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## AUREL RUSTOIU LA A 60-A ANIVERSARE

Cu ocazia împlinirii a 60 de ani de către reputatul arheolog dr. habil. **Aurel Rustoiu**, aducem un omagiu sincer unei personalități care a marcat decisiv cercetarea arheologică din România și din spațiul central și est-european.

Format încă dinaintea studenției sub îndrumarea regretatului arheolog Florin Medeț, el și-a desăvârșit pregătirea la Universitatea „Babeș-Bolyai” din Cluj-Napoca, în cadrul Facultății de Istorie și Filosofie. Lucrarea sa de doctorat, publicată în 1996 și dedicată metalurgiei bronzului la daci, rămâne un reper internațional, completată exemplar de analiza fibulelor din Dacia preromană, apărută în 1997 și considerată și astăzi un model de analiză tipologică și contextuală.



Carierea sa științifică este legată de Institutul de Arheologie și Istoria Artei din Cluj-Napoca, unde din 2017 este doctor habilitat și conducător de doctorate, dezvoltând direcții metodologice inovatoare și colective de cercetare performante. Este, de asemenea, profesor asociat la Universitatea de Vest din Timișoara, implicându-se activ în formarea noilor generații de cercetători.

Aurel Rustoiu s-a remarcat și printr-o susținută activitate arheologică de teren. A coordonat cercetări arheologice importante în țară, dintre care cele mai semnificative au fost cele de la Sighișoara - *Wietenberg* și Divici - *Grad*, dar și în străinătate, la Solotvino și Bila Ţerkova, în Ucraina Transcarpatică. În prezent coordonează proiecte de cercetare arheologică sistematică în colaborare cu Muzeul Național al Unirii din Alba Iulia, de la cimitirele din epoca fierului de la Sâncraia - *Darvas* și la cetățile dacice de la Cugir și Căpâlna. A fost membru, coordonator și mentor în numeroase proiecte de cercetare și granturi naționale și internaționale, construind punți durabile între instituții, generații, echipe și școli arheologice.

Este autor a 12 cărți, editor al mai multor volume de studii și semntar a peste 150 de articole, studii și note științifice, multe dintre ele publicate în reviste de prestigiu internațional. Studiile sale despre comunitățile dacice, celtice și nord-tracice rămân repere indispensabile pentru oricine abordează problematica interacțiunilor etno-culturale din prima epocă a fierului și până la Roma imperială. Prin publicațiile sale, Aurel Rustoiu a contribuit decisiv la reînnoirea metodologică a disciplinei și la afirmarea arheologiei românești în dialogul științific european. De-a lungul carierei editoriale și științifice a colaborat cu numeroși cercetători din țară și străinătate, între care Mariana E. Egri, Iosif Vasile Ferencz, Sándor Berecki, Andreea M. Drăgan, Andrei V. Georgescu, Adrian C. Căsălean, Gabriel T. Rustoiu, Valeriu Sîrbu, J. Vincent S. Megaw, Matthew M. McCarty, Călin Cosma, Gelu Florea, Horea D. Pop, Adrian Ursuțiu, Gabriela Gheorghiu, Valentin Vasiliev, Eduard A. Balaguri, Ioan Andrițoiu, Ion Horațiu Crișan, Marian Gumă, Vasile Moga, Corneliu Gaiu, Caius Săcărin, Alexandru Szentmiklósi, Eduard M. Nemeth, Alexandru Gudea, Dumitru Gh. Tamba, Emilian Teleagă, Cristian I. Popa, Cristinel Plantos, Gabriel D. Balteș, Alexandra Comșa, Mathilda Takács, Florin Gogâltan, Sorin Cociș, Constantin Inel, Valentin Cetean, Gabriel Crăciunescu, Corina Turc și Claudiu Lisovski-Cheleşanu.

Aurel Rustoiu a participat la numeroase conferințe și simpozioane internaționale, printre care cele mai importante ar fi cele de la Roma, Italia (2008); Heidelberg, Germania (2009); Cambridge, UK (2011, 2015); Carnuntum, Austria (2012); Rzeszów, Polonia (2012); Pilsen, Cehia (2013); Sofia, Bulgaria (2013); Manching, Germania (2014); Istanbul, Turcia (2014); Barcelona, Spania (2018); Praga, Cehia (2018); Chișinău, Republica Moldova (2018); Stará Lesná, Slovacia (2019); King's College London, UK (2019), Mikulov, Cehia (2022); Budapesta, Ungaria (2022); Jičín, Cehia (2023); Žilina, Slovacia (2024); Zlín, Cehia (2025).

Este membru în consiliul științific al Muzeului Național Brukenthal din Sibiu, Muzeului Banatului din Timișoara și Muzeului Satului Bănățean Timișoara, și a fost, de asemenea, implicat activ în consilii și comisii naționale precum CNATDCU sau Comisia Națională de Arheologie, contribuind prin experiență, echilibru și autoritate profesională la definirea standardelor în cercetare și patrimoniu. Din 2019 este membru de onoare al Institutului Național de Arheologie cu Muzeu al Academiei Bulgare de Științe, în semn de recunoaștere a contribuției sale la dezvoltarea arheologiei în Bulgaria, iar în același an a fost distins și cu Premiul George Barițiu al Academiei Române.

Prin deschidere interdisciplinară, cultură vastă și eleganță intelectuală, Aurel Rustoiu a creat o școală de gândire recunoscută pentru acuratețe, creativitate și spirit critic. În același timp, a avut curajul intelectual de a ieși din tiparele metodologice convenționale, promovând o arheologie autentică, atentă

la identități, mobilități, cauzalitatea mișcărilor de populații și dinamica interacțiunilor culturale. Această deschidere conceptuală a stimulat reflecția critică și a oferit disciplinei repere moderne de interpretare.

Aurel Rustoiu a organizat conferințe și workshop-uri la Cluj-Napoca, Alba Iulia și, mai recent, la Timișoara, contribuind la dinamizarea dialogului științific internațional. De asemenea, este activ în promovarea patrimoniului arheologic prin prezentări de popularizare și contribuții la volume destinate publicului cultivat mai larg, aducând rezultatele cercetării arheologice mai aproape de comunitate.

Un capitol aparte al activității sale îl reprezintă mentoratul. Generații întregi de arheologi – de la cercetători tineri aflați la început de drum până la specialiști astăzi deplin afirmați – îi datorează nu doar îndrumare științifică, ci și încredere, generozitate intelectuală și sprijin uman. Aurel Rustoiu nu a cultivat niciodată cunoașterea ca pe un bun rezervat, ci a împărtășit constant idei, metode și resurse, încurajând dialogul, creativitatea și autonomia profesională.

Mai puțin cunoscut în afara cercului apropiat, dar revelator pentru latura sa reflexivă și ludică, este volumul de poezii *Dadaism versus blablaism. Poezii de carantină (2020)*, care îi dezvăluie umorul subtil, sensibilitatea și apetitul pentru jocul conceptual, adăugând o notă surprinzătoare și fermecătoare profilului său intelectual.

La aniversarea celor șase decenii de viață, îi adresăm cele mai calde felicitări, cu recunoștință pentru contribuțiile sale excepționale și cu admirație pentru energia cercetătoare pe care o întruchipează. Îi dorim sănătate, putere de creație și ani mulți de cercetare rodnică, convinși că munca sa va continua să inspire generații viitoare de arheologi.

La mulți ani, cu prețuire și respect!

BERECKI Sándor

### AUREL RUSTOIU ON THE 60TH ANNIVERSARY

On the occasion of the 60th birthday of distinguished archaeologist Dr. Aurel Rustoiu, we pay sincere tribute to a personality who has had decisive impact on archaeological research in Romania and Central and Eastern Europe.

Mentored even before his university years by the late archaeologist Florin Medeleț, he completed his graduate studies at Babeș-Bolyai University in Cluj-Napoca, in the Faculty of History and Philosophy. His doctoral thesis, published in 1996 and dedicated to Dacian bronze metallurgy, remains an international milestone, complemented by his exemplary analysis of fibulae from pre-Roman Dacia, published in 1997 and still considered a model today of typological and contextual analysis.

His scientific career is closely linked to the Institute of Archaeology and Art History in Cluj-Napoca, where he has been a habilitated doctor and PhD supervisor since 2017, developing innovative methodological approaches and high-performing research teams. He is also an associate professor at the West University of Timișoara, where he is actively involved in training new generations of researchers.

Aurel Rustoiu also has a distinguished record of archaeological fieldwork. He has coordinated important archaeological research in Romania, most notably the excavations at Sighișoara - *Wietenberg* and Divici - *Grad*, as well as abroad, at Solotvino and Bila Tserkva in Transcarpathian Ukraine. He currently leads systematic archaeological research projects in collaboration with the National Museum of the Union in Alba Iulia, at the Iron Age cemeteries in Sâncrai - *Darvas* and the Dacian fortresses in Cugir and Căpâlna. He has been a member, coordinator, and mentor in numerous research projects and national



and international grants, building lasting bridges between institutions, generations, teams, and archaeological schools.

He is the author of 12 books, editor of several volumes, and author of over 150 articles, studies, and scholarly notes, many of which have been published in prestigious international journals. His studies on the Dacian, Celtic, and North Thracian communities remain indispensable references for anyone addressing the issue of ethno-cultural interactions from the Early Iron Age to the Roman Empire. Through his publications, Aurel Rustoiu has made a decisive contribution to the methodological renewal of the discipline and to the affirmation of Romanian archaeology in European academic debate. Throughout his editorial and scientific career, he has collaborated with numerous researchers from Romania and abroad, including Mariana E. Egri, Iosif Vasile Ferencz, and Sándor Berecki, Andreea M. Drăgan, Andrei V. Georgescu, Adrian C. Căsălean, Gabriel T. Rustoiu, Valeriu Sîrbu, J. Vincent S. Megaw, Matthew M. McCarty, Călin Cosma, Gelu Florea, Horea D. Pop, Adrian Ursuțiu, Gabriela Gheorghiu, Valentin Vasiliev, Eduard A. Balaguri, Ioan Andrițoiu, Ion Horațiu Crișan, Marian Gumă, Vasile Moga, Corneliu Gaiu, Caius Săcărin, Alexandru Szentmiklósi, Eduard M. Nemeth, Alexandru Gudea, Dumitru Gh. Tamba, Emilian Teleagă, Cristian I. Popa, Cristinel Plantos, Gabriel D. Balteș, Alexandra Comșa, Mathilda Takács, Florin Gogâltan, Sorin Cociș, Constantin Inel, Valentin Cetean, Gabriel Crăciunescu, Corina Turc, Roxana Grindean, Ioan Tanțău and Claudiu Lisovski-Cheleşanu.

Aurel Rustoiu has attended numerous international conferences and symposia, among the most important being those in Rome, Italy (2008); Heidelberg, Germany (2009); Cambridge, UK (2011, 2015); Carnuntum, Austria (2012); Rzeszów, Poland (2012); Pilsen, Czech Republic (2013); Sofia, Bulgaria (2013); Manching, Germany (2014); Istanbul, Turkey (2014); Barcelona, Spain (2018); Prague, Czech Republic (2018); Chișinău, Republic of Moldova (2018); Stará Lesná, Slovakia (2019); King's College London, UK (2019); Mikulov, Czech Republic (2022); Budapest, Hungary (2022); Jičín, Czech Republic (2023); Žilina, Slovakia (2024); Zlín, Czech Republic (2025).

He is a member of the scientific councils of the Brukenthal National Museum in Sibiu, the Banat Museum in Timișoara, and the Banat Village Museum in Timișoara, and has also been actively involved in national councils and commissions such as CNATDCU and the National Commission for Archaeology, contributing his experience, balance, and professional authority to defining standards in research and heritage. Since 2019, he has been an honorary member of the National Archaeological Institute with Museum at the Bulgarian Academy of Sciences, in recognition of his contribution to the development of archaeology in Bulgaria; that same year, he was awarded the George Barițiu Prize by the Romanian Academy.

Through his interdisciplinary approach, wide-ranging culture, and intellectual elegance, Aurel Rustoiu has forged a scholarly profile recognized for its accuracy, creativity, and critical spirit. At the same time, he has shown the intellectual courage to move beyond conventional methodological patterns, promoting an authentic archaeology attentive to identity, mobility, the causes of population movements, and the dynamics of cultural interaction. This conceptual openness has stimulated critical reflection and provided the discipline with modern interpretative landmarks.

Aurel Rustoiu has organized conferences and workshops in Cluj-Napoca, Alba Iulia, and, more recently, in Timișoara, contributing to the international scientific dialogue. He is also active in promoting archaeological heritage through public lectures and written contributions to volumes aimed at a wider educated audience, bringing the results of archaeological research closer to the community.

A particular aspect of his professional activity is mentoring. Generations of archaeologists, from young researchers at the beginning of their careers to fully established specialists, owe him not only scientific guidance, but also his confidence, intellectual generosity, and human support. Aurel Rustoiu has never treated knowledge as a guarded asset; he has consistently shared ideas, methods, and resources, encouraging dialogue, creativity, and professional autonomy.

Less well known beyond his immediate circle, but illustrative of his reflective and ludic side, is the poetry volume *Dadaism versus blablaism. Poezii de carantină* (2020), which reveals his subtle humour, sensitivity and an appetite for conceptual play, adding a surprising and charming note to his intellectual profile.

On the occasion of his sixtieth birthday, we salute him with warmest congratulations, with gratitude for his exceptional contributions and with admiration for the research energy he embodies. We wish him good health, creative strength, and many years of productive research, confident that his work will continue to inspire future generations of archaeologists. Happy birthday, with esteem and respect!

BERECKI Sándor

## NEW BRONZE AGE WAGON MODELS FROM THE WIETENBERG CULTURE

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National Museum of Union Alba Iulia

**Cuvinte cheie:** Bronz mijlociu, cultura Wietenberg, care din lut, date radiocarbon  
**Key words:** Middle Bronze Age, Wietenberg culture, clay wagons, radiocarbon dates

### Introduction

The increasing scale of the movement of people, goods, raw materials, and ideas is an enduring issue within Bronze Age archaeology<sup>1</sup>. Increasing long-distance travel during the Bronze Age required, and was facilitated by, technological innovations in transportation infrastructure such as boats, wheeled vehicles, and roads.

Wagon models (sometimes also referred to as cart models) are miniature versions of the wooden vehicles that would have been used to move people and objects across the landscape. The wagon models that were made of fired clay are some of the best indirect indicators of the importance of this form of transportation. Many clay wagon models were decorated with styles and motifs that were commonly found on culturally diagnostic ceramics.

The exact function of these wagon models remains unclear and a source of significant debate. They may be ritual objects, children's toys, or templates for real wagons. Any of these hypotheses – or indeed, all of them in some varying combination – might explain this phenomenon, more work is needed to systematically evaluate them. Nevertheless, it is important enough to note that Bronze Age people considered wagons significant enough to be worthy of miniaturization and replication in different media.

In Transylvania, the Wietenberg culture extends from the end of the Early Bronze Age through the end of the Middle Bronze Age (Formative Wietenberg: 2000-1875 BCE; Classical Wietenberg 1875-1500 BCE) and into the Late Bronze Age (Terminal Wietenberg: 1500-1320 BCE)<sup>2</sup>. While wagon models are found

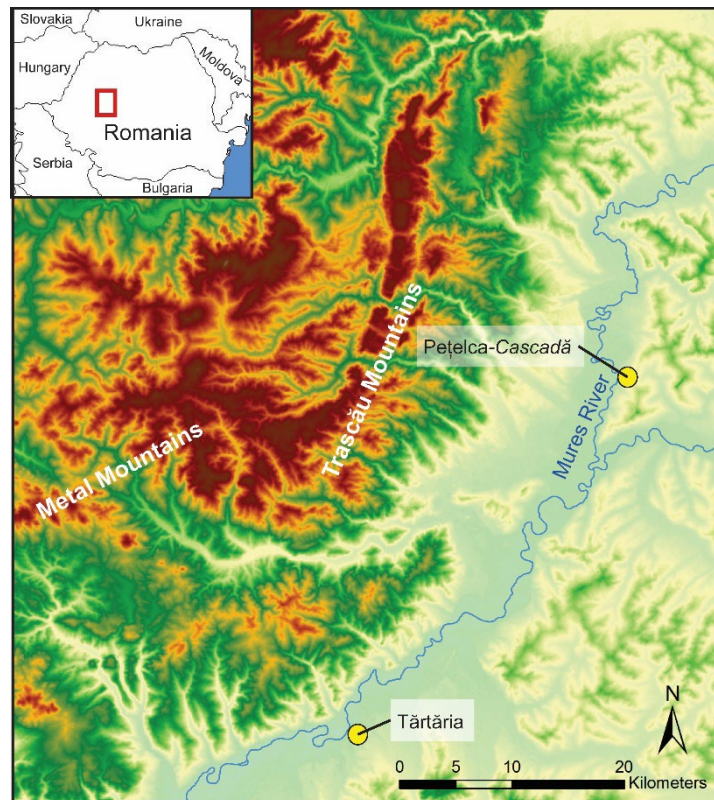
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<sup>1</sup> Anthony 2007; Boroffka 2023.

<sup>2</sup> Quinn *et alii* 2020.

across the Carpathian Basin and Transylvania during the Bronze Age, the most wagon models have been found associated with the Wietenberg culture<sup>3</sup>.

In this paper we present two new decorated clay wagon models associated with the Wietenberg culture in Transylvania (**Fig. 1**). The first, from Pețelca - *Cascadă*, comes from a systematic excavation as part of a survey project in the area around the Geoagiu Valley from the Trascău Mountains to the Mureș River valley (including the communes of Râmeț, Stremț, and the town of Teiuș). The second, from Tărtăria, was a chance find brought to the National Museum of the Union from Alba Iulia. These finds are important contributions to the understanding of wagon models and what their abundance in the Wietenberg culture may indicate for socioeconomic organization in the Bronze Age within Transylvania and beyond.



**Fig. 1.** Map of the locations of Pețelca – *Cascadă* and Tărtăria in southwest Transylvania (Alba county)

<sup>3</sup> Bondár 2012, p. 83.

**Pețelca – Cascadă**

The site of Pețelca – *Cascadă* is located north of the village Pețelca towards the village of Meșcreac. The site is positioned on the first terrace on the left bank (to the east) of the Mureș River. The site gets its name from the rapids in the river at a shallow section of the Mureș River, that provides a ford to cross the river. The site extends approximately 675 m along the terrace, bounded to the north by an erosional drainage and to the south by a spring and drainage. The Mureș River bends at this point and runs close to the terrace edge, though more work is needed to determine if this position was the case during the Bronze Age. The site is approximately 9.3 km north of the confluence of the Mureș and Târnava Rivers. To the west, the site has a commanding view of the Mureș River valley and the Trascău mountain range – part of the southern Apuseni Mountains. To the east, the slope rises towards a high ridge towards the Transylvanian plateau.

**Legend**

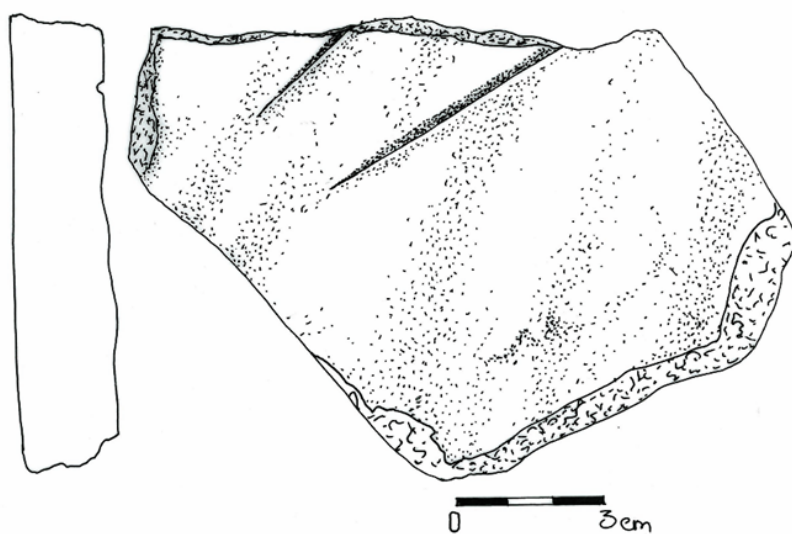
0 100 200 Meters

● Excavation units

▨ Site Extent

**Fig. 2.** Map of Pețelca – *Cascadă*

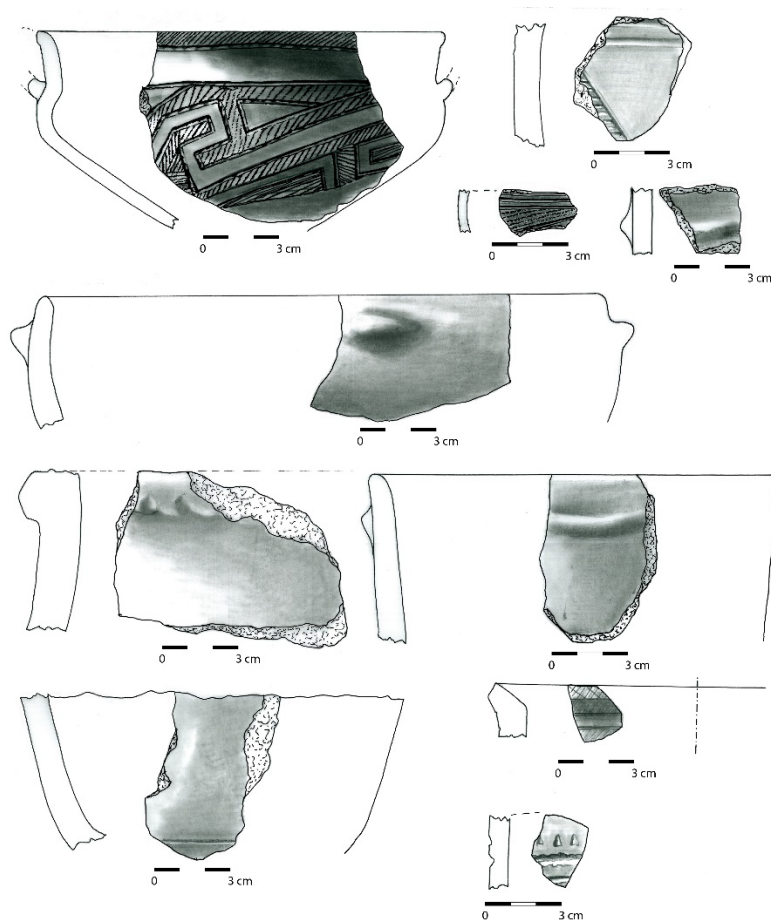
Pețelca – *Cascadă* was discovered during pedestrian survey as part of the Bronze Age Transylvania Survey (BATS) Project in 2013<sup>4</sup>. The area is covered in archaeological material in the plow zone of the fields that cover the site between the modern road and the terrace edge. Cultural material dating to the Copper Age (Coțofeni culture), Early Bronze Age, Middle Bronze Age (Wietenberg culture), Late Bronze Age (Gava culture) have been found along with evidence of Roman and Medieval settlement. The western edge of the site, along the Mureș River terrace, is eroding out into the river and has exposed the vertical stratigraphy of this portion of the site. Surface collections, using transects spaced 20 m apart, determined the horizontal extent of the site (approximately 8.8 hectares). In 2014, five excavation units were placed along the western edge of the site near the river, to determine the date and cultural affiliations of the site (**Fig. 2**). Excavations uncovered deeply stratified Wietenberg deposits. The large size of the site and the intact stratified Wietenberg deposits, which are similar to the site at Alba Iulia - *Recea/Monolit*, suggest that Pețelca – *Cascadă* is one of the most important Wietenberg settlements in the modern boundaries of Alba County.



**Fig. 3.** Stone mould for bronze pins from Pețelca – *Cascadă*

<sup>4</sup> The BATS Project is a partnership between the University at Buffalo, USA (C. Quinn) and National Museum of the Union from Alba Iulia, Romania (Dr. H. Ciugudean). The project is designed to improve the understanding of the Bronze Age in Transylvania through archaeological survey, excavation, and archaeological scientific analysis. Funding has been provided by the National Science Foundation (BCS-1341329), the Wenner-Gren Foundation (Dissertation Fieldwork Grant 8655), the American Philosophical Society, the University of Michigan, Hamilton College, and the University at Buffalo.

Unit 2 was a 1 x 0.5 m trench dug into the exposed and eroding profile along the river terrace. This unit exposed nearly 2 m of cultural deposits with 6 layers of stratigraphy. Level 1 is the plowzone. Level 2 post-dates Bronze Age occupation and contains wheel-made Roman pottery. Levels 3 and 4 contained Wietenberg Type C ceramics. Level 5 had no diagnostic ceramics (rims, handles, bases, decorated pieces), but the fabric of the non-diagnostic ceramics found in this level is consistent with Wietenberg Type C ceramic assemblages. Level 3 – a 25-30 cm thick layer of Wietenberg settlement debris – included a feature with densely packed material culture material. The feature included fragments of stone moulds for casting bronze pins (**Fig. 3**), decorated Wietenberg ceramics (**Fig. 4**), and a fragment of a wagon model.



**Fig. 4.** Ceramics from Peșelca – Cascadă

The wagon model fragment at Peșelca – *Cascadă* is the corner of a wagon box (Fig. 5). The fragment is made of a dark grey fine-grained fabric with a burnished surface and punctated and incised decoration (*Zahnstempelung* technique). The decoration technique of linear decoration made of small successive impressions is diagnostic for Wietenberg Type C<sup>5</sup>. The rim of the box is decorated with a series of lines made with successive impressions and the side of the wagon box has infilled triangles made with the same technique. There is decoration on both exterior surfaces of the wagon box, though much of the surface is not preserved.

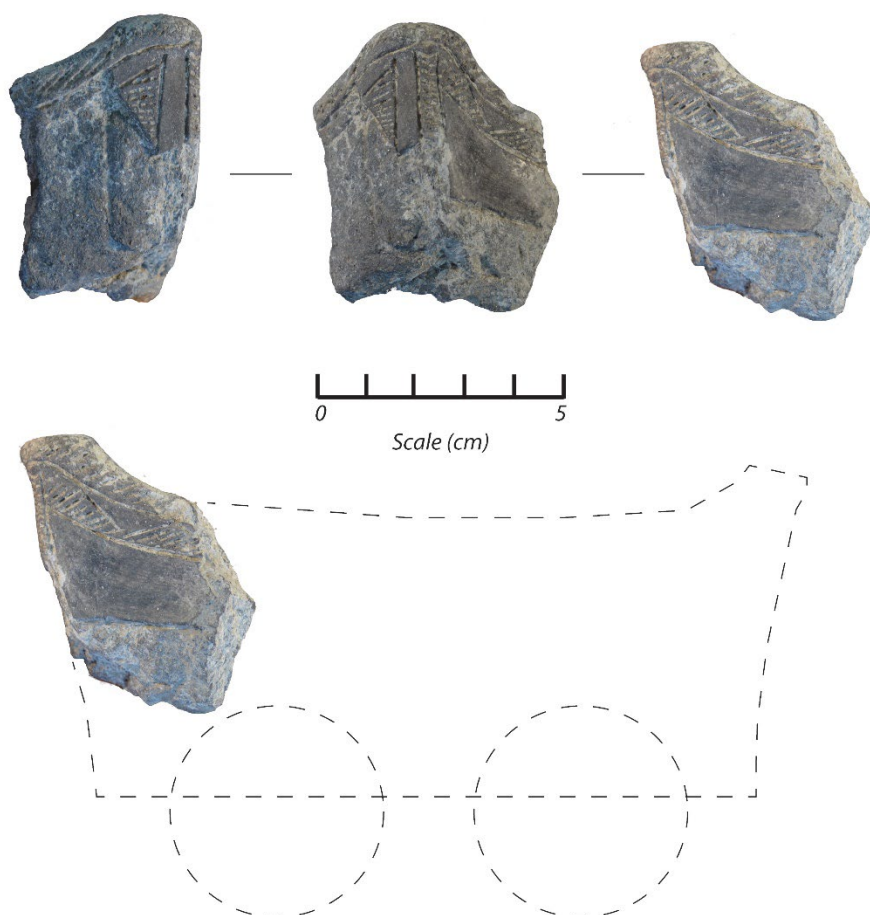


Fig. 5. Decorated wagon box fragment from Peșelca – *Cascadă*

<sup>5</sup> Boroffka 1994.

After the 2014 season, eight radiocarbon samples were submitted for processing from charcoal and animal bone taken from the prehistoric strata in Unit 1 and Unit 2 at Pețelca – *Cascadă* (Table 1). The charcoal samples were processed at the Woods Hole National Oceanographic AMS Laboratory (NOSAMS) and the animal bone samples were processed at the University of Georgia AMS Laboratory (UGAMS). One sample of wood charcoal from Level 4 in Unit 2 dissolved during pre-treatment and was unable to be run. Dates were calibrated using OxCal<sup>6</sup>.

**Table 1.** Radiocarbon dates from Pețelca – *Cascadă*

Sample Number	Context	Cultural Affiliation	Sample Material	Uncalibrated Date	Calibrated Date (2-sigma; 95%)
OS-113603	Unit 1 – Level 8	Coțofeni	Charcoal	4560 ±20 BP	3380-3100 cal. BCE
OS-113605	Unit 1 – Level 7	Wietenberg	Charcoal	3530 ±20 BP	1940-1770 cal. BCE
**OS-113604	Unit 1 – Level 6	Wietenberg	Charcoal	3810 ±20 BP	2340-2140 cal. BCE
UGAMS-18994	Unit 1 – Level 6	Wietenberg	Animal Bone	3570 ±25 BP	2020-1780 cal. BCE
OS-113602	Unit 1 – Level 5	Wietenberg	Charcoal	3050 ±20 BP	1400-1220 cal. BCE
UGAMS-18993	Unit 1 – Level 5	Wietenberg	Animal Bone	3110 ±25 BP	1440-1290 cal. BCE
OS-113647	Unit 2 – Level 4	Wietenberg	Charcoal	3170 ±20 BP	1500-1410 cal. BCE
**OS-113646	Unit 2 – Level 3	Wietenberg	Charcoal	3330 ±30 BP	1690-1510 cal. BCE

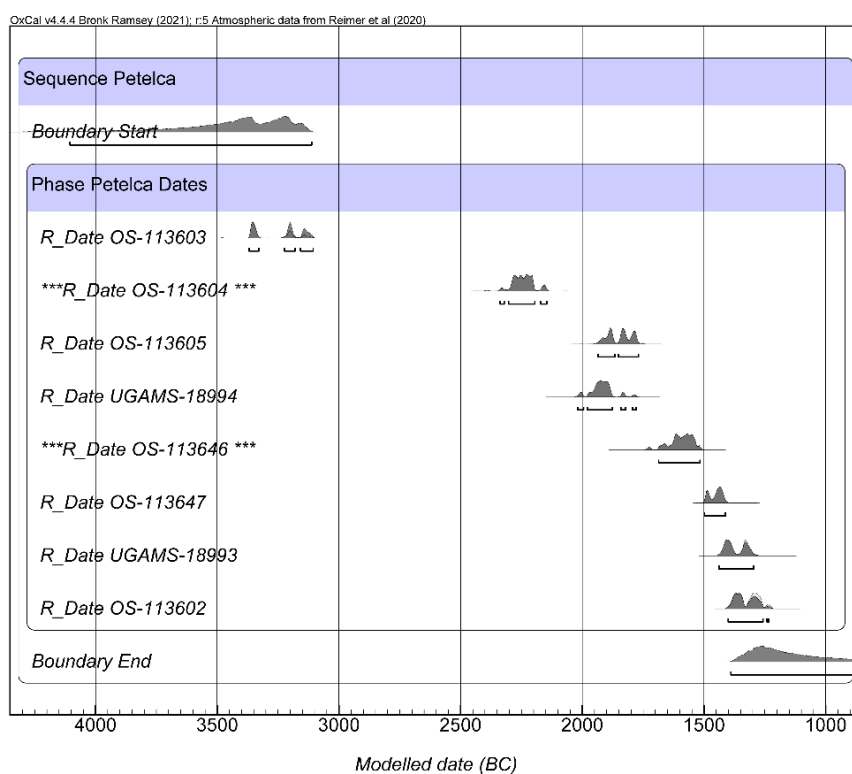
\*\* - likely old wood dates

From Unit 1, the lowest stratigraphic level representing the first human occupation at the site was Level 8. This level is a mixed deposit of Coțofeni ceramics with a few (potentially intrusive) Wietenberg ceramics. A wood charcoal sample came from the Coțofeni activity, dating the early occupation to 4560 ±20 BP (OS-113603)<sup>7</sup>. Levels 7, 6, and 5 contained Wietenberg ceramics.

<sup>6</sup> Bronk Ramsey 2009; Reimer *et alii* 2020.

<sup>7</sup> This sample has been already published in a different study (Ciugudean *et alii* 2022).

A wood charcoal sample from Level 7 produced a date of  $3530 \pm 20$  BP (OS-113605). An initial wood charcoal sample from Level 6 produced a date of  $3810 \pm 20$  BP (OS-113604); however, this date is problematic as it is earlier than the date that is from the stratigraphic layer below it. This is likely due to the „old wood effect” where charcoal samples from large trees, or from burning recycled wood, can give a false early date for a deposit. To address this, another sample from Layer 6, run on animal bone (not susceptible to the old wood effect), produced a date of  $3570 \pm 25$  BP (UGAMS-18994). A wood charcoal sample from Layer 5 produced a date of  $3050 \pm 20$  BP (OS-113602). Out of concern that this seemingly late date for Wietenberg Type B ceramics may have been associated with a later Late Bronze Age stratigraphic layer (e.g., Gava and Noua ceramics that have been found elsewhere on the site), we ran a second sample – this time on animal bone that is less likely to be disturbed through bioturbation – that produced a date of  $3110 \pm 25$  BP (UGAMS-18993). As both dates, run on different materials at different labs, produced similar dates, the dates can be confidently associated with the Wietenberg ceramics.



**Fig. 6.** Calibrated radiocarbon dates from Petelca – Cascadă

From Unit 2, Level 5 was the first intact level of cultural deposits. While Level 5 had no diagnostic ceramics, the non-diagnostic ceramics are consistent with Wietenberg assemblages. A wood charcoal sample from Level 5 produced a date of  $3170 \pm 20$  BP (OS-113647). Levels 4 and 3 contained Wietenberg ceramics with diagnostic ceramics associated with Type C ceramics. A wood charcoal sample from a flotation sample taken in Level 3, in direct association with the decorated wagon model, produced a date of  $3330 \pm 30$  BP (OS-113646). The two dates from Unit 2 are stratigraphically inverted (the younger date lower than the older date). This may be due to bioturbation and the movement of charcoal through the soil column. However, it might also be another example of the old wood effect for the sample from Level 3. For now, this unfortunately leaves us without a direct date on the feature in which the wagon model was found, though in the future additional dates can remedy this situation. Instead, we can consider the wagon model as having been deposited at Pețelca – *Cascadă* during the extensive Wietenberg occupation, which currently is dated between 2000-1320 cal. BCE<sup>8</sup>.

#### **Tărtăria – Gura Luncii**

The site of Tărtăria – *Gura Luncii* is located north-west of the railway station Tărtăria. The site is located on the first terrace on the left bank of the Mureș River with a spring running at the base of the terrace (see **Fig. 1**). The Mureș River runs far (1.5 km) from the terrace edge, though more work is needed to determine if this position was the case during the prehistoric times.

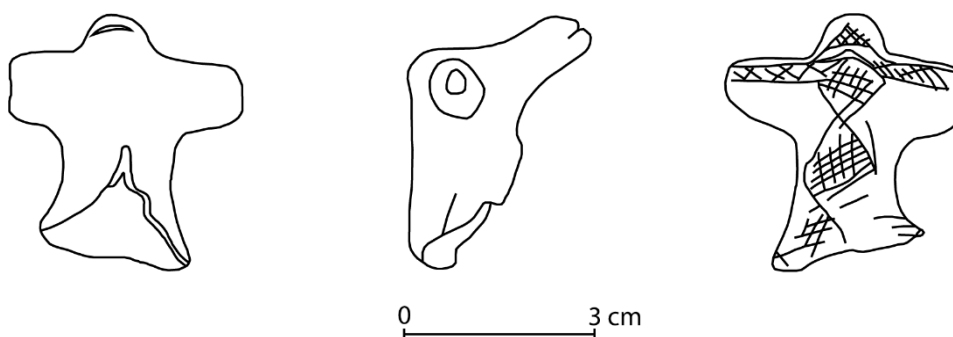
Tărtăria – *Gura Luncii* is a famous prehistoric site, better known for its Neolithic discoveries, particularly for the three famous inscribed clay tablets discovered in 1961 and considered to represent the earliest known form of writing in Europe but the interpretation of the signs is equally contentious. The area had an agricultural destination for very long time, so it is covered in archaeological material in the plow zone of the fields that cover the site between the railway station and the terrace edge. Cultural material dating to the Neolithic (Vinča culture), Copper Age (Petrești and Coțofeni culture), Early Bronze Age, Middle Bronze Age (Wietenberg culture), Early Iron Age (Basarabi culture) have been found along with evidence of a Medieval settlement. Excavations had been previously carried on by Marton Roska in the thirties, Kurt Horedt in 1942-1943, Nicolae Vlăssă in 1961, and Iuliu Paul in 1989<sup>9</sup>. New extended excavations at Tărtăria have recently been directed by the Lucian Blaga University of Sibiu and the National Museum of the Union from Alba Iulia.

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<sup>8</sup> Quinn *et alii* 2020.

<sup>9</sup> Horedt 1949; Vlăssă 1963; RepAlba 1995, p. 185-186.

The wagon model fragment from Tărtăria – *Gura Luncii* has been found by chance in the plow zone and donated to the museum in Alba Iulia. No context informations are available in such circumstances. The fragment from Tărtăria is in the shape of an animal head with a perforation through both horns (**Fig. 7**) and it was decorating one of the corners of the wagon box, similar to other finds already known from Transylvania (see below). The head might represent an ox, as this animal was the most frequently used to yoke the wagons during the Bronze Age<sup>10</sup>. The crosshatch decoration inside rhombic motifs is a common Wietenberg pattern on ceramics.



**Fig. 7.** Decorated wagon box fragment from Tărtăria

### Discussion

The wagon model fragments from Peșelca – *Cascadă* and Tărtăria are part of a broader phenomenon of clay wagon models that are found across Transylvania and the Carpathian Basin – and beyond – during the Bronze Age<sup>11</sup>. As of 2012, Bondár had identified 43 wagon models associated with the Wietenberg culture. Since 2012, new Wietenberg wagon models have been published from Racoș – *Piatra Detunată*, Miercurea Ciuc – *Fodor-Kert*, Aiud – *Groapa de gunoi*<sup>12</sup>. With the addition of the two new objects in this study, there are at least 48 clay wagon models that are affiliated with the Wietenberg culture.

The fragment from Peșelca – *Cascadă* has shared attributes with other Wietenberg wagon models. The decoration technique of small successive impressions (*Zahnstempelung*) is also found on models from Geoagiu/Algyógy

<sup>10</sup> Harding 2000, p. 167.

<sup>11</sup> Bóna 1994; Bondár 2012; Bondár 2016; Boroffka 1994; Boroffka 2004; Mengyán *et alii* 2023; Pare 2004; Popescu 2006; Puskás, Darvas 2021; Schuster 1996; Székely 2015.

<sup>12</sup> Székely 2015; Puskás, Darvas 2021; Bălan *et alii* 2016, p. 76, Pl. 20/6.

(jud. Hunedoara)<sup>13</sup>; Novaj (Hungary)<sup>14</sup>, Sighișoara<sup>15</sup>, Cluj<sup>16</sup>, Derșida<sup>17</sup>, Miercurea Ciuc<sup>18</sup>, and Aiud – *Groapa de gunoi*<sup>19</sup>. The infilled triangles found on the fragment from Peșelca – *Cascadă* are also found on three wagon models at Derșida<sup>20</sup>. The wagon model fragment from Cluj has similar morphological and iconographic similarities and is currently the most similar find to the fragment from Peșelca – *Cascadă*.

The fragment from Tărtăria also has parallels in previously published wagon models. Animal heads on the corners of the wagon boxes have been found at Lechința de Mureș<sup>21</sup> and Derșida<sup>22</sup>. The crosshatch decoration has also been found on several other Wietenberg wagon models, including Ciceu-Corabia<sup>23</sup>, Derșida<sup>24</sup>, Șieu<sup>25</sup>, Feldioara<sup>26</sup>, Gherla (two fragments)<sup>27</sup>.

The expansion of wagon models in the Middle Bronze Age is an important phenomenon in central and eastern Europe. It is notable that Bondár has shown that half of the culturally affiliated wagon models in the Carpathian Basin and Transylvania are from the Wietenberg culture<sup>28</sup>. The relative lack of wagon models from other cultural groups may be due to preservation and the choice of materials to make wagon models; as Bóna argues that other groups in the Carpathian Basin may have made wicker boxes rather than the more durable fired clay of the Wietenberg<sup>29</sup>. Bondár also cautions that most of the finds are chance finds and may not be fully representative of the distribution of wagon models in the past<sup>30</sup>.

While the lack of evidence of wagon models may not be evidence for a lack of wagon models in other cultural groups, we must also consider the possibility that Wietenberg communities had particular reasons for creating miniature models of wagons. The Bronze Age in Europe was a time of

<sup>13</sup> Roska 1942, Abb. 4.7; Boroffka 1994, p. 167; Bondár 2012, fig. 26.8.

<sup>14</sup> Bóna 1994, p. 74; Fettich 1969, Pl. V. 1; Bondár 2012, fig. 22.1.

<sup>15</sup> Schuster 1996, pl. 3.2.

<sup>16</sup> Boroffka 1994, Taf. 62.7; Bondár 2012, fig. 29.3.

<sup>17</sup> Chidioșan 1980, pl. 25.3; Bondár 2012, fig. 28.3.

<sup>18</sup> Puskás, Darvas 2021.

<sup>19</sup> Bălan *et alii* 2016, p. 76, pl. 20/6.

<sup>20</sup> Chidioșan 1980, pl. 25.1, 3, 5; Bondár 2012, fig. 28.2, 3, 7.

<sup>21</sup> Schuster 1996, pl. 3. 7; Bondár 2012, fig. 30.1; Boroffka 2004, abb. 9.

<sup>22</sup> Chidioșan 1980, pl. 25. 9; Bondár 2012, fig. 30.4.

<sup>23</sup> Boroffka 1994, taf. 59.5; Bondár 2012, fig. 30.6.

<sup>24</sup> Chidioșan 1980, pl. 25.7; Bondár 2012, fig. 30.3.

<sup>25</sup> Boroffka 1994, taf. 127.4; Bondár 2012, fig. 29.6.

<sup>26</sup> Boroffka 1994, taf. 76.2; Bondár 2012, fig. 28.4.

<sup>27</sup> Orosz 1901, fig. 111; Orosz 1904, fig. 9; Bondár 2012, fig. 26.6, 26.9.

<sup>28</sup> Bondár 2012, p. 58.

<sup>29</sup> Bóna 1994, p. 74; see Bondár 2012, p. 63.

<sup>30</sup> Bondár 2012, p. 85.

technological innovation and investment in the infrastructure of long-distance exchange<sup>31</sup>. With the natural abundance of raw materials in Transylvania, including metal ore, salt, and timber, and relative lack of these resources in other areas of the Carpathian Basin, it is likely that long-distance trade using wheeled wagons and carts would have been an important social, economic, and political activity for Wietenberg communities. There is indirect – and disputed – evidence for these networks in the distribution of decorated wagon models from the Wietenberg culture beyond the boundaries of Transylvania. Bóna argued that the model from Novaj, a site occupied by the Füzesabony culture, was a Wietenberg import<sup>32</sup>. Based on the identification of a wagon model from Füzesabony – *Öregdomb* in a more recent study by Kovács<sup>33</sup>, Bondár has challenged the assessment by Bóna<sup>34</sup>. Bóna's initial assessment that the Novaj was an import was in part justified by a broader lack of wagon models associated with the Füzesabony culture, of which the model published by Kovács refutes. While this find challenges this portion of Bóna's argument, the decoration on the Novaj object is consistent with Wietenberg wagon models. The same situation may be the case for the wagon model found at Otomani/Ottomány<sup>35</sup>, which has been attributed to the Otomani culture, though there are similarities to Wietenberg decorations. Additional chemical sourcing studies on these and other similar objects are warranted to better identify Wietenberg wagon models outside the traditional geographic distribution of Wietenberg ceramics.

### Conclusion

The two new wagon model fragments presented in this study are important additions to the archaeological literature on the Wietenberg culture and the archaeology of Bronze Age Transylvania. The fragment from Tărtăria was discovered as a chance find, as is common for most of these rare objects. The wagon model fragment from Pețelca – *Cascadă*, however, was found as part of a systematic archaeological survey of the site. Future scientific analysis of these objects, along with the broader assemblage of Wietenberg wagon models, have the potential to unpack some of the mysteries of their production, use, and significance for Bronze Age peoples.

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<sup>31</sup> Earle *et alii* 2015; Van de Noort 2004; Ling *et alii* 2022.

<sup>32</sup> Bóna 1994, p. 74.

<sup>33</sup> Kovács 2006, abb. 3.

<sup>34</sup> Bondár 2012, p. 63.

<sup>35</sup> Roska 1925, fig. 3.4; Bondár 2012, fig. 26.7.

**NOI MODELE DE CARE DIN EPOCA BRONZULUI APARTINÂND CULTURII WIETENBERG**

## REZUMAT

Studiul prezintă două noi descoperiri din jud. Alba ale unor modele de care modelate din lut, aparținând culturii Wietenberg din Transilvania. Primul este un fragment descoperit în situl de la Peșelca – *Cascadă*, decorat cu motive triunghiulare hașurate, realizate prin incizie, pe partea superioară având un decor în tehnica *Zahnstempelung*. Situl este unul multistratificat, depunerea superioară conținând materiale romane (nivelul 2), în vreme ce depunerea inferioară (nivelul 8) aparține culturii Coțofeni. Depunerile intermediare (nivelurile 3-7) nu au livrat decât fragmente cu decor Wietenberg sau ceramică atipică, ele putând fi atribuite epocii bronzului. Singurul complex provine din nivelul 3/unitatea 2, depunerea compactă de locuire livrând numeroase fragmente tipice Wietenberg C, un fragment de tipar din gresie pentru turnat ace și fragmentul de cărucior din lut.

Au fost recoltate mai multe probe din cărbune și os de animal pentru datări radiocarbon, rezultate fiabile fiind obținute pentru nivelul Coțofeni (OS-113603: 4560 ±20 BP) și pentru nivelurile 3, 5-7 aparținând epocii bronzului (OS-113605: 3530 ±20 BP; UGAMS-18994: 3570 ±25 BP; OS-113602: 3050 ±20 BP; UGAMS-18993: 3110 ±25 BP; OS-113647: 3170 ±20 BP). Două probe (OS-113604: 3810 ±20 BP și OS-113646: 3330 ±30 BP) au fost incluse în serie, dar sunt considerate prin poziția stratigrafică pe care o aveau ca fiind rezultatul „old wood effect”. Conform datelor obținute, locuirea din epoca bronzului de la Peșelca – *Cascadă* poate fi datată între cca 2000-1320 cal BCE, ceea ce ar indica o supraviețuire neobișnuit de târzie pentru o comunitate Wietenberg.

Cel de-al doilea fragment de car din lut este o protomă zoomorfa descoperită accidental pe zona arabilă a cunoscutului sit de la Tărtăria – *Gura Luncii*. Asemenea protome decorau de obicei colțurile frontale ale modelelor de care din lut, existând câteva bune analogii în mediul Wietenberg din Transilvania.

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## ABSTRACT

This study presents two new discoveries from Alba county of clay wagon models associated with the Wietenberg culture in Transylvania. The first wagon model fragment was found at Pețelca – *Cascadă* and is decorated with hatched triangular motifs made by incision and *Zahnstempelung* technique. Pețelca – *Cascadă* is a large multicomponent site, with intact cultural deposits associated with Roman (level 2) and Coțofeni (level 8), and the Bronze Age Wietenberg culture (levels 3-7). The Bronze Age level (levels 3-7) contained ceramics with Wietenberg decoration and other ceramics and material culture from the Bronze Age. One feature, from level 3/unit 2, contained numerous typical Wietenberg C fragments, a sandstone mold fragment for casting bronze pins, and the clay wagon model fragment.

Several charcoal and animal bone samples were collected and processed for radiocarbon dating, with reliable results obtained for the Coțofeni level (OS-113603: 4560 ±20 BP) and for the Bronze Age levels 3, and 5-7 (OS-113605: 3530 ±20 BP; UGAMS-18994: 3570 ±25 BP; OS-113602: 3050 ±20 BP; UGAMS-18993: 3110 ±25 BP; OS-113647: 3170 ±20 BP). Two samples (OS-113604: 3810 ±20 BP și OS-113646: 3330 ±30 BP) are included in the series of dates presented in this study, but are considered to be out of stratigraphic position and are affected by the „old wood effect“. According to the reliable dates, the Bronze Age occupation at Pețelca – *Cascadă* occurred between c. 2000-1320 cal BCE, which indicates an unusually late persistence of a Wietenberg community into the Late Bronze Age.

The second clay wagon model fragment is a zoomorphic corner of a clay wagon box found by chance at Tărtăria – *Gura Luncii*. This fragment is decorated with crosshatched Wietenberg motifs. Similar animal heads have been found on the corners of clay wagon boxes at other Wietenberg sites in Transylvania.

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Fig. 7. Decorated wagon box fragment from Tărtăria

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