MIRROR, MIRROR …
REFLECTIONS ON THE FUNCTIONALITY OF A SMALL LEAD FIND FROM ACIC SUAT (BAIA, TULCEA COUNTY)

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Abstract: *The paper presents a small circular mirror frame found in the rural settlement at Acic Suat. The mirror is made out of lead and decorated with radial lines on the frame, missing the reflective surface. Even though, such finds are numerous in the Danubian and Black Sea provinces, their functionality is still questionable, ranging from cosmetic to votive. Discussing the find from Acic Suat, together with the analogies and their potential functions, allows us to integrate the item in a wider context. Two sets of analyses were performed on the mirror, ED-XRF and PIXE, revealing its composition and highlighting the presence of bismuth and silver which can be indicators for the provenance of the lead core.*

Rezumat: *Lucrarea prezintă o mică ramă rotundă de oglindă descoperită în așezarea rurală de la Acic Suat. Piesa este realizată din plumb și decorată cu linii radiale, sticla reflectorizantă lipsind. Astfel de descoperiri sunt numeroase în provinciile dunărene și în bazinul Mării Negre, iar funcționalitatea lor este încă discutabilă, de la cosmetică la votivă. Tratarea descoperirii de la Acic Suat împreună cu analogiile și utilizările potențiale plasează piesa într-un context mai larg. Două seturi de analize au fost efectuate pe ramă, ED-XRF și PIXE, care dezvăluie compoziția acesteia și evidențiază prezența bismutului și a argintului, care pot fi indicatori ai unui punct de origine pentru miezul de plumb.*

Keywords: *lead mirror; cosmetic utensil; votive offering, Roman rural settlement; ED-XRF; PIXE.*

Cuvinte cheie: *oglindă din plumb; instrument cosmetic; ofrandă; așezare rurală romană; ED-XRF; PIXE.*

CONTEXTS AND DESCRIPTION

The site at Acic Suat is located between two major ancient cities, Histria and Argamum, on the shore of Golovița Lake, Baia, Tulcea County. From an administrative point of view, the site was placed in *regio Histriae*[1] in the Lower Moesia province (Fig. 1).

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[1] For *regio Histriae* see CIL III 12489 = ISM I 373; ISM I 329; ISM I 343; ISM V 123; ISM V 124; Avram 1981-1982, 113-120; Avram 1990, 26-28; Bărbulescu 2001, 34-35.

Fig. 1. Location of the site.

The first mention of a potential settlement belongs to V. Canarache, followed by a series of field surveys undertaken by A. Avram, O. Bounegru and C. Chiriac in the early 80s.[2] Systematic archaeological research on the site began with a diagnostic excavation in 2011 and continued from 2015 onwards within a French-Romanian archaeological mission coordinated by the Louvre Museum and the Institute of South Eastern European Studies (Romanian Academy).[3] Following the surveys and diagnostic excavations, the systematic research focuses on two areas, the Greek and the Roman settlements, in close proximity to one another and slightly overlapping. In the Roman settlement, Sector VI, a building from the early Roman period, second century – beginning of the third century CE was unearthed, with five rooms, a corridor and a courtyard, made out of stone and earth. The building is part of a larger Roman rural

[2] Canarache 1953, 136-142; Avram *et alii* 1985, 119-122.

[3] The site was identified in the framework of the French project *Programme ANR Pont-Euxin.* For details on the research of the site see Baralis *et alii* 2011, 233-234; Lungu *et alii* 2012, 229-230; Iacob 2012; Baralis, Lungu 2015; Baralis, Lungu *et alii* 2017; Mușat-Streinu 2017; Streinu 2019.

settlement, superposing an Archaic layer of occupation and in the vicinity of other Archaic, Classical and early Hellenistic habitations. Surveys have revealed the presence of a necropolis[4] and roads connecting it to the hinterland (Fig. 2). The building itself revealed at least two phases of construction, and its collapse was triggered by abandonment as no traces of violent destruction were observed. During the 2019 campaign, just outside the building, in a second layer of debris, a small lead mirror frame was discovered (Fig. 3).[5] The mirror is one of the few metal finds discovered during the excavation, in a very good state of preservation in comparison with the very fragmentary state of other types of finds.[6]

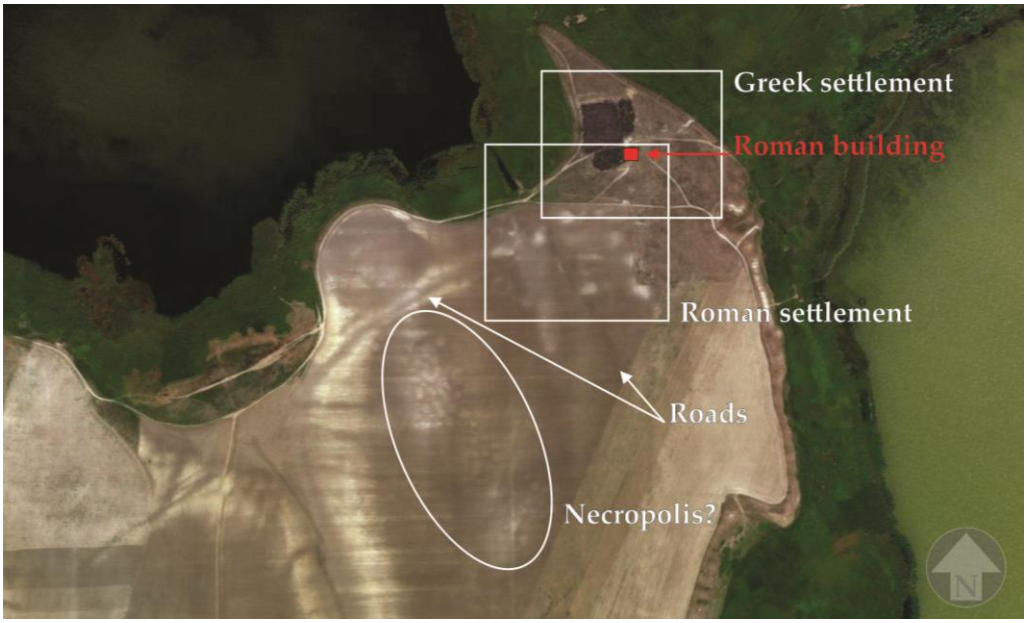

Fig. 2. Interpretation of the site based on archaeological research and aerial photography (after Lungu *et alii* 2019, image © Google Earth).

[4] The discovery of a Roman incineration tomb during a diagnostic excavation confirmed the existence of the necropolis (Baralis *et alii* 2017, 474).

[5] This particular area is characterized by compact layers of stones, denser than other exterior zones. The results of the excavation including the edifice are currently in preparation for publication.

[6] Most of the finds consist of ceramic materials, found both within and outside the edifice. Concerning coarse ware, for example, more fragments were discovered in the exterior of the building, as a result of discarding and/or recent agriculture performed on the site, Streinu 2019, Plate II.

Fig. 3. Aerial view of the Roman rural building and the find spot of the mirror (photo by M. Streinu, National Institute for Heritage, Bucharest).

The mirror is composed of a circular frame with a short handle, a small knob on top, and an open central space for placing the reflective surface. On the reverse it preserves three pins. The decoration on the front side consists of two volutes between the frame and the handle and a continuous stray of radial lines all around the frame. Based on the structure of the mirror, it was cast in a multipart mould. The measurements are as follows: total length 6.7 cm; length of handle 2.8 cm; diameter of frame 4.6 cm; diameter of central perforation 2.5 cm; thickness 1.1 cm; weight 12.2 g (Fig. 4).

Fig. 4. The two sides of the lead mirror frame (edited by G. Săndulescu and A. Dolea).

A small reflecting surface could be attached to the lead frame by the pins on the reverse side of the mirror, however, no traces of it were preserved.[7] In general, convex glass discs covered with a lead foil[8] on their back side were used as reflective surface; attested by the macroscopic observation or chemical analyses of several pieces from numerous Roman provinces.[9] Furthermore, as the analyses of a convex glass disc from Ljubljana revealed, the lead foil could have been fixed by an adhesive organic material.[10]

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7 Several glass fragments were found in the same area, which might have belonged to a mirror (i. e. reflecting surface), however, their state of preservation does not allow to draw a direct connection.

8 G. Lloyd-Morgan observed traces of silver on the back of a glass mirror from Nijmegen (no. 21) and mentions other mirrors with layers of black resin, red wax and white plaster from Egypt (Lloyd-Morgan 1981, 152). A similar remark was made by J. Topál about a glass reflective surface with traces of silvering and bitumen attached to a circular lead mirror frame found in grave 28 in Aquincum, dated to the first quarter of the fourth century CE (Topál 2003, 49-50).

9 Lead mirror frames with an intact thin convex glass disc or its fragments (in most cases including remains of an adhesive material and traces of a metal foil on the back) were found in both settlement and funerary context in Germania (Cologne, Moyland, Xanten), Raetia (Regensburg, Locarno), Italia (Aquileia, Ljubjana/Emona), Pannonia (Carnuntum, Ptuj/Poetovio), Moesia (Olbia), Thracia (Orochak), Asia Minor and Aegyptus. Most of these mirrors are dated to the second – third century CE (Nowotny 1910, 109-119; Michon 1909,

LEAD MIRRORS[11] IN ARCHAEOLOGICAL, LITERARY AND PICTORIAL SOURCES

The overall small size and accordingly less quantity of metal required for the production of a lead mirror frame facilitated the widespread availability of this object within the whole Roman Empire. Even though, given the small diameter high mobility was granted to the mirror, the practical purpose of the object itself is questionable. The choice of lead must have been determined by the low cost of the material and its easy utilization in manufacture. However, one of the most advantageous properties of this metal, namely its malleability, makes the finite piece brittle in case of frequent usage. Because of this ambivalent feature another hypothesis suggests that other qualities, like colour and weight, were of primary importance. These specific characteristics could be associated with magic in Antiquity.[12] Lead was chosen as a common medium for various objects (*e.g. ex-voto* and *defixiones*), which were used in religious and ritual activities, primarily to grant supernatural aid for their owner.[13]

Due to their reflecting surface, mirrors in general were implemented in a particular technique of divination, called catoptromancy, the observation of flashing

233-244, Michon 1911, 198-202). – *cf*. an extended summary and interpretation of lead mirror frames on the example of a piece from Noricum (Teurnia): Glaser 1979, 22-25.

10 The glass disc of a lead mirror was found in the Roman cemetery at Ljubljana, Dunajska cesta (*Viennese street*), in the brick grave nr. 828, dated to the third century CE (Nowotny 1910, 110, esp. footnote 2; for further details on the results and interpretation of the layers preserved on the glass see pages 110-113). Probably the traces of a similar adhesive material were identified as 'bitumen' on the glass reflective surface of the mirror from grave 28 in Aquincum (*cf*. footnote 8, Topál 2003, 49).

11 The terms *lead mirror*, *lead mirror frame* or *mirror frame* are interchangeable and equivalent in the current paper.

12 Nemeth, Szabo 2010, 102; Baratta 2012. In sympathetic magic, the physical characteristics (weight, temperature, low melting point, etc.) of lead were main comparators occuring in several formulas on curse tablets already in the fifth century BCE (Gager 1992, 4, 159-160, a wide range of examples see: Franek, Urbanová 2019, 27, 30-36).

13 Gager 1992, 2-7. As an example, the material of curse tablets (*defixiones*) was explicitly mentioned by Tacitus (Annales 2.49). Even though lead invokes supernatural connotations its practical properties must have played a major role in the choice of material for specific objects. The small rectangular lead tags used in Roman fulleries (*fullonicae*) illustrate this argumentation (see the examples from Savaria, Pásztókai-Szeőke, Radman-Livaja 2013, 255-262). Lead is resistant to water but unlike copper-alloys, it leaves no stain and more importantly it is solid, yet soft enough to scribe the necessary details on it (e. g. owner, given goods and required services) or to erase already invalid ones.

lights on the surface of a mirror.[14] The earliest mention[15] of a form of mirror magic is provided by Pausanias.[16] He describes a ceremony at the temple of Demeter in Patrae, where a mirror was sunk in water, thereafter the reflections were supposed to show whether the person would live or die. Furthermore, mirrors appear as mediums for eiosoptromancy (*i.e*. divination with a mirror) in Greek magical papyri dated between the third and the fifth centuries CE.[17]

The 'miniature' lead mirrors have been included in the category of cult objects, as they are often found in shrines dedicated to female deities, such as Selene, Venus, Isis, Juno, Artemis, or the Nymphs.[18] Some were also inscribed with good fortune wishes, dedications and the names of deities.[19] Several lead mirrors, discovered at Sucidava in a temple dedicated to Bacchus and the Nymphs, were adorned with specific motifs, like vine leaves, plants, animals, nymphs, and instruments related to wine making. One of these items bears an inscription which reads *da vinum,* also decorated with barrels, cups and a vine press.[20] Taking into consideration the find spot, the stylistic features of the mirror and the reference to wine, this piece can also be interpreted as a votive offering but to a male deity, namely Bacchus.

Other types of inscriptions seem to suggest a more mundane function: *To a beautiful soul; Present to the beautiful woman;*[21] *Lady, buy me for a denarius;*[22] *My lady,*

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[14] The umbrella term 'scrying' denotes a technique of divination, which aims to obtain knowledge preternaturally by staring at a fixed point usually represented by a reflective surface. The subcategories of the technique are distinguished according to the used object of focus. Therefore, the divinations involving, *e.g*. water, bowl or a mirror are respectively called hydromancy, lecanomancy or catoptromancy (Nelson 2000, 365; Ogden 2002, 205).

[15] Although Apuleius (*Apol.* 42.6) and Augustine (*De Civ. Dei*, Book VII, chap. 35.) both refer to Varro's accounts from the first century BCE as the earliest source on hydromancy, which can be seen as a form of catoptromancy (McCarty 1989, 169, footnote 20 – *cf*. Tuczay 2002, 32), no mirror was directly involved in these divinations.

[16] Pausanias VII, 21.12; Tuczay 2002, 31-33.

[17] *Papyri Graecae Magicae* XIII.748-752, *apud* Nelson 2000, 366, footnote 10.

[18] Barrata 2009a; Milovanović *et alii* 2016, 11; Uboldi 2016, footnote 23: votive offering for Juno at Kopilovtzi in Thrace and at Sardegna, for Venus at Tarracina, Bacchus and the Nymphs at Sucidava; Baratta 2009, 430: offerings for Artemis at Orochark in Thrace; the author also mentions the mirrors from Sucidava, but considers the temple dedicated only to the Nymphs, with no mention of Bacchus; Buócz *et alii* 2013, 18-21: three lead mirrors, several lead figurines and *aediculae* with the representations of Venus, Fortuna, Victoria and the Matronae in a sanctuary at Savaria.

[19] Milovanović *et alii* 2016, 11 with further bibliography.

[20] Tudor 1966, 16.

[21] Nemeth, Szabo 2010, nos. 1-3., 103 – *cf*. Bózsa, Szabó 2013, 40-41.

[22] Baratta 2014; Litinas 2015, 158.

salutation.[23] The size of the items, along with the latter inscriptions, could suggest that they were also meant as presents, as tokens of affection. In addition, erotic inscriptions occur on several mirrors as well.[24] Yet another functionality of the lead mirror frames is proposed by a Greek inscription on a rectangular lead mirror from Xanten: *This container soothes the incurable disease*.[25] Accordingly, some mirrors might have been fixed on the cover lid of small boxes. In this respect, one might postulate that lead mirror frames were made for religious as well as secular purposes, implying their ritual role on one hand, and practical purpose on the other.

Lead mirror frames also appear in funerary contexts,[26] although these are mentioned only marginally in publications. They are discovered most frequently in female graves and the ones bearing inscriptions can be connected to clearly feminine attributes.[27] In the western part of the Roman Empire two lead mirrors were found in a child burial in Gaule (Indres-et-Loire)[28] and ca. 20 mirror frames in the necropolis at Locarno.[29] In Pannonia, especially after the third century CE, lead mirrors were reportedly placed mainly in female and children's burials,[30] sometimes accompanied by cosmetic instruments[31] emphasizing the functional character of the item. However, mirrors (including those made out of bronze) were used by a wide range of the population including both women and men. This might be attested by a

[23] Dana 2015, 113-114. The circular lead mirror with the inscription in Greek, was discovered in the military fort at Ilișua–*Arcobara* (Bistrița-Năsăud County). The author of the publication compared the formula with the latin *Ave Domina,* but also suggested that the Greek word for *lady*, could refer to a female deity of the underworld, like Kore/Persephone.

[24] Inscriptions in Greek on 13 mirrors from a Nymphaeum in Orochak (Michon 1909, 240), in Latin on a mirror from a cremation burial in Moyland and on another of unknown provenance (Nowotny 1910, 118-119) – see summary: Fitz 1957, 393, Bózsa, Szabó 2014, 201-202 and Weiss 1992, 195, 200, footnote 28).

[25] In a slightly different translation: *This container eases your pain* (Nowotny 1910, 118, 124; Fitz 1957, 393, Bózsa, Szabó 2013, 10). A recent reinterpretation of the inscription, however, supposes a ritual meaning: *'This circle/round makes (your) suffering smaller'*, thus the aforementioned hypothesis is debatable (Weiss 1992, 198-199).

[26] Even though lead mirrors were found also in settlements, their context is not clear in most cases, therefore these are discussed at the analogies.

[27] See below at the analogies the examples for lead mirrors in funerary context.

[28] Michon 1909, 231.

[29] Michon 1911, 196-197.

[30] The same observation was made, based on anthropological analysis, about the graves including lead mirrors in Upper Moesia, however, such graves occur only to a lesser extent (Milovanović *et alii* 2016, 11-12).

[31] Bózsa, Szabó 2013, 12. See below footnote 70-71.

representation on an Early Christian *Loculus* plate from Rome, which seems to depict the reflection of a man's portrait in a mirror (Fig. 5.1).[32]

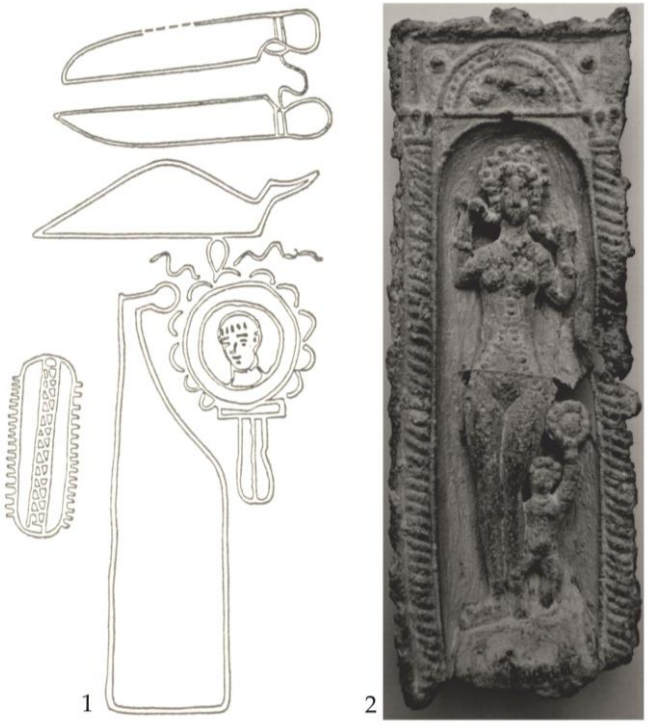

Fig. 5. 1. Four knives, a comb and a mirror reflecting a man´s portrait on a loculus plate from Rome (after Riha 1986, Fig. 2). 2. A lead aedicula from Sardinia (Tharros) representing Amor offering a small mirror to Venus (after Baratta 2010b, Fig. 6.a).

With regard to antique iconography, a lead *aedicula*, found in Sardinia, dated between the second and third centuries CE, depicts Amor offering a small mirror to Venus, a common theme in Antiquity (Fig. 5/2). It is worth noting, that the aforementioned item was found in the necropolis area together with a small lot of both circular and rectangular mirrors.[33] The same scene appears on a fifth century mosaic in the Limasol Archaeological Museum in Cyprus, which is very similar to earlier such representations.[34] Other depictions of mirrors are found on funerary steles, the so-

[32] Riha 1986, 11, Abb. 2; Ehler 2012, 615, IX.1.2. The plate depicts a mirror with similar features to the lead mirror frames (accompanied by four knives and a comb).

[33] Baratta 2010b, 1166, no. 6.

[34] Raddato 2019.

called *Camilla reliefs* from Pannonia and Noricum, showing women holding mirrors, all much larger than the lead variants.[35] In the Roman world several other types of mirrors were circulating, mostly made out of bronze, that assuredly had a cosmetic functionality, of which the most common type had a round and perforated frame.[36]

On one of the lead mirrors with inscriptions[37] we find the price of the mirror: one denarius. However, we cannot assume that all mirrors were commercialized for the same price, but it is plausible that it would have varied around this amount. In relation to the raw material, one libra of lead cost around seven denarii in the first century CE.[38] To gain a better perspective of what the value of a denarius was, it is worth mentioning that the base pay of a legionary was 225 denarii annually,[39] five denarii per month was calculated as the minimum necessary for a family in relation to the price of grains[40] and the price of one *modius* varied between three and six denarii.[41] For one denarius you could have had your tunic cleaned at Pompeii[42] or even buy a new cloak in Siscia[43]. According to this preliminary comparative compilation of prices, we might assume that a small lead mirror would have been accessible for purchase to most people.

ANALOGIES, DISTRIBUTION OF FINDS AND POSSIBLE WORKSHOPS

The most particular feature of the lead mirrors is their small size (approximately three to max. ten cm[44]), thus rendering the object unpractical or even unusable in personal care,[45] which implies their interpretation as 'miniature' versions of the mirrors made out of bronze. Based on their shape, three main types can be distinguished: lead mirrors with circular, rectangular or star-shaped frame.[46] Those with a round frame

35 Bózsa 2017, 427, Fig. 2, the reliefs are interpreted as a maid making offerings.

36 Treister 1994.

37 Baratta 2014; Litinas 2015, 158

38 Plin. *HN* 34, 48

39 Mac Mullen 1984, 580.

40 Alston 1995, 106. The author also quotes the *Digest* which stated that an adult needed between ten and 21.75 denarii per month for subsistence, while average price *per modius* was one denarius.

41 Erdkamp 2005, 150, 288, six denarii was the price payed in the third century as revealed by the Oxyrhynchus papyri 42.304.

42 Radman-Livaja 2018, 415.

43 Radman-Livaja 2018, 417.

44 Respectively, the size of the reflective surface varies between two and six cm (Németh, Szabó 2010, 101-102; *cf*. Bózsa, Szabó 2013, 10).

45 Németh, Szabó 2010, 101-102.

46 The few attempts made to classify lead mirror frames were specific to the finds from sites or collections discussed in the given studies: J. Fitz took the various decorations on the mirror frames from Intercisa as primary characteristics and accordingly distinguished between 16

can be further divided into two subcategories: with or without a handle. The earlier mirrors have various decorations, from floral to linear motifs, while the later variants show a more elaborate design.

Before introducing the analogies of the mirror frame from Acic Suat, some preliminary remarks shall be made highlighting the problematics concerning the find context, documentation and overall interpretation of this object group. Lead mirrors have been only sporadically published in detail due to a number of reasons. Probably, because of their particular shape and material, these small lead mirrors gained lesser interest in the archaeological research[47], unlike those pieces with inscriptions, which were thoroughly studied by epigraphists and other experts in the field of classical philology. However, the provenance of the published mirrors, well over 1000 pieces, represents the main issue. Most of the known lead mirrors are part of museums' or private collections established through acquisitions lacking both the place and circumstance of discovery.[48] In addition several 'anew' published pieces derive from older excavations and provide only limited information about the find context.[49] Since the majority of these 'miniature' lead mirrors with secure archaeological context were found in temples or sanctuaries and several inscribed pieces can be connected to religious or ritual activities (*e.g. ex-voto*), their possible practical usage has been more

types (Fitz 1957, 386-390). G. Lloyd-Morgan integrated the lead mirror frames within his typology of the third century Roman mirrors under group Y: Glass mirrors, thus emphasizing the main feature of the lead frames, namely that they were meant to hold the glass reflecting surface (*i.e.* the actual mirror) (Lloyd-Morgan 1981, 152-154). A more recent study about the lead mirrors in the collection of the Hungarian National Museum by A. Bózsa and Á. Szabó established a shape-based typology, which encompasses four main types: rectangular, round, star-shaped mirror frames and back plates (Bózsa, Szabó 2013, 45); G. Baratta differentiates simply between mirrors with and without a handle (Baratta 2015, 266-271).

47 Most likely these are the same characteristics, which on the other hand raised the attention of private collectors, leading to a high quantity of lead mirrors being sold in auctions.

48 The lead mirror collection of the Hungarian National Museum provides one of the best examples. From the 721 mirror frames 695 pieces reached the museum through acquisition or confiscation from private collectors (Bózsa, Szabó 2013, 7).

49 A star-shaped lead mirror registered in the inventory of the Romano-Germanic Central Museum in Mainz was originally found in Intercisa, but any further detail is unknown (Teichner 2011, cat. nr. W28, 131-132, 134). At least two lead mirror frames were found in two separate Roman buildings (building 2 and building 3 or so-called baths) in the civil town of Intercisa, however, the published documentation does not provide sufficient information for further contextual interpretation of the pieces (Barkóczi 1957, 550-551). Fourteen lead mirror frames of uncertain provenience ('supposedly Carnuntum') were published in an exhibition catalogue of Carnuntum. The pieces are probably from old excavations, or acquisitions of the museum. (Humer, Kremer 2011, cat. nr. 659, 713-725, 370-371, 374-376).

and more disregarded in the scientific research. In accordance, the few published pieces discovered in Roman settlements have been explained generally by the presence of a temple or a sanctuary in the near vicinity.[50] Nevertheless, lead mirror frames have been found in various contexts – tombs, settlements, workshops, baths, military forts, contributing to the ongoing debate about their functionality.

At the nearest center to Acic Suat, Histria, a lead mirror was discovered in the same context with a lot of terracotta figurines, also dated in the second – third centuries.[51] From Tomis, the capital of the province, we know of a single find, now in the Maria and dr. George Severeanu collection.[52] In Dobroudja, several lead mirrors were found in the territory of Durostorum, all in a fragmentary state with no clear place of discovery.[53] The circular mirror frames show close resemblance to the one discovered at Acic Suat and to those discovered in other Roman sites dated to the second – third centuries CE. From Noviodunum and Dunăreni comes a single find from each site, both with a floral decoration and inscription, dated between the second and third centuries CE.[54] Two lead mirror frames were discovered at Ulmetum and although these belong to the same category of circular frames, their decoration is much more elaborate and dated between the fifth and sixth centuries CE.[55] Also dated to the sixth century CE is a fragmentary frame discovered at Capidava.[56] A lot of similar items to the one from Acic Suat were discovered at Sucidava (Fig. 6/1. a-c),[57] where workshops can be located based on epigraphical evidence.[58] Many of the

[50] Outside the city walls of the civil town in Aquincum three lead 'mirror-shaped votives' (the Graces are depicted on two) and an aedicule with the representation of Fortuna were found. According to P. Zsidi, this combination of finds suggests that a sanctuary was located nearby (Zsidi 2000, 313, 315-321). Similarly, open worked *aediculae* and lead mirror frames were uncovered at the Amphitheater of the military camp in Carnuntum, interpreted as possible parts of an altar in the area (Boulasikis *et alii* 2012, cat. nr. Pb 354, Pb 358, Pb 386, 104-105, 11).

[51] Suceveanu 1967, Fig. 6/2.

[52] Gramatopol 1982, Pl. XXVIII, 2. We do not exclude the possibility that similar finds are unpublished.

[53] Mușețeanu, Elefterescu 1978.

[54] Baratta 2009, 438-440, nos. 6-7. The mirror from Noviodunum is a stray find and the one from Dunăreni is part of a private collection.

[55] Petcu 2017.

[56] Covacef 1995-1996, 115-116, fig. IV.8. Two fragmentary mirrors were found, but the second has a rectangular frame.

[57] Tudor 1966, fig. 26.

[58] Tudor 1959, 420-428. From this city we know the name of two manufacturers, Lollianus and Brutus: *Forma(m) Lollianus fecit* (IDR II, 229) and *F(o)rmam Brutus fec(it)* (IDR II, 230). Lloyd-Morgan mentions 200 mirrors from Sucidava referring to Tudor 1959 as well (Lloyd-Morgan 1981, 152), however, Tudor only summarized that a total of 200 mirrors were discovered

mirrors from Sucidava, 88, were discovered in a building considered a temple for Bacchus and the Nymphs.[59] In the larger Black Sea region, several mirrors were found in the necropolis at Panticapeum.[60] Another mirror was found at Trebizond, with a lead frame and glass at the center.[61]

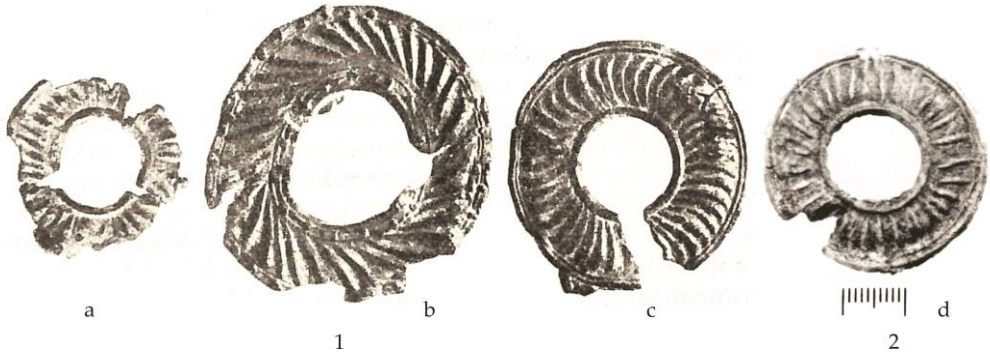

Fig. 6. Lead mirrors without handle decorated with radial lines from 1. Sucidava (after Tudor 1959, Fig. 1, cat. nr. 2-4.), frame dia. a. 3.2 cm; b. 5.3 cm; c. 4,6 cm; 2. Gigen / Oescus (after Kouzov 2002, Pl IX, cat. nr. 15), frame dia. 3.7 cm.

In Lower Moesia, at Pavlikeni, the site of a Roman villa in modern day Bulgaria, five lead mirrors were discovered. All five are round, with a circular aperture and volutes between the frame and the handle. Three of the finds are also inscribed with good fortune wishes.[62] There are 76 lead mirrors in the collection of the Varna Archaeological Museum, found in sanctuaries, settlements and necropolises, making it again difficult to ascertain their primary function (Fig. 6/2). From this collection, nos. 35, 36, 43 and 46 are most similar to our find from Acic Suat, discovered in Northern Bulgaria, near the town Levski (Fig. 7/3).[63] Thirteen lead mirrors with glass discs were

within the Roman Empire. At Sucidava alone, 68 complete and 14 fragmentary pieces were known at the time (Tudor 1959, 415). Another disc frame, similar to two other in the aforementioned collection, is registered as a stray find and considered to have been found in Dobroudja (Barnea 1977, 278, fig. 1.3-4).

59 Tudor 1966, 15.

60 Baratta 2009.

61 Michon 1909, 239, fig. 2. Another lead frame is mentioned from Smyrna, with no picture (Michon 1909, 239-240).

62 Dikov 2018, the building where the mirrors were found is outside of the *villa* complex and the posibility that it is a temple was also taken in consideration.

63 Kouzov 2002, Pl. XV, XVIII. Benea 2008, 237 and footnote 48 mentions further finds in Lower and Upper Moesia.

discovered in a sanctuary for the Nymphs at Orochak (Saladinovo, Thrace), dated during the Severian dynasty and another item was found at Olbia Pontica.[64]

Fig. 7. 1-3. Lead mirrors with handle decorated with radial lines from 1. Rit / Viminacium (after Milovanović *et alii* 2016, cat. nr. 8, Fig. 8.), frame dia. 3.8 cm; 2. the Hungarian National Museum (after Bózsa, Szabó 2013, cat. nr. 60, p. 243, fig. II.3.4a.60), frame dia. 3.84 cm; 3. Near Levski (after Kouzov 2002, Pl XVIII, cat. nr. 43), frame dia. 4 cm; 4. A mirror with handle and fastening pins from Aquileia (after Buora, Magnani 2015, no. 29, fig. IV/29), frame dia. 4.8-5 cm.

In the neighbouring provinces, three lead frames similar to the one from Acic Suat were found in the baths at Cioroiu Nou (Lower Dacia) and dated to the first half of the third century CE, when Legio VII Claudia was stationed there.[65] From Apulum (Upper Dacia), five lead circular mirror frames are known, discovered on the territory of the *praetorium*, which was earlier considered a Roman bath.[66] In addition, the only known one-piece ceramic and multi-part stone casting moulds used in the production of lead mirrors with circular frame were found here, in the proximity of the fort's defense wall and dated to the second century CE.[67] Further finds, 11, both with radiant

64 Michon 1909, 240, nos 13, 14-26.

65 Bondoc 2011, 107-108, Fig. 7-9.

66 Băluţă 1997, 561-563. Based on stylistic criteria the pieces are dated to the Antonine period.

67 Concerning the ceramic piece-mould, discovered near the fortress, see Ciugudean 1994, 231-233. The multi-part stone mould was found during excavations in 1990 at the Southeastern part of Partoş (Colonia Aurelia Apulensis). The semi-finished lead mirror frame, probably as

and floral decoration (Fig. 7/1), were discovered in a ditch in the proximity of Viminacium (Upper Moesia), where four *villae* and a necropolis have been identified through archaeological research. The ditch has been associated with the necropolis and the analysis of finds suggests a dating in the second half of the second-third centuries CE.[68] Furthermore, the National Museum in Pozarevac holds 130 lead mirrors, of which most originate from Viminacium.[69] Concerning Pannonia, in Aquincum such mirror frames were found in the graves of young women.[70] Similarly, lead mirror frames with preserved fragments of the glass reflective surface were found in several female burials in the cemetery of Intercisa,[71] but also in the territory of the civil town.[72] The Hungarian National Museum also holds a collection, with scarce information on the provenance of the artefacts,[73] but according to the stylistic analyses they must have been made and circulated in the central Danubian region. The closest analogies to the lead mirror from Acic Suat, altogether 5 pieces (cat. no. 60-64), are comprised under the typological group II.3.4a (Fig. 7/2).[74] Twenty-three

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the result of a casting error, was preserved in the mould. Although, the stratigraphical context is uncertain, a deformed lead plate was recovered in the near vicinity of the mould, which might represent the raw material required for the casting (Băluţă 1997, 560-561).

68 Milovanović *et alii* 2016, 10.

69 Milovanović *et alii* 2016, 12.

70 Nemeth, Szabo 2010, 101. Some exemplary lead mirror frames from cremation and inhumation burials (dated to the third and fourth centuries) at the military town in Aquincum (cemetery nr. /grave): V/28, IV/28 (Topál 2003, 15, 49-50) VI/112 (Topál 1993, 49) and at least from one grave in the eastern cemetery of the civil town (Zsidi 2017, 78, 94, cat. nr. 268). The convex glass reflecting surface was in most cases intact.

71 Lead mirror frames were included as grave goods in the inventory of at least nine burials (sector of the cemetery/grave: XII/1; XVII/6; XXII/63; XXIV/15; XXV/1; 4; 7; 14; XXVII/23), eventually placed beside the head (this observation was made only regarding grave XXV/7, Fitz, 1957, 393) or in the hand of the deceased (grave 1109, Vágó-Bóna 1976, 76). It is worth mentioning, that in three cases two lead mirrors were placed in the grave and most of the women were adorned with distinguished jewelry, like earrings, beads as part of the necklace or pendants made out of gold (Sági 1957, 579, 588, 603, 615-618, 623 – *cf*. Fitz 1957, 394-395). This suggests that these mirrors are not necessarily the 'cheap replacements' of their bronze counterparts, but rather items of personal value and/or carriers of symbolic meaning.

72 See footnote 49.

73 The majority of the lead mirror frames, a total of 721 pieces, derives from private collections (see footnote 48**)**, out of which six pieces were discovered probably in the South Transdanubian region, but the provenance of the remaining 689 lead mirrors is unknown. Only 26 items were collected or discovered through archaeological excavations between 1802 and 2013 (Bózsa, Szabó 2013, 7).

74 Bózsa, Szabó 2013, 62.

mirrors hold inscriptions with wishes for good luck, the beauty of body and soul, names and dedications.[75] In the western part of Pannonia, three lead mirror frames were found in a debris layer, mixed with recent objects at the East gate of the Amphitheatre in the military camp of Carnuntum. One of these lead mirrors is decorated, like that from from Acic Suat, with continuous stray of radial lines, which could supposedly be associated with the cult of Sol Invictus.[76] Concerning the mirrors placed in graves in Upper Moesia another connection was drawn between the mirrors and Sol. These items could be seen in Antiquity as the manifestation of the deity due to their ability to reflect sunlight.[77]

Further towards West, lead mirrors were also discovered in Spain, as part of the funerary inventory and some with uncertain provenance, dated to the second – third centuries CE.[78] Another lot of decorated small lead mirrors, made in bivalve molds, originate from the Balearic Islands.[79] In Asia Minor, at Ephesos a single lead mirror was discovered in the Mary's Church, however, the chronological classification of the piece is uncertain.[80]

A recent study illustrates the distribution of finds from various sites. Sucidava and Budapest stand out as they show the highest number, 82 and 720 (sic! 721) (from several sites and collections), followed by Rome with only 43 and Aquileia with 35 (Fig. 7/4) such finds.[81] This is one of the few attempts to highlight the distribution of such items, although in subsequent publications the number of mirrors discovered at

[75] Nemeth, Szabo 2010; Bózsa, Szabó 2013, 12, 31-41.

[76] Boulasikis *et alii* 2012, Cat. Nr. Pb 386, 104-105.

[77] Milovanović *et alii* 2016, 12.

[78] Lopez-Bravo, Delaporte 2015.

[79] Baratta 2015.

[80] Pülz 2020**,** cat. no. G 103, Textband, 138., Tafelband, 132, table 63, 70. Even though an analogy is mentioned from Sardis, dated to the second – third centuries CE (Waldbaum 1974, 109, Nr. 655, Table 42), the decorations of the two pieces are different. The Ephesian example shows stronger resemblance to lead mirrors found in graves from the crusader periods at *Caesarea Maritima* (Rafael 2008, 425, Obj. Nr. 73, 75, 77.) Accordingly, based on the analogies, the lead mirror from Ephesos is dated to the second–third centuries CE or to the crusader periods.

[81] Buora, Magnani 2015, 15. However, we must take into account that not all finds are published, as the number is quite low for the capital of the empire. One of the reasons for the small quantity of lead mirrors in Rome as well as in other cities and provinces can be explained by the recycling of the objects. There was a high demand for lead in various fields of everyday life (see below). Another issue is represented by the circulation of these items in abundant quantities on legal and illegal auctions as the majority of pieces in some of the above-mentioned museum collections also attest.

Sucidava is suggested to be higher than 88.[82] Until today, this is the highest number of mirrors known from archaeological context, other than tombs.

Concerning the production of glass mirrors (*i.e.* reflecting surfaces), the ancient writer Pliny the Elder mentioned that, the first attempts were made in Sidon.[83] Production centers in the empire are thought to have developed in Gaul and the provinces of the central Danubian region,[84] however, finds are also frequent in the Black Sea provinces.[85] In this regard the production of lead mirror frames can be located in Dacia,[86] at Apulum[87] and Drobeta,[88] where several moulds and workshops were discovered. A workshop specialized in casting lead objects including circular mirror frames was identified in a Roman villa complex at Gyulifirátót-Pogánytelek near modern Veszprém (36 km west of Gorsium-Herculia), in Hungary.[89] Another workshop is known from Gallia Narbonensis, at modern Arles, based on epigraphical information, the production of lead mirrors dedicated to Selene and/or Venus/Aphrodite is attested.[90] It is unclear when the manufacture of small mirrors ceased in antiquity, as finds still appear up to sixth century contexts.

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82 *Cf*. Tudor 1966, 15. M. Buora and, M., Magnani, the authors of the aforementioned study refer to early publication of lead mirror frames from Sucidava and Rome (1959, 1989), not folowing up on subsequent publications about Sucidava, which again shows that such objects are rarely found through archaeological excavations or even explicitly published .

83 Plin. *HN* 36, 66.

84 Niezabitowska-Wiśniewska 2012, 221 and references; Uboldi 2016, 98 and footnotes 9-10.

85 Niezabitowska-Wiśniewska 2012, 221-222 lists finds from Chersonesos, Panticapeum, Olbia, Tanais and several other finds in the Crimean region.

86 In general about lead processing and production, with special attention on workshops specialized in casting lead mirror frames, in Dacia in the Roman period: Benea 2007, especially 118-119.

87 Băluţă 1997, 559-561, 564, Benea 2008, 236-240, fig.3.

88 Benea 1974 describes four identical mirrors found in the proximity of a kiln with iron and lead waste, as well as crucibles, dated to the third century CE.

89 Several semi-finished and finished votive offerings (*aediculae* with the representation of the goddesses, Fortuna and Silvana as well as the Matronae) were found together with melting pots, ceramic moulds, lead wasters and scrap metals in building 2 of the villa complex. The repertoire of the casting workshop included a round circular mirror frame, which similarly to other unprocessed products, still had the casting fin all around the edges. Based on numismatic evidence, the building was dated between the end of third and the third quarter of the fourth centuries CE However, according to E. B. Thomas, the find complex of the workshop probably belongs to an earlier phase of the building, hence it might be dated between the end of first and beginning of second century CE (Thomas 1952, 32-34).

90 Baratta 2010a, 92. Other artisans are known from inscriptions, but not the location of their workshop.

LEAD, THE SOURCE MATERIAL OF THE MIRROR FRAMES

Among the non-ferrous metals, lead was one of the most widespread used in the Roman world. Its easy malleability, due to its low melting point and softness, made it possible to utilize this metal for various purposes. Even though the toxic properties of lead were known,[91] the ready availability and low price[92] facilitated intensive use in production. Accordingly, lead was applied in construction works (*e.g*. fittings, clamps, pipes), fulfilled an important role in measuring quantities as balance weights, and based on the very same physical properties it was used for fishing and textile production as net and loom weights.[93] In metalworking it served as a chemical agent to refine precious metals and it became an important alloying component providing better casting properties for copper-alloys, but it was also used to create models for serial production.[94] Furthermore, it was added to various colour paints for wall paintings as well as cosmetics.[95] Besides the civic related usage, lead was exploited also for military purposes (*e.g*. weapons, such as *plumbatae*, and various projectiles).[96] As mentioned before, lead was also chosen as medium for religious and ritual objects, such as votive offerings and malevolent curse tablets.[97]

In Antiquity lead was obtained mainly from argentiferous primary ores (galena / lead-sulfide) or secondary ores (cerussite / lead-carbonate).[98] First the lead ore was smelted under appropriate reducing and/or oxidizing conditions to gain metallic lead.

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91 Vitruvius (8.6) and Pliny the Elder (Plin., *HN* 34, 50) both note the 'deadly' effects of lead fume on humans and animals.

92 Pliny the Elder mentions that one lb. of lead cost only seven denarii, whereas, in comparison the same amount of tin ("white lead") was 80 denarii (Plin., *HN* 34, 48).

93 Benea 2007, 116-118.

94 Some exemplary publications on the use of lead in the aforementioned metalworking processes: Tylecote 1992, 72 (also see below footnote 99); Dungworth 1997, 901-902, 907; Gschwind 1997, 607, 615, 622-623, 625-628.

95 See the example of the analysed wall paintings in the Domus Aurea Neronis in Rome (Paradisi *et alii* 2012, 1061, 1070-1072) and about references and recipes in ancient literary sources: Olson 2009, 295-296, 299-302, 306-310, especially footnote 120 on the archaeological remains and analyses of cosmetics.

96 Bishop, Coulston 2006, 26, 58; Fig. 27/1-3, 88, 135-136. Fig. 81/4-7, 200-201. Fig. 127/11-12, 16.

97 See above, footnote 12-13.

98 In accordance with the archaeological sources the most important lead ore deposits and accordingly primary and secondary lead production can be located in the Republican period in Spain and later on in Britain (Tylecote 1992, 71), for a more detailed summary see Bode 2008, 12-15**;** especially footnote 8. Concerning mines operating already before the first century CE in the Eastern Mediterranean and Northwest-Anatolia see Pernicka *et alii* 1984, 535-573 and Pernicka 1987, 619-623, 645-679 or a more recent brief summary: Kassianidou, Knapp 2005, 225-226.

In the next step the lead was separated from silver by 'cupellation'.[99] The obtained lead was then cast into ingots, which still contained trace elements of the original ore in specific quantities characteristic for the provenience of the ore deposit and the smelting process. The most frequent such trace elements are bismuth, silver, antimony, arsenic, iron and zinc, whereas gold, mercury, tin, cadmium, tellurium and selenium occur less frequently.[100]

According to Pliny the Elder, the main sources of lead were located in Roman Britain, and a prohibition on mining over a certain amount was even enforced.[101] However, mineral deposits and therefore mines are mentioned also in Spain, France, Italy, Sardinia and Sicily.[102] There is little information regarding mining during the Roman occupation of Dobroudja, unlike Dacia, where several mineral extraction sites (including sulfidic lead ores / galena) were identified.[103]

COMPOSITIONAL ANALYSIS

Even though the mirror frames in discussion are described in the scientific publications as lead objects, only few studies confirmed their base material by natural scientific analyses. Most of the objects could be made out of lead or tin alloys eventually with additional copper in their composition as for example the case of numerous analysed 'lead' tablets has shown.[104]

Two separate analysis techniques were applied in order to obtain the chemical elements composing the piece from Acic Suat. After the piece was mechanically cleaned both techniques were applied in the same spot. A round spot of approx. 9 mm in diameter was cleared of the patina without causing permanent damage to the artefact.

Energy Dispersive X-ray Fluorescence (ED-XRF) analyses were performed using a Bruker Tracer S1 Titan spectrometer. This apparatus uses a Rhodium (Rh) anode tube to generate a beam with the energy of 40 keV. The beam passed through an 8 mm

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99 In this process a specific furnace/vessel (called 'cupel'), made of bone or ground-up potsherds, was used. The metallic lead is heated to 1000 °C and oxidised to litharge (lead oxide), which is absorbed in the cupel leaving only the silver behind (Tylecote 1992, 72; Meyers 1992, 170; Moorey 1994, 232-233; Kassianidou, Knapp 2005, 226).

100 Rehren, Prange 1998, 183.

101 Plin., *HN* 34, 49

102 Healy 1978, 61-62; Tylecote 1992, 71-72.

103 Ciugudean 1994; Benea 2008, 230-232. A more recent summary about the mining activities in Alburnus Maior (Roşia Montană), with special focus on the geological properties see Tămaş, Cauet 2009, 104. Furthermore, the extraction and subsequently smelting of sulfidic lead ores (galena) are known from the vicinity of Ulpiana, in the neighbouring province, Upper Moesia (Gassmann *et alii* 2011, 162, 164).

104 Gager 1992, 3-4, esp. footnote 12.

collimator before reaching the selected spot on the sample. A Silicon Drift Detector (SDD) positioned backwards at an angle of approximatively 45° with respect to the direction of the incident beam was used to record the characteristic X-rays emitted by the sample. A single point was analyzed on the sample, in order to establish the bulk elemental composition. The sample was irradiated for 35 seconds. A Bruker designed software was used for spectra analysis in order to obtain elemental concentrations.

Particle Induced X-Ray Emission (PIXE) analysis was performed at the RoCIBA (Romanian Center for Ion Beam Applications) laboratory from IFIN-HH ("Horia Hulubei" National Institute for Physics and Nuclear Engineering) using the 3MV Tandetron™ particle accelerator.[105] A 3 MeV proton beam was obtained from the sputtering ion source and transported through the IBA (Ion Beam Analysis) chamber, to be extracted "in-air" through a thin Si_3N_4 window (Silson, UK). The result was an approximatively 2,830 MeV beam (SRIM simulations starting from the 3 MeV beam in high vacuum conditions). A radiochromic film was used to determine the proton beam characteristics after a round shaped cross-section with approximatively 1,7 mm in diameter remained impregnated in the thin film. The resulting characteristic X-Ray were recorded for 300 seconds using a Silicon Drift Detector (Amptek, USA) positioned backwards at 45° and analyzed using the GUPIX software[106] with the Iterated Matrix solution type.

Correlating the two sets of results, noticeable differences appear. The percentage for copper is very different when measured with a significantly narrower point of interaction. The difference between the spot-on-sample for XRF and PIXE is of about 6,3 mm, as described above. This difference could explain why the fluorescence results show an increased percentage of copper with respect to PIXE. Also, the patina was cleared for about 9 mm, while the spot-on-sample for XRF is valued at 8 mm. Therefore, a slight concern that the information was gathered from the uncleaned zone still remains. Also, one must consider the fact that PIXE obtains information from the surface of the sample, while XRF succeeds in penetrating the sample more in depth. The tin percentage remains nearly constant for both measurements, while the lead percentage seems to vary. This may be explained by the fact that XRF was unable to detect chloride as one of the composing elements. This is due to the anode tube used by this apparatus, based on Rhodium. As a result, by eliminating the Rh characteristic lines, the Cl component was also removed, and its value added to the main composing elements.

[105] Burducea *et alii* 2015, 12-19.

[106] Maxwell *et alii* 1989, 218-230.

	Cu	Pb	Sn	Ag	Bi	Cl
PIXE	0,6±0,2	92,14±0,32	0,86±0,11	0,74±0,13	2,31±0,45	4,03±0,12
ED-XRF	3,7±0,1	93,91±0,28	1,04±0,12	0,43±0,14	1,03±0,34	-

Both techniques succeed in highlighting the presence of two other elements: bismuth and silver. Many precious metals mines may contain in their componence significant quantities of lead and copper. Considering the period of time in which the sample was positioned, the whereabouts of its discovery on one hand and a series of studies on silver artefacts and certain mines on the other hand, a possible mine from where the ore originated could be placed in the Kamariza Mining District, Lavrion, Greece.[107] Bismuth is one of the most commonly found trace elements in lead objects.[108] Despite the metalworking processes, the lead isotopes remain constant in the given metal, which could provide better indications for the provenance of the ore. However, these isotopes can only be analysed by invasive natural scientific methods and the possibility of misleading results have to be taken into consideration, since lead from a different ore deposit can be added during the cupellation process.[109] A more complex natural scientific study including invasive methods and the analyses of lead isotopes would allow a more conclusive evidence for the provenance of the material.

CONCLUDING REMARKS

Within this contribution, we gave a general overview on the distribution, the circumstances of discovery, and possible interpretation of lead mirror frames in various archaeological, pictorial and written sources. The high number of these objects found in temples and sanctuaries (as votive offerings) certainly supports their religious and magical connotation. Furthermore, the metaphorical meaning of the chosen material, strongly connected to the physical properties of lead, and some specific inscriptions on the mirrors underline this general hypothesis. However, we

[107] Voudouris *et alii* 2018. However, we must emphasize, that this is only a preliminary conclusion, since even the results provided by more reliable destructive methods (i. e. lead isotope analyses) are interpreted with possible errors or concerns regarding the provenance of the original lead ore. In details about lead isotope analyses see an extended study on samples from ore deposits and lead objects, with special interest on group L, the samples of 'Laurion-like' isotopic composition: Brill, Wampler 1967, 63-70, 74. Furthermore, see a brief summary about the famous Lavrion mining district functioning, with shorter or longer interruptions since the first half of the third millennium BCE, including the literary sources, archaeological research and the chemical characterisation of the ore deposits: Wagner, Pernicka 1982, 48-49, 52-53, 56.

[108] Rehren, Prange 1998, 183.

[109] Ogden 2000, 170.

reflected upon other aspects which provide additional details on the choice of lead and the function of mirror frames. The practical features of lead (e. g. ready availability, easy workability and cheap price) must have been also an important factor in the commercial utilization of lead for the production of mirror frames.[110] Even though the reflecting glass held by the frames has a small diameter, the convex surface could reflect certain details somewhat distorted, but enlarged. The epigraphic evidence also points towards a profound functionality of the mirrors, namely as cosmetic utensils and presents expressing affection. The few published pieces found in funerary, civic and military settlement context (*i.e*. in *villae*, baths or at amphitheaters), are underrepresented and they have not been extensively discussed in the research. Those discovered in the graves of women and children could also be interpreted as the personal belongings of the deceased and not only as symbolical grave goods. According to the current state of research, lead mirror frames were primarily used in ritual and religious context, but their secular implications (as functional items) cannot be excluded from their interpretation.[111] Therefore, the archaeological context is of primary importance, which should represent the main focus for future studies on this object group.

The mirror at Acic Suat was discovered in a household context and it can be interpreted as an actual cosmetic utensil or a gift for one of the inhabitants. The ritual association of these items with the goddess Venus/Aphrodite must have been well known throughout the antiquity and we can speculate on the possibility that the mirror could have ended up as a votive offering, considering the proximity to Histria where the temple of the goddess was one of the most prominent. This mirror is the only metal object found during the excavation of the house and the overall inventory consists only of ceramic shards in a very fragmentary state. Given the type of site, the mirror could have been a personal item, either purchased or received as a gift. Concerning the manufacturing place, it might have been made in a Danubian workshop using a raw material from the imperial mines, without clearly being able to pin point exactly which as there is neither clear analogy for the shape nor the

[110] Most of the inscriptions (*e.g*. *utere felix* or *succere amanti si me amas spes amas*) are *topoi*, pre-prepared already in the casting mould and not according to the customers' personal demands. This suggests, that lead mirrors were sold according to somewhat generalised standards, probably in great quantitites in commerce (*cf*. Bózsa, Szabó 2013, 40, Weiss 1992, 195-196).

[111] As a parallel, another category of functional objects, keys, were also used as votive offerings, for example, by women to ask for an easy birth – opening the womb (Festus, *De verborum significatione* 49.1L *apud* V. Dasen 2013, 32 and footnote 10). Furthermore, just like Venus with the mirrors, Hecate is mostly associated with keys, *the divine key-holder par exellence,* which receive a symbolic meaning (Karatas 2019, 27-37 for an overview of Greek and Roman sources).

composition. Due to the fact that the house was not rapidly destroyed, rather it was abandoned and eventually collapsed, the owners might have left the mirror behind on purpose after they had gathered most of their belongings. It could have been thrown away when the reflective surface was damaged, but given the numerous frames found in the same state it could have very well been reused either as a votive offering, grave good or even recycled for the raw material. Another valid possibility could be that it was simply lost by its owner just before abandoning the house.

To conclude, finding such a mirror in a rural civil settlement contributes further to the debate about its actual purpose. The variety of find spots shows that this item was both part of daily life and religious rites, an object of importance to their owners, serving both a functional and a symbolic purpose.

ACKNOWLEDGEMENTS

The authors would like to express their greatest gratitude to the reviewers for their valuable feedbacks and to Alexandra Dolea (Austrian Academy of Sciences - Austrian Archaeological Institute) for all her scientific support.

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