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AN INSCRIBED BREASTPLATE FROM APULUM DEPICTING VICTORIA

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We present here a recent discovery made at Apulum, in 2010, during the systematic excavations started in 2009 by Anca Timofan in the southern quarter of the civilian settlement of the legion XIII Gemina at Apulum. After restoration, the artefact (Br E) turned out to be an element of a bronze breastplate depicting Victoria, with an incised inscription¹.

I. Historical and archaeological context

The breastplate depicting goddess Victoria was found in 2010, during a systematic archaeological excavation in the southeastern part of the civilian settlement of the legion XIII Gemina at Apulum (Alba Iulia, Alba County, Romania). The military artefact was discovered at a depth of 90 cm, inside a room of building CII, one of the two Roman dwellings (“strip-houses” type) unearthed and researched within the Apulum – Alba Carolina Citadel (St. Francis of Paola Ravelin) project. This research aimed to highlight the

¹ The first part of this joint paper was redacted by A. Timofan, the second by M. Gui and the third by D. Dana; the two appendices are signed by D. G. Anghel and C. Șuteu.

archaeological and historical potential around the legion XIII Gemina's fortress². The area inside the Vauban fortification includes the Roman military base and a part of the civilian settlement (*canabae legionis*).

The *canabae* developed after the construction of the first phase of the fortification, in its vicinity. Based on the epigraphic records but also following the archaeological research carried out so far, it can be stated that the settlement expanded in the 2nd and 3rd c. AD around the legionary fortress. A part of this settlement or, in the opinion of other authors, the whole territory occupied by the *canabae* evolved rapidly reaching to fulfil in 197 AD the conditions for the first urban status, namely Municipium Septimium Apulense³.

The construction of the Vauban-type fortification (Alba Carolina Citadel) in the 18th c., with its specific defence system, resulted in extensive destruction of the Roman buildings. Some of the typical elements of the fortification, such as the ravelins, were arranged by digging a defensive ditch, the remaining earth mass being reinforced with brick walls. Giovanni Morandi Visconti, the commander-in-chief of the fortification, proposed exterior works of terraced counterguard type in the area of St. Francis of Paola Ravelin which will be transformed into a cavalier⁴.

St. Francis of Paola Ravelin is located in the southeastern area of the Vauban citadel between the Eugene of Savoy Bastion and Count Steinville Bastion, at 135 m South from the *porta principalis dextra*⁵ of the legionary fortress, occupying an area of about 8346 sq² (Pl. I.1). The Roman habitation layer was preserved inside this ravelin where the Habsburg constructions did not affect it, even if in 1765-1766 a reduit was planned to be built on the St. Francis of Paola, dominating Dealul Furcilor (the Forks Hill)⁶.

The stratigraphic sequence of the ravelin is characterised by the presence of several layers of habitation. The oldest archaeological features were dated to the Early Bronze Age⁷. This layer is followed by the Roman features (2nd and 3rd c. AD). The latest phase of the Roman habitation is overlaid and partially affected by an Early Medieval layer (10th-12th centuries)⁸. The current shape of the ravelin dates to the 18th-19th centuries when the Vauban-type fortification was built along with all its specific defensive elements. The history of

² CCA 2010, p. 24-26, no. 2; Timofan 2010a, pp. 105-116; idem 2010b, pp. 541-556.

³ Diaconescu, Piso 1993, p. 69; Ardevan 1998, pp. 48-50; Ota 2012, pp. 31-36.

⁴ Goronea 2007, p. 71.

⁵ Moga 2005, pp. 117-122.

⁶ Goronea 2007, p. 65.

⁷ Ciugudean 1988, pp. 17-22.

⁸ Timofan 2010a, p. 108.

archaeological research within this area includes several investigations carried out in the '60s, revealing traces of Early Medieval habitation⁹.

The first campaign of the systematic archaeological research began here in autumn of 2009 and continued in 2010 by investigating the north-western side of the St. Francis of Paola Ravelin (**Pl. I.2**). There were discovered two Roman buildings (CI, CII), whose walls have been unearthed at a depth between 40 and 60 cm after removing a substantial layer of Roman tiles belonging to the collapsed roof. Also, a street pavement with large slabs of greenish sandstone was discovered along the two Roman buildings. They are narrow and elongated buildings that extend along the street, possibly organised on the associated plots that have been adapted to the shape of the building (**Pl. I.3**).

Their planimetry and architecture indicate that it is most likely the type of Roman houses specific to civilian settlements near the forts, both *vici militares* and *canabae*, so-called “strip-houses” or “Streifenhaus”. It is a typical house-form found especially within the Gallo-Roman space, in the northwestern Roman provinces, but also in the Danubian area. These houses were orientated with their narrow front parts either onto the streets leaving the fort’s gates or on roads parallel to the fort’s defences¹⁰. They had a typical inner division with shops and workshops at street front, a dwelling area in the backyard and domestic annexes.

Analysing the occupation around the fort at Newstead, C. S. Sommer mentions that the excavated extramural buildings are technically strip-houses. He describes these elongated buildings having their narrow fronts towards the roads like the ones discovered in Apulum. Inside the houses, people lived, and also produced, stored and sold various goods, and offered certain services¹¹. The buildings could also accommodate various installations in the backyard as in the case of the cooking area between the two strip-houses investigated near the legion XIII Gemina’s fortress.

In Dacia, “strip-house” or “Streifenhaus” type dwellings were investigated in the military *vicus* at Tibiscum, the buildings being organised on plots and having their fronts towards the street. They had both living spaces and annexes for craft activities as pottery workshops, metalworking and glass workshop¹².

During the archaeological research on St. Francis of Paola Ravelin, several rooms were excavated altogether with the space between the two Roman strip-houses. This area was closed on the streetside with a wall, probably functioning as an annex (**Pl. II.1-2**). A circular trace of reddish clay of an oven

⁹ Anghel 1968, pp. 470-471.

¹⁰ Sommer 2012, p. 81.

¹¹ *Ibidem*, p. 82.

¹² Benea 2004, pp. 154-165; *idem* 2016, pp. 257, 260-262.

with a diameter of about 2 m was discovered between the added wall and the two pillars which supported a roof over the cooking area. A thick layer of charred seeds and burning debris from the clay oven walls were found surrounding the pillar bases, corresponding to the stepping level inside building CI. Several fragments of a *dolium* were found in the same archaeological context. This type of vessel can be related to household activities carried out in the area near the legionary fortress. The discovery of the oven and the *dolium* and the occurrence of millstones fragments in the same archaeological layer suggests that the buildings might have been used for domestic purposes for different phases in the processing of plants, some of them prior to cooking, for example dehusking of the hulled wheat¹³.

The upper part (*catillus*) of a Roman millstone was found inside building CII altogether with a fragment of a *meta* (the lower part). The presence of numerous fragments of *mortaria* and a substantial amount of common ware used in domestic and household activities indicate the production and storage of food resources and supply of the legionary fortress situated nearby. Among the fragments of amphorae used for the storage of wine and mostly for olive oil supply, one fragment bearing the painted abbreviation of the legion XIII Gemina (*titulus pictus*), was found¹⁴.

Other archaeological finds were: a pair of silver earrings, sewing needles, hair pins, lamps, fragments of terracotta statues representing goddess Venus, a T-shaped fibula dating from the first half of the 3rd c. AD¹⁵, *terra sigillata* ware, common ware, and a large number of animal bones. The coins are covering mainly the 3rd c. AD: *sestertius* from Antoninus Pius (139 AD), *denarius* from Iulia Maesa (218-224 AD), *denarius* from Elagabalus (222 AD), *denarius* from Sallustia Barbia Orbiana (225-227 AD), *denarius* from Severus Alexander (233-235 AD), *denarius* from Gordianus III (241-243 AD), *antoninianus* from Philippus I (244-247 AD), *antoninianus* from Cornelia Salonina (257-258 AD).

Based on the stratigraphic sequence, construction techniques and the characteristics of the archaeological artefacts, the two Roman strip-houses discovered in the civilian settlement of the legion XIII Gemina can be dated beginning with the end of the 2nd c. AD and in the first half of the 3rd c. AD, with a last phase of habitation after the first half of the 3rd c. AD.

¹³ Ciută, Timofan 2013, pp. 193-196.

¹⁴ Timofan 2012, pp. 102-103; Egri *et alii*, p. 189.

¹⁵ Cociş 2004, p. 150.

II. The breastplate

1. Description

The piece discussed in this paper (Pl. III, IV.4, VI) represents the left breastplate from a two-piece armour fastening system (Pl. VII.1-3). Made from a 0.2 cm thick copper-alloy sheet, it was not preserved in its entirety. The lower part is missing and the remaining length represents a little over 3/4 of the original length. The long side of the fragment measures 14.8 cm and the maximum width 9 cm. Besides the inferior part, the lower right corner of the main decorative panel lacks as well, and in some parts, the surface is so damaged that nothing of the decoration can be discerned (see *Appendix 1*, concerning the restoration report). The main decorative elements were embossed (*au repoussé*), while the techniques of engraving and punching (*punctum*) were employed for the details. An ownership inscription was scratched on the margin of the long side (see below, § III). Some modifications, which will be discussed later, suggest repairs and/or a secondary use of the piece.

Originally, the breastplate had three decorative panels, of which only the upper two survive. The panels are marked by a beaded cordon flanked by a row of punched dots (with a supplementary wavy row towards the edge of the short and upper sides). They are further delineated from each other by a band incised with oblique lines, again flanked by rows of dots. The main decorative field depicts Victoria with large wings seen from the front. The goddess is wearing an ample *peplos*, seemingly belted crosswise her chest and below her breasts, which reaches a little over her ankles. A *himation* or small mantle crosses her back at the level of the waist and hangs down from her arms. The footwear is suggested by incisions above the ankles. Victoria is depicted in slight contrapposto, with her left foot flexed. In her raised right hand, she is holding the laurel wreath, possibly decorated with ribbons. In her left hand, she is most likely holding the palm branch, but the area is damaged. The top of the palm branch can be discerned appearing from behind her left wing. The head is almost completely destroyed. The feathers from the upper half of her wings are rendered as small scales, whereas those on the lower half are marked by small oblique incisions. To the left of the goddess, there is a military standard comprising probably six *phalerae* above a *lunula*. Unfortunately, the top of the standard is damaged, but a couple of ribbons are perhaps visible. In the smaller upper panel, there is the representation of Jupiter's eagle with folded wings. The head of the bird was not preserved. The feathers on the body are rendered as small scales and the tail is marked with a herringbone pattern.

2. Analogies and dating

According to J. Garbsch, two main groups of such breastplates can be distinguished on the basis of the decorative composition. The first includes those with complete figures of various deities in the main register, usually with an eagle in the smaller upper register and an animal in the lower one (Garbsch P3, P6, P7; **Pl. VII.4-6**). The second (seemingly later) group is more stereotypical, most of the times illustrating busts of Mars and Minerva or Virtus, with the eagle above and shields beneath (Garbsch D1-2, E6, P23; **Pl. VII.7, Pl. VIII.1-2**)¹⁶.

The piece found at Apulum/Alba Iulia belongs to the first group (either Garbsch P3 – without legionary inscription under the central field, or P7 – with inscription; **Pl. VII.4, 6**). There are several analogies displaying the same iconographic motif, i.e. Victoria with laurel wreath and palm branch. A piece originating from the legionary fort at Carnuntum (**Pl. VIII.3**) depicts Victory seen from the front, wearing the same kind of garment and standing in a very similar pose, except that her head is turned to the right. In the upper register stands the eagle and in the lower one a capricorn. Based on this animal and on the place of discovery, the breastplate, dated to the 2nd-3rd c. AD, was connected to *legio XIV Gemina Martia Victrix*¹⁷. An almost identical fragment with unknown provenance, dated during the last half of the 2nd-first half of the 3rd c. AD, was published from the Axel Guttmann collection¹⁸. Despite the iconographic similarities, one must note that their execution is cruder and the registers are not formally divided (Garbsch P6; **Pl. VII.5**). Another find with uncertain origin from the same collection (probably coming from the Rhine area) is actually part of a pair illustrating Mars on one plate and Victory on the other (**Pl. IX.1**). This time Victory is semi-nude and a small mantle hangs down from her arms. The eagle with spread wings occupies the upper register and a sea panther the inferior one (Garbsch P3; **Pl. VII.4**). The animal was interpreted as either a purely decorative motif, or an unknown legionary or auxiliary emblem. The pair was dated again between the middle of the 2nd-middle of the 3rd c. AD¹⁹. Another plate of unspecified provenance with Victoria is identical in terms of iconography with the previously mentioned one²⁰. Apart from the fact that Victory is nude, the frontal view and the pose of the goddess on those two privately held breastplates are paralleled by the Apulum piece.

¹⁶ Garbsch 1978, p. 8. Since J. Garbsch's volume, some pieces which cannot be fitted in this typology have surfaced (e.g. Flügel 2005, Pl. 5, 7), but the majority of known breastplates can nevertheless be grouped as such.

¹⁷ Garbsch 1978, p. 77, P6 (Pl. 34.5); Junkelmann 1996, p. 17 (fig. 27).

¹⁸ Born, Junkelmann 1997, pp. 136-137, AG 593 (fig. 86).

¹⁹ *Ibidem*, pp. 132-135, AG 713, 714 (fig. 84-85, Pl. XII-XIII).

²⁰ D'Amato, Negin 2017, fig. 89.

Finally, another Victoria breastplate was discovered in *Barbaricum*, close to Orgovány (Hungary, Bács-Kiskun County). On it, the winged Victory is seen from the profile. Dressed in a similar fashion to ours, she extends a laurel wreath; the palm branch is also present. The eagle with outstretched wings appears in the upper register, while a bull is depicted in the inferior register, right under a *tabula ansata* inscribed with *GEM (Pl. VIII.4)*. Based on the bull and the inscription, the piece was assigned to the legion *X Gemina*²¹. Although a stray find, it was initially dated to the end of the 1st-beginning of the 2nd c. AD based on some historic suppositions²². Since then, a number of pieces have surfaced, which are so similar that a common workshop was recognised²³. The most important for the discussion is the breastplate from Mušov (Czech Republic), which illustrates an eagle in the top register, one of the Dioscuri in the centre, the inscription *LEG X* immediately below, and a bull in the inferior register²⁴. The discovery context ensures a close dating to the time of the Marcomannic Wars²⁵, and this fact and other stylistic considerations have prompted a revised dating for the entire group, including the Orgovány plate, to the second half or maybe even the last third of the 2nd c. AD²⁶. An important point is that this workshop presumably based at Carnuntum supplied breastplates not only for the resident *XIV Gemina* legion, but also for the *X Gemina* legion at Vindobona, and there may have been a further workshop at Brigetio producing stylistically different plates²⁷.

We must note that the breastplate found at Apulum has some affinities to the so-called Orgovány-Mušov group discussed above (e.g. the techniques – embossing, punching and engraving, the herringbone pattern on the eagle’s tail, the band with oblique lines separating the registers). However, this is not enough to postulate a common origin. Despite the similar artistic quality, our breastplate is less elaborate.

*

To date, only one other analogous piece (of the type Garbsch P3; **Pl. VII.4**) is known from Roman Dacia. Found in the civilian settlement at

²¹ Thomas 1976, fig. 1-5; Garbsch 1978, p. 77, P7 (Pl. 34.2).

²² Thomas 1976, p. 30.

²³ Borhy 1999, pp. 304-306; the group includes the breastplates from Orgovány, assigned to the legion *X Gemina* (Thomas 1976, fig. 1-5; Garbsch 1978, p. 77, P7, Pl. 34.2), the one from Mušov, assigned to the same legion (Tejral 1994, fig. 5.15), a piece with unknown provenance in the collection of the National Museum of Hungarian History in Budapest assigned to the legion *XIII Gemina* (Borhy 1999, Pl. 17.4-5; Pl. 18), and probably also a plate from Carnuntum or Brigetio without troop inscription (Garbsch 1978, p. 77, P3, Pl. 34.1).

²⁴ Tejral 1994, p. 36 (fig. 5.15).

²⁵ *Ibidem*, pp. 36, 39.

²⁶ Borhy 1999, pp. 305-307.

²⁷ See Borhy 1999, pp. 304-306; Flügel 2005, pp. 156-157.

Porolissum/Moigrad (Sălaj County), it illustrates the nude Mars probably with Corinthian helmet, spear and shield (**Pl. IX.2**)²⁸. The god is seen from the front, in slight contrapposto. The inferior panel is occupied by a sea panther. Of the original piece, only the central and the inferior registers were preserved²⁹. The upper register and the margins are missing. The resulting shape is too regular to believe that it happened by accident, so we can safely assume it was purposely cut following the borders of the decorative panels. Because the context of discovery was dated to the 3rd c. AD, the manufacture and use of the piece were assigned to the same period³⁰. However, since it appears to have been in fact reused as something else, the original breastplate was most likely produced earlier. Among the pieces with similar iconography (i.e. complete figure of Mars) we can recall the abovementioned plates from Carnuntum or Brigetio and from the National Hungarian Museum³¹, as well as a specimen from Adana (Turkey) and another one from Brigetio³², but the latter two are not very close to the plate from Porolissum in terms of style and manufacture.

A close comparison between the pieces from Apulum and Porolissum is not without significance. As mentioned above, studies on similar pieces have proven the existence of one, if not two workshops in Pannonia supplying various legions with breastplates³³. In the case of the two pieces from Dacia, we can note a similar (though not identical) manner of delineating the decorative panels, using punched dots, beaded cordons and bands incised with oblique lines (**Pl. VI, IX.2**). Also, the overall quality of the execution appears similar. The interior dimensions of the central decorative panels (roughly 8 x 5 cm for the Porolissum plate and 7.5 x 6 cm for the Apulum plate) suggest a slightly different shape, but this only means that they were not part of the same pair. Unfortunately, since these breastplates were only fragmentarily preserved, we lack more points of comparison. Nevertheless, the possibility of both being produced by the same workshop remains feasible.

*

Apart from these, there are 13 more breastplates known from the territory of Dacia, but nearly all are of the type with busts in the central field, eagles above and one or two shields underneath (Garbsch E6; **Pl. VIII.1**). The largest batch (five pieces) comes from various spots within the *principia* of the

²⁸ Zăgreanu, Deac 2014, pp. 209-211, no. 1 (Pl. II.1).

²⁹ Cf. Zăgreanu, Deac 2014, pp. 209-211, who seem to assign it to breastplates with two decorative registers, which is not the case here.

³⁰ Zăgreanu, Deac 2014, p. 210.

³¹ Garbsch 1978, p. 77, P3 (Pl. 34.1) (Carnuntum or Brigetio); Borhy 1999, Pl. 17.4-5; Pl. 18 (National Hungarian Museum, Budapest).

³² Garbsch 1978, P5 (Pl. 34.3) (Adana); P4 (Pl. 34.4) (Brigetio).

³³ Borhy 1990, pp. 305-306; Flügel 2005, p. 157.

legionary fortress at Potaiassa/Turda (Cluj County) and therefore they were largely dated post 170 AD, when *legio V Macedonica* arrived in Dacia³⁴. Quite unusually, all five are right breastplates. Although fragmentarily preserved, one can see that they are almost identical, both in terms of the composition of the decorative fields, the actual decoration and the execution. Four illustrate Minerva in the central field (the fifth is too fragmentary), the only variation being the number of shields in the inferior register, either a single one or two crossed shields (**Pl. IX.3, X.1**). The same type is illustrated by a right piece from barracks no. 5 in the auxiliary fort at Buciumi (Sălaj County), this time depicting Dea Virtus or Dea Roma with a bare breast, dated to the first half of the 3rd c. AD (**Pl. X.2**)³⁵; another fragment from the same site is too small to discern anything except that it was engraved³⁶. A left plate from the region of Oltenia dated to the beginning of the 3rd c. AD is analogous and features a female bust with a bare breast³⁷. A fragmentary right piece from the civilian settlement at Porolissum, dated to the beginning of the 3rd c. AD, illustrates a shield and is surely of the same type³⁸, and probably also a fragmentary breastplate from Sărățeni (Mureș County), of which only the eagle in the top register was preserved³⁹. All the above mentioned pieces share the same iconographic scheme, with the panels divided by a band of incised oblique lines, and the rather crude realisation. It appears that they were used indiscriminately by auxiliaries and legionaries and are extremely similar to other breastplates from across the Empire roughly dated between the middle of the 2nd and the middle of the 3rd c. AD⁴⁰, conveying the impression of standardisation.

A fragmentary plate found in the auxiliary fort at Micia/Vețel (Hunedoara County)⁴¹ and a pair with Mars and Minerva from Samum/Cășeu (Cluj County) (**Pl. X.3**), unfortunately, known only from a photograph⁴², stand

³⁴ Isac, Bărbulescu 2006-2007, p. 217, nos. 4-8 (fig. 22-26); idem 2009, pp. 75-76, nos. 4-8 (fig. 22-26).

³⁵ Chirilă *et alii* 1972, pp. 75-76, no. 3 (Pl. LXXXIV-LXXXV); Petculescu 1974-1975, pp. 82-83 (fig. 1.2, 2.1); Garbsch 1978, p. 78, P15; Petculescu 1986, p. 154 (fig. 3.2).

³⁶ Chirilă *et alii* 1972, p. 77, no. 16 (Pl. CXVI.12); Petculescu 1986, p. 154 (fig. 4.1a-b).

³⁷ Petculescu 1974-1975, pp. 82-83 (fig. 2.2-3); Garbsch 1978, p. 79, P17; Petculescu 1986, p. 154 (fig. 4.3; in the article, the reference to the figure is incorrectly indicated as fig. 4.2).

³⁸ Petculescu 1974-1975, pp. 81-82 (fig. 1.1); Garbsch 1978, pp. 78-79, P16; Petculescu 1986, p. 154 (fig. 3.1).

³⁹ Cioată, Ötvös 2015, pp. 33-35, Cat. no. 1 (fig. 2); contrary to the cited authors, we seriously doubt it can be resembled to the breastplates from Orgovány, Mušov and Carnuntum/Brigetio.

⁴⁰ E.g. Garbsch 1978, p. 55, E4-8 (Pl. 9.7, 8, 9, 11) (Pfünz); p. 78, P 9 (Pl. 36.1) (Mundelsheim); p. 77, P8 (Pl. 36.3) (Frankfurt-Heddernheim); p. 79, P21 (Pl. 36.4) (Künzing); p. 78, P12 (Pl. 36.5) (Heerlen); p. 79, P20 (Pl. 36.6) (Pfünz).

⁴¹ Petculescu 1986, p. 154 (fig. 4.2; in the article, the reference to the figure is incorrectly indicated as fig. 4/3).

⁴² Isac, Bărbulescu 2006-2007, p. 218, nos. 9-10 (fig. 5, 27); idem 2009, p. 76, nos. 9-10 (fig. 27).

out. They have just two decorative registers, not formally divided. The main register is occupied by the bust of a divinity and there is no eagle above, being most similar to the pair from Manching, dated to the first third of the 3rd c. AD⁴³ (Garbsch D1-2, **Pl. VII.7**). These finds differ from the rest not only in the organisation of the decorative fields; they also display higher artistic quality and detail. A fragment from Porolissum published only as a drawing, without further information, has a similar decorative scheme, with two registers⁴⁴.

To sum up, we can clearly discern three groups of breastplates in Dacia. The first comprises the finds from Apulum and from the civilian settlement at Porolissum illustrating Victoria and Mars (Garbsch P3 and/or P7; **Pl. VII.4, 6**); the second, the pair from Samum, the piece from Micia and another one from Porolissum (Garbsch D1-2 or similar; **Pl. VII.7**); the third, the largest group, those from Potaissa, Buciumi, Porolissum, Oltenia and Sărăţeni (Garbsch E6; **Pl. VIII.1**).

According to J. Garbsch, a chronological difference could be noted: the breastplates depicting various figures of deities were older, dating from between the end of the 1st and the beginning of the 2nd c. AD, while later in the 2nd c. AD the stereotypical breastplate with facing busts (mostly of Mars and Minerva) was introduced⁴⁵. More recent finds, however, lead to the generally accepted conclusion that this fastening system with breastplates was introduced no earlier than the Antonine period⁴⁶, but the idea of a chronological difference between types may still be valid.

Although almost all of the abovementioned finds with three registers (Garbsch E6; **Pl. VIII.1**) from Dacia were dated mainly on the basis of analogies and less on the actual discovery context, an interval between the Marcomannic Wars and the middle or third quarter of the 3rd c. AD was suggested⁴⁷. As already mentioned, the Orgovány-Mušov group (Garbsch P3 and/or P7; **Pl. VII.4, 6**) was in use during the Marcomannic wars. The type was therefore dated between the middle or last third of the 2nd and the beginning of the 3rd c. AD⁴⁸. It would appear then that the types with complete figures of deities were in use between the middle of the 2nd and the beginning of the 3rd c. AD and the

⁴³ Garbsch 1978, pp. 53-54, D1-2 (Pl. 8.1-2).

⁴⁴ Gudea 1997, p. 20 (a different piece of this type is illustrated on the cover of the booklet, but there is no information whether it is a real find or just an artistic illustration); we wish to thank H. Cociş and D. Deac (County Museum of History and Art, Zalău) for pointing out this piece to us.

⁴⁵ Garbsch 1978, p. 8.

⁴⁶ Bishop, Coulston 2006, p. 139; see also Borhy 1990, pp. 305-307; Tejral 1994, pp. 36-39; Flügel 2005, pp. 156-157; Fischer 2012, p. 165.

⁴⁷ Petculescu 1986, p. 154. Unfortunately, the finds from Potaissa were only broadly dated post 170 AD, so we cannot know if they were actually in use during the last decades of the 2nd c. AD, or only starting from the 3rd c. AD.

⁴⁸ Borhy 1990, pp. 305-306; Tejral 1994, p. 39; Flügel 2005, pp. 156-157.

stereotypical types with busts starting from the end of the 2nd, if not the beginning of the 3rd c. AD, allowing a period of overlapping. This would explain why there are only two pieces of the first kind in Dacia (Apulum and Porolissum), which probably survived because they were repurposed, and so many of the other.

3. Iconography

There are only three complete breastplate pairs known to date. The most relevant for our study is the already mentioned pair with Mars and Victory from the Rhine area (**Pl. IX.1**)⁴⁹. The remaining two pairs are of the type with two decorative registers, from Manching⁵⁰ and Samum/Cășeu (**Pl. X.3**)⁵¹, both with Mars on one plate, and Minerva on the other. Regarding the type with complete figures of deities, Mars is the most frequently encountered, followed by Victoria⁵², so it is reasonable to assume that they were commonly paired. While other male figures like Jupiter⁵³ or the Dioscuri⁵⁴ can be seen on this type of plates, it is statistically more likely that our Victoria was paired with Mars (see **Pl. XII.2**). This association of Mars and Victory, both included among the *dii militares*, is in fact extremely common on pieces of equipment⁵⁵.

The appearance of a *signum* is more interesting. Military standards crop up as a decorative motif on a wide range of equipment items, from helmets (even gladiatorial), shield bosses, sword sheaths, greaves and horse chamfrons⁵⁶ (**Pl. XI.2**). Relating specifically to body armour, we can mention the so-called manipular standards on the pectoral plate from Tricornium/Ritopek (Upper Moesia) (**Pl. XI.1**), attributed either to the legion *VII Claudia* or *IV Flavia*⁵⁷. However, probably due to space limitations and the fixed decorative scheme, they are not common on pairs of breastplates. We know of a single specimen which features a *signum*, but in that case, a legionary eagle occupies the central decorative field completely (**Pl. XII.1**)⁵⁸. Therefore, the *signum* behind Victoria

⁴⁹ Born, Junkelmann 1997, pp. 132-135, AG 713, 714 (fig. 84-85, Pl. XII-XIII).

⁵⁰ Garbsch 1978, pp. 53-54, D1-2 (Pl. 8.1-2).

⁵¹ Isac, Bărbulescu 2006-2007, p. 218, nos. 9-10 (fig. 5, 27); idem 2009, p. 76, nos. 9-10 (fig. 27).

⁵² Borhy 1990, pp. 305-306.

⁵³ D'Amato, Negin 2017, fig. 92.

⁵⁴ Tejral 1994, p. 36 (fig. 5.15).

⁵⁵ See Garbsch 1978, p. 29-30; Künzl 2001, p. 82; for comprehensive statistics on the iconographic themes appearing on armour, among which Mars and Victoria feature prominently, see Künzl 2004, pp. 398-402 (fig. 8-11).

⁵⁶ For examples, see Töpfer 2011, Pl. 128-132. From Dacia we can mention the horse chamfron from Gherla (Wieseler 1858, Pl. CXII remains the most detailed, yet not entirely accurate illustration; Garbsch 1978, pp. 58-59, K1-2, fig. 5).

⁵⁷ See Popović 1993, pp. 38-39 (fig. 1); see also Künzl 2001.

⁵⁸ Flügel 2005, Pl. 5, 7.

on the Apulum plate might have a special significance. It does not appear to be illustrated just to fill an empty space, being actually crammed inside the central panel. We can count a large *lunula* and possibly six simple *phalerae* above it; however, the representation is small-sized and damaged and the shape of the elements towards the top is unclear. The *signum* belongs to an infantry troop⁵⁹. Despite *phalerae* being present on the field signs of auxiliary cohorts and *equites singulares Augusti*, this kind of accumulation of simple *phalerae* and hardly any other *dona* above a *lunula* is characteristic, though not exclusive, for legionary *signa*⁶⁰. Unfortunately, the crowning was damaged, but one can perhaps distinguish ribbons. *Signa* on pieces of equipment and other representations are commonly crowned by a right hand or a spearhead, which, according to a recent interpretation, in the case of the legions represent the field signs of the century and cohort respectively⁶¹. Given the strong identification of soldiers with their *centuria*, the right hand features more prominently on personal equipment⁶² and this might be the case here as well. It is interesting to note that an inverted hook or barb was punched on the lower end of the *signum* shaft on the Apulum breastplate. This was seemingly meant to represent both the handle and the crossbar that prevented the shaft from sinking too deeply into the ground, in reality, two different components of a *signum*, which became conflated in representations⁶³.

Wherever a more or less secure link could be made between a breastplate and a particular legion, the animal represented in the inferior register was that troop's heraldic beast⁶⁴. Given the place of discovery and the inclusion of the *signum*, one can easily imagine the breastplate belonging to a legionnaire of *legio XIII Gemina* based at *Apulum*, though we cannot know this with certainty. In that case, a lion, the animal emblem of the legion⁶⁵, would have been most likely illustrated in the lower register (see **Pl. XII.2**).

4. Use and reuse

As already mentioned, pairs of such rectangular breastplates with rounded top following the neck line were employed in an armour fastening system. Usually, one plate had two rectangular slots on its interior edge, whereas

⁵⁹ See Töpfer 2011, pp. 151-152 for the characteristics of cavalry *signa* and how they differ from infantry field standards.

⁶⁰ *Ibidem*, pp. 52-54, 135.

⁶¹ *Ibidem*, pp. 66-70, 132-134.

⁶² *Ibidem*, pp. 133.

⁶³ *Ibidem*, pp. 15.

⁶⁴ See Flügel 2005, pp. 154-157.

⁶⁵ Ritterling 1925, col. 1711; Moga 1985, p. 15.

the other had corresponding toggles, which, once inserted into the slots, would rotate 90° and could further be secured with a pin (**Pl. VII.1-2**)⁶⁶. This type of fastening was introduced in the Antonine period both for chain mail and scale shirts⁶⁷, and was possibly even used on a type of segmental armour⁶⁸. Consequently, unless found together with parts of the armour, we cannot know for sure to which type it belonged, though most often in the literature they are associated with *lorica squamata*. Some of the breastplates include scale-like patterns in their decoration (**Pl. IX.1**)⁶⁹, whereas others have a background pattern which appears more similar to chain mail (**Pl. VIII.3**)⁷⁰, perhaps a hint to the armour they were mounted on. Most of the published specimens are made from copper-alloy, but iron pieces are also known⁷¹. For a long time, such breastplates were relegated to “parade armour”/“Paraderüstungen”, but it is now clear that they were fitted on regular, combat scale or chain mail shirts⁷². Their rich decoration neither interfered with their functional role, nor made them seem out of place in the wider context of Roman military equipment.

A close inspection of the Victoria breastplate found at Apulum indicates repairs and/or secondary use. The rectangular slot of the original fastening system now resembles a keyhole (**Pl. III, IV.4, VI**), but due to the poor state of preservation, it is impossible to tell if this is a result of damage or it was purpose-made. This opening is also surrounded by four holes still retaining small iron rivets, which were probably not part of the original piece. It is possible that the more vulnerable parts (e.g. those around the openings) were later reinforced or repaired using a counter plate held in place by the four small rivets⁷³. Of the original rivet holes used to attach the breastplate on the armour (or its backing), one was preserved in the upper corner and two on the outer edge. Of those two, one still preserves traces of an iron rivet, not copper alloy wire or rivets, as one might expect. The use of iron suggests that it could have been fixed on a more solid material, like wood. Therefore, the subsequent use of the breastplate as box or chest fitting is worth taking into account. This situation is by no means uncommon. It seems that this type of plates was well-suited for repurposing once

⁶⁶ Robinson 1975, p. 161 (fig. 170); Garbsch 1978, p. 8 (fig. 1-2); Junkelmann 1996, p. 69 (fig. 140).

⁶⁷ Bishop, Coulston 2006, p. 139; Fischer 2012, p. 165.

⁶⁸ The “Alba Iulia” type, see Bishop 2002, pp. 62-66.

⁶⁹ Born, Junkelmann 1997, pp. 132-135, AG 713, 714 (fig. 84-85, Pl. XII-XIII).

⁷⁰ Garbsch 1978, p. 77, P6 (Pl. 34.5), the same as Junkelmann 1996, p. 17 (fig. 27).

⁷¹ Tejral 1994, p. 36.

⁷² Petculescu 1986, pp. 157-160; idem 1990, p. 849; Tejral 1994, p. 39; Bishop, Coulston 2006, p. 139.

⁷³ A very similar way of reinforcing openings can be seen, for instance, in the Newstead type *lorica segmentata*, where the apertures made in an iron plate were strengthened by a copper-alloy plate held in place by four rivets, see Bishop 2002, pp. 46-54 (fig. 6.2-5).

it could no longer be used on armour. The breastplates were, after all, quite beautiful pieces and had the extra advantage of being flat and easy to cut. Just from the already cited literature, we can point to breastplates being reused as dagger sheath plates⁷⁴, and box fittings⁷⁵; conversely, breastplates could be worked from other items⁷⁶. The already mentioned fragment from Porolissum⁷⁷ (Pl. IX.2) was also specifically cut in a rectangular shape, though we do not know what it was intended for. Not all were cut into regular shapes: the breastplate turned into chest fitting from Orgovány maintained its original outline (Pl. VIII.4)⁷⁸. Something similar might have happened to the Apulum specimen.

III. The incised inscription

On the long side of the piece, we can observe an incised inscription on the upper part, between the edge and the iconographic register (Pl. IV.4, V.1-4). Twelve characters were engraved quite neatly, in two sequences separated by a round orifice, on a length of 3.5, respectively 1.2 cm. Height of letters: 0.5-0.6 cm. Symbol > for *centuria*, partly affected by accident. A without crossbar.

> VINDICIA *vac.* ANI

(*centuria*) *Vindicia(ni?)*, ANI.

Before the letter V, in a damaged sector, we can remark (autopsy as well as the different images of the H-RTI technique and microscope photos) traces from a sign in which it is easy to recognise the abbreviation for *centuria* (>), as it normally appears on the ownership marks of soldiers. The name of the century is abridged in VINDICIA, also because of the round orifice, reducing the needed space for engraving the end (NI or, less likely, NA); after the orifice, and before the edge of the piece, only three letters were incised, AN and probably an I, in a place affected by an accident.

For the name of the centurion, we may hesitate between two possibilities:

– either the *cognomen* of the centurion is abridged, (*centuria*) *Vindicia(ni)*, a solution that we are favouring.

⁷⁴ Born, Junkelman 1997, p. 132 (unknown provenance).

⁷⁵ Thomas 1976, p. 30 (fig. 1-2) (Orgovány); Flügel 2005, p. 153 (Pl. 5-6) (antiques market).

⁷⁶ Borhy 1990, pp. 301-302 (Pl. 17.1-3) (breastplate of unknown provenance made from a former helmet visor).

⁷⁷ Zăgreanu, Deac 2014, pp. 209-211, no. 1 (Pl. I).

⁷⁸ Thomas 1976, fig. 1-2.

– either a syntagma like (*centuria*) *Vindicia(na)* with the meaning “century of Vindex”. Besides the name of the centurion or of the decurion in Genitive (for centuries or *turmae*), of the type (*centuria*) *Rufi*, we may also find this indication under an adjectival form, (*centuria*) *Rufiana*; samples are known in epigraphy as well as in the Dura papyri⁷⁹ and the ostraca in the Eastern Desert of Egypt⁸⁰. This alternation was previously taken as stylistic by Fink, before that the same scholar could match the expression (*centuria*) *Rufi* with a centurion in charge, and (*centuria*) *Rufiana* with a century momentarily without a centurion (mutation, end of service, death)⁸¹. Yet, engraving a temporary indication (the century of an ex-centurion *Vindex*) seems less likely to us for an ownership mark, and for this reason we are favouring the indication of a serving centurion named *Vindicianus*.

This breastplate belonged then to a legionary, in service in a century identified by the *cognomen* of the centurion, *Vindicianus* (*OPEL* IV 171), a derivation of *Vindex*. The abbreviation ANI could both stand for the *tria nomina* of the legionary as for the beginning of his *cognomen*. This ownership mark informs us about a soldier of *legio XIII Gemina*, and a new centurion, (- ---) *Vindicianus*⁸².

Only two similar inscriptions on arms were known in Roman Dacia⁸³:

(1) a bronze right breastplate from a *lorica* (17.2 x 9.2 cm), discovered in 1994 in the *principia* of the legionary fort at Potaissa (south portico) (**Pl. X.1**). Partly silvered, it is decorated in repoussé and has three registers: an eagle at the top, a helmeted female bust in the middle (Minerva, Dea Roma or Dea Virtus); two crossed shields, below. A dotted inscription was engraved on the right edge, 8.7

⁷⁹ See the observations of Fink 1953, pp. 213-215, about *centuria Malchiana*, *centuria Seleuciana* and *turma Coceiana* in the papyri of Dura-Europus of *coh. XX Palmyrenorum*; these notations concern an intermediary period, when the company has no *centurio* or *decurio*, before his replacement.

⁸⁰ For instance, *O. Krok*. I 87, l. 43: (ἑκατονταρχίας) Προκλιανῆς, someone from *centuria Procliana*.

⁸¹ See also Birley 1953, pp. 127-129; Davies 1976, p. 254; Wheeler 2000, pp. 307-308 (with other explanations).

⁸² At Apulum, we may indicate, in addition in the military milieu, [- ---] *Vindex*, *b(ene)[f(iciarius)] co(n)s(ularis)* (*CIL* III 1059 = *IDR* III.5 178 = *CBI* 516); the legionary *Val. Vindex* (*IDR* III.5 451); and *P. Tenacius P. f. Pap(iria) Vindex*, centurion in *legio XXII Primigenia*, honored as *bouletes* of Nicopolis ad Istrum (*CIL* III 1481 = *IDR* III.2 120 = III.5 582; *CIL* III 6265 = III.5 518). The dedication of *Vlp. Vindex* (*CIL* III 7744 = *IDR* III.4 55 = *IDR* III.5 9*) comes from the village of Tibru (Alba County).

⁸³ Another inscription on an element of armour, also from Apulum, is unpublished; the dotted inscription on the neck-guard of a bronze helmet found in the conquest level of the Dacian fortress of Pietra Detunată/Durduia at Racoşul de Jos (Braşov County) pertains to *spolia* brought during a Dacian incursion of the 1st c. AD, before the Roman conquest: (*centuria*) *Cl(audi)*, *Corelius Acustus* (*AE*, 2009, 1178 = *ILD* II 916).

cm long (height of letters 0.4-0.7 cm)⁸⁴; we remark the abbreviation for *centuria* (C) and the punctuation. The decipherment is not easy, but the reading of the first editor Mihai Bărbulescu is confirmed by the autopsy (*AÉ*, 2013, 1299):

○ FAVSTINI SVC • RESP •

(*centuria*) *Faustini*, • *Suc()* *Resp(ect-)* •

If the name of the century is given in full, the *nomen* and the *cognomen* of the legionary is abridged, even if less neatly as at Apulum.

(2) a fragmentary bronze left breastplate (16.6 x 8.4 cm), kept at the Institute of Archaeology (Bucharest), with unknown findspot (maybe a fort on the line of the River Alutus/Olt)⁸⁵. Of golden colour, worked in the repoussé technique, it has three registers: in the middle, a helmeted deity to the left⁸⁶; above, an eagle with folded wings; below, a shield. The inscription was read for the first time by Liviu Petculescu: in the figurative field of the lower register, near the strip that separates it from the central register, the letter E (points realised with an acute spike) is the last letter of a missing word, maybe the last part of the abridged *gentilicium*; on the right edge of the piece, a dotted inscription (height of letters 1-1.1 cm), vertically (*IDR* II 660): SEVERI.

In other provinces, we may quote more samples of this kind of ownership marks on elements of armour⁸⁷, for instance in Pannonia⁸⁸ and on the German-Raetic *limes*; in this last case, 3 samples are sufficient:

⁸⁴ Petculescu 1990, p. 849; Isac, Bărbulescu 2006-2007, pp. 213 and 217, no. 4 (photo and drawing p. 229, fig. 22); idem 2009, p. 76 (photo and drawing p. 95, fig. 22); Bărbulescu 2012, pp. 256-259, no. 63 (photo p. 256, fig. 146a; drawing p. 257, fig. 146b) (cf. Petculescu 2014, p. 361; cf. Petolescu 2014, p. 393; cf. *ILD* II 942); Bărbulescu 2016, p. 171 (photo and drawing p. 172, fig. 266 and 267).

⁸⁵ *IDR* II 660, with a drawing (p. 256) and a photo (cf. Russu 1978, p. 194). See also: Pârvan 1926, p. 26 (drawing fig. 15; photo Pl. V.1); Klumbach 1962, p. 193, no. 27; Petculescu 1974-1975, pp. 83-84, no. 3 (photo and drawing p. 82, fig. 2.2-3); Garbsch 1978, p. 79, P17; Vlădescu 1983, p. 241 (photo and drawing fig. 128); Petculescu 1990, p. 854 (photo fig. 6).

⁸⁶ Dea Virtus or Dea Roma; Virtus or Mars, according to Garbsch, who places the piece at the beginning of the 3rd c. AD.

⁸⁷ On the occasion of the publication of a breastplate bought on the antiquity market, Jochen Garbsch reviewed other elements of breastplates, among them 12 that were inscribed, most of them dotted; see Garbsch 2000 and, for the inscriptions, *AÉ*, 2000, 1857-1869. Generally, about the inscriptions on armour, see the classical paper of MacMullen 1960; for a set of inscriptions on other pieces from the antiquities market, see Eck, Pangerl 2015 (cf. *AÉ*, 2015, 1905-1927).

⁸⁸ Kocsis 1991 and Borhy 1991, with photos and drawings in the catalogue *III-Pécs*: [LEG(io)] II•AD(iutrix) (no. 162, Aquincum), AVR(elius) CASSIANVS (no. 163, Pannonia, incised, very similar to our inscription), LEG(io) XIII GEM(ina) (no. 164, Pannonia), GEM(ina) (no. 165, Orgovány-Acélomb, **Pl. VII.4** in our paper). For the ownership mark of Aur. Cassianus and and

(1) in Raetia, at Vetoniana/Pfünz, multiple dotted inscriptions on the right plate of the closing system of a scale shirt (3rd c. AD)⁸⁹, which was owned by several soldiers. The most likely reading is: *(centuria) Memoris, Cerialis – (centuria) Patru(ini?) – (centuria) Ma(n)sueti, Terti*.

(2) also in Raetia, at Vallatum/Manching, a dotted inscription on each of the two breastplates of an armour closing system (second third of the 3rd c. AD)⁹⁰: *[-? C]laudius // Samo*.

(3) in Lower Germany, at Coriovallum/Heerlen, an incised graffito on a breastplate fragment⁹¹: *[(centuria) D?]onati Acquen(sis)*.

The majority of this kind of inscriptions are dotted, and only a small part are incised in metal, as the new inscription from Apulum published here.

IV. Conclusions

Unlike several artefacts recently surfacing on the antique market or in private collections, the archaeological context for this fragmentary military piece is known. It was found in 2010, during the excavations in the southern quarter of the civilian settlement of the legion XIII Gemina at Apulum, in a habitation level most likely dating from the first half of the 3rd c. AD. Its close inspection strongly indicates the repair and/or secondary use of a damaged piece of armour, most likely as box or chest fitting, not an uncommon situation for that matter. According to the extant analogies, the left breastplate found at Apulum originally had three registers, i.e. eagle – deity (Victoria, most probably paired with Mars on the right plate) – animal (possibly a lion, as symbol of *legio XIII Gemina*) and its period of use can be dated between the middle of the 2nd and the beginning of the 3rd c. AD. Given the context of discovery, it was probably no longer used in its primary function during the 3rd century AD. The ownership mark, which was incised (while most of these notations are dotted), informs us about a soldier of *legio XIII Gemina*, whose name was abridged, and a new centurion of the legion based at Apulum, (- ---) *Vindicianus*.

The most important aspect of this newly discovered breastplate is that we know its archaeological context and state prior to restoration and thus we can come as close as possible to its complete story. Lacking this vital information, it would have been just another aesthetically pleasing piece among many others;

fragmentary breastplate with the dotted name of LEG XIII [G]EM, see Borhy 1990 (with drawing p. 300, fig. 1; and photos and a drawing Pl. 17-18).

⁸⁹ *CIL* III 13558 = 15210; Garbsch 1978, pp. 79-80, P23 (Pl. 9.13); *AE*, 2000, 1869; *ILGIL* 366 (drawing Pl. 52).

⁹⁰ Klumbach 1962 (and Pl. 16.1-2); Garbsch 1978, pp. 53-54, D1-2 (Pl. 8.1-2); *AE*, 2000, 1868 (reading *L. Avidius*); *ILGIL* 364-365 (photos and drawings Pl. 52).

⁹¹ Minis, Schorn 2018, pp. 246-252 (and detailed photos).

no secure dating, tentative reconstruction, connection to the legion at Apulum, probable enrichment of the troop's prosopography or hypotheses of its reuse would have been possible.

APPENDIX 1. Restoration report (Dan George Anghel, **Pl. IV.1-3**)

Upon entering the restoration lab, the piece was categorised as an "artefact in a critical state of conservation". The plate was incomplete and in a fragmentary state, being covered with soil and organic debris fixed into the corrosion products and calcium carbonates. Its mechanical resistance was minimal, resulting in loss of material even at the gentlest handling. Its overall aspect was characteristic to pieces which had been burnt or kept in a very aggressive environment from a chemical point of view⁹². Successive layers of cuprite (red) were observed, which were covered by a layer with corneous aspect characteristic to malachite, as well as active punctiform attacks of a light green colour, with dusty texture specific to cupric oxychlorides, which pierced the preserved metal core⁹³ completely. An interesting fact was the different intensity of degradation, much more pronounced on the interior side of the copper alloy sheet than on the exterior, ornate part. This situation was hopeful, given the need to recover the iconographic and stylistic information displayed by the object. At the same time, in a very short period (three days) in which the piece was kept in a quarantine regime, an acceleration of the degradation was noted, in the form of increased size of spots with dusty texture and an accentuation of material loss.

Consequently, an emergency intervention was required, with the goal of achieving the chemical and structural stabilisation of the artefact. In this context, it was impossible to apply chemical interventions with a reducing character in order to remove the crusts that obstructed the decorative elements. Also, the extremely low mechanical resistance did not allow any mechanical interventions. As such, I resorted to its chemical stabilisation, realised in a stove with a solution of 3% benzotriazole in alcohol, without any previous mechanical cleaning. The role of this treatment was to temporarily stop the progressing chemical degradations of the piece.

After drying, the fragments were soaked by immersion in Paraloid B 72 acrylic resin with a concentration of 5%⁹⁴. During this stage, a halt in the evolution of the oxychlorides spots was noted, as well as an increase of the mechanical resistance of the piece following the soaking. However, the interventions did not allow one to make the most of the plate. As an extreme

⁹² Gerwin *et alii* 1998, p. 103.

⁹³ Mourey 1990, p. 25; Franceschi *et alii* 1998, p. 94-96; Hamilton 1999, p. 11.

⁹⁴ Sease 1987, p. 33; Reiderer 1990, p. 21.

measure, it was decided to cover the inferior area of the fragments with epoxydic resin of the Arladytt range, applied with a brush in order to increase the structural resistance. The problem in removing the crusts and revealing the decoration was determined by the fact that these areas were soaked in benzotriazole, a pollutant and toxic substance released in the lab in the form of fine powder during the mechanical cleaning interventions⁹⁵. In order to limit this pollution, I resorted to micro-sandblasting the piece in the premises, the tests carried out earlier revealing the presence of a very thin and perforated metallic core, but which still retained a part of the details of the decoration that could be exposed.

The mechanical interventions could not be finished in a single day and stopping the corrosion between the work stages was realised by re-soaking by brush with benzotriazole solution and accepting the exceptional working conditions. After the partial removal of the deposits and re-soaking the piece, the fragments were assembled and the missing parts were completed with chromatically integrated epoxydic resin. In order to increase the mechanical resistance of the piece for handling and display, it was necessary to double the inferior part with fibre glass glued with an adhesive from the UHU range reversible in organic solvents, which, however, does not completely obstruct this part of the object. The plate still remains sensitive to the microclimate variations of the storage and display spaces, but I consider that the interventions allowed both the conservation of the piece and its scientific and museal utilisation.

APPENDIX 2. H-RTI technique (Călin Şuteu, **Pl. IV.4** and **V.1**)

The H-RTI (highlight – reflectance transformation imaging) technique is nowadays used in several fields of study, finding particular applications in the analysis of various items of cultural heritage, from small artefacts to paintings and petroglyphs. In simple terms, the method allows improved visualization of an object's surface micro-topography, using essentially an interactive virtual raking light to reveal even the tiniest details. The method involves taking several static images (around 30 minimum) in which the only parameter changing is the orientation and incidence of a light source. All these images are then processed and viewed within two dedicated software solutions⁹⁶. The results are being imaged using an interactive virtual light source and special mathematical filters (specular enhancement) are applied in order to emphasise even the tiniest details. At the source of this method are the efforts of Tom Malzbender and Dan Gelb,

⁹⁵ Anghel 2012, p. 432.

⁹⁶ More details about the software used are available here <http://culturalheritageimaging.org/> (July 2020).

both researchers with the Hewlett-Packard Labs, who defined, back in 2001⁹⁷, this new method, then called PTM (*polynomial-texture mapping*).

The visual analysis of an object's surface can benefit considerably from this new technique of imaging, using the qualitative and quantitative information gathered from a combination of highlights and shadows cast interactively on the surface of the subject, thus revealing its minute three-dimensional texture. One of the applications of this technique is the imaging of faint inscriptions, not unlike the one making the subject of this study. The *lorica* fragment was photographed vertically using a high-resolution DSLR equipped with a 105 mm macro lens, while the light was provided by a flash unit, placed within 28 different incidences. The resulting photos were processed with RTI Builder software, extracting the light positions from the highlights recorded by two shiny black spheres placed within the photos. The resulting rti file was viewed within RTI Viewer software and several snapshots were exported using the three different imaging options, *default*, with mathematical filtering (*specular enhancement*) and the extracted normals (*normals visualisation*). It must be noted that the method was not as efficient due to the measures of preservation chosen for this particular artefact, specifically the applied shiny lacquer that filled most of the microtopography, including over the inscription. Nevertheless, we consider that the method was successful in aiding the interpretation considerably.

O GARNITURĂ DE ARMURĂ CU INSCRIPȚIE DESCOPERITĂ LA APULUM REPREZENTÂND-O PE VICTORIA

REZUMAT

Partea stângă a unei garnituri de armură din bronz decorată cu reprezentarea zeiței Victoria a fost descoperită în 2010, în timpul săpăturilor din cartierul sudic al așezării civile a legiunii a XIII-a Gemina de la Apulum. Contextul istorico-arheologic e prezentat în detaliu, fiind urmat de analiza tipologică a piesei. Reprezentări ale Victoriei pe închizători de armură sunt comune, dar acest tip e foarte rar în Dacia. În plus, apariția unui stindard militar alături de zeiță pare a avea o semnificație deosebită. Piesa prezintă și un graffito incizat cu un însemn de proprietate, studiul epigrafic relevând numele centuriei (lui Vindicianus) și abrevierea numelui soldatului, cel mai probabil în serviciu în *legio XIII Gemina*. Două apendice prezintă laborioasa muncă de restaurare și tehnica H-RTI folosită pentru a aduce la lumină toate detaliile posibile.

⁹⁷ Malzbender *et alii* 2001, available online at <http://www.hpl.hp.com/research/ptm/papers/ptm.pdf> (July 2020).

EXPLANATION OF PLATES

Pl. I. 1. Location of the researched area inside the Vauban-type fortification at Alba Iulia (source image: Google Maps); **2.** Orthophotoplan of the researched area on the north-western side of the St. Francis of Paola Ravelin (A. Timofan); **3.** Plan of the excavated area (2009-2010) (drawing by A. Timofan).

Pl. II. 1. View of the two strip-houses with the enclosed space and oven (A. Timofan); **2.** View of the strip-houses with their fronts towards the street (A. Timofan).

Pl. III. The inscribed breastplate depicting Victoria (photo by C. Şuteu).

Pl. IV. 1-3. Photos of the artefact during the restoration process (D. Anghel); **4.** H-RTI photos (C. Şuteu).

Pl. V. 1. H-RTI photo of the inscription (C. Şuteu); **2-3.** Microscope photos with details of the inscription (A. Timofan); **4.** Drawing of the inscription (D. Dana).

Pl. VI. The breastplate fragment from Apulum (drawing by M. Gui).

Pl. VII. 1-3. Armour fastening system using breastplates: closing with toggles (**1-2**) or metal rolls (**3**) (Garbsch 1978, 8, fig. 1-3); **4-7.** Breastplate typology according to Garbsch 1978: P3 (**4**), P6 (**5**), P7 (**6**), D1-2 (**7**), (taken from Garbsch 1978, 10-11, fig. 5).

Pl. VIII. 1-2. Breastplate typology according to Garbsch 1978: E6 (**1**) and P23 (**2**) (taken from Garbsch 1978, 10-11, fig. 5). **3-4.** Breastplates with Victoria: Carnuntum (**3**) (redrawn after Junkelmann 1996, 17, fig. 27); Orgovány (**4**) (redrawn after Thomas 1976, fig. 1-5) (drawings by M. Gui).

Pl. IX. 1. Breastplate pair with Mars and Victory, unknown provenance (redrawn after Born, Junkelmann 1997, fig. 86); **2.** Breastplate with Mars from Porolissum (redrawn after Zăgreanu, Deac 2014, Pl. I); **3.** Breastplate with Minerva from Potaissa (Isac, Bărbulescu 2006-2007, fig. 25).

Pl. X. 1. Breastplate with Minerva and ownership inscription from Potaissa (Isac, Bărbulescu 2006-2007, fig. 22), **2.** Breastplate with female deity from Buciumi (Chirilă *et alii* 1972, Pl. LXXXIV); **3.** Lost breastplate pair with Mars and Minerva from Samum (redrawn by M. Gui after Isac, Bărbulescu 2006-2007, fig. 5, 27).

Pl. XI. 1. Breastplate from Ritopek (Popović 1993, fig. 1); **2.** Lateral part of the horse chamfron from Gherla (Wieseler 1858, Pl. CXII).

Pl. XII. 1. Breastplate from Brigetio (redrawn by M. Gui after Flügel 2005, Pl. 5, 7); **2.** Hypothetical reconstruction of the breastplate pair from Apulum: white background – missing parts, light grey – parts with damaged decoration, dark grey – preserved parts (drawing by M. Gui).

Abbreviations:

| | |
|----------|--|
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ILGIL - St. F. Pfahl, *Instrumenta Latina et Græca inscripta des Limesgebietes von 200 v. Chr. bis 600 n. Chr. (ILGIL)*, Weinstadt, 2012.

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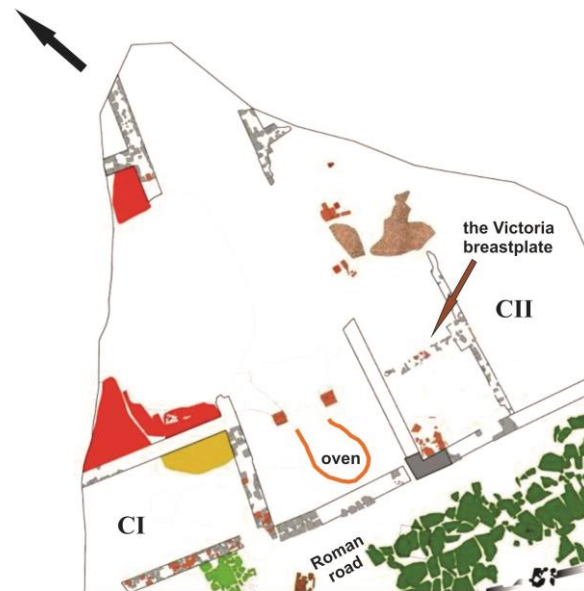
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Pl. I



1

2



3

0 5m

1. Location of the researched area inside the Vauban-type fortification at Alba Iulia (source image: Google Maps); 2. Orthophotoplan of the researched area on the north-western side of the St. Francis of Paola Ravelin (A. Timofan); 3. Plan of the excavated area (2009-2010) (drawing by A. Timofan).

Pl. II



1



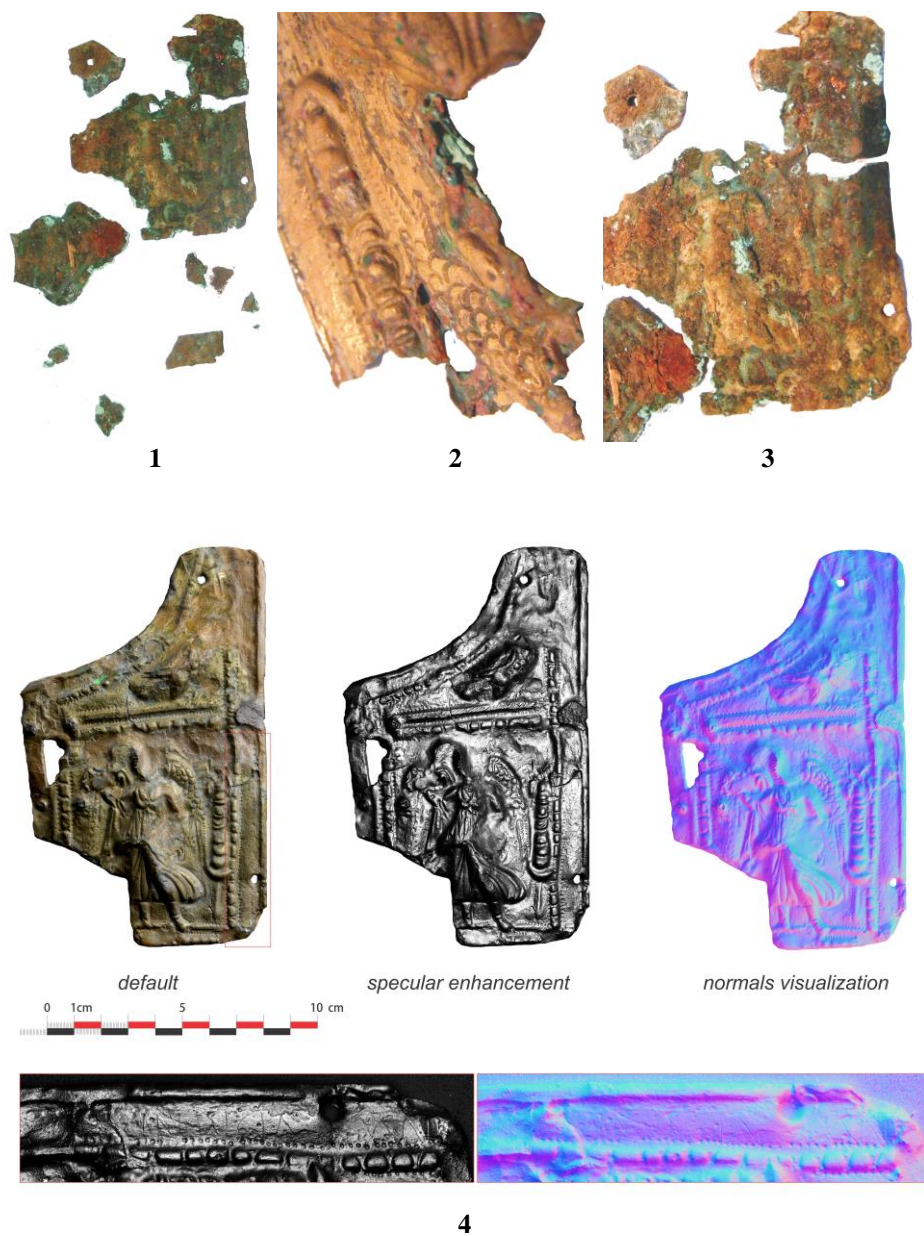
2

1. View of the two strip-houses with the enclosed space and oven (A. Timofan); 2. View of the strip-houses with their fronts towards the street (A. Timofan).



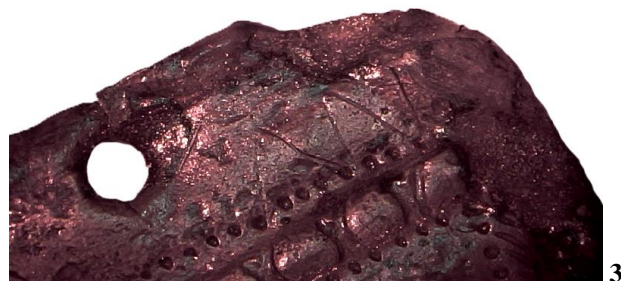
The inscribed breastplate depicting Victoria (photo by C. Şuteu).

Pl. IV

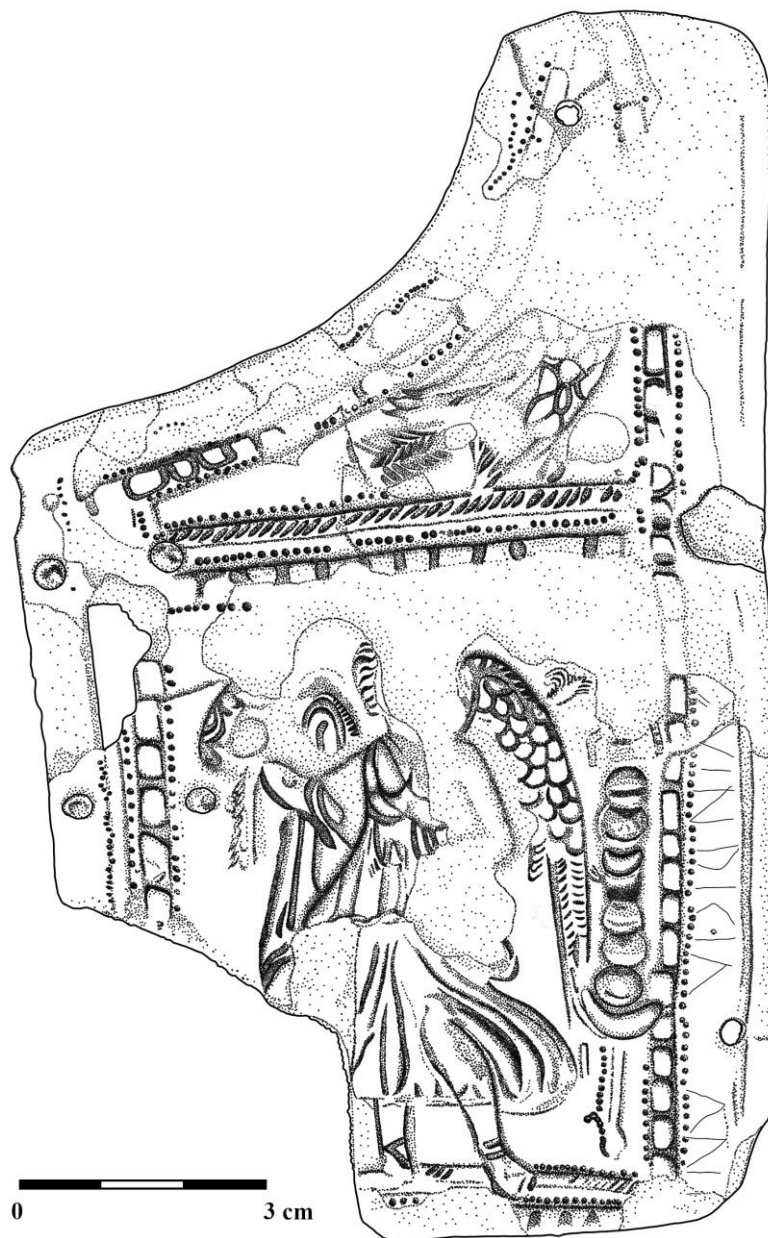


1-3. Photos of the artefact during the restoration process (D. Anghel); 4. H-RTI results (C. Şuteu).

Pl. V

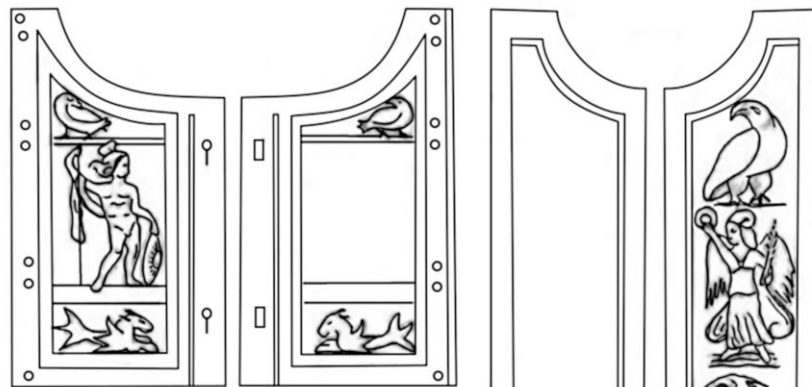
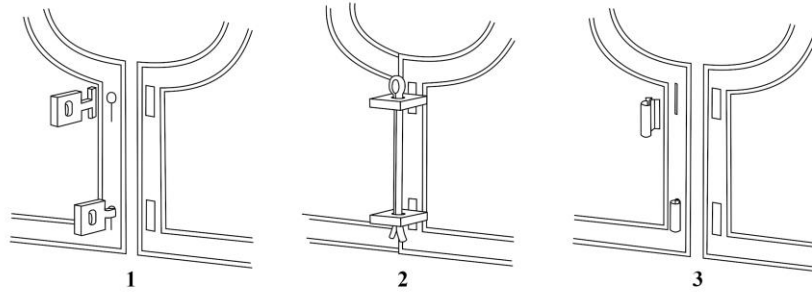


1. H-RTI photo of the inscription (C. Şuteu); 2-3. Microscope photos with details of the inscription (A. Timofan); 4. Drawing of the inscription (D. Dana).



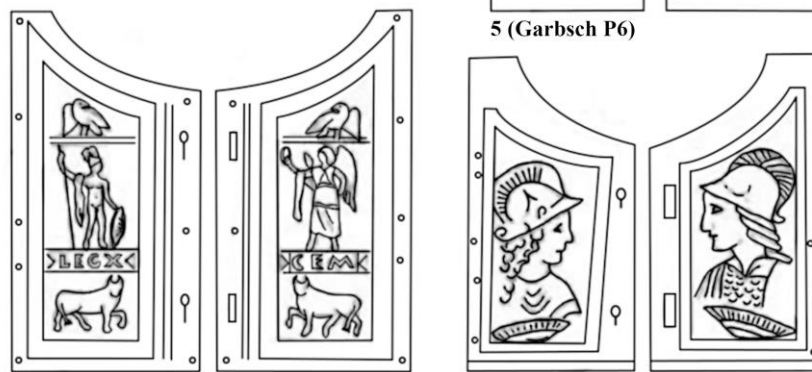
The breastplate fragment from Apulum (drawing by M. Gui).

Pl. VII



4 (Garbsch P3)

5 (Garbsch P6)

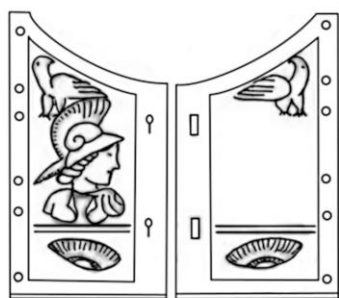


6 (Garbsch P7)

7 (Garbsch D1-2)

1-3. Armour fastening system using breastplates: closing with toggles (1-2) or metal rolls (3) (Garbsch 1978, 8, fig. 1-3); 4-7. Breastplate typology according to Garbsch 1978: P3 (4), P6 (5), P7 (6), D1-2 (7) (taken from Garbsch 1978, 10-11, fig. 5).

Pl. VIII



1 (Garbsch E6)



2 (Garbsch P23)



3



4

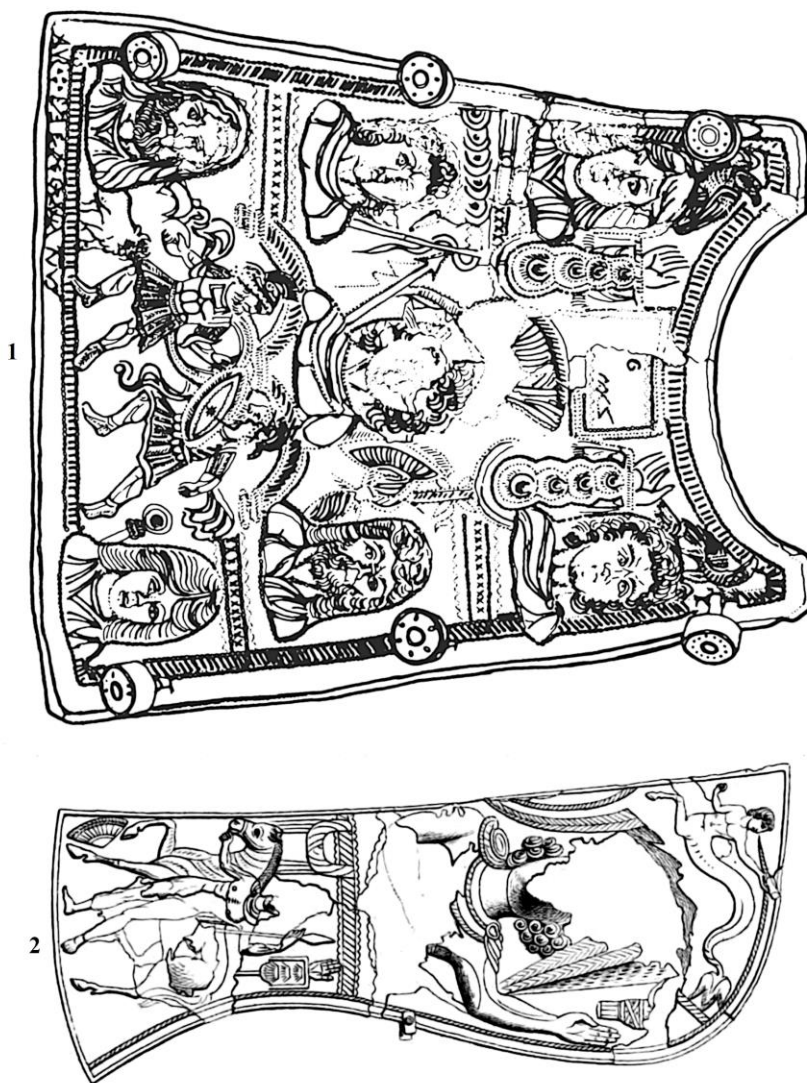
1-2. Breastplate typology according to Garbsch 1978: E6 (1) and P23 (2) (taken from Garbsch 1978, 10-11, fig. 5). **3-4.** Breastplates with Victoria: Carnuntum (3) (redrawn after Junkelmann 1996, 17, fig. 27); Orgovány (4) (redrawn after Thomas 1976, fig. 1-5) (drawings by M. Gui).



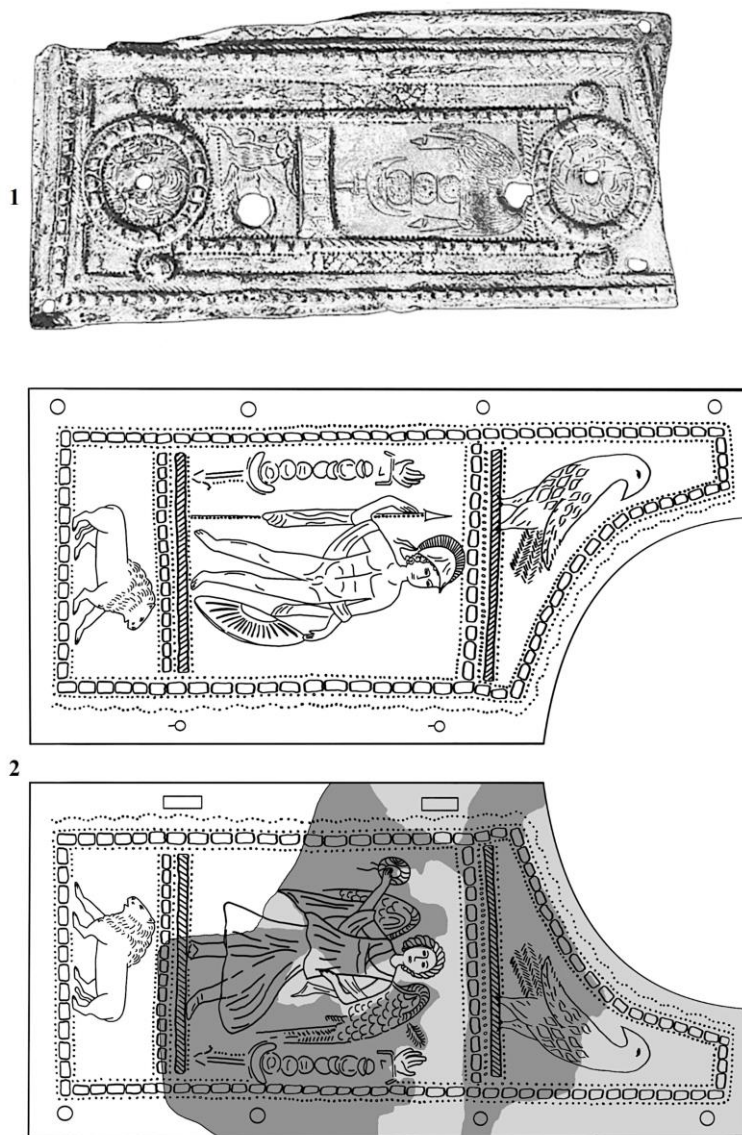
1. Breastplate pair with Mars and Victory, unknown provenance (redrawn after Born, Junkelmann 1997, fig. 86); 2. Breastplate with Mars from Porolissum (redrawn after Zăgreanu, Deac 2014, Pl. I); 3. Breastplate with Minerva from Potaissa (Isac, Bărbulescu 2006-2007, fig. 25).



1. Breastplate with Minerva and ownership inscription from Potaissa (Isac, Bărbulescu 2006-2007, fig. 22), 2. Breastplate with female deity from Buciumi (Chirilă *et alii* 1972, Pl. LXXXIV); 3. Lost breastplate pair with Mars and Minerva from Samum (redrawn by M. Gui after Isac, Bărbulescu 2006-2007, fig. 5, 27).



1. Breastplate from Ritopek (Popović 1993, fig. 1); 2. Lateral part of the horse chamfron from Gherla (Wieseler 1858, Pl. CXII).



1. Breastplate from Brigetio (redrawn by M. Gui after Flügel 2005, Pl. 5, 7); 2. Hypothetical reconstruction of the breastplate pair from Apulum: white background – missing parts, light grey – parts with damaged decoration, dark grey – preserved parts (drawing by M. Gui).