-285; DELEHAYE 1908, 217-218; DELEHAYE 1912b, 264-268; LECLERCQ 1920, 272-283; KRAFT 1958, 47; WEINSTOCK 1964; AMORE 1964, 484; HELGELAND 1979, 783-784; FRUTAZ 1986, 171; the Passio is legendary according to the critic. Renate Pillinger wrote about the translation; Dasius' relics were transported in the 6th. century to Ancona: PILLINGER 1995, 31; MUSURILLO 2000, xl-lxxi, 272-279.
- MARKOV 1987, 98-99: as Saturnalia, they really celebrated Zalmoxis.
- FRAZER 1922, Ch. 58. § 3, 586.
- FRAZER 1922, Ch. 58. § 3, 585.
- FRAZER 1922, Ch. 58. § 3, 585.
- The authenticity of the *acta* was doubted by G. Wissowa, J. GEFFCKEN 1906, 222-227 and DELEHAYE 1908, 217. Summarizing the former opinion, Musurillo says, that Dasius may be a historical, but his martyrdom cannot be taken as evidence; 2000 xl-xli: 'This amazing tale concerns a pious Christian soldier named Dasius, stationed at Durostorum, ... then commanded by the *legatus* Bassus, if the story is to be believed. ... I cannot feel that the Martyrdom, ... , can yet be taken as serious evidence for the events surrounding his death.'
- Summarize see MUSURILLO 2000, xli.
- HELGELAND 1979, 784.
- Musurillo's translation: '8. I obey no one else but the one undefiled and eternal God, Father, Son and Holy Spirit, who are three in name and person but one in substance' 2000, 277.
- HELGELAND 1979, 784 calculated the year on the basis, when the both emperors, Maximianus and Diocletianus were also consuls of the year.
- PILLINGER 1988, 29.
- CUMONT 1897, 8; HELGELAND 1979, 783, note 287.
- BOEFT – BREMMER 1981, 52.
- HELGELAND 1979, 783.
- STEIN 1940, 110.
- KUHOFF 2001, 231. See here the note 629: "CJ V 73 4 weist die Schlußformel d. VI id. Iun. Dorostolo Diocletiano VIII et Maximiano VII cons. auf.
- See note 11: MUSURILLO 2000.
- RITTERLING 1925, 1691.
- Inscription found in Beltir enumerates the *legiones*; CIL III 13586, line 5: ET . LEG . V . MAC . ET . XI . CL
- RITTERLING 1925, 1697-1700.
- HELGELAND 1979, 784.
- Cic. *De off.* III, 111: *nullum enim vinculum ad astrigendam fidem iure iurando ...*E. g. Cic. *Flacc.* 90: *si aram tenens iuraret* during a legal action. Or Cic. *Pis.* 7: *sed aeternitatem immortalitatemque*

- donavit* (sc. *Populus Romanus universus*) *cum meum ius iurandum tale atque tantum iuratus ipse una voce et consensu approbavit*. Cicero made an oath on declaring he had served for the salvation of the state.
29. Cic. *De off.* III, 104: *Qui ius igitur iusiurandum violat, is fidem violat, quam in Capitolio vicinam Iovis Optimi Maximi*. We have to recognise the power of the iusiurandum; it did not contain fear. We have not to fear Jupiter, because he might be angry or might harm us; these were not his habitude. Or Cic. *Verr.* III, 144: ... *fidem, ius iurandum, veritatem, officium, religionem desinant amici eius* (sc. *Verres*) *ea dicitare, quae detrimento, maculae, invidiae, infamiae nobis omnibus esse possit*.
30. He was the commander of the soldiers of Alba Longa, who seemed willing to unite with the Romans. He shared the alliance bound ritually and the solemn oath. The unity between Rome and Alba Longa has been concluded. Mettius Fufetius, however, took the oath perfidiously; he even broke it. Accordingly, he received punishment: if he divided his soul, his body should be divided. (*animum inter Fidenatem Romanamque rem ancipitem gessisti, ita iam corpus passim distrahendum dabis*.) Tullus arbitrated: “*Exinde duabus admotis quadrigis, in currus earum distentum inligat Mettium; deinde in diversum iter equi concitati, lacerum in utroque curru corpus, qua inhaeserant vinculis membra, portantes*.” Who were presents turn aside “*ab tanta foeditate spectaculi*.” Liv. I, 28, 9-11. (Auctores Latini III. Ed. F. NAGY 1966 pp. 74-75.)
31. *Caes. bell. Gall.* I, 3, 8: *hac oratione* (sc. *Caesaris*) *adducti* (sc. *milites*) *inter se fidem et ius iurandum dant* ...
32. *Caes. bell. Gall.* VII, 66, 7: *conclamat equites sanctissimo iure iurando confirmari oportere, ne tecte recipiatur, se ad liberos, ne ad parentes, ad uxorem adlitum habeat, qui non bis per agmen hostium perequitarit*.
33. *Caes. bell. civ.* I, 76, 1-5: At this moment, the soldiers were conducted by Petreius, but the *imperator* was Pompeius, who was far away ... *fit celeriter concursus in praetorium. Postulat, ut iurent omnes se exercitum ducesque non deserturos neque prodituros neque sibi separatim a reliquis consilium capturos. Princeps in haec verba iurat ipse; idem ius iurandum adigit Afranium; subsequuntur tribuni militum centurionesque; centuriatim producti milites idem iurant. Edicunt, penes quem quisque sit Caesaris miles, ut producat: productos pala min praetorio interficiunt. Sed plerosque ius iurandum qui receperant celant noctuque per vallum emittunt. Sic terror oblatus a ducibus, crudelitas in supplicio, nova religio ius iurandi spem praesentis deditiois sustulit mentesque militum convertit et rem ad pristinam belli rationem redigit*.
34. EARL 1970, 59-79.
35. That is why it was possible to kill Emperors (e. g. Caligula) without punishment; Emperors sometimes broke the *sacramentum* and the *fides*. The punishment came upon them.
36. The pagans knew well that the representations the of gods were not equal with the represented gods, because it was impossible to represent the God. Jesus Christ, the Son of the God, however has taught: ‘*qui videt me, videt et Patrem* (Ioh 14, 9). *Ego, et Pater unum sumus*’ (Ioh. 10, 30). Since Jesus Christ has been embodied, he can be represented. But on this occasion, the represented person is equal with the representation. SCHÖNBORN 1984. So the ancient people, who became Christian, came up against their former belief and conviction. This fact might cause emotion as we can see at the martyrdom of Karpos who cried angry: θεοί, οἱ τὸν οὐρανὸν καὶ τὴν γῆν οὐκ ἐποίησαν, ἀπολέσθωσαν (HARNACK 1888, 10, 444) – ‘Götter, die den Himmel und die Erde nicht geschaffen haben, mögen zugrunde gehen!’ Frühchristliche Apologeten und Märtyraken aus dem griechischen und lateinischen übersetzt. Hrsg. O BARDENHEWER – Th. SCHERMANN – K. WEYMAN, II Band, München 1913, 313, caput. 2.
37. HELGELAND 1978, 784.
38. WILKEN 1984, 31-35.

BIBLIOGRAPHY

- AMORE 1964: Augustino Amore, Dasio, *Bibliotheca Sanctorum* IV, Roma, 1964, 484
- ANRW: *Aufstieg und Niedergang der Römischen Welt*, Berlin, New York
- BOEFT – BREMMER 1981: Jan den Boeft – Jan Bremmer, *Notiunculae Martyrologiae, Vigiliae Christianae* 35, 1981, 43-56
- BURIAN 1997: Jan Burian, *Durostorum, Der Neue Pauly* 3, 1997, 851
- CAES. BELL. GALL.: C. Iulius Caesar, *De bello Gallico*, A. Klotz, Lipsiae, 1952
- CAES. BELL. CIV.: C. Iulius Caesar, *De bello civile*, A. Klotz, Lipsiae, 1957
- CIC.: Marcus Tullius Cicero, *Opera omnia*. C. F. W. Müller. Lipsiae, 1903
- CIC. DE OFF.: Marcus Tullius Cicero, *De officiis*. C. Atzert, Lipsiae, 1963
- CUMONT 1897: Franz Cumont, *Les actes de S. Dasius, Analecta Bollandiana* 16, 1897, 5-16
- CUMONT 1908: Franz Cumont, *Le tombeau de S. Dasius de Durostorum, Analecta Bollandiana* 27, 1908, 369-372
- DELEHAYE 1908: Hippolyte Delehaye, rec. Albert Dufourcq: Étude sur les Festa martyrum romains. Tomes II-III. *Analecta Bollandiana* 27, 1908, (1908) 215-218
- DELEHAYE 1912a: Hippolyte Delehaye, *Les origines du cult des martyrs*, Bruxelles, 284-285
- DELEHAYE 1912b: Hippolyte Delehaye, *Saints de Thrace et de Mésie, Analecta Bollandiana* 31, 1912, 264-268
- EARL 1970: Donald Earl, *The Moral and Political Tradition of Rome*. London, Rep., 1970
- FRAZER 1922: James George Frazer, *The Golden Bough*. London, 1922
- FRUTAZ 1986: Amato Pietro Frutaz, *Dasios. LThK* 3, 1986, 171
- GEFFCKEN 1906: J. Geffcken, *Die Verhöhnung Christi durch die Kriegsknechte, Hermes* 41, 1906, 220-229

- HARNACK 1888: Adolf Harnack, Die Acten des Karpus, des Papyrus und der Agathonike, eine Urkunde aus der Zeit M. Aurel's, *Texte und Untersuchungen zur Geschichte der Altchristlichen Literatur*. Hrsg Oscar von GEBHARDT – Adolf HARNACK. **III**, Band Leipzig, 1888
- HELGELAND 1979: John Helgeland, Christians and the Roman Army from Marcus Aurelius to Constantine, *ANRW II* **23/1**, 1979, 783-784
- JANSSEN 1975: L. F. Janssen, Die Bedeutungsentwicklung von Superstitio/Superstes. *Mnemosyne* **28**, (Fas.2.) 1975, 135-188.
- KRAFT 1958: H. Kraft, Dasius, *Die Religion in Geschichte und Gegenwart* (RGG) 22-23. 1958, Lieferung, Tübingen
- KUHOFF 2001: Wolfgang Kuhoff, *Diokletian und die Epoche der Tetrarchie*. Das römische Reich zwischen Krisenbewältigung und Neuaufbau (284-313). Frankfurt a.M., Berlin, Bern, Bruxelles, New York, Oxford, Wien, 2001
- LECLERCQ 1920: Henri Leclercq, Dasius, *Dictionnaire d'Archéologie Chrétienne et de Liturgie* **IV/1**, 1920, 272-283
- LTHK: Lexikon für Theologie und Kirche, Freiburg
- MARKOV 1987: Kiril Markov, Quelques aspects de la christianisation sur l'actuel territoire Bulgare pendant la basse Antiquité (IV-VI s.), *Miscellanea Bulgarica*, **5**, 1987, Wien, 97-105
- MUSURILLO 2000: Herbert Musurillo, *The Acts of the Christian Martyrs*. Introduction, Text and Translations. Oxford, Vol. II., 2000
- PATSCH 1905: Patsch, *Durostorum*, RE V, 1863-1864
- PILLINGER 1988: Renate Pillinger, *Das Martyrium des Heiligen Dasius*, Wien, 1988
- PILLINGER 1995: Renate Pillinger, Dasius, *LThK Nova Editio* **3**, 1995, 31-32
- RE: Paulys Wissowa Realencyclopädie der classischen Altertumswissenschaft, Stuttgart
- RITTERLING 1925: Emil Ritterling, *Legio*. RE XII 2. 1329-1829
- SCHÖNBORN 1984: Christoph Schönborn, *Die Christus-Ikone*, Novalis Verlag, 1984
- STEIN 1940: Arthur Stein, Die Legaten von Moesien. *Diss. Pann I*, **11**. Budapest, 1940
- WEINSTOCK 1964: Stefan Weinstock, *Saturnalien und Neujahrfest in den Martyreracten*, Mullus. Festschrift Theodor Klauser (JbAnt Christ Ergänzungsband 1) Münster Westfalen, 1964
- WILKEN 1984: Robert L. Wilken, *The Christians as the Romans saw Them*, New Haven, London, 1984



Barbarian Throwing Clubs and the origins of Roman *Plumbatae*

Alexei Kozlenko

The name *plumbata* is an abbreviation from *hasta plumbata* that is a javelin with a lead weight. Vegetius used the word *mattiobarbula* for the same weapon. Maurice transcribed it in Greek as *martzobarboulon* and gave it another nickname - *riptaria*¹.

Vegetius described the *plumbata* as a projectile weapon with a range of throw superior to the javelin. Initially it was a weapon of the skirmishers, who could strike the enemy while being themselves out of their missiles' range. Heavy armed infantrymen also carried five *plumbatae* on the interior of their shields and threw them during the charge or repulsing the enemy attack. Hence they could act as both skirmishers and heavy infantry. Maurice reported that during the approaching of the enemy, warriors at first threw the *plumbatae* then javelins and spears followed. He also recommended arming close rankers with *plumbata* as they could throw them over their own front rank during the battle².

The appearance of the *plumbata* was described in detail by the anonymous author of the treatise «*De rebus bellicis*». According to him, the *plumbata* was a kind of the light javelin (*iaculi*) thrown without mechanical device, simply by means of a man's arm (*manus impetu*). Like the javelin it had a small barbed head (in formam *venabuli*) fixed to the top of a wooden shaft. A flight of feathers were fastened at the base of the shaft with enough space left below to allow the thrower to grasp the end of the shaft with his fingers. The Anonymous also mentioned a lead weight that gave the name to the weapon. He didn't give the weapons dimensions but accompanying manuscript illuminations represented the *plumbata* as being of arrow proportions³.

This description compares well with several dozens of the archaeological finds of *plumbatae*. Most of them consist of a small triangle or leaf shaped head with a thin iron stem from 98 mm to 275 mm long⁴. This head was attached to the wooden shaft either by means of a short split socket or with a riveted plate tang. On the bottom of the head, at the point

where it was attached to the shaft, the barrel shaped lead weight was added. As the mode of the attachment was very fragile, this lead piece could serve as an additional fastening (Fig. 1)⁵. Total weights for the weapon differ from 130 gr to 350 gr. It is possible that the largest and heavier weighted examples could be dated to a later period when, according to Maurice, a leather quiver was used for carrying them⁶.

There are several ways to restore the appearance of the *plumbata* and the method for its use. Robinson reconstructed the *plumbata* as a javelin 105 cm long. Its range of flight was 50 m. Barker supposed that the *plumbata* was a short javelin. As the length of the iron and the wooden part of the *plumbata* on the «*De Rebus Bellicis*» manuscript illuminations were approximately the same, the final length of the weapon couldn't exceed half a meter. During the field experiment his 610 mm reconstruction of the Wroxeter *plumbata* made 27,5 m⁷. Eagle paid attention to The Anonymous's statement that the *plumbata* shaft had enough space below its feathers to allow fingers to grasp it. Hence, he proposed that during the throwing of the *plumbata*, it was held not in the middle of its shaft but at the tail. His reconstruction of Wroxeter *plumbata* with a final length of 51 cm which was thrown this way made 61,3 m⁸. This model demonstrates that the *plumbata* can achieve effective results and explains Vegetius's observations of this weapon as well.

Despite our knowledge of the *plumbata's* appearance and the way it was used, we know nothing about its origins. Traditionally it is considered that the *plumbata* descended from the javelin. This idea seems to be incomplete in so far as the *plumbata* differs from the javelin in many considerable features. Firstly, the *plumbata* is a weapon of small size with the shaft of 50 cm length, whereas a javelin shaft is more than two times longer. Secondly, the *plumbata* shaft has a lead weight that shifts its centre of gravity to the head, whereas the centre of the javelin's gravity is in the middle of the shaft at the point where it is held. Finally the *plumbata* is best thrown by lobbing underarm, with the missile held by the tail,

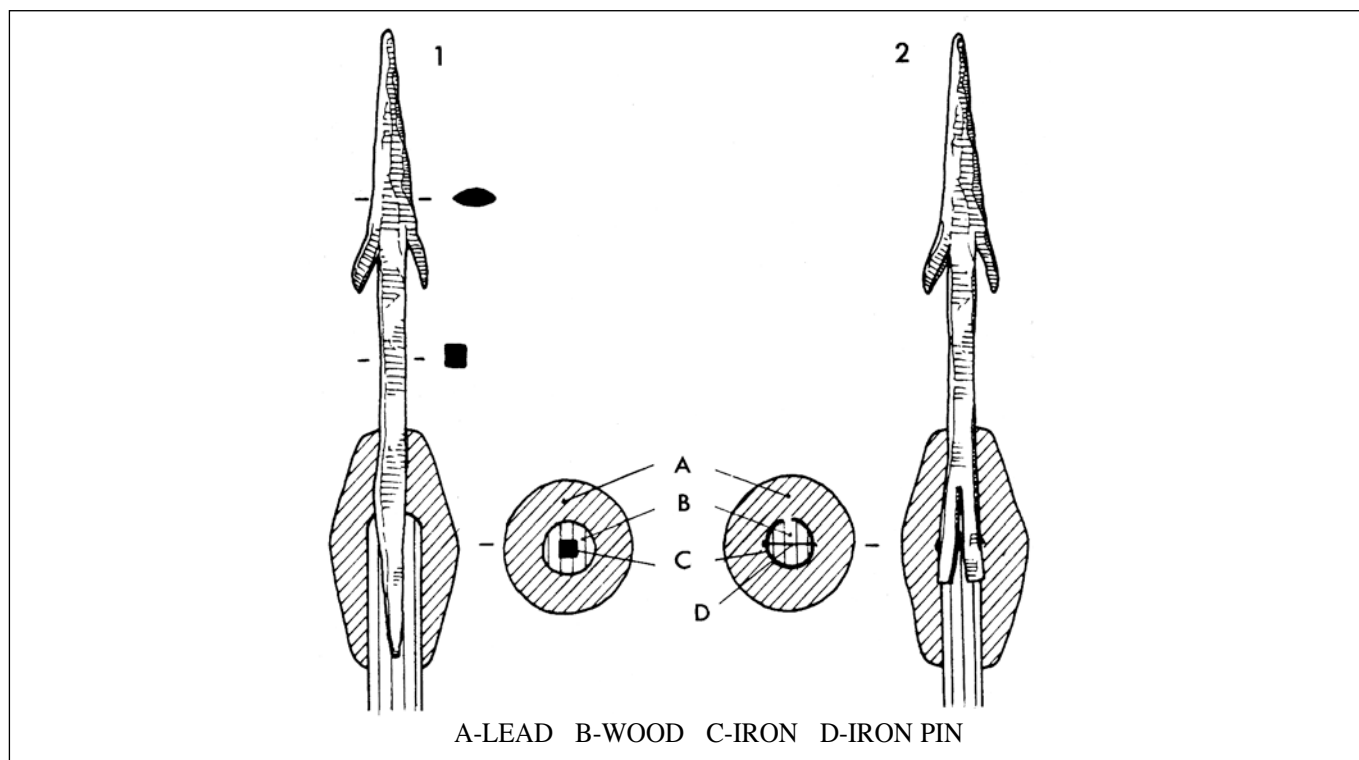


Fig 1. Reconstruction of the *plumbata* (According to DEGEN, R., 1992, *Plumbatae. Wurfgeschosse der Spätantike*, *Helvetica Archaeologica* 23, fig. 3).

whereas the javelin is thrown by pushing it away, while holding it at the middle of the shaft. Hence we should look for the *plumbata* prototype among weapons of the same length and form and with a similar style of throwing.

At first we should pay attention to the word *mattiobarbula*. The origin of this word is obscure. Michaescu compared it with a number of Romantic language derivations, such as Medieval Latin *matia*, Rumanian *maciuca*, French *massue* and even Greek *matzouka*. All of them had the same meaning of “club” or “mace” and, according to author, a common root probably of Celtic origin. He reconstructed hypothetically this primary root as *mattea* and found it in the Germanic ethnic name *mattiarii* and in the name of several Late Roman army units *mattiarum*. This etymology corresponds with the common identification of *martzobarboulon* as a *mace* in Byzantine military treatises⁹. Other scholars treat *mattiobarbula* as a corrupted derivative of *martiobarbula*, i.e. “Mars’ beard”. This is likely to be a soldier’s nickname of the weapon. The Byzantine word *riptaria* is certainly a nickname which derives from the Greek verb *ripto* “to throw”¹⁰.

None of the hypotheses take into account the second part of this word “*barbula*” which means “beard” or rather “bristle”. However this application is very informative as it characterizes the appearance of the weapon as “bristled”, probably studded with spikes. It is interesting that “*De rebus*

bellicis” describes the *plumbata tribolata*, whose main feature is spikes soldered into the lead weight and protruding just below the head. According to the Anonymous, this weapon had a double effectiveness – either by directly penetrating the body of an enemy, or by falling to the ground with one of the spikes uppermost, and thus liable to penetrate the foot of an unwary soldier. We don’t know if the author explains the functions of the spikes correctly, but we could compare *plumbata tribolata* with another weapon which has the same characteristic features – the German throwing club *cateia*.

The word *cateia* has Celtic roots and can be compared with the Irish word *cath* “struggle, fight” or with the Cornish *eatai* which means “stick”. It could also be a derivative of the Latin verb *caio* “to beat, to strike”¹¹. The first time this weapon was mentioned by Vergilius who linked its usage with a German habit (*teutonico ritu*). Servius described the *cateia* as a heavy throwing club of a *cubitus* length, bristling with nails (*Cateiam teli genus esse... ex materia quam maxime lenta, cubitus longitudine, tota fere clavis ferreis illigata*). Isidor said that *cateia* was made of heavy timber meaning it wasn’t easy to throw it far, but it did make a heavy strike (*ex materia quam maxime lenta, que iacta non longe, propter gravitatem evolat, sed quo pervenit vi nimia perfingit*)¹².

We can only guess how the clubs were thrown. Vergilius and Valerius Flaccus use the verb *torquere* “to curl, to twist”, which frequently refers to a sling. This application probably describes the weapon twisting during the throw. The experiment proves that there are two ways to throw the club. In the first case the weapon is thrown over arm. Because of the centre of gravity being close to the pommel the club rotates heavily during flight. This reduces both the range of the throw and its accuracy. In the second case the club is thrown underarm. Its rotation intensity reduces considerably, the missile flies directly on a flat trajectory with its pommel in front. The result of the throw can be improved if we make the club pommel of iron. The same way of throwing is typical for *plumbata*.

I think that the *mattiobarbula* was initially a mace with spikes which had its origin in Germanic clubs like *cateia*. Arrian mentioned that some of the Roman cavalymen were armed with axes or, perhaps, maces “with spikes protruding radially” as early as 2nd century AD¹³. It was possible to use it either as a striking or projectile weapon like the Byzantines did some centuries later. *Plumbata tribolata* resembled a mace in shape and technique, but it was mainly a projectile weapon as it struck the object with a sharp head. It is possible that some examples of this weapon held rudimentary spikes. The Anonymous author of «*De rebus bellicis*» mentioned them, but he obviously couldn't conceive of their functions. Later *plumbata* finally became a javelin.

NOTES

1. *Plumbata*: Vegetius, *Epit. Rei mil.* I, 17; II, 15, 16; III, 14; Anonimus, *De rebus bell.* X; XI; *mattiobarbula*: Vegetius, *Epit. Rei mil.* I, 17; *martzobarboulon*: Mauricius, *Strat.* XII, 5; 12; 16; 19; 20; *riptaria*: Mauricius, *Strat.* XII, 16.
2. Vegetius, *Epit. Rei mil.* I, 17; II, 15, 16; III, 14; Mauricius, *Strat.* XII, 16; 12.
3. Anonimus, *De rebus bell.* X.
4. VOLLING 1991, 290; DEGEN 1992, 142.
5. SHERLOCK 1979, 102.
6. Mauricius, *Strat.* XII, 5. VOLLING 1991, 291.
7. BARKER 1979, 99.
8. EAGLE 1989, 247.
9. *Mattiaci*: Tacitus, *Ann.* XI, 20; *Germ.*, 29; *mattiarii*: *Notitia, Dignitatum*, Occ. V. *Martzobarboulon* as a mace: Excerptum *Tacticorum* Z. 98, 88; 99; Leo, *Tact.*, VII, 3. KOLIAS 1988, 175-176.
10. DIXON – SOUTHERN 1996, 114; BENNETT 1991, 59.
11. WALDE – HOFMAN 1938, c.v. *cateia*; term *caia*: Isidorus *Etym.* 18, 7, 7; verb *caio*: Plautus, *Cist.*, 253.
12. Vergilius, *Aen.*, VII, 741; Servius, *Ad Aen.*, VII, 741 Isidorus, *Etym.* 18, 7, 7; Silius Italicus, III, 277; Valerius Flaccus VI, 83.
13. Arrianus, *Tact.*, 4, 2; *Contra alan.*, 21; Leo, *Tact.*, VI, 33.

BIBLIOGRAPHY

- BARKER 1979: Ph. Barker, The Plumbatae from Wroxeter, *Aspects of the De Rebus Bellicis: Papers Presented to Professor E.A. Thompson*, M.W.C. HASSALL (ed.) BAR International Series 63, Oxford, 1979, 97-99
- BENNETH 1991: B. A. Benneth, Plumbatae from Pitsunda (Pityus), Georgia, and some observations on their probable use, *Journal of Roman Military Equipment Studies* 2, 1991, 59-63
- DEGEN 1992: R. Degen, Plumbatae. Wurfgeschosse der Spantantike, *Helvetica Archaeologica* 23, 1992, 139 - 147
- DIXON – SOUTHERN 1996: K. R. Dixon – P. Southen, *The Late Roman Army*, London, 1996
- EAGLE 1989: P. Eagle, Testing Pumbatae, *Roman Military Equipment: the Sources of Evidence*, C. van DRIEL-MURRAY (ed.) BAR International Series 476; Oxford, 1989, 247-253
- KOLIAS 1988: T.G. Koliass, *Byzantinische Waffen*, Vienna, 1988
- SHERLOCK 1979: D. Sherlock, Plumbatae - A Note on the Method of Manufacture, *Aspects of the De Rebus Bellicis: Papers Presented to Professor E.A. Thompson*, M.W.C. HASSALL (ed.) BAR International Series 63, Oxford, 1979, 101-102
- VOLLING 1991: Th. Volling, Plumbata - mattiobarbulus - martzobarboulon. Bemerkungen zu einem Waffenfund aus Olympia, *Archaeologischer Anzeiger* 1991, 287 - 298
- WALDE – HOFMAN 1938: A. Walde – J. B. Hofman, *Lateinisches etymologisches Wörterbuch*, Heidelberg, 1938



The Experimental Context

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Testing the “Ramshaw” Boot - Experimental Calceology on the March

Florian Himmler

For Roman forces, like for any army, mobility has always been of great strategic importance. During the 3rd century AD, the Roman Empire was forced to fight various hostile peoples at the rivers Rhine, Danube and Euphrates, and was also shaken by a long series of civil wars. Consequently, military units were frequently transferred from one hot spot to another. Although the waterways were certainly used whenever possible, the most vital means of troop transportation still must have been marching, meaning that the quality of the soldiers' footwear was of great relevance. Archaeological finds from Britain to Syria show a type of closed eyelet boot, which for convenience is termed the Ramshaw style,¹ as a common military and civilian boot in the 3rd century AD². Unfortunately, the archaeological record presents a large number of fragmented remains, that tell little of the actual performance of this kind of footwear. Experimental archaeology was used to help interpret the finds and understand the capabilities of this kind of military equipment. The **2004 trans Alps** project presented the opportunity to test the Ramshaw boots.

A few years earlier, Josef Löffl, a classical studies student, had decided to create a Roman re-enactment group (LEG III ITALICA) at Regensburg/Germany with the specific project of marching across the Alps to Italy. Trans Alps was originally thought of as a ‘fun’ project, but during the planning phase, the scientific aspects gained in importance. The project offered the possibility to test Roman military equipment of the late 2nd - 3rd century AD. Due to the scarcity of funding - all of the equipment had to be financed by, or made by the participants themselves - compromises in scientific accuracy had to be made. However, maximum authenticity was decided for at least a few core items, including the footwear. In order to get a source for reliable reconstructions of Roman boots, the author contacted Marquita Volken from “Gentle Craft”, a non-commercial archaeological footwear institute in Switzerland. Mrs. Volken produced 11 pairs of accurate replica boots (see part II below for manufacture).

The march was intended to answer a number of calceological questions: how much stress could the shoes take? Would constructional weak spots, like the eyelets and the laces, be able to stand the strain of use? How fast would the nails wear down? When and why do the nails fall out? This last question is in response to the fact that excavations of Roman roads produce innumerable shoe nails. How would the different nailing patterns perform and how would they work on different types of walking surfaces?

1. GENERAL PROBLEMS AND WEARING COMFORT

The marching group consisted of 12 students, six of whom were in legionary costume, three were wearing archers' costumes, and three were armed scouts³. Tents, foodstuffs, the grain mill, tools and the rest of the baggage were transported by a van and two cars. The march started on August 15th 2004 at Reginum/Regensburg and ended on September 11th at Tridentinum/Trento/Trent. After the departure from Regensburg, the group first followed the Danube upstream to Rain am Lech, then marched up the Licca/Lech valley along the Via Claudia Augusta to Augusta Vindelicum/Augsburg. From there, the route went on to Parthanum/Parthenkirchen, and then over the ‘Seefeldler Sattel’ to the river Aenus/Inn, from where it continued over the Brenner Pass to Bauzanum/Bolzano/Bozen and finally to Trent.

It is not possible to give precise measurements of the entire distance, since the group rarely used major roads on which calculations are usually based. A first calculation before the march came to almost 500 km (496 km), but a more refined one gave the results as slightly over 600 km (607 km)⁴! This second calculation was more reliable, since it was based on more accurate maps. On the other hand, the individual distances were somewhat lower (see below), with the average participant attaining between 400 to 450 km⁵.

The first four to five days were the most problematic. Despite some training, a number of participants were unable to cope with the physical demands, and due to this, it was feared several people would abandon the march. A compro-

mise had to be found so that enough data about the boots could still be gathered. Participants who were too exhausted or had trouble with their feet could exchange a day of marching for a day of camp duty⁶. In such a case, the relevant person was moved to the next stop with the “baggage train”. Nevertheless, five participants eventually switched over to modern footwear, but four of these had severe orthopaedic difficulties, and the fifth person suffered from blisters on top of his toes. The other participants were much more successful, and some were very happy with their “Ramshaw” boots⁷. After the first week, the successful participants had become so used to their boots, that they did not have any major problems with them, although marching still made a general feeling of burning pain in the soles and aching Achilles tendons⁸. At first blisters and swollen insteps were very common, but gradually disappeared⁹. Surprisingly, the “Ramshaws” caused less blisters than the modern boots. During the first week, one of the scouts (M. Altmann) walked with Camel brand trekking boots for a day in order to feel the difference. He got blisters from these boots whereas this had not been the case with the “Ramshaws”. Two of the participants who walked with modern footwear most of the time had similar experiences. On arrival at Trent/Trento, the person with modern boots had massive blisters on both heels, while the person with German army boots had partially excoriated heels.

2. WALKING ON DIFFERENT KINDS OF SURFACES

The traction of the nailed footwear on soft and slippery ground was remarkable. Climbing up muddy slopes and wet, steep forest tracks (e.g. in the Brenner Pass) was not difficult at all, whereas those participants with modern boots or sandals were clearly at a disadvantage. Interestingly, the Roman boots proved themselves superior to modern footwear also on the remnants of two Roman roads carved into rock: first at Klais (Upper Bavaria - Fig. 1), then at Franzensfeste (South Tyrol - Fig. 2).

The track was wet with rain, so initially it was feared the entire group would slip and skid down the ‘Gleisstrecke’ at Klais. Instead, those wearing nailed boots got along well, provided they took care of where they placed their feet. Two participants with sandals and sneakers slipped and slid on the wet rock.

On a later, 5-day journey of mountaineering in the high Alps, the boot’s performance on stone showed the same results. The tiny dents and cracks of weathered rock always provided sufficient traction for the cone shaped nails of Roman boots. (Fig. 3).

The situation completely changed when the group inspected a subterranean excavation at Trent and had to walk on the well preserved remnants of a paved road (Fig. 4).

Here, the stones were so smooth that the *calceati* had great difficulties in standing upright, not to mention



Fig. 1–2: Roman roads at Klais (left) and Franzensfeste (right).

walking¹⁰. The difference between the exposed roads at Klais and Franzensfeste, and the slippery road ‘under’ Trent, can possibly be explained by the heavy erosion of the two former sections over the centuries. Or perhaps different kinds of stone were used.

Modern shoes were only superior to the Roman boots on modern paved roads, where every step with nailed footwear could be felt in the knees, hips and the back. Long distances on asphalt roads led to a feeling of burning pain in the feet, plus nail tips coming up through the insole (see 4, below). Hard, dried out clay covered with gravel was not much more comfortable to walk on. Some of the participants had problems already during the first two days, although the group had only very rarely marched on asphalt roads. Gravel surfaces were even more unpleasant, plus were more destructive for the nails. This is surprising as Roman roads often consisted of gravel¹¹.

During the march, the group did not have to walk on snow. However, a couple of short hikes early in 2005 showed the “Ramshaw” boots to be superior to modern footwear also under winter conditions. Walking up and down steep slopes was done without difficulties, despite a layer of slippery leaves hidden under the snow. On compressed snow, it was possible to walk fast. Marching on such a soft surface was much more comfortable than on hard terrain (like asphalt roads). Walking in deep snow made the socks soaking wet, but the feet stayed warm as long as one kept moving.

3. THE LEATHER

Although it was initially feared the shoelaces might snap, no such accident ever occurred. Some eyelets slightly widened, but none snapped either. Stretching was a problem for two pairs of boots made from thin 2.0 mm calf. The heel

area of both pairs started to stretch out of shape within only a few days¹². One of the two wearers noticed that the shoe became loose fitting and tried to counteract this problem with a thicker felt insole, but then developed blisters on top of his toes, and decided to use modern footwear. While his choice was due to poorer quality of the replica, the other participant equipped with 2.0 mm calf boots did not have any problems and kept on wearing his “Ramshaws” even though the leather of his boots stretched even more (Fig. 5).

Roman boots made of thin and/or low quality leather normally would have had internal linings to prevent a loss of shape (see above part 1). A pair of boots made of only slightly thicker leather (2,5 mm) hardly stretched at all, perhaps because the leather quality was higher or because it came from an adult animal (Fig. 6).

The heavy 3,5 mm calf hide boots did not lose their shape, with only one exception: on the eighth day of marching, after fording a small stream and then inadvertently stepping into several muddy puddles, the author noticed a deformation of his right boot. Although it remained watertight and stayed dry inside, the leather started to lose its shape. Walking became very unpleasant, and the upper and the boot sole no longer matched properly. Upon arriving at the next “marching camp”, the right foot hurt much more than the left. A repair was attempted by wetting the leather and kneading it back into a proper shape. Although this was only partially successful, and the right boot remained somewhat deformed (Fig. 7), walking was possible again without any resulting difficulties. The left boot remained unaffected by getting wet¹³.

With the exception of the 2.0 mm calf boots, the boots used until the end of the march (i.e. after nearly 400 km) were in a surprisingly good condition. Continued replacement of



Fig. 3: mountaineering with Roman footwear.



Fig. 4: The slippery Roman road at Trent.



Fig. 5 (left): shoe made of 2,0 mm medium quality leather with overstretched heel.



Fig. 6 (right): shoes made of 2,5 mm high quality leather with less stretched heels.



Fig. 7: deformed right boot.

nails would have made marching possible for an additional distance of at least 100 - 200 km, potentially even much more. One of the participants who quit walking with nailed footwear relatively early marched on with a pair of used German army boots which were worn out by the time he arrived at Trent.

4. NAILS AND NAILING PATTERNS

As described in part 1, the hobnails used for the “Ramshaw” reconstructions were cone headed soft iron nails with modified shafts, which resembled Roman shoe nails. The nailing patterns were chosen from a variety of Roman shoe soles from the late 2nd/early 3rd century. The total number included three pairs with a leaf shaped pattern (Fig. 8), one pair with an even distribution of nails (Fig. 9), and seven pairs with straight patterns of different density.

In two cases, the shape of the nailing patterns seems to have played a particularly important role. One pair of

boots had a rather spacious straight pattern, i.e. the distance between the individual rows was wider (Fig. 10).

As an effect, pressure was distributed less evenly, and in time the hobnail rows formed long ridges on the inside which were very uncomfortable to walk on (Fig. 11).

Whereas it was possible to smooth individual bumps, any attempt to flatten these long ridges was unsuccessful, and even felt insoles brought no comfort. Adding at least two more rows of nails on the soles might have been a solution but then there would not have been enough spare nails for the rest of the march. This incident clearly shows the superiority of dense nailing patterns over spacious ones, even if dense patterns used more nails.

The other case where the shape of the nailing pattern played a distinctive role was a pair of boots with a leaf shaped pattern. On the arrival at Trent, the hobnails were in an extremely good condition compared to the rest of the group’s shoes. Not a single nail had been replaced, and only one had fallen out (Fig. 8). Three factors may be responsible. First, the owner belonged to the archer group and thus carried less weight than the legionaries. Second, due to a general state of exhaustion, he had to be taken out of the marching group several times during the final week of the project. Third, the leaf shaped pattern contained a higher number of nails than even the dense and straight pattern. Nevertheless, a fourth reason has to be included here: the low abrasion rate was also the result of this participant’s noticeably careful way of walking, which, in turn, may have partially been caused by the leaf shaped nailing pattern. According to a very convincing theory of C. van



Fig. 8: leaf shaped pattern.

Driel-Murray, leaf shaped nailing patterns induce a more careful way of walking, creating better pressure and weight distribution than straight patterns¹⁴. It is very unfortunate that of the two other participants with leaf shaped patterns, one had to return to work after three days, and the other had too many orthopaedic problems. However, a 12th pair of Ramshaw boots with a leaf shaped pattern has been made for the author in February 2005, and the tests have led to confirmation of this theory. Nail abrasion was rather low, while walking was sufficiently comfortable.

As described above, the cone headed nails offered much better traction than any kind of modern boot. Yet one of the participants had trouble with the Roman boots from almost the very beginning. Already on the second day, several hobnail shafts came up through the insole in the area of the left heel and at the right tread; or rather the nails did not come up as much as the insole became compacted, leaving the nail points exposed. After three days, there were already four nails clearly to be felt in the right boot and no less than eight (!) in the left one. The nails were beaten down, but walking was still so painful, that this participant exchanged his calcei for modern footwear after the fifth day. Although nails came up in almost every boot, this did not happen too often and even then it was usually isolated nails, so it is difficult to explain why this one person had such problems. The



Fig. 9: nailing pattern with even distribution.

high number of protruding nails was probably not caused by irregularities during the shoe making process, but rather by this participant's orthopaedic anomalies (flat feet) and the resulting walking habit. In addition, the project preparations had consumed so much time for this specific participant that he had not been able to properly break in his boots for marching.

In general, the hobnails wore down quickly on asphalt and gravel roads (especially at the heels), so many nails had



Fig. 10: spacious straight pattern.



Fig. 11: boot with spacious straight pattern and the resulting “long “ridges” on the inside.



Fig. 12: ‘new’ hobnail placed between the shafts of two other nails.



Fig. 13: three new nails for each boot (left - one nail was placed between two old holes)



Fig. 14 (left): only the shafts remain of 6 totally worn down hobnails. Several others will soon follow.

to be replaced. This is likely to have been common practice in antiquity, as is suggested by a number of Vindolanda tablets which list several soldiers (?), or rather their boots, and the number of nails used for them. The figures are too low for nailing even one new shoe, but more than enough for repairs¹⁵. During the trans Alpes march, there were two replacement methods used for replacing nails. The first was to wait until old nails were so worn down that the head simply broke off. The new nail was then inserted in a slightly different position, because the shaft of the old nail was still stuck in the sole (Fig. 12)¹⁶.

The second method, which became the standard procedure, was placing a new nail in exactly the same position where the old one had been. If the old nail had simply fallen out, the same hole was used again, unless it was too worn out. If, however, the old nail was still present, it was first pried loose with a knife, then pulled out with a pincer, carefully and avoiding damaging the sole. Since a single new nail in a worn down pattern exerted uncomfortable pressure (especially at the heel), it was better to practice “pre-emptive replacement”, i.e. replacing several worn down nails at the same time (Fig. 13).

This had to be done before the nail heads became too thin, or they just broke off, making it very difficult to pull the shaft out (Fig. 14). Pulling nails out of new soles is next to impossible because the leather is still very hard, but after about a week of walking, the leather loosens up and the holes slowly widen. This can even lead to a boot “grinning” (Fig. 15)¹⁷.

Since new replacement nails protrude much more from the sole than their worn down neighbours, they are exposed to a significantly higher rate of abrasion, while simultaneously protecting the other nails. The new nails therefore wear down quickly to the same level as the worn nails. At this stage it is difficult to differentiate between the first and



Fig. 15 (right): the nails come loose and so does the sole.

the second (or third) generation of nails, unless they had been placed outside the nailing pattern or were of a different size. If placing replacement nails in the original nail holes was also practiced in antiquity, it might be difficult to identify such replacements in the archaeological record¹⁸.

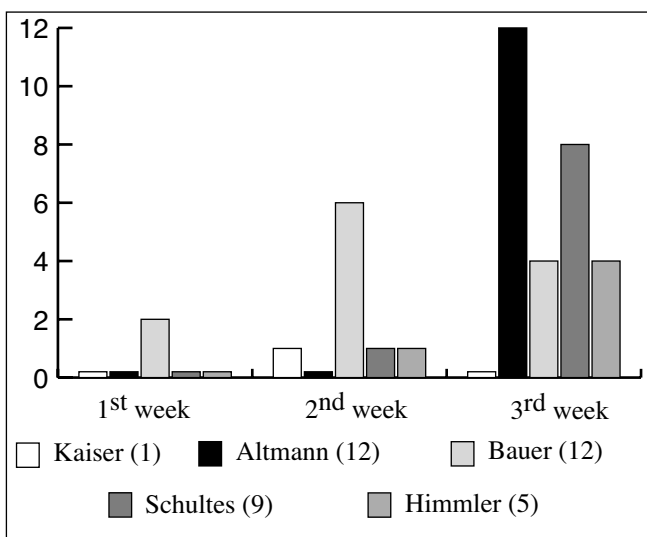
In general, the abrasion rate was influenced by both the weight of the wearer plus equipment, **and** by the individual walking habit. M. Altmann (a light armed scout) managed to cover an impressive distance with a minimal amount of replacement nails (three). But after nearly three weeks of marching, the nails in the tread area had become so thin that several suddenly broke off within only a few days. On the final day of marching, he carried a much heavier set of equipment than had usually been the case, and he immediately noticed a difference in walking, i.e. it was more difficult for him to properly get his feet off the ground or to walk without scuffling. The nail attrition-rate was noticeably sped up¹⁹. But weight alone does not always matter, as was shown by the comparison between three of the “legionaries”. Although they carried more or less the same amount of equipment, two of them had a far more “aggressive” way of walking than the third one, who tried to treat his boots more carefully. As a result, the hobnail patterns of the two former participants needed more replacement nails and were more worn out when the project ended. Whereas one nail on each boot of the “careful” legionary had to be replaced after ten days, the other two were in need of several replacements nails after seven/eight days of marching, with a minimum of two to three new nails for each boot in the outer row on the heel²⁰. After another week of marching, each boot of the “aggressive” walkers needed about half a dozen more replacement nails, again in the heel, but in both the outer and inner rows. Despite roughly the same amount of equipment, the rate of abrasion was strikingly different, which can be seen as a consequence of the individual walking habits.

The phenomena of nails breaking off or falling out started only after about one week of walking. Then some participants' boots needed more and more replacements, while others maintained a very low rate of nail loss. The hard walking surfaces were not solely responsible, because nails also fell out while walking in snow. Nail loss is somehow related to the sole leather flexing during walking *and* abrasion from the walking surface.

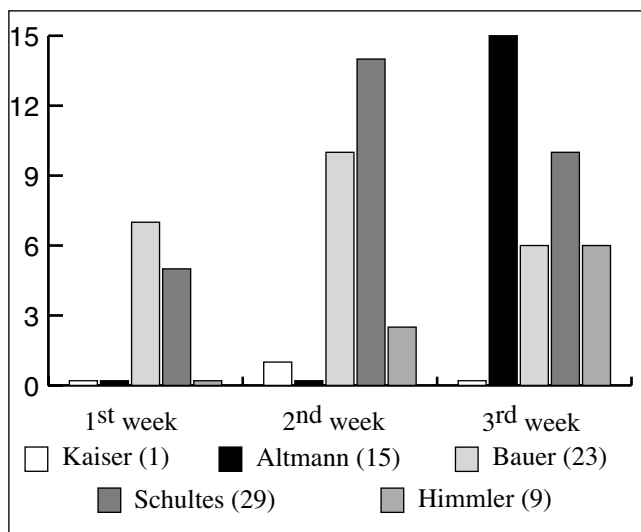
The following graphs show the number of nails fallen out, broken off, or extracted because they were heavily worn down and would have soon broken off or fallen out²¹. Five pairs of boots are presented²².

The biggest surprise was the archer with only 1 (!) nail lost in over two weeks. The scout did not lose any nails until

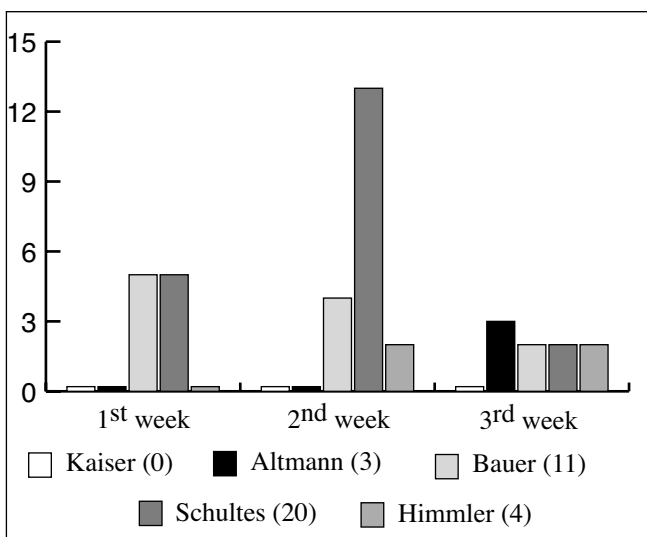
Name	Type of 'soldier'	Days of marching	Total distance
M. Kaiser	Archer ("careful")	16	nearly 400 km
M. Altmann	Scout ("careful")	21	about 520 – 530 km
D. Bauer	Legionary ("aggressive")	19	about 440 – 450 km
G. Schultes	Legionary ("aggressive")	18	about 430 km
F. Himmler	Legionary ("careful")	17	about 410 – 420 km



Graph 1: number of nails broken off or fallen out (not always replaced)



Graph 3: total number of nails lost (broken off, fallen out, extracted)



Graph 2: number of nails extracted and replaced.

the final days (and especially the last day when he marched with markedly heavier equipment), when a dozen nails broke off in the tread area. A few days earlier, three nails had been replaced on the heel.

All in all, almost 80 nails had been lost or replaced in a group of 5 persons, in less than three weeks of marching.

On average, each person lost or removed ca. 15 hobnails (although the individual numbers could be strikingly different). Accordingly, during three weeks of marching, a *vexillatio* of 1,000 men might have lost about 15,000 hobnails, and a *legion* of about 5,000 men probably up to 100,000 nails or 100-150 kilos in just one month! This extrapolation is of course highly academic - Roman soldiers did not walk on asphalt, but it gives a clue as to why so many loose hobnails are found during excavations of Roman roads.

CONCLUSION

The trans Alpes project has shown that the “Ramshaw” style boots are remarkably sturdy and reliable. Unless they were made of inferior leather, they held up well. The boots also offered excellent traction, and turned out to be quite comfortable, excepting long distances on hard surfaces, and/or wearers with orthopaedic difficulties, and/or wearers who were not sufficiently used to walking without modern raised heels.

The main problem was clearly the maintenance of the nails, i.e. the necessity to replace nails that had fallen out, broken off, or were in such a pitiful state that they had to be

pulled out. The large number of nails that had to be used to keep the nailing patterns in good order shows why Roman soldiers were in need of a financial bonus for nails, the so called *clavarium*²³.

How Roman armies on the march were supplied with completely new boots is, unfortunately, unknown. Although the “Ramshaws” used during trans Alpes rarely suffered from problems with the leather, Roman troops on the march over long periods of time must have needed replacement boots. A papyrus from 81 AD suggests soldiers regularly received a new pair of *caligae* together with each *stipendium*, i.e. thrice a year²⁴. Perhaps there were four distributions under Domitian, but this is hard to tell²⁵. We also do not know whether there was a quality difference between footwear of legionaries and of auxiliaries²⁶. What was standard practice during campaigns, when the wear and tear of equipment - especially of footwear - was more than under ordinary conditions, is completely unknown. By the early 2nd century at the latest, production of footwear for the military seems to have become part of the civilian sphere²⁷. Perhaps civilian contractors were ordered to produce an excess of boots in advance for an upcoming campaign. Fuentes suggests a spare pair of boots (in this case *caligae*) was carried by every soldier,²⁸ which means a *vexillatio* must have carried along hundreds or even thousands of pairs of spare boots. But since the major river-courses and highways were used to make large shipments of grain, wine, oil and clothes, shipments of footwear are likely²⁹. At the same time, spare shoes seem to have been stockpiled at important supply bases³⁰.

Another question raised by trans Alpes was how the Roman military dealt with soldiers suffering from orthopaedic deficiencies? As already mentioned, people in antiquity were certainly more used to nailed footwear than modern people, but those with orthopaedic difficulties must still have been at a disadvantage. That conscripts with flat feet, splayfeet or other ailments were never taken into the army is impossible³¹. Especially after the heavy losses inflicted by the Antoninian plague and the Danubian wars during the reign of the Emperor Marcus, Rome could not allow herself the luxury of being choosy³². Perhaps further finds can tell us more about this.

NOTES

1. DRIEL-MURRAY 1993, Fig. 17,2.
2. BUSCH 1965 Pl. X, 33. 34; DRIEL-MURRAY 1986, 141. 142, Fig. 142; 1999, 40 w. note 16; 2001, 366; JAMES 2004, esp. 59. Only five small fragments of this type of boot have been found at Welzheim (findings from about 200 AD), which suggests “it was only just coming into fashion”, cp. DRIEL-MURRAY 1999, 40. 102.

3. One of the “legionaries” had to leave after three days because of other commitments, and his place was occasionally taken by one of the “archers”. Another “archer” was equipped with boots from a different source made with a modern shoe construction, thus not useful for scientific purposes.
4. I want to thank Mr. R. Altmann from the Supreme Building Authority (Oberste Baubehörde) of the Bavarian Ministry of the Interior for providing me with these figures.
5. See below, note 22 with the table below.
6. Marching was more popular than camp duty because it demanded “less thinking and organising”.
7. ‘very comfortable’ (“scout” M. Altmann), ‘the most comfortable footwear in my entire life’ (“legionary” D. Bauer).
8. Roman shoes did not have raised heels, so modern people usually have shortened Achilles tendons.
9. In addition, the front part of both feet of D. Bauer got numb, especially the front part of the right foot. The phenomenon disappeared soon after the march was over.
10. The situation very much resembled an incident mentioned by Flavius Josephus, *Jewish War* 6, 85: a centurion named Julianus is killed in action after falling on the ground because “τὰ γὰρ ὑποδήματα πεπαρημένα πυκνοῖς καὶ ὀξεῖσιν ἦλοις ἔχων, ὥσπερ τῶν ἄλλων στρατιωτῶν ἕκαστος, καὶ κατὰ λιθοστρώτου τρέχων ὑπολισθάνει, πεσὼν δ’ ὑπτιος μετὰ μεγίστου τῆς πανοπλίας ἤχου...” (“wearing, like any other soldier, shoes thickly studded with sharp nails, while running across the pavement he slipped and fell on his back, with a loud clash of armour”) (Translat. H. St. J. Thackeray, Loeb Library).
According to Tac. *Hist.* 2, 88, 3, the Vitellian legionaries at Rome often “slid on slippery pavement or after a collision with somebody else” (*aut ubi lubrico viae vel occursu alicuius procidissent*), and started to rough up the locals ‘in revenge’. (I want to thank Jon Coulston for drawing my attention to this source).
11. Cp. for the roads in Roman Germany BENDER 2000, 254, Fig. 210, 256, Fig. 212, and esp. 260.
12. This loss of shape was caused by the mediocre quality of the leather, not by a lack of greasing. Both pairs had regularly been treated with a generous amount of neatsfoot oil. The 2.0 mm leather had to be used because the stock of better quality leather had been exhausted.
13. During the march the weather was usually fine and dry - with the exception of heavy showers on August 20th and 21st (Neuburg to Rain; Rain to Meitingen over Mertingen), August 29th (Murnau to Parthenkirchen), and September 4th (Matrei/Brenner Pass to Gossensass).
14. Personal communication by C. van DRIEL-MURRAY, and cp. *Leatherwork in the Roman Army*, 8-9, esp. Fig. 14.

15. *Tab. Vind.* III 601 lists only nails as such (unknown number) plus pork-fat (for greasing shoes?). According to *Tab. Vind.* III 604, a certain Taurinus bought 350 *clavi caligares*, which would have been within the limits of making one pair of shoes. However, the same account also lists 25 nails in *calciamenti Tetrici*, 20 nails in *galliculis* of an anonymous, and 30 nails in *campagonibus Prudenti*. *Tab. Vind.* III 605 lists 12 nails in *galliculis Lucani*, 8 nails in *galliculis Taurini*, 11 nails in *galliculis Auentini*, and another 11 nails for an unspecified type of footwear of an anonymous. It has been suggested that Taurinus was a cobbler who bought a large number of nails with which to repair the footwear of other persons, cp. BOWMAN – THOMAS 2003, 65-67 (based on a suggestion from Carol van DRIEL-MURRAY). The experiences gained during trans Alpes fit neatly into this theory. During the march, the maximum number of nails replaced on one shoe during individual repairs was 8. The usual number was lower, between 2 - 5. However, only almost completely destroyed nails were replaced during trans Alpes in order to save the stock of replacement nails. When the author thoroughly replaced most of the worn down nails of his own boots early in 2005, the total number came to nearly 40! Later repairs have reached similar numbers (ca. 15 - 35 new hobnails per pair), numbers which coincide with those mentioned in the Vindolanda tablets.
16. This method was also used by the Junkelmann group in 1985 (personal comment by Dr. M. Junkelmann), although the method of "Umsetzung" (change of position) of worn out nails, cp. JUNKELMANN 2003, 158 and pl. 61a, is not completely clear.
17. Replacing several nails solved the problem.
18. The excavations at Valkenburg have produced a number of shoe soles where nails were later added in new positions, cf. HOEVENBURG 1993, 279, Fig. 25 (one with a three hole spot!), and 280, fig. 26. One sole shows a whole line of larger nails, cf. HOEVENBURG 1993, 282, Fig. 28, which were thought to have been placed in already existing holes, but according to Carol van DRIEL-MURRAY (personal comment), they had been part of the original pattern as a deliberate reinforcement, cf. also HOEVENBURG 1993, 279, Figs. 720, 751 and 771.
19. M. Altmann never exchanged a day of marching for a day of camp duty and used modern footwear for only three days. He is likely to have covered more than 500 km with his "Ramshaw" boots. He also tried to protect his boots by walking on grass strips whenever possible.
20. On the other hand, the boots of the two "aggressive" walkers among the legionaries had a slightly more spacious pattern with a less even distribution of pressure. Nevertheless, the trend was clearly visible.
21. Please note also that for the "legionaries", the losses of the 3rd week are only lower than the losses of the 2nd week, because the 3rd week had been only a "half week" (three to four days). Otherwise they might have been even higher than during the 2nd week. Furthermore, a few days have to be added for breaking in the boots.
22. The distances are based on the relatively reliable calculation by Mr. R. Altmann, but should still be handled with care (an inaccuracy of +/- a dozen km or even more is still possible).
23. *Tac. Hist.* 3, 50: *clavarium (donativi nomen est)*; cp. also ThLL III, 1297: *pecunia militibus pro clavis vel calceis data*. The *clavarium's* character as a *donativum* suggests it was an irregular payment. PGenLat 1 (see below) does not mention it. According to Carol van DRIEL-MURRAY (personal comment), the *clavarium* was rather some kind of 'tip' or an extra payment, which was no longer connected with real nail purchases.
24. PGenLat. 1 (81 AD): two soldiers, probably auxiliaries, cp. SPEIDEL 1973, 145, each receive thrice 247 ½ drachmas within a period of one year. A sum of 12 drachmas (*3 denarii*) is deducted from each of these three payments for *caligas fascias* (boots and socks). A distribution of new footwear thrice a year is thus likely, cp. DRIEL-MURRAY 2001 340 + 362, although it is still possible that the soldiers were ALWAYS deducted money even if they did not need or even did not receive new boots, so the state could save on money (personal comment Prof. P. HERZ).
25. For the fourth *stipendium* introduced by Domitian but abolished after his death, cp. SPEIDEL 1973, 141; WIERSCHOWSKI 1984, 2. The highly eroded PGenLat. 4 (ca. 84 AD?) shows a deduction of 16 drachmas (*4 denarii*) for [*caligas fascia*]s from the 297 drachmas a legionary received with each payment, cp. SPEIDEL 1973, 141f. WIERSCHOWSKI 1984, 286, n. 919, postulates a deduction also from the fourth *stipendium*, but since the last lines are almost completely destroyed, we do not know if soldiers suddenly received four pairs of *caligae* each year, unless the abovementioned sums are theoretical anyway. Cp. for both papyri also FINK 1971, 243-253.
26. The different sums *3 denarii* for auxiliaries in 81 AD vs. *4 denarii* for a legionary in 84 AD - see the two previous footnotes) are explained by WIERSCHOWSKI, *ibid.*, with raised deductions in the wake of the 4th *stipendium*. However, it is more likely that legionaries simply had to pay more than auxiliaries, since they also earned more (personal comment Prof. P. HERZ), or the difference of 1 *denarius* does reflect a difference in quality. This would lead to the conclusion of legionaries having been provided with markedly better footwear than auxiliaries. Up to now, there has been no archaeological evidence from Europe for this theory.
27. DRIEL-MURRAY 1985, 56-58. *Sutores* are not mentioned in the famous list of legionary specialists (*immunes*) in the Digest of Justinian (*Dig.* 50, 6, 7).
28. Cp. FUENTES 1991, 89.
29. Hunt's *pridianum* (= BMP 2851, 100-105 AD, cp. FINK 1971, 217-227) does not mention footwear, but an entry about a

shipment of clothes from Gaul (*in gallia uestitum*) to *Coh I Hispanorum Veterana* at the lower Danube (!) is a clear example of how extended Roman supply lines could be.

30. One of the Vindonissa tablets, cp. SPEIDEL 1996, 170f., contains the following order: *soleas clavatas fac mittas nobis ut abeamus. Cum veniemus...* ("Send us nailed footwear so that we can march off! Once we arrive..."). Cp. also van DRIEL-MURRAY 1985, 54: "The text, which is probably pre-Claudian in date, implies ready stores in the fortress of the shoes we know [...] to have been made there. Campaigning forces may have sent in their requests for supplies when necessary."
31. On the other hand, it is unlikely that these conditions were as widespread in antiquity as now, since walking barefoot or with soft carbatina-type shoes must have stimulated foot development (pers. comment Carol van DRIEL-MURRAY).
32. BIRLEY 1987, 159-160. According to the *Historia Augusta*, Marc. 21, 6-8, even slaves, gladiators and bandits were taken.

BIBLIOGRAPHY

- BENDER 2000: H. Bender, Roemischer Strassen- und Reiseverkehr, L. WAMSER, (ed.), *Die Roemer zwischen Alpen und Nordmeer: Zivilisatorisches Erbe einer europaischen Militärmacht*, Munich, 255-263 (reprint 2005)
- BIRLEY 1987: A. Birley, *Marcus Aurelius. A biography*, London, 1987
- BOWMAN – THOMAS (Eds.), 2003: A. K. Bowman – J. D. Thomas, *The Vindolanda Writing-Tablets* (Tabulae Vindolandenses) Vol. III, London, 2003
- BUSCH 1965: A.L. Busch, Die römerzeitlichen Schuh- und Lederfunde der Kastele Saalburg, Zugmantel und Kleiner Feldberg. *Saalburg-Jahrbuch* 22, 1965, 158-210
- DRIEL-MURRAY 1985: C van Driel-Murray, The production and supply of military leatherwork in the first and second centuries AD.; a review of the archaeological evidence, M. BISHOP, (ed), *The Production and Distribution of Roman Military Equipment; Proceedings of the Second Roman Military Equipment Research Seminar BAR 275*, Oxford, 1985, 43-81
- DRIEL-MURRAY 1986a: C van Driel-Murray, Leatherwork in the Roman army, *Exercitus* 2/2, 1986, 7-11 (reprint).
- DRIEL-MURRAY 1986b: C van Driel-Murray, Shoes in Perspective, *Studien zu den Militaergrenzen Roms III. 13. Internationaler Limeskongress. Aalen 1983 Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Württemberg* 20, 1986, Stuttgart, 139-145
- DRIEL-MURRAY 1993: C van Driel-Murray, The Leatherwork, R. BIRLEY, (ed.), *Vindolanda Research Reports vol. III. The Early Wooden Forts*, Hexham, 1993, 1-75
- DRIEL-MURRAY 1999: C van Driel-Murray, Die römischen Lederfunde. In: Landesdenkmalamt Baden-Wuerttemberg, Das Ostkastell von Welzheim, Rems-Murr-Kreis *Forschungen und Berichte zur Vor- und Frühgeschichte in Baden-Wuerttemberg* 42, Stuttgart, 1999, 11-114
- DRIEL-MURRAY 2001: C van Driel-Murray, Footwear in the North-Western Provinces of the Roman Empire, O. GOUBITZ – C. van DRIEL-MURRAY – W. Groenman van WAATERINGE, *Stepping through time. Archaeological footwear from prehistoric times until 1800*, Zwolle, 337-376
- FINK 1971: R. O. Fink, Roman military records on papyrus, *Philological Monographs of the American Philological Association* 26, Cleveland, 1971
- FUENTES 1991: M. Fuentes, The mule of a soldier, *JRMES* 2, 1991, 65-99
- HOEVENBURG 1993: J. Hoevenburg, Leather Artefacts, *The Valkenburg Excavations 1985-1988, Introduction and Detail Studies*, Amersfoort, 1993, 217-338
- JAMES 2004: S. James, *The Excavations at Dura-Europos conducted by Yale University and the French Academy of Inscriptions and Letters 1928 to 1937. Final Report VII: The Arms and Armour and other Military Equipment*, London, 2004
- JUNKELMANN 2003: M. Junkelmann, *Die Legionen des Augustus. Der römische Soldat im archäologischen Experiment*, Kulturgeschichte der Antiken Welt 33, Mainz, 2003
- SPEIDEL 1973: M. Speidel, The Pay of the Auxilia, *JRS*, 63, 1973 141-147
- SPEIDEL 1996: M. A. Speidel, Die römischen Schreiftafeln von Vindonissa: lateinische Texte des Militärischen Alltags und ihre geschichtliche Bedeutung, *Veröffentlichungen der Gesellschaft pro Vindonissa* 12, Brugg, 1996
- WIERSCHOWSKI 1984: L. Wierschowski, Heer und Wirtschaft. Das römische Heer der Prinzipatszeit als Wirtschaftsfaktor, Bonn H. SCHMITT, et al. Eds., *Habelts Dissertationsdrucke. Reihe Alte Geschichte* 20, 1984



Making the Ramshaw Boot, an exercise in experimental archaeology

Marquita Volken

The Roman re-enactment group LEG III ITALICA selected the Ramshaw type boot as the most suitable footwear for the **2004 Trans Alp** journey¹. The success of the trek depended on the will and determination of the men involved, but the shoes had to be equally as tough. The motivation for making the Ramshaw boot was to see how an accurate copy would perform on a long march, thus giving an insight on how the original Roman boots performed. This meant that the reconstructions had to be the most perfect copies of Roman shoes possible. The boots also had to be cost efficient.

This ruled out any of the archaeological models that had time-consuming reinforcement linings sewn in. Among the archaeological examples, some are made of thicker calf or cow, but thinner goat leather was also used with linings sewn in for reinforcement². The boots would have to be made from thicker leathers that wouldn't need linings. To make an accurate replica shoe, all personal desires of 'improving' ancient designs must be avoided as well as compromises concerning leather quality, working techniques and tools. In making an accurate reconstruction of an archaeological shoe, the same



Fig. 1: Replicas of Roman tools: nailing anvil after the Saalburg example, awls after the finds from Vitudurum, shoemaker's hammer after the example from Lousanna-Vidy. (Photo F. Himmler, replicas made by J.-M. Coronat, Musée du Fer, Vallorbe CH)

tools and techniques must be used, though in some instances modern tools are acceptable when they do not differ in function and final results. Concessions such as modern contact glue and machine stitching were not even considered. My experience has shown that modern 'time saving' methods and adaptations from modern shoemaking techniques do not save time nor improve the reconstruction process, but merely create a clumsy hybrid that is neither a modern shoe nor a reconstruction of an ancient shoe.

The pattern was based on one of the Ramshaw boots found at the Roman camp of Saalburg³. Taking a pattern from a few fragments of worn and distorted archaeological leather finds in order to make a completely new pair of shoes is not a matter of simply copying the shapes and hoping the shoe will turn out right. A shoe is a three dimensional object yet the pattern has to be two-dimensional in order to be cut from the leather. When a shoe is made, flat leather is forced into a three-dimensional shape. After a shoe has been worn, the leather has formed to the wearer's foot. When a shoe is thrown away and buried in a rubbish tip, further distortions and material loss takes place. Roughly two thousand years later, when the shoe's fragments come to light during an archaeological excavation, it is often re-interpreted as a flat object in a registration drawing⁴. The drawing is the best solution for preserving the information contained in the fragment, but it is not a cutting pattern for making a shoe. The cutting pattern has to be rediscovered by reducing the distortions and finding the original elegance of the design lines. Superficial wear marks and material loss on the archaeological leather fragments are often a hindrance rather than a help for reconstructing the original pattern.

The greatest obstacle to making accurate Roman shoes is the nails. The nails must be of soft iron with a cone shaped

head and a square sectioned, pointed shaft. This kind of nail has not been produced since the beginning of the last century. The available modern nails are not appropriate, being cut steel wire shafts with small heads⁵. At the time that discussions were taking place about having the Ramshaw boots made for use during the trek, the American nail company was out of stock, so these modern nails could not be taken into consideration. Acceptable iron shoe nails were found among some old stock of a Swiss nail factory that had ceased production c.1950. The shafts were round but could be hand modified to a suitably square shape. The second problem is finding a modern source of the right quality of vegetable tanned leather. Fewer and fewer tanneries are producing vegetable tanned leather so obtaining leather comparable to the archaeological examples is not easy. Roman leather, as seen from the surviving archaeological leathers, was a high quality vegetable tanned cow, calf, or goat hide. Fortunately there is still one tannery in Switzerland still producing vegetable tanned leathers by traditional methods⁶. Three kinds of leather were used: 3.5 mm calf, 2.5 mm cow belly bend and 2.0 mm calf. The sole leather was 4.0 mm cow leather and the insole was 2.0 mm to 3.0 mm cow belly leather.

The first pattern I had made of this type had laces that were too short and the sole too wide⁷. After measuring to see how long the laces needed to be in order to lace the boot up, I set about making a design that allowed the longest possible laces with the smallest amount of leather waste. One solution was to loop the laces back on themselves with the lace ending at the toe (Fig. 2). The possibility that the laces made a large arc to obtain long enough laces seems improbable as it more than doubles the waste. As most surviving archaeological fragments do not have complete laces, it is difficult to check the reconstruction against the fragments. Some laces

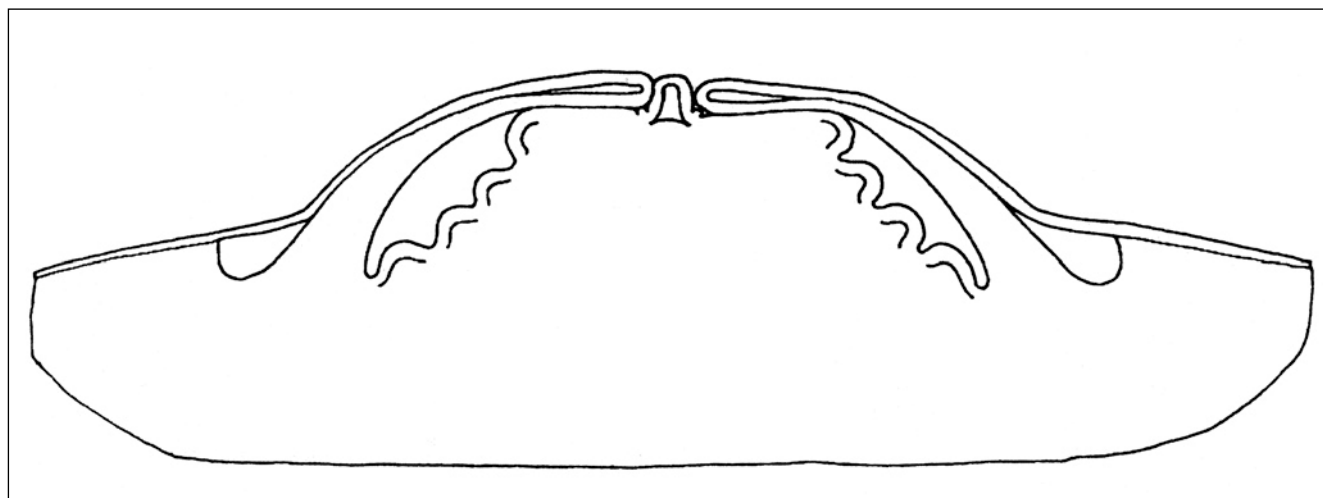


Fig. 2: Hypothetical reconstruction of the Ramshaw cutting pattern.

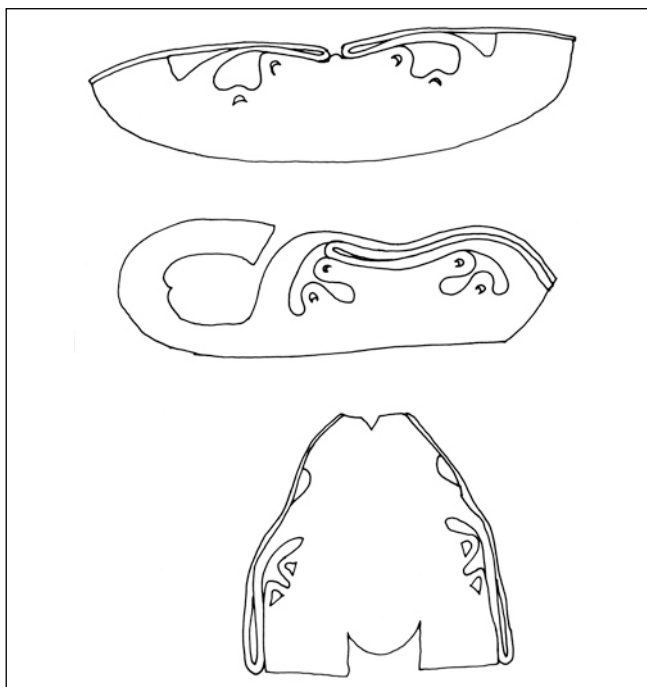


Fig. 3: Three cutting patterns for the Ramshaw type, a) Ramshaw-I pattern after the Bavay fragment, b) Ramshaw-J after DRIEL-MURRAY 2001, fig. 8, c). Ramshaw-U after HOEVENBURG 1993, N° 319. (Drawing M. Volken)

on the archaeological examples have been broken off at the same area where the reconstruction has the laces double back, an indication that the reconstructed pattern is probably correct⁸. A fragment of working scrap found at Bavay (B), cut out from a Ramshaw boot, provides an additional clue to cutting the laces⁹ (Fig. 5). This piece is the waste scrap

from between the laces and the eyelets (and was used for the reconstructed pattern of the Ramshaw-I below). Not all laces on Ramshaw models break at the spot where the laces double back as reconstructed here, but then not all models have the same cutting pattern. The Ramshaw style uses three different cutting patterns. The most common is the 'I' pattern which uses a central toe seam as the closing seam. The 'J' pattern has the closing seam on the side with one lace folded back. A carbatina type probably used the same looped back laces but arranged on both sides as would be necessary for a 'U' pattern. The cutting patterns I and J have a separate sole and insole, while a U pattern has an integral sole (Fig. 3).

The sole shapes and nailing patterns were selected from different collections of Roman shoe soles from the end of the 2nd to the beginning of the 3rd century¹⁰. The foot shapes of the members of the marching group were compared with the sole shapes until a match was found for that particular foot. Oddly enough, modern foot shapes and Roman sole shapes tended to fall into the same three categories: a wide foot with a straight toe to heel line, a narrow heel and wide forepart with a strongly broken toe to heel line, and a long and narrow foot with a straight toe to heel line (Fig. 4).

Previous experiments showed that the insole needed to be cut nearly the same size as the actual foot size, if not a little bit narrower. As the uppers are cut out of the leather in the direction of the most stretch for the width of the shoe, the upper will easily accommodate the foot. If the insole and the sole are not cut the same width or slightly smaller than the foot, then as the shoe stretches it becomes too large and baggy.

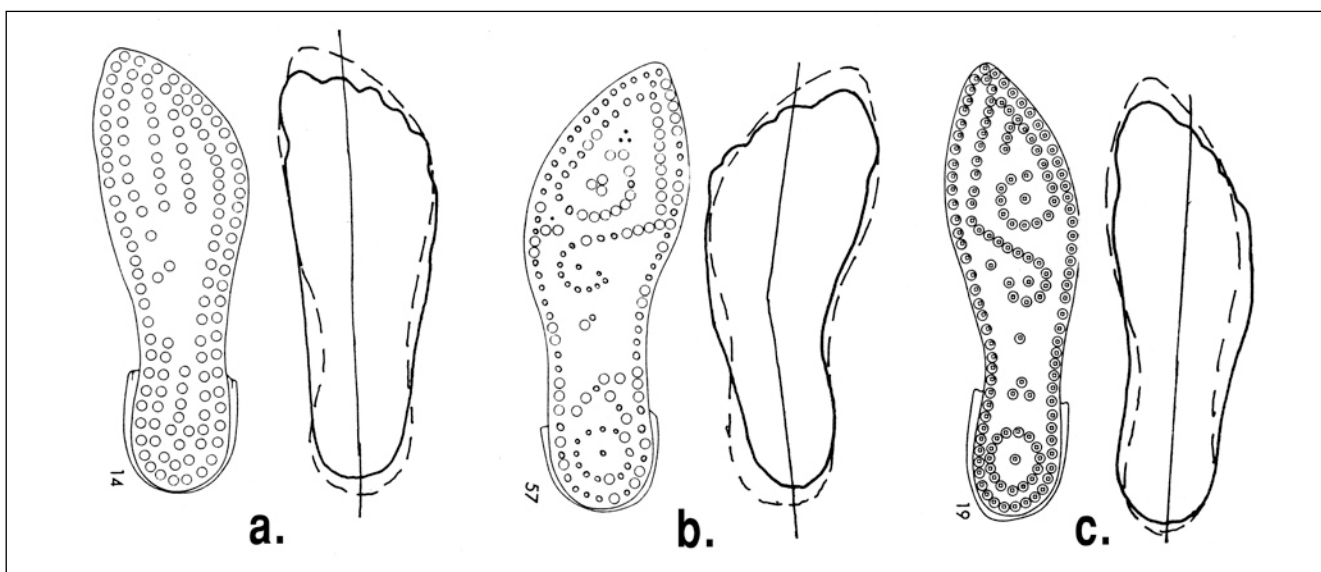


Fig. 4: The three basic foot shapes and Roman shoe soles with nailing patterns, a) straight, b) broken, c) narrow (soles after DRIEL-MURRAY – GECHTER 1983)

MAKING THE BOOTS

Initially only two pairs of boots were required. Making two pairs needed about one and a half square metres of calf leather and 60 square centimetres of sole leather. The nailing patterns used between 100 and 150 nails per shoe, so not more than 500 nails needed to be modified by hand. The paper model of the reconstructed flat cutting pattern was traced onto 3.5 mm calf leather. The half oval punch was used to mark stops and turns, then the shoe uppers were cut out. The laces were wetted and stretched straight, increasing the overall length by four to five centimetres. The damp raw edges were burnished and the bend made by the doubled back lace was minimised by rubbing. Previous experiments had shown that this operation was most successful when the turn was cut at exactly the same width as the lace. Leather has a 'sense' or direction for stretch, meaning there is less stretch

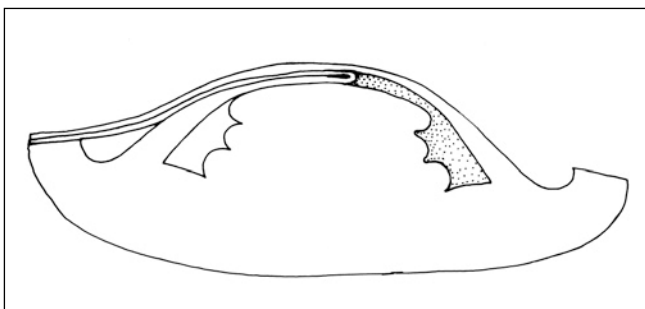


Fig. 5: *The Bavay fragment in a hypothetical cutting pattern.*

along the direction of the backbone and more stretch across from leg to leg. Cutting a strap crosswise to the direction of the backbone makes a weak strap because this is the direction that the leather stretches the most. The laces that double back take advantage of cutting the length of the laces along the direction of strength while using the turn to take advantage of the weaker direction to straighten the laces. The bend is then the area that would break first when the lace started to wear out. The scrap leather produced from cutting the upper consisted only of the small piece for the eyelets, the tear drop cut out from the front of the boot, and some small, narrow strips. The scrap from Bavay is a better solution since only one lace doubles back, making only one weak lace (Fig. 6).

The closing seam at the toe was stitched using hemp thread fixed to boar bristles, known in shoemaker parlance as waxed ends, and the holes made with an awl. The seam was rubbed and the entire shoe dampened in order to stitch it to the insole. As only two pairs were ordered, the expense and time needed to make copies of a Roman last was prohibitive, so sewing supports in the form of wooden sole shapes were cut out and the toe section thinned down. The sewing support could then be used for the right and left shoe. This type of object is not attested in the archaeological record. Two Roman wooden lasts are known as well as several pictorial representations on grave stones¹¹. To save time, the sole leather (3.5 mm compressed cowhide) was cut out with



Fig. 6: *Total scrap from one pair of Ramshaw boots (photo F. Himmler)*

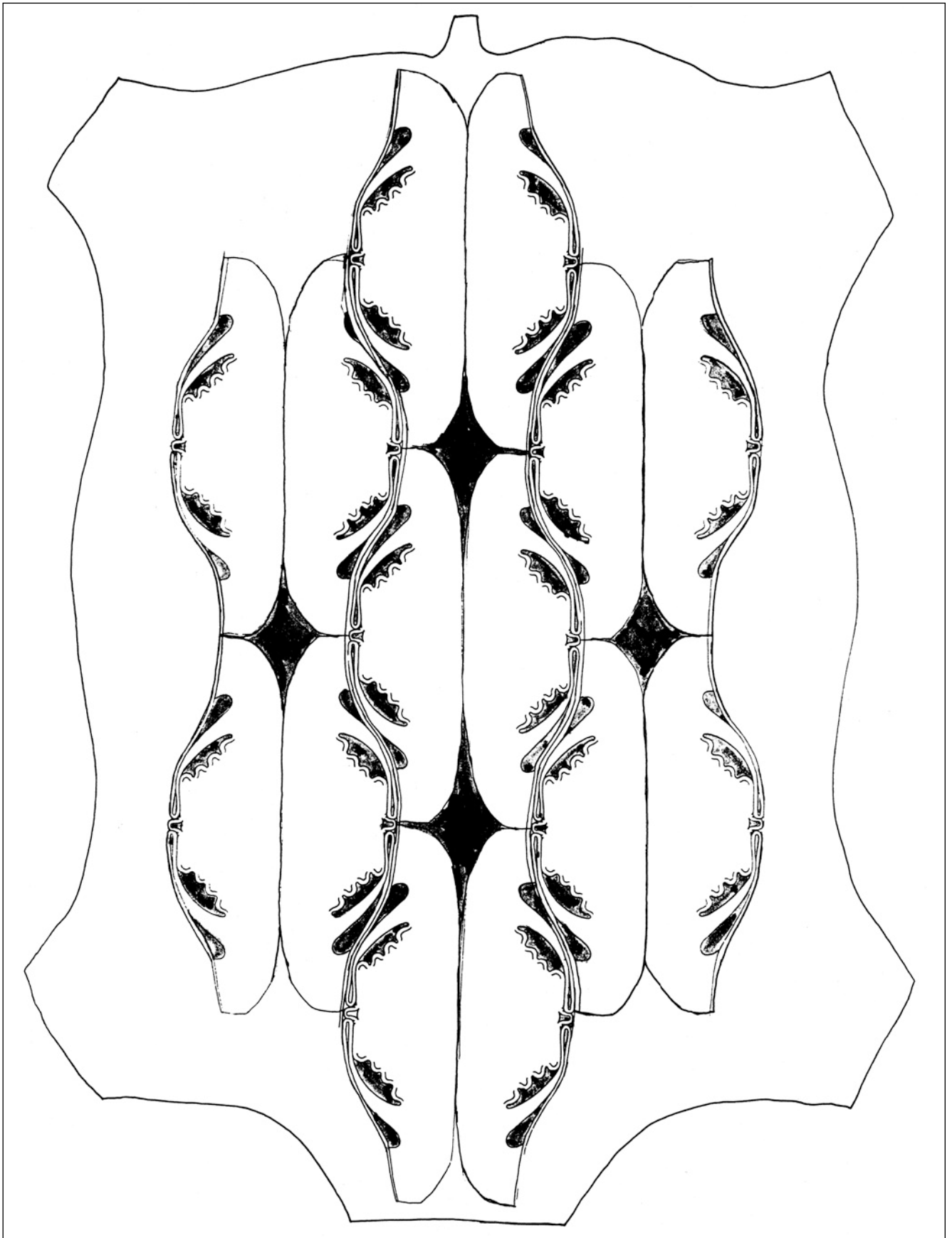


Fig. 7: Seven pairs of the Ramshaw boot uppers laid out on an entire adult cow hide. (Drawing M. Volken)

a sole cutting machine and the edges sanded down with a line finisher. These operations could have been done by hand but the end difference would not have been noticeable. The uppers were whip stitched to the insole with hemp thread, and the laminae braced with threads. No glue, especially any form of modern contact glue, was used at any stage to hold any of the pieces together.

The wooden sewing support was taken out and turned over in order to assemble the uppers and insole of the second shoe. The insole and the tread sole were dampened. Sole leather takes several hours to dampen correctly, so this was prepared ahead of time. Then the soles were nailed to the insole and uppers using a hammer and a shoe anvil. Initially the nail shafts were modified to a round profile with a thin point. This proved to make accurate nailing a miserable experience. A round shaft does not turn but flattens out at the tip, making a kind of rivet. When hammered, the iron becomes work hardened and then the whole nail shaft shifts so that the pointed conical head lays to one side. Roman nail shafts had a square profile and turned against the flat surface of the nailing anvil thus clinching the leather layers together, giving the tip of the nail shaft a characteristic 'fish hook' shape. After the nail shafts were modified with a square profile, the problem of the nail head sitting incorrectly on the leather sole's surface was solved. The nailing pattern was applied to the first sole by using a photocopy of the original sole and pricking the nailing pattern onto the damp leather. Once the first shoe had been nailed, the damp sole for the second shoe was laid grain side down onto the nailed sole and tapped so that the nailing pattern was transferred to the other shoe. Then the second shoe was nailed. Working at a careful pace and concentrating on getting the nailing pattern and nail distance correct, nailing a pair of shoes took a bit more than three hours.

Making only two pairs of shoes gives some information about the shoemaking process but doesn't offer the opportunity to really understand the realities of mass production that the Roman army must have used to equip its legions. Making two pairs of nailed boots versus mass production of Roman army shoes has the same relation as a Sunday afternoon stroll to marching hundreds of kilometres in full military gear. The opportunity to make more shoes came when more boots were ordered for the 2004 Alp march. Two more pairs were needed and then the measurements for five additional pairs arrived. After the necessary preparation of sizing patterns and making sewing forms, seven pairs of shoes were ready to be cut out. Laying out fourteen shoes is different to laying out four. The entire hide is taken into account so the placement of the upper's pattern becomes more efficient. When cutting out a

pair or two pairs of shoes, the cut edge on the remaining hide may not conform to the next type of shoe that will be cut out, resulting in excess scrap. When the entire hide is allotted for the production of one kind of shoe, the quantity of scrap is reduced. Using the Ramshaw on an entire hide created no scrap at all between the uppers, only the unusable areas along the flanks and legs and a small area between the boot's toes. Cutting out the basic form of the uppers was faster because a single cut removed two shoes at a time.

With the basic form cut out, the paper patterns served only to mark the placement of key punch holes. The centre back and the turnaround for the laces were punched out plus the opening for the front part of the foot. A compass was used to mark the laces and the edges of the eyelets. The eyelet indents were punched out. Being already familiar with the pattern allowed the cutting to go much faster and doing the seven pairs in assembly line fashion decreased the overall preparation time needed to make the boots.

The most important learning process happened during the nailing. Nailing one or two shoes is hard work, but as one will not do it all day or for many days, ideas about efficiency don't occur. Nailing shoes for several days in a row creates sufficient pain and fatigue that ideas about efficiency become important. Making the same nailing pattern over and over again reveals the logic behind the nailing order. When nailing, the first thing the sole will want to do is move out of alignment with the insole and upper. Gluing or stitching may help to hold it in place but these operations take time and don't have any support from evidence on the surviving Roman nailed soles. A single nail at the toe tip, the instep and the heel will hold it in place and takes only a few seconds. There are often isolated nails in these key places on Roman soles. Once a nail has been pounded in it is not possible to remove it, so every nail has to be correct. Nailing a row all the way around the sole would seem logical but again the sole likes to move so it is more efficient to start at the toe and nail the inner patterns first, working down towards the heel and then around the outside edge. Not only is it efficient, it is also less painful for the shoemaker. Nails already set on the left part of the sole in combination with fingers of the left hand holding the nail increase the risk of pinching and tapping one's fingers. Tapping a finger or thumb with a hammer is painful, but bloody when the finger is pinched between a pointed conical nail head and a hammer.

The accuracy of the nail placement on Roman shoe soles is not remarkable until one tries to reproduce it. Each nail head is placed exactly touching the next nail head and



Fig. 8: Nailing the sole. (Photo F. Himmler)

so on. Spending a single afternoon nailing a shoe does not allow enough practise to develop this skill, but a few days of mindless pounding and the hand/eye coordination improves. Occasionally a nail does not turn and clinch, but moves slightly sideways in the leather. Initially this is not sensed by the maker during nailing, but will show up later for the wearer when the insole compresses and the nail tip comes up out of the leather. After hearing and feeling a thousand nails clinch, the senses are sharper when something is not in order, the poorly clenched nail is immediately felt or rather heard. The sound of the nail going incorrectly through the leather is different to the sound of the nail correctly clinched against the anvil. By the time 2,000 nails have been pounded in, repetition leads to perfection of technique.

While seven pairs cannot really be considered mass production, the chance to produce more than a one off certainly leads to indications about the possibilities for producing great quantities of shoes quickly. The truth of this was revealed after finishing the seven pairs in less time per pair than the initial two pairs. At the last minute, two more pairs of boots were requested. After the experience of how relatively quickly the seven pairs were finished it



Fig. 9: The boots finished and ready to go. (Photo S. Volken)

seemed logical two final pairs would be made much faster than the initial two pairs. Much to my personal frustration, the two last pairs took as much time to make as the initial two pairs. This was the moment when I realised how much preparation time for simple things counted on an assembly line. And after all this work, the boots were not finished, two to three hours of edge polishing and greasing were still left to do on each pair. Every cut edge plus the laces should be waxed and polished with a mixture of beeswax and neat-foot oil. The leather uppers and soles also need treatment with neat-foot oil. The polishing and greasing work was left for the owners of the boots to complete.

The final count of eleven pairs of boots used about 3,000 nails or about five kilos. For the uppers five complete large calf hides, three cow belly strips, and one fourth of a large nearly adult calf hide were used. The soles used an entire croupon of 3.5 mm sole leather. Over 12 metres of hemp sewing thread was used, only four for stitching the front closing seams and the rest for bracing the uppers to the insole.

EXAMINATION OF THE WORN SHOES.

On first seeing the used soles with the worn off nails, I was amazed at how close they resembled soles from archaeological leather fragments, albeit in better condition. When making reproduction footwear, the goal is to make a new shoe. Actually wearing out the reproduction is something that falls outside of shoemaking. The repair work done on the soles by replacing worn out nails was a surprise to me, since this is part of the experience of 'wearing out' and not of making a shoe. That the nails were so easily removed from a worn shoe is something that conforms to the archaeological evidence, loose shoe nails are typically found along any Roman road. Removing already clinched nails is nearly impossible to do on a new shoe. The difficulty of some of the participants in wearing the shoes was also interesting. I had not been informed that some participants had severe orthopaedic problems nor had I thought to inquire. In hindsight, it may have been possible to select a certain nailing pattern to compensate for these problems, though selecting which nailing pattern would be appropriate could be problematic.

NOTES

1. DRIEL MURRAY 2001, 366-367.
2. Pers. comm. CAROL van DRIEL MURRAY
3. BUSCH 1965, Tafel 10, no. 199.
4. GOUBITZ 1984, 187-196.
5. The Hungarian cone head wire cut nails available from D.B. Gurney (USA) are often described as 'close enough'.
6. Gerberai Zeller, Steffisburg, Canton Bern CH.
7. Experimental model made and tested in 2000.
8. As seen on Saalburg nos. 199, 209, BUSCH 1965, and Waiblingen Fig. 2, a. DRIEL MURRAY 1989.
9. DRIEL MURRAY 2001, 341, Fig. 8.
10. DRIEL MURRAY-GECHTER 1983, Taf.: 2.14, 2.19, 3.57.
11. Rottweil: GÖPFRICH 1991, Abb. 15 and Bliesbruck: PETIT 2000, p.97-8.

BIBLIOGRAPHY

- BUSCH 1965: A. L. Busch, Die Römerzeitlichen Schuh- und Lederfunde der Kastele Saalburg, Zugmantel, und kleiner Feldberg, *Saalburg Jahrbuch* **22**, Bad Homburg, 1965
- DRIEL-MURRAY 1989: C. van Driel-Murray, Roman Footwear from Wells at Waiblingen and Walheim, *Fundberichte aus Baden-Württemberg*, Band **14**, 1989
- DRIEL-MURRAY 2001: C. van Driel-Murray, Footwear in the North-Western Provinces of the Roman Empire, *Stepping Through Time*, SPA, Zwolle, 2001, 337-376
- DRIEL-MURRAY – GECHTER 1983: C. van Driel-Murray – M. Gechter, Funde aus der Fabrica der Legio I Minervia am Bonner Berg, *Rheinische Ausgrabungen* **23**, Beiträge zur Archäologie des römischen Rheinlands IV, 1983
- GÖPFRICH 1991: J. Göpfrich, *Römische Lederfunde aus Mainz*, Deutsches Ledermuseum, Offenbach, 1991
- GOUBITZ 1984: O. Goubitz, The drawing and registration of archaeological footwear, *Studies in Conservation*, Vol. **29**, N° 4, 1984, 187-196
- PETIT 2000: J. P. Petit, Le complexe des thermes de Bliesbruck (Moselle) Blesa 3, Paris, 2000, 97-98

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