

# MARISIA

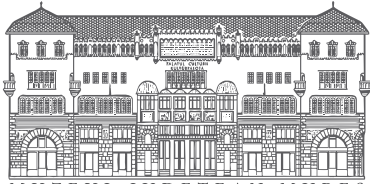
ARCHAEOLOGIA

HISTORIA

PATRIMONIUM

# 7

Târgu Mureş  
2025



The publication was financially supported by:

**nka**  
National Cultural Fund of Hungary

## EDITORIAL BOARD

**Executive Editor:**  
Botond REZI

**Editor-in-Chief:**  
Rita. E. NÉMETH

**Editorial Members:**  
Ünige BENCZE  
Sándor BERECKI  
János ORBÁN  
Szilamér Péter PÁNCZÉL

## EDITORIAL ADVISORY BOARD

Oliver DIETRICH, Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt (Halle/Saale, Germany) Elek BENKŐ, Institute of Archaeology, Research Centre for the Humanities (Budapest, Hungary) Marius-Mihai CIUTĂ, Lucian Blaga University of Sibiu (Sibiu, Romania) Zoltán CZAJLIK, Eötvös Loránd University, Institute of Archaeological Sciences (Budapest, Hungary) Ciprian FIREA, Romanian Academy, Institute of Archaeology and Art History (Cluj-Napoca, Romania) András KOVÁCS, Babeş-Bolyai University (Cluj-Napoca, Romania) Zsolt VISY, University of Pécs (Pécs, Hungary)

## CORRESPONDENCE

Muzeul Judeţean Mureş / Mureş County Museum  
CP 85, str. Mărăşti nr. 8A, 540328 Târgu Mureş, România  
e-mail: marisiaedit@gmail.com

**Cover:** István KARÁCSONY

The content of the papers totally involve the responsibility of the authors.

ISSN 2668–7232

DOI: <https://doi.org/10.63509/MrsAHP.2025.7>



EDITURA MEGA | [www.edituramega.ro](http://www.edituramega.ro)  
e-mail: [mega@edituramega.ro](mailto:mega@edituramega.ro)

## CONTENTS

<b>János Gábor TARBAY</b> Nothing is as it Seems: A New Late Bronze Age Sword from the Concrete Crusher	7
<b>Tibor-Tamás DARÓCZI – Mihai ROTEA – Jesper OLSEN</b> Radiocarbon Dating Bronze Age Graves from the Burial Ground at Florești– <i>Polus Center</i> (Cluj County)	15
<b>Sándor BERECKI</b> Ceramic Footwear Items in the Collection of the Mureș County Museum	27
<b>Zsolt-Szabolcs NAGY</b> Iron Ballista Bolts from Călugăreni (Mikháza, Mureș County)	39
<b>Csaba SZABÓ – Szilamér-Péter PÁNCZÉL</b> Notes On the Mithraic Relief from Ozd (Magyarózd, Mureș County)	49
<b>Péter SIMON</b> The Interval Towers of Roman Military Forts in the Province of Dacia Porolissensis	63
<b>Orsolya SZILÁGYI</b> Reconstructing the Gyulay and Kuun Families' Collection of Roman Antiquities	77
<b>Diana ANGYUS</b> A Late Roman Settlement in the Mureș Valley	103
<b>Imola KELEMEN</b> Archaeozoological Insights Into Animal Exploitation During the Late Roman Period at Sângeorgiu de Mureș– <i>Site No. 4</i> (Mureș County)	131
<b>Ünige BENCZE – László LENKEY – Noémi KÓSA – Kolos NÉMETH – Levente László ZÓLYA</b> The Results of the Geophysical Survey of the Bethlen Castle in Criș (Mureș County)	147
<b>Zsolt NYÁRÁDI</b> Archaeological Research at the Ugron Castle in Fiafalva (Harghita County)	161
<b>Dorottya ÚJVÁRI</b> Living Posters: An Unusual Advertising Attempt from a Women's Organisation in 1903 Târgu Mureș	191
Abbreviation	201

# IRON BALLISTA BOLTS FROM CĂLUGĂRENI (MIKHÁZA, MUREȘ COUNTY)

Zsolt-Szabolcs NAGY\*

*Research into iron ballista bolt heads has revealed that this category of artefacts has in several cases been misinterpreted in the scholarly literature. The re-evaluation of these finds significantly alters the picture of the distribution of iron ballista bolt heads in Dacia, into which the specimens recovered from the site of Călugăreni (Mikháza, Mureș County, RO) can now also be incorporated.*

**Keywords:** militaria, artillery, iron ballista bolt-heads, Dacia, auxiliary units

**Cuvinte-cheie:** militaria, artilerie, vârfuri de balistă din fier, Dacia, unități auxiliare

## INTRODUCTION

The Roman auxiliary fort and associated vicus at Călugăreni represent one of the major military sites along the eastern limes of Roman Dacia. Situated on the left bank of the Niraj River in Mureș County, the site played a key role in controlling and supervising the Niraj Valley. *Cohors I Augusta Ituraeorum sagittariorum* was stationed in the fort<sup>1</sup> whose fighting style is further attested by the large quantity of arrowheads and archery equipment recovered from the site.<sup>2</sup> The systematic research excavations conducted since 2011 (Area A – *principia*; Area B – *balneum*; Area C – *vicus*; Area D – north-eastern corner tower and the defensive system), together with the rescue excavation projects (CAB, CAP, ERA, and ERC) have resulted in an increasing

number of publications considering the material culture recovered from the site (Fig. 1).<sup>3</sup>

During the recent archeological excavations seven iron ballista bolt heads were discovered, all of them coming from the excavations at the *principia* (Area A).

## STATE OF RESEARCH REGARDING DACIA

In Roman Dacia, relatively few studies focus on this type of material, most publications merely mention it or record it in catalogues. In the case of Buciumi (Vármező, Sălaj County, RO), tanged and socketed iron ballista bolts are illustrated in the plates,<sup>4</sup> as confirmed by their dimensions and morphological characteristics; however, in the catalogue they are interpreted as

\* Mureș County Museum, Târgu-Mureș, RO; Pázmány Péter Catholic University, Faculty of Humanities and Social Sciences, Doctoral School of History, Budapest, HU, zsolt.nagy.szabolcs1999@gmail.com

<sup>1</sup> Considering the military unit see: PISO-MARCU 2008; ȚENȚEA 2012, 52–60; MATEI-POPESCU 2014, 207; SIDÓ-ÖTVÖS 2015; MATEI-POPESCU-ȚENȚEA 2016, 10; MATEI-POPESCU-PÁNCZÉL 2024.

<sup>2</sup> PÁNCZÉL-LUKÁCSI 2019; NAGY-PÁNCZÉL 2024.

<sup>3</sup> Some of the recent publications: SIDÓ-HÖPKEN 2020; SIDÓ-PÁNCZÉL 2019; SIDÓ-PÁNCZÉL 2020; MUSTAȚĂ 2020, 49–51; ÖTVÖS-CIOATĂ 2020, 52–53; VASS 2020, 54–55; MUSTAȚĂ-NYULAS 2020, 56–57; TALABÉR 2020; SZEKERNYÉS-PÁNCZÉL 2021; FIEDLER ET AL. 2023; DEAC-PÁNCZÉL 2023; SIDÓ 2023; COCIȘ ET AL. 2024; SZILÁGYI-PÁNCZÉL 2023; KOVÁCS 2023; BÁLINT-PÁNCZÉL 2024; MATEI-POPESCU-PÁNCZÉL 2024.

<sup>4</sup> CHIRILĂ ET AL. 1972, pl. LXII/1–8.

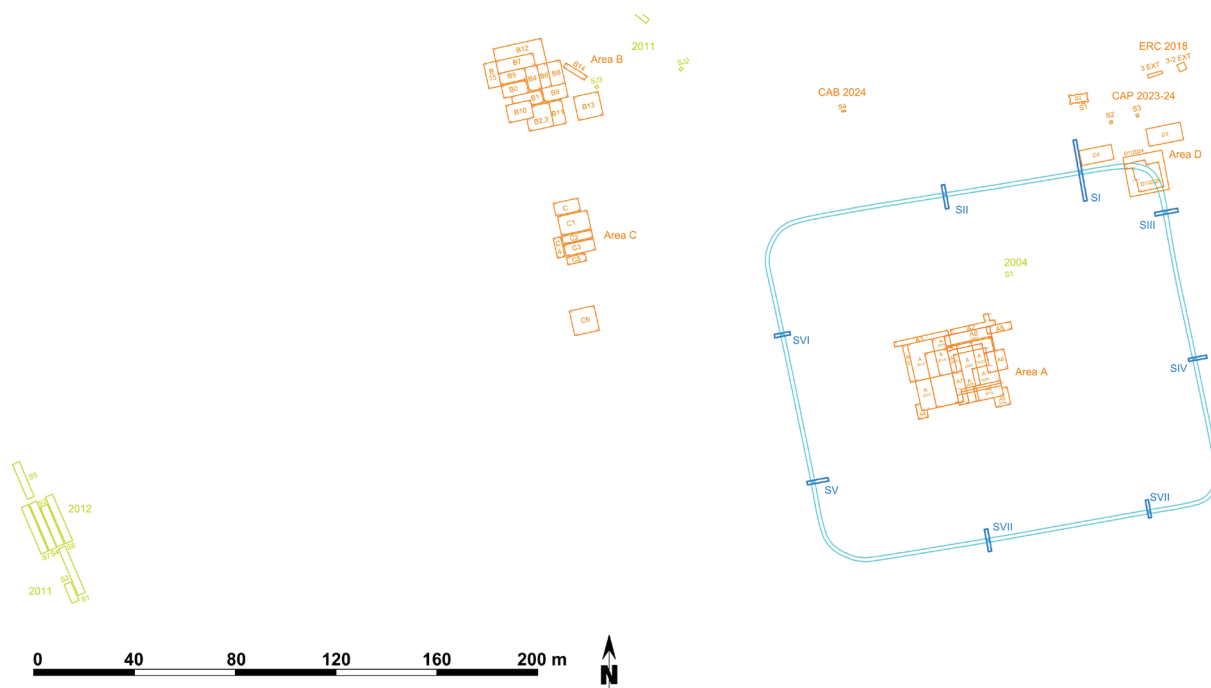


Fig. 1. The research excavations until 2025 (auxiliary fort with turquoise): 1961 excavations with blue; 2004, 2011–2012 excavations with green; 2013–2025 excavations with orange (Made by P. Simon and Sz.-P. Pánczél).

spearheads.<sup>5</sup> In the monography of the military camp of Buciumi, edited for the Limes Congress in 1997, one possible example<sup>6</sup> is represented.<sup>7</sup> Recently other 15 examples have been published, this time mentioning that they are belonging to torsion artillery.<sup>8</sup>

In the case of Porolissum (ro. Moigrad-Porolissum, hu. Mojgrád, Sălaj County, RO), a similar situation occurs, the objects that might be ballista bolts are interpreted as spearheads,<sup>9</sup> but the possibility that they could be artillery ammunition, are also listed.<sup>10</sup> Despite this, the objects in question were determined as iron bolt-heads.<sup>11</sup> N. Gudea in papers focusing on an arrowhead typology, based on the finds from Porolissum, distinguished two type of arrow-

heads by their weight and dimensions: light arrowheads and heavy arrowheads<sup>12</sup> implying that these are not belonging to the same type of weapons.<sup>13</sup>

In the monography of the Arcobadara military fort six iron ballista bolts<sup>14</sup> were listed in the catalogue plates and interpreted as arrowheads.<sup>15</sup> Close to the fort of Arcobadara (ro. Ilișua, hu. Alsóilosva, Bistrița-Năsăud County, RO), in Căianu Mic (Kiskaján, Bistrița-Năsăud County, RO) another possible ballista bolt was published as a spearhead.<sup>16</sup> From Micia (ro. Vețel, hu. Vecel, Hunedora County, RO), one iron ballista bolt was published, at that time interpreted also as arrowhead.<sup>17</sup>

<sup>5</sup> CHIRILĂ ET AL. 1972, 65.

<sup>6</sup> Based on the characteristics and dimensions.

<sup>7</sup> GUDEA 1997, 107/ fig. 21. second row, under the arrowheads.

<sup>8</sup> Iov 2022, 132–135, pl. III–IV.

<sup>9</sup> GUDEA 1989, pl. CXXIX/1–14; GUDEA 1989, 543–544.

<sup>10</sup> GUDEA 1989, 282.

<sup>11</sup> BISHOP–COULSTON 2009, 195, note 42.

<sup>12</sup> GUDEA 2006, 413, fig. 13; GUDEA 2008, 211, Abb. 13.

<sup>13</sup> Maximum weight for light arrowheads is 10 g and maximum length 5–6 cm (GUDEA 2006, 397; GUDEA 2008, 205).

<sup>14</sup> Interpreted as ballista bolts based on their characteristics.

<sup>15</sup> PROTASE ET AL. 1997, pl. LXIX/6–7, 9–12.

<sup>16</sup> MARINESCU–RETEGAN 1979, 254, fig. 1/6.

<sup>17</sup> FLOCA–VASILIEV 1968, fig. 19/first object.

In a paper focusing on the *militaria* finds from Ulpia Traiana Sarmizegetusa (Hunedoara County, RO) iron ballista bolts were published also as spearheads.<sup>18</sup> Later a part of them were republished, this time already as iron ballista bolts.<sup>19</sup>

From Gilău (Gyalu, Cluj County, RO),<sup>20</sup> Gherla (Szamosújvár, Cluj County, RO),<sup>21</sup> Tibiscum (ro. Jupa, Caraş-Severin County, RO),<sup>22</sup> iron ballista bolts were published also as different weapon types.

In conclusion, based on the shape, dimensions, and other characteristics of the iron ballista bolts, it becomes clear that a larger amount of this weapon type existed in Dacia than previously thought, however, they were not correctly identified as such.

Roman iron bolt-heads from other provinces are known from different periods,<sup>23</sup> however, from the perspective of the material discovered at Călugăreni, the examples dating to the 3<sup>rd</sup> century are the most relevant. At the site of Dura-Europos, a large quantity of both socketed<sup>24</sup> and tanged<sup>25</sup> bolt-heads were discovered, along with wooden bolt shafts.<sup>26</sup> These finds correspond closely not only in terms of chronology, but also with regard to shape, dimensions, and other characteristics, to our material. Regarding artillery machines, one of the most spectacular discoveries is the *manuballista* from Xanten, discovered in 1999.<sup>27</sup> From Dacia, the ballista elements from Gornea (Felsőlupkó, Caraş-Severin County, RO) and Dierna (ro. Orşova, Mehedinţi County, RO) are worth mentioning.<sup>28</sup> Unfortunately, to date no components of artillery machines are known from the site of Călugăreni, neither iron nor stone projectiles.

## THE FINDS FROM CĂLUGĂRENI

Since the beginning of the systematic excavations at the Roman archaeological site of Călugăreni, seven bolt-heads have been identified, all originating from the area of the *principia*. One piece comes from the northern armory deposits, one from the basilica and the remaining five from the southern deposits. Unfortunately, none of these finds derives from the phases related to the use of the building. One bolt-head was recovered from a destruction layer associated with the latest phase of use, while all others come from later disturbances, such as modern pits or robbing trenches. Since modern pits and robbing trenches were usually created for stone extraction, they generally do not affect layers earlier than the building's latest use. Consequently, these artefacts can be dated to the mid-3<sup>rd</sup> century at the latest, but certainly not earlier than the first half of the 3<sup>rd</sup> century.

An analysis of the shape of the artefacts shows that all the pieces are bodkins with a square cross-section. Based on their fixing methods, they can be divided into two main categories: tanged pieces and socketed pieces. As in most sites where iron bolt heads have been discovered, socketed pieces are present in greater numbers.

From Călugăreni, three examples are tanged. Their lengths range between 4.1 and 6.9 cm, however, in the case of the shortest piece, the bolt head is only partially preserved (Cat. 1, Pl. I/1). The maximum width of these pieces' ranges between 1.3 and 1.5 cm, which corresponds to the typical dimensions of this type of find at Dura-Europos, from where the largest assemblage of tanged bolt heads has been published so far. The weight ranges between 8.5 and 23.3 g, however, in the case of the 8.5 g piece, only the tang and a small portion of the head are preserved (Cat. 2, Pl. I/2), suggesting that the complete item would have weighed approximately 30 g. The third piece in the catalogue (Cat. 3, Pl. I/3), although fully preserved, weighs only 14.6 g. While an object of this weight could easily function as an arrowhead, the diameter of both the head and

<sup>18</sup> ILIEŞ 1981, 422, pl. II/2–13.

<sup>19</sup> ALICU ET AL. 1994, 96–97, pl. 164–169.

<sup>20</sup> ISAC 1997, pl. XXVI/8–10.

<sup>21</sup> PROTASE ET AL. 2008, 74; pl. XVII/2–3.

<sup>22</sup> PETRESCU 1986, 522; pl. II/3.

<sup>23</sup> BISHOP–COULSTON 2009, 58–61, 88–91, 135–137, 168–170, 206–208.

<sup>24</sup> JAMES 2007, 216–219, fig. 129–130/775–782; 795–804.

<sup>25</sup> JAMES 2007, 220–221, fig. 130/783–793.

<sup>26</sup> JAMES 2007, 221–223, fig. 131–137.

<sup>27</sup> SCHALLES 2010.

<sup>28</sup> GUDEA–BAATZ 1974.

the tang suggests that it should rather be associated with artillery.<sup>29</sup>

The remaining four pieces (Cat. 4–7, Pl. I/4–7) are socketed, their length varies between 6.8 and 8.1 cm. The maximum width is similar with the tanged pieces, from 1.2 to 1.6 cm. The weight of the bolt-heads ranges between 25.2 and 39.2 g, where the socket of the lightest piece is damaged. The inner diameter of the sockets is around 1 cm at all the pieces, which is fitting with the sharpened part of the preserved wooden shafts from Dura Europos.<sup>30</sup>

In conclusion, the iron ballista bolts from Călugăreni are fully consistent with comparable material of this type known from 3<sup>rd</sup>-century Roman provincial contexts, their place of discovery confirms the use of artillery in the auxiliary fort and this part of the province.

## CATALOGUE

### 1. Tanged iron bolt-head

Description: Iron bolt-head with square section. The tang is partly broken, and the head is slightly damaged.

Dimensions (cm): L: 6.9; W: 1.3; Tdm: 0.6.

Weight (g): 23.3.

Findspot: *Principia*, CAL 2019, Trench: A/2019, CX 583, SF no. 11820, Inv. no. 17179.

### 2. Tanged iron bolt-head

Description: Iron bolt-head with square section. The head is partly missing, and the tang is slightly damaged.

Dimensions (cm): L: 4.1; W: 1.5; Tdm: 0.8.

Weight (g): 8.5.

Findspot: *Principia*, CAL 2021, Trench: A8/2021, CX 669, SF no. 12185, Inv. no. 18035.

### 3. Tanged iron bolt-head

Description: Iron bolt-head with square section. The tang and the tip of the head are slightly damaged.

Dimensions (cm): L: 6.9; W: 1.3; Tdm: 0.4.

Weight (g): 14.6.

Findspot: *Principia*, CAL 2017, Trench: A7, CX 466, SF no. 11332, Inv. no. 8898.

### 4. Socketed iron bolt-head

Description: Iron bolt-head with square section. The socket is partly broken, and the tip of the head is damaged.

Dimensions (cm): L: 7.7; W: 1.2; Sidm: 0.8.

Weight (g): 25.2.

Findspot: *Principia*, CAL 2018, Trench: A5/2018, CX 550, SF no. 11648, Inv. no. 17279.

### 5. Socketed iron bolt-head

Description: Iron bolt-head with square section. The head is damaged.

Dimensions (cm): L: 8.1; W: 1.4; Sidm: 1.

Weight (g): 39.2.

Findspot: *Principia*, CAL 2018, Trench: A5/2018, CX 539, SF no. 11648, Inv. no. 17267.

### 6. Socketed iron bolt-head

Description: Iron bolt-head with square section. The head and the socket are slightly damaged.

Dimensions (cm): L: 6.8; W: 1.6; Sidm: 1.

Weight (g): 29.3.

Findspot: *Principia*, CAL 2018, Trench: A5/2018, CX 539, SF no. 11622, Inv. no. 17277.

### 7. Socketed iron bolt-head

Description: Iron bolt-head with square section. The head and the socket are slightly damaged.

Dimensions (cm): L: 7.3; W: 1.4; Sidm: 0.9.

Weight (g): 33.4.

Findspot: *Principia*, CAL 2018, Trench: A5/2018, CX 556, SF no. 11800, Inv. no. 17280.

<sup>29</sup> The tang in case of the arrowheads from the site are 0.2–0.3 cm, the head of the bodkin arrows is between 0.3–1 cm (NAGY-PÁNCZÉL 2024, 73–76).

<sup>30</sup> JAMES 2007, fig. 135/821; 137/830.

## REFERENCES

ALICU ET AL. 1994

D. Alicu – S. Cociş – C. Ilieş – A. Soroceanu, *Small finds from Ulpia Traiana Sarmizegetusa*, BMN 9 (Cluj-Napoca 1994).

BÁLINT–PÁNCZÉL 2024

G. Bálint – Sz. P. Pánczél, Roman cosmetic and medical instruments from Călugăreni/Mikháza, *Marisia-AHP* 6, 2024, 45–56.

BISHOP–COULSTON 2009

M. C. Bishop – J. N. Coulston, *Roman Military Equipment*. Second edition (Oxford 2009).

CHIRILĂ ET AL. 1972

E. Chirila – N. Gudea – V. Lucacel – C. Pop, *Das Römerlager von Buciumi* (Cluj, 1972).

COCIŞ ET AL. 2024

S. Cociş – Sz. P. Pánczél – K. Sidó, The typology and production of brooches on the eastern limes of Dacia Superior on the Brâncoveneşti–Călugăreni sector, *JAHA* 11/1, 2024, 80–100.

DEAC–PÁNCZÉL 2023

D. Deac – Sz. P. Pánczél, Jupiter – Ammon in Roman Dacia. New evidence from the Roman settlement of modern-day Călugăreni / Mikháza, in: C. A. Bărbulescu (ed.), *Roman Dacia and the Roman Army. Papers dedicated to Liviu Petculescu on the occasion of his 75th birthday* (Cluj-Napoca 2023), 131–139.

FIEDLER ET AL. 2023

M. Fiedler – C. Höpken – K. Oberhofer, Technical ceramics from a forge? A pottery find from Călugăreni/Mikháza (Romania), *ReiCretActa* 47, 2023, 127–131.

FLOCA–VASILIEV 1968

O. Flocă – V. Vasiliev, Amfiteatrul militar de la Micia, *Sargetia V*, 1968, 121–152.

GUDEA 1989

N. Gudea, Un complex arheologic daco-roman la marginea de nord a Imperiului Roman, *ActaMP* 13, 1989, 10–1178.

GUDEA 1997

N. Gudea, *Castrul roman de la Buciumi/ Das Römergrenzkastell von Buciumi* (Zalău 1997).

GUDEA 2006

N. Gudea, Sagittarii Porolissenses și armele lor I, in: C. Gaiu – C. Găzdac (eds.), *Fontes Historiae. Studia in honorem Demetrii Protase* (Cluj-Napoca 2009), 395–413.

GUDEA 2008

N. Gudea, Sagittarii Porolissenses und ihre Kampwaffen I, *JRMS* 16, 2008, 201–212.

GUDEA–BAATZ 1974

N. Gudea – D. Baatz, Teile spätrömischer Bailisten aus Gornea und Orşova (Rumänien), *SaalbJb* 31, 1974, 50–72.

Iov 2022

C. I. Iov, Despre vârful de săgeți din castrul roman de la Buciumi, jud. Sălaj, *RevBis XXXVI*, 2022, 120–140.

ILIEŞ 1981

C. Ilieş, Arme romane descoperite la Ulpia Traiana Sarmizegetusa, *ActaMN XVIII*, 413–424.

ISAC 1997

D. Isac, *Castrele de cohortă și ală de la Gilău/Die Kohorten- und Alenkastelle von Gilău* (Zalău 1997).

JAMES 2007

S. James, *The excavations at Dura-Europos 1928–1937. Final report VII. The arms and armour and other military equipment* (Oxford 2010).

KOVÁCS 2023

B. Kovács, Preliminary study on the terra sigillata vessels from Călugăreni/Mikháza, *Marisia-AHP* 5, 2023, 111–134.

MARINESCU–RETEGAN 1979

G. Marinescu – A. Retegan, Depozitul de obiecte romane de la Căianu Mic (jud. Bistrița-Năsăud), *SCIV(A)* 30/2, 253–260.

MATEI-POPESCU 2014

F. Matei-Popescu, Trupele auxiliare pe limesul estic al Daciei. Stadiul problemei, *Angustia* 17–18, 2014, 205–216.

MATEI-POPESCU–ȚENȚEA 2016

F. Matei-Popescu – O. Țențea, The eastern frontier of Dacia. A gazetteer of the forts and units, in: V. Bârcă (ed.), *Orbis Romanus and Barbaricum. The Barbarians around the province of Dacia and their relations with the Roman Empire*, PAT 14 (Cluj-Napoca 2016), 7–14.

MATEI-POPESCU–PÁNCZÉL 2024

F. Matei-Popescu – Sz. -P. Pánczél, Ready to be recycled? A fragment of a military diploma from Călugăreni/Mikháza (Dacia superior), *Marisia-AHP* 6, 2024, 95–99.

MUSTAȚĂ 2020

S. Mustață, Statuetă romană din bronz înfățișându-l pe zeul Mercurius/ Mercuriust ábrázoló római kori bronz szobor, in: Z. Soós (coord./főszerk.), *Valori și achiziții muzeale / Múzeumi értékek* (Târgu Mureș/Marosvásárhely 2020), 49–51.

MUSTAȚĂ–NYULAS 2020

S. Mustață – Ny. Dorottya, Cătușă / Bilincs, *Valori și achiziții muzeale / Múzeumi értékek* (Târgu Mureș/Marosvásárhely 2020), 56–57.

NAGY–PÁNCZÉL 2024

Zs. Sz. Nagy – Sz. P. Pánczél, Roman arrows from Călugăreni/Mikháza: A typological approach, *Marisia-AHP* 6, 2024, 57–94.

ÖTVÖS–CIOATĂ 2020

K. B. Ötvös – D. Cioată, Armură romană de solzi / Római pikkelypáncél, in: Z. Soós (coord./főszerk.), *Valori și achiziții muzeale / Múzeumi értékek* (Târgu Mureș / Marosvásárhely 2020), 52–53.

PÁNCZÉL–LUKÁCSI 2019

Sz. P. Pánczél – Cs. Lukácsi, Evidence concerning the use and production of composite bows in Călugăreni/Mikháza, I. G. Farkas – M. Szabó – R. Neményi (eds.), *Visy 75. Artificem Commendat Opus. Studia in Honorem Zsolt Visy* (Pécs 2019), 412–426.

PETRESCU 1986

M. S. Petrescu, Piese de armament descoperite in castrul de la Tibiscum (I). *ActaMN*, 22–23/1985–1986, 521–526.

PISO–MARCUS 2008

I. Piso – F. Marcu, La cohors I Augusta Iuraeorum en Dacie, *ActaMN* 43–44/1, 2006–2007 (2008), 167–176.

PROTASE ET AL. 1997

D. Protase – C. Gaiu – G. Marinescu, Castrul roman și așezarea civilă de la Ilișua (jud. Bistrița-Năsăud), *RevBis* X–XI, 1997, 27–110.

## PROTASE ET AL. 2008

D. Protase – N. Gudea – R. Ardevan, *Din istoria militară a Daciei romane. Castrul roman de interior de la Gherla / Aus der Militärgeschichte des Römischen Dakien. Das Römische Binnenkastell von Gherla* (Timișoara 2008).

## SCHALLES 2010

H.-J. Schalles, *Die Frühkaiserzeitliche Manuballista aus Xanten-Wardt, Xantener Berichte* Band 18 (Mainz 2010).

## SIDÓ 2023

K. Sidó, Roman stamped pottery from Călugăreni/Mikháza, in: S. Mustăța, V.-A. Lăzărescu (ed.) *FABER. Studies in honour of Sorin Cociș at his 65<sup>th</sup> anniversary* (Cluj-Napoca 2023), 523–537.

## SIDÓ–ÖTVÖS 2015

K. Sidó – K. B. Ötvös, New types of Roman stamped tiles from Călugăreni, in: A. Dobos – D. Petruț – S. Berecki – L. Vass – Sz. P. Pánczél – Zs. Molnár-Kovács – P. Forisek (eds.), *Archaeologia Transylvanica. Studia in honorem Stephani Bajusz* (Cluj-Napoca – Târgu Mureș – Budapest 2015), 175–188.

## SIDÓ–HÖPKEN 2020

K. Sidó – C. Höpken, Die kleinen hier – die großen da: Eine römische Zweikammer-Spardose aus Călugăreni / Mikháza am dakischen Ostlimes (Kreis Mureș, Rumänien), *ArchKorr* 50/3, 2020, 363–370.

## SIDÓ–PÁNCZÉL 2019

K. Sidó – Sz.-P. Pánczél, A fireplace from the wooden principia of Călugăreni/Mikháza, in: I. G. Farkas – M. Szabó – R. Neményi (eds.), *Visy 75. Artificem commendat opus. Studia in honorem Zsolt Visy* (Pécs 2019), 470–479.

## SIDÓ–PÁNCZÉL 2020

K. Sidó – Sz. P. Pánczél, Possible kernoi discovered in the Principia from Călugăreni/Mikháza, *Marisia-AHP* 2, 2020, 139–148.

## SZEKERNYÉS–PÁNCZÉL 2021

L. Szekernyés – Sz. P. Pánczél, Roman Rotary Querns from Călugăreni/Mikháza, *Marisia-AHP* 3, 2021, 143–164.

## SZILÁGYI–PÁNCZÉL 2023

O. Szilágyi – Sz. P. Pánczél, Roman Hairpins from Călugăreni/Mikháza, *Marisia-AHP* 5, 2023, 45–62.

## TALABÉR 2020

I. Talabér, Roman Jewellery from Călugăreni/Mikháza on the Eastern Limes of Dacia, *Marisia-AHP* 2, 2020, 119–138.

## ȚENȚEA 2012

O. Țențea, *Ex Oriente ad Danubium. The Syrian Units on the Danube Frontier of the Roman Empire*, The Centre for Roman Military Studies 6 (București 2012).

## VASS 2020

L. Vass, Opațiș roman din fier / Római vasmécses, in: Z. Soós (coord./főszerk.), *Valori și achiziții muzeale / Múzeumi értékek* (Târgu Mureș/Marosvásárhely 2020), 54–55.

**LIST OF FIGURES**

- Fig. 1. The research excavations until 2025 (auxiliary fort with turquoise): 1961 excavations with blue; 2004, 2011–2012 excavations with green; 2013–2025 excavations with orange (Made by P. Simon and Sz.-P. Pánczél).

**LIST OF PLATES**

- Pl. I. Tanged (1–3) and socketed (4–7) iron bolt-heads.

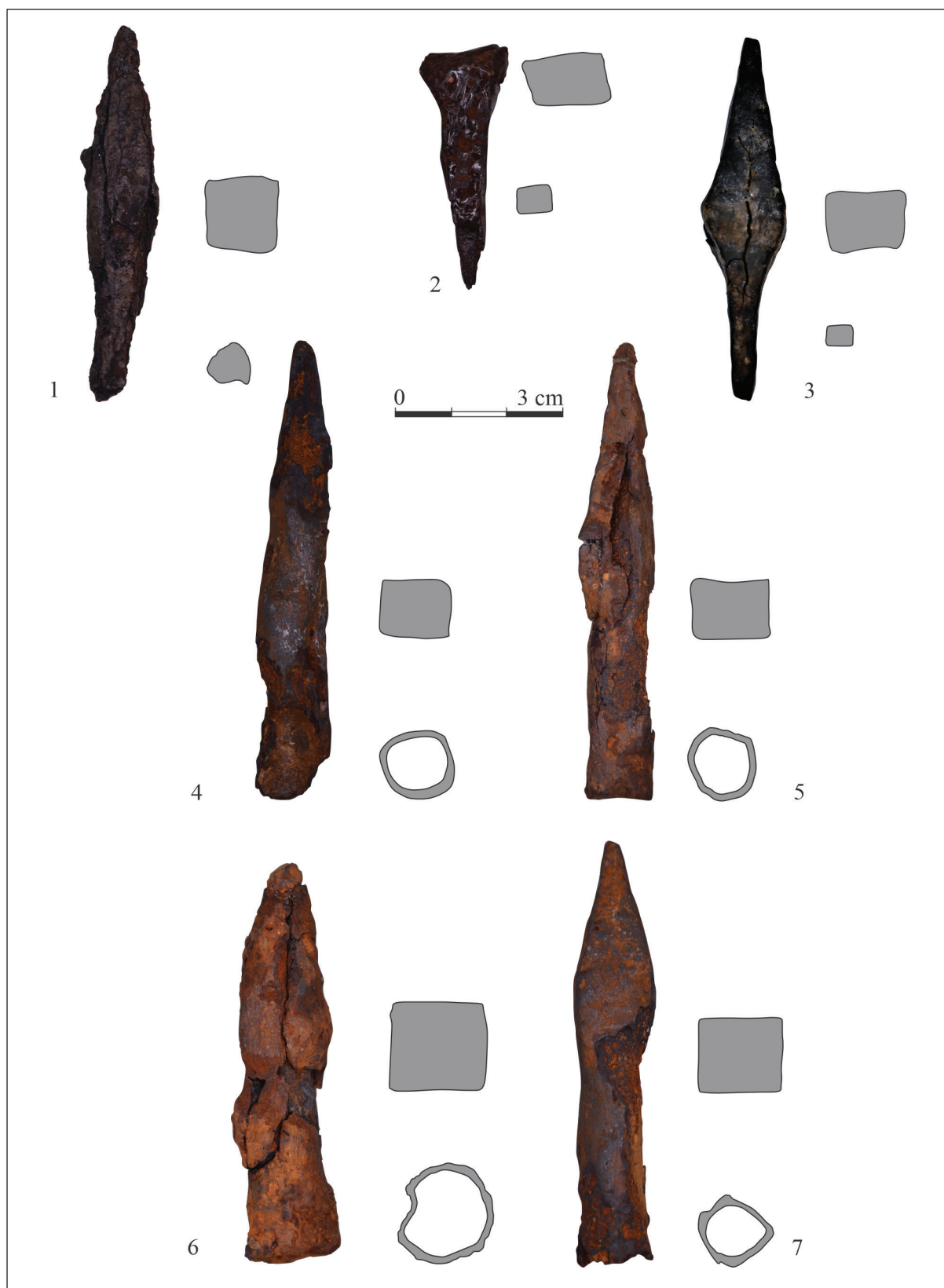


Plate I. Tanged (1-3) and socketed (4-7) iron bolt-heads.

## ABBREVIATION

<i>ACMI</i>	Anuarul Comisiunii Monumentelor Istorice, București
<i>Acta Antiqua</i>	Acta Antiqua Academiae Scientiarum Hungaricae, Budapest
<i>Acta Siculica</i>	Acta Siculica. A Székely Nemzeti Múzeum Évkönyve, Sfântu Gheorghe
<i>ActaArchHung</i>	Acta Archaeologica Academiae Scientiarum Hungaricae, Budapest
<i>ActaMN</i>	Acta Musei Napocensis, Cluj-Napoca
<i>ActaMP</i>	Acta Musei Porolissensis, Zalău
<i>AEM</i>	Archaeologisch–Epigraphische Mitteilungen aus Oesterreich–Ungarn, Wien
<i>American Antiquity</i>	American Antiquity, Society for American Archaeology
<i>Analele Banatului (S.N.)</i>	Analele Banatului S.N., Arheologie – Istorie, Muzeul Național al Banatului, Timișoara
<i>Angustia</i>	Angustia, Muzeul Carpaților Răsăriteni, Sfântu Gheorghe
<i>ANRC</i>	Arhivele Naționale ale României, Cluj
<i>Apulum</i>	Apulum. Acta Musei Apulensis, Alba Iulia
<i>Aquincumi Füzetek</i>	Aquincumi Füzetek, Budapesti Történeti Múzeum, Budapest
<i>Archaeolingua</i>	Archaeolingua, Budapest
<i>ArchÉrt</i>	Archaeologiai Értesítő, Budapest
<i>ArchKorr</i>	Archäologisches Korrespondenzblatt: Urgeschichte, Römerzeit, Frühmittelalter, Mainz
<i>ArchKözl</i>	Archaeologiai Közlemények, (1859–1899), Magyar Tudományos Akadémia Archaeológiai Bizottsága, Budapest
<i>ArhMold</i>	Arheologia Moldovei, Institutul de arheologie Iași, Iași
<i>ATF</i>	Acta Terrae Fogarasiensis, Muzeul Țării Făgărașului, Făgăraș
<i>AUA (SH)</i>	Anuarul Universității 1 Decembrie 1918, Alba Iulia
<i>AUASH</i>	Annales Universitatis Apulensis. Series Historica, Universitatea 1 Decembrie 1918”, Alba Iulia
<i>BiblEphNap</i>	Bibliotheca Ephemeris Napocensis, Institutul de Arheologie și Istoria Artei, Cluj-Napoca
<i>Bibliotheca Marmatia</i>	Bibliotheca Marmatia, Muzeul Județean de Istorie și Arheologie Maramureș
<i>BiblThrac</i>	Bibliotheca Thracologica, București
<i>BMM</i>	Bibliotheca Musei Marisiensis, Seria(es) Archaeologica, Târgu Mureș
<i>BMN</i>	Bibliotheca Musei Napocensis, Cluj-Napoca
<i>Buridava</i>	Buridava. Studii și materiale, Muzeul Județean „Aurelian Sacerdoțeanu” Vâlcea
<i>Caiete ARA</i>	Caiete ARA (Arhitectură. Restaurare. Arheologie), Asociația ARA, București
<i>CAN</i>	Cercetări arheologice în aria nord-tracă, Institutul de Thracologie, București
<i>CCA</i>	Cronica Cercetărilor Arheologice din România, București
<i>CIL</i>	Corpus Inscriptionum Latinarum, Berlin-Brandenburg Academy of Sciences and Humanities, Berlin
<i>Coll. Med.</i>	Collegium Mediense. Comunicări Științifice, Muzeul Municipal Mediaș, Mediaș
<i>ComArchHung</i>	Communicationes Archaeologicae Hungariae, Budapest
<i>Complutum</i>	Universidad Complutense de Madrid, Madrid
<i>Crisia</i>	Crisia, Muzeul Țării Crișurilor, Oradea

<i>Dacia (N. S.)</i>	Dacia. Recherches et découvertes archéologiques en Roumanie, I–XII (1924–1948), Nouvelle série (N. S.): Dacia. Revue d'archéologie et d'histoire ancienne
<i>DissPan</i>	Dissertationes Pannonicae, Budapest
<i>EDR</i>	Ephemeris Dacoromana. Annuario della Scuola Romana di Roma, Roma
<i>EphNap</i>	Ephemeris Napocensis, Cluj-Napoca
<i>ErdÉvsz</i>	Erdélyi Évszázadok, a Kolozsvári Magyar Történelmi Intézet évkönyve, Kolozsvár
<i>ErdMúz</i>	Erdélyi Múzeum. Az Erdélyi Múzeum Egylet Történelmi Szakosztályának Közölnye, Kolozsvár
<i>ETF</i>	Erdélyi Tudományos Füzetek, Kolozsvár
<i>FileIst</i>	File de Istorie, Complexul Muzeal Bistrița-Năsăud, Bistrița-Năsăud
<i>HTRTÉ</i>	A Hunyadmegyei Történelmi és Régészeti Társulat Évkönyve (1880–1912), Déva
<i>Hung. Archaeol.</i>	Hungarian Archaeology, Archaeolingua, Budapest
<i>Hungarian Archaeology</i>	Hungarian Archaeology, Archeolingua, Budapest, e-Journal
<i>IDR</i>	Inscriptiones Daciae Romanae, Academia Română
<i>Istros</i>	I stros. Revue d'archéologie et d'histoire ancienne, Muzeul Brăilei, Brăila
<i>JAHA</i>	Journal of Ancient History and Archaeology, Institute of Archaeology and Art History of Romanian Academy Cluj-Napoca & Technical University of Cluj-Napoca, Cluj-Napoca
<i>JAMÉ</i>	A Nyíregyházi Jósza András Múzeum Évkönyve
<i>JAMT</i>	Journal of Archaeological Method and Theory, Springer Nature
<i>JAS</i>	Journal of Archaeological Science, Elsevier, e-Journal
<i>JdI</i>	Jahrbuch des Deutschen Archäologischen Instituts, Deutsches Archäologisches Institut, Berlin
<i>JMS</i>	Journal of Mithraic Studies
<i>Journal of Applied Geophysics</i>	Journal of Applied Geophysics, Amsterdam
<i>JRA</i>	Journal of Roman Archaeology, Cambridge University Press, <a href="https://journalofromanarchaeology.com/">https://journalofromanarchaeology.com/</a>
<i>JRMS</i>	Journal of Roman Military Equipment Studies, Association for Roman Military Equipment Studies
<i>LUPA</i>	
<i>Lustra</i>	Lustra, Internationale Halbjahresschrift für Fragen des Klassischen Altertums, Göttingen
<i>MAGW</i>	Mitteilungen der Anthropologischen Gesellschaft in Wien, Wien
<i>Marisia</i>	Marisia (V–XXXV): Studii și Materiale, Târgu Mureș
<i>Marisia-AHP</i>	Marisia: Archaeologia, Historia, Patrimonium (2019–), Târgu Mureș
<i>MBV</i>	Münchener Beiträge zur Vor- und Frühgeschichte, München
<i>MCA</i>	Materiale și Cercetări Arheologice, Institutul de Arheologie „Vasile Pârvan”, București
<i>MIMK</i>	Molnár István Múzeum Kiadványai, Székelykeresztúr
<i>MNL DL</i>	Magyar Nemzeti Levéltár, Diplomatikai Levéltár
<i>NIMB</i>	Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms, Elsevier, e-Journal
<i>OJA</i>	Oxford Journal of Archaeology, Oxford
<i>Opitz Archaeologica</i>	Opitz Archaeologica, Martin Opitz Kiadó, Budapest
<i>Páztortúz</i>	Páztortúz (1921–1944), Kolozsvár
<i>PAT</i>	Patrimonium Archaeologicum Transylvanicum, Cluj-Napoca

<i>PBF</i>	Prähistorische Bronzefunde, München, Stuttgart
<i>Peabody Museum Bulletins</i>	Peabody Museum Bulletins, Harvard University Series
<i>PPS</i>	Proceedings of the Prehistoric Society, London
<i>Pril. Inst. arheol. Zagrebu</i>	Prilozi Instituta za arheologiju u Zagrebu, Zagreb
<i>PZ</i>	Prähistorische Zeitschrift, Berlin
<i>Quat.Int.</i>	Quaternary International, International Union for Quaternary Research, Elsevier, e-Journal
<i>Radiocarbon</i>	Radiocarbon, Cambridge University Press
<i>ReiCretActa</i>	Rei Cretariae Romanae Fautorum Acta, Tongeren
<i>Religion</i>	Religion, e-Journal
<i>RevBis</i>	Revista Bistriței, Complexului Muzeal Bistrița-Năsăud, Bistrița
<i>RevMuz</i>	Revista Muzeelor Institutul Național pentru Cercetare și Formare Culturală, București
<i>RMM – MIA</i>	Revista Muzeelor și Monumentelor. Monumente istorice și de artă, Institutul Național al Patrimoniului, București
<i>SaalbJb</i>	Saalburg-Jahrbuch. Bericht des Saalburg-Museums
<i>SAO</i>	Studien zur Archäologie in Ostmitteleuropa, Berlin
<i>Sargetia (N. S.)</i>	Sargetia. Acta Musei Devensis, deva
<i>Sbor. FFUK Historica</i>	Sborník Filozofickej fakulty Univerzity Komenského, Historica, Bratislava
<i>SCIV(A)</i>	Studii și Cercetări de Istorie Veche (și Arheologie 1974–), București
<i>SlovArch</i>	Slovenská Archeológia, Nitra
<i>StCom Satu Mare</i>	Studii și comunicări Satu Mare, Muzeul Județean Satu Mare
<i>StudPreist</i>	Studii de preistorie, Asociația Română de Arheologie (ARA), București
<i>Székelyföld</i>	Székelyföld, Kulturális folyóirat, Csíkszereda
<i>Terra Sebus</i>	Terra Sebus, Acta Musei Sabesiensis, Muzeul Municipal „Ioan Raica”, Sebeș
<i>Thraco-Dacica</i>	Thraco-Dacica, Institutul de Tracologie, București
<i>Tisicum</i>	Tisicum – A Jász-Nagykun-Szolnok Megyei Múzeumok Évkönyve, Szolnok
<i>UPA</i>	Universitätsforschungen zur Prähistorischen Archäologie, Bonn
<i>VAH</i>	Varia Archaeologica Hungarica, Budapest
<i>VMMK</i>	A Veszprém Megyei Múzeumok Közleményei, Veszprém
<i>V PU</i>	Vydavetel'stvo Prešovskej univerzity, Prešov
<i>WorldArch</i>	World Archaeology, Taylor & Francis, e-Journal
<i>Xantener Berichte</i>	Xantener Berichte. Grabung–Forschung–Präsentation, Mainz

## MARISIA. ARCHAEOLOGIA, HISTORIA, PATRIMONIUM

With a publishing tradition since 1965, in 2019 the annual of the Mureş County Museum initiated a new series entitled: *Marisia. Archaeologia, Historia, Patrimonium*. The publication provides a panel for new research results in archeology, architecture and material heritage of the history of arts and culture. The studies mainly focus on the inner Transylvanian region that encompasses also Mureş County. Beyond local valuable contributions, the annual aims at a regional and global concern that is relevant for the whole of Transylvania. Among the annual's missions is to provide mutual interpretation of the research results produced by the Romanian and Hungarian scientific workshops. Therefore, the annual articles are mainly in English but based on the field of research and the approached topic studies in German, Romanian or Hungarian are also accepted.

Cu o tradiție din anul 1965, anuarul Muzeului Județean Mureş s-a relansat în 2019 sub titlul *Marisia. Archaeologia, Historia, Patrimonium*. Această publicație se descrie ca o platformă științifică care cuprinde rezultatele cercetărilor în domenii precum: arheologia, arhitectura și patrimoniul material din zona istoriei artelor și a culturii, studii localizate în regiunea centrală a Transilvaniei, din care face parte județul Mureş. **In extenso**, anuarul își propune să ofere un spațiu unitar contribuțiilor științifice valoroase, relevante din perspectiva geografică a ceea ce înseamnă întreaga regiune a Transilvaniei. Una dintre misiunile publicației este aceea de a oferi tuturor celor interesați spațiul de schimb pentru cele mai noi rezultate din atelierile științifice românești și maghiare. Articolele anuarului sunt scrise în general în limba engleză, existând totodată articole scrise în germană, română și maghiară, în funcție de specificul domeniului și a temei abordate.

A Maros Megyei Múzeum 1965 óta megjelenő évkönyvének 2019-ben útjára bocsátott új sorozata, a *Marisia. Archaeologia, Historia, Patrimonium* elsősorban a mai Maros megyét is magába foglaló belső-erdélyi régió régészeti, épített és tárgyi örökségére, nemkülönben az ezekhez kapcsolódó művészettörténeti, művelődéstörténeti kérdésekre vonatkozó újabb kutatások tudományos fóruma. A lokális perspektíván túl igyekszik kitekinteni a regionális és univerzális összefüggésekre, így a tágran értelmezett Erdély területére nézve is közöl kiemelkedő értékkel bíró tanulmányokat. Küldetésének tekinti a hazai román és magyar tudományos műhelyekben született eredmények kölcsönös tolmácsolását. A dolgozatok nyelve főként az angol, de szakterülettől és témától függően német, román vagy magyar nyelven is közöl írásokat.