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ROMAN MILITARY EQUIPMENT FROM STOLNICENI (RÂMNICU VÂLCEA TOWN)

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Muzeul Național de Istorie a României București

Cuvinte cheie: Dacia romană, secolele II-III p.Chr., provinciile romane danubiene, Imperiul roman, armata romană

Key words: Roman Dacia, 2nd-3rd centuries AD, Roman Danubian provinces, Roman Empire, Roman Army

The 1962-1965 and 1967 trial excavations made by D. Tudor in the Roman site at Stolniceni identified a large civilian settlement and a supposed small fort¹. Then, between 1971-1992, G. Bichir and G. Bardașu unearthed a bath building².

Apart from the coins and inscriptions, most of the other small finds resulting from these researches are still unpublished. So, the publication of the military equipment found at Stolniceni has been long overdue. Yet, in the absence of recorded information on the precise findspots of the items and consequently of their contexts, I have to limit myself to typological and distribution considerations.

All the pieces are kept in Vâlcea County Museum from Râmnicu Vâlcea. Their numbering corresponds to that of the illustrations. Abbreviations: L = Length; W = Width; H = Height; D = Diameter; T = Thickness. The measurements are made in mm.

1. Pendant

Copper alloy. L 59; W 15; T 0.8; T of the knob 3. Inv. no. E 129. Excavations D. Tudor.

Lozenge-shaped pendant with an elongated narrow neck and a terminal domed knob with a flat rear face. The suspension loop which was made by twisting the neck around the top of the item is missing. Its front face has punctum decoration.

In Roman Dacia, there are six parallels, five of them undecorated: at *Drobeta* and *Buciumi* (Sălaj county) with suspension hooks simply made by

¹ Tudor 1978, p. 214-217, 270, figs. 59/1-2; Țentea *et alii* 2021, p. 61.

² Bichir, Bardașu 1983, p. 336-343; Bichir *et alii* 1992, p. 255-268; Țentea *et alii* 2021, p. 61.

neck bending; another one with a damaged suspension loop formed by twisting of the neck also at Buciumi; at *Porolissum* three examples without the upper ends of the bodies, among which one decorated with a central embossed ring³. Outside Dacia I know such pendants with twisted wire suspension loops, some of them bearing embossed or punctum decoration, in Moesia Superior at *Transdierna* and *Viminacium*, in Pannonia at *Siscia*, in Raetia at Eining, in Germania Superior at *Vindonissa* and *Aquae Helveticae* (Baden), in Britannia at Aldborough, in Syria at *Dura Europos*⁴. Besides, plain lozenge-shaped pendants with simple suspension hooks or without the upper end were found in Germania Superior at *Augusta Raurica* and *Vindonissa*, in Germania Inferior at Nijmegen, in Hispania at Herrera de Pisuerga and in Mauretania at *Volubilis*⁵.

It results that the lozenge-shaped pendants of this type with all its variants were widely diffused in the frontier provinces of the Roman Empire. They were generally dated in the 1st century AD⁶, but the Dacian pieces, together probably also with *Dura Europos* examples, prove their continuous use during the Trajanic period.

Their exact function is debatable and they were considered harness pendants or “apron” terminals, usually without an argumentation of the respective identification⁷. However, I think there are hints to consider them *apron* terminals. So, the item from *Aquae Helveticae* is decorated with a central boss and another one from *Porolissum* and four from *Siscia* with central embossed rings⁸, motifs similar with those on the belt plates dated in the second half of the 1st century AD and the beginning of the 2nd century AD⁹. Besides, the punctum decoration on the Stolniceni, Aldborough and four *Siscia* examples is

³ *Drobeta*: Tudor 1976, p. 131, no. 53, fig. 9/14; Buciumi: Chirilă *et alii* 1972, pl. 71/25, pl. 115/13; Gudea 1989, p. 648, pl. 208/25 and 668, pl. 217/34, 39.

⁴ *Transdierna*: Redžić 2013, p. 317, no. 783; *Viminacium*: Redžić 2013, p. 316, no. 781; *Siscia*: Radman-Livaja 2004, p. 91-92, nos. 250-254; Eining: Gschwind 2004, p. 310, C 64, pl. 24; *Vindonissa*: Unz, Deschler-Erb 1997, p. 40, no. 1425; *Aquae Helveticae*: Unz 1971, p. 50, no. 52; Aldborough: Bishop 1996, p. 74, no. 458; *Dura Europos*: James 2004, p. 91, nos. 234-235.

⁵ *Augusta Raurica*: Deschler-Erb 1999, p. 165, nos. 519-521; *Vindonissa*: Unz, Deschler-Erb 1997, p. 40, nos. 1422-1424, 1426, 1432-1434; Nijmegen: van der Veen 2020, fig. 67/3-5; Herrera de Pisuerga: Aurrecoechea Fernández 1998, p. 40, no. 12, fig. 3/8; *Volubilis*: Boube-Piccot 1994, p. 94, nos. 141-142.

⁶ Bishop 1996, p. 74, no. 458.

⁷ Harness pendants: Unz 1971, p. 50, no. 52; Unz, Deschler-Erb 1997, p. 40; van der Veen 2020, fig. 67. *Apron* terminals: Aurrecoechea Fernández 1998, p. 40; Boube-Piccot 1994, p. 94, no. 141 identified after the tombstone of Annaius Daverzus; Redžić 2013, p. 316. Harness pendants or *apron* terminals: Radman-Livaja 2004, p. 91-92; James 2004, p. 91. Only pendants: Bishop 1996, p. 74, no. 458.

⁸ Unz 1971, p. 50, no. 52 *Aquae Helveticae*; Gudea 1989, p. 648, pl. 217/39 *Porolissum*; Radman-Livaja 2004, nos. 250, 252-254 *Siscia*.

⁹ Bishop, Coulston 2006, p. 107, 2nd half of the 1st century AD; Étienne *et alii* 2002-2003, p. 77, pl. 10/Br. 19-21 the Trajanic layer from *Ulpia Traiana Sarmizegetusa*.

common on the lunate „apron” terminals with small secondary teardrop-shaped pendants found in some Flavian and Trajanic sites with military connections¹⁰. And, even if the sculptural representations of the „apron” terminals are not very specific¹¹, the contemporaneity of the „apron” and the lozenge-shaped pendants seems significant for their association.

2. Central bar of a belt plate

Copper alloy. L 38; W 6; T 1. Excavations G. Bichir.

Baluster-moulded bar with flat rear face. The piece cast apart was originally welded into two small rectangular slots on the underside of one narrow rectangular belt plate¹².

Parallels are met in Dacia at Lechința de Mureș (Mureș county) and *Apulum*, in Moesia Inferior at *Tomis* and *Nicopolis ad Istrum*, in Moesia Superior at *Viminacium* and in Požarevac Museum, in Pannonia Superior at *Gerulata* and in Raetia at Straubing, Eining-Unterfeld and Buch¹³. Among them, the Buch plate is dated after AD 150 when the fort was built and the detached bar from Eining-Unterfeld between AD 171/172-179, the duration of the fortress of *legio III Italica*¹⁴. One can also assume that many other narrow rectangular belt plates with central aperture and small rectangular slots on the underside were recovered without the initially welded bars¹⁵. However, as the undersides of these fittings are usually not illustrated, it is difficult to identify such examples in the published evidence. Besides, five baluster-moulded bars of different shapes and with one rivet hole at either end of the long axis found in

¹⁰ E. g. Ortisi 2015, p. 34-35 *Pompeii*; Bishop 1992, p. 97, fig. 16/3, 5, 6-7 Darmstadt, Wroxeter, Tekija, Caerleon; Aurrecoechea Fernández 1998, p. 37, nos. 1-2, fig. 1/1-2 and p. 40, no. 4, fig. 2/3 Alcanazar, p. 40, no. 7, fig. 3/1 Teba (Málaga), p. 40, no. 11, fig. 3/7 Herrera de Pisuerga; Étienne *et alii* 2002-2003, p. 77-78, pls. 10-11/Br. 23-24, 26, 50 *Ulpia Traiana Sarmizegetusa*.

¹¹ Bishop 1992, figs. 1-7.

¹² Petculescu 1995, p. 111, 134-136, pl. 7 the Lechința de Mureș belt fittings and the discussion of this variant of belts including the Stolniceni bar among parallels.

¹³ Lechința de Mureș: Petculescu 1995, p. 110-112, 134-137, pl. 7 one set of belt fittings; *Apulum*: Ciugudean 1997, p. 685-689 one belt set; Bolog 2017, p. 27, M 66, nos. 3-4, 9 an incomplete belt set made of one plate and two detached bars; Petculescu 1992, p. 110, note 65 and Ciugudean 2012, p. 113, pl. 3/3-4 two detached bars; *Tomis*: Petculescu 1998, p. 154, fig. 1/2 grave no. 2 a belt set; *Nicopolis ad Istrum*: Gencheva 2009, fig. 5/8 a belt plate; *Viminacium*: Redžić 2013, p. 199-200, nos. 443b, 446b, d, e two incomplete belt sets; Požarevac Museum: Redžić 2013, p. 199, no. 145 a belt plate; *Gerulata*: Krecović 1994, p. 217, fig. 5/2 a belt plate; Straubing: Walke 1965, p. 149, pl. 99/16 a detached bar; Eining-Unterfeld: Jütting 1995, p. 202, no. 117 a detached bar; Buch: Oldenstein 1976, no. 832 a belt plate.

¹⁴ Schönberger 1985, p. 485, Buch; Jütting 1995, p. 195 Eining-Unterfeld.

¹⁵ Petculescu 1995, p. 111, note 69.

Britannia at Piercebridge¹⁶ represent a distinct variant of this type of fittings or even belt stiffeners.

From above, it results that the belt plates with baluster-moulded bars are a variant of the narrow belt plates diffused in the Danubian frontier provinces during the latter half of the 2nd century AD¹⁷. The presence of these belt fittings in the legionary fortresses and auxiliary forts and their civilian settlements or cemeteries means that they were part of the personal equipment of all kind of military units.

3. Belt plate

Copper alloy. L 60; W 20.5; T 2. Excavations G. Bichir.

Narrow rectangular openwork plate with chamfered frame and decoratively cut terminals. Its central aperture is filled with the representation of a dolphin whose mouth and tail end in a trefoil and ivy leaf motifs respectively. Toward the ends of the long axis there are two copper rivets with circular heads and square cross-sectioned rods protruding 2 mm from the underside.

Almost identical belt plates were found in Roman Dacia at *Apulum*, *Sânpaul* (Cluj county) in the territory of *Napoca* town and at Buciumi (Sălaj county) and in *Barbaricum* at Mătăsar (Dâmbovița county), about 50 km away from the Dacian *limes*¹⁸. There are also openwork pointed oval belt plates ending in a volute, decorated with a highly stylized dolphin inside the frame at: Chersonesos, Eining, Langenau-Göttingen, *Dura-Europos* and South Shields¹⁹. However, as both the shapes of these belt plates and the representations of the dolphins are different from Stolniceni piece and its parallels, I don't consider them in this context. Besides, there are small dolphin shaped mounts distinct from the belt plates decorated with dolphin motifs²⁰.

The rectangular plates decorated with dolphin motifs represent a variant of the type of the rectangular openwork belt plates attested only in Dacia so far. And as all known examples are virtually identical, it means that they were manufactured within a short period of time, in or near a center with military connections, perhaps even at *Apulum*, the base of *legio XIII Gemina*. This

¹⁶ Walton 2021, p. 90, fig. 6/7F.

¹⁷ Petculescu 1995, p. 111.

¹⁸ *Apulum*: Ota 2011, p. 104, no. 186; *Sânpaul*: Cupcea *et alii* 2019, p. 156-157, pl. 25/7; Buciumi: unpublished; Mătăsar: Petculescu 1999, p. 896, no. 9, pl. 1.

¹⁹ Chersonesos: Kostromichyov 2011, p. 135-136, no. 46, fig. 27/2; Eining: Gschwind 2004, p. 329, no. C381, pl. 46; Langenau-Göttingen: Reim 1978, p. 71, fig. 39; *Dura-Europos*: James 2004, p. 79, no. 80, fig. 38; South Shields: Allason-Jones, Miket 1984, p. 225, no. 3.773.

²⁰ E. g. *Porolissum*: Gudea 1989, p. 653, pl. 211/1; *Viminacium*: Mrdić, Raičković 2013, p. 119, G1-58, fig. 9/3; Jütting 1995, p. 205, no. 184 Eining-Unterfeld; Walke 1965, pl. 99/18 Straubing.

variant, together with other similarly shaped but differently decorated openwork belt plates was fashionable in the second half of the 2nd century AD²¹.

4. Belt mount

Copper alloy. L 38.5; W 30.5; T 4; L of the rivets 8. Excavations G. Bichir.

Mount made of a chamfered flat bar with an outward-arching central part and a semicircular expansion at one end and a transversal rectangular bar at the other. It was attached to the leather by three rivets protruding 2 mm from the underside and provided with rectangular washers, placed on the semicircular expansion and near the extremities of the transversal bar.

In Dacia, there is only one published example of this mount type at Răcari (Dolj county) ending in a transversal rectangular plate with only one central rivet hole²². I know similar items to the Răcari piece in Moesia Superior at *Viminacium*, Stari Kostolac, *Singidunum*, Buđanovci, Golubac and at an unknown findspot, in Pannonia Inferior at *Siscia* and *Teutoburgium*, in Pannonia Superior at *Carnuntum* and Potzneusiedl, in Noricum at *Lauriacum*, in Raetia at Regensburg and Eining, in Germania Inferior at Kalkar²³. Besides, one moulded piece ending in a transversal bar was discovered at Weissenburg²⁴. In *Barbaricum*, in the territory between the Pannonia Inferior, Moesia Superior and Dacia provinces, at Orgovány was found a mount with transversal plate and at Tiszafüred three other with transversal bars²⁵.

The association in a child grave from *Viminacium* of three such mounts to an oval buckle with rectangular attachment loop and a hinged teardrop strap terminal is straightforward evidence of their identification as belt fittings²⁶. This type of mounts was dated c. AD 150-260²⁷ which is in agreement with the chronology of the *Viminacium* set made of fittings usual in the latter part of the 2nd century AD and of the inlaid iron examples from *Siscia* and Regensburg

²¹ Petculescu 1995, p. 896, 900.

²² Tudor 1965, fig. 8/6; Bondoc, Gudea 2009, p. 236, no. 753.

²³ *Viminacium*: Zotović, Jordović 1990, p. 90, T 116, 2-3 one incomplete belt set; Redžić 2013, p. 271, no. 681, p. 273, no. 688; Stari Kostolac: Redžić 2013, p. 271-272, no. 682; *Singidunum*: Crnobrnja, Krnić 1997, p. 288, nos. 486-487; Buđanovci: Redžić 2013, p. 272, no. 684; Golubac: Redžić 2013, p. 272, no. 686; Unknown findspot: Redžić p. 272, no. 685; *Siscia*: Radman-Livaja 2002, p. 94, 281-285, the last four mounts made of iron; *Teutoburgium*: Radman-Livaja 2005, p. 942, 18-19; *Carnuntum*: Kladnik, Kladnik 1993, p. 749, fig. 670 associated with an oval buckle; Kladnik, Kladnik 1993a, p. 751, fig. 710; Potzneusiedl: Kropf 1993, p. 726, fig. 540; *Lauriacum*: Wieser 1999, p. 72, Kat. nos. 195-196, pl. 44; Regensburg: von Schnurbein 1977, p. 93-94, no. 8 iron mount; Eining: Gschwind 2004, p. 343, no. C 599, pl. 56; Kalkar: Steiner 1911, p. 107, no. 108, fig. 16.

²⁴ Oldenstein 1976, p. 270, no. 869, pl. 66.

²⁵ Istvánovits, Kulcsar 1994, p. 410, fig. 4/2 Orgovány, fig. 4/4-6 Tiszafüred.

²⁶ Zotović, Jordović 1990, p. 90, T 116.

²⁷ von Schnurbein 1997, p. 94.

dating more probably during the 3rd century AD when this decoration is met on some sword scabbard accessories. Also the 30.5 mm wide piece from Stolniceni was in use after the Marcomannic Wars when the broad belts were fashionable. Besides, in a grave from *Emona* two such mounts were found together with 4th century AD belt fittings but they were thought, with good reasons, to have been obsolete grave goods²⁸.

The items from Stolniceni, *Teutoburgium*, Weissenburg and Tiszafüred represent a variant of this mount type characterized by an ending bar instead of the common plate. However, as the flat Stolniceni piece is about 5 mm wider than the moulded items from Weissenburg and Tiszafüred, it means that it was attached to a broader and consequently later belt and was probably manufactured in a different workshop than those examples.

Thus, it results that between c. AD 150-260 this type of belt mounts was distributed mainly in the Danubian provinces, the isolated item at Kalkar resulting from the intense military traffic along the frontiers during the 3rd century crisis.

5. Belt mount

Copper alloy. L 40; L without the suspension loop 29; W 24.5; T 2-5; L of the rivets 6. Excavations G. Bichir.

Openwork mount of curvilinear design ending in the upper part in two diverging horse heads and in the lower part in a semicircular suspension loop delimited to the body of the item by two horizontal ribs. It has two fixing rivets among which the upper one of square cross-section, placed towards the ends of its long axis.

In Roman Dacia I know close parallels of no. 5: at *Porolissum*, *Potaissa* fortress, in the former Botár collection made of items mostly originating in *Potaissa*, in Transylvania with unknown findspot and in the former Pappasoglu Collection largely consisting of objects from Oltenia region²⁹. Also such mounts were discovered in Moesia Inferior at *Histria* and *Chersonesos*, in Moesia Superior at *Viminacium* and in Mauretania Tingitana at *Volubilis*³⁰. In *Barbaricum*, beyond the Dacian limes two other similar pieces were found at Mătăsar (Dâmbovița county) and at Poieniști (Vaslui county), the latter one in

²⁸ Petru 1972, pl. 17, grave 130/32; von Schnurbein 1997, p. 94.

²⁹ *Porolissum*: Gudea 1989, p. 654, pl. 211/22; *Potaissa*: Unpublished, excavations 1990 by M. Bărbulescu; Botár Collection: Unpublished, photograph provided by M. Bărbulescu. Now in the National History Museum of Transylvania from Cluj-Napoca; Transylvania: Petculescu 2006, p. 147, no. 126; Pappasoglu Collection: Unpublished. Now in the National Museum of Antiquities from Bucharest.

³⁰ *Histria*: Suceveanu 1982, p. 128, pl. 25/11; *Chersonesos*: Kostromichyov 2011, p. 137, no. 58, fig. 27/14; *Viminacium*: Redžić 2013, p. 275, no. 693, pl. 62; *Volubilis*: Boube-Piccot 1994, p. 81, no. 100, pl. 11.

a 4th century AD inhumation grave where it was an obsolete item re-used as a pendant³¹. Besides, a piece of similar shape but without openwork decoration and so heavily stylized that the horse head motifs are barely recognizable comes from Pfaffenhofen in Raetia³², representing a distinct variant of this type probably manufactured in a Raetian workshop.

The *Potaissa* item dates c. AD 170-270, the duration of the fortress itself. However, as the mounts from Transylvania, *Volubilis* and *Potaissa* were fixed on narrow belts of only 20-23 mm wide, it seems that these items could have been used in the latter part of the 2nd century AD. On the contrary, the Stolniceni piece, of crude work and being an accessory of a broader belt of about 30 mm wide, was a later example of this type of fittings.

In conclusion, these mounts were fashionable in the Middle - and Lower Danubian provinces in the period of time from c. AD 150 to 260.

6. Belt mount

Copper alloy. L 38; L without the suspension loop 26; W 22; T 1.5-4. Excavations G. Bichir.

Openwork mount of curvilinear design ending in a semicircular suspension loop delimited to the body of the item by two horizontal ribs. Above the ribs are two lotus bud pierced motifs. Two rivet holes are placed toward the ends of its long axis.

I know an almost identical piece at *Romula* and a similar one but somewhat differently decorated at Gârla Mare (Mehedinți conty)³³. Also, the surviving lower part of an openwork mount with the characteristic horizontal ribs and semicircular loop from Kostolac in Moesia Superior seems to have been a fragment of a similar item with slightly different decoration³⁴.

As there are no available stratigraphical data on any of these fittings, one has to rely on the chronology of the mounts decorated with horse head motifs which represent the main variant of the openwork belt mounts with horizontal ribs and suspension loops and one can presume that they were used between the middle of the 2nd and the middle of the 3rd centuries AD. However, the few existing Dacian pieces of this subvariant of such kind of mounts and their diffusion in a small area hint they were manufactured in a short period of time, perhaps around the end of the 2nd century AD, and in only one workshop probably located in the southern part of Dacia Inferior.

³¹ Mătășaru: Petculescu 1999, p. 896, no. 11, pl. 1; Poieniști: Petculescu 1999, p. 898, no. 27, pl. 3.

³² Weber 2007, p. 208, M8, fig. 11.

³³ *Romula*: Amon 2004, p. 250, no. 27, pl. 31/2; Gârla Mare: Stângă 2005, p. 67, no. 1, pl. 35/20.

³⁴ Redžić 2013, p. 276, no. 695, pl. 62.

7. Belt mount

Copper alloy. L 27.5; W 12; T 1.5. Excavations G. Bichir.

Chamfered sub-rectangular plate with inward-arching long edges. On the rear face, at either end of the vertical axis, there is a massive fungiform stud.

In Dacia, there are mounts of the same shape and similar size at *Porolissum* (12 pieces), Gherla (two pieces), *Ulpia Traiana Sarmizegetusa* and *Romula*³⁵. Also I know such items in Moesia Superior at *Pincum* (Veliko Gradište), in Pannonia Superior at *Carnuntum* and *Vindobona*, in Raetia at Eining (two pieces), Eining-Unterfeld, Dambach and Buch, in Germania Superior at Zugmantel in Germania Inferior at *Colonia Ulpia Traiana* (Xanten), Tiel (two pieces) and Waardenburg, in Britannia at Caerleon and Strageath and in Mauretania Tingitana at *Volubilis*³⁶. Besides, many other parallels have much bigger size and/or small differences in shape. However, I didn't compile them in this context as they have the same distribution pattern as the basic type and the big ones could have been accessories of different equipment items.

That these mounts were belt accessories is attested by the association of a sub-rectangular mount with double inward-arching long edges to other fittings of a ring-buckle belt in an inhumation grave from *Viminacium* including a coin of Geta³⁷. The item from Eining-Unterfeld was deposited between AD 171/172-179 and the ones from Strageath and Xanten in the second half of the 2nd century AD and the first two third of the 3rd century AD respectively.

Consequently, these belt mounts were distributed all along the Roman Empire frontiers from the latter part of the 2nd to the first half of the 3rd century AD.

8. Pendant

Copper alloy. L 43; W 19; T 1. Excavations G. Bichir.

Sub-rectangular pendant with inward-arching long edges, ending in a trefoil expansion decorated with ring-and-dot motifs.

³⁵ *Porolissum*: Gudea 1989, p. 646-647, pl. 208/1-12; Gherla: Găzdac 1995, p. 414, nos. 92-93, fig. 11; *Ulpia Traiana Sarmizegetusa*: Cociș 1994, p. 104, no. 663, pl. 31; *Romula*: Unpublished.

³⁶ *Pincum*: Redžić 2013, p. 291, no. 727, pl. 64; *Carnuntum*: Grünewald 1981, pl. 17/23; *Vindobona*: Maspoli 2014, p. 49-50, 108, no. 94, pl. 143; Eining: Gschwind 2004, p. 344-345, nos. 617-618; Eining-Unterfeld: Jütting 1995, p. 205, no. 174, fig. 13; Dambach: Selke 2014, p. 329, no. 3343, pl. 138; Buch: Oldenstein 1976, p. 265, no. 739, pl. 59; Zugmantel: Oldenstein 1976, p. 265, no. 740, pl. 59; *Colonia Ulpia Traiana* (Xanten): Lenz 2006, p. 195, no. 745, pl. 75; Tiel: Nicolay 2007, p. 385, pl. 74/242.78-242.79; Waardenburg: Nicolay 2007, p. 385, pl. 74/269.21; Caerleon: Chapman 2005, p. 93, no. Pa 04; Strageath: Frere, Wilkes 1989, p. 146, no. 47, fig. 73; *Volubilis*: Boube-Piccot 1980, p. 175, no. 246, fig. 26.

³⁷ Redžić 2013, p. 100, no. 157a-f, pl. 20.

In Dacia, there are published four close parallels, all of them from *Porolissum*³⁸. Different variant of these pendants are met in Raetia: at Pförring a similarly shaped but much bigger example, at Weissenburg one piece with an outward-arching central part and at Eining another one with double pierced circular central part³⁹.

Even if these fittings are known only in Dacia and Raetia so far, it is quite obvious that they were diffused in all the Danubian provinces. As the ring-and-dot motifs on the military equipment became fashionable after the Marcomannic Wars⁴⁰, it means that these pendants date between c. AD 175-260. However, their rarity hints at their use on a shorter period of time during the 3rd century AD.

9. Eyeguard

Copper alloy. H 63; L 105; W 32; T 0.7-1; D (calculated) c. 130. Excavations D. Tudor. Inv. no. E 56.

Only part of the domed eyeguard survived. The fragmentary cap and brim are divided by a circular flat band decorated with two circular incisions. On the cap there is a network of square piercings. On the brim are placed four rows of differently shaped piercings: triangular on the upper one, circular on the next two and rectangular on the lower one. At the lower part of the brim there is another flat band decorated with a circular incision making the link to the, now missing, flange.

I know only three close parallels to the no. 9: two in the Ribchester hoard dated at the end of the 1st century AD and another one without known findspot from Mainz Museum dated loosely in the 1st-2nd centuries AD⁴¹. As the decorated eyeguard with differently shaped piercings from Regensburg-Kumpfmühl was almost certainly deposited between AD 171/172-179⁴² it means that at latest at the middle of the 2nd century AD, the early examples of Ribchester type were already replaced by more elaborate eyeguards. Thus, I think the Stolniceni piece was deposited in the first half of the 2nd century AD, most probably in AD 117-119, during or after the Roxolani attacks on the Northern Danubian part of Moesia Inferior.

³⁸ Gudea 1989, p. 666, pl. 217/13-16.

³⁹ Pförring: Oldenstein 1976, p. 248, no. 277, pl. 35; Weisseburg: Oldenstein 1976, p. 249, no. 282, pl. 35; Eining: Gschwind 2004, p. 343, C 597, pl. 56.

⁴⁰ Oldenstein 1976, p. 139-142.

⁴¹ Garbsch 1978, p. 58, I 2, pl. 12/3-4 Ribchester; p. 86, S 9, pl. 46/5 unknown findspot.

⁴² *Ibidem*, p. 56, G 2, pl. 11/2; Faber 1994, p. 32 the end of the *vicus* from Regensburg-Kumpfmühl.

10. Caltrop (*tribulus*)

Copper alloy. H 53; L of the spikes 25. Excavations G. Bichir.

Caltrop made of a central massive sphere and four diverging short spikes of circular cross-section, two of which with broken tips.

11. Caltrop (*tribulus*)

Copper alloy. H 71; L of the spikes 35; Excavations G. Bichir.

Caltrop made of a central polyhedron with four diverging blunted spikes of octagonal cross-section. A blow hole is on the polyhedron and the base of a spike.

By far, most of 2nd-3rd centuries AD caltrops from the Roman Empire are iron made. They were found especially in legionary fortresses but more rarely in auxiliary forts as well and even in civilian settlements located on the Danubian frontier and in Britannia⁴³. A similar situation is met in Dacia where only in a *Principia* room of the legionary fortress at *Potaissa* were discovered eight iron caltrops⁴⁴.

The bronze caltrops are much fewer and the only one assemblage of such items originates in the *Volubilis* town in Mauretania Tingitana⁴⁵. All have a central sphere but they differ one to another: no. 226 has circular cross-sectioned spikes decorated with circular ridges, no. 227 has a massive central sphere and two protuberances on each circular cross-sectioned spike, one spherical and the other one truncated, no. 228 has square cross-sectioned spikes and the fragmentary no. 229 of the same shape as no. 228 seems to have survived only as scrap metal. Despite the differences between these items, resulting from their casting by the lost wax process they were most likely manufactured in the same workshop also located at *Volubilis* and were stored in a house in order to supply the army.

Another bronze caltrop with central sphere and square-sectioned spikes was found in *Banasa* town situated in Mauretania Tingitana as well⁴⁶.

The production of the bronze caltrops in towns, at variance with the iron pieces mostly manufactured in military sites, is due to their complicate shapes requiring highly specialized craftsmen who were unavailable in the basic workshops inside the auxiliary forts.

Three other examples were published cursorily. The first one, without specification of its findspot and its illustration, was mentioned in the catalogue of the Bibliothèque Nationale from Paris, meaning it could have originated in

⁴³ Flügel 2010, p. 143-146.

⁴⁴ Fodorean 2020, p. 186, 8/1-8, pl. 62/3-4.

⁴⁵ Boube-Piccot 1994, p. 140-141, nos. 226-229, pls. 24, 86.

⁴⁶ *Ibidem*, p. 141, no. 230, pls. 24, 86.

any part of the Roman Empire⁴⁷. Another fragmentary piece was found by chance before 1913 somewhere in the territory of the Turkish Empire, perhaps at Karagatch, in the outskirts of Hadrianopolis but the supposition that it was associated with two bronze statuettes and a crossbow brooch in a funerary deposition inside a tumulus is highly unlikely⁴⁸. The illustration of the third caltrop was included in the catalogue of the Arles Museum without any further information⁴⁹. The spikes of this example, decorated in the lower part with three circular ridges and ending in a pyramidal tip are unparalleled among the other Roman caltrops and therefore it is hard to be dated. It is registered in Arles Museum without known findspot, which means it could originate everywhere, even outside Gallia Narbonensis⁵⁰.

Besides the Stolniceni pieces, another bronze caltrop was discovered in Dacia, at Răcari fort by Gr. G. Tocilescu⁵¹. The item with a small central sphere and long spikes was probably recovered from a room of the *Principia* of this fort garrisoned by a *numerus Maurorum*, which was uncovered in 1897-1898 Tocilescu's excavations⁵².

So, it seems that the standard bronze caltrops had a central sphere and differently sized, shaped and decorated spikes. Accordingly, no. 11 with central polyhedron is unparalleled so far.

The bronze caltrops were not only more expensive and difficult to manufacture than the iron examples, but also too conspicuous in the environmental conditions on the northern frontier of the Roman Empire. Since they were suitable on the desert frontiers, it looks like they were characteristic of the southern and eastern provinces and were sparsely diffused to the northern provinces during the 3rd century crisis when the military traffic was very intense.

The items from *Volubilis* and *Banasa* probably date in the period of time preceding the abandonment of the southern Mauretania Tingitana around AD 285. I think the Dacian examples date, the same as the bronze spearheads from Slăveni⁵³, in 250s to the 260s when every means were used to meet the needs of the army fighting the general Barbarian onslaught.

Discussion

Only 11 bronze items from the military equipment discovered at Stolniceni were available to me. Among them there are seven personal

⁴⁷ Babelon, Blanchet 1895, p. 668, no. 2105.

⁴⁸ Seure 1923, p. 33-34, fig. 81b.

⁴⁹ Sintès, Moutashar 1996, p. 57, fig. 36.

⁵⁰ S. Toussaint and A. Velcescu pers. comm.

⁵¹ Tudor 1965, p. 249, no. 23, fig. 8/12; Bondoc, Gudea 2009, p. 219, no. 589, pl. 104.

⁵² *Ibidem*, p. 236-237, fig. 2.

⁵³ Petculescu 1991, p. 41-42.

equipment pieces (nos. 1-7), one is probably a harness fitting (no. 8) and three are arms (nos. 9-11). Two (nos. 1, 9) date at the beginning of the 2nd century AD, other two (nos. 2-3) during the latter half of the 2nd century AD and the other seven (nos. 4-8, 10-11) from c. AD 150/175-260. This means that there was a military presence at Stolniceni throughout the entire period of time when Dacia was part of the Roman Empire.

The eyeguard (no. 9) evidences the presence during the Trajanic reign of cavalrymen among the troops concentrated in this site, belonging to the Moesia Inferior military units which included the *pedites singulares* of the provincial governor⁵⁴. On the contrary, the pendant no. 8 is not enough evidence for the stationing on the spot of a cavalry or *equitata* unit in the 3rd century AD. The other items are not characteristic only for infantry- or cavalry personal equipment and so one cannot specify if their owners were enlisted in cavalry or infantry units.

As the caltrops were usually found in the destruction or abandonment layers inside the store rooms located in fortress and forts or more rarely in the civil towns, one can suppose that nos. 10 and 11 were deposited toward the end of Dacia province.

The eyeguard (no. 9) and the caltrops (nos. 10-11) belong to types of weapons spread all over the Roman Empire. And the „apron” pendant (no. 1) is of a type widely diffused in the frontier provinces, the same as most of the 1st century AD military fittings. Yet, nos. 2-3 fashioned in the latter half of the 2nd century AD represent variants of the narrow belt plates met only in the Danubian provinces and Dacia respectively. Each belt mount used between c. AD 150/175-260 is representative of a different variant with a specific distribution area: all the frontier provinces (no. 7); the entire Danubian frontier (no. 4); Middle-and Lower Danubian provinces (no. 5); Dacia Inferior and perhaps Moesia Superior (no. 6). And the horse (?) pendant (no. 8) also belongs to a Danubian type probably fashionable only in the 3rd century AD. Consequently, already in the second half of the 2nd century AD, the Danubian provinces constitute a distinct production area of military equipment fittings. Inside this large region there are many local manufacturing centres, some of them in Roman Dacia, among which one at *Apulum* and another one probably located in the southern part of Dacia Inferior.

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⁵⁴ Tudor 1978, p. 270.

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ECHIPAMENTUL MILITAR ROMAN DE LA STOLNICENI (ORAȘUL RÂMNICU VÂLCEA)

REZUMAT

În acest articol, sunt publicate 11 piese militare de bronz descoperite de D. Tudor și G. Bichir în săpăturile dintre anii 1962-1992. Dintre acestea, trei sunt arme: o apărătoare de ochi pentru cal (nr. 9) și doi arici (nr. 10-11). Alte șapte piese reprezintă accesorii de echipament personal: un pandantiv de 'șorț' (nr. 1), două plăci înguste de centiron (nr. 2-3), patru aplice de centiron de diferite forme (nr. 4-7). În sfârșit un alt pandantiv (nr. 8) este probabil un accesoriu de harnașament.

Piese nr. 1 și 4 datează din timpul domniei lui Traian, nr. 2-3 în a doua jumătate a secolului II p.Chr., iar celelalte între c. 150/175-260 p.Chr., ceea ce înseamnă că la Stolniceni a existat o prezență militară pe întreaga perioadă a stăpânirii romane în Dacia.

Cele trei arme, pandantivul de șorț și aplica de centiron nr. 7 aparțin unor variante utilizate în întregul Imperiu roman, iar accesoriiile de echipament personal și harnașament sunt întâlnite aproape exclusiv în zona frontierei dunărene. Deci, în timp ce armamentul rămâne unitar la scara întregului Imperiu, începând cu a doua jumătate a secolului II p.Chr., o parte din echipamentul personal al soldaților din provinciile danubiene capătă trăsături distincte față de cel al soldaților din restul Imperiului.

LIST OF ILLUSTRATIONS:

Fig. 1. 1-8. Copper alloy. Scale 1:1

Fig. 2. 9-11. Copper alloy. Scale 1:2

Bibliography:

- Allason-Jones, Miket 1984 – L. Allason-Jones, R. Miket, *The Catalogue of Small Finds from South Shields Roman Fort*, Newcastle upon Tyne, 1984
Amon 2004 – L. Amon, *Armamentul și echipamentul armatei romane din Dacia sud-carpatică*, Craiova, 2004

- Aurrecoechea Fernández 1998 – J. Aurrecoechea Fernández, Apron fittings from Flavian times found in Spain, *Journal of Roman Military Equipment Studies*, 9, 1998, p. 37-41.
- Babelon, Blanchet 1895 – E. Babelon, J.-A. Blanchet, *Catalogue des Bronzes antiques de la Bibliothèque Nationale*, Paris, 1895
- Bichir, Bardașu 1983 – G. Bichir, P. Bardașu, Șantierul arheologic Stolniceni-Buridava, A XVa Sesiune Anuală de Rapoarte. Brașov 1981. *Materiale și Cercetări Arheologice*, 1983, p. 336-343
- Bichir *et alii* 1992 – G. Bichir, A. Sion, P. Bardașu, Așezarea de la Stolniceni, Buridava, jud. Vâlcea, A XVIIa Sesiune Anuală de Rapoarte. Ploiești 1983. *Materiale și Cercetări Arheologice*, 1992, p. 255-268
- Bishop 1992 – M. C. Bishop, The early imperial “apron”, *Journal of Roman Military Equipment Studies*, 3, 1992, p. 81-104
- Bishop, Coulston 2006 – M. C. Bishop, J. C. N. Coulston, *Roman Military Equipment from the Punic Wars to the Fall of Rome*, Oxford, 2006
- Bolog 2017 – A. Bolog, *Necropola romană de la Apulum, Dealul Furcilor- “Podei” (campaniile 2008-2012)*, Cluj-Napoca, 2017
- Bondoc, Gudea 2009 – D. Bondoc, N. Gudea, *Castrul Roman de la Răcari. Încercare de monografie*, Cluj-Napoca, 2009
- Boube-Piccot 1980 – C. Boube-Piccot, *Les bronzes antiques du Maroc. III Les chars et l'attelage*, Rabat, 1980
- Boube-Piccot 1994 – C. Boube-Piccot, *Les bronzes antiques du Maroc. IV. L'équipement militaire et l'armement*, Paris, 1994
- Chapman 2005 – E. Chapman, *A Catalogue of Roman Military Equipment in the National Museum of Wales*, British Archaeological Reports, BS 388, Oxford, 2005
- Chirilă *et alii* 1972 – E. Chirilă, N. Gudea, V. Lucăcel, C. Pop, *Castrul roman de la Buciumi. Contribuții la cercetarea limesului Daciei Porolissensis*, Cluj, 1972
- Ciugudean 1997 – D. Ciugudean, Aspecte privind restaurarea și reconstituirea unei piese de echipament militar roman, *Apulum*, 34, 1997, p. 685-690
- Ciugudean 2012 – D. Ciugudean, Another Roman grave with military equipment from Apulum, *Apulum*, 49, 2012, p. 109-130
- Cociș 1994 – S. Cociș, Bronze objects, in: D. Alicu, S. Cociș, C. Ilieș, A. Soroceanu, *Small finds from Ulpia Traiana Sarmizegetusa*, Cluj-Napoca, 1994, p. 47-61
- Crnobrnja, Krunić 1997 – A. Crnobrnja, S. Krunić, Military Equipment and Horse Harness, in: S. Krunić, *Antique Bronze from Singidunum*, Belgrade, 1997, p. 263-302
- Cupcea *et alii* 2019 – G. Cupcea, V. Rusu-Bolindeț, I. Petiș, C. Onofrei, A sanctuary of Silvanus in the rural territory of Napoca, *Acta Musei Napocensis*, 56/1, 2019, p. 147-194
- Étienne *et alii* 2002-2003 – R. Étienne, I. Piso, A. Diaconescu, Les fouilles du Forum Vetus de Sarmizegetusa. Rapport Général, *Acta Musei Napocensis*, 39-40/1, 2002-2003, p. 59-154

- Faber 1994 – A. Faber, *Das römische Auxiliarkastell und der Vicus von Regensburg-Kumpfmühl*. Münchner Beiträge zur Vor- und Frühgeschichte 49, München, 1994
- Flügel 2010 – C. Flügel, Tribuli-Römische Krähenfüsse, *Bayerische Vorgeschichtsblätter*, 75, 2010, p. 143-146
- Fodorean 2020 – F. Fodorean, Arme și piese de echipament militar, in: M. Bărbulescu (ed.), *Principia din castrul legionar de la Potaissa*, Cluj-Napoca, 2020, p. 183-202
- Frere, Wilkes 1989 – S. Frere, J. Wilkes, *Strageath: excavations within the Roman fort, 1973-86*, Britannia Monograph Series No. 9, London, 1989
- Garbsch 1978 – J. Garbsch, *Römische Paraderüstungen. Katalog der Ausstellung*, München, 1978
- Găzdac 1995 – C. Găzdac, Bronzuri romane de la Gherla, *Acta Musei Napocensis*, 32, 1995, p. 401-430
- Gencheva 2009 – E. Gencheva, Римският ажурен колан от България, *Археология*, Sofia, 50, 2009, p. 11-26
- Grünewald 1981 – M. Grünewald, *Die Kleinfunde des Legionslagers von Carnuntum mit Ausnahme der Gefässkeramik (Grabungen 1968-1971)*. Der Römische Limes in Österreich, 31, Wien, 1981
- Gschwind 2004 – M. Gschwind, *Abusina. Das römische Auxiliarkastell Eining an der Donau vom 1. bis 5. Jahrhundert n. Chr.*, München, 2004
- Gudea 1989 – N. Gudea, *Porolissum. Un complex arheologic daco-roman la marginea de nord a Imperiului Roman=Acta Musei Porolissensis* 13, Zalău, 1989
- Istvánovits, Kulcsár 1994 – E. Istvánovits, V. Kulcsár, Roman and Germanic elements in the armament of the barrow-graves of the 2nd-3rd centuries A.D. in the Great Hungarian Plain, in: C. von Carnap-Bornheim (ed.), *Beiträge zu römischer und barbarischer Bewaffnung in der ersten vier nachchristlichen Jahrhunderten. Akten 2. Internationalen Kolloquiums in Marburg a. d. Lahn, 20. bis 24. Februar 1994*, Lublin/Marburg, 1994, p. 405-416
- 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
- Jütting 1995 – I. Jütting, Die Kleinfunde aus dem römischen Lager Eining-Unterfeld, *Bayerische Vorgeschichtsblätter*, 60, 1995, p. 143-230
- Kladnik, Kladnik 1993 – O. Kladnik, S. Kladnik, Petronell, *Fundberichte aus Österreich*, 32, 1993, p. 749
- Kladnik, Kladnik 1993a – O. Kladnik, S. Kladnik, Petronell, *Fundberichte aus Österreich*, 32, 1993, p. 751-753
- Kostromichyov 2011 – D. Kostromichyov, Римское военное присутствие в Херсонесе в начале I – первой половине V вв. (по данным археологии), *Stratum plus*, 4, 2011, p. 15-164
- Krecovič 1994 – E. Krecovič, Military equipment on the territory of Slovakia, *Journal of Roman Military Equipment Studies*, 5, 1994, p. 211-225
- Kropf 1993 – W. Kropf, *Potzneusiedl*, *Fundberichte aus Österreich*, 32, 1993, p. 726

- Lenz 2006 – K. Lenz, *Römische Waffen, militärische Ausrüstung und militärische Befunde aus den Stadtgebiet der Colonia Ulpia Traiana (Xanten)*, Bonn, 2006
- Maspoli 2014 – A. Maspoli, *Römische Militaria aus Wien. Die Funde aus dem Legionslager, der canabae legionis und der Zivilsiedlung von Vindobona*, Wien, 2014
- Mrđić, Raičković 2013 – N. Mrđić, A. Raičković, Soldiers burials with weapons at Viminacim cemetery, in: M. Sanader, A. Rendić-Miočević, D. Toncinić, I. Radman-Livaja (eds.), *XVII Roman Military Equipment Conference. Zagreb 2010. 24th-27th May 2010. Proceedings of the XVII Roman Military Equipment Conference. Weapons and Military Equipment in a Funerary Context*, Zagreb, 2013, p. 117-132
- Nicolay 2007 – J. Nicolay, *Armed Batavians. Use and Significance of Weaponry and Horse Gear from Non-Military Contexts in the Rhein Delta (50 BC to AD 450)*, Amsterdam, 2007
- Oldenstein 1976 – J. Oldenstein, Zur Ausrüstung römischer Auxiliareinheiten. Studien zu Beschlägen und Zierat an der Ausrüstung der römischen Auxiliareinheiten des obergermanisch-raetischen Limesgebietes aus dem zweiten und dritten Jahrhundert n. Chr, *Bericht der Römisch-Germanischen Kommission*, 57, 1976, p. 49-284, pls. 9-90
- Ortisi 2015 – S. Ortisi, *Militärische Ausrüstung und Pferdegeschirr aus den Vesuvstädten*, Wiesbaden, 2015
- Ota 2011 – R. Ota, Aplică, in: G. Bounegru, R. Ciobanu, D. Anghel (eds.), *Lux, util și estetic la Apulum. Podoabe și accesorii vestimentare. Catalog de expoziție*, Alba Iulia 2011, 104, no. 186
- Petculescu 1991 – L. Petculescu, Bronze spearheads and spear butts from Dacia, *Journal of Roman Military Equipment Studies*, 2, 1991, p. 35-58
- Petculescu 1995 – L. Petculescu, Military equipment graves in Roman Dacia, *Journal of Roman Military Equipment Studies*, 6, 1995, p. 105-145
- Petculescu 1998 – L. Petculescu, The equipment graves from Tomis, *Thraco-Dacica*, 19/1-2, 1998, p. 153-156
- Petculescu 1999 – L. Petculescu, Roman military equipment in Barbaricum in the proximity of the Dacian limes, in: N. Gudea (ed.), *Roman Frontier Studies. Proceedings of the XVIIth International Congress of Roman Frontier Studies*, Zalău, 1999, p. 895-905
- Petculescu 2006 – L. Petculescu, Aplică de centură/ Applique di cintura, in: A. Băltăc (ed.), *Dacia Augusti Provincia. Crearea Provinciei. Il catalogo della Mostra*, București, 2006, 147, no. 126
- Petolescu 2021 – C. Petolescu, *Armata romană din Dacia*, București, 2021
- Petru 1972 – S. Petru, *Emonske Nekropole*, Ljubljana, 1972
- 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, in: Z. Visy (ed.), *Limes XIX. Proceedings of the XIXth International Congress of Roman Frontier Studies held in Pécs, Hungary, September 2003*, Pécs, 2005, p. 941-953

- Redžić 2013 – S. Redžić, *Rimske Pojasne Garniture na tlu Srbije od I do IV Veka*, Unpublished Ph. D. thesis, University of Belgrade, 2013
- Reim 1978 – H. Reim, Grabungen in einem römischen Gusthof bei Langenau-Göttingen, Alb-Donau-Kreis, *Archäologische Ausgrabungen: Bodendenkmalpflege in den Regierungsbezirken Stuttgart und Tübingen*, Stuttgart, 1978, p. 69-72
- von Schnurbein 1977 – S. von Schnurbein, *Das römische Gräberfeld von Regensburg*, Kallmünz/Opf., 1977
- Schönberger 1985 – H. Schönberger, Die römischen Truppenlager der frühen und mittleren Kaiserzeit zwischen Nordsee und Inn, *Bericht der Römisch-Germanischen Kommission*, 66, 1985, p. 341-497
- Selke 2014 – V. Selke, *Römische Funde aus Dambach am Limes (1892-2007)*, Kallmünz/Opf., 2014
- Seure 1923 – G. Seure, Archéologie thrace. Documents inédits ou peu connus, *Revue Archéologique*, 17, 1923, p. 1-42
- Sintès, Moutashar 1997 – C. Sintès, M. Moutashar (eds.), *Musée de l' Arles Antique. Collections archéologiques d'Arles*, Arles, 1996
- Steiner 1911 – P. Steiner, *Kataloge West- und- Süddeutscher Altertumssammlungen. I. Xanten*, Frankfurt, 1911
- Stângă 2005 – I. Stângă, *Villa rustica de la Gârla Mare, Județul Mehedinți*, Craiova, 2005
- Suceveanu 1982 – A. Suceveanu, *Les thermes romains*, Bucharest-Paris, 1982
- Tudor 1965 – D. Tudor, Castra Daciae Inferioris (VIII). Săpăturile lui Gr. G. Tocilescu în castrul roman de la Răcari (raion Filiași, reg. Oltenia), *Apulum*, 5, 1965, p. 233-257
- Tudor 1976 – D. Tudor, Obiecte de metal din Drobeta descoperite în săpăturile lui D. C. Butculescu (1883) și Gr. C. Tocilescu (1896-1899), *Drobeta*, 2, 1976, p. 117-137
- Tudor 1978 – D. Tudor, *Oltenia romană*, București, 1978
- Țentea et alii 2021 – O. Țentea, F. Matei-Popescu, V. Călina, Frontiera romană din Dacia Inferior. O trecere în revistă și o actualizare. Partea 1, *Cercetări arheologice*, 28/1, 2021, p. 9-90
- Unz 1971 – C. Unz, Römische Militärfunde aus Baden-Aquae Helveticae, *Jahresbericht 1971. Gesellschaft pro Vindonissa*, Vindonissa, 1972, p. 41-58
- Unz, Deschler-Erb 1997 – C. Unz, E. Deschler-Erb, *Katalog der Militaria aus Vindonissa. Militärische Funde, Pferdegeschirr und Jochteile bis 1976*. Veröffentlichungen der Gesellschaft Pro Vindonissa, XIV, Brugg, 1997
- van der Veen 2020 – V. van der Veen, *Roman military equipment and horse gear from the Hunerberg at Nijmegen. Finds from the Augustan military base and Flavio-Trajanic castra and canabae legionis*, Nijmegen, 2020
- Walke 1965 – N. Walke, *Das römische Donaukastell Straubing – Sorviodurum*, Berlin, 1965
- Walton 2021 – Ph. Walton, Military equipment and militaria, in: E. Eckardt, Ph. Walton, *Bridge over Troubled Water: The Roman Finds from the River Tees at Piercebridge in Context*. Britannia monograph Series No. 34, London 2021, p. 82-95

- Weber 2007 – M. Weber, *Militärische Ausrüstungsgegenstände, Pferdegeschirrbestandteile und Fibeln aus dem römischen Vicus Pons Aeni/Pfaffenhofen (mit 19 Abbildungen und Tafeln 1-2)*, *Bayerische Vorgeschichtsblätter*, 72, 2007, 151, 318
- Wieser 1999 – M. Wieser, *Die römischen Gürteln und Gürtelbeschläge aus Lauriacum*, Unpublished Diplomatarbeit Universität Wien, 1999
- Zotović, Jordović 1990 – L. Zotović, Č. Jordović, *Viminacium. Nekropole "Više Grobalja"*, Belgrad, 1990

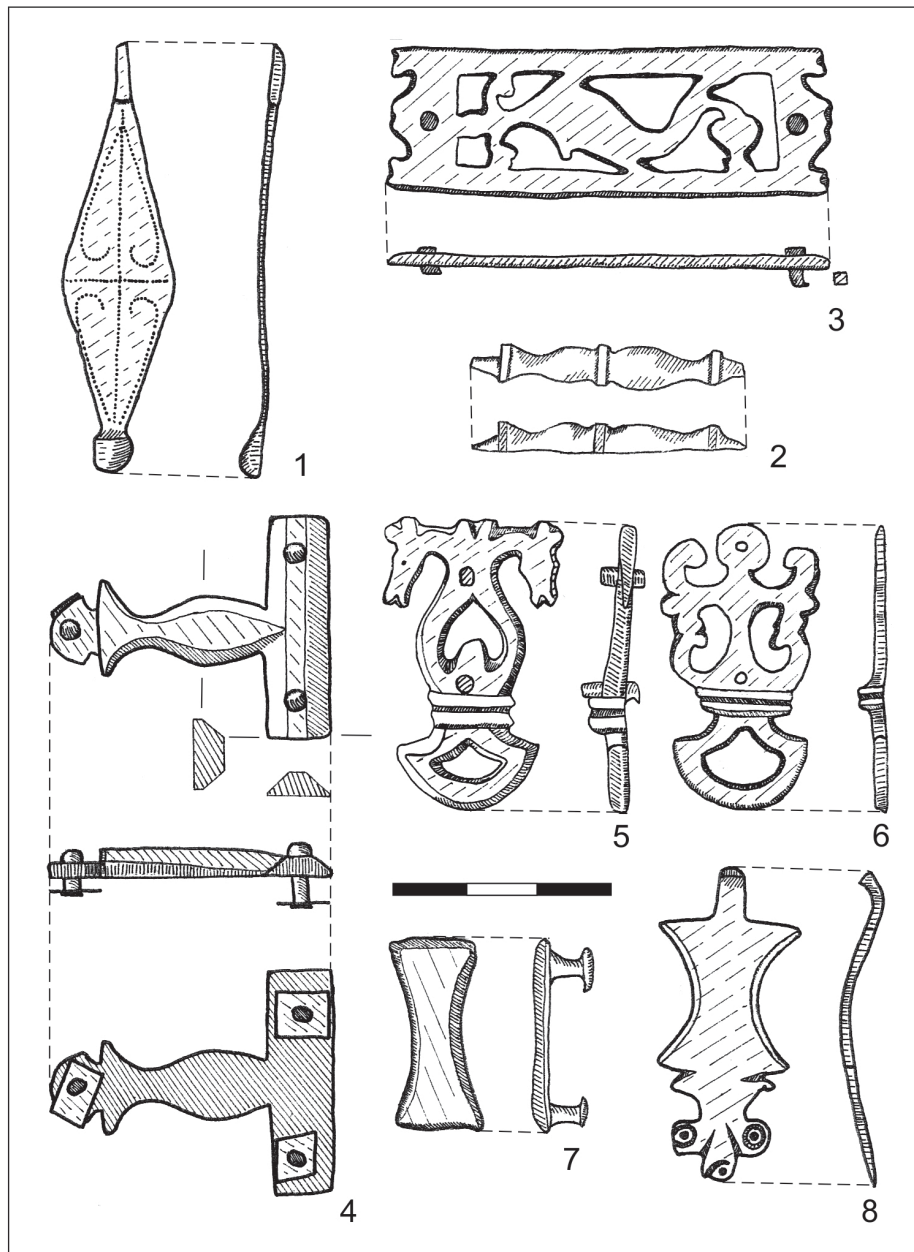


Fig. 1

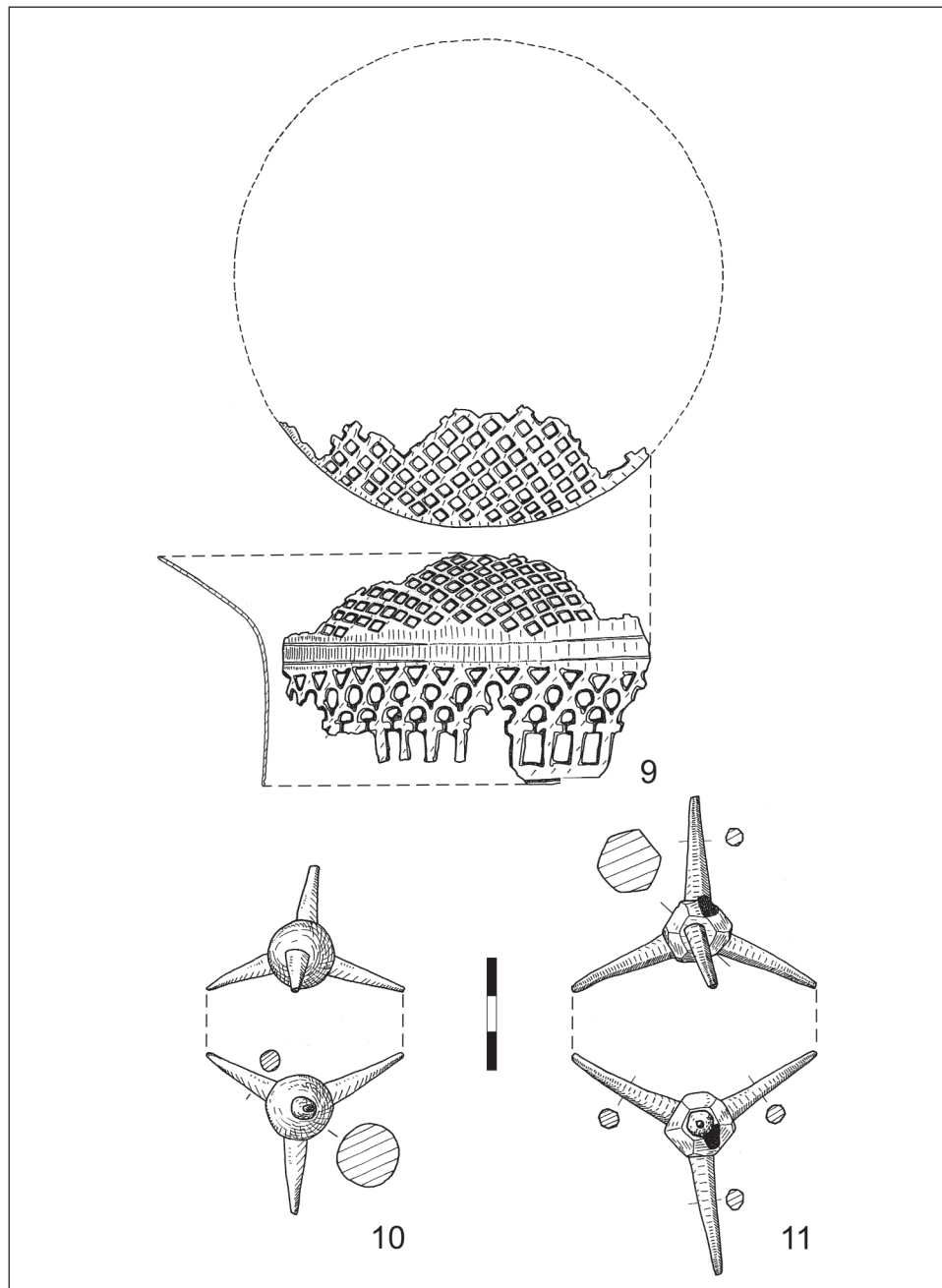


Fig. 2