

A HORREUM FOUND AT BĂCĂINȚI-OBREJE (ȘIBOT PARISH, ALBA COUNTY)

Radu OTA*
Ilie LASCU**
George BOUNEGRU***

Abstract. The building analysed is a horreum, with 12 exterior and interior buttresses (0.90×0.90 m, with an exception, in the east, where they are 1×1 m). The exterior dimensions are 31×17.4 m (539.4 m 2). We found no elements of internal partitioning or pillars for the support of the suspended floor, and we considered that the weight of the cereals would have been too heavy for this type of structure (621.60 tons of wheat). The total capacity of the barn will be 70 tons (1 m 3 bays = 60-80 kg). Thus, it could satisfy the yearly hay necessity for 45-46 horses used for public transport. The horreum is placed on a road connecting Ulpia Traiana Sarmizegetusa to Apulum. It is possible that this barn belongs to a mansio or statio.

Keywords: agriculture, grains, hay, horreum, mansio, rural life.

The archaeological site at Băcăinți-Obreje (com. Șibot) is located on the left bank of Mureș River, on its first terrace, 10 m higher than the waterside (fig. 1).¹ We are in the southwest of Alba County, on the border of Hunedoara County. The researched point is approximately 2 km from Șibot village and 30 km from Alba Iulia, on the right side of the European road Sebeș-Orăştie. The point is presented in the dedicated literature due to the discovery of the urn of Băcăinți.²

The archaeological research occasioned by the exploitation of some mineral units in Șibot parish, Băcăinți village (Alba County), in an area called Obreje by the local people, brought to light, during the two campaigns from 2015-2016,³ findings from several ages (Eneolithic, Middle Bronze Age, Hallstatt, Roman, post-Roman, Early Middle Ages). A total of 217 archaeological complexes were researched, including incineration and inhumation tombs, scooped dwellings, ritual graves, graves for provisions and domestic graves, and a rectangular building from the Roman age, which is the object of this paper.

* National Museum of Union Alba Iulia, Romania; e-mail: eractum@yahoo.com.

** National Museum of Union Alba Iulia, Romania; e-mail: lascuia@yahoo.com.

*** National Museum of Union Alba Iulia, Romania; e-mail: bounegru_g_viziru@yahoo.com.

¹ Andrițoiu 1979, p. 21, no. 14; Popa 2011, p. 675, no. 16, fig. 151.

² Andrițoiu 1986, p. 35, fig. 3/5; Andrițoiu, Vasilev 1990-1993, p. 133, fig. 8/1.

³ The research team consisted of Radu Ota (Scientific Coordinator), Ilie Lascu, Florin Ciulavu, Gabriel Balteș, George Bounegru and Cătălin Borangic. The aerial photos are courtesy of our colleague, Călin Șuteu ("1 Decembrie 1918" University of Alba Iulia).

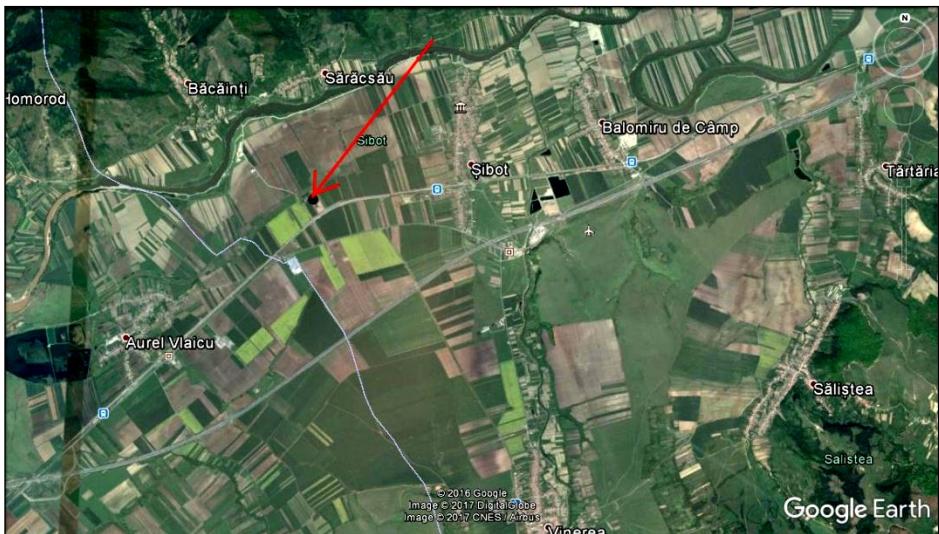


Fig. 1. The lay-out of the research area

The *horreum* we discovered is a big building, observed immediately under the arable layer to a depth of 0.20-0.35 m, fragments of Roman tiles and river stones were identified on the surface of the field.⁴ The construction was researched in S3 and S6. The ground where the Roman tiles were discovered was slightly uneven, with a difference of level of approximately 0.5 m on the axis NE-SV. To a depth of 0.20 m, for the northern and central area of the building and 0.30 m for the southern area, a compact level of Roman tiles, locally broken, was discovered. We mention that the layer of tiles was present only in the interior of the building and is missing on a distance of 1-2 m from the foundations of the building on all the four sides. No tegular fragment had stamp marks. To a depth of 0.25 for the north area and 0.40 m for the south area from the stepping level, we observed the bedding layer from the foundations of the building, wide of 0.70 m. The arrangement layer was deep of 0.30-0.40 m, excavated in the sterile soil. It is deeper in the east side of the construction. There is a difference of level of almost 1 m between the eastern and the western side of the *horreum*. River stones united by mortar were preserved only in the east, on a length of 4.50 m.

The building is rectangular, with the dimensions of 31 x 17.40 m, an area of 539.4 m² and an internal area of 473.6 m² (**fig. 3-6**). There are four buttresses on the long flanks, on the inner side in the north, and two on the inside and two on the outside in the south. The median buttresses are on

⁴ The aerial photos are courtesy of our colleague, Călin Şuteu.

the inside of the building. They are placed 6.20 m from the margins of the building with 4.90 m between them. Each short flank has two buttresses on the outside. They are placed to 5.20 m from the margins of the building, with 4.60 m between them. The buttresses are made of gravel, one being exclusively made of river stones. The dimensions of the buttresses are of 0.90 x 0.90 m, with one exception, in the east, where the dimension is of 1 x 1 m. A large number of iron nails were discovered at the level of the fallen roof and under it, belonging to the framework and to the walls of the building.

The entire surface of the building was divided into four quadrants, in order to obtain the interior profiles of the archaeological complex. We discovered inside one quadrant only ceramic material from the Roman age, a broken clay recipient. There was no other archaeological inventory. Eight interior profiles were obtained after researching the four quadrants. We noted a 10-20 cm layer of black soil mixed with sterile yellow soil, where six pits were contoured (five prehistoric pits and a Roman one). Two dwellings from the 10th century were also identified. Only in the medial area, to a depth of 10 m, under the roof level, on a length of 2 m, we observed a ditch, wide of 0.5 m, deepening by 5 cm compared to the contour level. This ditch is partially superposed on a prehistoric pit, marked as Cx 35. In the sterile soil, to 10-15 cm under the layer of tiles, there were no marks from the sustaining pillars of a floor. Considering the planimetry and the construction manner, we assess that this archaeological complex is a *horreum*. We did not discover inside the building and in the neighbouring areas any fragments of bricks or stones that might have belonged to the elevation of the building, leading us to the conclusion that it was made of wood.

We also discovered in the researched areas complexes (circular pits) and archaeological materials attributed to the Roman era.

The archaeological pieces discovered in the layer are especially sartorial accessories. We found a bronze fibula (**fig. 7/1**). Its form is the type T - Cociș 39a3a2.⁵ The body is curved, trapezoidal in plane and rectangular in section. It is ornamented with two parallel rows of incisions. The head has a button. The leg is short, with a port-pin of type Cociș 20. T-form fibulas, in the variant we discovered, appear predominantly in sites in Dacia and sporadically in the neighbouring provinces. This type of ornament is considered to have been first designed here. The periodization of the fibula is established as third century AD.⁶ An iron fibula was also discovered in the culture layer (**fig. 7/2**). The piece belongs to the category

⁵ Cociș 2004, p. 149-150.

⁶ Ibid.

of fibulas with the leg bent inside: type Cociş 37.⁷ It is interesting that this fibula is closer to crossbow fibulas. The body is arched, semi-circular in profile and finished with a port-pin twisted around the leg (type Cociş 21). The periodization of fibulas with the leg bent inside starts in the Severan period.

It was discovered a fragment of a bronze buckle (**fig. 7/3**). A good analogy comes from the area of the Rhenan *limes*.⁸ Made through moulding from a single bronze piece, it presents two circular ears to be pinned to a fixed segment attached to the end of the belt. Another piece of military equipment found was a bronze plaque (**fig. 7/4**). Moulded, it has on the back a complete fixation bullet and the marks of a second one. The superior side has a notched *ansa*. The rhomboid body is decorated with fret sawing under the form of *pelta* and ends with two circles on both sides.

Another category of pieces we discovered is that of small objects of everyday use. We mention two keys of different dimensions, both part of the same typological series, presenting a trapezoid body in plane and a circular orifice at the end (**fig. 7/5**). The active part is wide and disposed at an angle to the body. Both pieces are heavily rusted.

We discovered an iron knife in the area of the building (**fig. 7/6**). It is corroded by rust, but it can be seen that the blade is curved inside and the arm may be observed. The flat arm shows it was possible to be caught inside hilts.

To the south of the building, to approximately 75 m, we discovered 14 incineration tombs and an inhumation tomb. We discovered in the east side a natural alveolar (terrace rupture), used most probably as a rubbish damp in the Roman era, on a length of 15 m and a width of 10 m. We observed in the researched area the lack of any elements that could belong to other constructions from the Roman age. To the west of the building, to approximately 50 m, fragments of tiles and ceramics from the Roman age were observed.

Colleagues from Bucharest have recently studied a very well-developed rural setting, which, due to the amplexus of the vestiges, the organisation of the building and the street texture, has a quasi-urban character.⁹ Roman marks, probably belonging to some *villae rusticae* exploiting the rich agricultural area, were discovered at several points on the territory of Şibot parish.¹⁰ Another site from the Roman age, located to the

⁷ The fibulas with the leg bended behind are exclusively made of bronze. See ibid., p. 142.

⁸ Oldenstein 1976, p. 97.

⁹ Bâltac et al. 2013, p. 230-232.

¹⁰ Some finds from the Roman era are mentioned by Dumitru Tudor (Tudor 1968, p. 135). Next to Băcăinți-Obreje (the location of our research), some Roman vestiges have been

west of the area under discussion, is that of Aurel Vlaicu-*Voiroda*. Materials from the Roman era were discovered here across an area of 2-3 ha, leading M. Blăjan to affirm the existence of a *vicus*.¹¹

We cannot say whether the building we researched used to have compartments. Based on the planimetry and disposition, we assume a diversified use, e.g. for depositing hay for animals.

The big *horrea* in Rome and Ostia had served not only as warehouses for animal feed, but also for other merchandise, such as marble, torches, candles, papyrus, scents, vestments, wine, oil, and so on. They also served as commercial points. The biggest *horrea* in Rome are those of the Portus of Trajan and the *horrea Galbae, Nervae, Ummidiana, Seiana* and *Lolliana*, followed by those specialised as depots for certain products: *candelaria, chartaria, piperataria*.¹² Those in Ostia, the *Grandi Horrea*, were approximately 7,291 m² in size and were built at the beginning of the first century AD, being extended and renovated several times during the Severan Dynasty.¹³

There were also strategic market localities, for example, the *horrea* of Nauportus in Pannonia Superior, a *vicus* located by the Ljubljanica River, on the road connecting Aquileia and Emona. This complex was surrounded by defensive walls and contained storage houses, depots and barns, covering an area of 5,500 m². It was in an important commercial location near a major route which had numerous warehouses, among which are the *horrea* of Vienne, in Gallia Narbonensis, which cover an area of 4-6 ha.¹⁴

The main occupation in Dacia was agriculture, as many areas, including the Mureș Valley, the Transylvania Plateau, the Banat Plain and the Oltenia Plain, produced high agricultural yields. The surplus of grain was probably exported in the neighbouring provinces, but there is no evidence of its export to Rome or italic peninsula.¹⁵ The produce would have been used to supply the needs of the provincial army and the eleven cities.

At the present time, there have been no *horrea* discovered in rural locations in Dacia. There is an urban one (56.40 x 20.60 m; area 1,161.84 m²), in Ulpia Traiana Sarmizegetusa,¹⁶ next to a *domus procuratoris* built when

found in *La Baltă-ob.1*, *La Baltă-ob.2*, *Ausele*, and *Cânepeiste* (see: Popa 2011, p. 358-360, fig. 40b).

¹¹ Blăjan 1989, p. 292.

¹² Carcopino 1979, p. 222; Carapellucci 2011, p. 20-27.

¹³ Bukowiecki et al. 2008, p. 212-216, fig. 20.

¹⁴ Horvat 2008, p. 112-113, 115.

¹⁵ Petolescu 2000, p. 239.

¹⁶ Petculescu 1987, p. 72, fig. 2-3; Băeștean, Albulescu 2012, p. 37, fig. 12.

the Flavia Felix Fourth Legion (or some of its troops) camped there, between 106 and 108 AD.¹⁷

Archaeological research at several Roman camps in the Roman Dacia has led to the documentation of granaries or barns. The Roman camp of the Fifth Macedonian Legion in Potaissa had a complex of *horrea* with three compartments. The dimensions are not entirely known, only the external width, which was 38.40 m and presented exterior buttresses.¹⁸ Assuming a ratio of 2:1 between the length and the width, which was typical of *horrea* in this region, the length would have been around 77 m and the area approximately 2,950 m².

A report observed that a typical ratio of length to width in the construction of *horrea* was 2:1 in Germania Superior and Inferior, and 3:1 in Britannia.¹⁹ Such granaries typically occupied approximately 1.5-2% of the area a camp.²⁰ To date, several *horrea* in Roman auxillary camps have been fully or partially researched: Porolissum, Bologa, Buciumi and Cășei in Dacia Porolissensis; Cigmău, Micia and Drobeta (two *horrea*) in Dacia Superior; and Câmpulung - Jidova, Racovița, Răcari and Slăveni in Dacia Inferior.²¹ A *horreum* similar to the one discussed in this paper in terms of structure and planimetry, was found in the *praetentura dextra* of the legionary camp at Lambaesis, in Numidia. Over 1,000 m² in size, it could hold 900 m³ the equivalent of 675 tons²² of grain.²³

During the late Roman period, until the fourth century, there were numerous fortified *villae* (some were real palaces belonging to members of the senatorial order or even to the imperial house), containing *horrea* with the same planimetry which had a strategic role in provisioning the army. Such buildings have been discovered in Romuliana Felix (a palace built by Galerius in Gamzigrad, Serbia), Zaldapa and Abritus (Razgrad, Bulgaria).²⁴

We still do not have sufficient data on the imperial Roman route between Cigmău and Blandiana.²⁵ The *Tabula Peutingeriana* indicates a

¹⁷ For a synthesis of the discussions on the functioning of the camp in Ulpia before the establishment of the colony, see Husar 2002, p. 64-65.

¹⁸ Bărbulescu 1997, p. 36, fig. 18.

¹⁹ Marcu 2009, p. 14.

²⁰ Ibid., p. 31, n. 93.

²¹ We only took into consideration the sure discoveries; see Petculescu 1987, p. 67-72, fig. 1/1, 3-6; 3; Marcu 2009, p. 31, 42-44, 61-63, 94, 126, 127, 134-135, 144, 198, 216, 219, 236, fig. 2, 11, 26.

²² The weight of wheat is 750 kg/m³.

²³ Papi, Martorella 2007, p. 174, 176, fig. 3.

²⁴ Rizos 2013, p. 667, 670, 673-674, fig. 10, 14, 18/2-3.

²⁵ Cristian Ioan Popa discusses the identification of Roman roads in the area of Cugir, Vinerea and Șibot (Alba County) and establishes there was a trade road on the left bank of

segment from the Ulpia Traiana - Apulum section, between *Germizera* and *Apula* ($VIII\ milia\ passuum = 13.30\ km$). Florin Fodorean proposes that in the area around Cigmău, Gelmar, Sărăcsău and Blandiana, the Imperial road was on the right shore of Mureş River.²⁶ The first military survey of Transylvania (1763-1787) (**fig. 2**) shows a Roman road on the left shore of Mureş River, passing next to the site of the *horreum* we present, and continuing to the east, under the names “Drum Trajan” and “Alter Römer Weeg.”²⁷ This Roman road might have branched from the Imperial road, passing through the first terrace of the left shore of Mureş River.

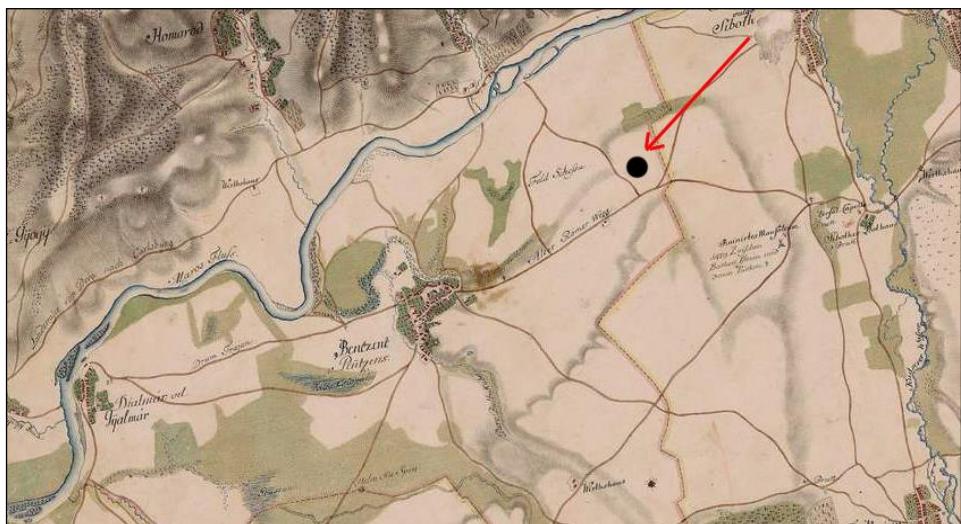


Fig. 2. The layout of the researched area on Habsburg military survey maps (1769-1773)

Could the building we researched be part of a *mansio* or *statio* complex placed on the main road of the province? Both types of settlement were complexes of buildings which served the function of way-stations, sometimes guarded by soldiers (*statio*). Located near the roads, they acted as inns for travellers, *horrea* (barns) for depositing various products, baths (*thermae*), shelters for animals, barns etc. They also served as postal points. Septimius Severus ordered the building of *horrea* in such *stationes*. As well as

Mureş River, parallel with the Imperial road on the right bank (Popa 2011, p. 381-386). We believe there was only a single main strategic road, on the left bank of Mureş.

²⁶ Fodorean 2006, p. 243-244.

²⁷ https://upload.wikimedia.org/wikipedia/commons/9/91/Josephinische_Landaufnahme_pg185.jpg, accessed 17 April 2017; Fodorean 2010, p. 469-470, pl. 5-6.

accommodation, *mansiones* offered a change of horses and the safekeeping of carts in the inner yards of the complex. There were personnel, often slaves, to take care of maintenance. Usually, *mansiones* were placed along the roads at intervals of 30-40 Roman miles and *statio* every 10-12 Roman miles (15-18 km).²⁸

Regarding the dimensions of the *horreum* we studied (external area 539.4 m²; internal area - 473.6 m²) it is the third largest in Dacia, after those from Ulpia Traiana Sarmizegetusa and Potaissa. It is larger than those found in the auxiliary camps of the province,²⁹ but however it had a lower stocking volume due to the lack of inner partitioning.

Carefully analysing its structure, we concluded that the inner pillars, along with the longitudinal walls, sustained a wooden platform serving as place to deposit hay for the animals lodged at the way-station. We applied data from Alexandru Gudea's work, with reference to the food requirements of the horses and beasts of burden used by the Roman army in Dacia. According to Gudea, war horses needed 10 kg of hay per day. The cavalry troops from the camp in Micia, *ala I Hispanorum Campagonum*, had 528 war horses and 64 beasts of burden. 500 horses would need 185 tons of hay/year.³⁰

Our calculation took in consideration the inner surface of the barn, 473.60 m². If we imagine the existence of a central inner corridor for accessing hay, 29.60 m in length and a conventional width of 3 m (necessary for cart access), the resultant area would be 88.80 m². Subtracting this area from the total inner area of the barn, results an effective space of 384.80 m² for storage. Today, the weight of a cubic meter of hay is typically estimated at 60-80 kg. The calculation is developed as follows: we multiply the height (conventionally 3 m) with the storage area, 384.80 m², giving us a volume of 1,154.4 m³. If 1 m³ can contain 60 kg hay then the *horreum* could have held a total of 69,264 kg - approximately 70 tons - of hay.

To feed one horse for the cold period of the year (approximately 150 days/year), 1.5 tons of hay is required. According to the above calculation,

²⁸ MacLean 2004, p. 7, 12-13; Panaite 2004, p. 186; Bărbulescu 2005, p. 23-26, map VI.

²⁹ *Horrea* from the auxiliary camps have the following dimensions: Bologa (285 m²), Buciumi (338 m²), Căsei, *horreum* I, stage II (437.25 m²), *horreum* II, stage II (365 m²) in Dacia Porolissensis; Cigmău, *horreum* I (507.50 m²), *horreum* II (299.25 m²), Micia (290 m²), Drobeta (two *horrea* of 276 m²) in Dacia Superior; Câmpulung - Jidova (445.40 m²), Racoviță (Praetorium) (477 m²), Răcari (180 m²), Slăveni (497 m²) in Dacia Inferior (Petculescu 1987, p. 67-72, fig. 1/1, 3-6; 3; Marcu 2009, p. 31, 42-44, 61-63, 126-127, 134-135, 144, 198, 216, 219, 236, fig. 11, 26).

³⁰ Gudea 2009, p. 13, 17.

this barn could store the yearly food supply for 45-46 horses.³¹ Thus, the storage capacity of this *horreum* is reduced reported to its surface. It could not satisfy the annual requirements of a cavalry troop from an auxiliary camp, but it was enough for a postal station (*mansio*). The weight of wheat would have been too much for a building without pillars for support on the inside. For this area approximately 621.60 tons of wheat might have been stored.

We do not exclude the possibility that this *horreum* might have simply belonged to a farm (*villae rusticae*) of a landlord living in Ulpia Traiana Sarmizegetusa or Apulum.³² It is considered that the *territorium* of the first city of Apulum, *municipium Aurelium Apulense/colonia Aurelia Apulensis*, spread to the south-west, extending almost as far as Germisara.³³ It would be the same possibility for the military territory (*prata legionis*) of the Thirteenth Gemina Legion, based on the tegular materials with the name of the legion discovered close to Germisara.³⁴ In any case, these areas were cultivated by soldiers or the civil population³⁵ and had agricultural lands, meadows, forests as necessary resources for the troops.³⁶ On these military *territoria* were farms that sold products to the legion.³⁷

The location of the barn from Băcăinți-Obreje in the rich valley of Mureș River, with access to a road connecting Ulpia Traiana Sarmizegetusa and Imperial Apulum may indicate it was part of a *mansio* or *statio*, but until new archaeological evidence emerges, we cannot exclude the possibility that the the *horreum* we discovered was part of a farm complex (*villa rustica*).

Bibliographical Abbreviations

- | | |
|----------------|--|
| Andrițoiu 1979 | - Ioan Andrițoiu, <i>Contribuții la repertoriul arheologic al județului Hunedoara</i> , in <i>Sargetia</i> , XIV, 1979, p. 15-34. |
| Andrițoiu 1986 | - Ioan Andrițoiu, <i>Contribuții la cunoașterea culturii Nouă în sud-vestul Transilvaniei</i> , in <i>Thraco-Dacia</i> , VII, 1986, 1-2, p. 31-45. |

³¹ The same quantity of hay/day was necessary for beasts of burden, while the needs of cows were smaller.

³² There is evidence for 22 *villae rusticae* in Dacia. They were typically of 50-100 ha and usually belonged to the urban *territoria*. See Husar 2002, p. 293-294; Gudea 2008, p. 115-122, annexes VII-XII; Benea 2016, p. 214.

³³ Ardevan 1998, p. 254.

³⁴ Moga 1985, p. 76.

³⁵ Ptolescu 2000, p. 239.

³⁶ Mason 1988, p. 164-165; Benea 2016, p. 213.

³⁷ Mason 1988, p. 166.

- Andrițoiu, Vasilev 1990-1993 - Ioan Andrițoiu, Valentin Vasilev, *Câteva considerații privind cultura Nouă în Transilvania*, in *Apulum*, XXVII-XXX, 1990-1993, p. 121-146.
- Ardevan 1998 - Radu Ardevan, *Viața municipală în Dacia Română*, Timișoara, 1998.
- Bărbulescu 2005 - Mihai Bărbulescu (ed.), *Atlas-dicționar al Daciei romane*, Cluj-Napoca, 2005.
- Băeștean, Albulescu 2012 - Gică Băeștean, Tiberiu Albulescu, *Monografie istorico-etnografică a localității Sarmizegetusa*, Deva, 2012.
- Bărbulescu 1997 - Mihai Bărbulescu, *Das Legionslager von Potaissa (Turda)/Castrul Legionar de la Potaissa (Turda)*, Zalău, 1997.
- Bâltâc et al. 2013 - Adela Bâltâc, Paul Damian, Cătălina Neagu, Corina Nicolae, Alina Mușat, Alexandra Dolea, Ionuț Bocan, Ioana Paraschiv-Grigore, Eugen Paraschiv-Grigore, Bogdan Voicu, Virgil Apostol, Alexandru Rațiu, Mihai Vasile, Irina Ene, Emil Dumitrașcu, Marius Streinu, Andra Samson, Daniel Ene, Mihai Duca, Edmond Ene, Sebastian Dobrotă, Florentin Munteanu, Nicolae Stoica, Gică Băeștean, *Şibot, com. Şibot, jud. Alba. Punct: În Obrej (autostrada Orăştie-Sibiu, lot 1, Sit 5, km 9+650 - 10+150)*, in *CCA. Campania 2012*, Jassy, 2013, p. 230-232.
- Benea 2016 - Doina Benea, *Istoria Banatului. Antichitatea*, second edition, Bucharest, 2016.
- Blăjan 1989 - Mihai Blăjan, *Contribuții la repertoriul arheologic al așezărilor rurale antice (secolele II-III) din Dacia română*, in *Apulum*, XXVI, 1989, p. 283-333.
- Bukowiecki et al. 2008 - Évelyne Bukowiecki, Nicolas Monteix, Corinne Rousse, *Ostia Antica: Entrepôts d'Ostie et de Portus. Les Grandi Horrea à Ostie*, in *MEFRA*, 1, 2008, p. 211-216.
- Carapellucci 2011 - Andrea Carapellucci, *Gli Horrea. Struttura, organizzazione e funzioni dei magazzini nella Roma antica*, in *FUrb*, February 2011, p. 20-27.
- Carcopino 1979 - Jérôme Carcopino, *Viața cotidiană la Roma la apogeu Imperiului*, Bucharest, 1979.
- Cociș 2004 - Sorin Cociș, *Fibulele din Dacia romană/The Brooches from Roman Dacia*, Cluj-Napoca, 2004.
- Fodorean 2006 - Florin Fodorean, *Drumurile din Dacia romană*, Cluj-Napoca, 2006.
- Fodorean 2010 - Florin Fodorean, *Roman Fortresses and Roads on Habsburgic and Austro-Hungarian Maps*, in Horea Pop, Ioan Bejinariu, Sanda Băcuet-Crișan, Dan Băcuet-Crișan (eds), *Identități culturale locale și regionale în context european. Studii de arheologie și antropologie istorică. In memoriam Alexandru V. Matei*, Cluj-Napoca, 2010, p. 469-478.
- Gudea 2008 - Nicolae Gudea, *Așezările rurale din Dacia Română (106-275). Schiță pentru o istorie a agriculturii și satului daco-roman*, Oradea, 2008.
- Gudea 2009 - Alexandru Gudea, *Soldatul roman în Dacia (106-275 p.Chr.). Studiu de arheozoologie privind creșterea animalelor și regimul alimentar în armata romană*, Cluj-Napoca, 2009.

- Horvat 2008 - Jana Horvat, *Early Roman horrea at Napportus*, in MEFRA, 120, 2008, 1, p. 111-121.
- Husar 2002 - Adrian Husar, *Din istoria Daciei romane. I. Structuri de civilizație*, Cluj-Napoca, 2002.
- MacLean 2004 - Sarah MacLean, *A British mansio? An Examination of the Roadside Settlement of Tripontium*, unpublished undergraduate dissertation, 2004.
- Marcu 2009 - Felix Marcu, *Organizarea internă a castrelor din Dacia*, Cluj-Napoca, 2009.
- Mason 1988 - David J. P. Mason, *Prata Legionis in Britain*, in *Britannia*, 19, 1988, p. 163-189.
- Moga 1985 - Vasile Moga, *Din istoria militară a Daciei romane. Legiunea XIII Gemina*, Cluj-Napoca, 1985.
- Oldenstein 1976 - Jürgen Oldenstein, *Zur Ausrüstung römischer Auxiliareinheiten. Studien zu Beschlägen und Zierat an der Ausrüstung der römischen Auxiliareinheiten des obergermanisch-raetischen Limesgebietes aus dem zweiten und dritten Jahrhundert n.Chr.*, in BerRGK, 57, 1976, p. 49-284.
- Panaite 2004 - Adriana Panaite, *Villa rustica or mansio?*, in EDR, s.n., XII/I, 2004, p. 185-201.
- Papi, Martorella 2007 - Emanuele Papi, Francesco Martorella, *I grandi della Numidia*, in *L'Afrique du Nord de la protohistoire à la conquête arabe / AntAfr*, 43, 2007, p. 171-186.
- Petculescu 1987 - Liviu Petculescu, *Roman Military Granaries in Dacia*, in SJ, 43, 1987, p. 66-76.
- Petolescu 2000 - Constantin C. Petolescu, *Dacia și Imperiul Roman de la Burebista până la sfârșitul Antichității*, Bucharest, 2000.
- Popa 2011 - Cristian Ioan Popa, *Valea Cugirului din preistorie până în zorii epocii moderne*: Monumenta Archaeologica et Historica, Cluj-Napoca, 2011.
- Rizos 2013 - Efthymios Rizos, *Centres of the Late Roman Military Supply Network in the Balkans: A Survey of horrea*, in JRGZM, 60, 2013, p. 659-696.
- Tudor 1968 - Dumitru Tudor, *Orașe, târguri și sate în Dacia română*, Bucharest, 1968.



1



2

Fig. 3. Băcăinți-Obreje. Aspects from the excavation in the *horreum* area



Fig. 4. Băcăinți-Obreje. Aspects from the excavation in the *horreum* area

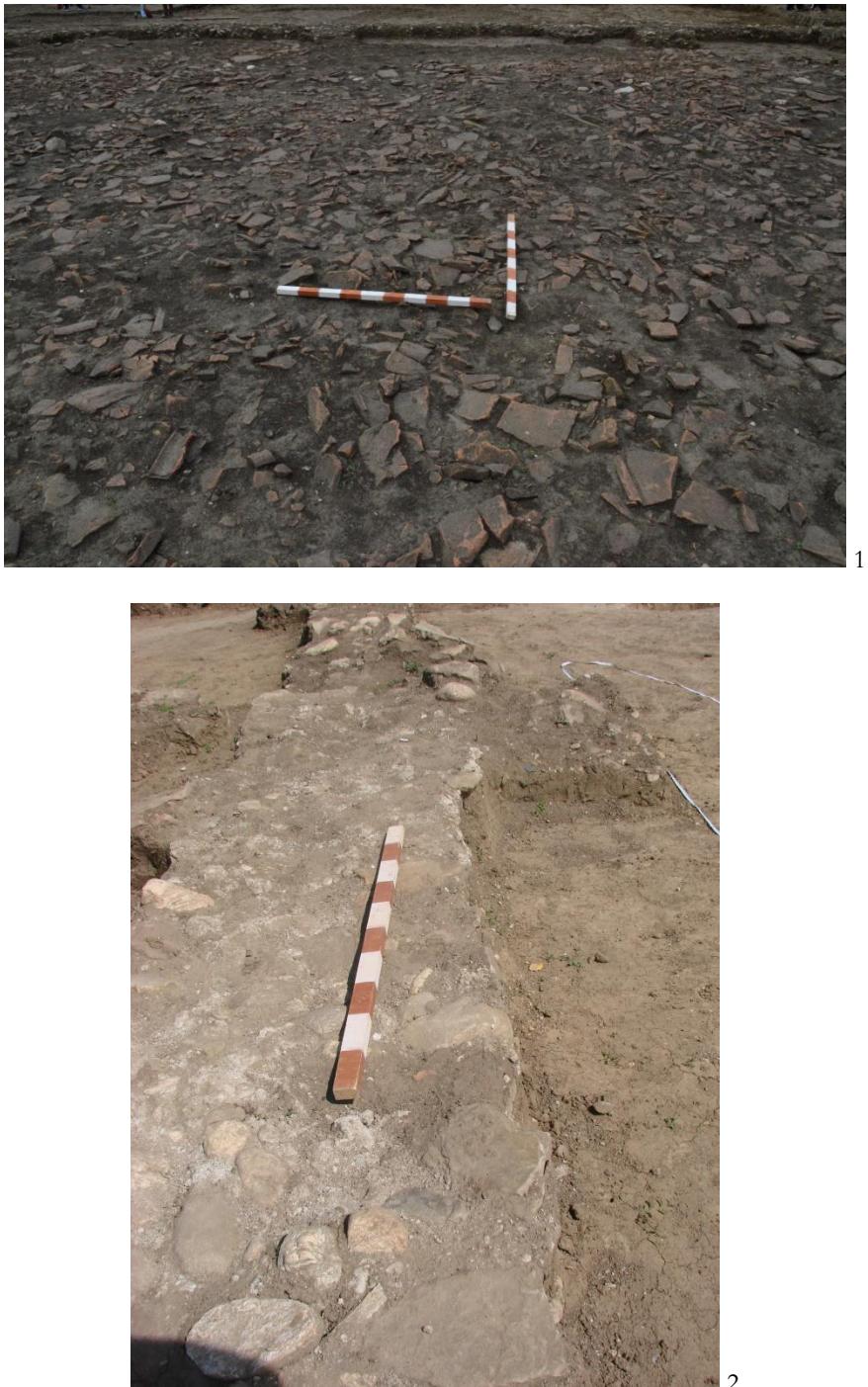


Fig. 5. Băcăinți-Obreje. Aspects from the excavation in the *horreum* area



Fig. 6. Băcăinți-Obreje. Aerial photo of the *horreum* (by Călin Şuteu)



Fig. 7. Băcăinți-Obreje. Discovered archaeological materials: bronze fibula (1); iron fibula (2); bronze buckle (3); bronze plaque (4); iron key (5) and iron knife (6)

LISTA ABREVIERILOR

- AAR-SI** - Analele Academiei Române. Memoriile Secțiunii Istorice. Academia Română. București.
- ActaArchHung** - Acta Archaeologica. Academiae Scientiarum Hungaricae. Budapest.
- ActaHASH** - Acta Historica Academiae Scientiarum Hungaricae. Budapest.
- ActaMN** - Acta Musei Napocensis. Muzeul de Istorie a Transilvaniei. Cluj-Napoca.
- Adevărul** - Adevărul. București.
- AE** - Archaeologai Értesítő a Magyar régészeti, művészeti-történeti és éremtani társulat tudományos folyóirata. Budapest.
- AF** - Altorientalische Forschungen. Institut für Archäologische Wissenschaften, Abteilung Vorderasiatische Archäologie. Berna.
- AH** - Archaeologia historica. Masarykova univerzita, Filozofická fakulta. Brno.
- AHY** - Austrian History Yearbook. Center for Austrian Studies. Minneapolis MN.
- AIEFCB** - Anuarul Institutului de Etnografie și Folclor „Constantin Brăiloiu”. Academia Română, Institutul de Etnografie și Folclor „Constantin Brăiloiu”. București.
- AIAC** - Anuarul Institutului de Istorie și Arheologie Cluj-Napoca. (este continuat de AIIGB).
- AIIAI/AIIX** - Anuarul Institutului de Istorie și Arheologie „A. D. Xenopol” Iași (din 1990 Anuarul Institutului de Istorie „A. D. Xenopol” Iași).
- AIIGB** - Anuarul Institutului de Istorie „George Barițiu” Cluj-Napoca. (continuă AIAC).
- AIIN** - Anuarul Institutului de Istorie Națională. Cluj-Sibiu.
- AISC** - Anuarul Institutului de Studii Clasice. Cluj.
- AJPA** - American Journal of Physical Anthropology. The Official Journal of the American Association of Physical Anthropologists. Baltimore.
- Alba-Iulia** - Alba-Iulia. Alba Iulia.
- Aluta** - Aluta. Studii și comunicări - Tanulmányok és Közlemények. Sfântu Gheorghe.
- AM** - Arheologia Moldovei. Institutul de Istorie și Arheologie „A. D. Xenopol” Iași.
- AMM** - Acta Moldaviae Meridionalis. Muzeul Județean Vaslui.
- Anatolia Antiqua** - Anatolia Antiqua. L’Institut Français d’Études Anatoliennes d’Instanbul.
- AnB** - Analele Banatului. Muzeul Național al Banatului (serie nouă). Timișoara.
- Anistoriton** - Anistoriton / Ανιστόρητον. History and Archaeology Journal. Digital Journal (Grecia).

Lista abrevierilor

- Annales** - Annales. Économies, Sociétés, Civilisations. École des Hautes Études en Sciences Sociales. Paris.
- Antaeus** - Antaeus. Communications ex Instituto Archaeologico Academiae Scientiarum Hungaricae. Budapest.
- AntAfr** - Antiquités africaines. Université de Provence. Paris.
- AnUB-ŞP** - Analele Universității din București. Seria Științe Politice. Universitatea din București.
- AO** - Arhivele Olteniei. Serie nouă. Institutul de Cercetări Socio-Umane. Craiova.
- Apulum** - Apulum. Acta Musei Apulensis. Muzeul Național al Unirii Alba Iulia.
- ArhMed** - Arheologia Medievală. Reșița. Cluj-Napoca.
- ArhVestnik** - Arheološki Vestnik. Inštitut za arheologijo. Ljubljana.
- Arts of Asia** - Arts of Asia. The Asian Arts & Antiques Magazine. Hong Kong.
- Astra Sabesiensis** - Astra Sabesiensis. Despărțământul Astra „Vasile Moga” Sebeș.
- AUASH** - Annales Universitatis Apulensis. Series Historica. Universitatea „1 Decembrie 1918” din Alba Iulia.
- Banatica** - Banatica. Muzeul de Istorie al județului Caraș-Severin. Reșița.
- BAR** - British Archaeological Reports (International Series). Oxford.
- BB** - Bibliotheca Brukenthal. Muzeul Național Brukenthal. Sibiu.
- BCH** - Bulletin de correspondance hellénique. L’Institut de correspondance hellénique d’Athènes. Atena.
- BCSS** - Buletinul Cercurilor Științifice Studențești. Universitatea „1 Decembrie 1918” din Alba Iulia.
- BECh** - Bibliothèque de l’école des chartes. Revue d’érudition. Paris.
- BerRGK** - Bericht der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts. Frankfurt pe Main.
- BHAB** - Bibliotheca Historica et Archaeologica Banatica. Muzeul Banatului Timișoara.
- BJS** - The British Journal of Sociology. London School of Economics and Political Science. University of London.
- BMA** - Bibliotheca Musei Apulensis. Muzeul Național al Unirii Alba Iulia.
- BOR** - Biserica Ortodoxă Română. Patriarhia Română. București.
- Boabe de grâu** - Boabe de grâu. Revistă de cultură. București.
- BR** - Budapest Régiségei. Budapesti Történeti Múzeum. Budapest.
- Britannia** - Britannia: A Journal of Romano-British and Kindred Studies. Society for the Promotion of Roman Studies. Londra.
- Brukenthal** - Brukenthal. Acta Musei. Muzeul Național Brukenthal. Sibiu.
- BS** - Balkan Studies. Institute for Balkan Studies in Thessaloniki. Salonic.
- BSNR** - Buletinul Societății Numismatice Române. București.
- BTh** - Bibliotheca Thracologica. Institutul Român de Tracologie. București.
- BudRég** - Budapest Régiségei. Budapesti Történeti Múzeum. Budapest.

CAC	- Central Asia and Caucasus. Institute for Central Asian and Caucasian Studies. Luleå (Sweden). Institute of Strategic Studies of the Caucasus. Baku (Azerbaijan).
Carpații	- Carpații: Vânătoare, pescuit, chinologie. Cluj.
Castrum	- Castrum. A Castrum Bene Egyesület Hírlevele. Budapest.
CCA	- Cronica cercetărilor arheologice. București.
Cercetări arheologice	- Cercetări arheologice. Muzeul Național de Istorie a României. București.
Chronica	- Chronica: annual of the Institute of History. University of Szeged.
Cibinium	- Cibinium. Analele Muzeului Etnografic „ASTRA”. Complexul Muzeal „ASTRA”. Sibiu.
CN	- Cercetări Numismatice. Muzeul Național de Istorie a României. București.
CNA	- Cronică Numismatică și Arheologică. Foaie de informații a Societății Numismatice Române. București.
CP	- Classical Philology. A Journal Dedicated to Research in Classical Antiquity. Chicago.
Crisia	- Crisia. Culegere de materiale și studii. Muzeul Țării Crișurilor. Oradea.
Dacia	- Dacia. Recherches et découvertes archéologiques en Roumanie. Nouvelle série: Revue d'archéologie et d'histoire ancienne. București.
Denarius	- Denarius. Slovenské národné múzeum - historické múzeum. Bratislava.
Der Unterwald	- Der Unterwald. Sebeș.
DolgCluj	- Dolgozatok az Erdélyi Nemzeti Múzeum Érem - és Régiségtárából. Kolosvár (Cluj).
EDR	- Ephemeris dacoromana. Annuario dell'Accademia di Romania. Roma.
EHQ	- European History Quarterly. Sage Publications. New York.
EO	- Etnograficheskoye obozreniye. Institut etnologii i antropologii RAN. Moscova.
Erdély Múzeum	- Erdély Múzeum. Erdélyi Múzeum-Egyesület. Cluj-Napoca.
Études balkaniques	- Études balkaniques. Cahiers Pierre Belon. Association Pierre Belon. Paris.
European Archaeology	- European Archaeology/online. București.
FBW	- Fundberichte aus Baden-Württemberg. Stuttgart.
FI	- File de Istorie. Muzeul de Istorie Bistrița (continuată de <i>Revista Bistriței</i>).
FolArch	- Folia Archaeologica. Magyar Történeti Múzeum. Budapest.
FUrb	- Forma Urbis. Roma.
Gasırlar avazy	- Gasırlar avazy. Ekho vekov. Kazan.
Germania	- Germania, Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts. Frankfurt am Main.
GM	- Golos minuvshego. Federal'noye gosudarstvennoye byudzhetnoye obrazovatel'noye uchrezhdeniye vysshego obrazovaniya Kubanskiy gosudarstvennyy universitet. Krasnodar.
Godišnjak	- Godišnjak. Jahrbuch Knjiga. Sarajevo-Heidelberg.

Lista abrevierilor

HEI	- History of European Ideas. International Society for the Study of European Ideas. Londra.
Hierasus	- Hierasus. Muzeul Județean Botoșani.
Hiperboreea Journal	- Hiperboreea Journal. Societatea de Istorie Balcanică. București.
HOMÉ	- A Herman Ottó Múzeum Évkönyve. Miskolc.
HSCP	- Harvard Studies in Classical Philology. Harvard University. Cambridge (SUA).
IIER	- Issues in Educational Research. Western Australian Institute for Educational Research Inc. New South Wales, Australia.
IJESE	- International Journal of Environmental & Science Education. Kazan.
IJL	- International Journal of Linguistics. Makrothink Institute. Las Vegas.
IPH	- Inventaria Praehistorica Hungarie. Budapest.
Istoricheskie	- Istoricheskie, filosofskie, politicheskie i yuridicheskie nauki, kulturologiya i iskusstvovedenie. Voprosy teorii i praktiki. Tambov.
Izvestiya ASU	- Izvestiya. Altayskiy gosudarstvenny universitet. Barnaul.
Jászkunság	- Jász-Nagykun-Szolnok Megyei Tudományos Egyesület. Szolnok.
JHE	- Journal of Human Evolution. Elsevier.
JRGZM	- Jahrbuch des Römisch-Germanischen Zentralmuseums zu Mainz.
Közlemények	- Közlemények az Erdélyi Nemzeti Múzeum Érem - és Régiségtárából. Cluj.
KST	- Kazi Sonuçları Toplantısı. Ankara.
Kubaba	- Kubaba. Faculdade de Ciências Sociais e Humanas, Universidade Nova de Lisabona.
Lumea nouă	- Lumea nouă. București.
Lupta	- Lupta. Iași.
Mannus	- Mannus. Gesellschaft für Deutsche Vorgeschichte. Leipzig.
Maqarnas	- Muqarnas Online. An Annual on the Visual Cultures of the Islamic World. Cambridge.
Marisia	- Marisia. Muzeul Județean Târgu Mureș.
MCA	- Materiale și cercetări arheologice. București.
ME	- Memoria Ethnologica. Centrul Județean pentru Conservarea și Promovarea Culturii Tradiționale Maramureș. Baia Mare.
MEFRA	- Mélanges de l'École française de Rome - Antiquité. Roma.
MEJSR	- Middle-East Journal of Scientific Research. International Digital Organization for Scientific Information. Deira, Dubai.
MFMÉ	- A Móra Ferenc Múzeum Évkönyve. Studia Archaeologica. Szeged.
Mir nauki	- Mir nauki, kulturi, obrazovania. Gorno-Altaysk.
MN	- Muzeul Național. Muzeul Național de Istorie a României. București
Mots	- Mots. Les langages du politique. ENS Editions. Paris.
Muzeológia	- Muzeológia a kultúrne dedičstvo. Univerzita Komenského v Bratislave.
Múzeum	- Slovenské národné múzeum. Bratislava.

Natura	- Natura. Revistă pentru răspândirea științei. București.
NK	- Národní knihovna: knihovnická revue. Národní knihovna České republiky. Praga.
Numizmatika	- Numizmatika. Slovenská numizmatická spoločnosť. Bratislava.
PA	- Patrimonium Apulense. Direcția Județeană pentru Cultură Alba. Alba Iulia.
PBF	- Prähistorische Bronzefunde. München.
PolSci	- Romanian Journal of Political Science. Societatea Academică din România. București.
Pontica	- Pontica. Muzeul de Istorie Națională și Arheologie. Constanța.
PQCS	- Philippine Quarterly of Culture and Society. University of San Carlos. Cebu.
PZ	- Prähistorische Zeitschrift. Deutsche Gesellschaft fuer Anthropologie, Ethnologie und Urgeschichte, Institut für Prähistorische Archäologie. Berlin.
Rațiunea	- Rațiunea. Revistă bilunară de liberă cugetare. București.
RB	- Revista Bistriței. Complexul Muzeal Bistrița-Năsăud. Bistrița (continuă File de Istorie).
RES	- Review of European Studies. Canadian Center of Science and Education. Toronto.
RevHisto	- Revista de Historiografía. Instituto de Historiografía Julio Caro Baroja. Universidad Carlos III de Madrid.
RHA	- Revue historique des armées. Ministère de la Défense. Paris.
RHSEE/RESEE	- Revue historique du sud-est européen. Academia Română. București, Paris (din 1963 Revue des études sud-est européennes).
RI	- Revista de Istorie (din 1990 Revista istorică). Academia Română. București.
RIR	- Revista istorică română. Institutul de Istorie Națională din București.
RMM-MIA	- Revista muzeelor și monumentelor. Monuments Istoriques et de l'Art. București.
Romantisme	- Romantisme. Revue du dix-neuvième siècle. Editeur Armand Colin. Paris.
România liberă	- România liberă. București.
Rossiyskaya istoriya	- Rossiyskaya istoriya. Akademicheskiy nauchno-izdatel'skiy, proizvodstvenno-poligraficheskiy i knigorasprostranitel'skiy tsentr Nauka. Moscova.
RRH	- Revue Roumaine d'Histoire. Academia Română. București.
RRSE	- Revista română de studii eurasiatice. Centrul de Studii Eurasiatice, Universitatea „Ovidius” Constanța.
SA	- Sociological Analysis. Oxford University Press. Oxford.
SAA	- Studia Antiqua et Archaeologica. Universitatea „Alexandru Ioan Cuza” din Iași.
SAI	- Studii și articole de istorie. Societatea de Științe Istorice și Filologice a RPR. București.
SArcheologiczne	- Sprawozdania Archeologiczne. Instytut Archeologii i Etnologii PAN. Cracovia.

Lista abrevierilor

Sargetia	- Sargetia. Acta Musei Devensis. Muzeul Civilizației Dacice și Romane Deva.
SC	- Studii și comunicări. Asociația Folcloristilor și Etnografilor din județul Sibiu (din 1992 devine Studii și Comunicări de Etnologie).
SCB	- Studii și cercetări de bibliologie. Academia RPR. București.
SCIV(A)	- Studii și cercetări de istoria veche. București (din 1974, Studii și cercetări de istorie veche și arheologie).
SCN	- Studii și Cercetări de Numismatică. Institutul de Arheologie „Vasile Pârvan” București.
SJ	- Saalburg Jahrbuch. Bericht des Saalburg Museum. Mainz am Rhein.
SJAHHSS	- Scholars Journal of Arts. Humanities and Social Sciences. Scholars Academic and Scientific Publishers (SAS).
SlovArch	- Slovenská Archeológia. Nitra.
SlovNum	- Slovenská numizmatika. Národný numizmatický komitét Slovenskej republiky a Archeologický ústav SAV. Nitra.
SM	- Svobodnaya mysl. Obshchestvo s ograničennoy otvetstvennost'yu Politizdat. Moscova.
SMIM	- Studii și materiale de istorie modernă. Institutul de Istorie „Nicolae Iorga” al Academiei Române. București.
SMIMed	- Studii și materiale de istorie medie. Institutul de Istorie „Nicolae Iorga” al Academiei Române. București.
Socialismul	- Socialismul. București.
SP	- Studii de Preistorie. Asociația Română de Arheologie. București.
SS	- The Social Sciences. Western Social Association. Dubai.
Stâna	- Stâna. Revistă profesională și de cultură. Organ al oierilor din întreaga țară. Poiana Sibiului.
Steaua	- Steaua: literară, artistică și culturală. Uniunea Scriitorilor din România. Cluj-Napoca.
StudiaTC	- Studia Theologia Catholica. Universitatea „Babeș-Bolyai” Cluj-Napoca.
StudiaUBBH	- Studia Universitatis Babeș-Bolyai. Series Historia. Universitatea „Babeș-Bolyai” Cluj-Napoca.
Studii	- Studii. Revistă de istorie. (din 1974 Revista de istorie și din 1990 Revista istorică). Academia Română. București.
Suceava	- Anuarul Muzeului Județean Suceava.
SUCH	- Studia Universitatis Cibiniensis, Serie Historica. Universitatea „Lucian Blaga” Sibiu.
Syria	- Syria. Archéologie, art et histoire. Revue d'art oriental et d'archéologie. Institut français du Proche-Orient.
Száزادok	- Századok. A Magyar Történelmi Társulat folyóirata. Budapest.
TAD	- Türk Arkeoloji Dergisi. Ankara.
Telegraphul	- Telegraphul. București.
Terra Sebus	- Terra Sebus. Acta Musei Sabesiensis. Muzeul Municipal „Ioan Raica” Sebeș.
Thraco-Dacica	- Thraco-Dacica. Institutul Român de Tracologie. București.
Transilvania	- Transilvania. Centrul Cultural Interetnic Transilvania. Sibiu.

- Tyragetia** - Tyragetia. Muzeul Național de Arheologie și Istorie a Moldovei. Chișinău.
- UPA** - Universitätsforschungen zur Prähistorischen Archäologie. Berlin.
- Vestnik Moskovskaya** - Vestnik Moskovskaya gosudarstvennaya khudozhestvenno-promyshlennaya akademiya imeni S. G. Stroganova. Moscova.
- Vestnik Omskogo** - Vestnik Omskogo universiteta. Seriya Istoricheskiye nauki. Omskij Gosudarstvennyj Universitet. Omsk.
- Vestnik Tatarskogo** - Vestnik Tatarskogo gosudarstvennogo gumanitarno-pedagogicheskogo universiteta. Filologija i kul'tura. Kazan.
- VI** - Voprosy istorii. Institut russkoy istorii Rossiyskoy akademii nauk. Moscova.
- VF** - Voprosy filosofii. Izdatel'stvo «Nauka». Moscova.
- VTT** - Vesprémi Történelmi Tár a Veszprémi Megyei Múzeumi Igazgatóság kiadványa. Veszprém.
- WASJ** - World Applied Sciences Journal. International Digital Organization for Scientific Information. Deira, Dubai.
- Xenopoliana** - Xenopoliana. Buletin al Fundației Academice „A. D. Xenopol” Iași.
- Ziridava** - Ziridava. Muzeul Județean Arad.