

## A BYZANTINE GOLD CROSS IN AN AVAR PERIOD GRAVE FROM SOUTHEASTERN HUNGARY

This article presents a unique Byzantine gold pectoral cross pendant from the Avar period archaeological site known as Makó, Mikócsa-halom, located in the Maros Valley, southeastern Hungary (Kom. Csongrád)<sup>1</sup>.

One subset of the Early Byzantine pectoral crosses made from precious metal is found in treasure troves (such as Syria, Cyprus, Mersin, Kyrenia [Northern Cyprus], or Senise [prov. Potenza/I]); the other subset is made up of stray finds, which are primarily known from exhibitions, auction catalogues and the websites of internet auction houses. Gold pectoral crosses have rarely been found in graves and even more rarely found in undisturbed, closed archaeological finds.

Up to the present, gold pectoral crosses from the Avar archaeological material of the Carpathian Basin were known only from one of the graves at Ozora-Tótipusztá (Kom. Fejér/H). These are not original Byzantine productions: according to some researchers they are provincial<sup>2</sup>, others suggest that they are imitations made by the Avars<sup>3</sup>.

In this article, we present a gold pectoral cross pendant that is unique, not only on the basis of its decoration, but also because it was found in an undisturbed Early Avar period grave in which the cross lay *in situ*. The analogies of this cross demonstrate a relationship to the Eastern Mediterranean, primarily to the Balkans.

### THE GRAVE CONTAINING THE CROSS – MAKÓ, MIKÓCSA-HALOM, GRAVE 33

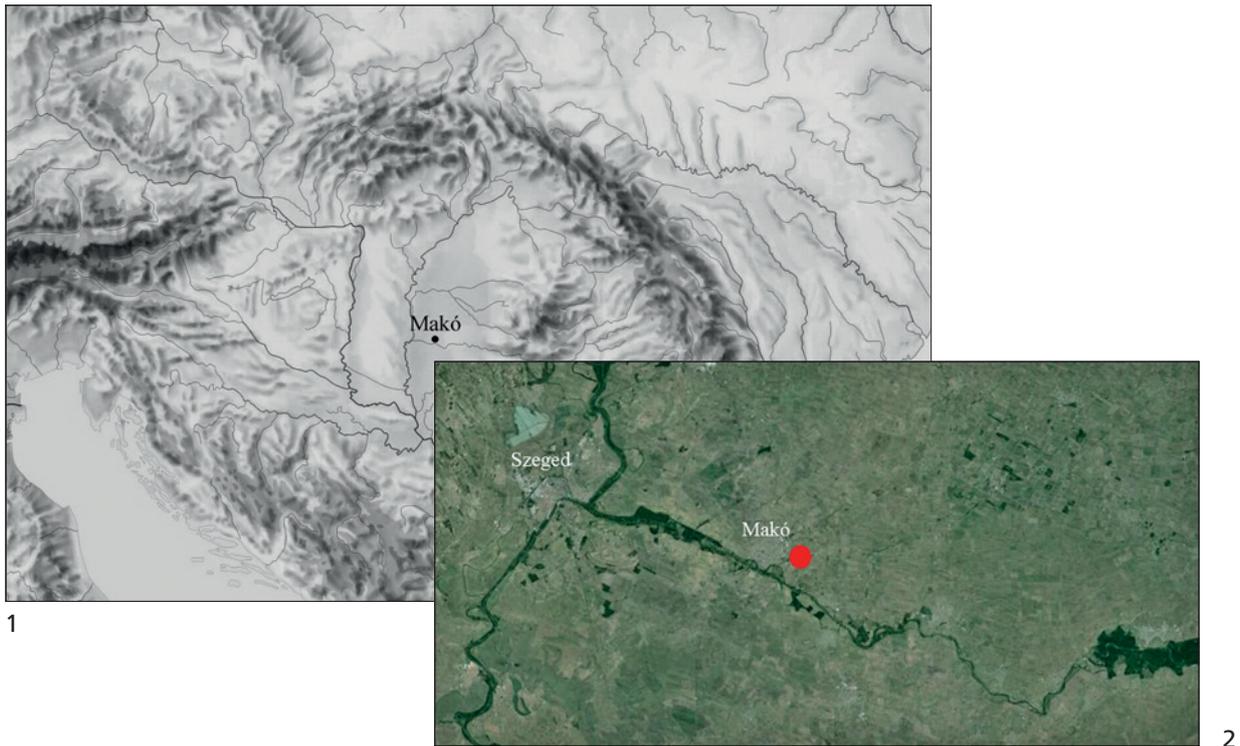
The 251 graves of an Early Avar cemetery were excavated near Makó in 2010 (fig. 1, 1-2). The cemetery can be considered completely excavated. The grave containing the cross is located near the northern edge of the cemetery. The orientation of Grave 33 was E-W and it was a niche grave<sup>4</sup>. A 3.5-year-old partial cow, a new-born partial calf, an approximately 12-year-old partial sheep and an additional five lower limbs of a cow were placed in the shaft part of the composite grave. The niche for the deceased was recessed into the north side of the grave pit. An adult woman (aged 23-35) lay in the tomb. A round bronze earring was on the right side of the skull and a bronze earring with large spherical pendant was found in the left side. The woman wore two necklaces: one was assembled from three pressed-silver, disk-shaped pendants and thin bronze tubes, while the other was made from amber, monochrome beads and red opaque beads decorated with applications (fig. 2, 1-3). The gold cross hung from this bead necklace. A belt with an iron buckle secured the woman's dress. The arms of the dress were constricted at the elbows by cast bronze bracelets with widening terminals (fig. 2, 4). Tools were also found in the grave (a spindle and awl); a ceramic vessel was placed at the head of the deceased.

<sup>1</sup> The study was supported by the National Research, Development and Innovation Office NKFIH-OTKA Grant No. 109510.

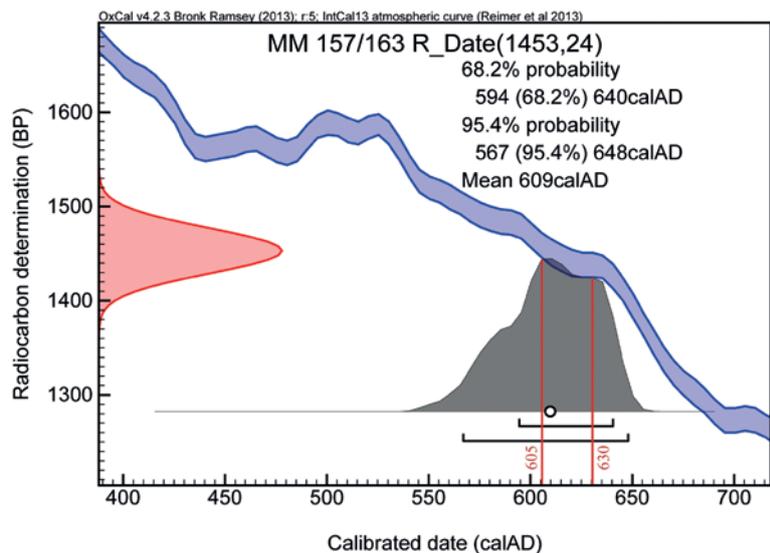
<sup>2</sup> Bálint, *Mittelawarenzeit* 37.

<sup>3</sup> Bóna, *A XIX. század* 131; Garam, *Funde* 62.

<sup>4</sup> The grave was documented as snr. 157/obnr. 163.

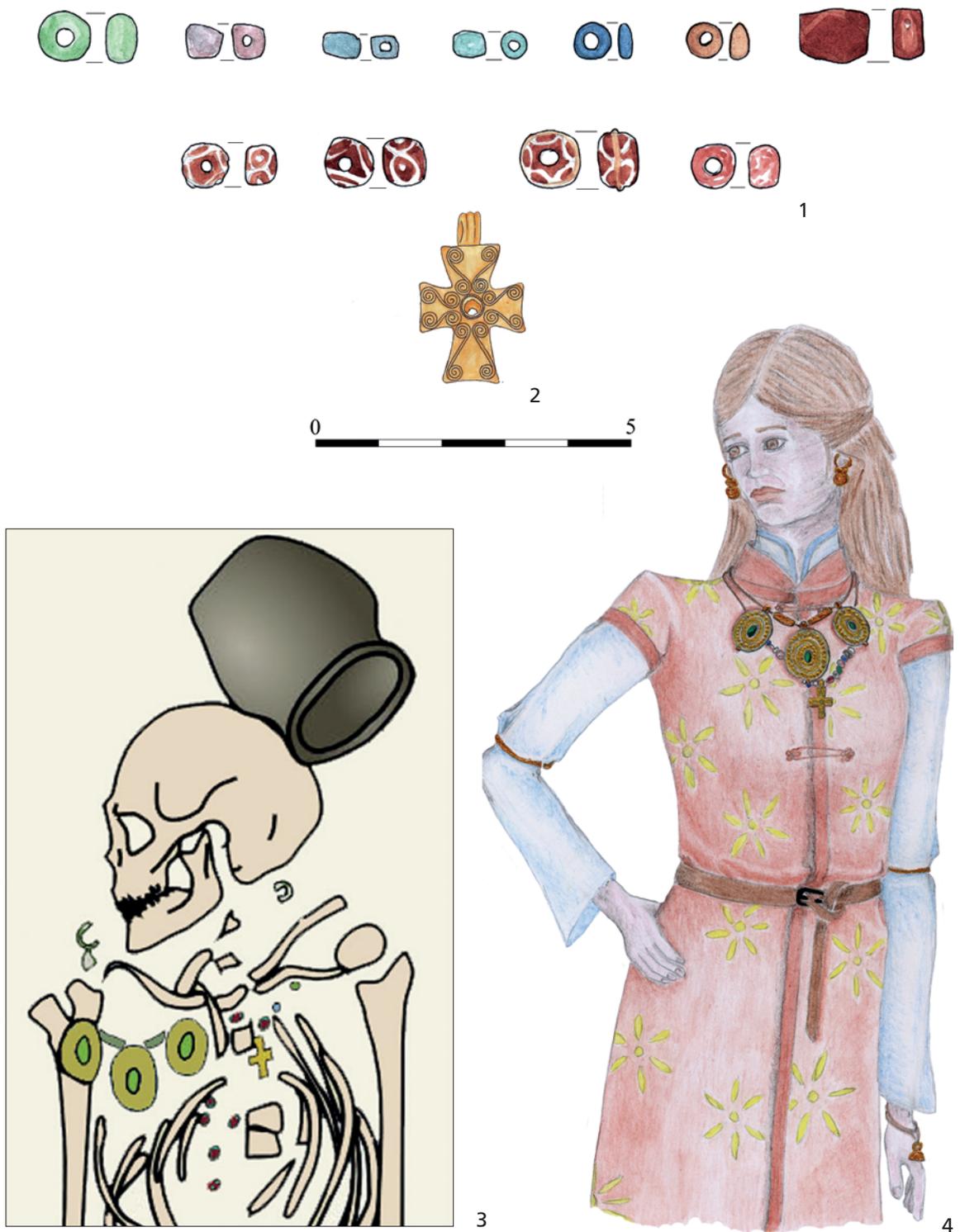


**Fig. 1** Makó, Mikócsa-halom (Kom. Csongrád/H): **1-2** location of the archaeological site. – **3** individual calibrated date for Grave 33. – (1-2 illustrations Cs. Balogh; 3 graphics S. Gulyás).

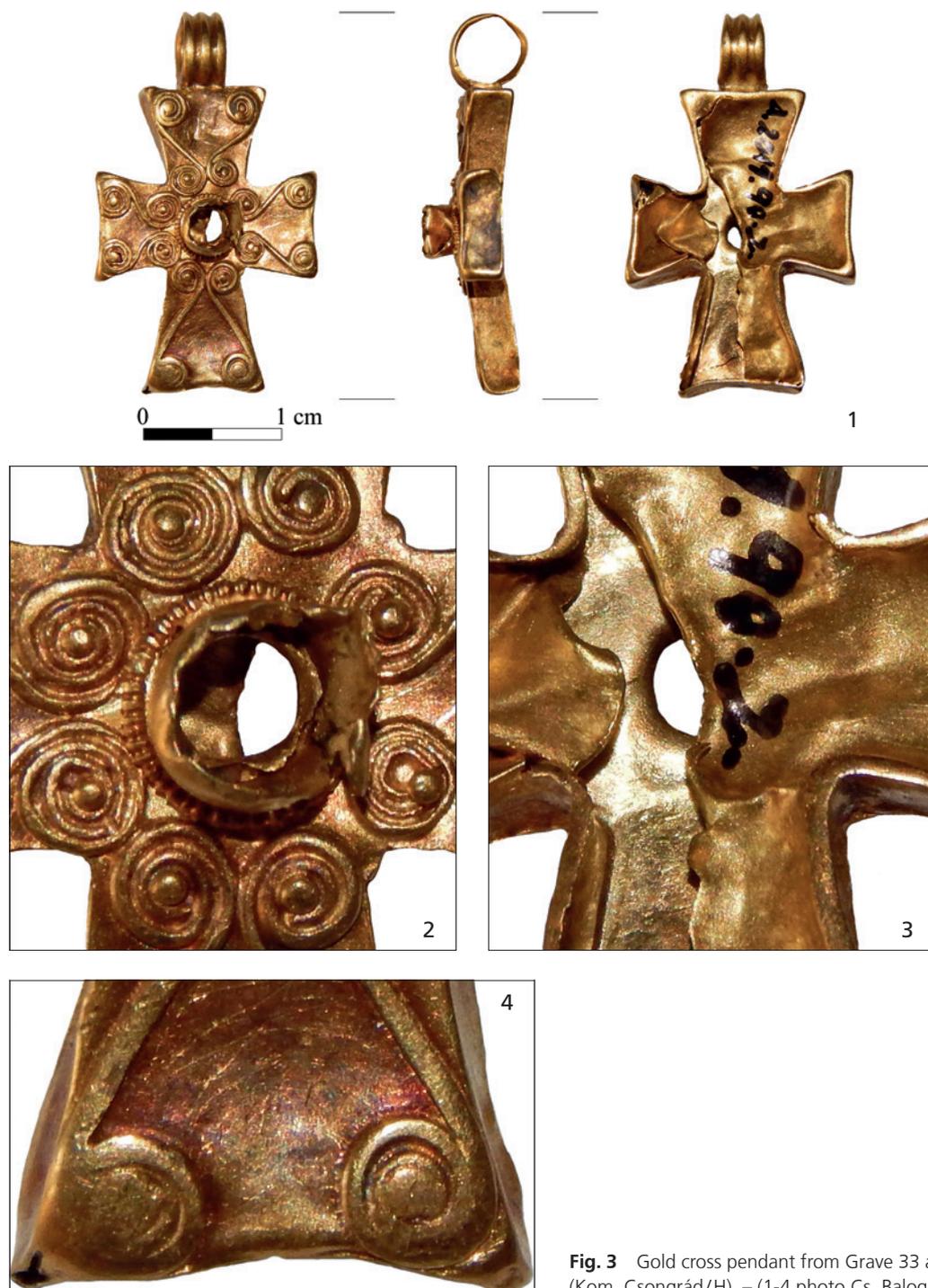


## DESCRIPTION OF THE CROSS

The cross is made of a gold plate, with widening arms that have curved ends (fig. 2, 2). It was hollow and consisted of four parts. The front side of the cross was cut from a relatively thick gold plate, while the back was cut from a thinner plate. Between the sides was a separate 0.3 cm wide strip of gold that connected the front to the back side, which was brazed at the upper arm of the cross (fig. 3, 1). At the top of the cross, a ribbed suspension ring made from a gold strip covered the seam. The front plate is decorated with a round mount in the centre of the cross, made from a gold band, 3 mm in width. The base of the setting was surrounded with granulation imitating gold wire (fig. 3, 2). The stone or glass once set in this has not been found. The arms of the cross are decorated with filigree on the front side. The multiple spiral-ended,



**Fig. 2** Makó, Mikócsa-halom (Kom. Csongrád/H), Grave 33. – (1-2 drawing A. Barabás; 3 detail of the documentation drawn by Cs. Balogh; 4 after the sketch of the author drawn by M. Heipl).



**Fig. 3** Gold cross pendant from Grave 33 at Makó, Mikócsa-halom (Kom. Csongrád/H). – (1-4 photo Cs. Balogh).

S-shaped double filigrees are symmetrically positioned. The centres of the spiral heads are decorated with granulation. The back plate is damaged; a part has been broken off and the edge of the fracture is crumpled (fig. 3, 3). The front of the cross is damaged in the centre, under the mount: the plate was perforated from the rear and the broken edges of the plate are at right angles to the front plate. The wall of the setting was also distorted and the edges are fragmented.

The length of the cross including the suspension ring is 2.8 cm, the width is 1.7 cm, the thickness is 0.45 cm, the width of the suspension ring is 0.3 cm, the diameter 0.6 cm, the diameter of the setting 0.35 cm. The cross can be found in the Móra Ferenc Museum (Szeged), inventory no.: A. 2011.90.2.

## SOME TECHNICAL REMARKS CONCERNING THE CROSS

According to our findings, the gold alloy used for the preparation of the studied Byzantine cross from the Early Avar period cemetery of Makó, Mikócsa-halom, is fairly uniform on the front plate. A high-quality alloy was prepared for the creation of the metal plates and the central gemstone housing, with 21-20-karat values and c. 90 % gold content. Silver and copper were given at 2:1 ratio to the alloy in minimal proportions (7-3 %). The filigrees are composed of an alloy containing gold in similar proportions (c. 90 %) but a relatively equal volume of copper and silver (1:1) at somewhat higher proportions (6 %). This must have yielded a softer alloy suitable for bending into spirals. The back of the cross is composed of metal plates with much lower gold (79 %) and silver (10 %) and copper (10 %) content.. This alloy must have been ideal for the folding and bending of these plates. The suspension ring on the top is made of the same alloy as the front part of the cross<sup>5</sup>.

The formal characteristic of the cross is the hollow body formed from plate. The structural elements, such as the front and back plates, the thin side strip and the suspension ring were secured by soldering. The traces of solder are not visible, which probably could be explained by the fact that the soldering was done with low-karat gold material.

The decoration techniques used on the cross – cloisonné technology, granulation and filigree decoration – are well known ornaments in the archaeological material of the Avar period and in Byzantine jewellery. We also could find a similar form (Deszk [Kom. Csongrád/H], Balatonfűzfő [Kom. Veszprém/H]) and a similar decoration with granulation (Deszk) on the Avar period pectoral crosses. Filigree decoration appears only on a piece from Makó.

We cannot find an analogy for the multiple spiral-ended S-shape filigree motifs among the archaeological material of the Avar period of the Carpathian Basin. But, as we will see, this motif is exceptionally rare among the Early Medieval Byzantine cross types, as well.

Based on the less attentive formation of the setting in the centre, the asymmetrically filigree ornaments, the movement of the granulation of the spiral-heads in several instances and the melting of the filigree on the lower arm of the cross, it can be stated that the cross is not a perfect goldsmith's work.

The cross was already damaged (it lacked stone or glass decoration, and the front and back covers were fragmentary) when it came into the grave. There are strong signs of wear near the suspension ring that show it was in use for a considerable period of time.

## ANALOGIES OF THE CROSS

When discussing the analogies of this cross, one must consider separately the analogies of the form and of the decoration, since there is not a single piece among those we know that would parallel the exemplar at Makó from both points of view.

<sup>5</sup> The measurement and analysis can be read in the Appendix.

## Formal analogies

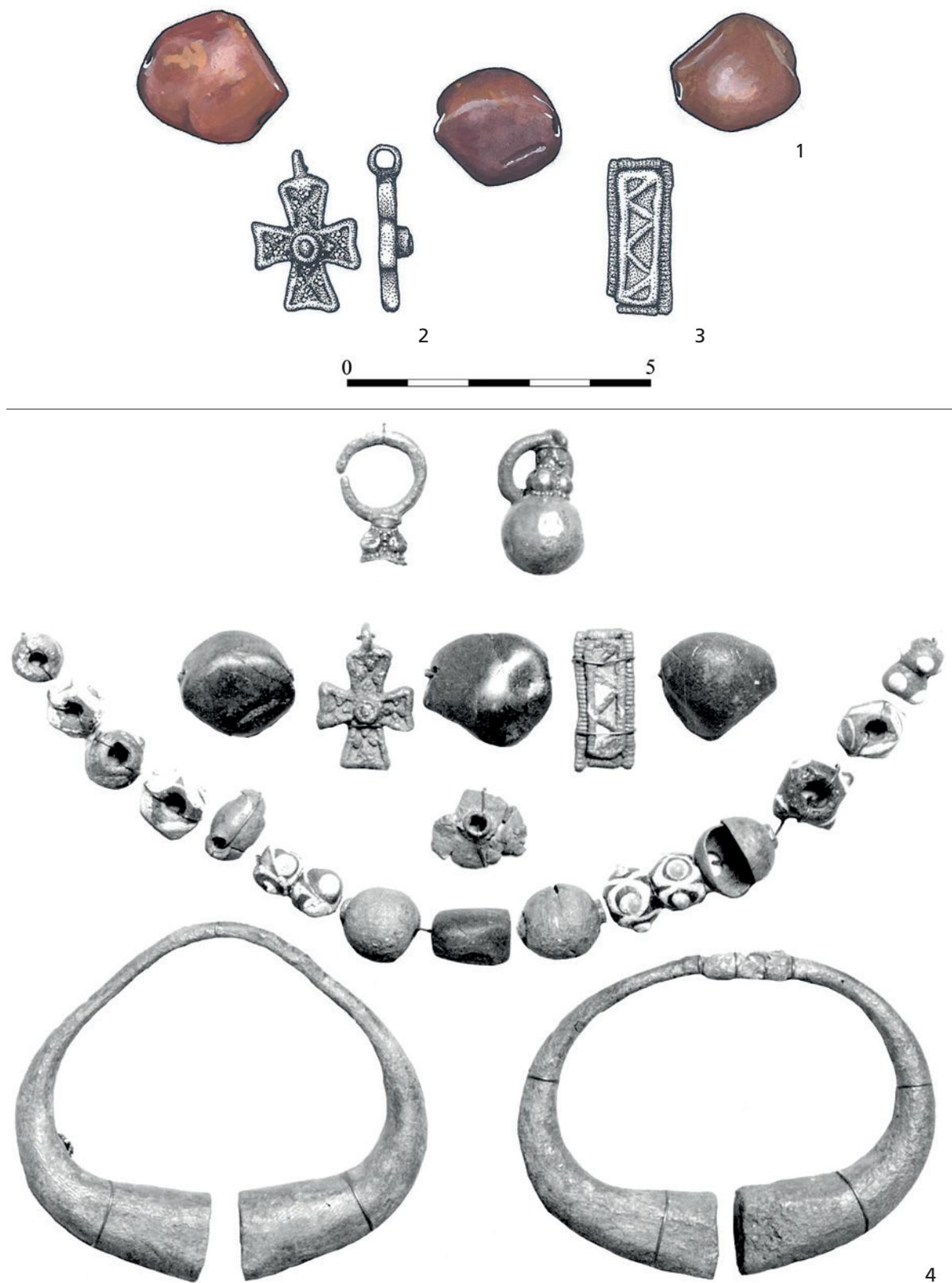
The main formal characteristic of the hollow metal plate cross is that its arms widen out towards their ends and the ends are curved. Analogies of this form are known from the Balkan areas of the Byzantine Empire, from the territory of modern-day Croatia<sup>6</sup>, Macedonia<sup>7</sup>, Romania<sup>8</sup> and Bulgaria<sup>9</sup>. In smaller numbers, they also appear in the Crimea<sup>10</sup>, and a few similar pieces are known from the central area of the Byzantine Empire, as well as from Cyprus<sup>11</sup>, modern Turkey<sup>12</sup> and Israel<sup>13</sup>.

Crosses with widening arms can be found among 5<sup>th</sup>-6<sup>th</sup>-century cast pectoral crosses as well<sup>14</sup>, for example in the Gepidic material of the Carpathian Basin from Grave 350 at Kiszombor B (Kom. Csongrád/H)<sup>15</sup>, and in an Avar context from Grave 104 at Závod (Kom. Tolna/H)<sup>16</sup>. Due only to formal similarities, we should mention the plate crosses with widening arms appearing in large numbers from the last decades of the 6<sup>th</sup> century in the Alamannic-Baiuvarian cemeteries of the Merovingian period and in the Italo-Byzantine material, which were decorations of coffins or shrouds. Such plate or foil crosses can be found in the Avar period material of the Carpathian Basin, in a few Transdanubian cemeteries with Germanic cultural contacts<sup>17</sup>.

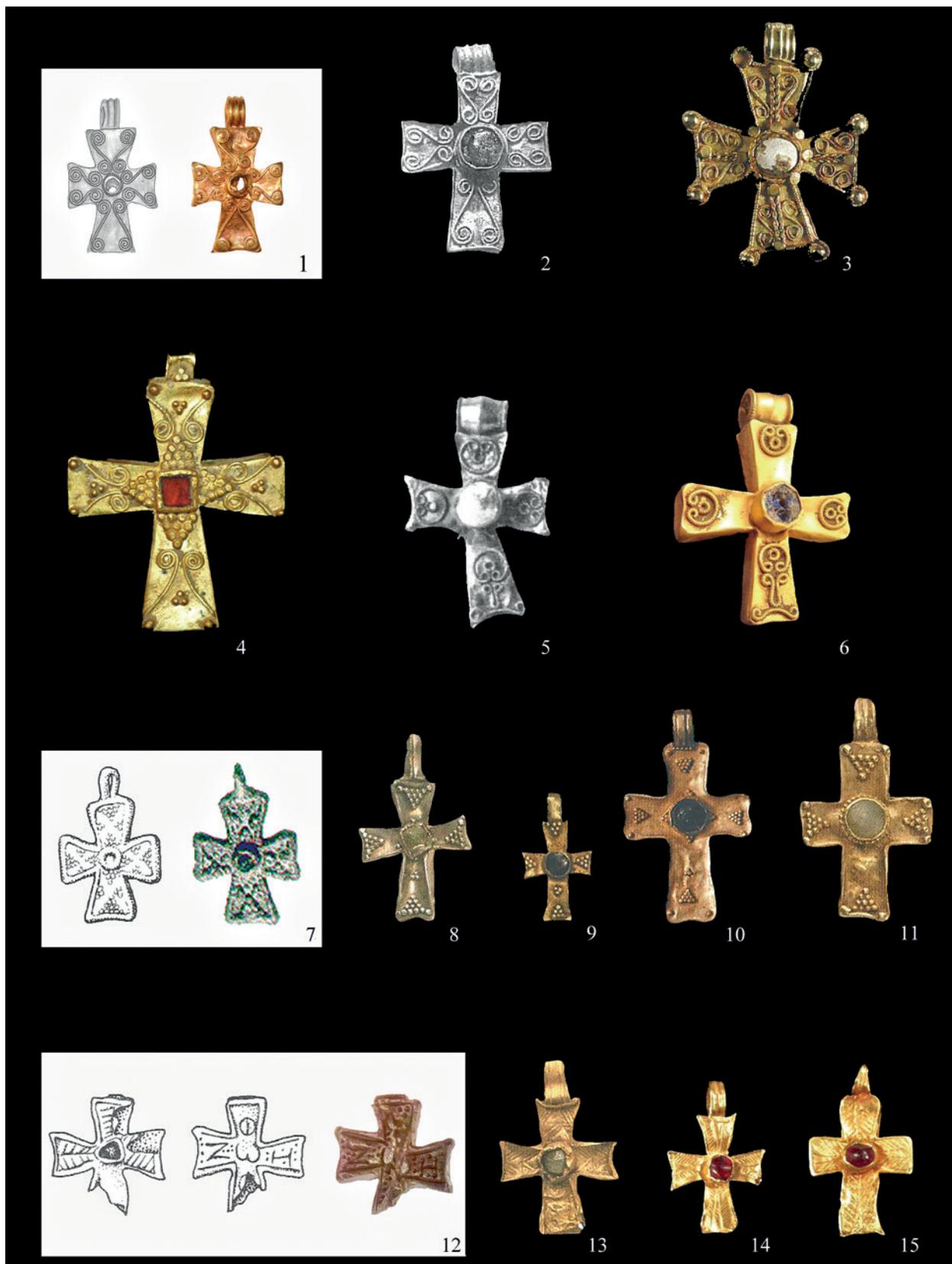
We can find formal analogies of the Makó cross among the pectoral crosses of the Avar archaeological material of the Carpathian Basin as well<sup>18</sup>: the pectoral crosses with widening arms from Deszk and Bala-tonfűzfő are the closest to the exemplar from Makó.

A cross made of silver plate, decorated with granulation and green glass inlay in a round socket in the centre of its obverse was found in Grave 37 of a woman in the Avar period Deszk G cemetery, just 15 km as the crow flies from the findspot of the Makó cross (figs 4, 2; 5, 7). The woman was buried in an E-W oriented ledge grave (niche dug from the end of the grave pit); in the region of her ear was a gold earring with

- 6 Dicmo (žup. Split-Dalmatia/HR): Vinski, Krstoliki nakit pl. V, 14; Petrović, Vizantijskih krstova cat. 234.
- 7 Strumitsa-Tsarevo Kuli (Opština Strumitsa/MK), Grave 38: Murdževa, Krstovi 20 fig. 1; Filipova, Reliquaries fig. 8a; Negotino (Opština Negotino/MK), Trifun Kostovski Collection: Filipova, Reliquaries fig. 8b.
- 8 Istria (jud. Constanța/RO), Grave 40: Barnea, Les monuments 227 fig. 87.
- 9 Bežanovo treasure (obl. Lovech/BG): Ovčarov/Vaklinova, Ranovizantijskij pametniči 51.
- 10 Cherson (UA): Cat. Sevastopol cat. 103; Luchistoye (UA): Khairedinova, Medieval Crosses fig. 4; Mangup, Teschkliburun treasure (UA): Gerzen, Teshkliburun fig. 86; Michaelsfeld (Djiginskoe/UA): Bank, Iskusstvo no. 101. – 80 crosses from the 6<sup>th</sup>-9<sup>th</sup> centuries from southwestern Crimea were collected by E. A. Khairedinova; the crosses with widened arms can be found in her type 3 (Khairedinova, Medieval Crosses 422-427).
- 11 Lambousa-Lapethos (Northern Cyprus): Manière-Lévêque, Bijoux pl. 5, H.
- 12 Mersin (TR): Cat. Moscow no. 1616.
- 13 Caesarea Maritima (Kibbutz Sdot Jam, Haifa/IL): Manière-Lévêque, Bijoux pl. 5, E.
- 14 e.g. Salona (Dalmatia/HR): Petrović, Vizantijskih krstova cat. no. 231; stray find: Petrović, Vizantijskih krstova cat. no. 253; Skopje (MK): Petrović, Vizantijskih krstova cat. no. 204. – Cipuljići-Crkvina (Bosanski Šamac/BA): Vinski, Krstoliki nakit pl. 9; Kranj (Upper Carniola/SLO), Grave 104/1097: Vinski, Krstoliki nakit pl. IV, 19; Požarevac (okr. Braničevo/SRB): Petrović, Vizantijskih krstova cat. no. 86; Ram (Veliko Gradište, okr. Braničevo/SRB): Vinski, Krstoliki nakit pl. VII, 30. Other examples from the Balkan Region see Petrović, Vizantijskih krstova; Turkey: Boğazköy (İl Polatlı): Böhlendorf-Arslan, Boğazköy fig. 13, 21; Elaiussa Sebaste (İl Mersin): Ferazzoli, Elaiussa Sebaste pl. 5, 46-47; Ukraine: Eski Kermen (Bakhchisaray): Ajbabin, Krim pl. 39, 19.
- 15 Csallány, Archäologische Denkmäler pl. CXXIV, 12.
- 16 Hampel, Alterthümer pl. 252, 1.
- 17 e.g. Budakalász (Kom. Pest/H): Vida, Frühchristliche Funde fig. 1, 3; Káptalantóti (Kom. Veszprém/H): Bakay, Időrend; Kiss, Byzantinische Schwerter figs 2-3; Kékesd (Kom. Baranya/H): Kiss, Avar Cemeteries pl. XV; Zamárdi-Rétiföldek (Kom. Somogy/H): Bárdos/Garam, Zamárdi I; Bárdos/Garam, Zamárdi II.
- 18 The previous catalogue of the Avar period pectoral crosses of the Carpathian Basin (Garam, Funde 57-59; Vida, Amulette 189) has been augmented by E. Gulyás in 2013. In her classification she assigned similar pieces to the type with widening arms and a central ornament (Type 2): Gulyás, Mellkereszték 35. In the summary table of the crosses, Grave 17 at Bačko Petrovo Selo, Čik (Vojvodina/SRB) appears erroneously twice under nos 3 and 10, while the cross with hooked arms from Grave 237 at Bratei 3 (Brateiu, jud. Sibiu/RO) was omitted, although it lay on the right side of the chest area, and was probably worn at the neck (Bârzu, Bratei 248 pl. 39, G.237: 3), just like another cross with glass inlay and granulation, a stray find from the cemetery (Bârzu, Bratei pl. 81, 15). The catalogue of Avar period crosses can be complemented with two more lead crosses. The female Grave 2 from Mindszent-Szegvári út, Szőlőpart (Kom. Csongrád/H) yielded a lead Greek cross: Bede, Mindszent. In Grave 234, the grave of a child, in the cemetery of Makó, Mikócsa-halom (snr. 541/obnr. 512) we found a lead Latin cross.



**Fig. 4** Deszk G (Kom. Csongrád/H), Grave 37. – (1-3 drawing A. Barabás; 4 archive photo in the Móra Ferenc Museum [Szeged]).



**Fig. 5** 1 Makó, Mikócsa-halom, Grave 33. – 2 Golemanovo Kale. – 3 Italy(?). – 4 unknown site. – 5 Sadovsko Kale. – 6 unknown site, Bulgaria(?). – 7 Deszk G, Grave 37. – 8. 11. 13 unknown site. – 9 Syria(?). – 10 Asia Minor(?). – 12 Balatonfűzfő-Szalmássy telep, Grave K. – 14-15 unknown site. – (1 after fig. 2, 2 and fig. 3, 1; 2. 5 after Uenze, Sadovec; 3 after Cat. Genève 156; 4 see note 23; 6 see note 26; 7 drawing after fig. 4, 2 and the photo by Cs. Balogh; 8. 11. 13 after Cat. München cat. 284. 275. 276; 9-10 after Cat. Paderborn IV.21; IV.23; 12 after Garam, Funde; 14-15 [www.ancienttouch.com/628.jpg](http://www.ancienttouch.com/628.jpg); [www.ancienttouch.com/379.jpg](http://www.ancienttouch.com/379.jpg) [31.1.2016]).

granulation and a large spherical pendant made of silver sheet. Around the neck there was a necklace of spheres made of sheet silver and coloured beads with appliqué decoration and monochrome yellow beads (fig. 4, 4). The small silver cross and the fragment of a rectangular bronze mount with light glass inlay were fastened on the left side of the chest among three amber beads (fig. 4, 1-3). The woman bore cast bronze bracelets with widening ends on both arms. There were cattle, sheep and goat bones in the shaft of the grave, and dog bones next to the woman's leg.

The front of the fragmentary silver cross from Balatonfűzfő-Szalmássy telep is decorated by pressed spike motifs, with glass inlay in an irregularly shaped, low socket in the centre and a Greek inscription on the reverse (fig. 5, 12). The cross comes from Grave K, which had been destroyed before excavation. The grave yielded a pair of earrings with large spherical pendants with stone inlay, placed within a reliquary on a bronze chain. Gold earrings decorated with granulation and stone inlays were found beside the skull, while a row of beads was discovered at the neck. The grave also contained a gold bead with red and green stone inlay and a silver bulla decorated with an image of St. Peter<sup>19</sup>.

### Analogs of the decoration of the cross

Filigree is a rare type of decoration on Byzantine pectoral crosses. Only three pieces are known that have a S-shaped filigree decoration with spiral terminals similar to the exemplar from Makó. The best analogy of the cross from Makó is a silver cross from the material of the fortress of Golemanovo Kale in Bulgaria (fig. 5, 2)<sup>20</sup>. The cross found in the so-called Nestor House was probably part of a smaller hoard containing female jewellery<sup>21</sup>. The spiral-ended, symmetrically placed, S-shaped filigree decoration on the arms are identical to those of the cross from Makó, although the granules from the centre of the spirals are missing. Similarly to our cross, the spirals are not placed regularly on this specimen either.

Similarly placed and executed filigree decoration can be seen on another cross, dated to the 7<sup>th</sup> century (fig. 5, 3)<sup>22</sup>. The ends of the widening arms of the cross are decorated by granulations placed into round sockets. The opposing S-shaped filigree ornaments on the arms of the cross flank intertwining filigree ornaments. The findspot of the cross is uncertain, possibly Italy. Similar cross forms can be found in the 6<sup>th</sup>-8<sup>th</sup> century Merovingian and Anglo-Saxon material and in the Byzantine Empire and its Balkan territories.

A more distant parallel of the filigree composition on the cross from Makó can be seen on another unprovenanced cross (fig. 5, 4)<sup>23</sup>. Granulation complementing the filigree decoration appears on this specimen as well, just as on the exemplar from Makó.

The gold pectoral cross from Sadovsko Kale (BG) has a different, Ω-shaped filigree ornament (fig. 5, 5)<sup>24</sup>. It was also probably part of a smaller hoard, and was associated with an antique gold necklace with stone inlay, although it is not proven that the cross originally hanged from this necklace<sup>25</sup>. A close parallel of the cross from Sadovsko Kale also comes from Eastern Europe, also probably from Bulgaria, but is a stray find (fig. 5, 6)<sup>26</sup>.

<sup>19</sup> Németh, *Avarkori leletek* 153-154. In her work, Éva Garam presented the find association differently. According to her description the bulla and the cross, together with the gold earring fragment with garnet inlay, were found within the reliquary (Garam, *Funde* 60).

<sup>20</sup> Golemanovo Kale, located in the Northern Balkans near Sadovec and identified as a fort of the Gothic *foederati* (Werner, *Trachtzubehör* 16), was a fort in the province of *Moesia Inferior*. Its defensive walls were built in the 4<sup>th</sup> century. The fort was abandoned during the 5<sup>th</sup> century, and resettled again at the beginning of the 6<sup>th</sup> century (Uenze, Sadovec 90).

<sup>21</sup> Uenze, *Sadovec* 172 pl. 126, 1.

<sup>22</sup> *Cat. Genève* 156.

<sup>23</sup> [www.time-lines.co.uk/byzantine-cross-pendant-014694-24308-0.html](http://www.time-lines.co.uk/byzantine-cross-pendant-014694-24308-0.html) (31.1.2016).

<sup>24</sup> Sadovsko Kale, located near Sadovec, on the site of the Vit River, is another Late Antique fortress (Uenze, *Sadovec* 90).

<sup>25</sup> Uenze, *Sadovec* 172 pls 8, 9; 126, 2.

<sup>26</sup> [www.antiquitiesgiftshop.com/store/ancient-crosses/late-roman/early-byzantine-goldcross.html](http://www.antiquitiesgiftshop.com/store/ancient-crosses/late-roman/early-byzantine-goldcross.html) (31.1.2016).

Based on the analogies of the form and decoration of the cross from Grave 33 at Makó, Mikócsa-halom, it belongs to an Eastern Mediterranean hollow cross type decorated by a stone inlay in its centre. These are mostly ornamented with granulation (fig. 5, 6-11) and pressed spike motifs (fig. 5, 12-15), although sometimes Greek inscriptions also make their appearance. Filigree ornaments are much more rare. A number of such crosses have been found in the vicinity of Sadovec, which may indicate that they were the products of a nearby workshop. Based on the hollow body of the crosses they were originally probably reliquary crosses, although no finds substantiating this have been discovered yet.

## WEARING THE CROSS

Based on our *in situ* observations, the woman buried in the grave in Makó had worn the gold cross on her neck, among beads. Her necklace consisted of only eleven beads (fig. 2, 1). The flattened spherical and short cylindrical, monochrome beads were the representatives of Late Roman bead manufacturing traditions. The type of three flattened spherical beads with white-on-red appliqué decoration appears on the necklaces of the period between the end of the 6<sup>th</sup> and the first half/second third of the 7<sup>th</sup> century<sup>27</sup>. They appear among Early Avar period remains probably as traded goods from West European, Frankish and Alamannic workshops<sup>28</sup>.

One prismatic amber bead with truncated corner was also included in the necklace. Amber beads usually appear in smaller numbers among other types of beads in the Avar period material, especially in its first half, but they were worn until the end of the 7<sup>th</sup> century<sup>29</sup>.

Early Byzantine crosses sometimes were part of necklaces made up of metal chains and other metallic parts<sup>30</sup>, on other occasions they were attached to bead necklaces. Wearing crosses on bead necklaces is attested most frequently among the 5<sup>th</sup>-7<sup>th</sup>-century finds of the Crimea, e. g. among the finds of Vault 257 of Eski Kermen<sup>31</sup>, or in a number of vaults of the Crimean Gothic cemetery of Luchistoye<sup>32</sup>. In most cases amber dominates among these beads<sup>33</sup>. In all probability, the pectoral crosses known from the Avar period material of the Carpathian Basin were worn on necklaces of beads.

The cross from Deszk, formally very close to the specimen from Makó, was also worn on a necklace among beads. A necklace made up of knobbed beads with appliqué decoration and of spherical silver sheet beads was around the neck of the woman buried in the grave (fig. 4, 4). However, the cross was not found among these, but on the left side of the chest, beside three large, seed-shaped amber beads (fig. 4, 1). In all probability it was attached to them. Beside the cross, the fragment of a bronze mount also hung among them (fig. 4, 3). A beaded wire frame was soldered to the edge of the small, rectangular bronze plate. Within the frame, the surface of the mount is decorated by light glass inlays placed into attached, triangle shaped sockets made of thin wire. The mount is alien to the material of the period, but similar pieces are known from Hun period material, primarily among horse harness mounts. The best analogies come from the horse harness of the grave from Levice (Nitriansky kraj/SK)<sup>34</sup>.

<sup>27</sup> Pásztor, Éremleletes sírok 75; Pásztor, Csákberény 46-47.

<sup>28</sup> Exemplares from the Merovingian material of the second half of the 6<sup>th</sup>-the beginning of the 7<sup>th</sup> century Koch, Schretzheim pls 3, 34.5 (coloured); 9, 32.24.

<sup>29</sup> Pásztor, Horreum.

<sup>30</sup> Dumbarton Oaks Collection: Ross, Catalogue pl. XVII; Lambousa (Northern Cyprus): Stolz, Insignie pl. 5, 4; Mersin: Stolz, Insignie pl. 5, 1; Teshkliburun (Mangup, Crimea): Gerzen, Teshkliburun fig. 86; Spier/Hidman, Jewelry cat. 14a. 15 fig. 15, 1.

<sup>31</sup> Khairedinova, Medieval Crosses fig. 9, 3.

<sup>32</sup> Vaults 38, 100, 102, 122A, 146 and 268: Chajredinova, Byzantinische Elemente figs 11; 16, I. IV; Khairedinova, Medieval Crosses figs 8-9.

<sup>33</sup> Khairedinova, Medieval Crosses 432.

<sup>34</sup> Bóna, Hunnenreich fig. 65.

The phenomenon that, in addition to the cross, other pendants also hung from the necklace is not unique. On the gold necklaces from Lambusa (Northern Cyprus)<sup>35</sup> and Mersin<sup>36</sup>, leaf-shaped pendants can be seen in addition to the cross, and probably the leaf-shaped pendant of the Ozora find would have been threaded on the same necklace as the cross<sup>37</sup>. The pressed cross from Vault 257 of Eski Kermen also hung from a bead necklace, but two leaf-shaped and two round pendants and a Heraclius solidus were also threaded on the necklace<sup>38</sup>. Besides the two crosses, the necklace from Vault 100 of Luchistoye included animal teeth, shell and a shield-shaped masked mount<sup>39</sup>, while the necklace of the hoard from Teshkliburun (Mangup) was decorated by a cross, two bullae and two drop-shaped pendants as well<sup>40</sup>.

This phenomenon also shows that, in certain cases, crosses worn at the neck may not necessarily indicate the religious affiliation of the person who wore them; they may have been worn – similarly to other pendants – as amulets. This might be the case when more than one cross was put on the necklace. Two crosses were attached in a number of vaults in Luchistoye<sup>41</sup>, and Vault 207 actually contained four<sup>42</sup>. This interpretation may be especially true if the crosses and other pendants were associated with amber beads, since amber had been believed to have healing and apotropaic powers since antiquity<sup>43</sup>.

Furthermore, we have to mention that crosses – removed from their original context – became a widespread ornamental motif, from the 5<sup>th</sup>-6<sup>th</sup>-centuries onwards, in the areas that had contact with the Mediterranean and Byzantium. Following Mediterranean customs of wearing jewellery, they appear as ornaments on various adornments such as finger rings, pendants, brooches and as pendants on earrings. Crosses also appeared as clothing ornaments. They became a common ornamental motif on belt buckles and belt mounts, and Byzantine cross-shaped belt buckles became rather popular and widespread. The Langobard crosses made of pressed gold sheet may have been clothing ornaments, according to some scholars<sup>44</sup>. The ten crosses from Anemurium (Anamur, İl Mersin/TR), dated to the turn of the 6<sup>th</sup>-7<sup>th</sup> centuries, and the associated seven mounts, were probably clothing ornaments, sewn to the neck of the garments<sup>45</sup>.

The person who wore the cross from Grave 33 at Makó, Mikócsa-halom, was most certainly not Christian. She was buried with grave goods and sacrificial animals, according to pagan rites.

## THE DATE OF THE CROSS FROM MAKÓ

When dating the cross, the only starting point we have is the 6<sup>th</sup>-century date of its formal and ornamental analogies. We do not have data for a more exact date in the case of the best analogy, the cross from the antique fort of Golemanovo Kale. Lacking well-dated, closed assemblages, a more precise dating within the 6<sup>th</sup> century is impossible.

At the same time, we may be able to determine the date of Grave 33 at Makó, Mikócsa-halom, based on its other finds. In particular, the necklace with pressed silver discs and bronze tubelets and the cast bracelets with widening ends may provide a basis, although a detailed typo-chronological analysis of these types has not yet been carried out.

<sup>35</sup> Yeroulanou, *Diatrita* fig. 236.

<sup>36</sup> Yeroulanou, *Diatrita* fig. 223.

<sup>37</sup> Garam, *Münzdatierte Gáber* pls 72, 2; 73, 1.

<sup>38</sup> Khairedinova, *Medieval Crosses* fig. 9, 3.

<sup>39</sup> Khairedinova, *Medieval Crosses* fig. 8, 2.

<sup>40</sup> Khairedinova, *Medieval Crosses* fig. 7, 1.

<sup>41</sup> Luchistoye, Vaults 100. 102. 124. 146: Khairedinova, *Medieval Crosses* figs 7, 2; 8, 2-3; 9, 1.

<sup>42</sup> Khairedinova, *Medieval Crosses* fig. 7, 3.

<sup>43</sup> Pliny, *Natural History* XXXVII, 44, 50-51.

<sup>44</sup> Menghin, *Langobarden* 174-177.

<sup>45</sup> Russell, *Anemurium* 1636 fig. 12.

Similar necklaces with pressed discs are known from Grave 31 at Deszk G<sup>46</sup>, Grave 16 at Deszk H<sup>47</sup>, Grave 5 at Deszk L<sup>48</sup> and Grave 60 from Mokrin-Vodoplav (Vojvodina/SRB)<sup>49</sup>, while an unpublished specimen was found in Grave 214 at Makó, Mikócsa-halom, as well. The two sheet ornaments of Grave 1 at Szegvár-Oromdűlő (Kom. Csongrád/H)<sup>50</sup> were formally close to the large pressed disc ornaments; they were, however, not part of a necklace, but instead formed a pair of ornaments fastening the two sides of the upper body clothing. Some have suggested that the predecessors of these discs were the Byzantine disc fibulae, and dated them to the third quarter of the 6<sup>th</sup> century<sup>51</sup>; others think that they were manufactured as local copies of necklaces made up of oval pendants, and can be dated to the turn of the 6<sup>th</sup>-7<sup>th</sup> centuries<sup>52</sup>.

Cast bracelets with widening terminals – found in smaller numbers in Southern Transdanubia, the wider Maros region and in Transylvania<sup>53</sup> – and similar exemplars made of sheet metal can also be traced back to Byzantine origins, based on their form and ornaments. Studies so far have placed the apex of their manufacture in the first half of the 7<sup>th</sup> century, but the type may appear until the last third of the 7<sup>th</sup> century<sup>54</sup>.

The joint appearance of these two jewellery types with slightly differing dates puts the grave at the beginning, or the first decades of the 7<sup>th</sup> century. A detailed analysis of the jewellery, however, may modify or refine this.

In connection with the beads, it has already been mentioned that they included types datable to a longer period, between the end of the 6<sup>th</sup> and the end of the 7<sup>th</sup> centuries; thus, the composition of the necklace does not help with the dating of the grave. The earring with a large spherical sheet pendant, whose bronze specimen was worn by the woman buried in the grave, is also a long-lived jewellery type of the period.

Thus, based on the pair of bracelets and the necklace with sheet pendants, the burial can so far be dated to the beginning or the first decades of the 7<sup>th</sup> century. This is supported by the radiocarbon date of the sample taken from the human skeletal material of the grave (fig. 1, 3). It is also in conformity with the use-wear traces and damages on the pectoral cross, indicating a longer use-life. Thus, the cross was manufactured some time during the 6<sup>th</sup> century, and after a long period of use, was buried only around the beginning of the 7<sup>th</sup> century.

## SUMMARY

In the Carpathian Basin, we cannot speak about the general spread of Christianity to larger segments of the population before the Avar period, since there are very few finds connected to Christianity in Gepidic cemeteries<sup>55</sup>. In the Avar period, however, Christianity can be observed in the Romanized population of Eastern Transdanubia (the vicinity of Keszthely [Kom. Zala/H], Pécs [Kom. Baranya/H], Csákberény [Kom. Fejér/H], Budakalász, Várpalota [Kom. Veszprém/H], Tác [Kom. Fejér/H] and Balatonfűzfő), and furthermore among the Germanic populations, in a form indicating a syncretic world view combining Christian and pagan traditions. The partially-Christian local remnant population of the Roman province with its Roman culture was augmented by Christian immigrants from the Balkans and communities resettled by the Avars. In the

46 Garam, Funde pl. 17, 1.

47 Garam, Funde pl. 16, 4.

48 Garam, Funde pl. 17, 2.

49 Ranisavljev, Mokrin pl. XXI, 60: 7.

50 Lőrinczy, Szegvár-Oromdűlő 136.

51 Lőrinczy, Szegvár-Oromdűlő 137.

52 Garam, Funde 40.

53 The list of the archaeological sites was compiled by Éva Garam: Garam, Funde 69-70.

54 Garam, Funde 72.

55 e. g. Csongrád-Ketőshalom (Kom. Csongrád/H), without grave number: silver buckle: Csallány, Archäologische Denkmäler pl. CCXI, 10; Kiszombor B, Grave 350, cast pectoral cross: Csallány, Archäologische Denkmäler pl. CXXIV, 12; Szentés-Berekhat (Kom. Csongrád/H), cast buckle-mount: Csallány, Archäologische Denkmäler pl. LXXIII, 12-13; Szentés-Nagyhegy (Kom. Csongrád/H), Grave 84, silver reliquary: Csallány, Archäologische Denkmäler pl. XXXIX, 4.

find material of the Romanized population of Southern Transdanubia, objects with connections to both the Western and the Eastern Mediterranean are attested, which shows the traditional Eastern Alpine and Dalmatian relationships of the local Christians, but also indicates new immigrants or resettled individuals from the Balkan territories of the Byzantine Empire.

However, those who wore the cross and other objects decorated with crosses in the Avar period were surely not all Christians. The pectoral cross from Grave 33 of the cemetery excavated at Makó, Mikócsa-halom, belongs to the type of hollow sheet metal crosses with widening arms that were widespread primarily in the Eastern Mediterranean. The representatives of the types are known mostly from the Balkan Peninsula. The few exemplars attested in the southwestern part of the Crimea arrived there as imports via Cherson<sup>56</sup>. The woman wearing the cross found in Makó was buried according to pagan rites, with grave goods and sacrificial animals. Thus the cross was not a symbol of her affiliation with the Christian community, but was probably worn as an amulet. The same can be said about the person wearing the cross found at Deszk, only 15 km as the crow flies from the findspot of the Makó cross.

To date the cross, we used the known chronological position of the other finds from the grave (cast bracelets with widening terminals, necklace with sheet pendants, types of the beads beside the cross). Based on these, the grave can be dated to the beginning or the first decades of the 7<sup>th</sup> century. The radiocarbon date measured from the human remains in the grave confirms this. At the same time, the use-wear traces and damages on the cross indicate that it had been in use for a long period before it was buried in the grave. Thus, it had most probably been manufactured in the 6<sup>th</sup> century. Based on the analogies, it was probably manufactured in one of the workshops of the Byzantine Empire in the Balkans.

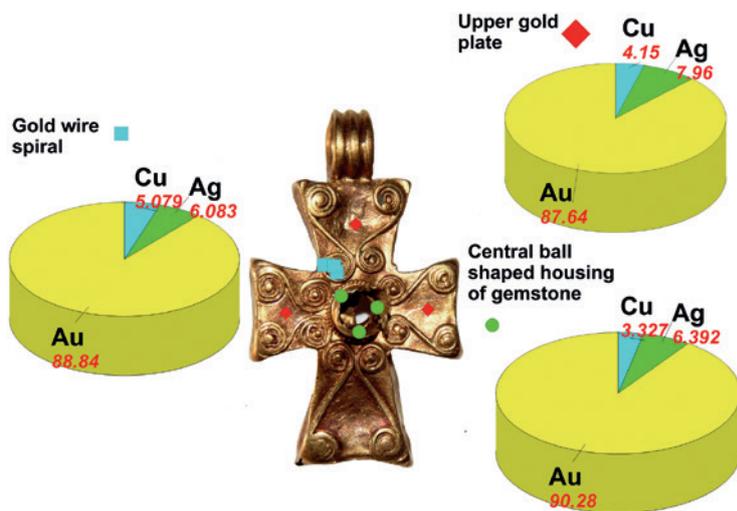
The question of how and when it reached a female member of the pagan community using the cemetery at Makó, Mikócsa-halom (as traded goods or spoils of war), can be answered only after the detailed analysis of the whole cemetery. At this time, we can only mention that the analogies of a number of jewellery types from the cemetery (earrings with voluted ends, earrings with hooked ends, and necklaces with monochrome beads) can be identified among the finds of the Late Antique – Early Byzantine population of the Balkans. This promises an opportunity to study a new direction of contacts in the 6<sup>th</sup>-7<sup>th</sup> century material of this area, primarily the Maros region.

## **METALLURGICAL CHARACTERISTICS OF A GOLD BYZANTINE CROSS FROM THE EARLY AVAR PERIOD CEMETERY MAKÓ, MIKÓCSA-HALOM**

*Sándor Gulyás · Csilla Balogh · Gábor Bozsó*

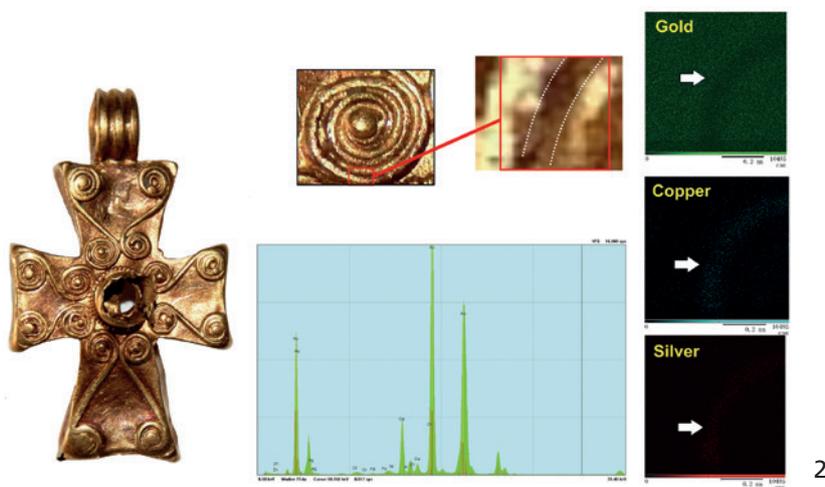
The body of the studied Byzantine cross pendant was prepared by soldering together individual gold plates. A central ball-shaped gemstone housing encircled by tiny granulations was also added to the main body. Meticulously folded gold wires forming S-shaped threads ending in spirals were applied to the arms of the cross in a double manner. To reveal the so far undiscussed characteristics of the goldsmith industry in which the referred Byzantine cross was manufactured, the artefact was subjected to detailed metallurgic analysis with X-ray fluorescence, thus highlighting potential compositional differences in the gold alloy used for the preparation of the different parts of the cross.

<sup>56</sup> Ajbabin, Istorija Krima 132.



**Fig. 6 1** Metallic composition of selected areas in the upper part of the Byzantine cross (values are in mass %, symbols mark sites of multipoint measurements). – **2** spectral peaks and elemental map of the gold wire on one of the spirals (note the dark arch in the square photo on the right, showing smaller amounts of gold but higher amounts of silver and copper). – (1-2 graphics S. Gulyás).

1

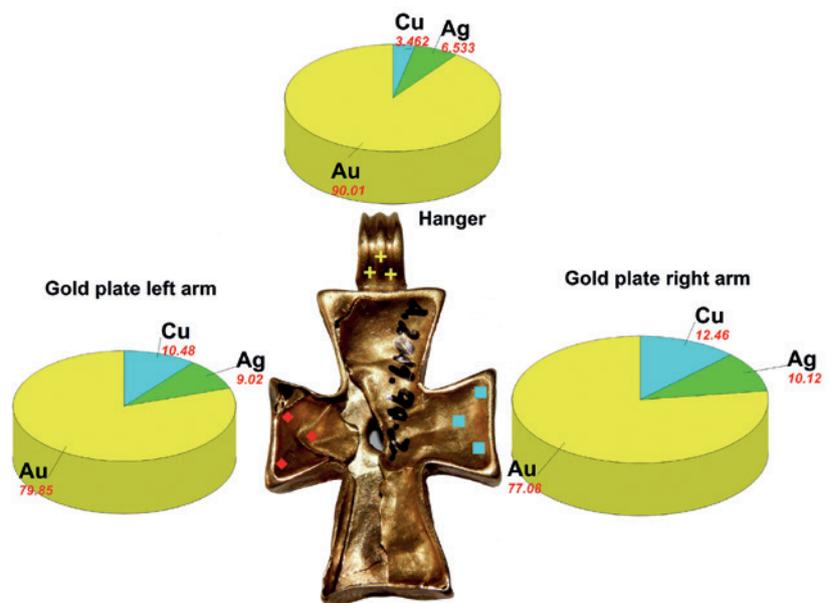


2

## MATERIAL AND METHODS

To gain representative information on the metallic composition of the individual plates and wires used for the final assembly of the cross, numerous areas have been selected for measurements. Analyses involved both the upper and lower parts of the studied artefact. Measurements were implemented on a Horiba XGT-5000 type XRF spectrometer at the Department of Mineralogy and Geochemistry, University of Szeged. Each selected site was subjected to multipoint measurement with an individual running time of 300s (XGT diameter: 100  $\mu$ , X-ray tube vol.: 50 kV, current of 0.140-0.200 mA). For the final evaluation, the average of three measurements per site was considered. Results are presented in mass percentages of the identified elements. Potential error of measurement was less than 0.05 %. In areas that seemed ambiguous from a compositional point of view, surficial elemental maps were also prepared with the mentioned instrumental settings. Results are presented on individual pie charts and photographs.

**Fig. 7** Metallic composition of selected areas in the upper part of the Byzantine cross (values are in mass %, symbols mark sites of multipoint measurements). – (Graphics S. Gulyás).



## RESULTS

Spectral peaks of seven elements could have been identified in all studied samples. These are chromium, iron, nickel, zinc, copper, silver and gold. As concentrations of the first three elements were highly negligible (0.02-0.1 %), they have been omitted from the final evaluation. Results with sites marking the areas of multipoint measurements are presented on **figure 6, 1-2** for the upper and lower sides of the crucifix. In case of the gold plate giving the main body of the cross, in the upper side c. 88 % of the material was pure gold. For the preparation of the workable alloy only a minimal silver and copper were added (7.96 and 4.15 %, respectively) at a roughly 2:1 ratio yielding an alloy of 21-22 karat gold. The same alloy must have been used for the preparation of the semi-ball-shaped granulated gemstone housing. The mass percent of gold here is c. 90 %. The ratio of silver to copper is likewise roughly 2:1 and is present only at very small percentages within the alloy (6.4 and 3.33 %, respectively). For the spiral wire decoration, somewhat larger amounts of silver and copper have been used, slightly reducing the volume of total gold. The ratio of silver to copper is around 1:1 (5-6 %). This slightly softer alloy must have been more suited for bending the wires into the S-shaped decorative spirals. Yet the overall high quality of the material remained with a c. 88 % gold, yielding an alloy of 21-22 karat. To tackle potential spatial differences in the composition of the alloy, elemental maps on the sides of the wires have been prepared (**fig. 6, 2**). The mapped areas are presented in the upper part of **figure 6, 2**. Although the general spectrum seen at the bottom of the figure is similar to the other sites of measurements, the spatial distribution of elements reveals slight discrepancies between the main body of the cross and the wire itself. Compared to the neighbouring areas of the gold plate giving the main body of the upper side of the cross, the wire has lower concentrations of gold visible as a blackish arch on the right central part of the uppermost elemental map. However, this arch has higher concentrations of silver and copper compared to the neighbouring areas. This again corroborates the previous statement, that although the general quality of the alloy remained high, the somewhat higher amounts of silver and copper must have made the wires softer and much more workable for the highly elaborate spiral decorations. The gold plate at the back of the cross has lower concentrations of gold ranging between 77 and 80 % (**fig. 7**). The amount of silver and copper added to the alloy was twice that of the spirals on the upper side (c. 10-12 %) at an equal ratio. This presumes that the metal sheet at the back must have been much softer

than the front panel of the crucifix. The value of the gold was reduced only by 1-2 karats, yet this softer alloy was needed for the bending and folding of the metal sheet at the back.

However, the suspension ring is again made of high-karat gold, with silver and copper added at a roughly 2:1 ratio and a gold content of 90 %. This is comparable to the values of the metal sheet used for the preparation of the central half-ball shaped gemstone housing as well as the metal sheet composing the upper side of the cross. It seems unlikely that goldsmith at the time had analytical scales available for the accurate preparation of gold alloys. So the 1-2 % differences in the total values between the measured sites of the suspension ring, the upper gold metal plate forming the body as well as the gold housing in the centre is non-significant. So these parts of the cross must have been prepared from the same single alloy. Slightly higher amounts of silver and copper added to gold yielded a somewhat different alloy having still high concentrations of gold, but much more workable for bending the spirals. The back of the cross required a third type of alloy, where copper and silver were added at the same ratio as in the case of the gold wires, but at definitely higher amounts – almost twice of the values recorded. This was necessary for the creation of an even softer alloy, which enabled the inward folding of the metal sheets. Yet this technique yielded a small reduction in the overall karat number compared to the upper side of the cross. So the goldsmith managed to preserve the overall high quality of the material ranging between 19-20 and 21-22 karats.

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## SUMMARY

### A Byzantine Gold Cross in an Avar Period Grave from Southeastern Hungary

This article presents a unique Byzantine gold pectoral cross pendant from the Avar period archaeological site of Makó, Mikócsa-halom, located in Maros Valley, Southeastern Hungary (Kom. Csongrád).

The adult woman (aged 23-35) who wore the cross from Makó was buried according to pagan rites, with grave goods (an earring with a large spherical pendant, two cast bronze bracelets with widening terminals, a necklace assembled from three pressed silver disk-shaped pendants and thin bronze tubes) as well as sacrificial animals. Based on our *in situ* observations, the woman had worn the gold cross at her neck, among beads. The cross was not a symbol of her affiliation with the Christian community but was probably worn as an amulet.

The pectoral cross belongs to the type of hollow sheet-metal crosses with widening arms that were widespread primarily in the Eastern Mediterranean. Based on its hollow body, this was probably originally a reliquary cross. The representatives of the types are known mostly from the Balkan Peninsula. A few exemplars are attested in the southwestern part of the Crimean peninsula.

To date the cross, we used the known chronological position of the other finds from the grave. Based on these, the grave can be dated to the beginning or the first decades of the 7<sup>th</sup> century. The radiocarbon date obtained from the human remains in the grave confirms this. At the same time, the use-wear traces and damage to the cross indicate that it had been in use for a long period before it was buried in the grave. Thus, it had most probably been manufactured in the 6<sup>th</sup> century. Based on the analogies, it was probably made in one of the workshops of the Byzantine Empire in the Balkans.

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