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## AN ASSEMBLAGE OF ROMAN MILITARY EQUIPMENT FROM BRIGANTIUM/BREGENZ (AUSTRIA): ARTEFACTUAL EVIDENCE FOR THE RARE RECTANGULAR *SCUTUM*

UN CONJUNTO DE EQUIPO MILITAR ROMANO PROCEDENTE  
DE BRIGANTUM/BREGENZ (AUSTRIA). EVIDENCIA ARQUEOLÓGICA SOBRE UN  
INSÓLITO *SCUTUM* RECTANGULAR

POR

JULIA KOPF\*

### ABSTRACT - RESUMEN

In 1908, ten iron military equipment items were discovered in Brigantium/Bregenz (Austria). Among them are fragments of four or five shield bosses of rectangular *scuta*. This is the largest ensemble of this archaeologically rare type of umbo hitherto known. They are probably preserved because they were burnt and therefore the material could not be recycled. The typological dating of the shield bosses indicates that they were buried during the dismantling of the fort in Brigantium in the early Claudian Period or shortly before. It remains unclear in which constructional context the objects were recovered, because the stratigraphic circumstances of finding were not documented and there is not enough knowledge about the military buildings on the excavation area. Due to the location within the fort, it seems most likely that it was a barrack or a magazine building situated along the *via principalis*.

En 1908 se encontraron diez elementos de equipamiento militar de hierro en Brigantium/Bregenz (Austria). Entre estos figuran los fragmentos de cuatro o cinco umbos de *scuta* rectangulares. Se trata del conjunto de este tipo de umbos, arqueológicamente insólitos, más grande conocido. Probablemente su buen estado de conservación se debe a que las piezas estaban quemadas y su reciclado resultaba imposible. La datación tipológica de los umbos indica que fueron enterrados durante del cierre de la fortaleza en *Brigantium* en la época claudiana o poco antes. No está claro en qué contexto estructural fueron recuperados los objetos, porque las condiciones estratigráficas no fueron documentadas e y no se sabe lo suficiente acerca de los edificios militares en el área de la excavación. Debido a su situación dentro de la fortaleza, parece probable que se tratase de un barracón o almacén localizado en la *via principalis*.

### KEYWORDS - PALABRAS CLAVE

Bregenz; Early Imperial fort; Roman armour; shield bosses; burnt layer; storage of equipment.

Bregenz; Fortaleza del principio del periodo imperial; armas defensivas romanas; umbos; estrato de incendio; almacenamiento de equipo militar.

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\* University of Vienna, Institute of Classical Archaeology. [julia.kopf@univie.ac.at](mailto:julia.kopf@univie.ac.at) / ORCID ID: <https://orcid.org/0000-0002-9584-450X>.

## 1. EARLY IMPERIAL MILITARY PRESENCE IN BRIGANTIUM/BREGENZ (AUSTRIA)<sup>1</sup>

The settlement of Brigantium was situated at an important traffic junction within the Roman province of Raetia. It represented the terminal of the so-called «Alpenrheintal» road, which came from Milan, crossing several Alpine passes. In Brigantium the trading routes branched: one led to the west into the Gaulish provinces and the other one headed northeast towards the centres of the Roman province of Raetia, namely Cambodunum/Kempten and Augusta Vindelicum/Augsburg<sup>2</sup>. Besides this important geographical position, the geomorphology of the settlement place itself was virtually predestined for the siting of a Roman fort. During the Early and Middle Imperial Era the main settlement activity took place on the «Ölrain» plateau, which measures about 50 hectares and is situated 34 meters above the present water level of Lake Constance. The plateau is bordered by slopes on three sides and by a foot of a mountain on the fourth side. The only natural access path comes from southwest across a narrow land tongue (Fig. 1).

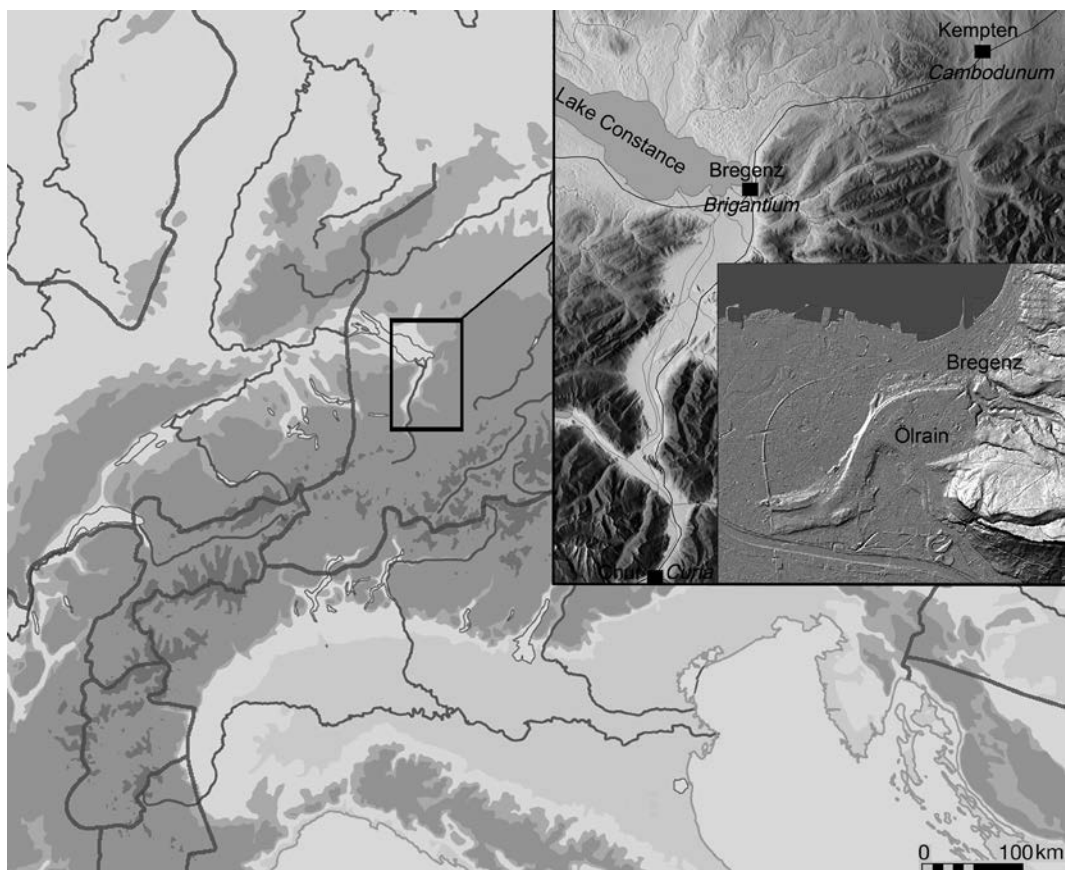


Figure 1. Overview map of the Western Alps with position and topography of the settlement Brigantium/Bregenz (layout: K. Oberhofer, base map: Institute of Archaeology, University of Innsbruck; ALS: Vorarlberg Atlas).

<sup>1</sup> The English and the Spanish version of the abstract were composed by Natalie Mair (Innsbruck) and slightly modified by the author. For the proofreading of the English manuscript the author is indebted to Martin Kopf.

<sup>2</sup> Schimmer, 2005a: 8.

In the years 2009-2012 excavations were carried out at the transition of this access path into the settlement plateau (Fig. 2)<sup>3</sup>. These excavations brought to light structures belonging to three different military camps or forts of (late) Augustan to early Claudian date<sup>4</sup>. Best preserved of all military phases were the structures appertaining to the latest fort of Tiberian period. In the southwestern area of this fort, two V-shaped ditches, parts of the timber gate in the form of massive post-holes, foundation ditches of the timber-revetted rampart and some interior buildings could be identified. Due to this discovery, the long-lasting discussion about the military or civilian origin of Brigantium can be resolved in favour of the military thesis<sup>5</sup>. Taking into account the section of a large ditch situated in the southern part of the settlement, discovered in 1927<sup>6</sup>, two sides of the military area define a proven size of about 2 ha. Because of the absence of the north-western defensive ditch in the recently excavated area<sup>7</sup>, it can be assumed that the fort area extended more or less to the northern slope side. The north-eastern boundary of the fort is completely unknown, but the main concentration of the military equipment and observations made in the course of former excavations in Bregenz suggest that the north-eastern enclosure of the military ground could be located in front of or inside the later bath complex. If the enclosures were situated at the supposed axes, the Tiberian fort would be comparatively large, covering about 5.2 ha (indicated in light grey on Fig. 2). Thanks to the finds from the backfill of the defensive ditches the abandonment of this fort may be dated to the middle of the 1<sup>st</sup> century AD. This time frame is additionally confirmed by dendrochronological data (44/45 AD) from a wooden structure belonging to the first civilian settlement phase<sup>8</sup>.

The analysis of the military features of the excavations from 2009 to 2012 made part of the author's Ph.D. thesis<sup>9</sup>, as well as the processing of all Early Imperial military small finds known so far from Brigantium. Including the horse harness, 302 pieces of military equipment from the 1<sup>st</sup> century AD were identifiable. Among the finds from former excavations there is an exceptional assemblage derived from the central part of the fort, which shall be discussed in the present paper.

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<sup>3</sup> The excavations were carried out by the Austrian company Talpa GnbR in cooperation with the Federal Office for the Preservation of Historical Monuments (Bundesdenkmalamt, BDA) and the Institute of Archaeologies of the University of Innsbruck. See Bader, 2011; Kopf & Oberhofer, 2013a. – Base map of Fig. 2 is a recently designed overall plan of the Roman building remains in Bregenz. For this plan, all the original excavation plans stored in the vorarlberg museum and the Federal Office for the Preservation of Historical Monuments were digitalized and separately georeferenced (see Oberhofer *et alii*, 2018). For the provision of this actual base map thanks are due to K. Oberhofer (University of Cologne), A. Picker (BDA) and G. Grabher (vorarlberg museum).

<sup>4</sup> The processing of the features and finds of these field works was carried out in a research project at the University of Innsbruck from 2011 to 2016, financed by the Austrian Science Funds (FWF, project number P23777, project leader: Gerald Grabherr) – The new military features were presented for the first time at the 22<sup>nd</sup> International Limes Congress in Ruse 2012 (Kopf, 2015).

<sup>5</sup> The first to postulate a Tiberian fort at Brigantium on the basis of excavation features was A. Hild (1953). Since then, several arguments for and against this hypothesis have been made (Zanier, 2006: 82-86).

<sup>6</sup> Hild, 1948: 140-142, Abb. 34.

<sup>7</sup> Kopf & Oberhofer, 2013b: 68-70.

<sup>8</sup> Kopf & Oberhofer, 2013c: 75-81; Kopf & Oberhofer, 2016: 129-136.

<sup>9</sup> Kopf, 2016b. In 2011 the work on the thesis was sponsored by a grant of the University of Innsbruck, vice rectorate for research.

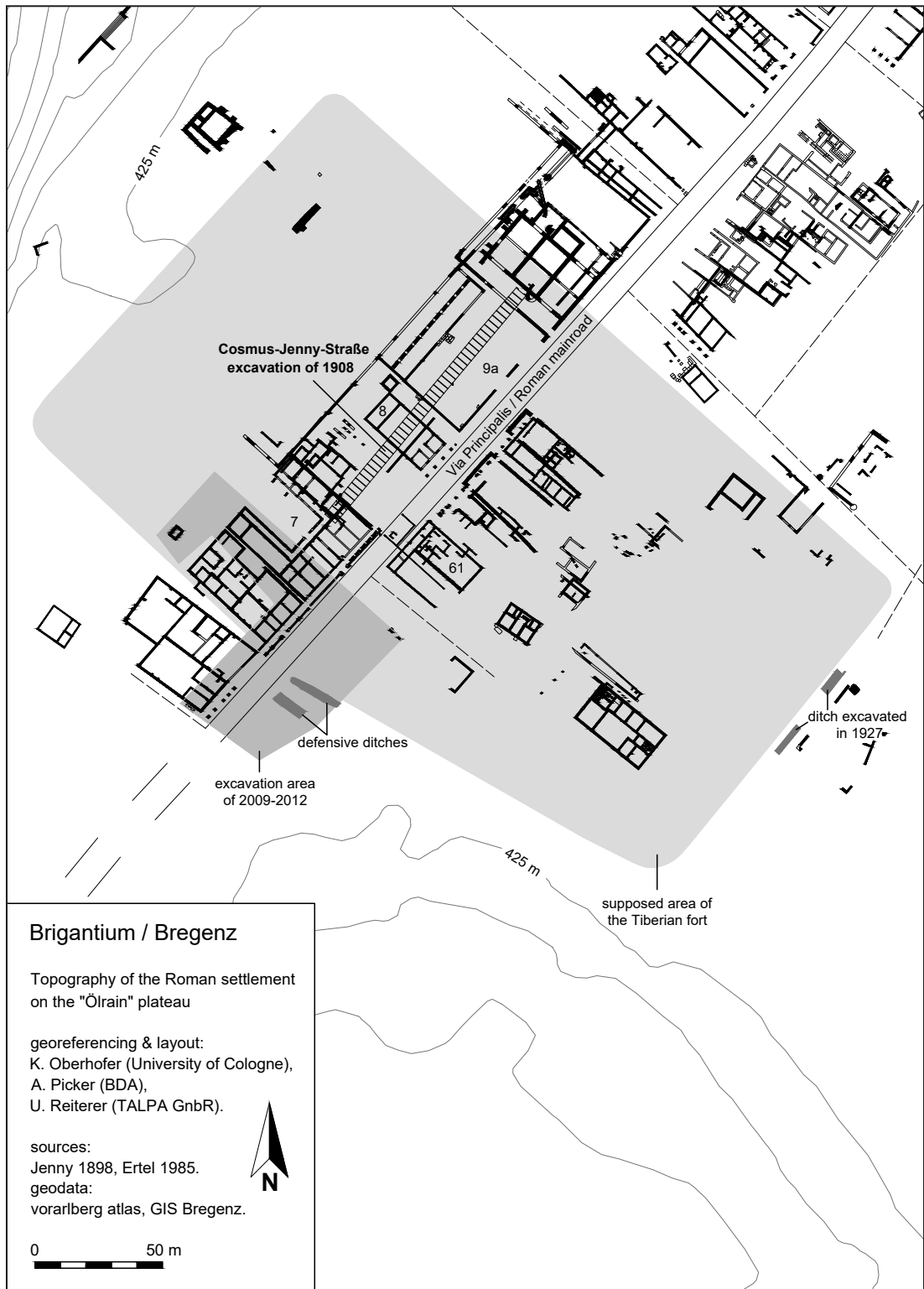


Figure 2. Roman structures on the southwestern part of the "Ölrain" plateau in Bregenz with marking of the excavation of 1908. Scale 1:2500 (plan: K. Oberhofer/A. Picker/U. Reiterer, adapted by J. Kopf).

## 2. THE MILITARY EQUIPMENT FIND COMPLEX DISCOVERED IN BREGENZ IN 1908

The nine (originally ten) objects were found in 1908 during the construction of a street (Cosmus-Jenny-Straße) on the «Ölrain» plateau in Bregenz. Due to the linear character of the concomitant excavation, the exact findspot of the objects cannot be determined. On the plan of the Roman settlement remains in Bregenz the buildings no. 7, 8 and 9a are situated along this line (Fig. 2)<sup>10</sup>, but their stone construction dates them to the Middle Imperial Era, so they are not a directly relevant context for the Early Imperial military equipment in question<sup>11</sup>. The list of finds of the excavation of 1908 refers to seven «shield boss-like» metal fittings of thick sheet iron. Due to their burnt state and the attachment of slag, they were initially interpreted as bowls for smelting by the excavator, C. von Schwerzenbach<sup>12</sup>. These objects constitute the core of the presented finds assemblage and will be studied in detail below, but first the other military equipment finds from the excavation will be examined.

A biconical bolt-head with rhombic cross-section, no. 1 (Pl. 1), represents a rare type in Roman contexts<sup>13</sup>. However, its Roman origin can be doubted: firstly the stratigraphic circumstances of the objects unearthed in 1908 are obscure; and secondly close parallels to no. 1 are well-known as quarrel bolts from medieval sites in the region<sup>14</sup>. On the other hand, biconical bolt-heads at least occasionally occur in layers of Roman Principate date too<sup>15</sup>, although more likely with a square-sectioned, elongated point<sup>16</sup>. A similar bolt-head as no. 1<sup>17</sup>, also with a rhombic cross-section, originates from the *vicus* of the Early Imperial fort Aislingen<sup>18</sup>.

Two other objects found during the excavation of 1908 can be identified as browguards of helmets (probably type Imperial Gallic/Mainz)<sup>19</sup>. The two semicircular artefacts have an elongated trapezoidal cross-section. On the larger, roughly complete browguard no. 2 (Pl. 1) one of the two lateral loops for the mounting on the bowl is preserved, while the other is broken off. A browguard from Kalkriese (in copper alloy) has similar dimensions as this piece from

<sup>10</sup> Schwerzenbach, 1910/11: 79. To the latter building (no. 9a), covering a large part of the excavation area of 1908, see Jenny, 1882: 12-14.

<sup>11</sup> The main features of all these architectural remains (visible on fig. 2) have already been uncovered at the end of the 19<sup>th</sup> century by S. Jenny. His excavation method was oriented towards the tracking of stone walls via narrow trenches. Therefore, on areas investigated (mainly) by Jenny there is no recorded evidence for timber structures of the early Principate.

<sup>12</sup> „...sieben Beschlagstücke aus starkem Eisenblech, Schildbuckeln ähnlich; etwa 18 cm ins Geviert, durch vermutlich sechs Nägel an der Unterseite festgehalten; die Schalen sind kreisrund, 10 cm Durchmesser, 3 bis 4 cm tief; ursprünglich glaubte ich, es handle sich um Schalen für Schmelzzwecke, da sie ganz ausgebrannt sind und innen Schlacken anhaften.« (Schwerzenbach, 1910/11: 80-81).

<sup>13</sup> Inventory number B08,2. The find material from Bregenz contains no fewer than nine pieces of this bolt-head-type, but solely two of them (including no. 1) originate from more or less ensured Roman contexts. The other pieces are scattered finds from the area of the Roman cemetery or made part of the private collection of the excavator Jenny (Kopf, 2016b: 33-34, 468-469, Taf. 1-2).

<sup>14</sup> For instance from the Swiss castle ruins Alt-Wartburg (Meyer, 1974: 75-76) and Scheidegg near Gelterkinden (Ewald & Tauber, 1975: 99, cat. nr. F8-F23). In the medieval find material from Burghöfe bolt-heads of this type are represented as well (Later, 2009: Taf. 1,7). Two surface finds of similar hunting bolts from the line of the Via Claudia Augusta are also more likely assigned to the post-Roman Age (Grabherr, 2006: 207, 224-225, Taf. 15, B87-88). For general remarks to medieval bolt-heads of this type see Zimmermann, 2000: 51-53.

<sup>15</sup> Similar types of weapons were found e.g. in Dura Europos, albeit from Middle Imperial context (James, 2004: 219-220, Fig. 130, 795-803). *Ibid.* 220 information on further parallel finds can be found.

<sup>16</sup> Unz & Deschler-Erb, 1997: Taf. 23, 489-494; Schönberger & Simon, 1976: Taf. 5, 40; Lenz, 2006: Taf. 11, 73.

<sup>17</sup> Kopf, 2016b: 468, cat. nr. A 15.

<sup>18</sup> Kainrath, 2008: 47, Taf. 2, B 8.

<sup>19</sup> Inventory numbers B08,97 and B08,98. See Kopf, 2016b: 476, cat. nr. B 05-B 06. In the preliminary excavation report of C. von Schwerzenbach these two find pieces are labelled as handles of vessels (Schwerzenbach, 1910/11: 80).



Bregenz<sup>20</sup>. The second, smaller browguard no. 3 (Pl. 1) is of a poorer state of preservation and is slightly deformed. On this piece only the remnant of one of the two lateral loops remains. The quite complete preserved fragment of a left cheek-piece of a helmet type Imperial Gallic/Mainz<sup>21</sup> (no. 4, Pl. 1) is heavily corroded. Therefore, the characteristic recess parallel to the rear edge<sup>22</sup> is only slightly perceptible<sup>23</sup>.

Object no. 5 (Pl. 1) can be identified as a large peg<sup>24</sup>. Iron spikes with integrated round hole or lateral loop, sometimes with the preserved mounting ring hooked into it, belong to the standard find material on Roman military sites of the Republican Period and the early Principate. Usually they are designated as tent pegs, because of the assured use of tents by the Roman army. But these iron pegs –especially the bigger examples like no. 5– were undoubtedly also employed for alternative purposes like tethering horses and other animals. Maybe they also served as a tool for Roman surveyors<sup>25</sup>. Some archaeologists account the function of tethering pegs as the main purpose of these objects, since especially the larger pegs would have represented an enormous burden of weight if used as tent pegs for (marching) camps. Moreover, it has been archaeologically demonstrated that in the Principate wooden tent pegs were in use<sup>26</sup>. On object no. 5, the mounting ring was hooked into the peg by a lateral loop with round cross-section. In contrast, the cross-section of the spike itself is shallowly rectangular. Pegs of this type occur in the proximity for instance in Zurzach, Vindonissa and Aislingen<sup>27</sup>.

The presented assemblage of military equipment from the excavation of 1908 is dominated by hemispherical shield bosses (*umbones*) with rectangular baseplates. The preserved assemblage comprises at least three (no. 6-8, Pl. 2), probably even four examples of this type of *umbo*<sup>28</sup>. Of the fourth piece (no. 9, Pl. 2) solely the hemispherical dome survived, which has a larger diameter (13.5 cm) than the other three pieces (10-11 cm). Since both diameter variants constitute common dimensions for shield bosses of rectangular *scuta*, the assignation of no. 9 to this group is justified<sup>29</sup>. According to the notes in the excavations inventory book, another large fragment of an *umbo* with rectangular baseplate was found in the course of the excavation concerned (Fig. 3)<sup>30</sup>. However, this piece could not be found during research in the vorarlberg museum. As a consequence, the 1908 assemblage originally contained at least four, probably even five hemispherical shield bosses with rectangular baseplates. In the inventory

<sup>20</sup> Harnecker & Mylo, 2011: 25, Taf. 7,2108. Another comparandum from Vindonissa is illustrated in Unz & Deschler-Erb, 1997: Taf. 28,579.

<sup>21</sup> Inventory number B08,100. All helmet pieces known so far from Brigantium can be assigned (more or less securely) to helmets of the type Imperial Gallic/Mainz (Kopf, 2016b: 45-46, 475-476, Taf. 6-7).

<sup>22</sup> Deschler-Erb, 1999: 31, Abb. 26,2.

<sup>23</sup> Kopf, 2016b: 476, cat. nr. B 07. Similar objects are presented here: Unz & Deschler-Erb, 1997: Taf. 27,573.574; Harnecker & Mylo, 2011: Taf. 6,2105; Schaeff, 2011: Taf. 10,W 117. On a second, much better preserved cheek-piece of the same type from Bregenz not only the copper alloy edging, but also a rivet with rearward loop for the attachment of the likewise preserved suspension ring at the backside are still in place. The slight fold alongside the rear edge is also identifiable at this cheek-piece (Kopf, 2016b: 476, Taf. 7,B 08\*).

<sup>24</sup> Inventory number B08,101. See Kopf, 2016b: 498, cat. nr. E 40.

<sup>25</sup> Radman-Livaja, 2005: 85.

<sup>26</sup> Bishop & Coulston, 2006: 69, 116-117, Fig. 67,5-6.

<sup>27</sup> Hänggi *et alii*, 1994: 547, 553, Taf. 31,107.3, 34,118.30-36; Hagendorn, 2003: 629, 635, 663, 665, Taf. 53,Me234, 56,Me303, 69,Me790, 70,Me839; Ulbert, 1959: Taf. 30,20.

<sup>28</sup> Inventory number (of all pieces) B08,96. See Kopf, 2016b: 476-477, cat. nr. B 11-B 14.

<sup>29</sup> The catalogue work of A. Nabbefeld comprises four shield bosses with dome-diameter of 10–11 cm (Nabbefeld, 2008: 215, 244, 248, cat. nr. 460, 599-600, 622) and two objects with corresponding diameter of 13,5 cm (*ibid.*: 256, 275, cat. nr. 665, 717).

<sup>30</sup> Inventory book 1 of the Roman finds from Brigantium, page 121. Besides the *umbones* presented in this article, additionally two smaller fragments of hemispherical domes of shield bosses are listed there. Due to the fact that these could belong to the larger fragments no. 6-8, they are not presented here as separate artefacts.

book some nail holes are mentioned and also visible on the related drawings (partly in the corner, partly central of the baseplate)<sup>31</sup>. Due to the massive corrosion of the surfaces since the restoration of the shield bosses a long time ago, the nail holes can no longer be identified.

The largest of the preserved shield boss fragments from Bregenz no. 6 (Fig. 4) measures 15.5 x 19 cm and its dome has a diameter of 9.8 cm<sup>32</sup>. The base plates of the two *umbones* no. 7 and no. 8 feature almost intact side lengths of 17.5 and 18.3 cm, respectively and the domes of these pieces are similarly dimensioned as the one of no. 6. Assuming that on both sides of the dome of no. 6 there is not much of the baseplate missing to the original edges and that the two other objects were of similar size, then the measurements of the shield bosses from Bregenz conform with the majority of other pieces in this class (sizes between 19 x 16 cm and 21 x 20 cm<sup>33</sup>).

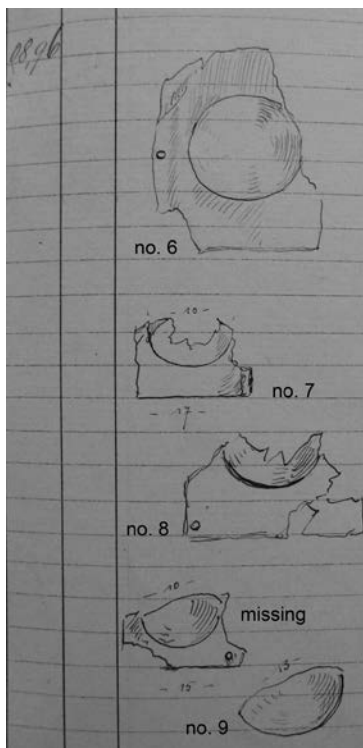


Figure 3. Record of the large fragments of shield bosses in the inventory book of the vorarlberg museum (photograph J. Kopf).



Figure 4. The most complete shield boss of a rectangular *scutum* found in Bregenz in 1908. Scale 1:2 (photograph J. Kopf).

<sup>31</sup> On the parallel finds of shield bosses of rectangular *scuta* between four (Nabbefeld, 2008: 160, 227, cat. nr. 155, 520) and eight (*ibid.*: 282-283, cat. nr. 747) nails or nail holes in the baseplate could be observed.

<sup>32</sup> This shield boss is the only one of the assemblage already published at the beginning of the author's thesis research (Ubl, 1999: 248, 250; Schimmer, 2005b: 620, Abb. 10,7). Nevertheless, it was not taken into account in the seminal work of Nabbefeld (2008) on Roman shields.

<sup>33</sup> Nabbefeld, 2008: 44-45. Only three of the 14 shield bosses of the same type mentioned there are considerably larger (28 x 24 cm, 33 x 24 cm and 28.6 x 22.1 cm).

To the recently developed discussion of the extent to which Roman *umbones* were curved<sup>34</sup>, the pieces from Brigantium cannot contribute much due to their state of preservation. The angle between base plate and collar of the dome of the objects no. 6–8 is considerably greater than 90°, corresponding to the parallels illustrated by A. Nabbefeld, and in accordance with the studies of H. Ratsdorf. The artefacts no. 7 and no. 8 show a horizontal curving, whereas the short preserved section of the presumed horizontal axis of the most complete fragment no. 6 is deformed<sup>35</sup>, probably owing to the pressure of the earth material. The slight vertical curving, which was characteristic of the shield boards of rectangular *scuta* according to Ratsdorf<sup>36</sup>, cannot be traced on the shield bosses no. 7 and no. 8 due to their fragmentary preservation and neither is it detectable for the intact side of no. 6.

### 3. THE SHIELD BOSS ASSEMBLAGE

The functional composition of the presented assemblage is exceptional, since seven of the nine (preserved) pieces appertain to the category of armour, representing parts of shields and helmets. The only offensive weapon typologically rather belongs in medieval times, so that it has to be challenged that this piece originally was part of the Roman military find complex of 1908. The peg can be attributed to the category of «further equipment», that is often not unambiguously determinable, but parallels from innumerable camps and forts argue for a significantly military function of these objects. In contrast, a military purpose of a possible horse harness pendant and a rivet with plain head cannot be verified with certainty, so that these two finds of the excavation of 1908 are not presented in this article<sup>37</sup>.

The four respectively originally five *umbones* of rectangular *scuta* (no. 6-9) constitute the highlight of the military equipment assemblage found in Bregenz in 1908 because hemispherical shield bosses with rectangular base plates are comparatively rare in finds assemblages from Roman (military) sites. Nabbefeld catalogued no more than 14 examples of this shield boss-type (excluding the parade bosses with attached bust), restricted to the curved rectangular *scutum*. The *umbones* with known locations listed were found in Eining (Germany), Newcastle upon Tyne (Great Britain), Lyon (France), Aroer (Israel), Carnuntum (Austria, three pieces), Vindonissa (Switzerland), Iža (Slovakia), Dura Europos (Syria) and Budapest (Hungary). Among them are fragments made of iron as well as of copper alloy, although the latter material has so far been identified solely on decorated shield bosses<sup>38</sup>.

Shield bosses of this type are considered to have been part of the standard equipment of Roman legionaries in the period from the middle of the 1<sup>st</sup> century AD until the mid 3<sup>rd</sup> century AD<sup>39</sup>. However, individual finds have a slightly earlier date range (e. g. piece from Aroer, 1<sup>st</sup>

<sup>34</sup> Ratsdorf, 2009.

<sup>35</sup> The illustration of no. 6 on Pl. 2 is rotated through 90° in order to be able to place all shield boss fragments on one table.

<sup>36</sup> A reconstruction of the possible curving of the rectangular *scutum* is provided by Ratsdorf, 2009: 349-351.

<sup>37</sup> To these finds see Kopf, 2016b: 488, 498, Taf. 13,D 07, 19,E 32.

<sup>38</sup> Nabbefeld, 2008: 44-45. The iron counterparts derive from Eining (*ibid.*: Taf. 18, 155), Lyon (*ibid.*: Taf. 66,518), Carnuntum (three pieces, *ibid.*: Taf. 86,599–601), Iža (*ibid.*: Taf. 96,665), Dura Europos (*ibid.*: Taf. 106,706) and Budapest (*ibid.*: Taf. 110,717). The bronze *umbo* with decoration from Vindonissa is also published here: Unz & Deschler-Erb, 1997: Taf. 26,565.

<sup>39</sup> Nabbefeld, 2008: 45. Indeed there are research results that the shield weaponry of the legionaries altered as early as in the 1<sup>st</sup> half of the 2<sup>nd</sup> century AD for the oval shields. Thus, in the layers of this period in the *fabrica* of the *legio I Minervia* in Bonn shield covers of oval shields alone were found (Busch, 2009: 326).



half of the 1<sup>st</sup> century AD)<sup>40</sup>. The earliest illustration of a rectangular *scutum* can be seen on the metopes of the tomb of Lucius Munatius Plancus in Gaeta (Italy, c. 20 BC). Therefore, the introduction of this shield type is dated to the Augustan Age<sup>41</sup>. Another early depiction of rectangular *scuta* exists on a *sestertius* minted under the emperor Gaius in 37/38 AD (RIC 32)<sup>42</sup>. A. Busch additionally cited the tombstone of Publius Clodius in Bonn (Germany) as early pictorial evidence (1<sup>st</sup> half of the 1<sup>st</sup> century AD) of this shield type<sup>43</sup>, although she comments sceptically on the significance and authenticity of funerary monuments with regard to the reconstruction of the equipment of particular units<sup>44</sup>.

Apart from the legions, singular auxiliary units were also equipped with a *scutum*, as suggested by regimental titlature (e. g. *cohors II Hispanorum scutata Cyrenaica*)<sup>45</sup>. However, generally and despite their rarity in the archaeological record, rectangular *scuta* are regarded by scholars as the standard equipment of Roman legionaries in the period mentioned above<sup>46</sup>. This claim is supported by the find context of the *umbones* of this shield type<sup>47</sup>: the majority of the objects concerned with known provenance derives from legionary fortresses (Carnuntum, Vindonissa, Aquincum) and from forts or garrison towns, in which the presence of legionaries is presumed or at least quite likely (Iža, Dura Europos and new Bregenz)<sup>48</sup>.

Nabbefeld suggested various reasons for the rarity of this shield boss-type in the archaeological record: The *umbo* is considered to be the most precious metal fitting on a Roman *scutum* – a fact that especially applies to the objects made of copper alloy. In the case of damage of the wooden shield, an intact *umbo* could have been mounted on another shield board and a damaged *umbo* was usually repaired or smelted down<sup>49</sup>. As further explanation for the small number of preserved or otherwise known shield bosses of rectangular *scuta* Nabbefeld quotes the state of research and publication, the rather short period of their use and the (relative) restriction to legionaries as bearers<sup>50</sup>. Nevertheless, both the recycling of metal and the state of research of course concern all shield bosses, so that these factors cannot have a greater impact on the instance of this *umbo*-type in comparison with circular iron and copper alloy shield bosses with round flanges. The latter are present in a far larger number of finds. As a consequence, it is not unreasonable, based on the artefactual evidence, to conclude that the rectangular *scutum* was not the sole shield type in the equipment of Roman legionaries during the period AD 50–200/250,

<sup>40</sup> Nabbefeld, 2008: 44-45.

<sup>41</sup> *Ibid.*: 18.

<sup>42</sup> Fischer, 2012: 172.

<sup>43</sup> Busch, 2009: 339.

<sup>44</sup> *Ibid.*: 331-332.

<sup>45</sup> Nabbefeld, 2008: 45, Anm. 216. A leather cover (*tegimentum*) of a rectangular shield with designation of the *cohors XV Voluntariorum* was recovered in the auxiliary fort of Roomburg (Netherlands), likewise attesting the use of this shield type by auxiliary units (Busch, 2009: 325-326, Abb. 4).

<sup>46</sup> Deschler-Erb, 1999: 33; Bishop & Coulston, 2006: 91.

<sup>47</sup> Regarding the find context of the shield bosses from military sites see Nabbefeld, 2008: 244, 248, 256, 272, 275, cat. nr. 599-601, 622, 665, 706, 717. Three objects derive from civil contexts, albeit partly in a military sphere: from the *vicus* northeast of the auxiliary fort Abusina/Eining, from a mansion in Lyon and from the *vicus* of the Roman fort of Aroer (*ibid.*: 160, 227, cat. nr. 155, 518, 520). The contexts of the three *umbones* from private collections listed by Nabbefeld and of the piece found in the river Tyne near South Shields (*ibid.*: 215, cat. nr. 460) cannot be determined.

<sup>48</sup> For information on the fort of Iža, which functioned as outpost of the legionary fortress Brigetio, see Musilová & Turčan, 2011: 116-121. For the legionary *vexillationes* at Dura Europos in the 3<sup>rd</sup> century AD see Fischer, 2012: 291. For Bregenz the deployment of legionaries has to be assumed based on the find material as well as on historical considerations (Kopf, 2016b: 86-88, 389-390; Kopf, forthcoming).

<sup>49</sup> Nabbefeld, 2008: 57.

<sup>50</sup> *Ibid.*: 45.

but constituted one of several forms in contemporaneous use by these troops<sup>51</sup>. Thanks to the pieces from Bregenz presented in this paper (and missing from the publication of Nabbefeld) the number of undecorated hemispherical *umbones* with rectangular baseplate increases from 14 to 18 or 19. However, this number still has to be regarded as very low as the empire-wide archaeological record of legionary shields from a period at least 150 years.

#### 4. DISCUSSION: FORMATION AND LOCATION OF THE FINDS ASSEMBLAGE

Relating to the Rhine provinces, Th. Fischer points out two historical framework conditions leading to a relatively high ratio of quite large and in principle still usable military objects within the settlement finds from Roman military forts: on the one hand such find accumulations can be observed in the Rhineland at fortresses of the Augustan occupation age (until 10 AD) without traces of a violent destruction (e. g. Nijmegen, Oberaden, Dangstetten). A possible explanation therefor could be a tactically induced rapid decampment from these forts, whereby still usable equipment was left behind. On the other hand a great amount of military equipment within the small find material is characteristic of destroyed fortresses and forts – their burnt debris layers naturally contain more military objects than the remains of systematically abandoned military installations. Along the rivers Rhine and Danube many fortresses and forts destroyed in 68/70 AD belong in this category (Vetera I, Hofheim, Rheingönheim, Aislingen)<sup>52</sup>.

Alternatively, a high ratio of military equipment within rubble layers can also be ascribed to a local hostile fire. This situation applies to Köln-Alteburg (Germany), where an excavation on the area of two barrack buildings revealed two massive burnt layers of the Trajanic Period comprising numerous metal finds including many weapons and some armour pieces. According to their state of preservation these metal objects cannot be classified as scrap, but were intact at the time of the fire incident<sup>53</sup>. Relating to the military equipment, this observation especially concerns large fragments of weapons. Consequently, the state of preservation of the small finds indicates that the fort was not intentionally burnt down before a planned rebuild, but that the burnt layers originate from an unintended fire incident. The archaeological features support this assumption: due to missing burn marks in other parts of the fort the two burnt layers cannot be rated as archaeological evidence of a martial event. The composition of the assemblage of weapons from Köln-Alteburg does not correspond to the complete equipment of a military unit but mainly contains pieces of daggers without the originally associated *cingula*, whereas armour and shield fragments are only represented in a small number. The daggers probably do not represent usable weapons but individual items that were stored in the *arma* of the barracks. In contrast, the majority of the equipment of the soldiers was not located there at the time of the fire incident or could still have been retrieved by their owners<sup>54</sup>.

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<sup>51</sup> For critical comments with regard to the categorization of the rectangular *scuta* as standard equipment of legionaries in the 2<sup>nd</sup> century AD see Busch 2009: 325-327. She does not doubt the assignation of this shield type mainly to legionaries, but brings in archaeological evidence (finds from legionary fortresses) showing that in the 2<sup>nd</sup> century AD legionaries used oval shields with circular shield bosses too, even to a greater extent than rectangular shields. She emphasizes with good reason that the image of the typical legionary of the 2<sup>nd</sup> century AD equipped with the rectangular *scutum* is largely influenced by iconographical sources (e.g. Trajan's Column and Column of Marcus Aurelius).

<sup>52</sup> Fischer, 2012: 87-88.

<sup>53</sup> Albeit it cannot be excluded that allegedly undamaged pieces have been awaiting repair of organic components (kind remark of a reviewer).

<sup>54</sup> Fischer, 2005: 161-163.

Another possible explanation for considerable accumulations of military equipment in the find material of a fort is a probably unexpected, but quite regularly executed decampment of the garrison unit without return. In this context two assemblages of military equipment from Britain are worth mentioning, which probably were left behind intentionally by the withdrawing troops: the segmental armour-hoard from Corbridge –a chest containing damaged items and scrap metal buried by the garrison unit<sup>55</sup>– and military equipment from Newstead, where scrap metal and redundant material, probably deriving from the fabrica, was deliberately buried in pits in the course of the clearing process of the Domitian fort<sup>56</sup>.

Which of these circumstances could have been responsible for the formation of the assemblage of large fragments of iron armour in Bregenz? Both the kind of feature and the structural context (see below), from which the finds derive, are obscure. So it is unknown whether the military equipment lay in a pit, in a levelling layer, or in some other context. As mentioned above, it is solely recorded that the fragments were completely burnt. Probably, the preservation of the objects in their original shape is owed to this circumstance, because their burnt state rendered a further use impossible, as well as smelting of the metal. Therefore, at least the incident that preceded or accompanied their interment can be identified as a fire. For the assessment if burnt objects originally were stored at their finding place or elsewhere, the information on the corresponding feature type would be helpful: burnt metal deriving from a pit represents scrap, which could have been disposed away from the original storage site<sup>57</sup>. On the contrary, burnt rubble from a levelling layer usually comprises the material from the building destroyed on the spot. A combination of these two assumptions is also conceivable: large metal fragments such as those from Bregenz may have hindered the levelling of a smaller quantity of fire debris, and for this reason they could have been picked out of the burnt rubble and disposed of separately in pits on the same ground.

The typologically latest objects of the assemblage –the fragments of shield bosses of rectangular *scuta*– date to the end of the Early Imperial fort occupation on the «Ölrain» plateau. Thus it is highly probable that the fire incident which damaged the presented military objects was associated with the systematic dismantling of the fort (dendrochronologically dated to 44/45 AD), or occurred shortly before this date. In the latter case it may have to be classified as local hostile fire. If the burning of the finds took place in association with the withdrawal of the garrison then of course an intentional burning of the building in which they were stored is conceivable. The latter scenario would imply that the objects were intended to be left behind and thus constituted scrap or surplus metal. Instead of taking this material along to the new base the soldiers would have left it to the fire that destroyed parts of the former fort.

Indeed, burnt layers from the time of the dismantling of the latest fort in Bregenz could be documented, but solely alongside the rampart. In the narrow band of the inner part of the fort excavated so far only levelling layers without noteworthy burning bear witness to the transition from military to civilian assignment of the area<sup>58</sup>. A find complex of burnt samian ware potentially represents archaeological evidence of the intentional destruction of some buildings inside of the fort by fire. According to its form range and the potters' stamps, this find can be dated to the early Claudian Age, very likely establishing a connection to the end of the latest fort. The samian find complex was discovered in close vicinity to the excavation of 1908, on

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<sup>55</sup> Allason-Jones & Bishop, 1988.

<sup>56</sup> Manning, 2006.

<sup>57</sup> A potential pattern of the partial waste disposal in pits within the defensive enclosure of a fort was developed by U. Ehmig during processing of the *amphorae* from Dangstetten. By means of analyzing matching fragments she was able to prove that pieces of the same *amphorae* were regularly disposed of in widely separated pits (Ehmig, 2010: 130-143).

<sup>58</sup> Kopf & Oberhofer, 2016: 142-143.

the opposite side of the main thoroughfare (*via principalis*) of the fort (building no. 61 on Fig. 2)<sup>59</sup>. The destruction of the latest fort by an act of war can definitely be precluded. Firstly, in the already excavated and documented parts inside of the fort no extensive burnt layers with indicators for a wartime destruction could be detected. Secondly, there is some archaeological evidence for a systematic preparation of the former military ground for an immediately subsequent civil usage, executed by the soldiers before their withdrawal<sup>60</sup>. Therefore a sudden, hasty decampment of the troops can be excluded as reason for the burying of the military equipment assemblage from Bregenz. The organized withdrawal of the garrison unit may be explained in connection with the change of the legion deployed in Vindonissa, as well as with the establishment of the western Danube *limes* as a new militarily secured frontier of the province of Raetia<sup>61</sup>.

With regard to the reconstruction of the find context, the composition of the assemblage is noteworthy. It contrasts with the military equipment find from Köln-Alteburg: whereas the latter mainly consists of weapons (particularly daggers and spearheads), armour and especially shields dominate the Bregenz assemblage. However, neither the Bregenz nor the Köln-Alteburg find complex constitute the entire equipment of the soldiers of a *contubernium*. Thus, two scenarios can be imagined considering the unknown feature context: either the objects represent usable equipment accidentally remained behind in the designated rooms, whereas the majority of the equipment normally also kept there was carried along with the soldiers or could be saved by them from the fire. Alternatively, the objects were stored in or disposed of at their findspot as repair pieces or scrap metal, maybe constituting redundant equipment purposely left behind by the withdrawing troops. It could be argued that the excavation of 1908 should have yielded other metal fittings of shields and helmets (e.g. handgrips, U-sectioned brass bindings, helmet bowls, crest holders, decorated washers) if the shield bosses were mounted on a usable shield, and the brow guards and the cheek-piece on a functioning helmet at the time of their damage by fire. However, due to the uncertain layer relationships the absence of further pieces cannot be taken as a secure evidence that the iron fragments constituted repair pieces or scrap metal when the fire incident happened<sup>62</sup>. These considerations lead to the issue of the architectural context of the finds from the excavation of 1908: in what kind of buildings inside of a Roman military installation can larger amounts of weapons and armour generally be expected?

As part of the individual equipment, the weapons and armour in use normally were kept in the *arma* of the barrack buildings<sup>63</sup>, as could be proved in the archaeological record for instance by the abovementioned military finds from the burnt layers in Köln-Alteburg. Otherwise the existence of special armouries (*armamentaria*) in Roman fortresses and forts is well attested, especially in the epigraphical evidence. M. C. Bishop and J. C. N. Coulston interpret the *armamentaria* as repositories of those pieces of military equipment which were in general ownership by the troops (not of the individual soldier), and of reserve material or disused weapons destined for recycling<sup>64</sup>. The latter assumption is among others deduced from an ar-

<sup>59</sup> Kopf, 2016a. This samian assemblage is currently investigated in more detail by the author in the course of a research project, financed by the Tyrolean Science Fund and the Vorarlberg museum.

<sup>60</sup> Kopf & Oberhofer, 2016.

<sup>61</sup> Kopf, 2016b: 410; Kopf, forthcoming.

<sup>62</sup> Such a conclusion would require that the entire burnt layer from which the finds derive was removed during the excavation. This precondition is applicable to a shield boss from the area of the Early Imperial timber buildings in Cambodunum/Kempten (Germany). Because of the absence of further shield elements in its layer of origin, M. Sieler tends to an interpretation as scrap metal for this object (Sieler, 2009: 79).

<sup>63</sup> Fischer, 1991: 165.

<sup>64</sup> Bishop & Coulston, 2006: 265. At the same time they admit that the *fabrica* would be the more suitable storage place for scrap metal.

archaeological finding in the fort of Künzing (Germany). As has been proven, not the weapons and armour of the individual soldier's equipment but old arms as well as reserve assets were stored in the *armamentarium* within the headquarters building there<sup>65</sup>.

The architectural localization of *armamentaria* in the archaeological record has succeeded fairly seldom so far. Finds of military equipment in the architectural complex of the *principia* demonstrate the custom to place the weaponries within the headquarters buildings, e.g. in Lambaesis (attested by small finds and inscriptions), Niederbieber, Housesteads etc. In these cases the findspot of the military equipment was always situated in the rooms around the courtyard of the *principia*<sup>66</sup>. However, these finds sometimes do not reflect the original function of the rooms concerned but late repurposing of them (e.g. at Housesteads and Novae)<sup>67</sup>.

A prominent inscription from the fort of Lanchester (England) mentions the reconstruction of the headquarters building and the armoury (*... principia et armamentaria conlapsa restituit...*). But from the wording of this inscription it does not come out unambiguously if it refers to one architectural complex or two separate buildings. In comparison an inscription from Leiden-Roomburg (the Netherlands) bears witness to the new building of an *armamentarium*. According to that, a separate building functioned there as the armoury. This situation should also apply to other forts with missing lateral rooms around the headquarters yard<sup>68</sup>. The latter category comprises for the main part forts of the Early Principate, since according to a list of M. Kemkes lateral rooms with the purpose of an *armamentarium* constitute the latest introduced element of headquarters buildings in Roman fortresses and forts<sup>69</sup>. This architectural element turns up for the first time in the *principia* of the 21<sup>st</sup> Legion in Vindonissa in order to become a canonical feature of fortresses from Neronian Age onwards. However, in Upper Germany and Raetia the lateral rooms around the headquarters yard are still completely missing in the early Flavian Period, coming into the picture for the first time in the forts established in Trajanic Age (e.g. Künzing and Urspring). Changes in the fort logistics – initially introduced in the legionary fortresses and then adopted by the auxiliary forts – could have been responsible for the implementation of this new functional area<sup>70</sup>.

Contrary to this opinion, Bishop and Coulston are opposed to the localization of the *armamentaria* within the *principia*, raising the following arguments against this theory<sup>71</sup>. Firstly, the small finds upon which this assertion is based on regularly derive from deposits or waste disposals of the final stage of occupation (e.g. in the wells from the *principia* courtyards in Newstead and Bar Hill). In consequence, the location of the military finds concerned is not significant for the former functions of buildings but a result of the movement and deposition of equipment during the dismantling of installations. Secondly, some of the inscriptions in question were found in secondary contexts. The blocks with *armamentarium* inscriptions from the *principia* at Lambaesis represent spoils in a rebuild of the headquarters buildings. Therefore, they cannot be taken as evidence for the original location of the weaponry<sup>72</sup>. Thirdly, the phraseology of inscriptions referring to the reconstruction of connected parts of a building tends to be different from that of the inscription in Lanchester quoted as epigraphic evidence for the placing of the weaponry inside the headquarters buildings. As a possible candidate for

<sup>65</sup> Fischer, 1991: 160-161, 165, 167. According to the finds from Künzing military tools and cavalry 'sports' helmets were kept in the *armamentaria* too.

<sup>66</sup> Johnson, 1987: 128.

<sup>67</sup> Kind remark of a reviewer.

<sup>68</sup> Johnson, 1987: 128.

<sup>69</sup> Kemkes, 1996: 81-82, Tab. 1 (typology of Roman headquarters buildings of the 1<sup>st</sup> century AD).

<sup>70</sup> *Ibid.*: 93-94.

<sup>71</sup> Bishop & Coulston, 2006: 263-265.

<sup>72</sup> Kind remark of a reviewer.



a separate building functioning as *armamentarium* Bishop and Coulston bring in the so-called «Waffenmagazin» in Carnuntum. There more than 1000 fragments of weapons and armour were found, whereby the latter category numerically dominates by far (121 pieces of scale armour, 302 of segmental armour, 62 pieces of shield and 58 of helmet). Their second candidate for a separate *armamentarium* is located in the British fortress of Caerleon. Both in Carnuntum and in Caerleon the potential armouries are rampart-back buildings<sup>73</sup>. However, the interpretation of these structures as *armamentaria* is not generally accepted, especially not for the so-called «Waffenmagazin» in Carnuntum: The numerous weapon and armour finds published by Groller von Mildensee as early as 1901<sup>74</sup> indeed originate from the area of building VI attached to the southwestern enclosure wall, which Bishop and Coulston identify as *armamentarium*. Nevertheless, Ch. Gugl is very sceptical about a stratigraphic relation between the find complex of the Middle Imperial Era and the later massive building VI<sup>75</sup>.

Due to the present scarce state of knowledge concerning the inner building structure of the latest fort in Bregenz it is impossible to determine if the military equipment discussed in the present paper was discovered in a barrack building, an *armamentarium*, a *fabrica* or another building type. All we know is that the objects were recovered together during an excavation in 1908, carried out north of the southwestern edge area of the Tiberian fort excavated from 2009 to 2012. Unfortunately, the structural context of the finds is completely obscure. Their discovery was linked to the construction of a street crossing a so-called portico (no. 9a on Fig. 2) between the bath complex of the settlement and a symmetrical stone building (no. 7 on Fig. 2, denominated «Basilica» by the excavator S. Jenny<sup>76</sup>), already excavated at the end of the 19<sup>th</sup> century. Features of the oldest settlement phase to which the military assemblage in question has to be assigned were documented neither at the excavations of Jenny nor in the course of the investigations of von Schwerzenbach in 1908<sup>77</sup>. Thus the kind of building of the Tiberian fort in which the ensemble was stored is obscure. The position of the southwestern and (in all probability) southeastern defensive enclosure of the fort is archaeologically attested, so that it can be said that the findspot lies in the central area or in the northern half of the (presumed) *praetentura* of the fort close to the *via principalis*, passing by southeast of the excavation area. The headquarters building has not so far been located, but in compliance with the usual overall layout of a Roman fort it should be positioned on the opposite, southeastern side of the *via principalis*. Consequently it is unlikely, although according to present knowledge not completely impossible, that the objects were covered with earth in the area of an armoury inside the *principia*. Anyway, considering the existence of the fort from the Tiberian to Early Claudian periods, this would not be expected, referring to the previous remarks on the introduction of *armamentaria* within the architectural complex of the headquarters buildings in Claudian Age (in fortresses) at the earliest. As a consequence, storage of the artefacts in the area of barrack buildings or a *fabrica* seems most plausible. The composition of the assemblage dominated by armour and shields could also point towards as having belonged to a *contubernium*:

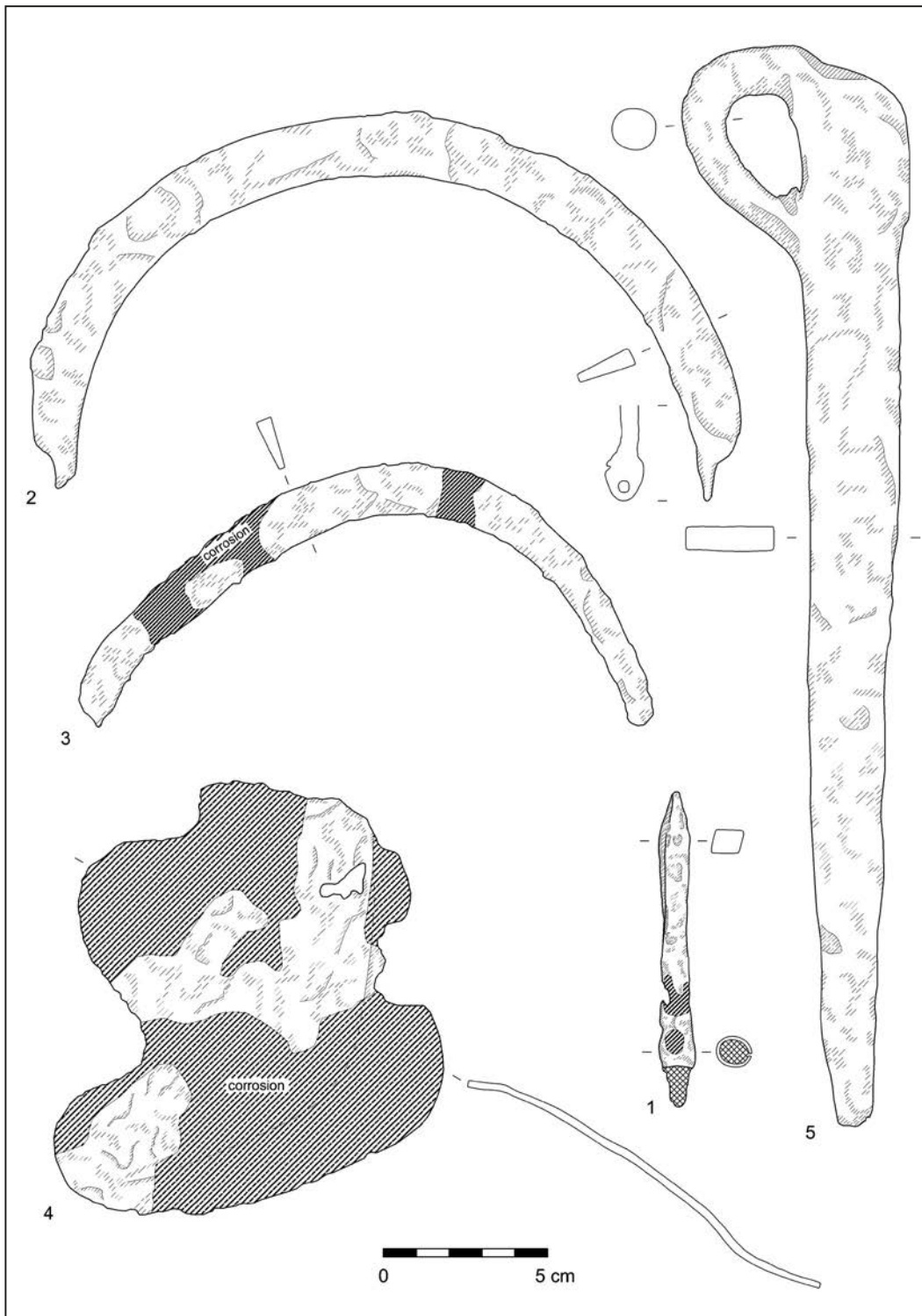
<sup>73</sup> Bishop & Coulston, 2006: 265-266; Bishop, 2015.

<sup>74</sup> Groller von Mildensee, 1901.

<sup>75</sup> Gugl, 2011: 516. The military equipment was recovered inside or under the western wing of the building. An alternative interpretation of building VI as a fortlet for the remaining units of the *legio XIV Gemina* (proposed by H. Veters) is also problematic from the archaeological point of view: Parts of the stonework of building VI overlay the *vallum* of the fort, rendering a contemporary use of these two structures effectively impossible (*ibid.*: 516, Abb. 7).

<sup>76</sup> Recent research on this building indicates a function as a *hospitium* (Oberhofer, 2016: 104-106).

<sup>77</sup> During the excavation of 1908 the oldest settlement layers were at least partly reached with great certainty, because the find material comprises a Nemausus coin (Schwerzenbach, 1910/11: 81).



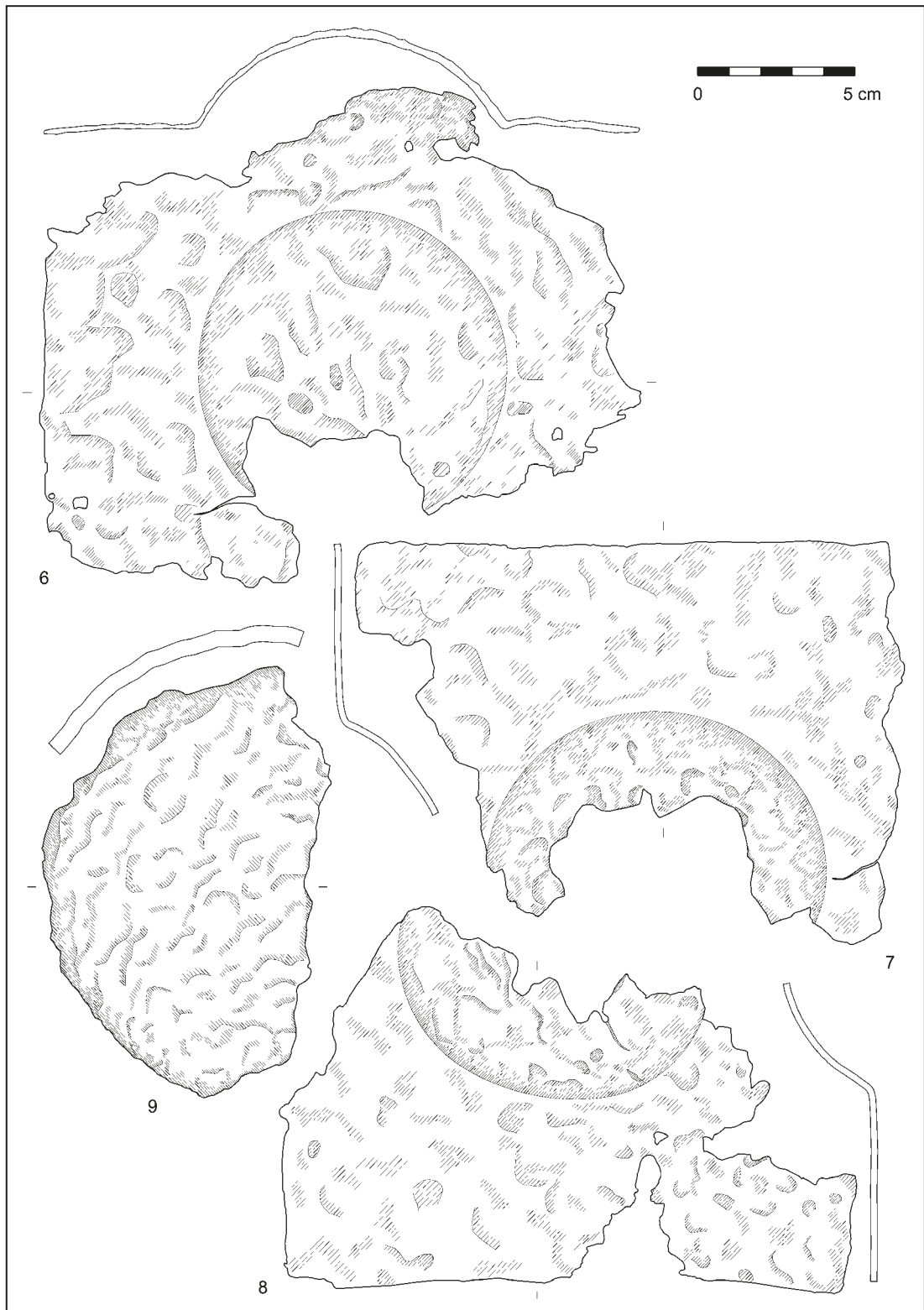


Plate 2. Shield bosses from the excavation of 1908 in Bregenz. Scale 1:2 (drawings J. Kopf).

shield and helmet were part of the personal equipment of the soldiers and had to be close at hand in case of an emergency<sup>78</sup>.

A comparable find from the Netherlands shines a light on another possible building type from which the Bregenz military equipment could derive. At Valkenburg an assemblage of three copper alloy circular shield bosses has been interpreted as a possible *in situ* remnant of an *armamentarium*. The *umbones* from Valkenburg (ascribed to the phase of Castellum 4) were discovered in an elongated rectangular building with a double suite of rooms alongside the *via principalis*, by the side of the supposed *praetorium*<sup>79</sup>. They lay in a pit with burnt debris, whereby the circumstances of finding suggest an intentional burying<sup>80</sup>. The structure in Valkenburg can be assigned to the category of long rectangular buildings alongside the main roads of forts, which probably served as magazines (for equipment, tools, vehicles, stocks etc.) according to A. Johnson.<sup>81</sup> More details about the character of the fort buildings in the area of the excavation of 1908 could only be obtained by new, stratigraphic exploration<sup>82</sup>. Since a large part of this area has still not been built over, it is within the bounds of possibility that future archaeological investigations will shed new light on this exceptional military equipment assemblage from Bregenz.

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<sup>78</sup> Manning, 2006: 19-20. According to this, pieces of helmet and shield are completely missing in the metal hoards collected together from the *armamentaria* within the *principia* of Künzing (Fischer, 1991: 166).

<sup>79</sup> Glasbergen, 1972: 52-53, 150.

<sup>80</sup> *Ibid.*: 114-116.

<sup>81</sup> Johnson, 1987: 18, 211.

<sup>82</sup> Geophysical measurements on the area of building no. 8 (fig. 2) and southwest of it have already been carried out in 2015 by a team of the University of Innsbruck with participation of the author. However, these investigations did not produce significant results regarding the timber building structures of the early phases due to modern disturbance and a considerable elevation of the terrain since Roman times.



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