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A Late Bronze Age 'Hoard' and Metal Stray Finds from Tiszalök-Rázompuszta (Szabolcs-Szatmár-Bereg County, Hungary)

Artefacts from the Protected Private Collection of László Teleki

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Abstract: The paper presents an uncertain Late Bronze Age (Ha B1) hoard and metal stray finds from Tiszalök (Szabolcs-Szatmár-Bereg County) that were discovered more than half a century ago, around 1952, and remained hidden for research in the private collection of László Teleki, the chief engineer of the Tiszalök hydroelectric power plant's construction. Based on an escrow contract between the granddaughter of the late collector, Zsófia Farkasné Teleki and the Hungarian National Museum, the objects are temporarily kept in the Prehistoric Collection of the Department of Archaeology. The assemblage and stray finds were discovered at the construction site of a hydroelectric power plant on the north-eastern edge of the so-called Rázompuszta. Information on the hoard's composition is contradictory, and it can be best reconstructed from the lists of Emília Risztics, who documented the collection on the construction site in 1952. Most of the objects—a sword, a socketed axe, a spearhead, two plano-convex ingots, and several bracelets and annular rings—that arrived at the Hungarian National Museum through the escrow contract appear in her lists and are identifiable by their dimensions and her sketches. This selection of objects suggests that the uncertain hoard in question belongs to the common category of "hoards with mixed composition". The typo-chronological analysis of the finds dates this assemblage to the Ha B1, assigning it to the so-called Hajdúböszörmény horizon. The study provides a basic typological and technological overview of the uncertain hoard and the stray finds, with particular emphasis on ornament types not subjected to in-depth analysis. Metal finds from Tiszalök-Újtelep and Tiszalök-Vásártér are also presented in the text to add to our understanding of the local Late Bronze Age sites near Tiszalök.

Keywords: Late Bronze Age, Hajdúböszörmény horizon (Ha B1), hoard, Tiszalök, technological analysis

Introduction

In 2018, the Hungarian National Museum (HNM) received bronze finds from Zsófia Farkasné Teleki for scientific publication (Fig. 1; 2; 3). These artefacts are temporarily kept in the Prehistoric Collection of the Department of Archaeology based on an escrow contract between the HNM and the owner. According to Zsófia Farkasné Teleki, the archaeological material belonged to the collection of his father, László Teleki, chief engineer, who acquired the finds during the construction of the hydroelectric power plant at Tiszalök (Szabolcs-Szatmár-Bereg County, Hungary).

The László Teleki Collection is one of those few archeological private collections that obtained a Deed of Protection from the Hungarian state. In this case, the document was signed on 30 March 1956.[1] The collection in question is well-known from the archaeological literature owing to the fine works of Mihály Párducz,[2] Eszter Istvánovits, and Valéria Kulcsár.[3] Extensive records and archive data on the development of the collection are available in the Jósa András Museum in Nyíregyháza, which Eszter Istvánovits generously made available to me for the writing of this study. I do not intend to go into detail about the history of the László Teleki Collection here; rather, my goal is to present the Late Bronze Age metal objects that arrived at the Hungarian National Museum via the escrow contract. Only those aspects of the collection's history will be discussed that are relevant for the identification of these artefacts.

In 2018, a total of 25 bronze items were temporarily deposited in the HNM: 1 socketed axe (Fig. 1.1), 1 sword (Fig. 1.2), 1 spearhead (Fig. 1.3), 3 annular rings (Fig. 1.4), 1 decorated annular ring (Fig. 2.7), 14 bracelets and their fragments (Fig. 2.8–16; Fig. 3.17–21), and 2 plano-convex ingots (Fig. 3.22–23). These finds are undoubtedly dated to the Late Bronze Age. There is an additional bracelet with a blunt terminal that may not be of Bronze Age origin (Fig. 3.24).[4] One of the most important sources for research on the László Teleki Collection is a list of objects comprising sketches, measurements, and descriptions by Emília Risztics, former archaeologist of the András Jósa Museum in Nyíregyháza. This work presents the artefacts found during the construction of the hydroelectric power plant largely in chronological order. Emília Risztics documented the finds that were presented by the secretary of László Teleki on 25 April 1952 on site.[5]

The bronze finds that arrived at the HNM were compared with her list, and, with a few exceptions, such as Nos 12 and 30 (Fig. 1.6; Fig. 3.24), most artefacts could be identified. However, the number of objects has changed compared to 1952, as 13 Late Bronze Age bronze items are missing (Fig. 4.25–37). For these finds, I have redrawn sketches by Emília Risztics or used her descriptions to reconstruct them (Fig. 4.25,32–36). The pieces not sketched by her have been scaled and visualized on the basis of the descriptions, but it should be noted that the typological identification of the objects is not without uncertainties. The reconstructions show the outlines of what are the most likely forms of the lost artefacts (Fig. 4.26–31,37).

In the case of assemblages from private collections, the first task is to reconstruct the composition, which is the most difficult one that usually produces uncertain or highly questionable results. It is obvious at first glance and will be confirmed by the typological analysis to be presented later, that the majority of the finds in the HNM are of the same date, their style is uniform, and they resemble the most typical hoards with mixed composition of the Hajdúböszörmény horizon. The available literature and archive data harmonize relatively well with the above. The discovery of a Late Bronze Age—or "Early Iron Age" or "Hallstatt", using the research terminology of the 1950s—hoard at the Tiszalök hydroelectric power plant site is reported by three sources. Nándor Kalicz mentioned that between 1950 and 1956, numerous archaeological finds from the area of Tiszalök were found every year, a significant part of which was acquired by private collectors. The construction of the hydroelectric power plant was one of them. He also called attention to an "Early Iron Age" (Late Bronze Age) tool hoard; the whereabouts of this assemblage are unknown, as it is not mentioned in the

1 VNy 1956.

2 Párducz 1959, 329.

3 Istvánovits – Kulcsár 1992, 63.

4 This object is not mentioned by Emília Risztics in the list of Bronze Age finds; Risztics 1952a.

5 Risztics 1952b.

Fig. 1. Metal finds from Tiszalök-Rázompuszta. 1 – socketed axe, 2 – sword blade, 3 – spearhead, 4–6 – annular rings (Private Collection of Zsófia Farkasné Teleki; Photo: J. G. Tarbay)

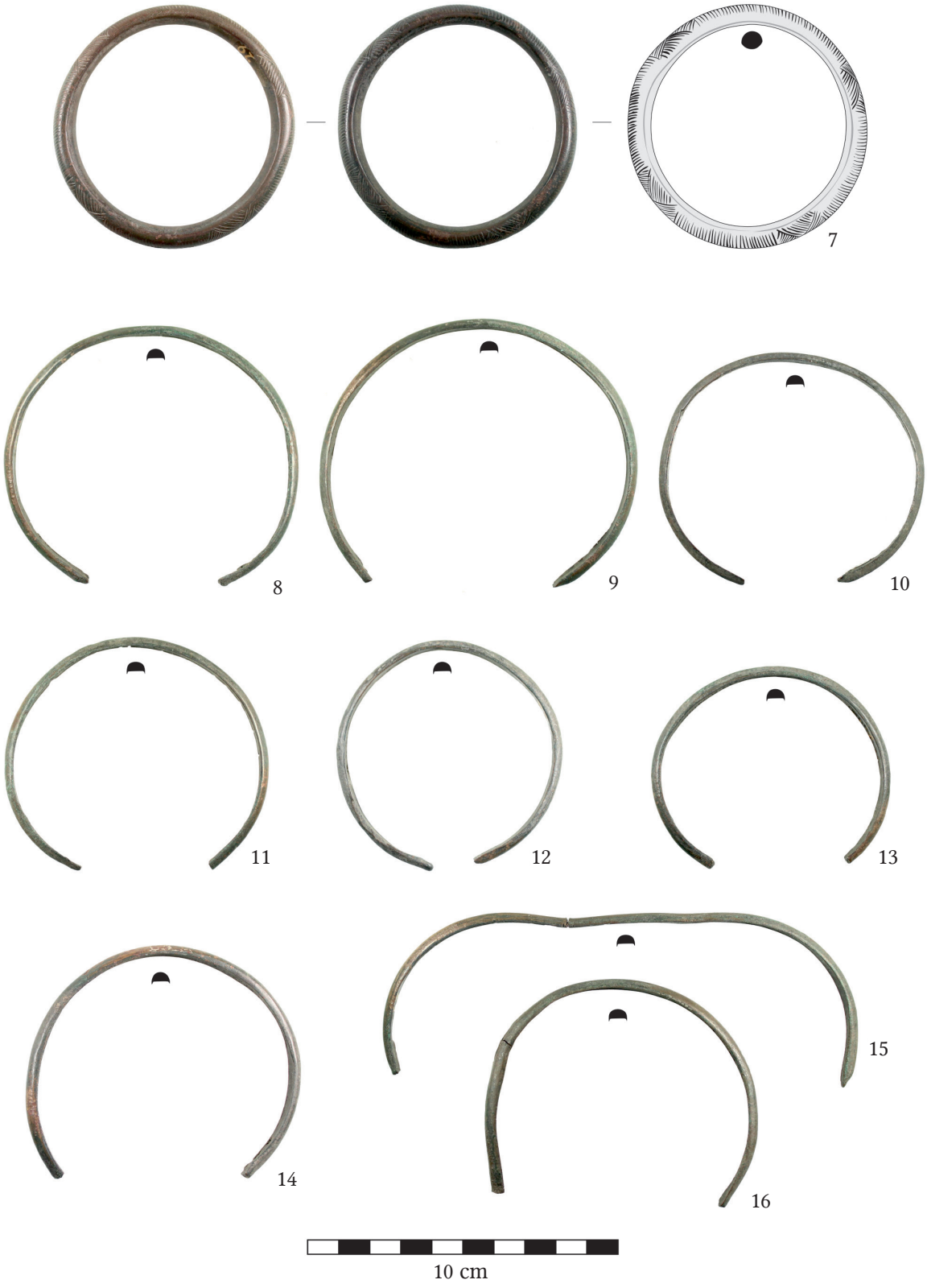

Fig. 2. Metal finds from Tiszalök-Rázompuszta. 7 – annular ring, 8–16 – bracelets (Private Collection of Zsófia Farkasné Teleki; Photo: J. G. Tarbay)

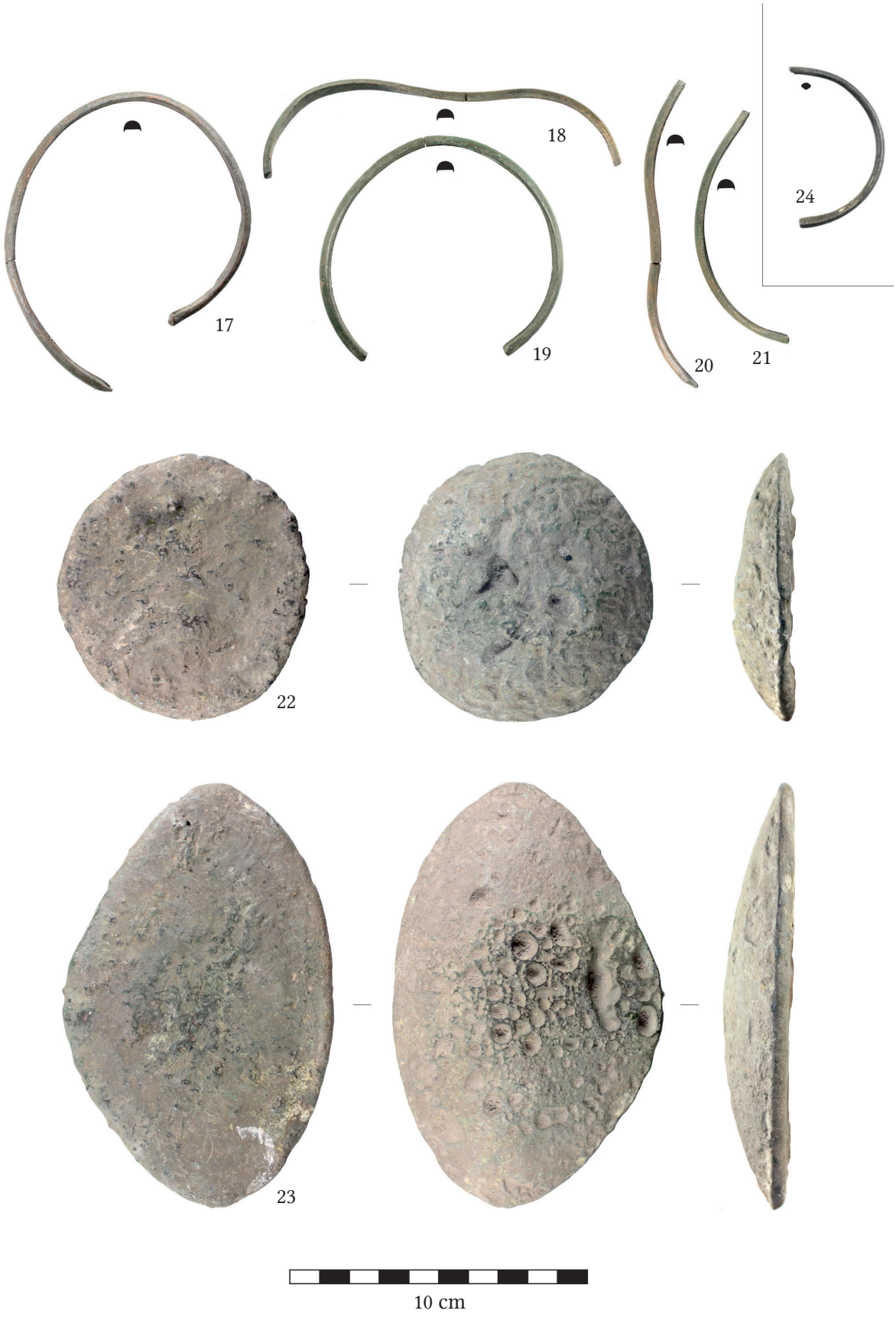

Fig. 3. Metal finds from Tiszalök-Rázompuszta. 17–21 – bracelets, 22–23 – plano-convex ingots, 24 – bracelet of uncertain date (Private Collection of Zsófia Farkasné Teleki; Photo: J. G. Tarbay)

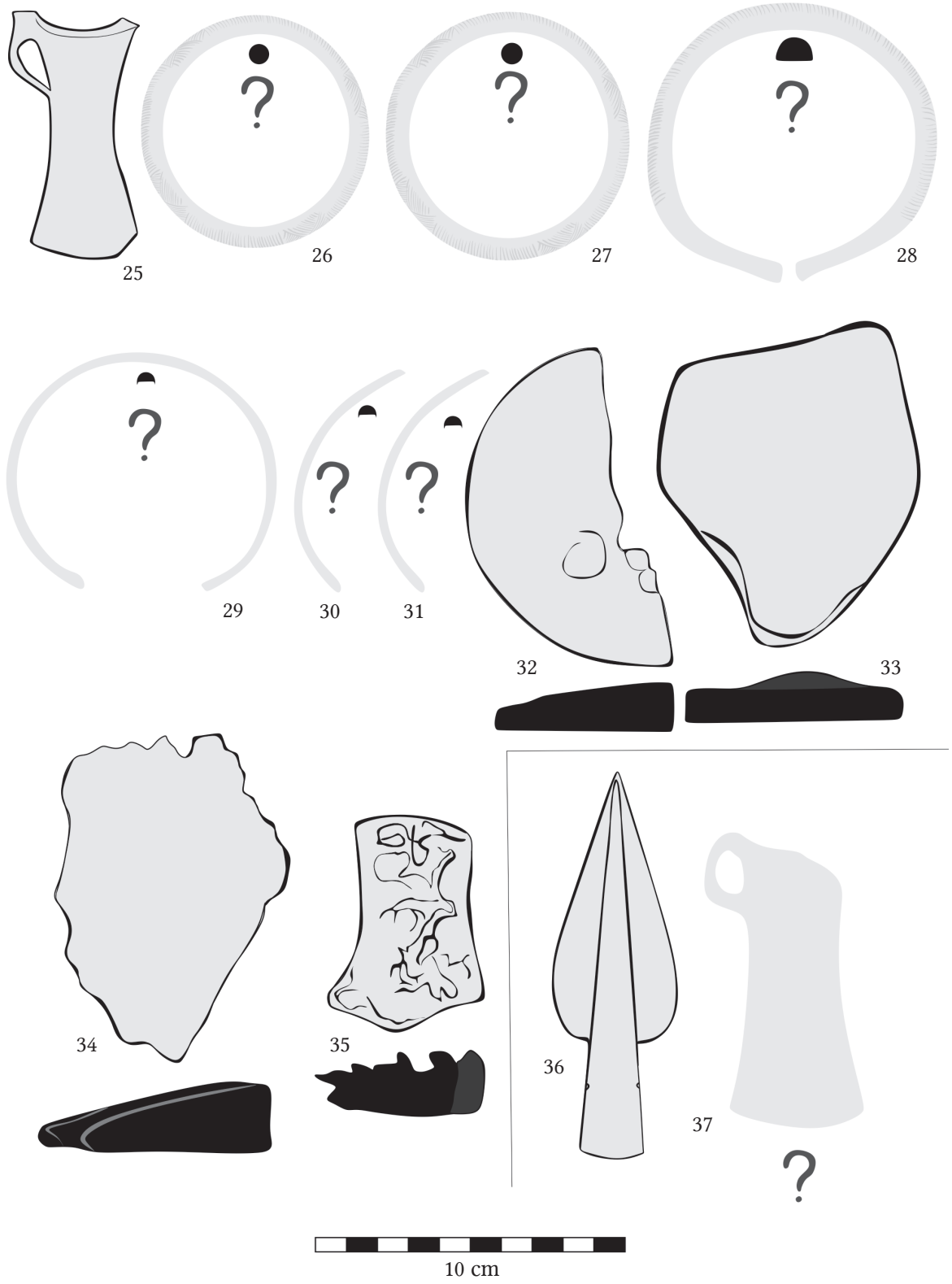

Fig. 4. Metal Finds from Tiszalök-Rázompuszta. 25–35 – Lost artefacts from the hoard, 36–37 – Objects listed as separate items. 25, 32–36 were drawn after the sketches of Emília Risztics. 26–31 and 37 were reconstructed after the brief description of the Emília Risztics (Risztics 1952a). Please note the uncertainty of the reconstructions, the drawings only show objects the author considers likely to match the list of finds. It cannot be excluded that the original objects may have looked different

later hoard literature.[6] It cannot be excluded that Nándor Kalicz wrote about the hoard under study but he had only superficial information about its composition. On 16 April 1952, Mihály Nyárádi, the director of the András Jósa Museum in Nyíregyháza at the time, mentioned in his letter to the former National Centre of Museums and Monuments [Múzeumok és Műemlékek Országos Központja]: "Recently, they found [...] a hoard with three spearheads, 13 notched bronze bracelets, approx. 20 different ones, and two bronze lumps. [László Teleki] was not able to tell me the find spot of the assemblage, as it was discovered during mechanical excavation."[7] The director's letter has already mentioned the types of artefacts that arrived in the HNM. However, the quantity of these finds is much greater compared even to what is described in the following source. It is the previously mentioned 1952 list by Emília Risztics, written a few days after Mihály Nyárádi's letter. In this document, almost all the Late Bronze Age bronzes are listed as "Early Iron Age" [Late Bronze Age], their belonging to an uncertain hoard is indicated by a question mark (see the identifiable pieces on Fig. 1.1–5; Fig. 2; Fig. 3.17–23; Fig. 4.25–35). Two more Late Bronze Age artefacts, an undecorated spearhead with a leaf-shaped blade (Fig. 4.36) and an incomplete cast of a fragmented socketed axe with a loop (Fig. 4.37), appear at the end of the booklet. There are no notes indicating that these objects belonged to the uncertain hoard (Fig. 4.37).[8] In a report dated 28 April 1952, a few days later, she reports that a large part of the documented finds had been bought back by the management of the construction site from the workers involved in the construction. Emília Risztics, however, does not mention the hoard.[9]

The Late Bronze Age finds appeared in later documents, where they were listed typologically,[10] in the latest being the document of protection from 30 March 1956.[11] The available information on the Late Bronze Age hoard discovered in the Tiszalök area can be summarized as follows: such a hoard most likely did turn up in the hydroelectric power plant construction area between 1950 and 1958,[12] sometime in April 1952, before Mihály Nyárádi's letter was written. This coincides with the period (1951–1953) when the SPA (State Protection Authority – Hungarian *Államvédelmi Hatóság*) ran a labour camp in Tiszalök, where mainly prisoners of war of German origin were compelled to work.[13] It is very likely that many of the objects presented in the later parts of this essay could have been grouped together as a hoard, but it is important to point out that we are dealing with archaeological material of extremely uncertain context, which may have been mixed with stray finds from the construction site or in the several decades during which the objects were in the private collection. The hoard was found by mechanical excavation, and even László Teleki could not tell its exact location to Mihály Nyárádi. We cannot rule out the possibility that the objects or parts of them were collected and taken away by the workers' SPA supervisors working on the construction site and later re-collected in whole or in part when the rewards were distributed. Of the three hoard compo-

6 Kalicz 1956, 57; Kemenczei 1984; Mozsolics 1985; Mozsolics 2000.

7 Nyárádi 1952.

8 Risztics 1952a.

9 Risztics 1952b.

10 Risztics 1956.

11 Some of the objects in the document list can be identified but, especially in the case of rings and bracelets, it is not possible to clearly identify which artefacts are involved. Certain items, (Fig. 3.22–24, Fig. 4.32–35,37), which arrived at the museum or are listed in the booklet of Emília Risztics, are missing from the Deed of Protection, see Risztics 1952a; VNy 1956.

12 http://www.tiszavizvizeromu.hu/tiszalok-vizeromu.php (last accessed: 13. 10. 2022).

13 https://www.munkataborok.hu/tiszalok/?fbclid=IwAR0f5x4-jhISYJN3WWjoY6Xag8iLSy2q6w5rGp2nV-16MofxHFgs3f_HxEA (last accessed: 14. 11. 2022).s

sition possibilities, Emília Risztics' reconstruction is probably the closest to the truth, as she visited the site and documented the finds thoroughly. Nándor Kalicz and Mihály Nyárádi were probably working from superficial sources. Of course, the strong opinion is nuanced by the fact that Emília Risztics only met with the secretary and not with László Teleki himself, so she probably could not provide more details about where and in what context the objects may have been found or how many objects were unsuccessfully recovered. This is probably why the question mark was placed in front of the objects described as being part of an "Early Iron Age" [Late Bronze Age] hoard.

The hoard's topographical location and connections to the Late Bronze Age settlement network are at least as important as its composition. The information on the exact location of the hoard's discovery is lost forever. Even Mihály Nyárádi could not find it out,[14] but the construction site is relatively well-placed in the archaeological topography of the Tiszalök area. The hydropower plant lies west of Tiszalök. Based on the Cadastral Maps[15] and the Second Military Survey[16] it is the Rázompuszta and some parts of the Kurta füz or Rázomi füz where the Tisza now flows. There are no sites dated to the Gáva pottery style (Ha A2/Ha B1) mentioned in the literature from the administrative area of Tiszalök;[17] we only know of hoards (Tiszalök I–II) and metal finds (Tiszalök-Újtelep, Tiszalök-Vásárhalom), which will be discussed briefly below.

Late Bronze Age hoards and metal finds from Tiszalök

Before analysing the metal finds from the László Teleki Collection, it is worth summarizing the previously found Late Bronze Age assemblages and metal finds from the Tiszalök area. Such finds are known from four sites in the region of the town. Two of them are well-known weapon hoards named Tiszalök I (Tiszalök-Szomjas tanya) and II (Tiszalök-Középső-dűlő). The others are less known in the literature; one of them is an uncertain burial (Tiszalök-Újtelep), while one ring and a bracelet are stray finds (Tiszalök-Vásárhalom) from west of Tiszalök. We have the opportunity to present the latter two finds from the HNM's Prehistoric Collection in greater detail.

Sword hoards I–II: Szomjas tanya and Középső-dűlő

Amália Mozsolics noted two hoards originating from the area of this town. Both were published and discussed in great detail in Tibor Kemenczei's *Prähistorische Bronzefunde* volumes on flange-hilted and metal-hilted swords.[18] Tiszalök I is a pure Ha B1-type sword hoard that was inventoried by the András Jósa Museum in 1958. According to the sketches and notes of András Jósa,[19] the weapons were donated to the institute on 5 September 1917, by Count Gusztáv Szomjas. The three swords were in a pile ("egy rakáson"). They were probably found around the end of August 1917. According to the notes,

14 Nyárádi 1952.

15 https://maps.arcanum.com/en/map/cadastral/?layers=3%2C4&bbox=2371452.3758201655%2C6109674.118620129%2C2378403.3680798486%2C6112516.620609485 (last accessed: 13. 11. 2022).

16 https://maps.arcanum.com/hu/map/secondsurvey-hungary/?layers=5&bbox=2368854.8196684327%2C6109088.712075386%2C2375805.811928116%2C6111931.2140647415 (last accessed: 13. 11. 2022).

17 Kemenczei 1984; V. Szabó 2002, 26–43; V. Szabó 2017, Fig. 1; Kósa 2020, Fig. 29. The list of Emília Risztics, however, mentions a ceramic pot that could be the product of this culture. An example is the No. 53 black bowl with an incurving and wrapped turban rim (Baks Type B7). At the same time, this vessel form is present over several periods and cannot be dated to the Ha A2/Ha B1: see Risztics 1952a; Kósa 2020, 20, Fig. 8.

18 Kemenczei 1988, Nos 351, 395, and 398; Kemenczei 1991, Nos 212, 227–228, and 241; Mozsolics 2000, 85.

19 Archive Documents Nos II-2018, II-2019, and II-2020.

the location to be found is the farmstead of the donator (Szomjas tanya) but András Jósa expressed doubts about the exact location, as two locals gave him different information. Based on the Third Military Survey, this estate lies east of Tiszavasvári, in a southwestern direction from Kisfástanya.[20] This weapon hoard consists of two large flange-hilted swords and one metal-hilted variant with a cup-shaped pommel. The metal-hilted sword can be classified as a Strachotice-type, while the other two weapons are related to West Central and West European sword types like Locras (Port variant) and Mâcon.[21] The presence of these western swords in North-eastern Hungary may be the result of warrior mobility. After all, their design is fundamentally different from the local weapons. The skilled use of such weapons probably required a fighting style developed in the main distribution area of these weapons. These two swords fit well into the trend of the appearance of foreign-style weapons, tools, and ornaments observed in the north-eastern Carpathian Basin during the Ha B period.[22]

The second sword hoard was discovered in 1966 in a plough field called Középső-dűlő (or Közép-dűlő), which is located west of Tiszalök according to the Cadastral Map.[23] This is an assemblage with identical characteristics and a similar chronological position as the first hoard. In this case, four swords, three metal-hilted and one flange-hilted, from the same period were selected for deposition.[24] According to Sabine Pabst, the flange-hilted sword belongs to the group of Stätzling-type (variant with four shoulder pegs) swords, which is a widely distributed type between the Carpathian Basin and West Central Europe.[25] The three metal-hilted swords with cup-shaped pommels have a more local character in the north-east Carpathian region.[26] The two assemblages are emblematic examples of the so-called pure sword hoards, a ritual practice related to warriors and warrior bands that were characteristic between the Br D and Ha B1 periods in the north-eastern Carpathian Basin and other parts of Europe.[27]

Újtelep

Újtelep is a separate part of the town located in its south-western zone, in an area known as Balogh Istók laposi dűlő or Lapos halom.[28] A small assemblage of ornaments was obtained from there by

20 https://maps.arcanum.com/hu/map/thirdsurvey25000/?layers=here-aerial%2C129&bbox=2386048.5238185385%2C6103023.165047222%2C2392999.5160782216%2C6105865.667036577 (last accessed: 14. 11. 2022).

21 Schauer 1971, 178–179; Kemenczei 1984, 186, Pl. 207b,1; Kemenczei 1988, 72–74, Pl. 45,395,398; Kemenczei 1991, 53, Pl. 47,212; Pl. 48,212; Jockenhövel 1997, 147; Mozsolics 2000, 85, Pl. 109,1–3; Stockhammer 2004, 49, 90, 184, 305, List 57.

22 Tarbay 2022c, 5–6, Fig. 5.

23 https://maps.arcanum.com/hu/map/cadastral/?layers=here-aerial%2C3%2C4&bbox=2372973.8073009443%2C6108754.994935269%2C2379924.7995606274%2C6111597.496924624 (last accessed: 14. 11. 2022).

24 Kemenczei 1966; Németh 1966, 89; Kemenczei 1984, 187, Pl. 208a,1–2; Kemenczei 1988, 66, Pl. 38,351; Kemenczei 1991, 55, 57, Pl. 51,227; Pl. 52,228; Pl. 53,227–228; Pl. 56,241; Pl. 57,241; Mozsolics 2000, 85, Pl. 110,1–4.

25 Pabst 2013, 139–140, Fig. 2.

26 Stockhammer 2004, 183–184, 306–307, List 49.

27 Mozsolics 1985, 11–17; Vachta 2008, 48–64, Fig. 30; Soroceanu 2011.

28 https://maps.arcanum.com/hu/map/cadastral/?layers=here-aerial%2C3%2C4&bbox=2381352.8296715776%2C6107632.84786056%2C2384828.325801419%2C6108951.386598479 (last accessed 14. 11. 2022). https://maps.arcanum.com/hu/map/firstsurvey-hungary/?layers=here-aerial%2C147&bbox=2375039.205208146%2C6105781.218422276%2C2388941.189727512%2C6111055.373373953 (last accessed 14. 11. 2022)

the HNM around 1948. It was found in the garden of S. Nagy in Újtelep. Burnt human bones were discovered near the bronzes. Unfortunately, these remains were not collected from the site. There is a possibility that this assemblage was a cremation burial accompanied by a small set of as-cast bracelets made for the burial event (Fig. 5.A2–4), and an A2a-type passementerie fibula (Fig. 5.A1).[29] The *passementerie* fibula was characteristic of Transdanubia, East Hungary, Transcarpathia, and also Serbia between the Ha A1 and Ha B1 periods (Fig. 5.A1; Fig. 10).[30] The bracelets are simple, rhomboid-profile pieces with tapered terminals, which the author classified as Rétközberencs-type (Fig. 5.A2–4). These rings can be dated between the Br C2/D and Ha B1 (Ha B2) periods, with a strong presence in the Br D/Ha A1. Bronze rings resembling the Tiszalök-Újtelep specimens were discovered in Hungary, Romania, Northern Croatia, Transcarpathia, Austria and Slovakia (Fig. 10).[31] The dating of this assemblage is uncertain. Amália Mozsolics and Tibor Kemenczei associated it with the Ha A2 period, but, based on the most datable analogies, the author previously related it to the Br D/Ha A1 or Ha A phases.[32] As both A2a-type *passementerie* fibulae and Rétközberencs-type rings appear in the Ha B1 phase, the author does not exclude the possibility that this assemblage can be assigned even to this period. Comparative elemental composition analyses are needed to determine the extent to which the composition of the artefacts is similar to that of well-datable Ha B1 finds.

Vásárhalom

West of the town lay the so-called Vásárrét and Vásárhalom, where small burial mounds dating to younger periods are known.[33] Based on the maps of the First Military Survey, Vásárhalom is an area close to the Tisza River and is now occupied by the Tisza-sétány.[34] According to the inventory book of the HNM, a decorated bracelet and a similarly decorated annular ring were donated to the institute in 1953 by János Szentesi. They were found during earthworks at Vásárhalom

29 Kemenczei 1984, 187, Pl. 209,1–4; Mozsolics 1985, 204; Mozsolics 2000, 86; Tarbay 2018, 682, Pl. 378,1–4.

30 List of A2a-type *passementerie* fibulae: Antalovtsi I (Ha A1), Aszód area (stray find), Feuersbrunn (stray find), "Gelénes/Téglás II" (Ha B1), Nógrádmarcal, Pećinci (Horizon II/Br D–Ha A), "Slovakia", Sióagárd I (Ha A2/Ha B1), Tatabánya-Bánhida II (Ha B1), Szőkedencs (stray finds); site not known (3 pcs). Hampel 1886, Pl. 41,1; Vasić 1999, Pl. 5,82; Kobal' 2000, Pl. 64A,1; Novotná 2001, Pl. 5,57; Tarbay 2012, Fig. 5,8; Tarbay 2014, Fig. 14,3; Fig. 15,1–2; Váczi 2014, Fig. 2,43; Tarbay 2018, Pl. 85,8; Pl. 245,15–16; Pl. 349,1–2; Pl. 365,112.

31 List of Rétközberencs-type rings. *Br C/D* Nyzhni Vorota I, Mukachevo-Pidmonastyr' II, Velyki Luchky; *Br D* Lăpuş, Panticeu; *Ha A1* Berkesz, Bogata, Frâncenii de Piatră, Guşteriţa II, Milostea-Sacoţi, Nagyhalász I, Nagyhalász II, Rétközberencs, Suseni; *Br D/Ha A1* Budinšćina; *Ha A2* Dezmir, Suskovo I; *Ha A2/Ha B1* Biatorbágy, Kesztölc, Sióagárd I; *Ha B1* "Gelénes/Téglás II", Jászkarajenő, Moigrad I, Şpălnaca I, Zemplínske Kopčany; Ha B1/B2: Lovasberény, Puch; *undatable* Bihor, Căţelu Nou, Cireşoaia II, "Crişana II", Mureş region, "Romania", Timişoara. Jósa – Kemenczei 1965, Pl. 36,7; Demeterová-Polláková 1973, Pl. 1,7,10–11; Mozsolics 1973, Pl. 45,15; Pl. 77A,7,11; Vinski-Gasparini 1973, Pl. 81A,6; Mozsolics 1985, Pl. 173,13; Pl. 177,12; Pl. 194,4–10; Petrescu-Dîmboviţa 1998, Pl. 103,1353–1360,1362,1365; Pl. 104,1369–1370,1373,1376–1378,1383,1394–1395; Pl. 105,1405–1406,1408; Pl. 106,1417–1418; Kobal' 2000, Pl. 26B,2; Pl. 30,40–41; Pl. 35,10–11,13; Pl. 73B,7,10–11; Lauermann – Rammer 2013, Pl. 32,5; Tarbay 2018, Pl. 25,102; Pl. 85,4; Pl. 126,112; Pl. 169.86; Pl. 246,31; Pl. 281,100–102; Tarbay 2022b, Pl. 22,65.

32 Mozsolics 1985, 204; Mozsolics 2000, 86; Kemenczei 1996, 78; Tarbay 2018, 682.

33 Sőregi 1936, 58, 60; Párducz 1950, 65.

34 https://maps.arcanum.com/hu/map/firstsurvey-hungary/?layers=here-aerial%2C147&bbox=2370624.325036167%2C6107626.115621606%2C2384526.3095555333%2C6113311.1196003165 (last accessed: 14. 11. 2022).

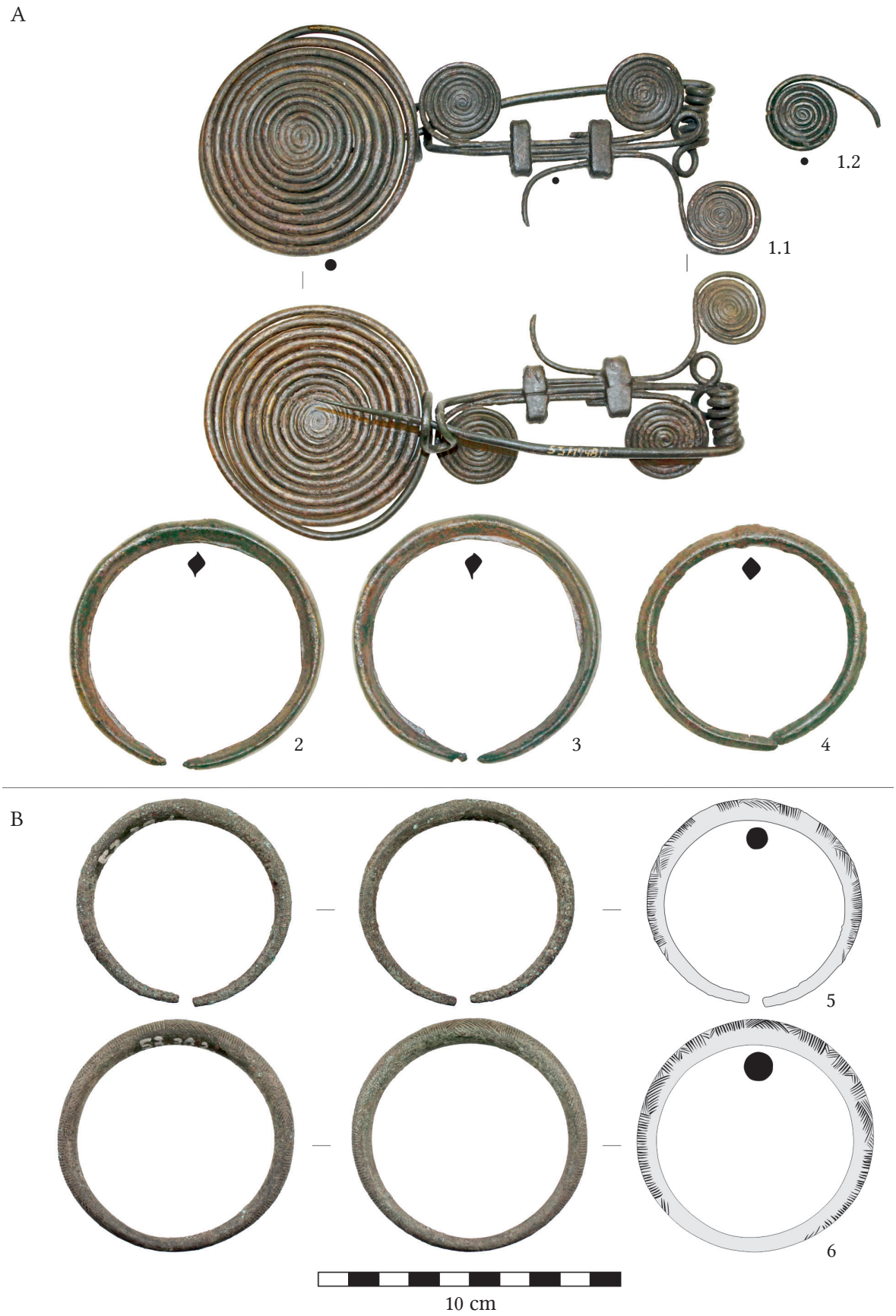

Fig. 5. Metal finds from Tiszalök: 1–4 – Tiszalök-Újtelep, 5–6 – Tiszalök-Vásárhalom (Hungarian National Museum, Budapest) (Photo: J. G. Tarbay)

(Fig. 5.B5–6).[35] Based on the minimal information on the archaeological context that survived, these ornaments could have been part of a hoard found at a Late Bronze Age settlement or they could belong to the grave goods of a burial. Since most of these ornaments were found as part of hoards, the first possibility is the most likely. The two ornaments represent two different types: the bracelet has a circular cross section, blunt ends, and an incised decoration consisting of line bundles and cross-hatched triangles (Fig. 5.B5). Identical pieces were named by the author as the first variant of the Zsáka-type (Fig. 11).[36] It should be noted that these rings do not form a homogenous type; variations in size and thickness tend to appear, just like different kinds of decoration combinations and variants in the shape of endings. Examples of these ornaments are known mainly from North-east Hungary, Transcarpathia, and Transylvania. They are also present in Poland, Slovakia, Bosnia and Hercegovina. These bracelets were primarily deposited between the Br C2/Br D (Serie Kriva) and the Ha B1 and the Ha B1/B2 periods (Fig. 11).[37] The second annular ring has a circular cross-section and a fine decoration consisting of line bundles and cross-hatched triangles (Fig. 5.B6). This annular ring is similar to the undecorated ones with a rhomboid cross-section deposited in the "new" hoard from Tiszalök (see below). It shares similarities with finds from North-east Hungary, Slovakia, and Romania: Cherghеş (Ha A1), Gârbău (Ha B1), Rohod III (Ha B1), Trenčianske Bohuslavice (Ha B1), Romania, Vinţu de Jos (Br D), Visuia (Ha B1), Žbince (Ha A1). Based on its analogies, it can be dated to the Br D and Ha B1 periods; most of the finds represent the late period.[38]

35 Inventory Book of the HNM 1953.30.1–2.

36 Tarbay 2017, List 3; Tarbay 2018, Fig. 52,4.1, List 62.1.

37 List of Zsáka-type bracelets. *Br C/D* Arcuş, Balazher, Chynadiiovo II; *Br C2/D* Bilky, Bodalovo, Borodivka, Dibrova, Kolodne II, Kvasovo I, Obava I–II, Orosijevo, Mukachevo-Pidmonastyr' II, Irshava II, Velikie Lučky; *Br D* Beregsurány, Gégény, Hetefejércse-Bencehát, Târşolţ, Volovets'; *Ha A1* Alţâna, Aluniş, Balsa, Bârsana, Blatná Polianka, Bodrogkeresztúr, Čopovka, Demecser, Deva III, Dolina, Edelény, Gemer, Kemecse-Hamvaspart, Kemecse-Orvosdomb dűlő, Nagyhalász-Pálhalom dűlő I, Nagyhalász-Tétke domb II, Nehrovo I, Olešnik III & V, Szabolcsbáka, Vidovice, Viničky I, Zemplín, Žbince; *Br D/Ha A1* Bükkzsérc I, Felsőtárkány, Galoşpetreu, Nitrianske Sučany, Tállya, Treznea; *Ha A* Crasna Vişeului, *Ha A2* Kidesh II, Suskovo I; *Ha A2/Ha B1* Dubivsti, Napkor, Potochyshche, Sambir; *Ha B1* Cornеşti, Jászkarajenő, Hajdúböszörmény-Hetven-laponyag (Ha B1 or Br D/Ha A1), Kántorjánosi, Szendrőlád, Viničky II, Załuż, Zsáka II (or Br D/Ha A1 – bracelets); *Ha B2/B3* Velyka Kam'yanka; *undatable* Ardanovo, Hungary, Romania, Shypyntsi, Slovakia, Valea Someşului, Velikaja Began'/Kidesh/Orosijevo; *unknown* Slavkovce. Żurowski 1949, Pl. 46,1–4; Pl. 47,1–7; Novotná 1968, Pl. 27,1; Novotná 1970, Pl. 51,1,3–4; Pl. 52A,1–2; Pl. 54C,2; Mozsolics 1973, Pl. 63,9–18,20–21; Schauer 1974, Fig. 10,7; Petrescu-Dîmboviţa 1978, Pl. 79A,1–6; Pl. 79B,2; Pl. 83B,5–9; Pl. 93A,35; Pl. 160D,2; Kemenczei 1984, Fig. 7; Fig. 29,3–4; Pl. 44E, Pl. 59A,5–10,11–14; Pl. 60A,13–14; Pl. 60B,5–8; Pl. 61,1–4; Pl. 63A,1–4; Pl. 166,22; Pl. 172B,5–6; Pl. 174,1; Mozsolics 1985, Pl. 157,11–15; Chidioşan – Soroceanu 1995, Fig. 3,11; Bader 1996, Fig. 11,4–5; Kacsó 1996, Fig. 4,4–5; Petrescu-Dîmboviţa 1998, Pl. 38,383–384; Pl. 41,409–410; Pl. 71,895; Kobal' 1999, Pl. 4,9; Novotná 1999, Fig. 1; J. Dankó – Patay 2000, Fig. 31; Kobal'2000, Pl. 11B,1; Pl. 13,26–28; Pl. 20–22; Pl. 29,16,19; Pl. 31A,1–7,9–12; Pl. 32,1–14; Pl. 33,19–20; Pl. 34B,3–5; Pl. 35,1–3,5; Pl. 38A,1–2,7; Pl. 41B,1–14; Pl. 42,1–2; Pl. 43A,1–2; Pl. 55B,2–3,7; Pl. 62B,1–2,4–5; Pl. 67,3; Pl. 71,1–4,6–7; Pl. 69B,1–2; Pl. 72E,2; Pl. 73B,2; Pl. 79A,2; Pl. 89,1–4,9; Pl. 94B,3–4; Mozsolics 2000, Pl. 42,20; König 2004, Pl. 6A,21–23; Furmánek – Novotná 2006, Pl. 48,8; Kobal' 2007, Fig. 2,3; Zielińska 2007, Fig. 7,1–2; V. Szabó – Bíró 2009, Fig. 12; Niculică 2011, Fig. 4–5,7; Rezi 2015, Pl. 3,3; Tarbay 2017, Fig. 10,6–16; Veliačik 2017, Fig. 2,3–4; Pl. 1,8; Tarbay 2018, Pl. 126,105; Pl. 236,16–19; Pl. 308,28–29; Pl. 464,6–9; Pl. 465,10–12; Tarbay 2019, Pl. 10,26.

38 Novotná 1970, Pl. 51,2,6; Veliačik 1983, Pl. 39,11; Chidioşan – Soroceanu 1995, Fig. 2,5; Petrescu-Dîmboviţa 1998, Pl. 164,2399–2403,2408–2410; Mozsolics 2000, Pl. 81,11. It is possible that these relatively uncommon circular-sectioned annular rings are the final state of the as-cast rhomboid-sectioned ones. During the production phase and perhaps use, what was originally a regular, rhomboid-shaped cross-section became circular. We consider the above to be a possible technological hypothesis, which should be verified in the future by personal inspection of the objects.

Tiszalök "III"

Except for two finds (Fig. 1.6; Fig. 3.24), most of the artefacts that arrived at the HNM were listed by Emília Risztics as part of an uncertain hoard that can be supplemented by the missing finds only known from her lists and sketches (Fig. 4.25–35). The original composition of this assemblage could be the following: two socketed axes (Fig. 1.1; Fig. 4.25), one sword (Fig. 1.2), one spearhead (Fig. 1.3), five annular rings (Fig. 1.4–5; Fig. 2.7), seventeen bracelets and their fragments (Fig. 2.8–16; Fig. 3.17–21; Fig. 4.29–31), five plano-convex ingots (Fig. 3.22–23; Fig. 4.31–34), one lump (Fig. 4.35). Annular ring No. 6 (Fig. 1.6) is not mentioned in Emília Risztics' list. The Bronze Age dating of No. 25 bracelet (Fig. 3.24) is uncertain. There is no data indicating that socketed axe No. 36 (Fig. 4.36) and spearhead No. 37 (Fig. 4.37) were part of this uncertain assemblage. Tiszalök III is the name given to the uncertain hoard. It could be classified as a limited composition hoard, which is typical of the second half of the Late Bronze Age in Eastern Hungary. As it will be shown by the analysis, the artefacts can be dated largely to this period, more precisely to the Ha B1. The content of the hoard will be presented below in typological and technological terms. To avoid repetition, objects vaguely or not related to the hoard are analysed together.

Socketed axes

The lower half of a large socketed axe was part of the Tiszalök III hoard (Fig. 1.1). This fragment was once part of a fully functional, well-manufactured object. Along its wider and narrower sides, fine hammer marks are visible. Its cutting edge is sharpened but dented (Fig. 6.A). The socket of this tool has been crushed, which is a well-known intentional manipulation of hoarded socketed tools and weapons (Fig. 1.1). Analogies to this kind of intentional manipulation are known in local Carpathian assemblages (e.g., Jászkarajenő, Nagyrábé).[39] The most common axe types in the north-eastern Carpathian Basin during the Ha B1 period are either the Debrecen-type or different beaked-mouth variants.[40] The absence of a rim does not allow an accurate classification of the object in question, but it likely belongs to one of these types. The other axe is only known from a sketch made by Emília Risztics, depicting a socketed axe with a beaked mouth. These tools were common in the north-east Carpathian Basin, during almost the entire Late Bronze Age. Their fine typological classification is only possible based on the shape of the narrow sides. Unfortunately, this detail is not depicted on the sketches (Fig. 4.25). Therefore, the object cannot be further evaluated in typological terms. All that is known about the third socketed axe is that it had a loop, which, like socketed axe No. 1, is a rather broad typological category and not suitable for analysis.

The sword

Only one diamond-profile sword blade fragment can be found in this presumed hoard (Fig. 1.2). This fragment was likely part of a functional weapon. It features only one group of intensive (prehistoric) use-wear marks along the ricasso (Fig. 6.C). The occurrence of small blade fragments is not an isolated phenomenon in Ha B1 hoards of the Great Hungarian Plain and the adjacent areas. This fragmentation type appears in hoards like Debrecen 3, Gáborján, Hévízgyörk, Jászkarajenő, and Mérk.[41] The studied find is an undecorated sword blade fragment with ricasso, which is an important typological feature as such were usually applied to metal-hilted swords with disc- or cup-shaped pommels.

39 Knight 2020, 2; Tarbay 2018, Pl. 117,30; Pl. 226.9.

40 Kemenczei 1996, 78; Mozsolics 2000, 24; Dergačev 2002, 174–176.

41 Tarbay 2021b, Fig. 7.

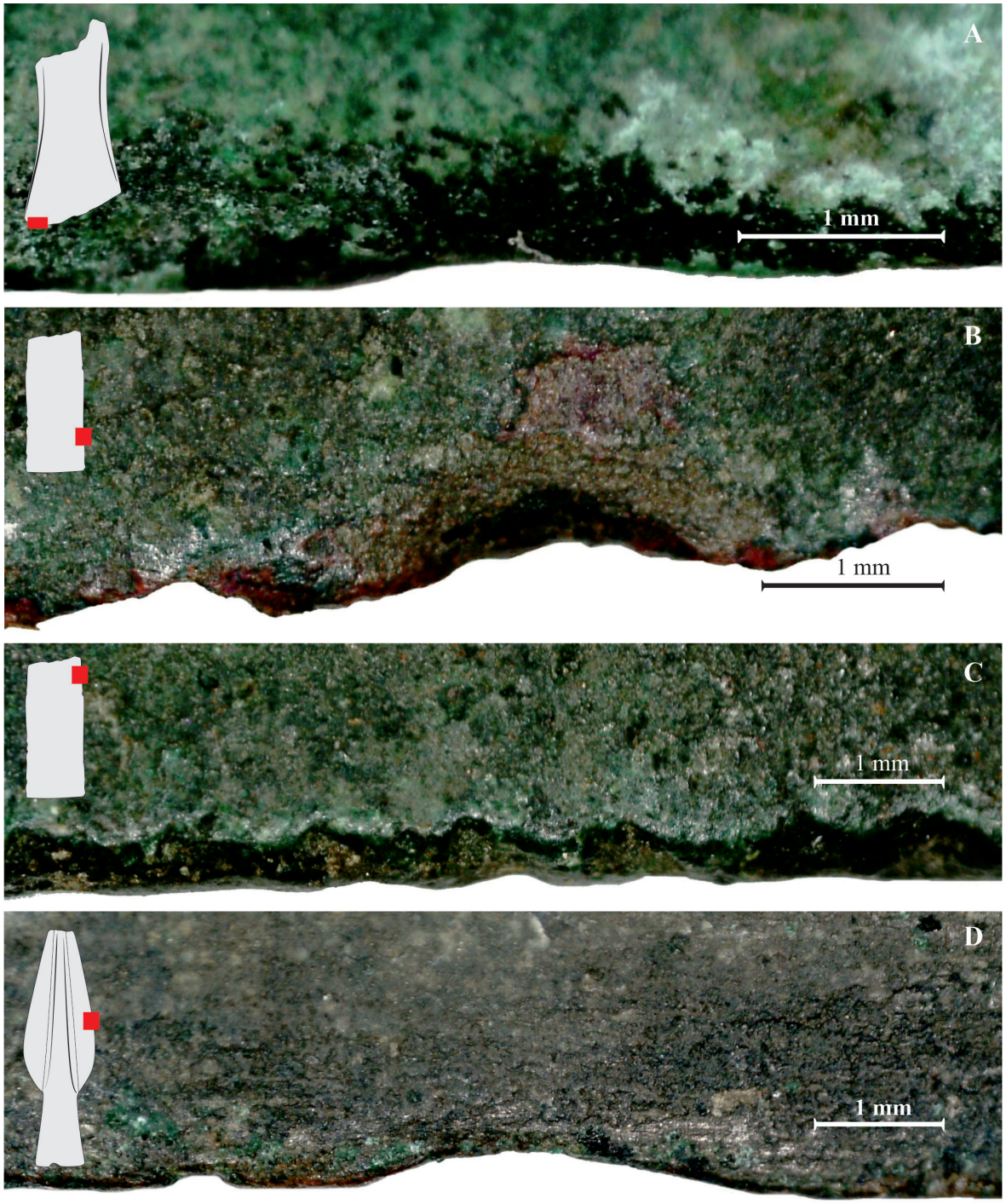

Fig. 6. Macroscopic observations. A – dent (socketed axe, No. 7), B – modern dent (sword, No. 8), C – worn ricasso (sword, No. 8), D – dents (spearhead, No. 9) (Micrographs: J. G. Tarbay)

The spearhead

The spearhead from the Tiszalök III hoard is an example of the use of aesthetically defective castings during the Late Bronze Age. The spearhead features a large misrun (Fig. 7.B) that runs from one of the peg holes to the upper part of the socket. Such defects are common amongst spearheads in the Carpathian Basin. Fine grind marks and traces associated with the removal of the casting seams indicate this object having been a finished product. Small dents can be seen along the cutting edge, possibly caused by blade on blade contact (Fig. 6.D; Fig. 7.A).

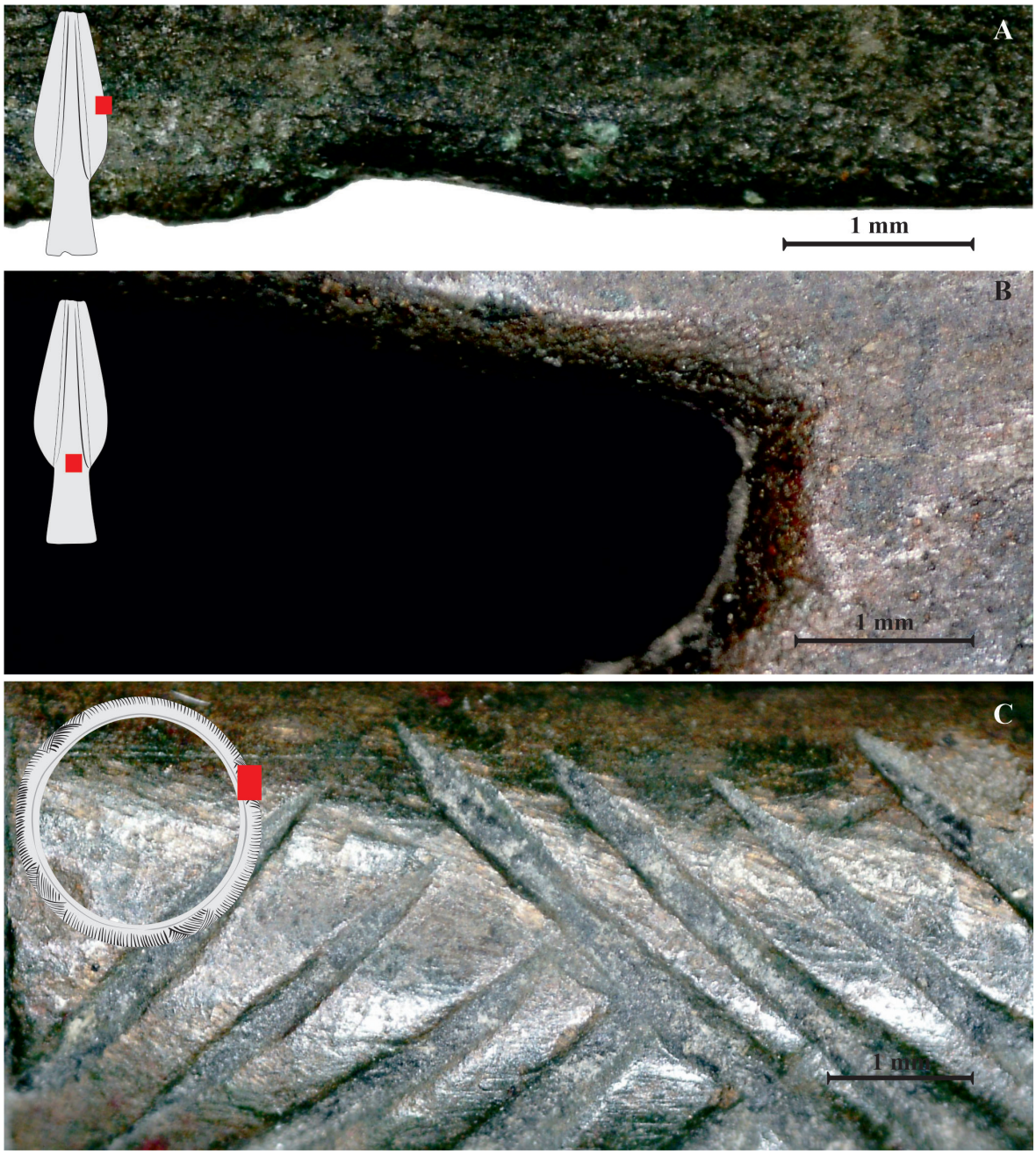

Fig. 7. Macroscopic observations. A – dents (spearhead, No. 9), B – misrun defect (spearhead, No. 9), C – patterns (annular ring, No. 13) (Micrographs: J. G. Tarbay)

The spearhead has a leaf-shaped blade. Its midrib is decorated with a vertical rib and two curved ribs that terminate at the line of the socket-blade interface (Fig. 1.3). Such spearheads can be classified as Tiberius Bader's Group C, Variant e, known specimens of which distribute in North-eastern Hungary and Transylvania, and sporadically appear in the territory of Transdanubia, Slovakia, Germany, Poland, Slovenia, Croatia, Moldova, and Bulgaria. The first specimens appeared during the Br C and Br D periods, while most of them were deposited between the Ha A1 and Ha B1 periods. The spearhead from the Tiszalök III hoard is most likely one of the youngest examples.[42]

42 Bader 2015, 386, Tab. 1,52; Tarbay 2015, 314, List 1; Fig. 3; Bader in press.

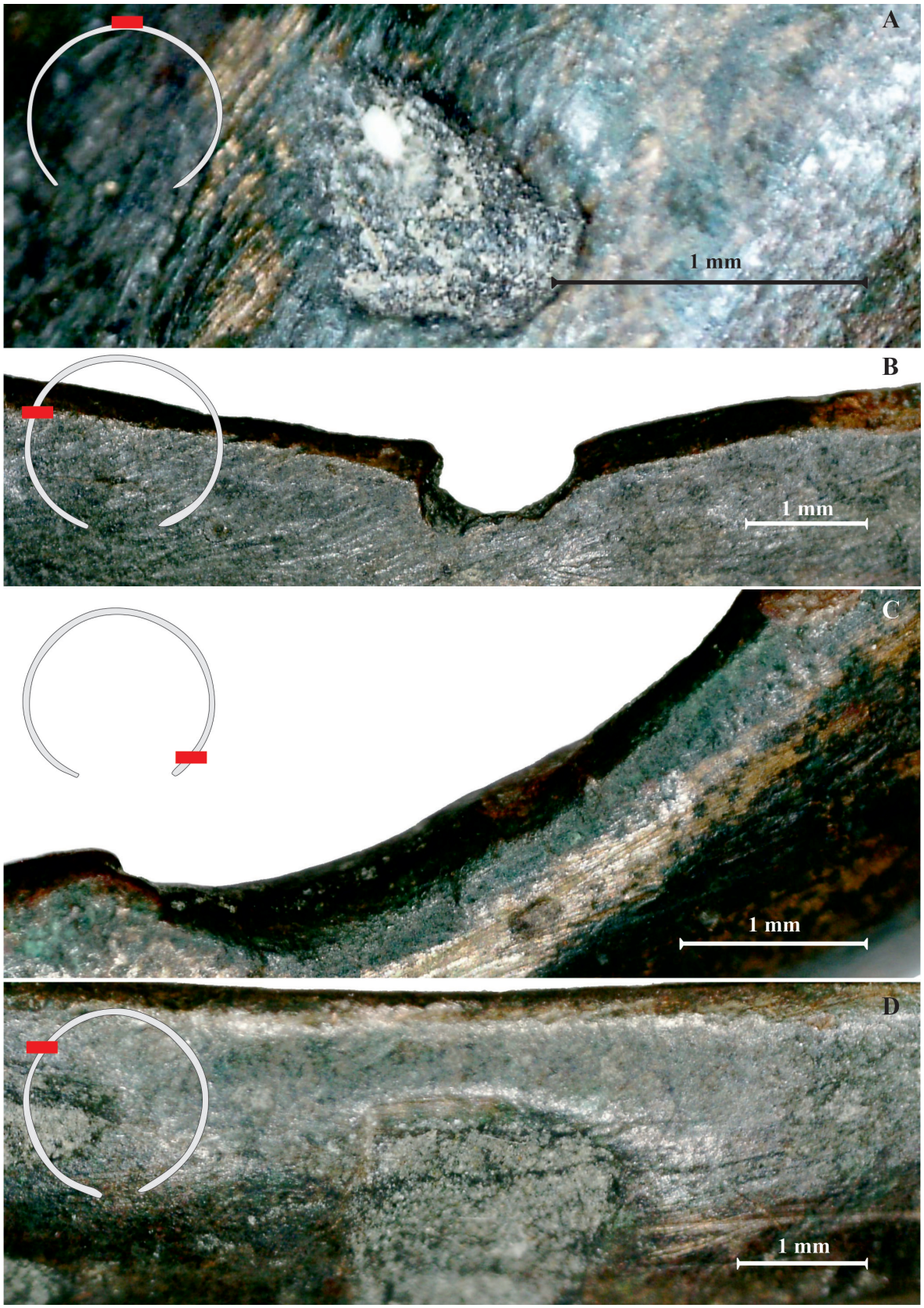

Fig. 8. Macroscopic observations. A – Shrinkage (bracelet, No. 15), B – Ground incomplete defect (bracelet, No. 16), C – Incomplete defect (bracelet, No. 17), D. Ground shrinkage (bracelet, No. 18) (Micrographs: J. G. Tarbay)

The spearhead—a stray find—registered as No. 90 in Emília Risztics's list[43] is a common weapon. It is an undecorated piece with a leaf-shaped blade (Fig. 4.37). Risztics's sketch, although relatively nicely executed, is not suitable for a proper evaluation of the spearhead. Undecorated spearheads with different types of leaf-shaped blades (Bader Group A) are one of the most common forms of the Late Bronze Age in the Carpathian Basin.[44] They were also common during the Ha B1 period, where the Tiszalök III hoard is most likely dated.[45]

Annular rings

Among the group of finds that arrived at the HNM, four diamond-profile annular rings can be found (Fig. 1.4–6; Fig. 2.7), which I previously referred to as Visuia-type variants 1 and 3.[46] Only three annular rings can be related to the presumed hoard (Fig. 1.4–5; Fig. 2.7). The as-cast ring fragment is not mentioned in Emília Risztics' work (Fig. 1.6). One of the undecorated ornaments was probably an unfinished product, as it shows traces of unremoved casting seams and mismatch defects (Fig. 1.5). No. 10 is probably a finished product with a finely ground-off casting jet, but it lacks clear traces of use (Fig. 1.4). The preserved jet traces in cases Nos 10 and 11 can be used to determine the casting direction. In the case of No. 10, the diamond-profile jet traces were on the narrow sides, while on No. 11 on the half-oval-profile jet was on the thick side. Based on the jet traces, the casting seams along the narrow sides of the rings, and some mould finds like those from Velem-Szent Vid and Căuaş (Romania), these ornaments were made in two-piece moulds for a pair of objects.[47]

Undecorated Visuia-type rings have analogies in Eastern Hungary, Transylvania, Moravia, Transdanubia, and Poland. Most known examples come from hoards deposited in the East Carpathian Basin. They can be dated between the Ha A1 and Ha B2/Ha B3 periods. A significant number of examples, particularly those in North-east Hungary, were deposited during the Ha B1 phase (Fig. 11).[48] One annular ring has a rounded edge, and it is decorated with bundles of lines and cross-hatched triangles (Fig. 7.C; Fig. 2.7). According to the list of Emília Risztics, two further, similar annular rings were also part of this presumed assemblage (Fig. 4.26–27).[49] This ornament was very likely in everyday use as testified by the wear marks inside and along the patterns. This specimen is also slightly different to the rest of the ornaments, as it has a more rounded, flat triangular cross section, which somewhat reminds us of the annular ring from Tiszalök-Vásárhalom (Fig. 5.2).

43 Risztics 1952a.

44 Bader 2015, 375–377.

45 E.g., Egyek, Hajdúszovát, Karcag, Nádudvar-Halomzug II, Taktakenéz. See Mozsolics 2000, Pl. 28,2; Pl. 39,10–11; Pl. 44,4; Pl. 56,25; Pl. 100,16,19.

46 Petrescu-Dîmboviţa 1998, 193–194; Tarbay 2018, 86, Fig. 54,1,3.

47 Miske 1907, Pl. 23,8; Bader 1996, Fig. 4,7.

48 Undecorated Visuia-type annular rings with diamond profile. *Ha A1* Biharia, Keresztéte; *Ha B1* Balmazújváros, Borsodgeszt-Kerekhegy, Corneşti, Gáborján, Gârbău, Hejőszalonta, Kántorjánosi, Nádudvar II, "Nagyrábé II", Nyíregyháza-Sertéskombinát, Rohod III, Suceava, Szendrőlád, Visuia; *Ha A2–Ha B* Soběsuky II; *Ha B2* Celldömölk-Sághegy II and IV, Rájec-Jestřebí; *Ha B1/B2* Lovasberény; *Ha B2/B3* Karmin I, *Ha B* Štramberk I; *undatable* Romania, Szentes-Terehalom, Valea Someşului. Sennovitz 1902, Fig. 1,5; Chidioşan – Soroceanu 1995, Fig. 2,10; Fig. 3,5–6,11–23; Petrescu-Dîmboviţa 1998, Pl. 169,2443–2449; Pl. 170,2454–2458,2462–2463; Pl. 171,2465; Mozsolics 1985, Pl. 225,5; Hänsel 2000, Fig. 2,7–8; Mozsolics 2000, Pl. 4,20; Pl. 16,8–9; Pl. 22,2–3; Pl. 40,5; Pl. 42,18–19; Pl. 58,12; Pl. 66,25; Pl. 81,10; Pl. 151,4–16; Salaš 2005, Pl. 419,29–31; Pl. 426B; Pl. 430,3–5; Tarbay 2018, Pl. 82,16; Pl. 169,85; Pl. 249,9; Pl. 307,22; Pl. 308,23; Baron et al. 2019, Pl. 6.

49 Risztics 1952a.

Fig. 9. Macroscopic observations. A – Shrinkage (bracelet, No. 19), B – Incomplete defect (bracelet, No. 21) (Micrographs: J. G. Tarbay)

The round-profile—see Vásárhalom—and diamond-profile variants (Fig. 11)[50] of these decorated rings can be mainly dated to the Ha B1 period, and most known specimens originate from the eastern part of the Carpathian Basin.

Different variants discussed in this work appear together in the Gârbău and Visuia.[51] There is also a combination of undecorated diamond-profile specimens with decorated diamond-profile (Balmazújváros) or round-profile ones (Rohod III).[52] The combinations and similarities between the

50 Examples for decorated annular rings with diamond profile: *Ha B1* Balmazújváros, "Gelénes/Téglás II", Gârbău, Hajdúböszörmény-Hetven-lapony (or Br D/Ha A1), Hódmezővásárhely, Visuia. Novotná 1970, Pl. 51,2,6 (profile unclear); Chidioşan – Soroceanu 1995, Fig. 2,3–4,6–9; Petrescu-Dîmboviţa 1998, Pl. 169,2450–2452; Mozsolics 2000, Pl. 4,18–19; Tarbay 2017, Fig. 9,4–5; Tarbay 2018, Pl. 85,5; Pl. 105,30.

51 Chidioşan – Soroceanu 1995, Fig. 2,3–10; Petrescu-Dîmboviţa 1998, Pl. 164,2394–2403; Pl. 169,2445–2451; Pl. 170,2454–2457,2463; Pl. 171,2465.

52 Mozsolics 2000, Pl. 4,18–20; Pl. 81,10–11.

dating and distribution of the different variants support the idea that these annular rings may have been completely finished versions of these ornaments, and their cross-section changed during the post-casting treatment phase and wearing.

Bracelets

The majority of the hoard consists of half-oval profile bracelets with blunt ends (Fig. 2.8–16). Originally, the hoard contained 17 such pieces and fragments (Fig. 2.8–16; Fig. 3.17–21; Fig. 4.29–31). These ornaments were either cast in open or two-part moulds with one negative. The inner surface of these objects is usually smooth; their outer surface is rounded. One can also observe open holes (pores) on the inner (Nos 19, 22, 24, 25, 27) (Fig. 9.A) and, in some cases, outer surfaces (Nos 15, 18) (Fig. 8.A,D). No. 18 should be highlighted because it shows well that the craftsman invested a great deal of effort into grinding off all open holes from the outer surface (Fig. 8.D; Fig. 2.12). Different kinds of holes, generally along the edges, are also present on many of these ornaments (Nos 16–18, 21) (Fig. 8.B–C; Fig. 9.B). They were bent into a circle by cycles of hammering, the traces of which are visible on the backside of some specimens (e.g., No. 16).

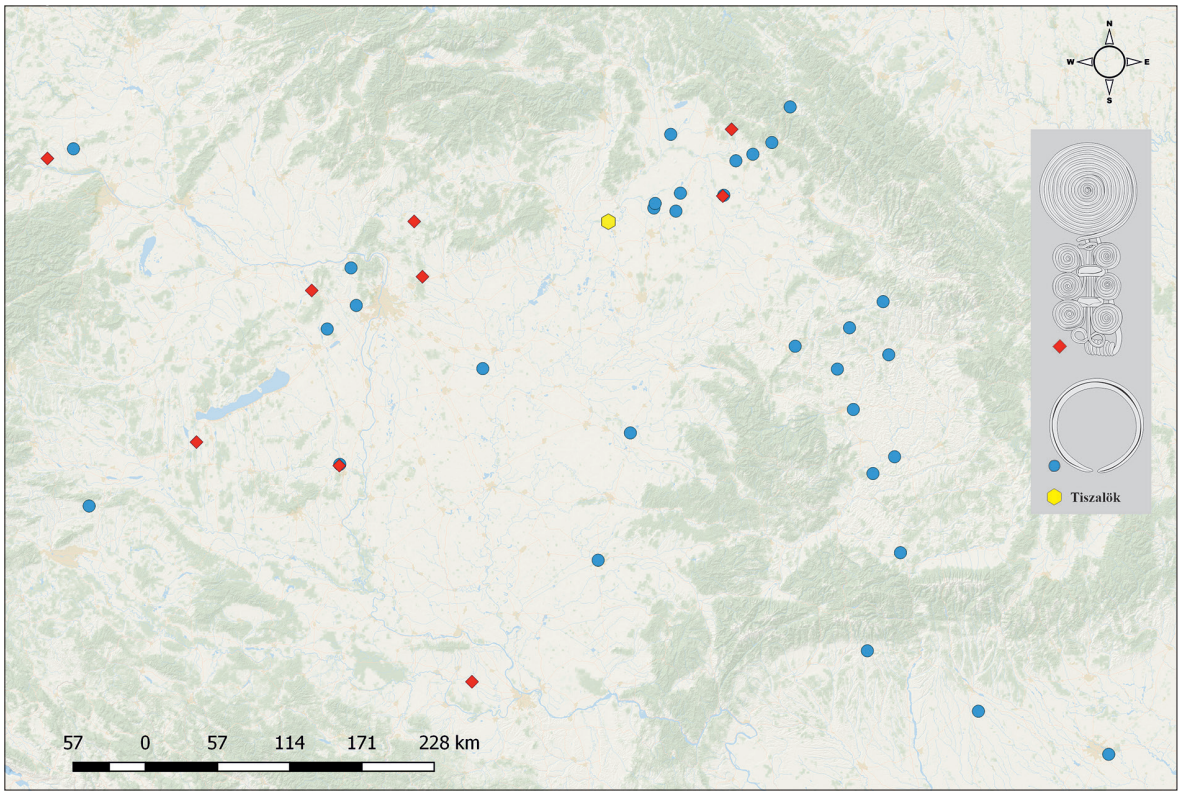

Fig. 10. The distribution of A3a-type passementerie brooches and Rétközberencs-type bracelets (analogous to Tiszalök-Újtelep)

These bracelets are long-persisting types dated between the Br D and the Ha B1. They appear in the archaeological records of the era in Austria, North-east Hungary, Serbia, Romania, and Northern Croatia. The relative chronological position of most specimens is Br D/Ha A1; however, they are also present in Ha B1 assemblages like the one from Kunmadaras-Repülőtér.[53]

53 See Tarbay 2022a, 60. Further examples: Bordei (Niculică 2010, Fig. 3,3). Decorated examples, such as those in the Celldömölk-Sághegy II hoard (Vas County, Hungary) may be the finished-product versions of these ornaments: Mozsolics 2000, Pl. 13.

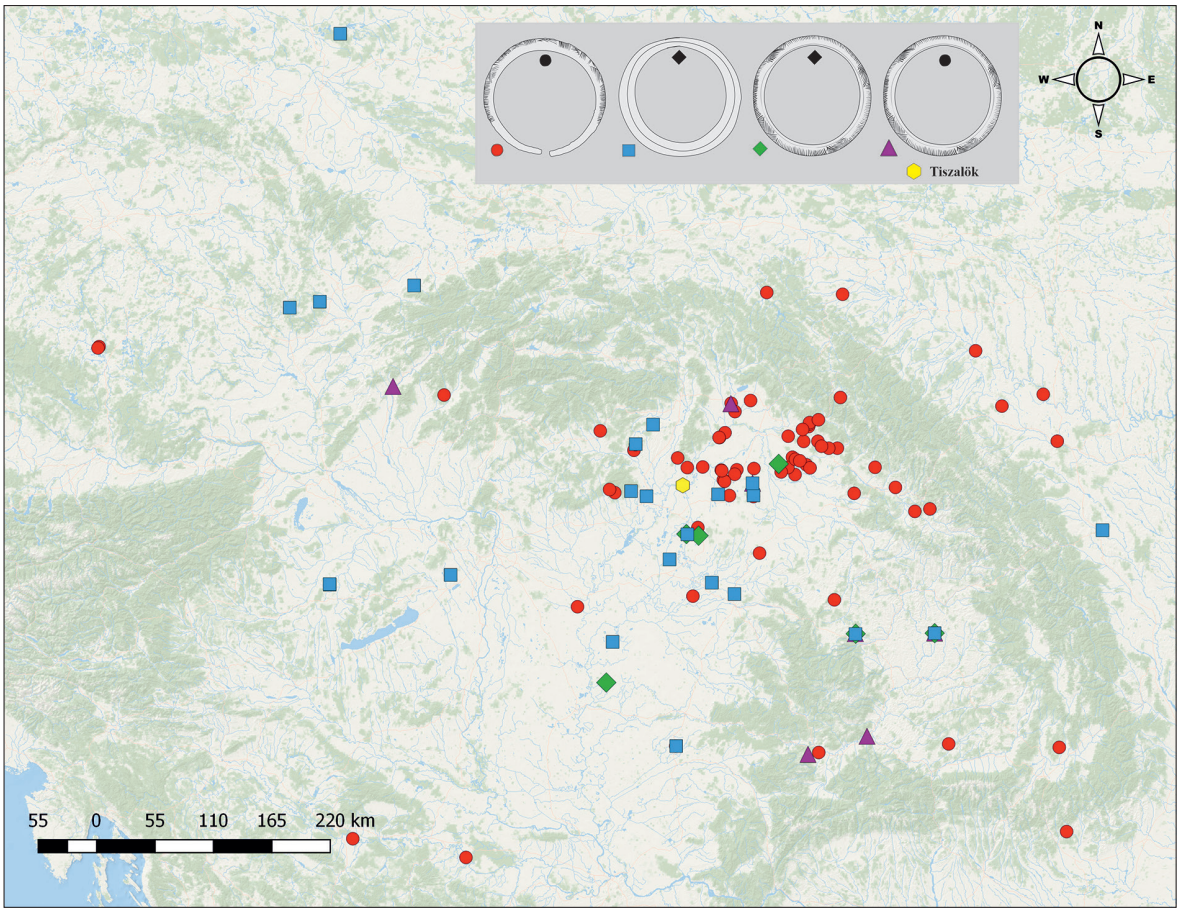

Fig. 11. The distribution of Zsáka-type bracelets (red circle) and Visuia-type annular rings (undecorated diamond-profile – blue rectangle, decorated diamond-profile – green diamond, decorated round-profile – purple triangle)

A lost bracelet

In her notes, Emília Risztics mentioned a special bracelet that is currently missing. It was a decorated specimen with a D-shaped cross section. The endings of the ornament were tapered and converging (Fig. 4.28).[54] From such a schematic description, it is almost impossible to identify exactly what object Emília Risztics had in mind. However, in the Ha B1 material in the north-eastern Carpathian Basin, there is a bracelet type that seems quite similar and appears in several assemblages. These bracelets are always D-shaped in cross-section and are typically richly decorated with dense patterns. Their ends are slightly tapered.[55] Based on currently available information, it is most likely that the lost object fell into the same category as these ornaments.

Plano-convex ingots and a lump

Originally, the Tiszalök III hoard contained five plano-convex ingots, but only two were delivered to the HNM. One is a small, round flat-convex specimen with a flat-convex cross-section and open- and blowholes on the bottom (Fig. 3.22). A second one is oval, slightly irregular, with a flat-convex cross-section (Fig. 3.23). The dimensions of ingot No. 29 are close to the Transdanubian

54 Risztics 1952a.

55 E.g., Kemenczei 1996, 79; Mozsolics 2000, Pl. 25,23a; Pl. 28,5–7.

Lovasberény-type by Zoltán Czajlik (Di. 80–120 mm, Wt. 0.5–1 kg), which is a long-persisting type between the Br D and Ha B1 phases, with numerous examples from the latter period.[56] It can be assumed that the lost No. 28 plano-convex ingot was also a representative of this type (Fig. 4.33).

Ingot No. 29 is special; it is an 'ovoid' plano-convex ingot according to Daniel Modl's classification.[57] We know of similar ingots from Hungary, Slovenia, Transylvania, Bosnia and Hercegovina and Transcarpathia (West Ukraine). These ingots range in size from palm-sized to specimens similar to the Tiszalök III ingot. They are pointed-oval or oval in shape. This shape first appeared in the Br D phase, but most such items can be dated to between the Ha B1 and Ha B2 periods.[58] Smaller examples are known from the eponymous Bodrogkeresztúr hoard containing re-cast material, formal analogies of which are known from the Late Bronze Age material record of France. These unique ingot shapes do not necessarily reflect intentionality. They may have been created by the irregularity of the negative carved into the ground or the mould, or by the overflow of metal in some direction during casting.[59] The large oval ingot from Tiszalök III and most of its analogies tend to have a more regular profile, which may reflect an intentional casting of this shape.

Emília Risztics described the bronze lump as if it were fused together from small bronze fragments (Fig. 4.37).[60] This description is too broad to determine the type of the lump: it could have been a fragment of a porous plano-convex ingot or even a special ingot consisting of re-melted objects, just like the plano-convex ingots from Bodrogkeresztúr described above.[61]

Conclusions

Metal finds from the late László Teleki's private collection were published in this study, together with previously discovered assemblages and stray finds from Újtelep and Vásárhalom in the administrative area of Tiszalök. Most of the metal finds arrived through an escrow contract between Zsófia Farkasné Teleki and the HNM's Prehistoric Collection of the Department of Archaeology, where they are temporarily kept. Most artefacts were part of an uncertain hoard found by mechanical excavation around April 1952 during the construction of the hydroelectric power plant at Tiszalök. Based on archive documents from the András Jósa Museum, this hoard most likely consisted of two socketed axes (Fig. 1.1; Fig. 4.25), one sword (Fig. 1.2), one spearhead (Fig. 1.3), five annular rings (Fig. 1.4–5; Fig. 2.7), seventeen bracelets and their fragments (Fig. 2.8–16; Fig. 3.17–21; Fig. 4.29–31), five plano-convex ingots (Fig. 3.22–23; Fig. 4.31–34), and one lump (Fig. 4.35). Many of these finds have not been delivered to the HNM, and their whereabouts are unknown. The content of this hoard refers to a 'classical' Hajdúböszörmény hoard type, the so-called 'hoard with mixed composition', which is typical of the north-eastern part of Hungary during the Ha B1.[62]

56 Czajlik 2012, 69–70.

57 Modl 2019, 381, Fig. 6,B.

58 List of oval plano-convex ingots. *Br D* Perișor; *Ha A2* Kanalski Vrh II; *Ha B1* Beremend (small), Sâmbăta Nouă, Taktakenéz, Vésztő; *Ha B2* Celldömölk-Sághegy II; *Ha B1/Ha B2* Bokavić, Lovasberény; *undatable* "Poltava region", "Velikaja Began or Kidesh". Petrescu-Dîmboviţa 1978, No. 248, Pl. 254A,35; Čerče – Šinkovec 1995, Pl. 118,74; Kobal' 2000, Pl. 93,61; Pl. 94A,64; Mozsolics 2000, Pl. 101,1; Pl. 124,6; König 2004, Pl. 49,284–285,289,290–291; Klochko – Kozymenko 2017, 228, Fig. 1; Rezi 2015, Pl. 8,47; Tarbay 2018, Pl. 182,222–223; Pl. 266,83; Pl. 267,84; Pl. 442,20.

59 Mozsolics 1981; Le Carlier de Veslud et al. 2014, 514, Fig. 2.

60 Risztics 1952a.

61 Mozsolics 1981.

62 Kemenczei 1996, 78–81; Mozsolics 2000, 23–25; Tarbay 2022a, 64–70.

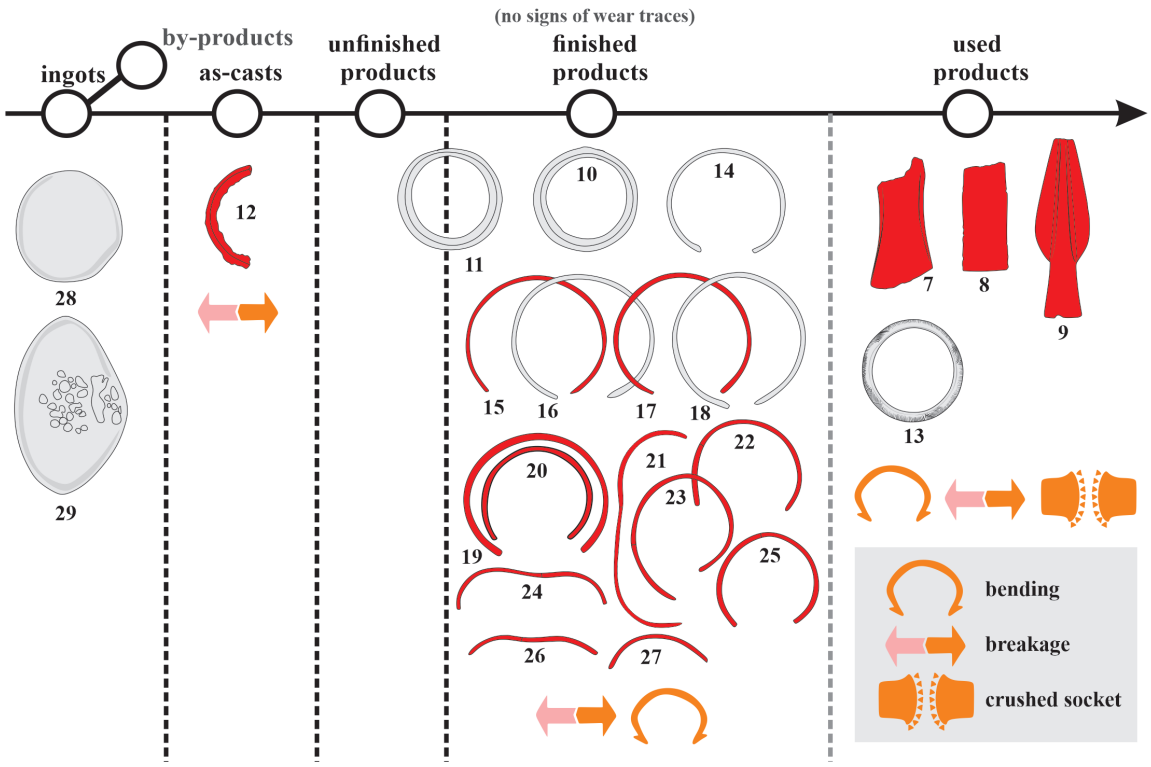

Fig. 12. Technological classifcation of the Late Bronze Age finds from Tiszalök-Rázompuszta (Graphic: J. G. Tarbay)

The hoard contains widespread Carpathian types with strong local stylistic features. In contrast to the Tiszalök I–II weapon hoards, which may represent a specific social group—the warriors or the elite—, the Tiszalök-Rázompuszta III hoard must have been part of a local event. The metalwork production and use-wear analysis of the objects suggest that the bronze finds had different life cycles. There is a small metallurgical component consisting of ingots, as well as several rings and bracelets that may never be used. Most bracelets could be finished products based on their various production marks, but we consider it unlikely that they were heavily used. A handful of objects, including a socketed axe, a sword blade, and a spearhead show microscopic edge damages. This technological group also contains a heavily used annular ring with traces of abrasion along its edges. The Tiszalök-Rázompuszta III hoard contains both intact and broken artefacts. There can be little doubt that the condition of the objects is the result of deliberate action, but the date of these manipulations is more uncertain. Given that we are dealing with an assemblage found by a mechanical extractor on a construction site, and that several modern damages were observed on the surface of the finds under study, it is not all that impossible that the condition of this material was altered during its discovery. This is particularly likely in the case of matching bracelet fragments. The damage to the spearhead, the sword, and the axe, on the other hand, fits the pattern of intentional damage observed in the case of other local Late Bronze Age artefacts. The fragmentation and other manipulations (e.g., the crushing of the axe socket) were carried out on finds in usable condition, suggesting that their life-cycle was interrupted. This act is rather characteristic of ritual assemblages. However, the complete lack of archaeological context and precise topographical information on the find spot make it difficult to evaluate the assemblage conclusively. It contains common elements such as raw material and metallurgical products (as-cast, ingots, finished but mostly unused finds), a small weapon or tool set, and ornaments, all of which could have been prized possessions of local Bronze Age people (Fig. 12).

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Catalogue[63]

Tiszalök-Újtelep

1. Fibula (53.1948.1): A3a-type *passementerie* fibula. Two of its side spirals are missing. O. broken, bent. 195.99×81.95 mm, Th. 3.19–2.19 mm, Wt. 169.2 g; Spiral fragment. 36.87×25.60 mm, Th. 1.97 mm, Wt. 6.1 g (Fig. 5.1).
2. Bracelet (53.1948.2): Square-profile bracelet with tapered ends. O. mismatch, impacts at the middle, casting jet on the back. 84.27×83.14 mm, Th. 6.88×9.95 mm, Di. 70.64×71.08 mm, Wt. 55.8 g (Fig. 5.2).
3. Bracelet (53.1948.3): Square-profile bracelet with tapered ends. O. mismatch, incomplete defect, casting jet trace on the back. 82.61×83.10 mm, Th. 7.91×7.11 mm, Di. 68.93×69.03 mm, Wt. 58.6 g (Fig. 5.3).
4. Bracelet (53.1948.4): Square-profile bracelet with tapered ends. O. casting jet on the back. 76.31×74.03 mm, Th. 6.12×5.66 mm, Di. 60.61×63.21 mm, Wt. 29.6 g (Fig. 5.4).

Tiszalök-Vásárhalom

5. Bracelet (53.30.1): Round-profile bracelet with blunt ends, line bundles, and cross-hatched patterns. 65.18×68.56 mm; Th. 8.83×6.74 mm; Di. i. 55.30×56.81 mm; Wt. 35.3 g (Fig. 5.5).
6. Annular ring (53.30.2): Round-profile annular ring with line bundless, cross-hatched triangles, and fishbone patterns. 76.42×76.84 mm; Th. 8.90×8.48 mm, 4.58×4.59 mm; Di. i. 63.01×61.71 mm; Wt. 65.2 g (Fig. 5.6).

Metal finds from Tiszalök-Rázompuszta

7. Socketed axe (Hoard III): Lower half of a socketed axe with a hexagonal cross-section and a hammered cutting edge. O. core shift defect, dent, crushed socket, broken blade. L. 104.46 mm; W. b. ca. 50.15 mm; Di. s. 40.78×20.01 mm; Wt. 277 g (Risztics 1952a, No. 15; Risztics 1956, No. 24; VNy 1956, No. 34) (Fig. 1.1; Fig. 6.A).
8. Sword (Hoard III): Oval-profile blade fragment of a sword with a ricasso. O. modern dent, worn ricasso, bent, broken. L. 83.73 mm; W. 35.49–32.45 mm; Th. 6.67 mm; Wt. 92.5 g (Risztics 1952a, No. 17; Risztics 1956, No. 26; VNy 1956, No. 38) (Fig. 1.2; Fig. 6.B–C).
9. Spearhead (Hoard III): Spearhead with a leaf-shaped blade, one vertical rib and two protruding ribs along its mid-rib, with broken tip and a conical socket with two peg holes. O. large misrun defect, mismatch, incomplete defect, grinding, ground seams, dents. L. 143.87 mm; Di. s. 29.34×28.21 mm; Di. b-s. 43.79×12.64 mm; Wt. 163.6 g (Risztics 1952a, No. 16; Risztics 1956, No. 25) (Fig. 1.3; Fig. 6.3; Fig. 7.A–B).[64]

63 Abbreviations: O. – Observations, L. – Length; W. – Width, Di. – Diameter, Th. – Thickness, Wt. – Weight, b. – blade, s. – socket, b-s. – blade-socket interface, i. – inner.

64 Only one spearhead is listed in the Deed of Protection of the private collection. Item No. 31 can be Cat. Nos 9 or 43 (VNy 1956).

10. Annular ring (Hoard III): Diamond-profile annular ring. O. mismatch, polished-off jet, grind marks. 84.54×82.01 mm; Th. 12.43×9.45 mm, 7.61×5.80 mm; Di. i. 64.88×63.58 mm; Wt. 78 g (Risztics 1956a, No. 23; VNy 1956, 36) (Fig. 1.4).
11. Annular ring (Hoard III): Diamond-profile annular ring. O. mismatch, unremoved casting seams, broken jet. 82.57×81.65 mm; Th. 10.77×8.12 mm, 6.19×3.41 mm; Di. i. 61.04×64.35 mm; Wt. 83.1 g (Risztics 1952a, No. 22; VNy 1956, 36) (Fig. 1.5).
12. Annular ring (Hoard III /Stray find):[65] Diamond-profile annular ring fragment. O. mismatch, flashes, mould damage, removed jet trace, potential modern break. 83.10×37.84 mm; Th. 8.26×7.19 mm; Wt. 31.2 g (VNy 1956, 36) (Fig. 1.6).
13. Annular ring (Hoard III): Oval-profile ring with line bundles and cross-hatched triangle patterns. O. worn inside and along the pattern. 78.26×77.49 mm; Th. 8.04×9.05 mm, 6.27×8.24 mm; Di. i. 62.44×64.29 mm; Wt. 93.2 g (Risztics 1952a, No. 21; Risztics 1956, No. 27; VNy 1956, Nos 39/30/35) (Fig. 2.7; Fig. 7.C).
14. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends. 94.67×83.34 mm; Th. 6.07×2.85 mm; Di. i. 88.11×79.79 mm; Wt. 26.5 g (Risztics 1952a, Nos 24–31; Risztics 1956, No. 28; VNy 1956, No. 37) (Fig. 2.8).
15. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, one broken off. O. ground, shrinkage. 102.56×86.29 mm; Th. 6.58×2.88 mm; Di. i. 95.48×81.77 mm; Wt. 27.6 g (Risztics 1952a, Nos 24–31; Risztics 1956, No. 28; VNy 1956, No. 37) (Fig. 2.9; Fig. 8.A).
16. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends. O. incomplete defects, hammered back. 85.71×78.03 mm; Th. 6.43×2.90 mm; Di. i. 79.41×72.31 mm; Wt. 23 g (Risztics 1952a, Nos 24–31; Risztics 1956, No. 28; VNy 1956, No. 37) (Fig. 2.10; Fig. 8.B).
17. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, one broken off. O. incomplete defect. 85.01×74.85 mm; Th. 5.7×3.24 mm; Di. i. 79.17×69.10 mm; Wt. 20.2 g (Risztics 1952a, Nos 24–31; Risztics 1956, No. 28; VNy 1956, No. 37) (Fig. 2.11; Fig. 8.C).
18. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends. O. incomplete defect, ground open holes on the back. 73.90×74.53 mm; Th. 6.25×2.96 mm; Di. i. 68.79×66.11 mm; Wt. 23.4 g (Risztics 1952a, Nos 24–31; Risztics 1956, No. 28; VNy 1956, No. 37) (Fig. 2.12; Fig. 8.D).
19. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, one broken off. O. shrinkage inside. 77.07×66.70 mm; Th. 5.18×3.20 mm; Di. i. 70.71×54.37 mm; Wt. 18.1 g (Risztics 1952a, Nos 24–31; Risztics 1956, No. 28; VNy 1956, No. 37) (Fig. 2.13; Fig. 9.A).
20. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, one broken off. O. 88.49×75.89 mm; Th. 5.63×3.39 mm; Di. i. 80.86×67.52 mm; Wt. 23.6 g (Risztics 1952a, Nos 24–31; Risztics 1956, No. 28; VNy 1956, No. 37) (Fig. 2.14).
21. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, broken in two. O. incomplete defects. 153.34×56.95 mm; Th. 5.51×3.30 mm; Wt. 22.6 g (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29;[66] VNy 1956, No. 37) (Fig. 2.15; Fig. 9.B).
22. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, broken in two. O. Blowholes inside. 87.77×70.16 mm; Th. 6.43×3.30 mm; Di. i. 77.83×69.22 mm; Wt. 21.1 g (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 2.16).
23. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, broken in two. 83.53×92.04 mm; Th. 5.83×3.51 mm; Di. i. 75.81×68.92 mm; Wt. 25.9 g (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 3.17).
24. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, broken in two. O. twisted, flash defect. 120.48×38.89 mm; Th. 7.43×3.09 mm; Wt. 18.6 g (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 3.18).
25. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends, broken in two; one of the ends broke off. 75.95×75.21 mm; Th. 6.53×3.09 mm; Di. i. 69.37×65.54 mm; Wt. 22.3 g (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 3.19).

65 This object is not mentioned in the list of the László Teleki collection by Emília Risztics (Risztics 1952a). The Deed of Protection of the private collection, however, mentions three diamond-profile rings (VNy 1956, No. 36).

66 Total of ten fragments are listed under No. 29. Based on the 1952 list by Emília Risztics, we can count with more bracelet fragments.

26. Bracelet (Hoard III): Two fragments of an undecorated bracelet with a semi-oval cross-section and blunt ends. 103.07×19.21 mm; Th. 6.04×3.52 mm; Wt. 12.7 g (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 3.20).
27. Bracelet (Hoard III): Undecorated bracelet with a semi-oval cross-section and blunt ends. 79.94×26.16 mm; Th. 5.79×3.01 mm; Wt. 10.4 g (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 3.21).
28. Plano-convex ingot (Hoard III): Small round plano-convex ingot, a flat-convex cross-section with open holes on the bottom. Di. 89.99×83.53 mm; H. 18.32 mm; Wt. 577.8 g (Risztics 1956, No. 47) (Fig. 3.22).
29. Plano-convex ingot (Hoard III): Large, flat, oval plano-convex ingot with a flat-convex cross-section and open holes on the bottom. Di. 142.64×90.48 mm; H. 21.56 mm; Wt. 975.6 g (Risztics 1952a, No. 48) (Fig. 3.23).

Tiszalök-Rázompuszta, uncertain dating

30. Bracelet (stray find): An undecorated oval-profile bracelet with thick blunt ends was also included among the finds that arrived at the museum via the escrow contract. This fragment is too small to be classified with certainty typo-chronologically. It should also be noted that such an ornament was included to in the list of Bronze Age finds from the László Teleki collection. Therefore, it is likely that it may belong to a group of artefacts from different periods. 54.06×32.23 mm; Th. 5.07×3.95 mm; Wt. 7.3 g (Fig. 3.24).

Tiszalök-Rázompuszta, finds known from archive documents[67]

31. Socketed axe (Hoard III): Socketed axe with a loop, a plain, undecorated body, and a casting jet trace on the loop. L. 80 mm. The sketch depicts a socketed axe with a symmetrical beaked mouth, one loop with a jet traces (Risztics 1952a, No. 14; Risztics 1956, No. 24; VNy 1956, No. 33) (Fig. 4.25).
32. Annular ring (Hoard III): Round-profile annular ring with incised patterns. Di. 75 mm (Risztics 1952a, No. 18; Risztics 1956, No. 27; VNy 1956, Nos 39/30/35) (Fig. 4.26).
33. Annular ring (Hoard III): Annular ring with incised patterns. Di. 80 mm (Risztics 1952a, No. 19; Risztics 1956, No. 27; VNy 1956, Nos 39/30/35) (Fig. 4.27).
34. "Bronze ring" (Hoard III): A decorated, roughly D-profile ring with tapered converging ends. 90×84 mm (Risztics 1952a, No. 20; Risztics 1956, No. 27; VNy 1956, Nos 39/30/35) (Fig. 4.28).
35. Bracelet (Hoard III): Total 23 bracelets (8 intact, 15 fragments) mentioned in the archive document. They are similar to the 20 bracelets on Fig. 2,8–16, Fig. 3,17–21. One intact specimen is missing (Risztics 1952a, Nos 24–31; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 4.29).
36. Bracelet (Hoard III): Total 23 bracelets (8 intact, 15 fragments) mentioned in the archive document. They are similar to the 20 bracelets on Fig. 2,8–16, Fig. 3,17–21. One fragment is missing (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 4.30).
37. Bracelet (Hoard III): Total 23 bracelets (8 intact, 15 fragments) mentioned in the archive document. They are similar to the 20 bracelets on Fig. 2,8–16, Fig. 3,17–21. One fragment is missing (Risztics 1952a, Nos 32–46; Risztics 1956, No. 29; VNy 1956, No. 37) (Fig. 4.31).
38. Plano-convex ingot (Hoard III): Half of a round plano-convex ingot. Di. 103 mm (Risztics 1952a, No. 49; Risztics 1956, No. 30) (Fig. 4.32).
39. Plano-convex ingot (Hoard III): Roughly a quarter of an irregular plano-convex ingot with no blisters on its surface. Di. 105 mm (Risztics 1952a, No. 50; Risztics 1956, No. 30) (Fig. 4.33).
40. Plano-convex ingot (Hoard III): Edge fragment of a plano-convex ingot. Di. 106 mm (Risztics 1952a, No. 51; Risztics 1956, No. 30) (Fig. 4.34).
41. Lump (Hoard III): "As if small bronze fragments were fused together". L. 70 mm (Risztics 1952a, No. 52; Risztics 1956, No. 30) (Fig. 4.35).

Tiszalök-Rázompuszta, Late Bronze Age stray finds

42. Socketed axe (stray find): "Bronze axe with a loop. The side in front of the loop is incomplete". L. 95 mm (Risztics 1952a, No. 89; Risztics 1956, No. 24; VNy 1956, No. 32) (Fig. 4.36).
43. Spearhead (stray find): Undecorated spearhead with a leaf-shaped blade and two peg holes. L. 125 mm (Risztics 1952a, No. 89; Risztics 1956, No. 25) (Fig. 4.37).[68]

67 Objects described and illustrated after the sketches and notes of Emília Risztics (Risztics 1952a).

68 Only one spearhead is listed in the Deed of Protection of the private collection. Item No. 31 can be Cat. Nos 9 or Cat. Nos. 43 (VNy 1956).

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