

Books published in BIBLIOTHECA SEPTEMCASTRENSIS series:

- I. Ioan Marian ȚIPLIC, *Breslele producătorilor de arme din Sibiu, Brașov și Cluj. Secolele XIV-XVI*, Sibiu, 2001.
- II. Dumitru POPA, *Villae, Vici, Pagi. Așezări rurale din Dacia romană intracarpatică*, Sibiu, 2002.
- III. Sabin Adrian LUCA, Zeno Karl PINTER, Adrian GEORGESCU, *Repertoriul arheologic al județului Sibiu (situri, monumente arheologice și istorice)*, Sibiu, 2003.
- IV. Sabin Adrian LUCA, Cristian ROMAN, Dragoș DIACONESCU, *Cercetări arheologice în peștera Cauce*, volumul I, Sibiu, 2004.
- V. Sabin Adrian LUCA, Horia CIUGUDEAN, Cristian ROMAN, Dragoș DIACONESCU, Corneliu BELDIMAN, Georgeta EL SUSI, *Cercetări arheologice în peștera Cauce*, volumul II, Sibiu, 2005.
- VI. Sabin Adrian LUCA, *Repertoriul arheologic al județului Caraș-Severin*, București, 2004.
- VII. Sabin Adrian LUCA, *Arheologie și istorie (I). Descoperiri din județul Caraș-Severin*, București, 2004.
- VIII. Dumitru PROTASE, *Cimitirul slav de la Ocna Sibiului (sec. VIII-IX)*, București, 2004.
- IX. Silviu Istrate PURECE, *Tezaurul de la Stănești*, București, 2005.
- X. Sabin Adrian LUCA, *Arheologie și istorie (II). Descoperiri din Banat*, București, 2005.
- XI. Sabin Adrian LUCA, *Arheologie și istorie (III). Descoperiri din județul Hunedoara*, București, 2005.
- XII. ***, *Relații interetnice în Transilvania. Secolele VI-XIII*, București, 2005.
- XIII. Mihai VIȘAN, Mirel Patriciu PASCU, Daniel CRECAN, *Puterea - Administrația și Dreapta românească interbelică*, Alba Iulia, 2005.
- XIV. Sabin Adrian LUCA, *Repertoriul arheologic al județului Hunedoara*, Alba Iulia, 2005.
- XV. Valeriu SÎRBU, Nicolae CERIȘER, Vasile Romulus IOAN, *Depozitul de obiecte din fier dacice de la Piatra Roșie*, Sibiu, 2005.
- XVI. Sabin Adrian LUCA, *A short prehistory of Transylvania*, Heidelberg Sibiu, 2006.
- XVII. *** (coord. Sabin Adrian LUCA and Valeriu SÎRBU), *The Society of the Living the Community of the Dead (from Neolithic to the Christian Era). Proceedings of the 7th International Colloquium of Funerary Archaeology* (Acta Terrae Septemcastrensis, V, 1, special number), Sibiu, 2006.
- XVIII. Sabin Adrian LUCA, *Descoperiri arheologice din Banatul românesc repertoriu*, Sibiu, 2006.
- XIX. Zeno Karl PINTER, Ioan Marian ȚIPLIC, *Europa și Orientul Apropiat în evul mediu (secolele V-XIII)*, Alba Iulia, 2006.
- XX. ***, *Relații interetnice în spațiul românesc (II). Populații și grupuri etnice (sec. II î.Hr. - V d.Hr.)*, Alba Iulia, 2006.
- XXI. Ioan Marian ȚIPLIC, *Transylvania in the early middle ages*, Alba Iulia, 2006.
- XXII. Zeno Karl PINTER, Aurel DRAGOTĂ, Ioan Marian ȚIPLIC, *Piese de podoabă și vestimentație la grupurile etnice din Transilvania (sec. VII-XII)*, Alba Iulia, 2006.
- XXIII. Aurel DRAGOTĂ, *Aspecte de multiculturalitate spirituală. Rit și ritual funerar în Transilvania și Europa Centrală și de Sud-est (sec. IX-XI p. Ch.)*, Alba Iulia, 2006.

ACTA TERRAE SEPTEMCASTRENSIS

Numbers: 2002; II 2003; III 2004; IV 2005; V 2006; V, 1 2006 special number (***, coord. Sabin Adrian LUCA and Valeriu SÎRBU, *The Society of the Living the Community of the Dead from Neolithic to the Christian Era. Proceedings of the 7th International Colloquium of Funerary Archaeology*).

Online: <http://arheologie.ulbsibiu.ro>

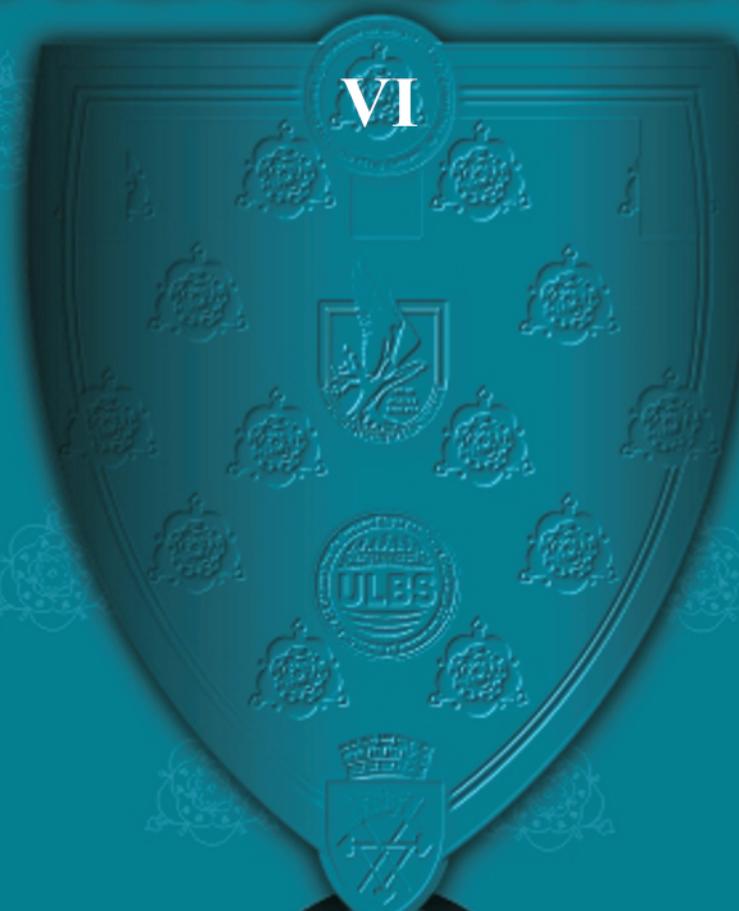
ISSN 1583-1817

“LUCIAN BLAGA” UNIVERSITY OF SIBIU
FACULTY OF HISTORY AND PATRIMONY
INSTITUTE FOR THE STUDY AND VALORIFICATION
OF THE TRANSYLVANIAN PATRIMONY IN EUROPEAN CONTEXT

ACTA TERRAE SEPTEMCASTRENSIS

VI

ACTA TERRAE SEPTEMCASTRENSIS



Editura "ALTIP"



Sibiu - 2007



Acta Terrae Septemcastrensis, VI, 2007

ACTA TERRAE SEPTEMCASTRENSIS

VI, 2007

Acta Terrae Septemcastrensis, VI, 2007

Acta Terrae Septemcastrensis, VI, 2007
„LUCIAN BLAGA” UNIVERSITY OF SIBIU
INSTITUTE FOR THE STUDY AND VALORIZATION OF THE
TRANSYLVANIAN PATRIMONY IN EUROPEAN CONTEXT

ACTA TERRAE

SEPTEMCASTRENSIS

VI

ARCHAEOLOGY
CLASICAL STUDIES
MEDIEVAL STUDIES

SIBIU

2007

Acta Terrae Septemcastrensis, VI, 2007

Editorial board:

Editor:

Sabin Adrian LUCA (Universitatea „Lucian Blaga” din Sibiu, România)

Members:

Paul NIEDERMAIER (membru corespondent al Academiei Române),
(Universitatea „Lucian Blaga” din Sibiu, România)

Krum BACVAROV (Bulgarian Academy of Sciences, Institute of Archaeology
and Museum, Sofia)

Dumitru PROTASE (membru de onoare al Academiei Române)
(Universitatea „Babeş-Bolyai” Cluj-Napoca)

Paolo BIAGI (Ca’ Foscaro University Venice, Italy)

Michael WHITE (Sussex University, Brighton, United Kingdom)

Michela SPATARO (University College London, United Kingdom)

Zeno-Karl PINTER (Universitatea „Lucian Blaga” din Sibiu, România)

Marin CÂRCIUMARU (Universitatea „Valahia” Târgovişte, România)

Nicolae URSULESCU (Universitatea „Al. I. Cuza” Iaşi, România)

Gheorghe LAZAROVICI (Universitatea „Eftimie Murgu” Reşiţa,
România)

Thomas NÄGLER (Universitatea „Lucian Blaga” din Sibiu, România)

Secretaries:

Ioan Marian ȚIPLIC (Universitatea „Lucian Blaga” din Sibiu, România)

Cosmin SUCIU (Universitatea „Lucian Blaga” din Sibiu, România)

ISSN 1583-1817

**Contact adress: Universitatea „Lucian Blaga” Sibiu, Institutul pentru
cercetarea și valorificarea patrimoniului cultural transilvănean în
context european, B-dul Victoriei Nr. 5-7, 550024 Sibiu, România Tel.
0269 / 214468, int. 104, 105; Fax. 0269 / 214468; 0745 / 366606; e-mail:
sabinadrian.luca@ulbsibiu.ro; web: <http://arheologie.ulbsibiu.ro>.**

Acta Terrae Septemcastrensis, VI, 2007

Content

Sabin Adrian LUCA, Dragoş DIACONESCU, Adrian GEORGESCU, Cosmin SUCIU, ARCHAEOLOGICAL RESEARCHES AT MIERCUREA SIBIULUI-PETRIŞ (SIBIU COUNTY, ROMANIA) THE CAMPAIGNS FROM 1997 TO 2005..... 7

Georgeta EL SUSI, ARCHAEOZOOLOGICAL RECORDS ABOUT DOMESTIC SPECIES FARMED BY EARLY NEOLITHICAL COMMUNITIES FROM BANAT AND TRANSILVANIA..... 25

Viktoria PETROVA, CERAMIC ASSEMBLAGE OF THE LATE CHALCOLITHIC KARANOVO VI CULTURE IN THRACE: PHASES I AND II..... 53

Marco MERLINI, A SEMIOTIC MATRIX TO DISTINGUISH BETWEEN DECORATIONS AND SIGNS OF WRITING EMPLOYED BY THE DANUBE CIVILIZATION..... 73

Alexandru Gh. SONOC, EINIGE BEMERKUNGEN BEZÜGLICH DER METALLSARKOPHAGE (MIT BESONDERER RÜCKSICHT AUF DENJENIGEN AUS RÖMERZEITLICHEN DAKIEN)..... 131

Maria-Emilia ȚIPLIC, Martin WHITE, A VIRTUAL RECONSTRUCTION OF THE TWO ROMANIC CHURCHES FROM SOUTH OF TRANSYLVANIA. Case studies at Cislăchioara and Șura Mică Churches..... 153

Sabin Adrian LUCA, DEAR COLLEAGUE..... 173

Acta Terrae Septemcastrensis, VI, 2007

Acta Terrae Septemcastrensis, VI, 2007

**ARCHAEOLOGICAL RESEARCHES AT
MIERCUREA SIBIULUI-PETRIȘ (SIBIU COUNTY, ROMANIA)
THE CAMPAIGNS FROM 1997 TO 2005**

Sabin Adrian LUCA,
Brukenthal National Museum, sabin.luca@brukenthalmuseum.ro;
Dragoș DIACONESCU,
“Corvin Castle” Museum, goshu_d@yahoo.com
Adrian GEORGESCU,
Brukenthal National Museum, adrian.georgescu@brukenthalmuseum.ro;
Cosmin SUCIU,
„Lucian Blaga“ University, cos_suciu@yahoo.com

*Săpăturile arheologice de la Miercurea Sibiului-Petriș.
Campaniile anilor 1997-2005. Stratigrafie
- rezumat -*

Situl arheologic de la Miercurea Sibiului, punctul Petriș, se localizează la circa 500 m est de stațiunea balneară Miercurea Băi și la 50-80 m nord de drumul național Sebeș – Sibiu. Așezările preistorice se întind de-a lungul terasei care se înalță cu aproximativ 4-5 m înălțime față de lunca inundabilă a râului Secaș. Resturile arheologice se întind pe aproximativ 300 m de-a lungul terasei și 80-100 m de la buza acesteia către șoseaua națională mai sus pomenită.

În anul 1997 s-au început și cercetările arheologice sistematice printr-o cooperare între Universitatea „Lucian Blaga” din Sibiu și Muzeul Național Brukenthal din aceeași localitate.

Din anul 2003 s-a pornit colaborarea cu Universitatea “Ca’ Foscari” din Veneția (Italia; Prof.dr. Paolo BIAGI) și “University College London” (Marea Britanie; Dr. Michela SPATARO).

Între anii 1997 și 2000 sistemul de săpătură a constat în trasarea și cercetarea unor secțiuni de control stratigrafic. Acestea au fost: secțiunea S1 / 1997 (20 / 1,5 m), secțiunile S 2-3 / 1998 (16 / 2 m fiecare), secțiunea S4 / 1999 (16 / 2 m) și secțiunea S5 / 2000 (20 / 1,5 m).

În anul 2001 s-a deschis o suprafață de cercetare de 20 / 20 m (suprafața S1 / 2001-2003). În anul 2003 s-a deschis suprafața SII (15 / 16 m), care s-a cercetat complet în anii 2004 și 2005. În anul 2005 s-a deschis încă o suprafață de cercetare, SIII (20 / 10 m), care va fi cercetată în decursul anului 2006.

Acta Terrae Septemcastrensis, VI, 2007

Pe scurt, stratigrafia sitului este următoarea:

I – primul nivel de locuire – și cel mai vechi – aparține culturii Starčevo-Criș. Acesta are mai multe subniveluri, după cum urmează:

- *Ia – locuințele adâncite ale acestui subnivel (bordeie) aparțin fazei IB a culturii;*
- *Ib – locuințele adâncite ale acestui subnivel (bordeie) aparțin fazei IC-IIA a culturii;*
- *Ic – locuințele adâncite ale acestui subnivel (bordeie) aparțin unei faze evolute a culturii (IIB-III A ?).*

II – al doilea nivel de locuire reprezintă sfârșitul fazei timpurii a culturii Vinča și are – la rândul său – trei subniveluri:

- *Ia₁ – locuințele adâncite ale acestui subnivel (bordeie) aparțin – cel mai devreme – sfârșitului subfazei A₂ și fazei A₃ a culturii;*
- *Ia₂ – locuințele adâncite ale acestui subnivel (bordeie) aparțin fazei A₃ a culturii;*
- *Iib – locuințele de suprafață ale acestui subnivel (bordeie) aparțin fazei A₃-B₁ a culturii.*

III – al treilea nivel de locuire reprezintă cultura Petrești. Faza AB și prezintă – din punctul de vedere al arhitecturii – locuințe de suprafață.

IV – nivelul al patrulea este reprezentat prin foarte puține complexe celto-dacice și se datează în secolele II-I î.Chr.

V – al cincilea nivel este reprezentat printr-o necropolă gepidă.

VI – al șaselea nivel este format din locuințe semi-adâncite, cu pietrar. Epoca la care au fost construite este extrem de greu de evaluat. Credem că se pot încadra în primul mileniu d.Chr.

Un exemplu pentru stratigrafia verticală a sitului este o parte a profilului de sud al suprafeței SI a cărei cercetare s-a încheiat în anul 2003. De sus în jos situația stratigrafică este următoarea:

1. Nivelul arabil (1) – cu dimensiunile de 0,26-0,32 m. Sub nivelul arabil se păstrează – acolo unde mai există structuri nerăscolite – nivelul Petrești.

2. Nivelul Vinča A (2) are aproximativ 0,30 m. Uneori acesta este mai subțire cu până la 0,10 m. Se văd foarte bine resturile locuințelor de suprafață din nivelul Iib.

3. Următorul nivel Vinča A (3) are aproximativ 0,20 m. Bordeicul B₅ (nivelul Ia₁) are, în acest caz, două orizonturi de umplere (notate de noi cu cifrele 4 și 5).

4. Nivelul notat de noi cu cifra 6 este steril din punct de vedere arheologic. Nivelul Starčevo-Criș nu are – acolo unde există – o grosime mai mare de 0,10 m.

Avem, în acest moment, mai multe date ¹⁴C pentru nivelul I.

Bordeiul B₁₀ / 2003, nivelul Ia, încadrat de noi relativ Starčevo-Criș IB-C se datează la 7050±70 BP (GrN - 28520). O altă dată provine din groapa rituală G₂₆ / 2005: 7010±40 BP (GrN - 29954).

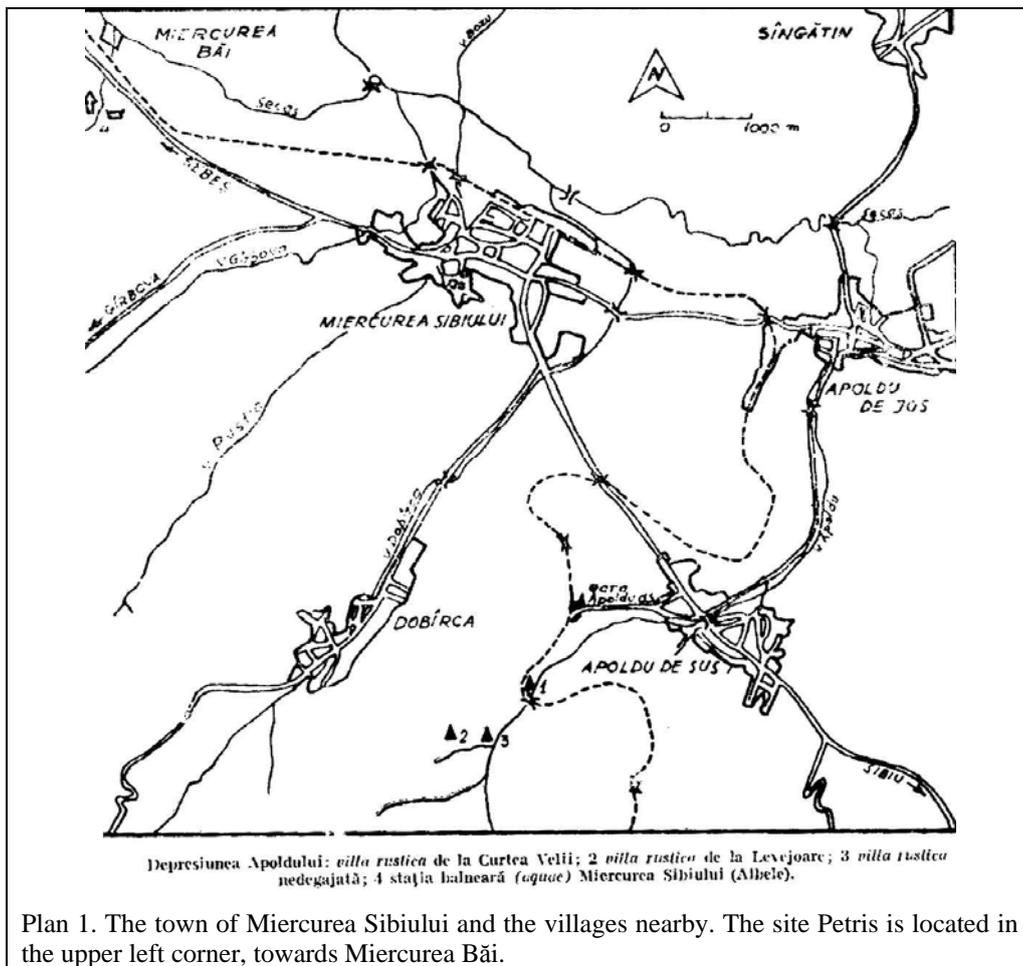
Din bordeiul B₁ / 2003, nivel Ib, Starčevo-Criș IC-IIA, avem data GrN-28521: 6920±70 BP.

În sfârșit, din nivelul Ic, Starčevo-Criș II B-III A, bordeiul B₉ / 2003, avem data: GrN 26606: 6180±40 BP (?). Această dată este acceptată, de obicei, pentru Vinča B₁. De poate ca proba să fi fost antrenată în groapă ulterior încetării funcționării acesteia.

Acta Terrae Septemcastrensis, VI, 2007

Pentru nivelul IIIb, Vinča A₃-B₁ avem o singură dată până în prezent: GrN 29053: 6350±130 BP.

The site *Petriș* is located some 500 m east of Miercurea Băi, 50-80 m north of the national motorway Sebeș – Sibiu, on the edge of a long terrace, 4-5 m higher than the floodable meadow of the Secaș River. The archaeological finds are spread on a of 300 m (width) by 80-100 m (length) along a terrace which is parallel to the floodable meadow of the river.



Plan 1. The town of Miercurea Sibiului and the villages nearby. The site *Petriș* is located in the upper left corner, towards Miercurea Băi.

Acta Terrae Septemcastrensis, VI, 2007

In the spring of 1997¹, C. Roman, archaeologist of the “Corvin Castle” Museum in Hunedoara rediscovered the site. The finds he collected, as well as the ones previously found were immediately published.² On that occasion it was possible to ascertain the existence of material to be attributed to the early phases of the Starčevo-Criș Culture, as well as others, belonging to the early phases of the Vinča Culture, the Eneolithic period (Petrești) and the Bronze Age.³

In 1997, the excavation of the site was carried out in cooperation with the “Lucian Blaga” University and the Historical Department of the Brukenthal National Museum (Sibiu)⁴.

Since 2003 we have started a collaboration with the “Ca’ Foscari University of Venice” (Italy)⁵ and the “University College London” (Great Britain)⁶.

This collaboration embraces many research subjects such as: the study of south-western Transylvanian soils, the comparison between those soils and the composition of Neolithic ceramics, some C dates carried out for Banat and Transylvania⁷, the study of south-western Transylvanian obsidian and the research of raw material sources, some palinology studies and the analysis of the Vinča culture’s early phases and the linear synthesis that appears on this occasion.

Between 1997 and 2000 a few trial trenches were opened, in order to check the archaeological sequence of the settlement which characterise the site⁸. Here are the sections: S1 / 1997 (20 / 1,5 m), S 2-3 / 1998 (16 / 2 m each), S4 / 1999 (16 / 2 m) and S5 / 2000 (20 / 1,5 m). The excavation revealed the presence of surface dwellings (habitation structures), fireplaces, deepened archaeological complexes

¹ Luca et alii 2000a, p. 40; 2000b, p. 7.

² *Ibidem*.

³ Luca et alii 1998; Luca et alii 1999; Luca et alii 2000; Luca et alii 2001; Luca et alii 2002; Luca et alii 2003; Luca et alii 2004.

⁴ The research team is conducted by Sabin Adrian LUCA (“Lucian Blaga” University of Sibiu), field director, and Adrian GEORGESCU (Brukenthal National Museum Sibiu), as a member. Since 2001, Andrei GONCIAR (University of Ottawa – Canada) has joined this team and from 2003 Dragoș DIACONESCU (Corvin Castle Museum of Hunedoara), Cosmin SUCIU (“Lucian Blaga” University of Sibiu), dr. Georgeta EL SUSI (Romanian Institute of Archaeology – Bucurest), dr. Corneliu BELDIMAN (“Dimitrie Cantemir” University – Bucurest), dr. Marius CIUȚĂ and Beatrice CIUȚĂ (“1 Decembrie 1918” University – Alba Iulia). More information on this subject is available at <http://arheologie.ulbsibiu.ro>.

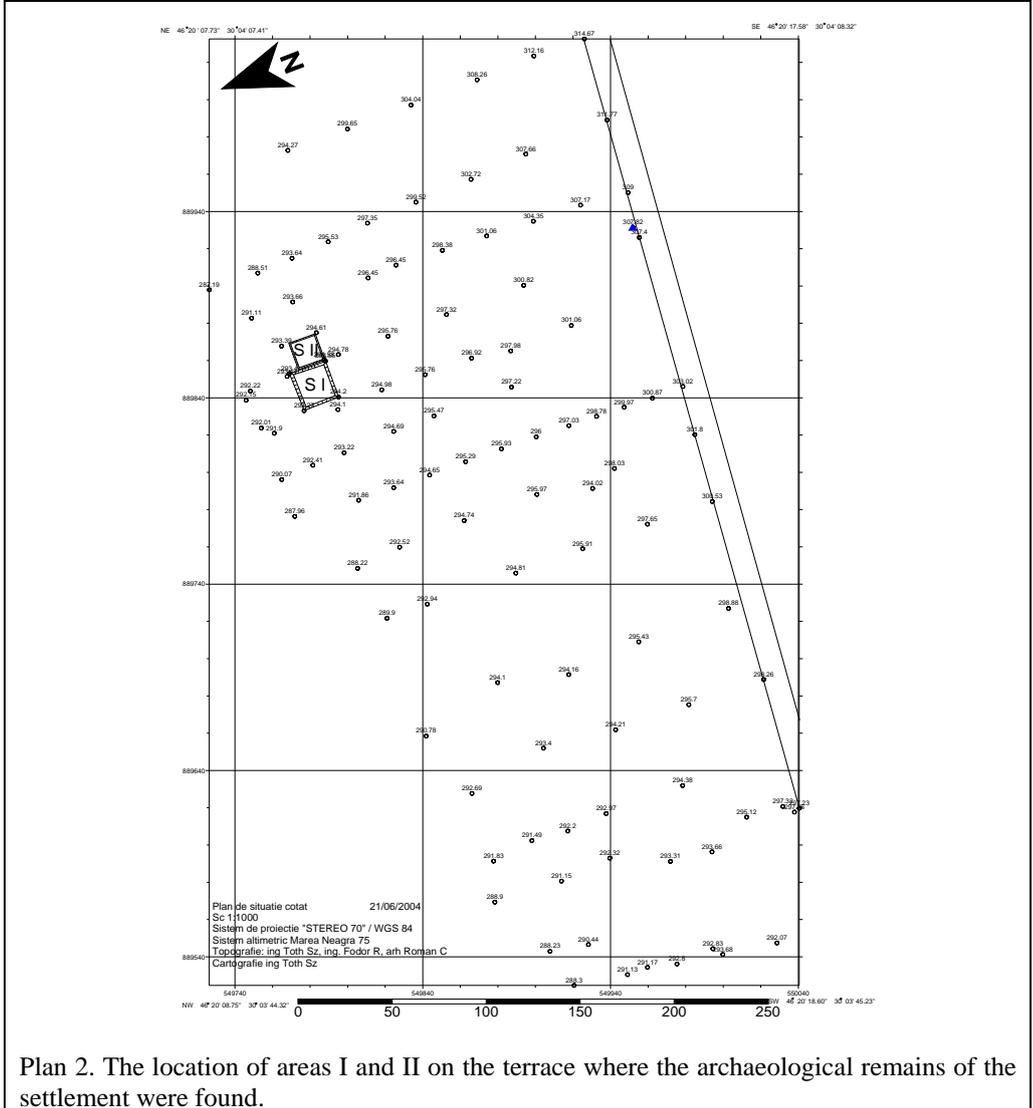
⁵ Prof.dr. Paolo BIAGI.

⁶ Dr. Michela SPATARO.

⁷ Biagi, Spataro 2004.

⁸ Luca et alii 1998; 1999; 2000a; 2001.

Acta Terrae Septemcastrensis, VI, 2007
 (domestic pits, foundation ditches, pits for pillars and poles) and 5th century Gepidic
 period graves.



Plan 2. The location of areas I and II on the terrace where the archaeological remains of the settlement were found.

In 2001 an area measuring 20 by 20 m (SI / 2001-2003) was opened. In 2003, we began the excavation of area SII (15 by 16 m), which was completed in 2004

Acta Terrae Septemcastrensis, VI, 2007

and 2005. In 2005, we began the excavation of area SIII (20 by 10 m), which was completed in 2006.

Briefly, the site's layering is the following:

I – the first, and at the same time the oldest level belonging to the Starčevo-Criș culture, has many sublevels:

Ia – the deepened dwellings dated in IB phase

Ib – the deepened dwellings dated in IC-IIA phase

Ic – after a hiatus, the deepened dwellings belonging to an evolved phase of the Starčevo-Criș culture.

II – the second level belonging to the end of the oldest Vinča phase has several sublevels:

IIa – with deepened dwellings having two sublevels:

II a1 – with deepened dwellings and a palisade dating from the A₂ phase (as a typological-stylistic base);

II a2 – with deepened dwellings dating from the A₃ phase.

III – the third level belonging to the Petresti culture; the AB phase also has some surface dwellings.

IV – the fourth level is the Celtic-Dacian one, dating from the IInd-Ist centuries BC.

V – the fifth level is represented by a Gepid necropolis.

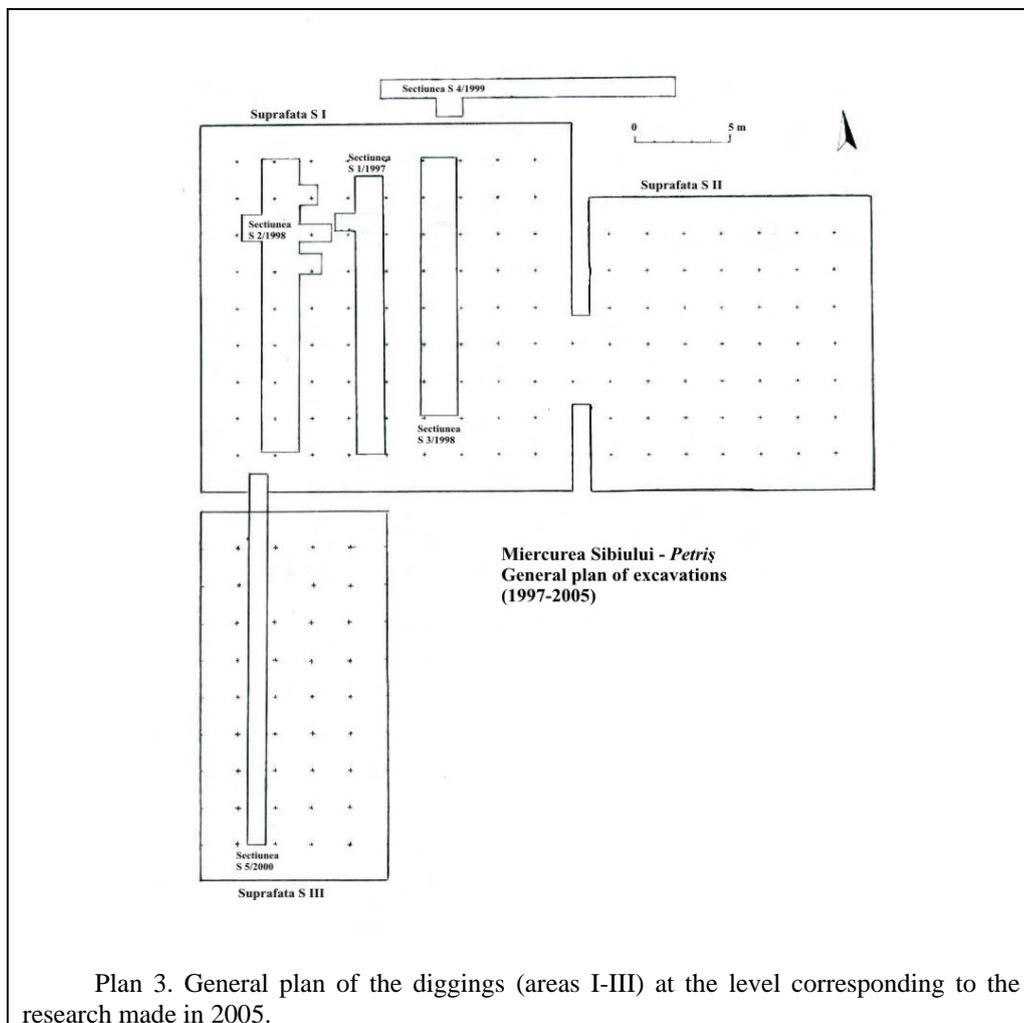
VI – the sixth level is represented by a baked clay dwelling from the early medieval epoch which is, from a chronologic and a cultural point of view, very hard to frame due to the lack of clear dating elements.

In 2005 we excavated other four huts belonging to this level.

At this stage of the research, we suggested that layer Ia represented the first Neolithic horizon of this site (defined by hut H₁₀ / 2003 complex), a rectangular dwelling, with rounded corners, partially cut, in the north-western corner, by another hut foundation (hut H₁ / 1998, 2003 belonging to an later stage of the same culture, level Ib). In 2003, we finished the excavation of the other pits of the early Starčevo-Criș culture (3 deepened hut-type dwellings, three other pits).

By analysing the disposal of the complexes belonging to the Starčevo-Criș culture we can notice that the observation made by N. Vlăsa, who stated that all over the settlement at Gura Baciului the huts were disposed in a nestlike shape, is right. This disposal is curious because it supposed either the knowledge, or the seeking of the old emplacement through field work methods. Perhaps the unsophisticated tools did not provide very good conditions for digging, so the necessity arose to use former labours. On the other hand, we can assume a religious explanation for this kind of pits. The oldest pits, or the place where there were located, can be considered *votive* and, thereby, in a good state.

Acta Terrae Septemcastrensis, VI, 2007

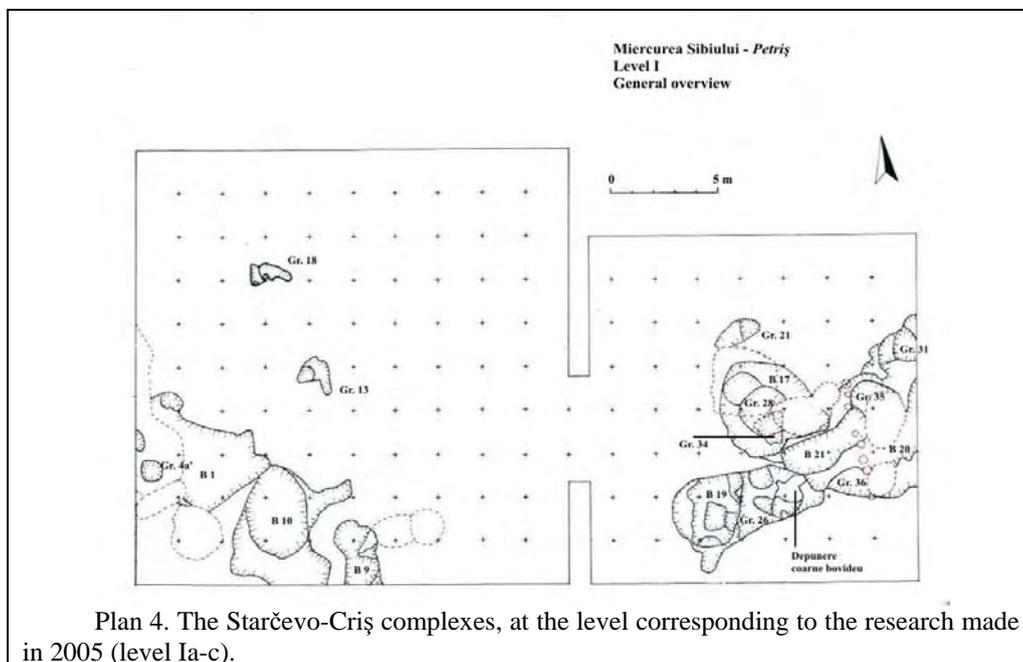


From the architectural point of view, little is known about the walls and the roof of these huts. We know that they had one room – the pit – having a depth of only 60-80 cm. The room is usually rectangular in the earliest phases and rounded in the last phases of the Starčevo-Criș culture.⁹

⁹ Luca 2002 ; Luca 2004 ; Luca, Suciuc 2004.

Acta Terrae Septemcastrensis, VI, 2007

During the same season, we excavated the remains of a few surface dwellings, belonging to the ancient Vinča horizon (2 structures). In 2003, we finished the excavation of the oldest Vinča culture (phase A) layer (5 deepened dwellings).



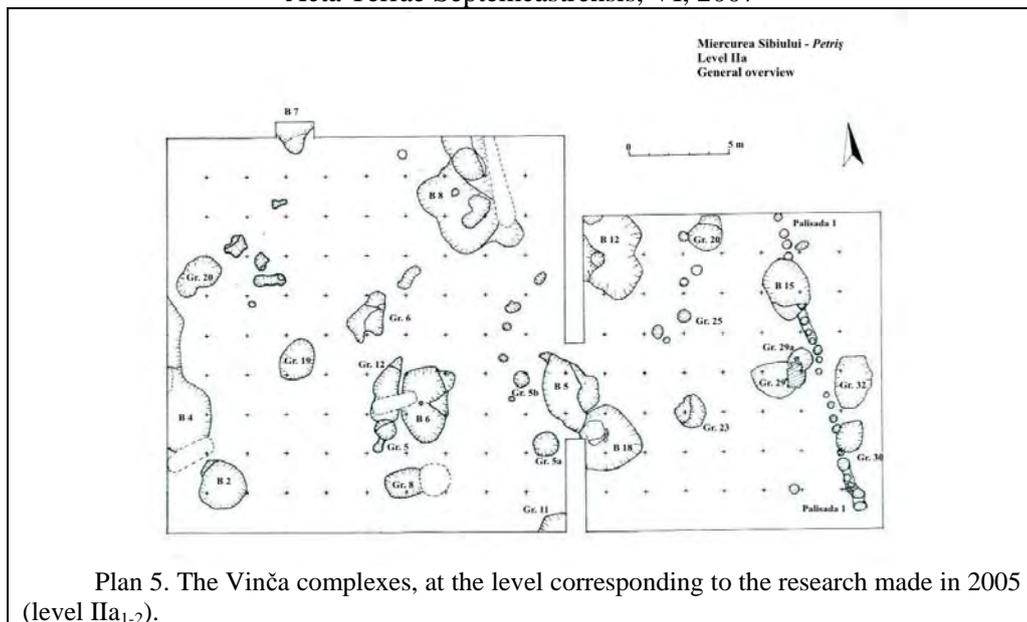
Plan 4. The Starčevo-Criș complexes, at the level corresponding to the research made in 2005 (level Ia-c).

The Vinča huts occupied, in parallel lines, the entire space of the settlement, indicating an organized management of space. Their architecture is better known than the one of the previous level. So, the huts are rounded or oval, the pit has a depth of 1 m and the walls are made of adobe sustained by stakes stuck at the extremity of the pit. The study of these huts allows us to set an internal chronology. The Vinča B15 hut overrides the line of a former palisade belonging to the same culture, which proves the existence of at least two sublevels of the Ila level.

The Vinča surface dwellings are characterised by the same concern for space management as the ones belonging to the previous level. The architecture of this kind of dwellings is much more sophisticated. The surface dwellings have floors made of small river stones, a superstructure made of a solid wood sole, equipments for cereals storage and for fire (fireplaces and furnaces with two levels of usage).

As an example of the vertical layer we have chosen a profile from the SI area excavated in 2003.

Acta Terrae Septemcastrensis, VI, 2007



From up side down, the site's vertical layering is not so complicated, containing many layering units:

1. The arable level (1) – which is, rarely, of 0,26-0,32 m. Under the arable level we have discovered – where it was preserved – the Petrești level.

2. The Vinča A level (2) has approximately 0,30 m. Sometimes it is whittled or thickened, but never more than 0,10 m. At its bottom, we found remains from the surface dwellings of IIb level.

3. The next level (3) also belongs to the Vinča culture A and has approximately 0,20 m. We notice that this level thickens in the area of the huts, between the IIa1 and IIa2 sublevels. In this case we have a hut belonging to IIa2 sublevel, with two filling levels (4-5 on the drawing).

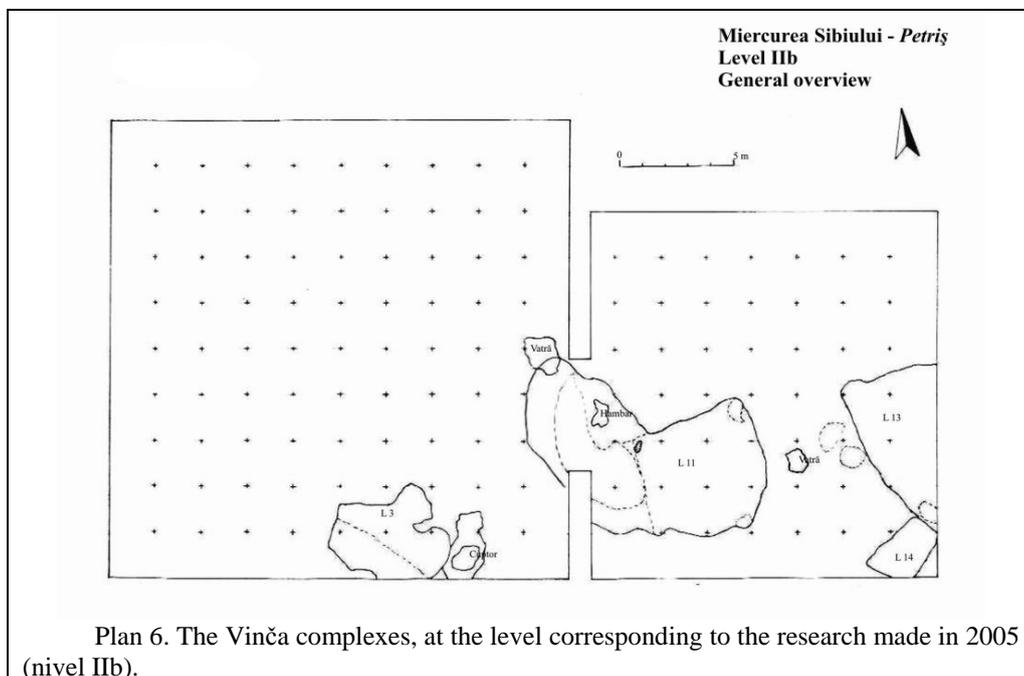
4. The last level (6) of this drawing is sterile from an archaeological point of view. The Starčevo-Criș culture layer (Ia-c levels) is discovered only in the nest area and it is, invariably, very thin, (only 0,10 m deep).

In 2001 and 2002 we excavated the Petrești occupation layer, represented by surface dwelling (2 houses), which are the most recent Eneolithic structures of the site¹⁰.

¹⁰ Luca et alii 2002.

Acta Terrae Septemcastrensis, VI, 2007

The Petresti level is very affected by modern agricultural works. Therefore, only remains of two surface dwellings were discovered. Their fragmentary situation stopped us from drawing any conclusions.



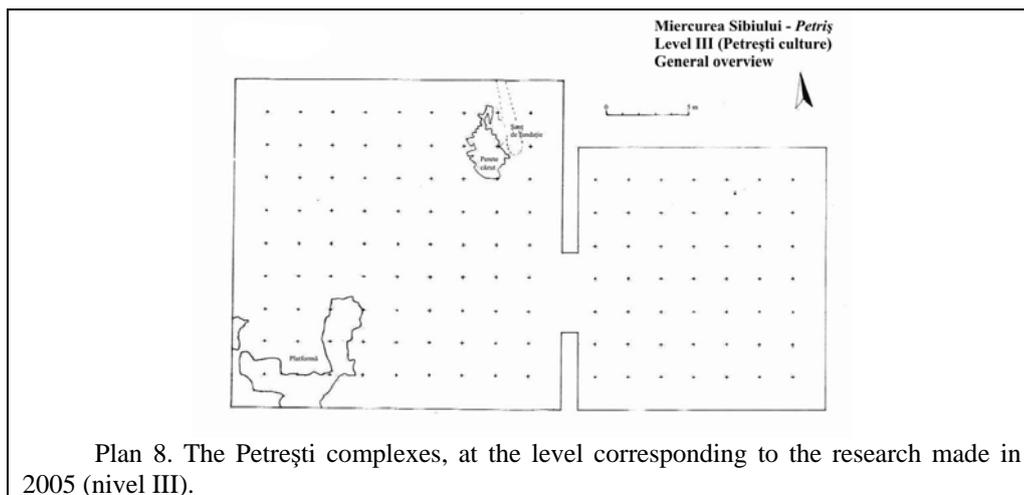
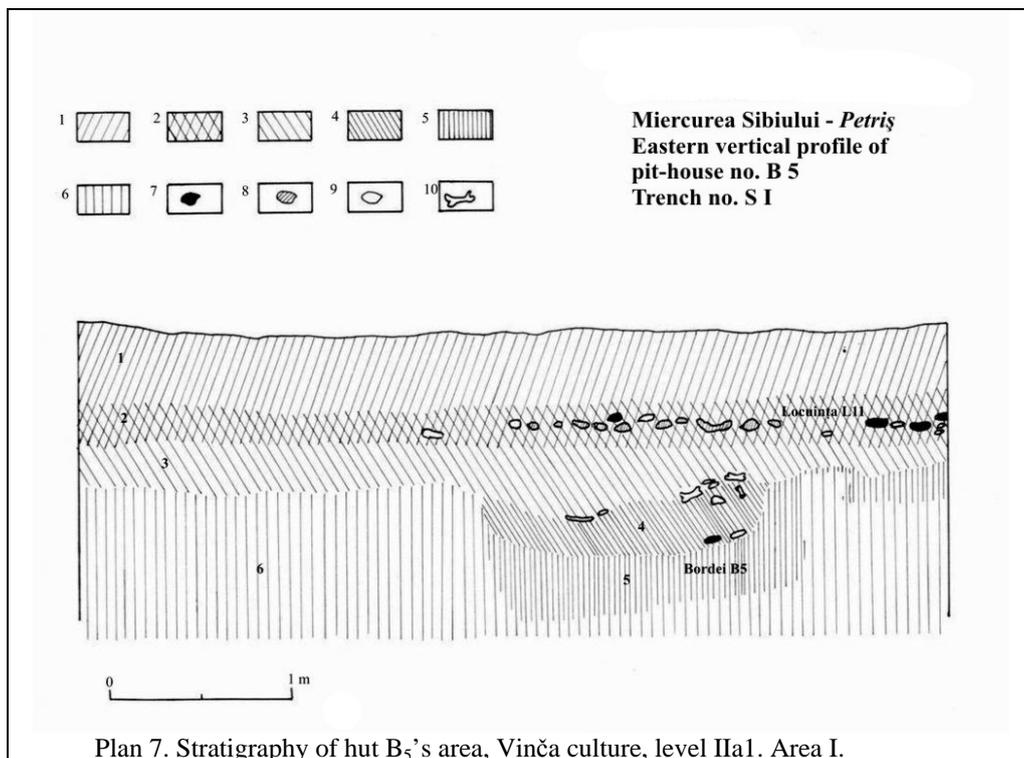
The Celtic-Dacian level is represented by some isolated pits irrelevant for the development of any theory on the way space was occupied at that time.

The Gepidic level (the burials) was already published, so we will not comment on this particular matter¹¹.

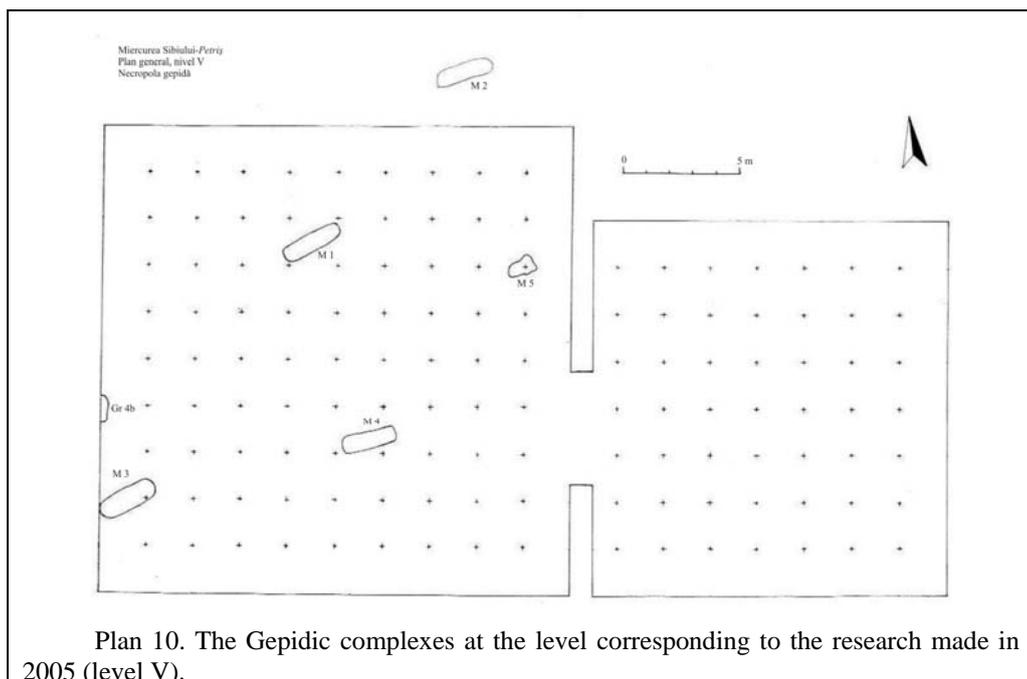
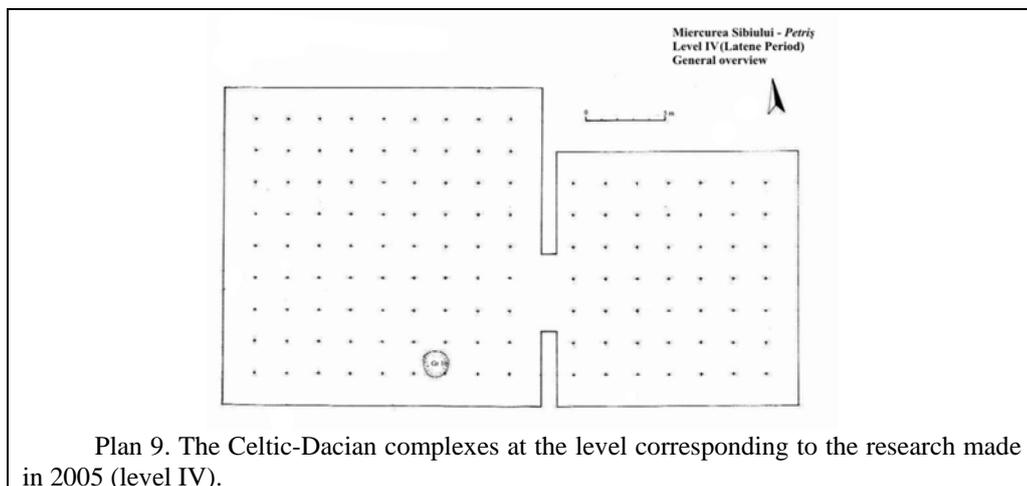
Most of the data concerning the absolute chronology are available for level I. The hut B₁₀/2003 situated on the level Ia that we dated back to Starčevo-Criș I B-I C goes back to 7050 ±70 BP (GrN - 28520). For the same level (I a) we have another C date of a sample in G 26/2005, namely 7010±40 BP (GrN - 29954). From B₁/2003, belonging to the level Ib (Starčevo-Criș IC-IIA), we have a C date GrN-28521: 6920±70 BP. Finally, for the level Ic (Starčevo-Criș II B-III A), B₉-2003, we have the following C date: GrN 26606 6180±40 BP (?). This date may be corrupted as it was based on a absolute chronology once accepted for Vinča B₁.

¹¹ Luca et alii 2005.

Acta Terrae Septemcastrensis, VI, 2007



Acta Terrae Septemcastrensis, VI, 2007



Finally, for the level IIb (Vinča A3-B1) we have a C date too: GrN 29053, 6350 ± 130 BP.

Acta Terrae Septemcastrensis, VI, 2007

All these C dates, except the B₉/2003 are generally part of a period going from Starčevo-Criș to Vinča B1.

All the data in this article show that the archaeological site in Miercurea Sibiului has one of the most important and interesting vertical and horizontal stratigraphies in Transylvania. This will make us continue our research in the years to come.

Acta Terrae Septemcastrensis, VI, 2007

Illustration list
Lista ilustrațiilor

Plan 1. The town of Miercurea Sibiului and the villages nearby. The site *Petris* is located in the upper left corner, towards Miercurea Băi.

Plan 2. The location of areas I and II on the terrace where the archaeological remains of the settlement were found.

Plan 3. General plan of the diggings (areas I – III) at the level corresponding to the research made in 2005.

Plan 4. The Starčevo-Criș complexes, at the level corresponding to the research made in 2005 (level Ia-c).

Plan 5. The Vinča complexes, at the level corresponding to the research made in 2005 (nivel IIa1-2).

Plan 6. The Vinča complexes, at the level corresponding to the research made in 2005 (nivel IIb).

Plan 7. Stratigraphy of hut B₅'s area, Vinča culture, level IIa1. Area I.

Plan 8. The Petrești complexes, at the level corresponding to the research made in 2005 (nivel III).

Plan 9. The Celtic-Dacian complexes at the level corresponding to the research made in 2005 (level IV).

Plan 10. The Gepidic complexes at the level corresponding to the research made in 2005 (level V).

Plan 1. Orașul Miercurea Sibiului și localitățile din jurul acestuia. Situl din punctul *Petriș* se află în dreptul curbei spre Miercurea Băi (în colțul de stânga-sus al hărții). The town of Miercurea Sibiului and the villages nearby. The site *Petris* is located in the upper left corner, towards Miercurea Băi.

Plan 2. Localizarea suprafețelor SI și SII pe terasa pe care au fost descoperite resturile arheologice. The location of areas I and II on the terrace where the archaeological remains of the settlement were found.

Plan 3. Planul general al săpăturilor (suprafețele SI-III) la nivelul de cercetare corespunzând anilor 1997-2005. General plan of the diggings (areas I-III) at the level corresponding to the research made in 1997-2005.

Plan 4. Complexele Starčevo-Criș cercetate în perioada 1997-2005 (nivel Ia-c). The Starčevo-Criș complexes, at the level corresponding to the research made in 1997-2005 (level Ia-c).

Acta Terrae Septemcastrensis, VI, 2007

Plan 5. Situația complexelor aparținând culturii Vinča, corespunzând cercetărilor anilor 1997-2005 (nivel IIa₁₋₂). The Vinča complexes, at the level corresponding to the research made in 1997-2005 (level IIa₁₋₂).

Plan 6. Situația complexelor aparținând culturii Vinča, corespunzând cercetărilor anilor 1997-2005 (nivel IIb). The Vinča complexes, at the level corresponding to the research made in 1997-2005 (nivel IIb).

Plan 7. Situația complexelor aparținând culturii Petrești, corespunzând cercetărilor anilor 1997-2005 (nivel III). The Petrești complexes, at the level corresponding to the research made in 1997-2005 (nivel III).

Plan 8. Situația complexelor celto-dacice, corespunzând cercetărilor anilor 1997-2005 (nivel IV). The Celtic-Dacian complexes at the level corresponding to the research made in 1997-2005 (level IV).

Plan 9. Situația complexelor gepide, corespunzând cercetărilor anilor 1997-2005 (nivel V). The Gepidic complexes at the level corresponding to the research made in 2005 (level V).

Plan 10. Stratigrafia din zona B₅, cultura Vinča, nivel IIa₁, suprafața SI. Stratigraphy of hut B₅'s area, Vinča culture, level IIa₁. Area I.

Acta Terrae Septemcastrensis, VI, 2007

BIBLIOGRAPHY

CCA	– Cronica cercetărilor arheologice , București
CCDJ	– Cultură și civilizație la Dunărea de Jos , Călărași
Istros	– Istros, Muzeul Brăilei , Brăila
MI	– Magazin istoric , București
PB	– Patrimonium Banaticum , Timișoara
Transilvania	– Transilvania , Sibiu

Biagi, Spataro 2004 – *Biagi P., Spataro M.*, New radiocarbon dates from the Criș Culture settlements of Banat and Transylvania (Romania), in *PB*, 3, 2004, p. 7-20.

Luca 2002 – *Luca S.A.*, Eine zoomorphe Statuette aus der Jungsteinzeitliche Siedlung von Reussmarkt / Miercurea Sibiului / Szerdahely-Petriș, in *CCDJ*, 19, 2002, p. 96-106.

Luca 2004 – *Luca S.A.*, O statueta zoomorfă stilizată descoperită în stațiunea de la Miercurea Sibiului-Petriș (Jud. Sibiu, România) și câteva opinii despre începutul neoliticului timpuriu din Transilvania, in *Istros*, 11, 2004, p. 3-26.

Luca 2004a – *Luca S.A.*, *La Miercurea Sibiului locuințe de acum 8.000 ani*, in *Magazin istoric* 38 (2004, 2, 443), București, p. 59-60.

Luca 2004b – *Luca S.A.*, *Opinii noi despre începutul neoliticului timpuriu din Transilvania. Nivelul I din stațiunea neolitică de la Miercurea Sibiului*, in *Transilvania*, Supliment Miercurea Sibiului, Sibiu, 21.05.2004, p. 3-12.

Luca, Suci 2004 – *Luca S.A., Suci C.*, *The Begining of the Early Neolithic in Transylvania*, in *Scripta praehistorica. Miscellanea in honorem nonagenarii magistri Mircea Petrescu-Dîmbovița oblata*, Iași, 2005, p. 139-156, ISBN 973-7834-13-5.

Luca et alii 1998 – *Luca S.A., Georgescu A.*, Miercurea Sibiului-Petriș, in *CCA*, 1998, p. 44.

Luca et alii 1999 – *Luca S.A., Georgescu A.*, Miercurea Sibiului-Petriș, in *CCA*, 1999, p. 64.

Luca et alii 2000 – *Luca S.A., Georgescu A., Purece S.*, Miercurea Sibiului-Petriș, in *CCA*, 2000, p. 86.

Luca et alii 2000a – *Luca S.A., Ciugudean H., Roman C., Dragotă A.*, Faza timpurie a culturii Vinča în Transilvania. Repere ale orizontului cronologic și cultural, in *Angustia*, 5, 2000, p. 37-72.

Acta Terrae Septemcastrensis, VI, 2007

Luca et alii 2000b – Luca S.A., Ciugudean H., Roman C., *Die frühphase der Vinča- Kultur in Siebenbürgen. Anhaltspunkte des chronologischen und ethnokulturellen horizontes*, in *Apulum* 37, 1, 2000, p. 1-50.

Luca et alii 2001 – Luca S.A., Georgescu A, Purece S., Gonciar A., *Miercurea Sibiului-Petriș*, in *CCA*, 2001, p. 143.

Luca et alii 2002 – Luca S.A., Georgescu A, Purece S., Gonciar A., *Miercurea Sibiului-Petriș*, in *CCA*, 2002, p. 204.

Luca et alii 2003 – Luca S.A., Diaconescu D., Georgescu A, Suciu C., *Miercurea Sibiului-Petriș*, in *CCA*, 2003, p. 196-197.

Luca et alii 2004 – Luca S.A., Diaconescu D., Georgescu A, Suciu C., *Șantierul arheologic Miercurea Sibiului*, in *CCA*, 2004, p. 124.

Luca et alii 2005 – Luca S.A., Pinter Z.K., Țiplic I.M., Georgescu A., Diaconescu D., *Descoperiri gepide la Miercurea Sibiului-Petriș (jud. Sibiu)*, in *Relații interetnice în Transilvania. Secolele VI-XIII*, București, 2005, p. 19-32.

Acta Terrae Septemcastrensis, VI, 2007

Acta Terrae Septemcastrensis, VI, 2007

**ARCHAEOZOOLOGICAL RECORDS ABOUT DOMESTIC SPECIES
FARMED BY EARLY NEOLITHICAL COMMUNITIES FROM BANAT
AND TRANSILVANIA**

Georgeta El Susi

Institute of Archaeology, Bucarest, getasusi@yahoo.com

In the last decade new information about morphological traits and metrical data concerning the species exploited by Early Neolithic communities from Banat and Transilvania accumulated. Taking into account the precedent information (El Susi, 1996), we put them in a common framework and tried to synthesize some common traits of the animals exploited in sites belonging to *Starčevo-Criș* Culture in our regions. The next table emphasizes the settlement under discussion, their location, size sample etc.

Table 1 – The distribution of samples

Site	Location	Chronology	Size sample	Faunal analyze
Dudeștii Vechi	Banat Plain	Starčevo-Criș IC-IIA	2,457	El Susi, 2001
Foeni-Gaz	Banat Plain	Starčevo-Criș IC-IIA	7,561	El Susi, 2002
Gura Baciului	Someșan Plateau	Starčevo-Criș IA-III	1,226	El Susi, Bindea, 1995
Șeusa-Cârarea Morii	Secașelor Plateau	Starčevo-Criș IC-IIA	1,086	El Susi, 2000
Miercurea Sibiului-Petriș	Secașelor Plateau	Starčevo-Criș IB-IIA	1,451	Inedited
Cauce	Mountains Poiana Ruz	Starčevo-Criș IC-IIA	727	El Susi, 2005
Pojejena-Nucet	Danube Valley (S Banat)	Starčevo-Criș IIA-IIB	302	El Susi, 2006
Gornea -Locurile Lungi	Danube Valley (S Banat)	Starčevo-Criș IIB	275	El Susi, 2006

Acta Terrae Septemcastrensis, VI, 2007

The present study focuses upon cattle, sheep, goat, pig and dog remains from mentioned sites, that regularly are integrated in faunal samples from this epoch. Sheep/goat and cattle samples furnished abundant data contrasting to scarce records of dog and pig. Analyses of the faunal remains from many sites are still ongoing and results are therefore preliminary.

Sheep (*Ovis aries*) and goat (*Capra hircus*)

The Early Neolithic communities accorded a special attention to this grouping of mammals, in most cases prevailing as number of fragments. About 1,739 small ruminant bones were collected from the mentioned-sites, a large amount originating in sheep. Until now, the number of horn cores introduced in analyze is reduced to nine pieces from sheep and two from goat. The two untwisted (“aegagrus”) horn cores of goat belonging to female were collected from Miercurea Sibiului (SW Transilvania).

Table 2 – Horn cores of caprovines from Neolithic sites

S p.	Ovis				Ovis	Ovis		Ovis	Ovis	Capra	
Site	Miercurea Sibiului				Dudeștii Vechi	Șeușa		M. Sibiului	Cauc	M. Sibiului	
GL	65	58.5						65	95		
GD	45.5	47.5	47	51	53	37	45	28	36	37.5	37.5
SD	29	27.5	27.5	30.5	33		31.5	19	22	24.5	27.5
C	129	122	120	132.5	137		115	76	94	99	103
Sex	M	M	M	M	M	M/s-adult	M	F	F	F	F

Six male horn cores and three from females illustrate the sheep sample. Among the male pieces, a single one from Dudeștii Vechi is robust, the other ones display moderate dimensions. They belong to “copper sheep” type: outwardly twisted, not very long, with triangular cross-section. The three cores of females are shortest, untwisted and goat-like. They were collected only from Transylvanian sites, missing in the Banat region. Hornless sheep were emphasized only at Miercurea Sibiului (three pieces) and at Șeușa (a piece) (El Susi, 2000, 50). “They were

Acta Terrae Septemcastrensis, VI, 2007

identified in every Early Neolithic site in the Balkans, in the Carpathian Basin, as well as in South Europe” (Bökönyi, 1992a, 209), as sign of early domestication (Bökönyi, 1977, 66). Were also identified at Achilleion (the earliest appearance in Europe) (Bökönyi, 1989, 319), Mihajlovac Knepjšte (Bökönyi, 1992b, 80), Endröd 119 (Bökönyi, 1992a, 211).

As for the withers height, in case of caprinae we have no data to illustrate this parameter. The fewer measurements on breath of bones suggest medium sized-animals, more robust than sheep According to measurements on sheep long bones (Table 3), for the Banat region a variation of 56.9-60.3 cm (average – 58.9) was obtained. For Transylvanian sheep a variation of 48.5-65 cm (average - 56.7 cm) was established. The lesser value is due to reduced figures in case of Cauce site. There a variation of 48-54 cm was found.

Table 3 – The withers height of caprovines in Early Neolithic sites

Sit	D. Vecchi				Foeni-Gaz	Cauce				G. Baciului	M. Sibiului		
	Metacarp		Metatars		Mc.	Mc.	Scapula		Mc.	Mc.	Radius		
Lg.	120	122	131	133	116.5	111.5	114	129	121.5	133	142	147	
Tall	58.6	59.6	59.4	60.3	56.9	54.5	48.1	54.4	58.9	65	57	59.1	

By contrary at Miercurea Sibiului a variation of 57-65 cm, with an increased average, of 60.4 cm emphasized (personal, unpublished data). The size of 65 cm certainly suggests a ram. Taking into consideration the estimations on calcaneii (pretty numerous), it obtained the lesser values in case of Cauce too (55.1 cm average). It seems that the Cauce community exploited a “breed” of ovinae smaller in size as compare to the other ones. We talk about a local “breed”? or simply one, among the presumed individuals the ewes prevailed. Preliminary analysis of sheep and goat remains suggests that during Early Neolithic epoch they were gracile, small in size, with withers heights rarely exceeding 62-65 cm (maybe the rams), matching with the SE European sheep. Related values displayed the samples from Endröd 119: 51.2-63.6 cm, average – 57.2 (Bökönyi, 1992a, 216), Lánycsók-Egettmalom 54.4-58.8 cm (Bökönyi, 1981, 21-34), Maroslele-Panai 58.3-62.6 cm (Bökönyi, 1964, 92), Nosa 48-70 cm (Bökönyi, 1984, 34), Donja Branjevina 58 cm (Blažić, 2005, 76), Mihajlovac Knepjšte 59.6 and 59.8 cm (Bökönyi, 1992b, 80) and Padina 52.3 cm (Clason, 1980, 162).

Cattle (*Bos taurus*)

The cattle samples under discussion total about 1814 fragments, which of them twenty-five are horn cores; most part of them were unearthed at Miercurea Sibiului.

Acta Terrae Septemcastrensis, VI, 2007

Talking about that site, in a pit (Nr. 26/2005)¹ the filling of the complex contained about 36 horn cores. The cattle horn cores sample totals twenty-five fragments (sixteen on the right side, eight on the left part and for one is unspecified the side) and derive from minimum eighteen-nineteen individuals, six females and eleven males. Nine pieces originating in aurochs. The female specimens (two lefts and six rights) derive from five adults and one sub-adult. As to their morphology, the horn cores are small, short, curved, and oval on the cross-section, belonging to “brahyceros” type. The male specimens (five lefts and ten rights) belong to minimum eleven animals. By morphology, measurements and texture they are of “primigenius” type. They are large, two of them (No 12 and 21) fall into the lower aurochs range size. Furthermore, they have thinner walls as compare the aurochs material. Among the male cores some types, expression of the individual variability were identified. The first type includes the pieces no. 9, 10, 15, 16, 17, 19; moderate to large in dimensions, they are not very long, with thin walls and a compact surface.

Table 4 – Metric evaluation of cattle horn cores from Early Neolithic sites

Miercurea Sibiului															
Nr. crt.	1	2	3	4	5	6	7	8	9	10	11	12	13		
Greatest length						184							340		
Great diam of base	56.5	64.5	55.5	61.5	61	63.5	63	64	70	71	77	84	62		
Small diam of base	48.5			57.5	45	59	50	55		56		78	55.5		
Circonf.	167			189	175	192	184	192		207		268	198		
Sex	F	F	F	F	F	F	F	F	M	M	M	M	M		
Age	Adult	adult	adult	sub-adult	Adult	adult	adult	adult	adult	You ng mat.	You ng mat.	Mat ure	sub-adult		
(go on)															
										Miercurea Sibiului			Foe ni-Gaz	D. Vechi	Cau ce
Nr. crt.	14	15	16	17	18	19	20	21	22	23	24	25			

¹ The detailed analyze of the pit will be made in another context

Acta Terrae Septemcastrensis, VI, 2007

Greatest length			270								190	
Great diam of base	71	72	73	74	75,5	76,5	81		84	70	68	50
Small diam of base		55	65	50	74,5	61	62	68,5	78		56	40
Circonf.		206,5	227	208	242	226	230		268			147
Sex	M	M	M	M	M	M	M	M	M	M	F	F
Age	adult	young mat.	Immature	adult	Young mat.	young mat.	Adult	adult	adult	Adult	adult	Adult

The actual length of the No 16 horn core could hardly have exceeded 270-300 mm; regularly they are oval on cross-section, point laterally, with their tips twisted forwards and slightly upwards. Another group includes the pieces No 12, 18, 21, they are of large proportions, the section of the base is semicircular with their tips twisted forwards, than upwards. The piece No 20 is oval at the base, short, with the tip oriented forwards. Judging from dimensions of the base, it could be assessed that the bovine horn cores at Miercurea Sibiului exhibited a high degree of robustness, typical to Criş populations. Of eleven individuals, three are immature and seven reached the adulthood. Among them the young matures prevail. The male/female ratio is 11/6, suggesting a preference for the male killing, mostly before or sooner after their body maturity accomplished. Obviously, the economic judgment conditioned the culling of the males for killing, keeping the females for secondary purposes.

Overall, the morphology and the increased metric data of the cattle horn cores are typical to Early Neolithic materials from Romania and neighboring areas. We envisage similar samples in Hungary (Endröd) 119 (Bökönyi, 1992, 201-203), Serbia (Bökönyi, 1984, 29-43, idem 1988, 422). The appearance of short horned cattle ("brahyceros type") is quite interesting. Such cattle developed not long after domestication. At Çatal Hüyük such horn cores were found in the 7th millennium B.C. (Perkins, 1969, 178, after Bökönyi, 1992, 203); hitherto the earliest find in Europe was noted at Nosa (Bökönyi, 1984, 38). In the earliest Neolithic sites from the Banat Plain we found just one piece of this type at Foeni-Gaz (El Susi, 2001, 16) and Dudeştii Vechi (personal data). In Transilvania, a single piece was identified at Cauce (El Susi, 2005, 100) and several at Miercurea Sibiului, as

Acta Terrae Septemcastrensis, VI, 2007

expected. In the Earliest Neolithic site at Cârcea - „Viaduct” (Oltenia) two-three horn cores of “brahyceros” type were identified (Bolomey, 1980, 20-23).

Concerning the withers height of cattle, the analyses of the seven metapodii summarizes that: for bulls, an average of 130.3 cm (128-131 cm) was estimated for the Banat Plain. Values of 128.4 cm and 131.6 cm were calculated for Miercurea Sibiului and Gura Baciului (El Susi, Bindea, 1995, 183). In case of females withers heights of 122-127 cm (average 123.9 cm) were supposed in Transylvanian sites (Table 5). A difference of 5 cm exists between female and male withers height, signifying a visible sexual dimorphism “an ordinary fact in the primitive breeds since a conscious human selection didn’t exist” (Bökönyi, 1992a, 203).

Table 5 – Cattle metapodii from Early Neolithic sites

	Dudeștii Vechi		Miercurea Sibiului	Gura Baciului			
Bone	Metacarpus			Metacarpus			Mt
GL	240	240	203	197,5	198	213	233
Tall	131.2	131.2	128.4	122	122	131.6	127.4
Sex	M	M	M	F	F	M	F

Among cattle remains were identified few bones (their percent below 1 %) with measurements falling in the aurochs range size. In all probability, the remains originate in “transitional” individuals, their occurrence rather suggesting accidentally hybridizations with the aurochs (pretty numerous in the local fauna) than systematical preoccupations for domestication. E.g., at Miercurea Sibiului, from a total of 500 cattle bones just 3-4 remains seems to belong to cattle/aurochs. For the time being local domestications wouldn’t be excluded and on no condition the samples ascertain that assumption. In this connection „very possible close behind the arrival of Criș populations together with their flocks local domestication process to be started” (Haimovici, 1992, 264). At Achilleion, were brought out bones from “transitional individuals” of bovine (Bökönyi, 1989, 318) also at Argissa Magoula (Boessneck, 1962, 58).

Pig (*Sus scrofa domesticus*)

Fewer evaluations were made on pig sample; just 276 bones were collected from the mentioned sites, most part of them from young and sub-adult animals. Values of 70 cm (Dudeștii Vechi) and 75.9 cm (Foeni-Gaz) were obtained for the Banat Plain; at Gornea-*Locurile Lungi*, values of 64.4 and 68.9 cm were recorded (settlement placed in the Danube Valley) (El Susi, 1985-1986, 44). Only two values: 53.2 cm and 70.5 cm provided the sample from Gura Baciului (Transilvania). Therefore a large variation span of the withers height (53-75 cm) exists in case of pig from Early Neolithic sites. Some hybridization with the wild

Acta Terrae Septemcastrensis, VI, 2007

boar would have generated this variation in size. The small size of the pig would argue the introduction of the species in our regions ready domesticated from the south Balkans; it is known that our wild boar is taller and more robust than the Asian type (Haimovici, 1992, 265). Proofs of local domestication of the pig were set off at Endröd 119 (Bökönyi, 1992a, 219).

Dog (*Canis familiaris*)

Usually the dog is weakly represented in all faunal samples, counting no more than 34 bones. Accordingly, not many information about its size, using in consumption exist. Its remains were not preserved at Gura Baciului and Cauce. Overall the canine population included usually, exemplars of small size and gracile skeleton and sporadically exemplars of medium size. An animal of medium size was identified at Dudeștii Vechi (50.8 cm) (El Susi, 2002, 21). Values of 37.5 cm and 39.8 cm were found at Achilleion (Bökönyi, 1989, 321) and in the eponymous station Starčevo (Clason, 1980, 155).

The diffusions of the domesticated animal populations towards west Anatolia was considered until now starting at beginning at 7th millennium BC. According to newly geo-chronological data concerning domestication, the migration would have happened at beginning of the 8th /or end of the 9th BC. Starting with the end of the 8th BC began the dispersion into the Mediterranean Basin, Balkan Peninsula, then Carpathian Basin, Central Europe, Ukraine (Vigne, 2000, 149-159). Right from the start it must be precised that all domestic mammals typical to Romanian Early Neolithic sites were introduced in the local fauna in their domesticated form, from Near East together with the human population waves; The hypothesis is broadly accepted in the older (Vörös, 1980, 35-61) or newly studies (Vigne, 2000, and bibliography connected to study), not excluding the existence of other domestication areas (Bökönyi, 1974). “A series of recent genetic studies revealed the remarkably complex picture of domestication in both New World and Old World livestock. By comparing mitochondrial and nuclear DNA sequences of modern breeds with their potential wild and domestic ancestors, we have gained new insights into the timing and location of domestication events that produced the farm animals of today. The high number of domestication events and their diverse locations in which they took place surprise” (Bruford et alii, 2003, 900).

Archaeological studies show that sheep and goats were initially domesticated in the fertile crescent region of the Near East (Smith, 1995; Zeder and Hesse, 2000, apud Anderung, 2006,) and in the eastern margin of the Middle East, i.e. today's Afghanistan, eastern Iran and Pakistan (Meadow, 1993 apud Anderung, 2006). The recently genetic analyses (Anderung, 2006) confirmed that assumption; the domestic goat (*C. hircus*) originates from one or both of the next wild species, the bezoar (*C. aegagrus*) and the markhor (*C. falconeri*). In case of modern domestic

Acta Terrae Septemcastrensis, VI, 2007

sheep it was established that the species were domesticated from the Asiatic mouflon (*Ovis orientalis*), as they had the same chromosome number; the mouflon is now considered to be a relic of the first domestic sheep that were brought to Europe by early farmers around the 7000 BC (Clutton-Brock, 1999).

As for the cattle, the situation is more complex. According to archaeozoological studies, cattle were domesticated in the Eastern Mediterranean and Near Eastern region, about 10 000 years ago. Also the mtDNA diversity proves that European cattle were domesticated in the Near East and brought into the European continent from there. In Europe hybridizations with local aurochs took place, thus it appears that today's cattle descend from Anatolian as well as European aurochs (Anderung, 2006, 29, 36). A number of routes have been suggested for the introduction of domestic cattle into Europe from the Near East: A Mediterranean route extended to Iberian Peninsula and another one along the Danube into central Europe (apud, Anderung, 2006, 27). Seeing that mtDNA analyzes were not made for our regions, for the moment just archaeological/archaeozoological investigations established the penetration ways of the animal species toward our regions.

The pig domestication was "a very gradual process, involving intermediate stages where genotypic and phenotypic changes were minimal" (Anderung, 2006, 25). New archaeological and genetic evidence supports the suggestion that pigs could have come under the influence of human control in more than once place and during different times in prehistory (Zvelebil, 1995, apud Anderung, 2006, 25). The study of mtDNA diversity in European and Asian pigs suggests "a population expansion prior to domestication (perhaps beginning after the last glaciation's period), and also showed introgression of Asian pigs into European pig mtDNA... Ancient DNA from prehistoric pig remains could provide a geographic location and a temporal framework for the apparently complicated pig domestication process" (Anderung, 2006, 25).

The extreme phenotypic diversity of dogs, even during the early stages of domestication, also suggests a varied genetic heritage. Consequently, the genetic diversity of dogs may have been enriched by multiple founding events, possibly followed by occasional interbreeding with wild wolf populations (Bruford et alii, 2003, 905).

Closing, the cattle, small ruminants, pig and dog were introduced as domesticated form, in our local fauna by the communities' movements from the south Balkan Peninsula. Although, for cattle, pig and dog their wild correspondents in the autochthonous fauna existed, at that chronological moment we can't talk about domestication preoccupations; even if crossbreds (accidentally or not) took place, these were in negligible number, and little influenced the animals. Over time these "experiences" amplified, according some data towards the end of the

Acta Terrae Septemcastrensis, VI, 2007

Neolithic a “domestication fever” occurred temporizing the withers height reducing process, mostly in case of bovines (Dumitrescu et alii, 1983, 143).

Acta Terrae Septemcastrensis, VI, 2007

LIST OF ILLUSTRATION

Fig. 1 Withers height of caprovines in Early Neolithic sites

Fig. 2 Withers height of cattle in Early Neolithic sites

BIBLIOGRAPHY

Anderung, 2006 - Anderung Cecilia., Genetic Analyses of Bovid Remains and the Origin of Early European Cattle, Summary of Uppsala Dissertation from the Faculty of Science and Technology, 234, *Acta Universitatis Upsaliensis*, (2006), 66 p.

Blažić, 2005 - Blažić Svetlana, The faunal Assemblage, in *Donja Branjevina*, Karmanski Sergej (Paolo Biagi ed.), *A Neolithic settlement near Deronje in the Vojvodina (Serbia)*, *Quaderno*, 10, (2005), p. 74-78

Bolomey, 1980 - Bolomey Alexandra, Analiza resturilor de animale din locuirea Starčevo-Criș de la Cîrcea-Viaduct, *Anuarul Muzeului Olteniei*, I, (1980), p. 9-23

Dumitrescu et alii, 1983 - Vladimir Dumitrescu, Alexandra Bolomey, Florea Mogoșanu *Esquisse d'une préhistoire de la Roumanie jusqu'à la fin de l'Âge du bronze*, Bucharest, București, (1983), p. 56-128,

Boessneck, 1962 - Boessneck, Joachim, Die Tierreste aus der Argissa-Magula vom präkeramischen Neolithikum bis zur mittleren Bronzezeit, in *Die deutschen Ausgrabungen auf der Argissa-Magula in Thessalien*, ed. V. Miložičič, J. Boessneck, M. Hopf, 1: 27-99, *Beiträge zur ur- und frühgeschichtlichen Archäologie des Mittelmeer-Kulturraumes*, Bonn (1962),

Bökönyi, 1964 - Bökönyi Sandor, A maroslele-Panai Keolitikus Telep. Gerinces Faunája, in *Archaeologiai Értesítő*, I, vol 91, (1964), p. 87-93

Bökönyi, 1981 - Bökönyi Sandor, Early Neolithic Vertebrate Fauna from Lánycsók-Egettmalom, in *Acta Archaeologica Hungarica*, 33 (1-4), (1981), p. 21-34

Bökönyi, 1984 - Bökönyi Sandor, Die Frühneolithischen Wirbeltiernfauna von Nosa, *Acta Archaeologica Hungarica*, 30, (1984), p. 29-41

Bökönyi, 1989 - Bökönyi Sandor, Animal Remains, in Gimbutas Maria, Winn Sh, Shimabuku D., *Achilleion. A Neolithic Settlement in Thessaly, Greece, 6400-5600 B.C.*, *Monumenta Archaeologica*, 14, Los Angeles, (1989), 315-332

Acta Terrae Septemcastrensis, VI, 2007

Bökönyi, 1992a - Bökönyi Sandor, The Early Neolithic vertebrate fauna of Endröd 119, in Cultural and landscape changes in south-east Hungary, I, *Archaeolingua*, I, Budapest, (1992)p. 195-299

Bökönyi, 1992b - Bökönyi Sandor, Animal remains of Mihajlovac- Knepište; An Early Neolithic Settlement of the Iron Gate Gorge, *Balkanica*, 23, (1992), p. 77-87

Bruford, et alii, 2003 - Bruford Michael, Bradley Daniel, Luikart Gordon, DNA Markers reveal the Complexity of Livestock Domestication, *Nature Reviews*, november, vol. 4, p. 900-910, (2003), www.nature.com/reviews/genetics

Clason, 1980 - A. T. Clason, Padina and Starčevo: Game, Fish and Cattle, *Paleohistoria*, XXII, (1980), p. 142-171

Ciubotaru, 2004 - Ciubotaru Dan Leopold, Șantierul de la Dudeștii Vechi (Jud. Timiș), *Cronica Cercetărilor Arheologice*. Campania 2003, Cluj-Napoca, (2004)

Clutton-Brock, 1999 - Clutton-Brock, Juliet, *A natural history of domesticated animals*. Cambridge, University press, Cambridge, (1999).

Ciută, 2005 - Ciută Marius, *Începuturile neoliticului timpuriu în spațiul intracarpatic transilvănean*, *Bibliotheca Universitatis Apulensis*, XII, Alba Iulia, (2005)

El Susi, Bindea, 1995 - El Susi Georgeta, Bindea Diana, Raport preliminar asupra materialului faunistic din așezarea neolitică timpurie de la Gura Baciului, jud. Cluj, *Acta MN*, 32/1, (1995), p. 181-189

El Susi, 2000 - El Susi Georgeta, Determinarea resturilor faunistice dintr-o locuință neolitică timpurie de la Seușa - "La cărarea morii" (jud. Alba), *Banatica*, 15/1, (2000), p. 49-59

El Susi, 2001- El Susi Georgeta, Cercetări arheozoologice preliminare în situri Starčevo-Criș timpurii din Câmpia Banatului. Fauna de la Foeni-Gaz și Dudeștii Vechi (Jud.Timiș), *Analele Banatului*, 9/2001, (2001), p.15-40

Haimovici, 1992 - Haimovici Sergiu, Cercetări arheozoologice privind materialul provenit din așezarea de la Turia (jud. Covasna) aparținând culturii Criș, *Carpica*, 23, (1992), p. 260-266

Lazarovici, Lazarovici, 2006 - Lazarovici Magda Cornelia, Lazarovici Gheorghe, Arhitectura neoliticului și epocii cuprului în România, *Bibliotheca Archaeologica Moldaviae*, IV, Iași

Luca et alii, 2004 - Luca Sabin, Roman Cristian, Diaconescu Dragoș, *Cercetări arheologice în peștera Cauce*, vol I, Sibiu, (2004)

Acta Terrae Septemcastrensis, VI, 2007

Luca et alii, 2005 - Luca Sabin, Roman Cristian, Diaconescu Dragoș, Ciugudean Horia, El Susi Georgeta, Beldiman Corneliu, *Cercetări arheologice în peștera Cauce*, vol II, Sibiu, (2005), p. 95-155

Vigne, 2000 - Jean-Denis Vigne, Les débuts néolithiques de l'élevage des ongulés au Proche Orient et en Méditerranée, *Premiers paysans du monde. Naissances des agricultures*, Paris, (2000), p. 143-168

Acta Terrae Septemcastrensis, VI, 2007

Measurements of cattle and caprovines

Maxilla			Mandibula			
M1-	M3		P2-	M1-	M3	
M3	M3		M3	M3	M3	
84,5	30,5	M. Sibiului			38,5	M. Sibiului
88	34	M. Sibiului			40	M. Sibiului
	34,5	M. Sibiului			41	M. Sibiului
	33,5	M. Sibiului				M. Sibiului
	29,5	M. Sibiului		85		G. Baciului
	32,5	M. Sibiului		96	40,5	G. Baciului
	31	M. Sibiului			39	G. Baciului
	31	M. Sibiului			39	G. Baciului
	32	M. Sibiului			39,5	G. Baciului
84		G. Baciului			39,5	G. Baciului
	30,5	Șeușa			42	Șeușa
	31,5	Șeușa			39,5	Cauce
	32,5	Șeușa			32	Dudeștii V.
	33,5	Șeușa			38	Dudeștii V.
	34	Șeușa			38,5	Dudeștii V.
	36,5	Șeușa			40	Dudeștii V.
80	32	Foieni-Gaz	158	98	38	Foieni-Gaz
					41	Foieni-Gaz

Scapula			Humerus			
SLC	GLP	LG	BT	Bd	Dd	
		58			84	M. Sibiului
60,5	75	65,5	58	87,5	89	M. Sibiului
53		65	67,5	73,5	74	M. Sibiului
63			80	88	87	M. Sibiului
51	70	55	74,5	81,5	82	M. Sibiului
51	69	59		80,5	81,5	M. Sibiului
54			82	85	85,5	M. Sibiului

Acta Terrae Septemcastrensis, VI, 2007

56			Dudeștii V.	89	95	96,5	Sibiului G. Baciului
63			Dudeștii V.	73,5			G. Baciului
65	80	68	Dudeștii V.	79,5	86	91	Cauce Dudeștii V.
		82	Foieni-Gaz	58,5	63		Dudeștii V.
56	74	62	Foieni-Gaz	75			Dudeștii V.
Humerus				Humerus			
BT	Bd	Dd		BT	Bd	Dd	
86	95,5		M. Sibiului	78	86	82	Dudeștii V.
88	93	94	M. Sibiului	81,5			Dudeștii V.
	80		M. Sibiului	81,5	86,5	85,5	Dudeștii V.
	92	93	M. Sibiului	81,5	87,5	88,5	Dudeștii V.
		57	M. Sibiului		89	88	Dudeștii V.
77	81	85	M. Sibiului		88,5	88	Dudeștii V.
77,5	89		M. Sibiului			92,5	Dudeștii V.
78	83,5		M. Sibiului		77	86	P. Nucet
81,5			P. Nucet		79	86	P. Nucet
81	92	85	P. Nucet				
Radius							
BFp	Bp	Dp	Bd	Dd			
		43			M. Sibiului		
		52			M. Sibiului		
		41			M. Sibiului		
		47			M. Sibiului		
76	82	43			M. Sibiului		
80,5	89	43			M. Sibiului		
81					M. Sibiului		
87,5	86	51,5			M. Sibiului		
			85	62,5	M. Sibiului		
77,5	84	42			G. Baciului		

Acta Terrae Septemcastrensis, VI, 2007

77,5	85,5	40,5			G. Baciului
79		44			G. Baciului
79		45			G. Baciului
79	86	43,5			G. Baciului
91,5	88	45,5			G. Baciului
	88				G. Baciului
			79	49	G. Baciului
			78	44	Șeușa
			82	42	Șeușa
73		43,5			Dudeștii V
81,5	88,5	46,5			Dudeștii V
82,5	91	45,5			Dudeștii V
84	90	49			Dudeștii V
85,5	93	44			Dudeștii V
		43,5			Dudeștii V
		45			Dudeștii V
		45			Dudeștii V
		45			Dudeștii V
		48			Dudeștii V
		55			Dudeștii V
		43			Dudeștii V
			68	47	Dudeștii V
			68	48	Dudeștii V
			76,5	45,5	Dudeștii V
			81	48	Dudeștii V
			65	47	P. Nucet
			78		P. Nucet
				44	P. Nucet
				46	P. Nucet
			81	56	Foieni-Gaz

Metacarpus						
Gl	Bp	Dp	Sd	Bd	Dd	
203	63	39	33,5	62	34,5	M. Sibiului
	65,5	41	38,5			M. Sibiului
		33,5				M. Sibiului

Acta Terrae Septemcastrensis, VI, 2007

		34				M. Sibiului
		35,5				M. Sibiului
		37				M. Sibiului
		40,5				M. Sibiului
56,5	34					M. Sibiului
64,5	40					M. Sibiului
75	35,5					M. Sibiului
				32		M. Sibiului
				35		M. Sibiului
				35		M. Sibiului
			65	35,5		M. Sibiului
				39,5		M. Sibiului
			68,5	36,5		M. Sibiului
197,5	57,5	36,5	34	62,5	34,5	G. Baciului
198	62	37,5	34	63	33	G. Baciului
213	65	41,5	34,5	65,5	34,5	G. Baciului
	60	39				G. Baciului
	61,5	38				G. Baciului
	62	40				G. Baciului
	63,5	38,5				G. Baciului
	64,5	39		62,5	35,5	G. Baciului
				65	35,5	G.

Acta Terrae Septemcastrensis, VI, 2007

					Baciului
				33,5	G.
				32,5	Baciului
					G.
61	37				Baciului
					Șeușa
			65,5	36,5	Șeușa
				34	Șeușa
					Dudeștii
54	31,5				V
					Dudeștii
55,5					V
					Dudeștii
60	35				V
					Dudeștii
62	38				V
					Dudeștii
64,5					V
					Dudeștii
68	40				V
					Dudeștii
			58,5	32	V
					Dudeștii
			61,5	33	V
					Dudeștii
			63	36	V
					Dudeștii
			64	38,5	V
					Dudeștii
			66,5	39,5	V
					Dudeștii
			69,5	38	V
					Dudeștii
				36,5	V
					Dudeștii
				35	V
		M.			
63,5	47,5	Sibiului			
		M.			
69		Sibiului	63	33,5	P. Nucet
		M.			
68	52	Sibiului	64	34	P. Nucet
		M.			
71,5	52	Sibiului	66	36	P. Nucet
70	46	Dudeștii	67	34,5	P. Nucet

Acta Terrae Septemcastrensis, VI, 2007

		V Dudeştii			
	46,5	V	67,5	36	P. Nucet
68	50	Foieni- Gaz	65	37,5	Foieni- Gaz
71	52,5	P. Nucet	72	35	Foieni- Gaz

Metatarsus				Centrotarsal		
Bp	Dp	Bd	Dd		GB	
48	41			M. Sibiului	54	M. Sibiului
53,5	54			M. Sibiului	56	M. Sibiului
65	68,5			M. Sibiului	57	M. Sibiului
		65,5	38,5	M. Sibiului	57	M. Sibiului
			34	M. Sibiului	57,5	M. Sibiului
			35,5	M. Sibiului	61	M. Sibiului
		60	33,5	M. Sibiului	66	M. Sibiului
		68	39	M. Sibiului	56,5	G. Baciului
		61,5	35,5	M. Sibiului	56,5	G. Baciului
50,5	50,5			G. Baciului	60	Dudeştii V.
51	50,5			G. Baciului	64	Dudeştii V.
52	50			G. Baciului	64,5	Dudeştii V.
	44			G. Baciului	65	Dudeştii V.
		60	34	G. Baciului		
			35	G. Baciului	Calcaneus	
			39	G. Baciului	G1	
58,5	60			Şeuşa	142	M. Sibiului
51	50			Şeuşa	140	M.

Acta Terrae Septemcastrensis, VI, 2007

		59,5	36,5	Șeușa	136	Sibiului G.
48	49,5			Dudeștii V	141	Baciului G.
51				Dudeștii V	149	Baciului Dudeștii V.
53,5	51,5			Dudeștii V	149,5	Dudeștii V.
56,5	55			Dudeștii V	150	Dudeștii V.
56	57			Dudeștii V	150,5	Dudeștii V.
59	59,5			Dudeștii V	132	Foieni- Gaz
		58	35	Dudeștii V	135	Foieni- Gaz
		62	35,5	Dudeștii V	136,5	Foieni- Gaz
		62,5	37,5	Dudeștii V		
		63	37	Dudeștii V		
		63,5	36	Dudeștii V		
		64	35	Dudeștii V		
		64,5	38	Dudeștii V		
		68	39	Dudeștii V		
		68,5	36	Dudeștii V		
55	56,5			P. Nucet		
52				Foieni-Gaz		
53	52			Foieni-Gaz		
57	55			Foieni-Gaz		
		59	35	Foieni-Gaz		
		60	35	Foieni-Gaz		
		71	39	Foieni-Gaz		

Pelvis		LA	
68,5			M. Sibiului
74			M. Sibiului
80			M. Sibiului
79			G. Baciului
69			Dudeștii V.
69,5			Dudeștii V.
70			Dudeștii V.
70,5			Dudeștii V.
71			Dudeștii V.
70,5			Foieni-Gaz
69			Foieni-Gaz

Talus				Talus			
GLI	GLm	Bd		GLI	GLm	Bd	
67	61	42	M. Sibiului	74			Dudeștii V.
72	66,5	42,5	M. Sibiului	76	69	47	Dudeștii V.
73	37	45	M. Sibiului		62	43	Dudeștii V.
74	67,5	43	M. Sibiului		69		Dudeștii V.

Acta Terrae Septemcastrensis, VI, 2007

63	57	40	G. Baciului	73,5	68,5	45	P. Nucet
69	63	43	G. Baciului	75	69,5	43	P. Nucet
75	67	43	G. Baciului	74	69	46	P. Nucet
		41	G. Baciului	71,5	66	41,5	Foieni-Gaz
72	66	45,5	Șeușa	74	68	42	Foieni-Gaz
62	57	42	Cauce	67	62	41	Foieni-Gaz
66	61	42	Dudeștii V.	75	68	45	Foieni-Gaz
70,5	68	45,5	Dudeștii V.	71	66	44	Foieni-Gaz
73,5	68,5	48	Dudeștii V.				

Ovis/Capra					
Horn cores					
GL	Gd	Sd	Circonf.	Sex/sp.	
	37,5	24,5	99	F/Capra	M. Sibiului
	37,5	27,5	103	F/Capra	M. Sibiului
65	45,5	29	129	M/Ovis	M. Sibiului
58,5	47,5	27,5	122	M/Ovis	M. Sibiului
65	28	19	76	F/Ovis	M. Sibiului
	47	27,5	120	M/Ovis	M. Sibiului
	51	30,5	132,5	M/Ovis	M. Sibiului
	45	31,5	115	M/Ovis	Șeușa
	37			M/Ovis	Șeușa
95	35,5	22	94	F/Ovis	Cauce
	53	33	137	M/Ovis	Dudeștii V.
	25	16	68	F/Ovis	Foieni-Gaz
	32,5	21	82	F/Ovis	Foieni-Gaz

Maxilla			Mandibula		
P2-M3	M1-M3	M3	P2-M3	M1-M3	M3
74	51,5	23,5	78	52	24,5
		17,5			23,5
		21,5			23,5
	44,5	19,5			23,5
		21	75	53	24

Acta Terrae Septemcastrensis, VI, 2007

58	38	16	Ovis/Cauce			24,5	Ovic/M.
		18	Ovic/Foieni-Gaz		50,5	20	Sibiului
Mandibula							Ovic/M.
P2-M3	M1-M3	M3					Sibiului
			Ovic/Dudeștii				Ovic/M.
68	48	22	V.	68	43	24	Sibiului
			Ovic/Dudeștii				Ovic/M.
68	49	21,5	V.	72	52	22	Sibiului
			Ovic/Dudeștii				Ovic/G.
69	47	23	V.			22	Baciului
			Ovic/Dudeștii				Ovic/G.
71,5	49	20	V.			22,5	Baciului
			Ovic/Dudeștii				Ovic/G.
72,5	47	21	V.	70	48	22,5	Baciului
			Ovic/Dudeștii				
		23	V.			22,5	Ovic/Șeușa
			Ovic/Dudeștii				
		23	V.			23	Ovic/Șeușa
			Ovic/Dudeștii				
		21	V.			24	Ovic/Șeușa
			Ovic/Dudeștii				
		23	V.		45	23,5	Ovic/Cauce
			Ovic/Dudeștii				
		23	V.			18,5	Ovic/Cauce
			Ovic/Dudeștii				
		21	V.			21	Ovic/Cauce
			Ovic/Dudeștii				
		52	V.			22	Ovic/Cauce
			Ovic/Dudeștii				
		44	V.			22,5	Ovic/Cauce
			Ovic/Dudeștii				
		48	V.			23	Ovic/Cauce
		23,5					
65	45	23	Foieni-Gaz			23	Foieni-Gaz

Humerus				Scapula			
BT	Bd	Dd		SLC	GLP	LG	
			Ovis/M.				Ovis/M.
26,5	28,5	26,5	Sibiului	20	32,5	27,5	Sibiului
			Ovis/M.				Ovis/M.
25	27,5	25	Sibiului	20	33,5	25	Sibiului
			Ovis/M.				Ovis/M.
26,5	29,5	27,5	Sibiului	18,5	33,5	26,5	Sibiului
24	26,5	25,5	Ovis/M.	18,5	30	25	Ovis/M.

Acta Terrae Septemcastrensis, VI, 2007

			Sibiului				Sibiului
28,5	26,5		Ovis/M.				Ovis/M.
			Sibiului		18,5		Sibiului
24,5	26,5	24,5	Ovis/M.				Ovis/M.
			Sibiului		18,5		Sibiului
24,5	26,5	24,5	Ovis/M.				Ovis/M.
			Sibiului		18		Sibiului
25,5			Ovis/M.				Ovis/M.
			Sibiului	16	27		Sibiului
27,5	30		Ovis/G.				Ovis/G.
			Baciului	17,5	33	27,5	Baciului
28	31	24	Ovis/G.				Ovis/G.
			Baciului	14			Baciului
29,5			Ovis/G.				Ovis/G.
			Baciului	16,5			Baciului
	29	28	Ovis/Şeuşa	17,5			Ovis/Şeuşa
	31	28	Capra/Şeuşa	18,5			Ovis/Şeuşa
23,5	25	23	Ovis/Cauce	18,5	30,5	25,5	Ovis/Şeuşa
24	25,5	23	Ovis/Cauce	18		21,5	Ovis/Şeuşa
24	25	21,5	Ovis/Cauce	18		21	Capra/Şeuşa
24	25	23	Ovis/Cauce	20,5			Ovis/Cauce
	25	23	Ovic/Cauce		31	21	Ovis/Cauce
		22	Ovic/Cauce	20,5	31,5	23,5	Ovis/Cauce
			Ovis/Dudeştii				
25	26	23	V.	18,5	31,5	21,5	Ovis/Cauce
			Ovis/Dudeştii				
	26	23	V.	21,5	32,5	24	Ovis/Cauce
			Ovis/Dudeştii				
26,5	27,5	24	V.	18	34,5		Ovis/Cauce
			Ovis/Dudeştii				
26	31	29,5	V.		35	24	Ovis/Cauce
			Ovis/Dudeştii				
	28	24,5	V.	14,5	24	21	Ovis/Cauce
			Ovic/Dudeştii				
25			V.	18	28	22	Ovis/Cauce
			Ovis/Dudeştii				Ovis/Dudeştii
25	26	28,5	V.	17,5	28,5	21,5	V.
			Ovic/Dudeştii				Ovic/Dudeştii
	26		V.	17,5	26,5	21,5	V.
			Ovic/Dudeştii				Ovic/Dudeştii
27	28,5	26,5	Ovis/P. Nucet	17,5	28,5	23,5	V.
28			Ovis/Foieni-	18	32	23,5	Ovic/Dudeştii

Acta Terrae Septemcastrensis, VI, 2007

25	24,5	Gaz	18	29,5	23,5	V.	
		Ovis/Foieni-Gaz				Ovis/Dudeștii	
26	29	Ovis/Foieni-Gaz	20	30,5	23	V.	
		Ovis/Foieni-Gaz				Ovis/Dudeștii	
	26	26	18,5	30	20	V.	
						Ovis/Dudeștii	
	20	31,5	25	20,5	32	25	V.
							Ovis/Dudeștii
	16	29,5	23,5	16	29,5	23,5	V.
							Ovis/Dudeștii
	18,5	31,5	21,5	18,5	31,5	21,5	V.
							Capra/Foieni-Gaz
20	34	24,5	19	32	22,5	Ovis/Foieni-Gaz	
						Ovis/Foieni-Gaz	
19	32	22	19	32	22	Ovis/Foieni-Gaz	
						Ovis/Foieni-Gaz	
18,5	30	23	18,5	30	23	Ovis/Foieni-Gaz	
						Ovis/Foieni-Gaz	

Radius						
GL	BFp	Bp	Dp	Bd	Dd	
142	27,5	29		26	18,5	Ovis/M. Sibiului
147	27,5	30,5	16	26	18,5	Ovis/M. Sibiului
	28,5	29	15			Capra/M. Sibiului
	29,5	30,5				Capra/M. Sibiului
	29,5	30,5	16,5			Capra/M. Sibiului
				25,5	17	Ovis/M. Sibiului
	30	31,5	16,5			Ovis/M. Sibiului
	27	28,5	14,5			Ovis/M. Sibiului
	30	31,5	16,5			Ovis/M. Sibiului
	22,5		13,5			Ovis/G. Baciului
	26	28,5	15,5			Ovis/G. Baciului
		26,5	14			Ovis/G. Baciului
	24,5		13,5			Ovis/G. Baciului
	27	28,8	16,5			Ovis/Șeușa
	29,5	31,5	17,5			Capra/Șeușa

Acta Terrae Septemcastrensis, VI, 2007

25	26,5	13,5			Capra/Cauce
25	25,5	13			Capra/Cauce
23,5	25,5	13,5			Ovis/Cauce
25	27,5	13,5			Ovis/Cauce
26	28	14			Ovis/Cauce
24	26	13			Ovis/Cauce
			28	16,5	Capra/Cauce
			23	16	Ovis/Cauce
			24,5	17	Ovis/Cauce
			24,5	17	Ovis/Cauce
			23,5	15	Ovis/Cauce
27		14			Capra/Dudeștii V.
28	29	16			Capra/Dudeștii V.
28,5	19	15,5			Capra/Dudeștii V.
			32,5	21	Capra/Dudeștii V.
26	30	15			Ovis/Dudeștii V.
26	29	15,5			Ovis/Dudeștii V.
26,5	29,5	15,5			Ovis/Dudeștii V.
28	30	15			Ovis/Dudeștii V.
	29,5	14,5			Ovis/Dudeștii V.
	30	15,5			Ovis/Dudeștii V.
			24	16	Ovis/Dudeștii V.
			25	16	Ovis/Dudeștii V.
26,5	27,5	15,5			Ovis/P. Nucet
28,5	31				Ovis/Foieni-Gaz
			27,5	17,5	Ovis/Foieni-Gaz
27	28,5	15,5			Ovis/Foieni-Gaz
27	29	15			Ovis/Foieni-Gaz
26	28	15			Ovis/Foieni-Gaz
26,5	28,5	14			Ovis/Foieni-Gaz
			26,5	18	Ovis/Foieni-Gaz

Metacarpus						
GL	Bp	Dp	Sd	Bd	Dd	
				23,5	14,5	Capra/M. Sibiului
133	22	16	13	24,5	16	Ovis/M. Sibiului
					15	Ovis/M. Sibiului
	26	16				Ovis/M. Sibiului
	20	17				Ovis/M. Sibiului

Acta Terrae Septemcastrensis, VI, 2007

121,5	22,5	16,5	14	23,5	16	Ovis/G. Baciului
	20,5	14				Ovis/G. Baciului
				24	15,5	Ovis/Șeușa
111,5	19,5	15,5	12,5	22	14	Ovis/Cauce
				20,5	14	Ovis/Cauce
				22	15	Ovis/Cauce
				22,5	14	Ovis/Cauce
				21	15,5	Ovis/Cauce
120	21,5	17	14	22,5	15	Ovis/Dudeștii V.
122	20	15,5	13	23,5	15	Ovis/Dudeștii V.
	21	15		22	14,5	Ovis/Dudeștii V.
	22	16,5				Ovic/Dudeștii V.
116,5	22	16,5	13	23,5	15	Ovis/Foieni-Gaz

Metatarsus						
GL	Bp	Dp	Sd	Bd	Dd	
				23	16,5	Ovis/M. Sibiului
	23	15				Ovis/G. Baciului
				19	13	Ovis/Cauce
				19,5	12,5	Ovis/Cauce
133	18,5	19,5	10	22	15,5	Ovis/Dudeștii V.
131	18,5	19	10,5	22,5	15,5	Ovis/Dudeștii V.
				20	13,5	Ovis/Dudeștii V.
				21,5	14	Ovis/Dudeștii V.

Tibia			Talus		
Bd	Dd		GLI	GLm	Bd
26,5	18,5	Ovic/M. Sibiului	26	24	16,5
					Ovis/G. Baciului
25,5	20	Ovic/M. Sibiului	26,5	24,5	15,5
					Ovis/G. Baciului
25	20	Ovic/M. Sibiului	27	26	17
					Ovis/G. Baciului
25,5	19	Ovic/G. Baciului	27,5	26	18
					Ovis/G. Baciului
27	20,5	Ovic/G. Baciului	27,5	26	18
					Ovis/G. Baciului
21	17,5	Ovic/Cauce	27,5	26,5	18
					Ovis/G. Baciului
21	16,5	Ovic/Cauce		25,5	
					Ovic/G.

Acta Terrae Septemcastrensis, VI, 2007

21	16,5	Ovic/Cauce	34,5	33	21,5	Baciului Capra/G.
22	17	Ovic/Cauce	36	35	17	Baciului
22	16,5	Ovic/Cauce	22,5	21,5	14,5	Ovis/Cauce
23	18,5	Ovic/Cauce	24,5	23	14	Ovis/Cauce
24	18	Capra/Cauce	24,5	24	14,5	Ovis/Cauce
27	22	Capra/Dudeștii V.	25,5	23,5	15	Ovis/Cauce
28	21,5	Capra/Dudeștii V.	27,5	25	18	Capra/Cauce
28,5	23	Capra/Dudeștii V.	27,5	25	18	Capra/Cauce
28,5	22,5	Capra/Dudeștii V.	29	31	18	Ovis/Dudeștii V.
23,5	18	Ovic/Dudeștii V.	30	32	19,5	Ovis/Dudeștii V.
25	18	Ovic/Dudeștii V.				
27	21	Ovic/Dudeștii V.				
28	21,5	Ovic/Dudeștii V.				
28	22	Ovic/Dudeștii V.				
24,5	21,5	Ovic/P. Nucet				
25	19	Ovis/Foieni-Gaz				
29	23	Capra/Foieni-Gaz				
23	17,5	Ovis/Foieni-Gaz				
24	19	Ovis/Foieni-Gaz				

Calcaneus			Pelvis	
GI	Talie		LA	
54	61,5	Ovis/M. Sibiului	25	Ovis/M. Sibiului
55	62,7	Ovis/M. Sibiului	28	Ovis/M. Sibiului
56	63,8	Ovis/M. Sibiului	28,5	Ovis/M. Sibiului
55,5	63,2	Ovis/Șeușa	32	Ovis/M. Sibiului
46,5	53	Ovis/Cauce	26	Ovis/M. Sibiului
47	53,4	Ovis/Cauce	27	Ovis/M. Sibiului
48	54,7	Ovis/Cauce	27	Ovis/M. Sibiului
48	54,7	Ovis/Cauce	27,5	Ovis/M. Sibiului
48	54,7	Ovis/Cauce	30	Capra/G. Baciului
49	55,8	Ovis/Cauce	20	Ovis/Cauce
49	55,8	Ovis/Cauce	20	Ovis/Cauce
49,5	56,4	Ovis/Cauce	21	Ovis/Cauce
49,5	56,4	Ovis/Cauce	23	Ovic/Cauce

Acta Terrae Septemcastrensis, VI, 2007

50	57	Ovis/Cauce	23	Ovis/Dudeștii V.
64,5		Capra/Dudeștii V.	23,5	Ovis/Foieni-Gaz
65,5		Capra/Dudeștii V.	23,5	Ovis/Foieni-Gaz
67		Capra/Dudeștii V.	26	Ovis/Foieni-Gaz
68		Capra/Dudeștii V.	27	Ovis/Foieni-Gaz
52	59,2	Ovis/Foieni-Gaz		
52,5	59,8	Ovis/Foieni-Gaz		

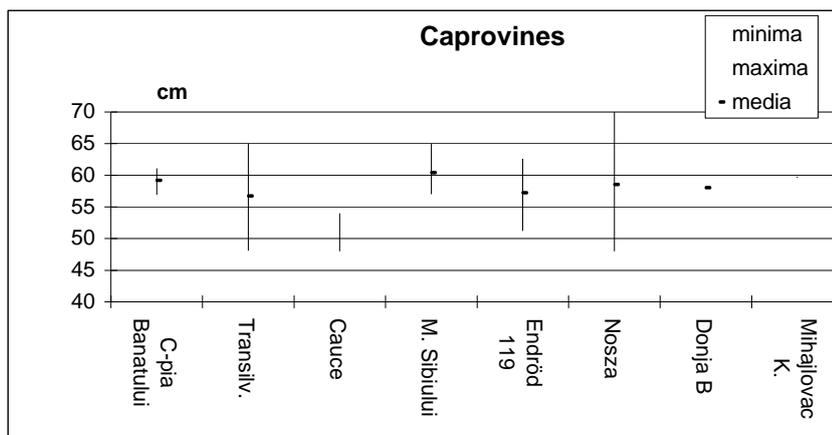


Fig. 1.

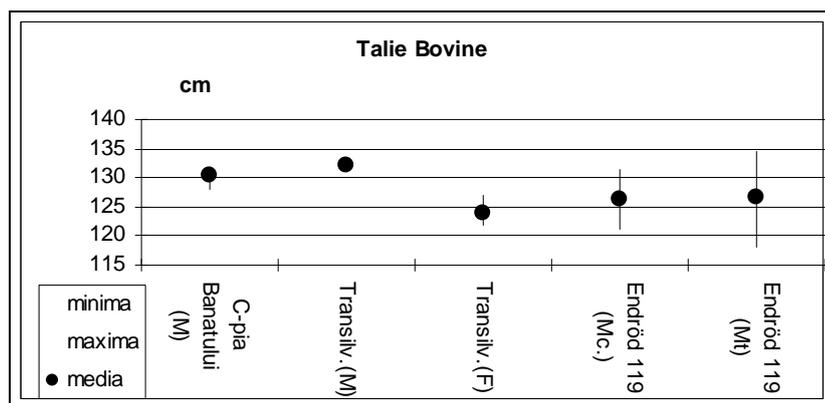


Fig. 2.

Acta Terrae Septemcastrensis, VI, 2007

Acta Terrae Septemcastrensis, VI, 2007

**CERAMIC ASSEMBLAGE OF THE LATE CHALCOLITHIC
KARANOVO VI CULTURE IN THRACE:
PHASES I AND II**

Viktoria PETROVA
Institute of Archaeology
and Museum at the Bulgarian Academy of Sciences
viki5rova@yahoo.com

*Ceramica culturilor Chalcolithicului târziu,
cultura Karanovo VI din Thracia: fazele I și II
- rezumat -*

În articolul de mai jos autoarea propune o periodizare internă a culturii Karanovo VI.

Karanovo VI culture was first identified by G.I. Georgiev after his systematic investigations at Tell Karanovo in Bulgarian Thrace. When creating the Karanovo Chronological System, he defined it as the southern assemblage of the Kodzhadermen or Gumelnița culture and referred it to the end of the Copper Age (Georgiev G.I., 1961, 74). Today this cultural phenomenon is considered as a part of the Kodzhadermen-Gumelnița-Karanovo VI cultural complex (KGK VI) comprising the territories of northeast Bulgaria, Muntenia (Romania) and Thrace (Todorova H., 1986, 107).

On the territory of Muntenia, the earliest evidence of Gumelnița culture was found during trench excavations at Tell Gumelnița and Tell Vidra (Dumitrescu V., 1924; 1925) when four stages of its development had been distinguished: A1, A2, B1, B2. After the excavations at Tangîru, another periodization was created which also included four phases: I to IV. Each phase was subdivided into three subphases and a fourth one was added, simultaneous with the Sălcuța IV culture (Berciu D., 1957, 67).

Based on materials from the tells in northeast Bulgaria and Thrace (Kodzhadermen, Russe, Deneva Mogila, Mechkyur, Kapitan Dimitriev, Devebargan, Racheva Mogila, Karanovo), in the 1960s H. Todorova created the periodization of the Gumelnița culture in Bulgaria. Initially she divided it into four phases (I to IV). The first two phases had two and three subphases each, respectively, and were considered as simultaneous with period A of the Gumelnița

Acta Terrae Septemcastrensis, VI, 2007

culture in Romania. The third phase was divided into two subphases, which together with the fourth phase were referred to period B of the Gumelnița culture in Romania (Vajsová H., 1966, 31-41; 1969, Abb. 6).

Since the 1970s the Gumelnița culture in Bulgaria has been interpreted as the Kodzhadermen-Gumelnița-Karanovo VI cultural complex and the earlier periodization has been specified (Todorova H., 1986, 109-112). The division of the first phase into two subphases (*a* and *b*) has remained whereas no such division has been suggested for the second one. The third phase has preserved its subphases *a* and *b*, and the former fourth phase has been added to its end as subphase *c*.

A new periodization of the Karanovo VI culture was proposed recently which is created on the basis of research on closed assemblages from the periods Merdzhumekya D and Merdzhumekya E at Tell Drama-Merdzhumekya. The culture was again divided into three phases: Karanovo VI a, b, and c (Lichardus J., Iliev I., 2004, 39-40).

The new excavations in Bulgarian Thrace over the last few years as well as the need of precise definition of the Karanovo VI culture presented a convincing case for considering its assemblage in greater detail. The aim of this paper is to define the main features of phases I and II of that cultural phenomenon and point out the basic parallels within the Kodzhadermen-Gumelnița-Karanovo VI cultural complex. The features of phase III pottery complex were presented in 2003, at the *Prehistoric Thrace* International Symposium in Stara Zagora, Bulgaria (Petrova V., 2004).

The criteria for defining of each phase are the presence of at least three new elements (technological features, shapes or ornamental patterns and motifs) that continued their development during later periods as well as the disappearing of features common in the preceding periods. They are usually accompanied by the massive occurrence of elements typical of all Karanovo VI stages. A basic criterion for identifying the subphases is the clear presence or massive occurrence of new ornamental patterns and elements on vessels shapes existing since earlier periods.

PHASE I OF THE KARANOVO VI CULTURE

Phase Ia

At the present state of research, phase Ia of the Karanovo VI culture has been recorded only in the N-S Trench at Tell Karanovo (Map 1). It is the beginning of the late Chalcolithic in Thrace and combines features that are typical of the transitional Maritsa IV culture as well as newly emerging elements continuing their development during the later Karanovo VI stages.

The Merdzhumekya D period of Tell Drama-Merdzhumekya has been referred to the beginning of the late Chalcolithic in Thrace (Lichardus J., Iliev I., 2004, 39-

Acta Terrae Septemcastrensis, VI, 2007

40). According to the description published, common features of this assemblage are the wide incised lines widening toward flutes as well as *Kerbschnitt* decorations in horizontal arrangement. The presence of typical incised ornamentation with fluting and rusticated surface - considered to be the dominating types in the Maritsa IVa and IVb phases as well as phases I and II of the Karanovo VI culture (Lichardus J. et al., 2001, 67f) - has been recorded. The comparative analysis shows partial similarities of the Merdzhumekya D period with layer 2-1 of the N-S Trench at Tell Karanovo. Parallels could be found mainly in the shapes and to a lesser extent in the vessels' ornamentation. The common features of the material from the Merdzhumekya D period refer it rather to the end of the middle Chalcolithic in Thrace (Todorova H., 1986, 102). No elements have been established which can definitely associate it with the Karanovo VI culture. Unlike the Merdzhumekya D period, shapes and ornamental patterns and motifs appeared which developed during the later Karanovo VI stages. This provides good grounds to suggest that the material of the Merdzhumekya D period belongs to a transitional stage of the assemblages from layer 2-1 of the N-S Trench at Tell Karanovo.

The uppermost Chalcolithic layers (1 and 2) of the N-S Trench at Tell Karanovo have been referred to the same stage of Karanovo VI culture (Schlor I., 2005). They possess some of the main features of the preceding Maritsa IV culture (Todorova H., 1986, 102, ris. 24): lily-shaped (Fig. 1: 2), cylindrical-conical and cone-conical shallow and medium-deep dishes (Fig. 1: 1, 3, 5, 7, 8, 10). Their typical features are the incised radial lines on the lower part of the vessel (Fig. 1: 8, 9; Schlor I., 2005, Pl. 130: 19, 20) as well as the "ladder-like" ornament (Fig. 1: 7; Schlor I., 2005, Pl. 130: 8-15). Among the common elements of the Maritsa IV culture are the S-shaped deep dishes and their wide-banded graphite ornamentation (Fig. 1: 4, 6). The incised decoration consists of rhomboid motifs or fields filled up with scratched lines as well as radial incised lines (Fig. 1: 8, 9).

Along with these features, one finds elements that continued their development in the later Karanovo VI phases. These are mainly medium-deep dishes of inverted conical shape, and with an inward-curved mouth rim (Fig. 2: 5; Schlor I., 2005, Pl. 126) as well as medium-deep biconical bowls (Fig. 2: 1, 4). The deep S-shaped bowls have sharp carination and don't have any ornamentation (Fig. 2: 3). The assemblage includes numerous inverted conical dishes with straight or inside-thickened mouth rims (Schlor I., 2005, Pls. 114, 123, 124). The deep bowls are mainly spherical, often with plastic ornaments (Fig. 2: 6). Pots occur rarely and have conical or cylindrical upper parts (Schlor I., 2005, Pl. 138: 1-6).

A new phenomenon for the dishes of cylindrical-conical shape is the rectilinear positive-negative graphite ornamentation of inclined quadrangles, vertical or oblique lines and checkered quadrangles (Fig. 2: 2; Schlor I., 2005, Pls. 126: 3; 128:

Acta Terrae Septemcastrensis, VI, 2007

4; 129: 9; 131: 13, 14). A common feature is the combination of the rectilinear (oblique, vertical or horizontal lines of varying width) and curvilinear graphite ornamentation consisting of negative circles and arched lines (Fig. 2: 7, 8).

Plastic ornamentation consists mainly of oval knobs along the vessels' carination or plastic bands with indents (Figs. 1: 10; 2: 6).

Phase Ib

This phase has been recorded at Stara Zagora (Tell Azmak IV), Karanovo, Yambol (Tell Racheva, Ezero and Mechkyur) (Map 1).

The outer surfaces of the vessels could be basically burnished, smoothed or rustic. Vessels with burnished upper parts and rustic lower ones are rarely found. Almost all elements typical of the Maritsa IV culture disappeared during this subphase: the lily-shaped dishes, S-shaped bowls, graphite ornamentation with wide bands and decoration of radial incised lines.

The continuity in the development of vessels' shapes and ornamentation in phase Ia is exemplified by the distribution of medium-deep inverted conical dishes with straight or inside thickened mouth rims, and spherical bowls with plastic decoration (Fig. 3: 1). Production of medium-deep bowls with cylindrical mouths and rounded middle parts, and with positive-negative graphite decoration continued (Fig. 3: 5). Some of the elements continuing their development are the richly incised ornamentation on the outside and graphite decoration of checkered rectangles on the inner surface of cylindrical-conic shallow dishes (Fig. 3: 6) as well as the pattern of arched lines combined with negative circles (Fig. 3: 4). The S-shaped deep bowls already had become carinated; because of the almost straight walls of their upper part they acquired a cylindrical-conical shape (Fig. 3: 3). In northeast Bulgaria, such vessels have been found in layers VIII-X of Tell Ovcharovo (Todorova et al., 1983, Pl. 63: 12) and layer XIV of Tell Ruse (Popov V., 1996, Fig. 105: 1, 4). In Muntenia, similar shapes have been recorded in the phase Ib assemblage at Tangîru (Berciu D., 1961, Figs. 205: 3; 209: 3). The number of medium-deep and biconical deep bowls has increased; these bowls have a great variety of carinations (biconical, rounded, pointed, underlined from below, etc.) and mouth rims (straight, outward curved) (Figs. 3: 2; 4: 6). As in the preceding subphase, the pots are few in number; they have cylindrical or conical mouth rims, hemispherical middle and inverted conical lower parts (Fig. 4: 5, 8).

The dishes with conical mouths and inverted conical lower parts (Fig. 4: 2, 4) appeared during phase Ib as well as the shallow bowls with conical mouths and inverted conical lower parts (Fig. 4: 1, 3). Similar vessels occur in the assemblage of Tell Kodzhadermen (Popov R., 1916-1918, Fig. 133: A, D). Some of the common elements of this phase are the lids with cylindrical cornices and conical

Acta Terrae Septemcastrensis, VI, 2007

upper parts. They are ornamented with positive graphite decoration (Fig. 5) and are often encountered at different sites in northeast Bulgaria among which are Tell Kodzhadermen, layers VIII-X of Tell Ovcharovo (Todorova H. et al., 1983, Pl. 62: 6), layer XIV of Tell Ruse (Popov V., 1996, Fig. 109), etc. The shapes and ornamentation described had long-term development and occurred in phase II of the Karanovo VI culture.

Among the new elements in the ornamentation of already existing vessel shapes is the rectilinear graphite decoration, with positive patterns of angular motifs (Fig. 5) and positive-negative patterns of filled-in triangles with negative circles, horizontal and oblique lines (Fig. 4: 7). New elements are the negative circles surrounded by deep dots (Fig. 4: 4). They developed into the following phases of the Karanovo VI culture, e.g. in layer I of Tell Sadievo referred to the beginning of phase III (Todorova N. et al., 2003, Fig. 3: 3).

The incised ornamentation does not differ from the one known so far. It is located on the middle or lower parts of the vessels and consists of triangular motifs filled with parallel lines (Fig. 3: 6). Ornamentation of oval dots appeared on the middle part of pots (Fig. 4: 5). The plastic ornamentation consists of circular buttons also typical of the preceding subphase which are sometimes combined with graphite decoration (Figs. 3: 5; 4: 8) and vertical plastic bands with indents.

PHASE II OF THE KARANOVO VI CULTURE

Phase II of the Karanovo VI culture has been defined on the basis of the following ceramic assemblages: Stara Zagora (Tell Azmak III-II, Tell Dyadovo VIII-VI, Tell Sadievo III, Tell Karanovo; Simeonovgrad (Tell Devebargan); Yambol (Tell Racheva, Tell Mechkyur). A strong argument for the definition of this phase is the combination of new shapes and ornamentation that continued their development during the following periods as well as the disappearance of elements characteristic of the preceding phase Ib.

Phase IIa

This phase has been recorded at Stara Zagora (Tell Azmak III, Tell Karanovo and Tell Mechkyur). Phase IIa material is scarce thereby making it difficult to determine its characteristics and to find particular parallels.

The outer surfaces of the vessels from phase IIa are generally burnished, smoothed or rustic. In contrast to phase I, the number of vessels with smoothed mouth (upper) and lower rustic parts increases.

The cylindrical-conical bowls and the pattern of checkered rectangles disappeared. The shallow bowls with cylindrical mouth (upper) parts, convex walls

Acta Terrae Septemcastrensis, VI, 2007

and inverted conical lower parts (Fig. 6: 3), which are common for the preceding phase Ib, have been rarely produced.

During that period of the Karanovo VI development, the use of biconical medium-deep bowls with a wide range of carinations (rounded, rounded-conical or biconical) was wider (Fig. 6: 1, 2, 4). The use of the medium-deep dishes of inverted conical shape and straight or inward thickened mouth rim continued (Fig. 7). Well represented are the shallow dishes with conical mouths and inverted conical lower parts (Fig. 6: 5) as well as the medium-deep dishes with inward curved mouth rims (Fig. 6: 7). The medium-deep bowls with cylindrical mouths, rounded middle and inverted conical lower parts, with rectilinear graphite decoration (Fig. 6: 10) as well as the deep spherical bowls with generally profiled bottom and plastic ornamentation could still be encountered (Fig. 6: 9). The development of lid shapes with cylindrical cornices and conical upper parts continued.

Apart from the non-uniformly treated outer surfaces (smoothed mouth/upper and rustic lower parts) (Fig. 6: 5, 9), new vessel shapes appeared which provide good grounds for identifying phase IIa of the Karanovo VI culture. Among these are the medium-deep bowls on a *Fußboden* (Fig. 6: 8) which find their parallel shapes at Tell Kodzhadermen (Popov R., 1916-1918, Fig. 109: b) and Tell Gumelnița (Dumitrescu V., 1925, Fig. 22: 2). New elements are the deep bowls of biconical shape and concave upper walls (Fig. 6: 6).

The graphite ornamentation is basically positive and positive-negative. Determining and characteristic features are the filled-in and negative unfolded helix, drop-like and moon-shaped motifs which became the main elements of the ornamental patterns used until the end of the Karanovo VI development. The positive patterns include motifs existing since phase I (a horizontal band, oblique quadrangles, hanging semi-oval and angular motifs). The positive-negative patterns include combinations of unfolded helix with rhomboid and drop-like elements or with horizontal bands (Figs. 6: 4; 7).

The incised ornamentation consists of parallel incised lines covering the entire outer surface (Fig. 6: 8). In the plastic ornamentation, the occurrence of plastic buttons with or without indents and angular or oblique plastic bands with indents continues (Fig. 6: 9).

Phase IIb

This phase was recorded at Simeonovgrad (Tell Devebargan), Yambol (Tell Racheva, Dyadovo VIII-VI, Sadievo III), Stara Zagora (Tell Azmak II, Mechkyur, Tell Karanovo, Bikovo, Kortzen-Moussovitsa) (Map 1). The continuing production of vessels common in the preceding subphase as well as the appearance of new

Acta Terrae Septemcastrensis, VI, 2007

ornamental motifs on already existing shapes is the reason for identifying a separate subphase IIb.

The outer surfaces of the vessels from that period are burnished, smoothed or rustic. The most common vessels of the preceding phases have smoothed/burnished mouth and rustic lower parts (Fig. 8: 2, 5) or smoothed/burnished upper and rustic lower parts (Figs. 8: 7; 9: 2-4, 7).

The production of medium-deep inverted conical dishes with straight or inward thickened mouth rim continued (Figs. 8: 2; 9: 8, 9). Some of these have smoothed mouth and rustic lower parts (Fig. 8: 2). Similar vessels have been found in the assemblages of layers XI-XIII of Tell Ovcharovo (Todorova H. et al., 1983, Pl. 79: 4). Also well represented during that period were the medium-deep dishes of inverted conical shape with inward curved mouth rims (Fig. 8: 1, 9). Rarely encountered are the shallow bowls with cylindrical mouth parts, concave walls and inverted conical lower parts (Fig. 8: 8) which are typical of phase Ib. They have also been recorded in smaller numbers in phase IIa.

A basic feature of the phase IIb ceramic assemblage is the shallow bowl with a conical upper and inverted conical lower part, and with graphite positive-negative ornamentation of rectilinear elements (Fig. 8: 3, 4). Close parallels in terms of shape can be found at Tell Kodzhadermen (Popov R., 1916-1918, Figs. 119, 120). Another important feature is the massive production of medium-deep biconical bowls with varied carinations existing as early as phase Ib (Fig. 9: 2-7). Among these is a vessel consisting of three interconnected biconical bowls (Fig. 9: 1) which has a close parallel in the assemblages of layers XI-XIII of Tell Ovcharovo (Todorova H. et al., 1983, Pl. 82: 1). The production of rounded deep bowls continued (Fig. 8: 6). Deep bowls with conical upper parts and *Fußboden* appeared (Fig. 8: 5) whose parallels have been found in the material of layers XIII-XII of Tell Ruse (Popov V., 1996, Fig. 116: 5). Unlike phase IIb of the Karanovo VI culture, this vessel type is represented by a greater variety.

In comparison with the preceding phases, the presence and range of the deep pots increased in phase IIb. Besides the already existing vessels with cylindrical mouth, hemispherical middle and inverted conical lower parts (Jerôme P., 1901, Fig. 4), vessels of rounded shape and varied carinations and mouth rims have been recorded (Fig. 8: 7; Popov R., 1926, obr. 162: a).

The most typical among the lids are the ones with cylindrical cornices and conical upper parts which are decorated with both rectilinear patterns of angular motifs and a combination of negative unfolded helix motifs and small circles (Jerôme P., 1901, Fig. 14).

The graphite ornamentation during that period is exceptionally varied. The positive-negative patterns prevail followed by the positive ones; most scarce are the

Acta Terrae Septemcastrensis, VI, 2007

negative patterns. The positive-negative patterns include negative unfolded helix motifs, existing since the earlier stages of the Karanovo VI culture, which are combined with wide drop-like motifs (Fig. 9: 9), horizontal lines (Fig. 9: 5) or rhomboid motifs (Jerôme P., 1901, Fig. 6); oblique filled-in quadrangles with negative circles (Fig. 8: 4), and helix elements combined with filled-in quadrangle (Fig. 9: 8). A new element is the positive or negative cruciform motif with widened ends (Fig. 8: 8, 9).

The positive patterns contain ornamental motifs existing since the earlier phase IIa. Among them are horizontal or wide bands, short vertical lines, oblique quadrangles, drop-like motifs, and unfolded helix motifs (Fig. 9: 1, 3).

The negative patterns include opposite or alternating triangular motifs existing since phase IIa; oblique double lines and negative circles (Fig. 8: 3, 9). The appearance of a new ornamental motif of two oblique lines ending in a semi-oval element has been recorded (Fig. 9: 6).

The incised ornamentation does not vary significantly from the preceding periods. It is often combined with plastic buttons (Fig. 8: 6). One can find the ornamentation of horizontal rows of oval impressions in phase Ib. The appearance of shell impressions is instructive for this phase (Fig. 9: 2). Plastic ornamentation is same as in the earlier stages either. It consists of round buttons with or without indents (Fig. 8: 5, 7) or plastic bands with indents.

The definition of phases I and II of the Karanovo VI culture in Thrace evidences of the continuity and smooth evolution of vessel shapes and ornamentation. These features can be traced as early as the preceding Maritsa IV culture and continued until the end of the Karanovo VI culture, i.e. its phase III.

Acta Terrae Septemcastrensis, VI, 2007

Bibliography

Berciu D., 1957 - Sur les résultats du contrôle stratigraphique à Tangîru et à Petru Rareş (1956-1957). In: *Dacia*, 3 (1957), 57-78.

Berciu D., 1961 - *Contributii la problemele neoliticului în România în lumina noilor cercetari*. Bucarest: Editura Academiei republicii populare Romîne (1961).

Dumitrescu V., 1924 - Découvertes de Gumelnița. In: *Dacia*, 1 (1924), 325-342.

Dumitrescu V., 1925 - Fouilles de Gumelnița. In: *Dacia*, 2 (1925), 29-103.

Georgiev G.I., 1961 - Kulturgruppen der Jungstein- und der Kupferzeit in der Ebene von Thrazien (Südbulgarien). In: Böhm J., De Laet S.J. (ed.) *L'Europe à la fin de l'âge de la pierre. Actes du Symposium Consacré aux Problèmes du Néolithique Européen, Prague-Libice-Brno 5.-12. oct. 1959*. Praha (1961), 45-100.

Jérôme P., 1901 - L'époque néolithique dans la vallée du Tonsus (Thrace). In: *Revue archéologique*, 39 (1901), 328-349.

Lichardus J., Iliev I., 2004 - Die relative Chronologie des Neolithikums und der Kupferzeit in der Mikroregion von Drama und die Verbindungen zu Zentralthrakien. In: Nikolov V., Băčvarov K., Kalchev P. (eds.) *Prehistoric Thrace. Proceedings of the International Symposium in Stara Zagora, 30.09 - 04.10.2003*. Sofia - Stara Zagora: Institute of Archaeology and Museum & Regional Museum of History - Stara Zagora (2004), 34-45.

Lichardus J. et al. 2001 - Lichardus J., Fol A., Getov L., Bertemes F., Echt R., Katinčarov R., Iliev I.K. *Izsledvaniya v mikroregiona na s. Drama, 1983-1999*. Sofia: SU "Sv. Kliment Ohridski" (2001).

Petrova V., 2004 - The ceramic assemblage of the late Chalcolithic Karanovo VI Culture, phase III. In: Nikolov V., Băčvarov K., Kalchev P. (eds.) *Prehistoric Thrace. Proceedings of the International Symposium in Stara Zagora, 30.09 - 04.10.2003*. Sofia - Stara Zagora: Institute of Archaeology and Museum & Regional Museum of History - Stara Zagora (2004), 425-432.

Popov R., 1916-1918 - Kodzhadermenskata mogila pri gr. Shumen. In: *Izvestiya na Bulgarskoto arheologicheskoto druzhestvo*, 6 (1916-1918), 71-155.

Popov R., 1926 - Mogilata Devebargan. In: *Godishnik na Narodniya muzey*, 4 (1926), 72-115.

Popov V., 1996 - Periodizatsiya i hronologiya na neolitnitate i halkolitnitate kulturi ot porechieto na r. Rusenski Lom. Sofia: Agatho (1996).

Acta Terrae Septemcastrensis, VI, 2007

Schlör I., 2005 - Keramik der Stufen Karanovo V und VI. In: Hiller S., Nikolov V. (Hrsg.) *Karanovo, IV. Die Ausgrabungen im Nordsüd-Schnitt, 1993-1999*. Wien: Phoibos (2005), 73-150.

Todorova H., 1986 - Kamenno-mednata epoha v Bulgaria (peto hilyadoletie predi novata era). Sofia: Nauka i izkustvo (1986).

Todorova H. et al. 1983 - Todorova H., Vasilev V., Yanushevich Z., Kovacheva M., Valev P. Ovcharovo (*Razkopki i prouchvaniya*, 9). Sofia: Bulgarska akademiya na naukite (1983).

Todorova N. et al., 2003 - Todorova N., Leshtakov P., Kuncheva-Russeva T. Late Chalcolithic Pottery from Sudievo Tell, Nova Zagora District. In: Nikolova L. (ed.) *Early Symbolic Systems for Communication in Southeast Europe (BAR International Series, 1139)*. Oxford (2003), 241-289.

Vajsová H., 1966 - Stand der Jungsteinzeitsforschung in Bulgarien. In: *Slovenska archeologia*, 14/1 (1966), 5-48.

List of Figures

Map 1. Sites of the late Chalcolithic Karanovo VI culture in Bulgarian Thrace, phases I and II: 1. Devebargan; 2. Yambol – Racheva; 3. Bikovo; 4. Dyadovo; 5. Ezero; 6. Karanovo; 7. Korten-Mousovitsa; 8. Sadievo; 9. Azmak; 10. Mechkyur.

Fig. 1. Karanovo VI culture, phase Ia: pottery from Tell Karanovo, N-S Trench, layer 2-1 (after Schlör I., 2005, Taf. 114-146).

Fig. 2. Karanovo VI culture, phase Ia: pottery from Tell Karanovo, N-S Trench, layer 2-1 (after Schlör I., 2005, Taf. 114-146).

Fig. 3. Karanovo VI culture, phase Ib: pottery from Tell Azmak, layer IV (1, 3-6); Karanovo (2).

Fig. 4. Karanovo VI culture, phase Ib: pottery from Tell Azmak, layer IV (1-5); Karanovo (2, 7); Mechkyur (1, 8).

Fig. 5. Karanovo VI culture, phase Ib: pottery from Tell Azmak, layer IV.

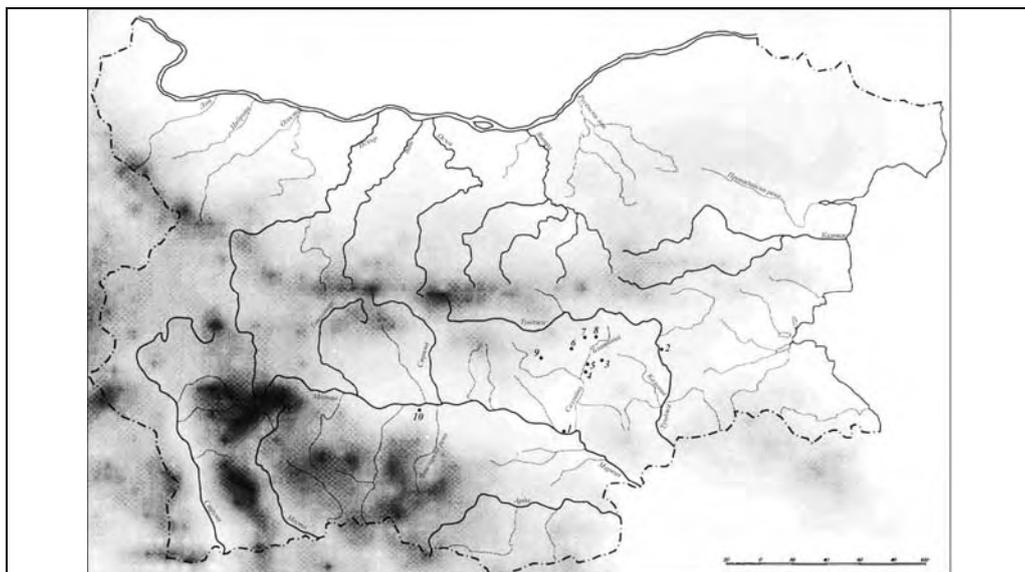
Fig. 6. Karanovo VI culture, phase IIa: pottery from Tell Azmak, layer III (3, 4, 6-8, 10); Karanovo (5, 9); Mechkyur (1, 2).

Fig. 7. Karanovo VI culture, phase IIa: pottery from Tell Azmak, layer III.

Fig. 8. Karanovo VI culture, phase IIb: pottery from Tell Azmak, layer II (1, 2, 5, 8); Sadievo, layer III (4, 6); Karanovo (3, 7); Racheva (9; after Vajsova H., 1966, Abb. 10: 11).

Fig. 9. Karanovo VI culture, phase IIb: pottery from Tell Sadievo, layer III (2, 5, 6, 9); Dyadovo, layer VIII (7); Karanovo (4, 8); Mechkyur (1); Korten-Mousovitsa (3).

Acta Terrae Septemcastrensis, VI, 2007



Map 1. Sites of the late Chalcolithic Karanovo VI culture in Bulgarian Thrace, phases I and II: 1. Devebargan; 2. Yambol – Racheva; 3. Bikovo; 4. Dyadovo; 5. Ezero; 6. Karanovo; 7. Korten-Moussovitsa; 8. Sadievo; 9. Azmak; 10. Mechkyur.

Acta Terrae Septemcastrensis, VI, 2007

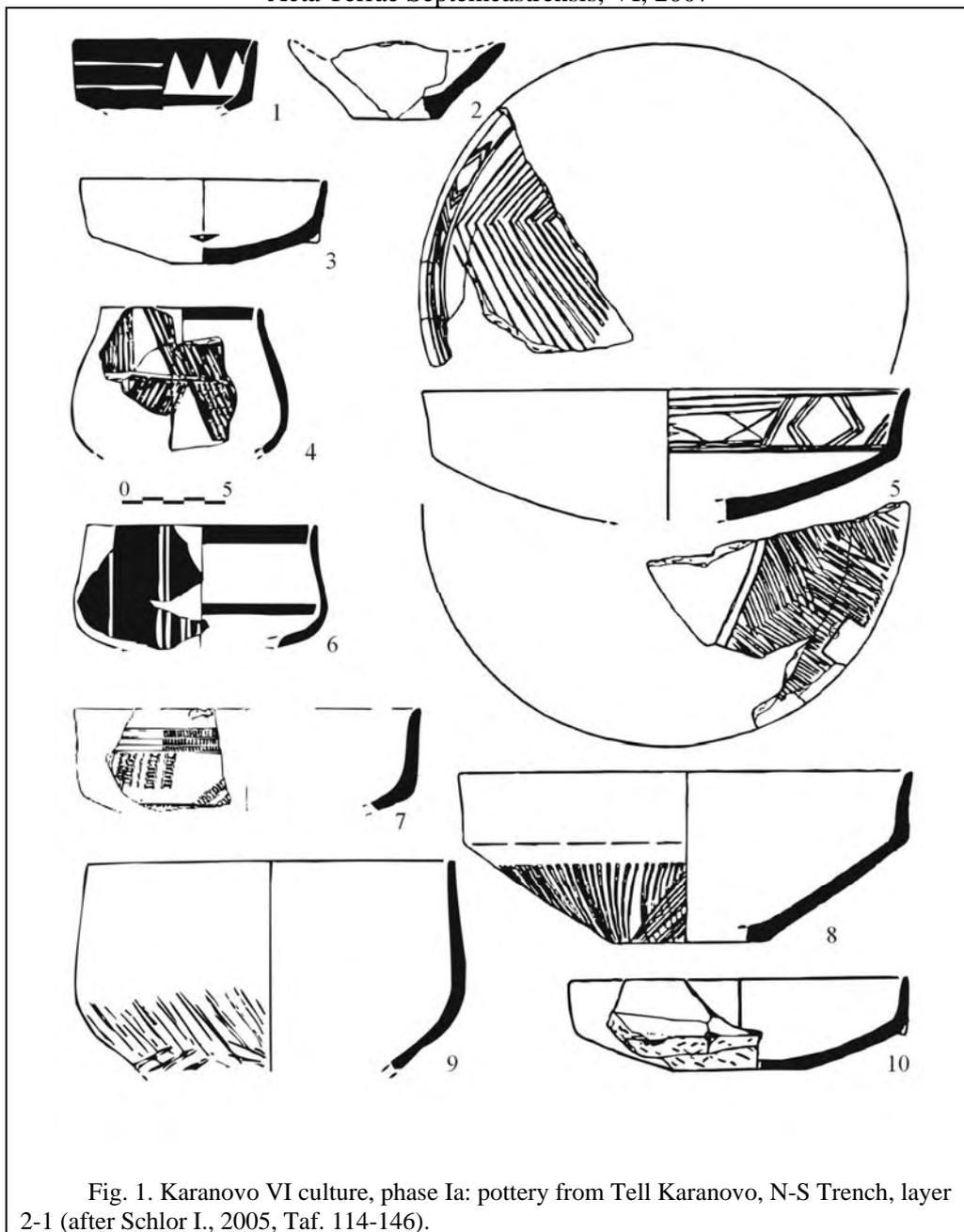
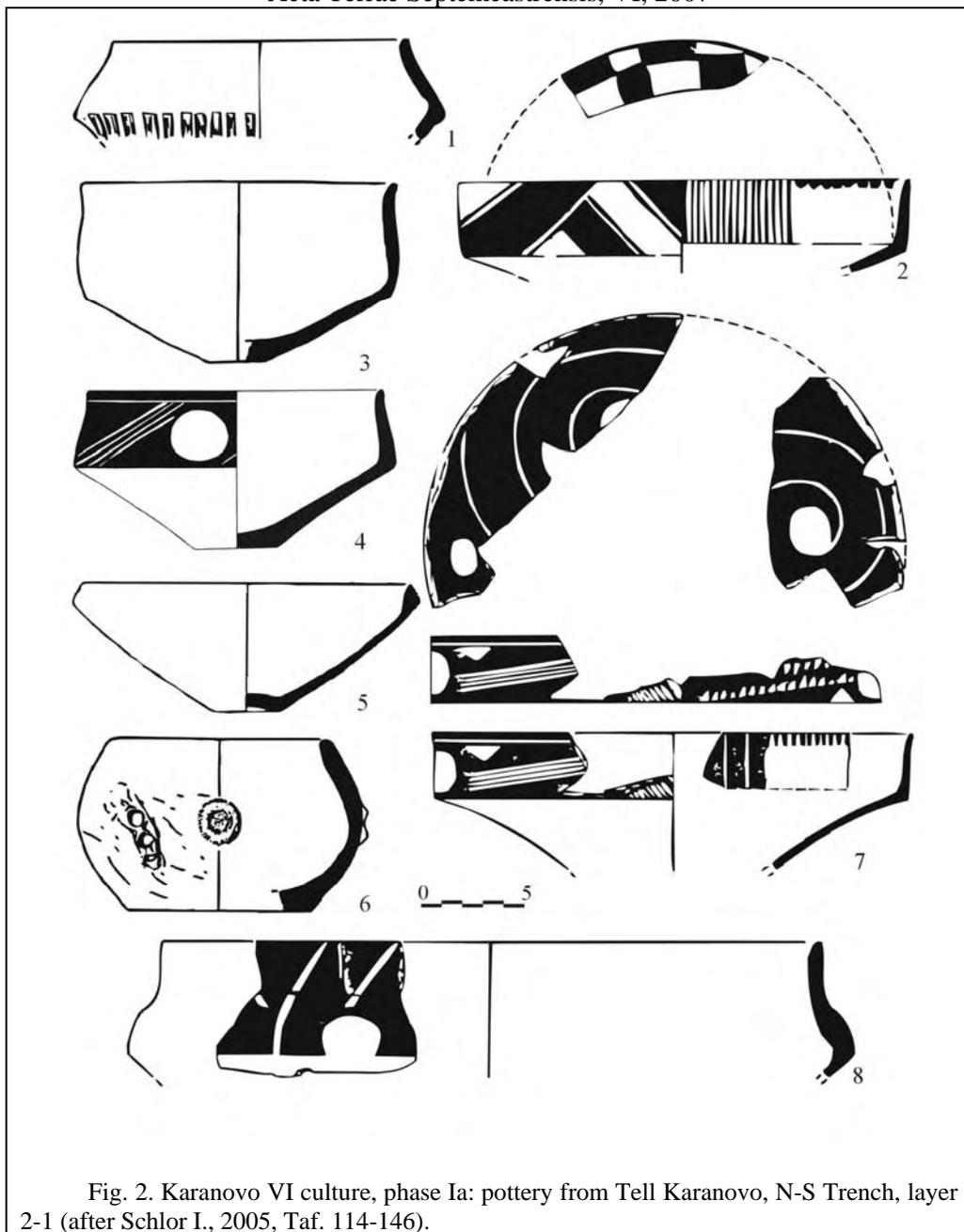


Fig. 1. Karanovo VI culture, phase Ia: pottery from Tell Karanovo, N-S Trench, layer 2-1 (after Schlor I., 2005, Taf. 114-146).

Acta Terrae Septemcastrensis, VI, 2007



Acta Terrae Septemcastrensis, VI, 2007

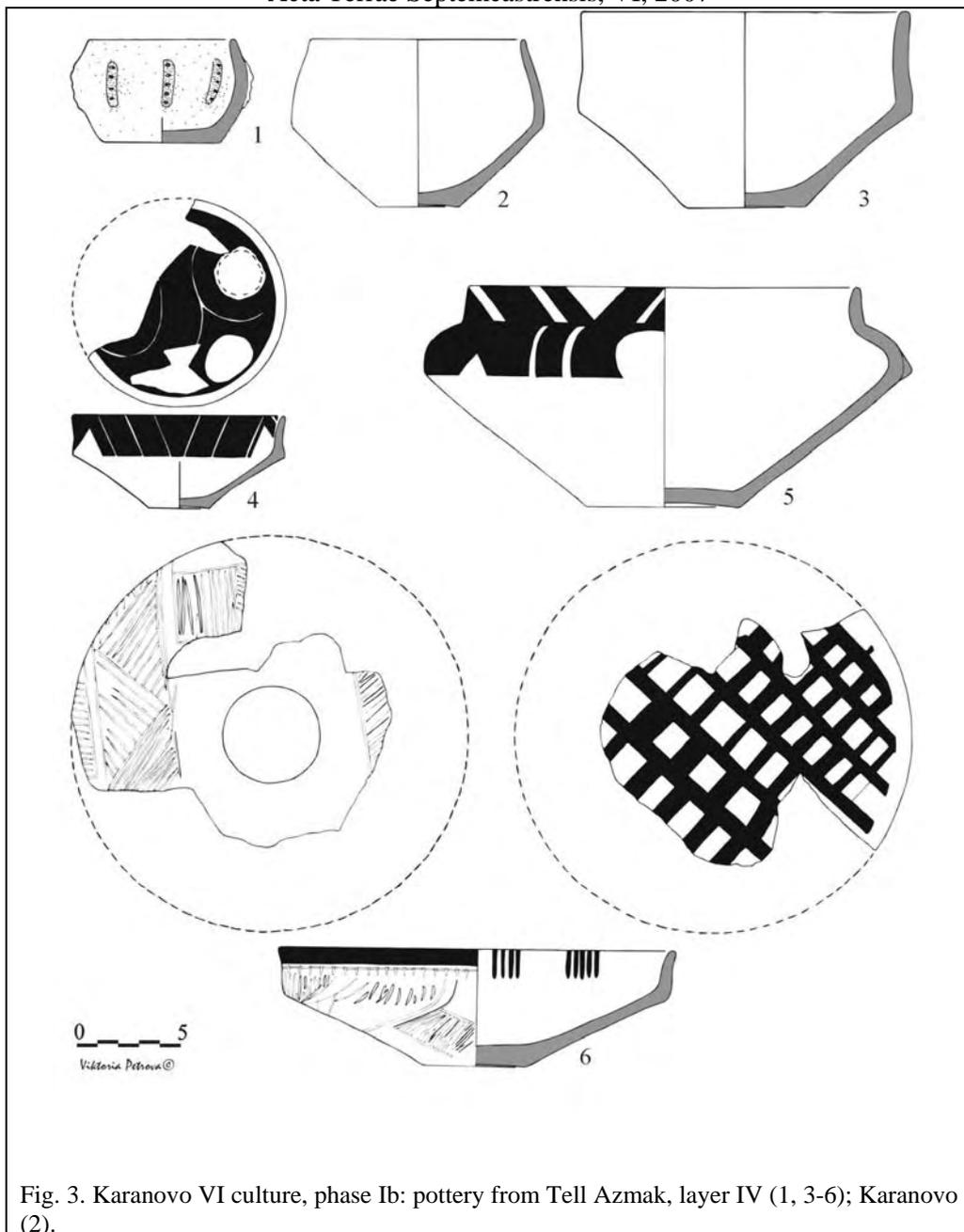


Fig. 3. Karanovo VI culture, phase Ib: pottery from Tell Azmak, layer IV (1, 3-6); Karanovo (2).

Acta Terrae Septemcastrensis, VI, 2007

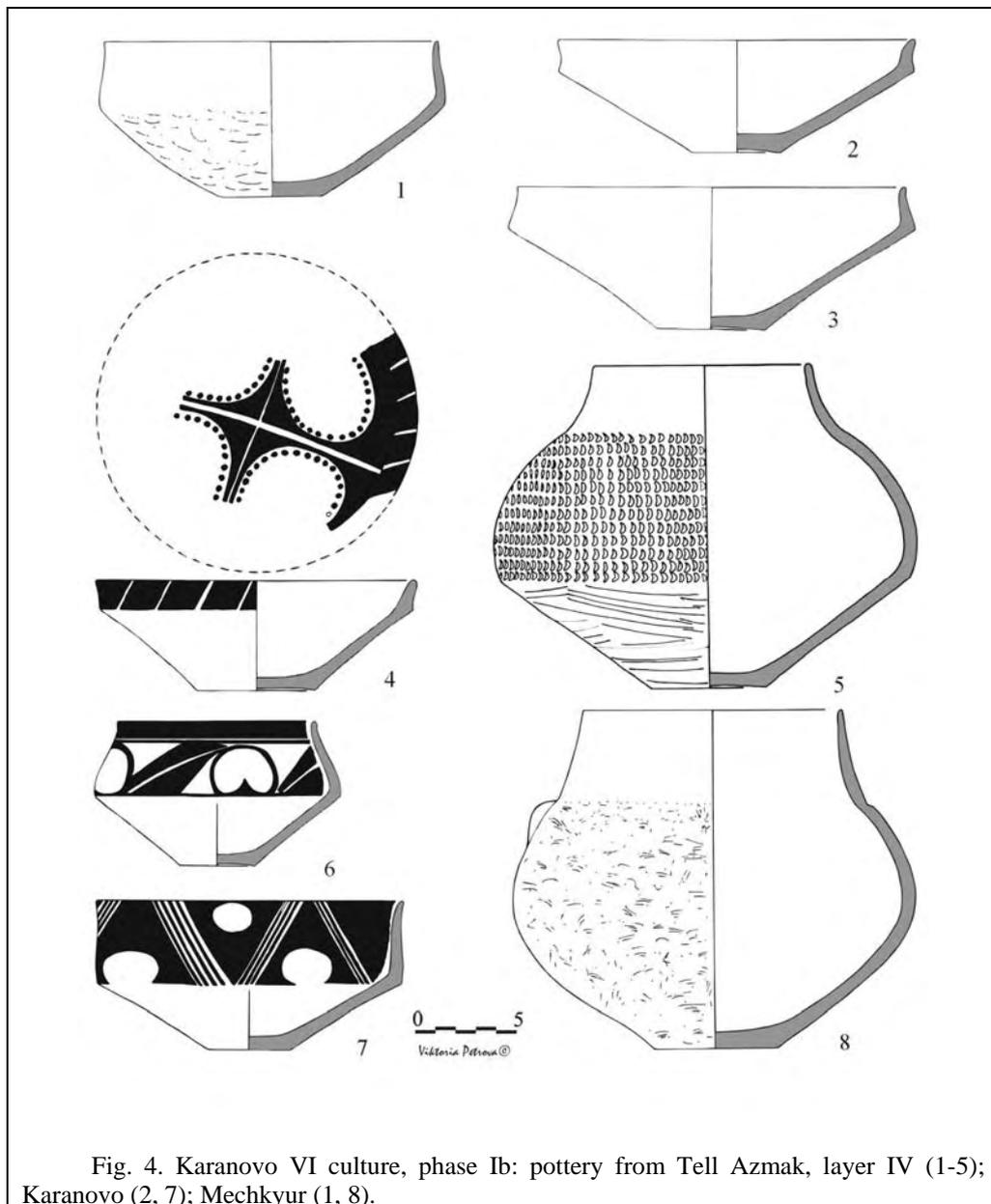
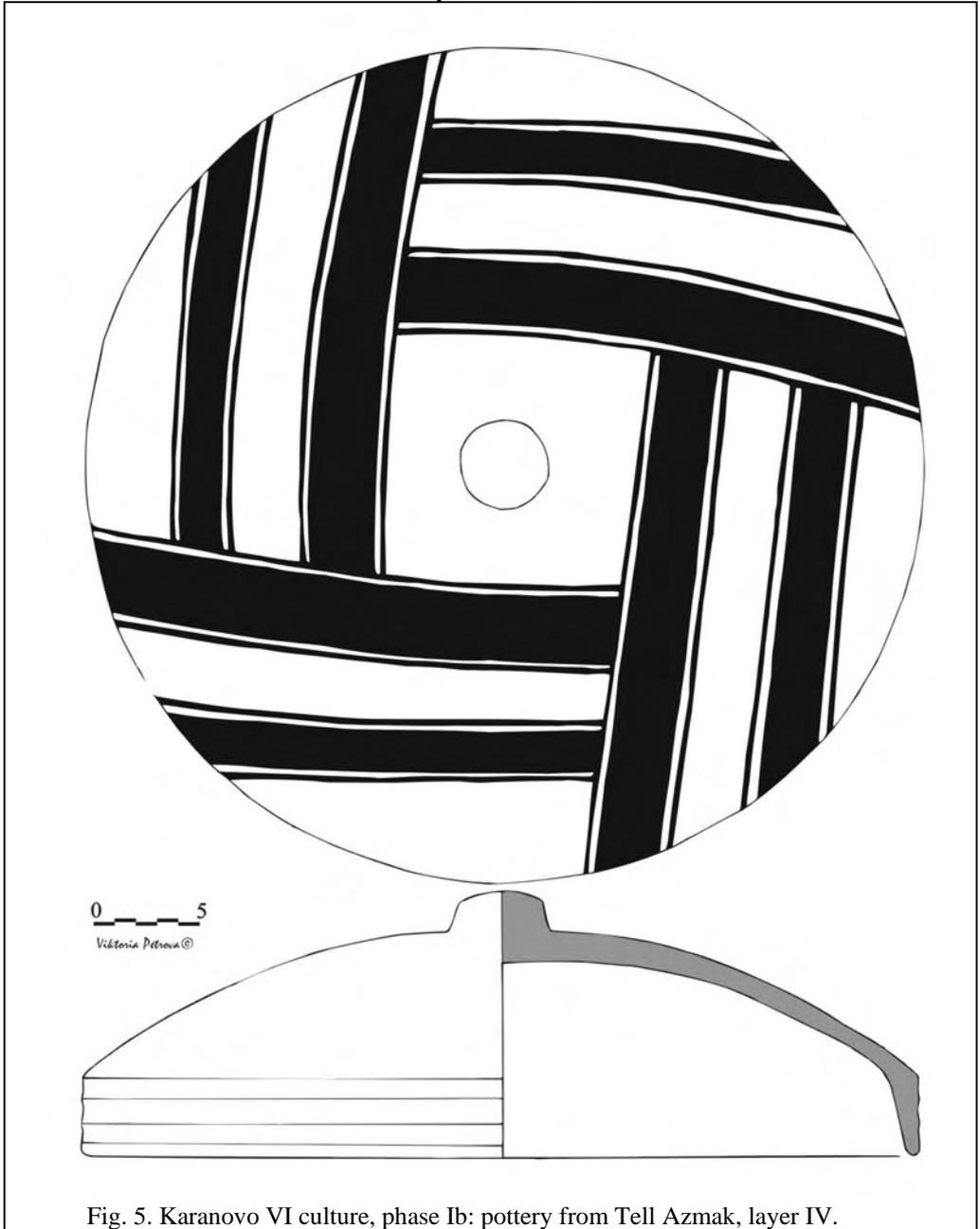
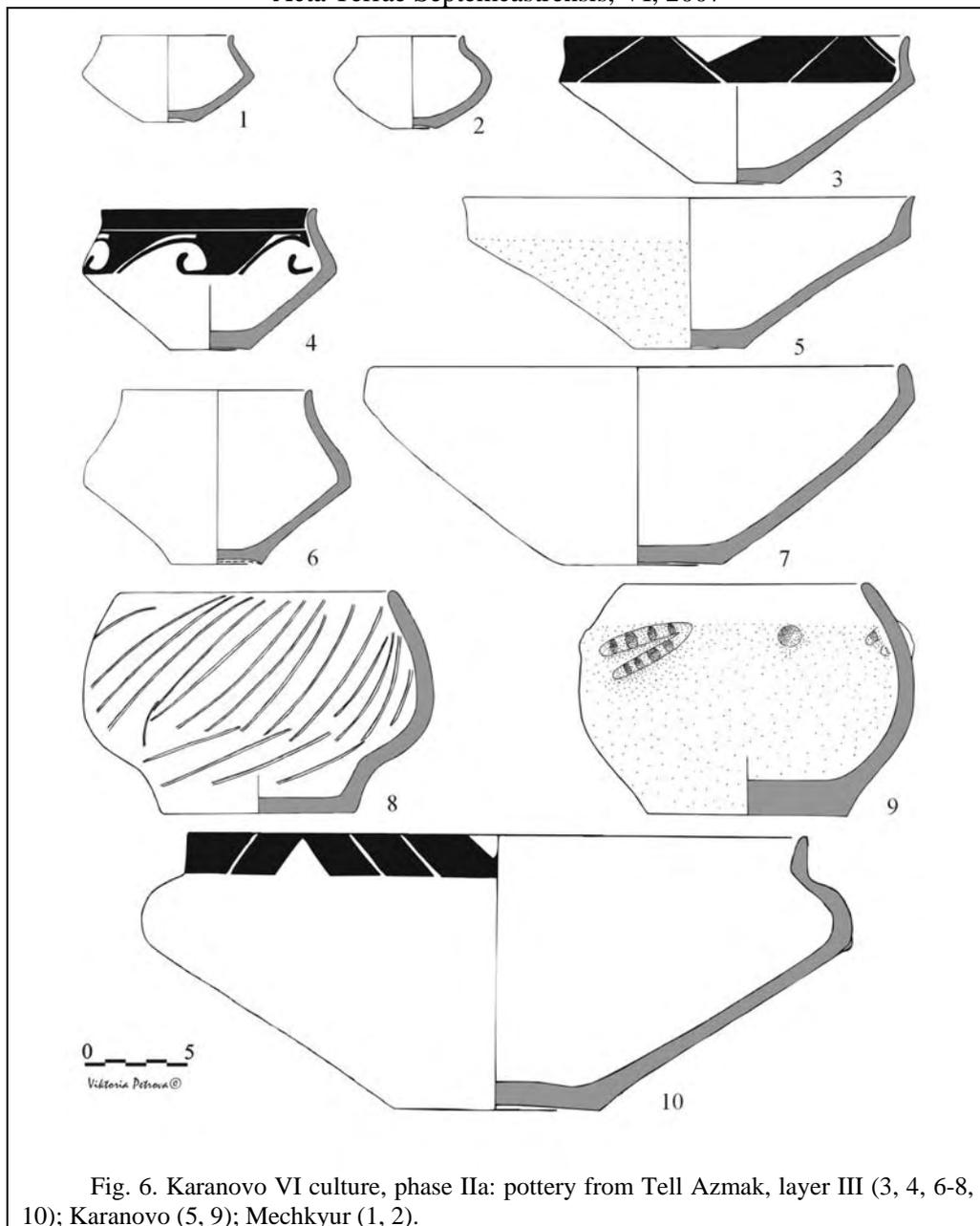


Fig. 4. Karanovo VI culture, phase Ib: pottery from Tell Azmak, layer IV (1-5); Karanovo (2, 7); Mechkyur (1, 8).

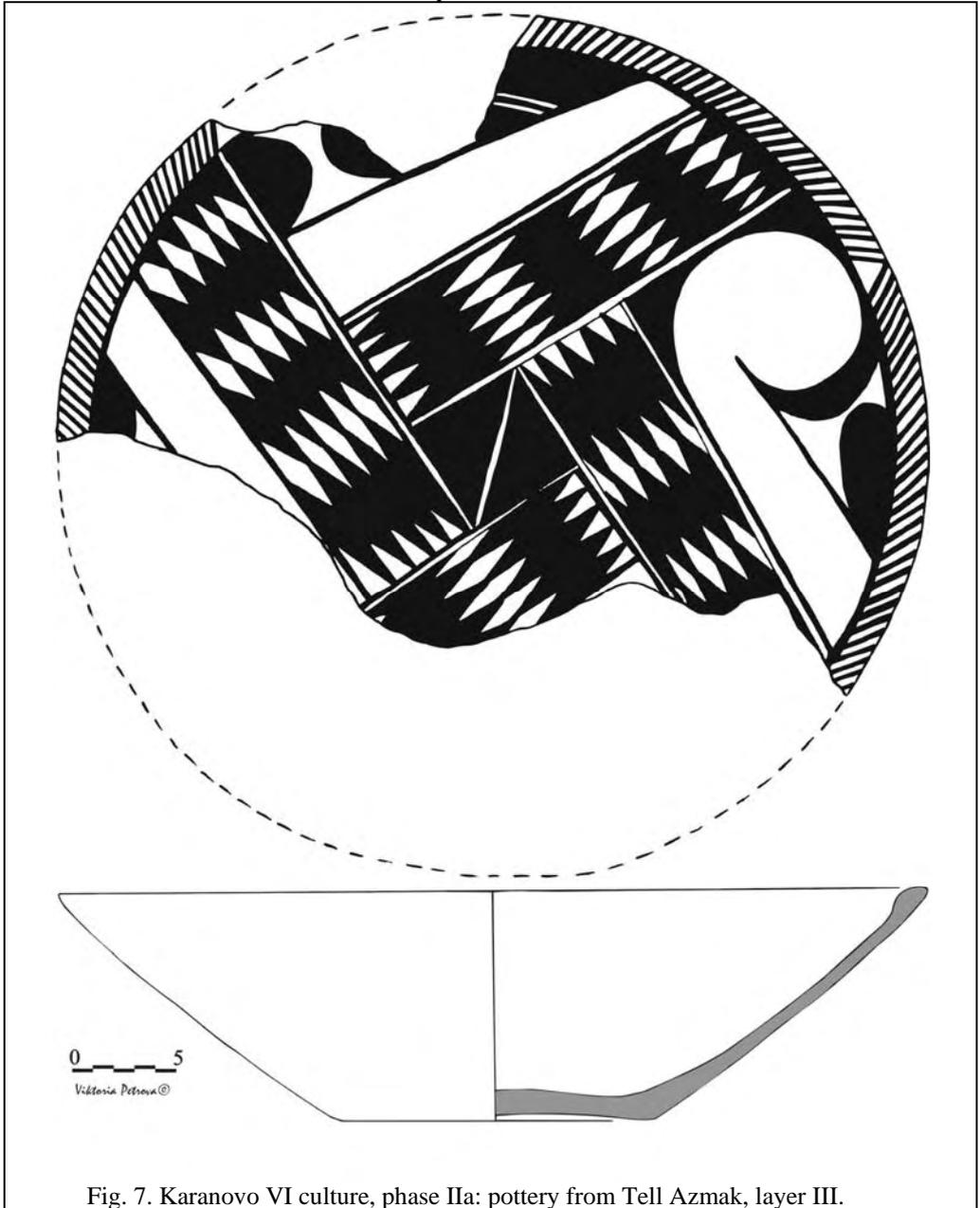
Acta Terrae Septemcastrensis, VI, 2007



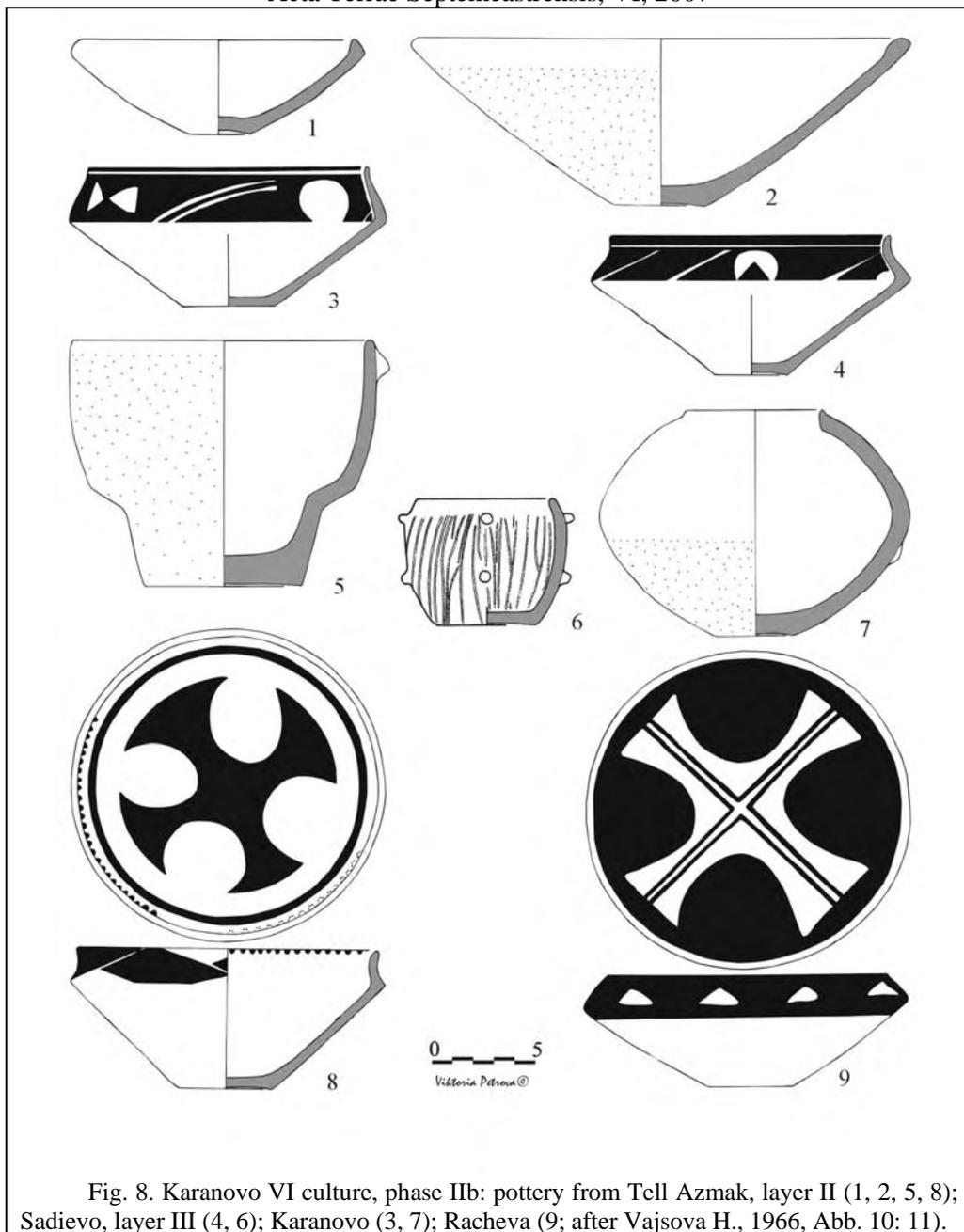
Acta Terrae Septemcastrensis, VI, 2007



Acta Terrae Septemcastrensis, VI, 2007



Acta Terrae Septemcastrensis, VI, 2007



Acta Terrae Septemcastrensis, VI, 2007

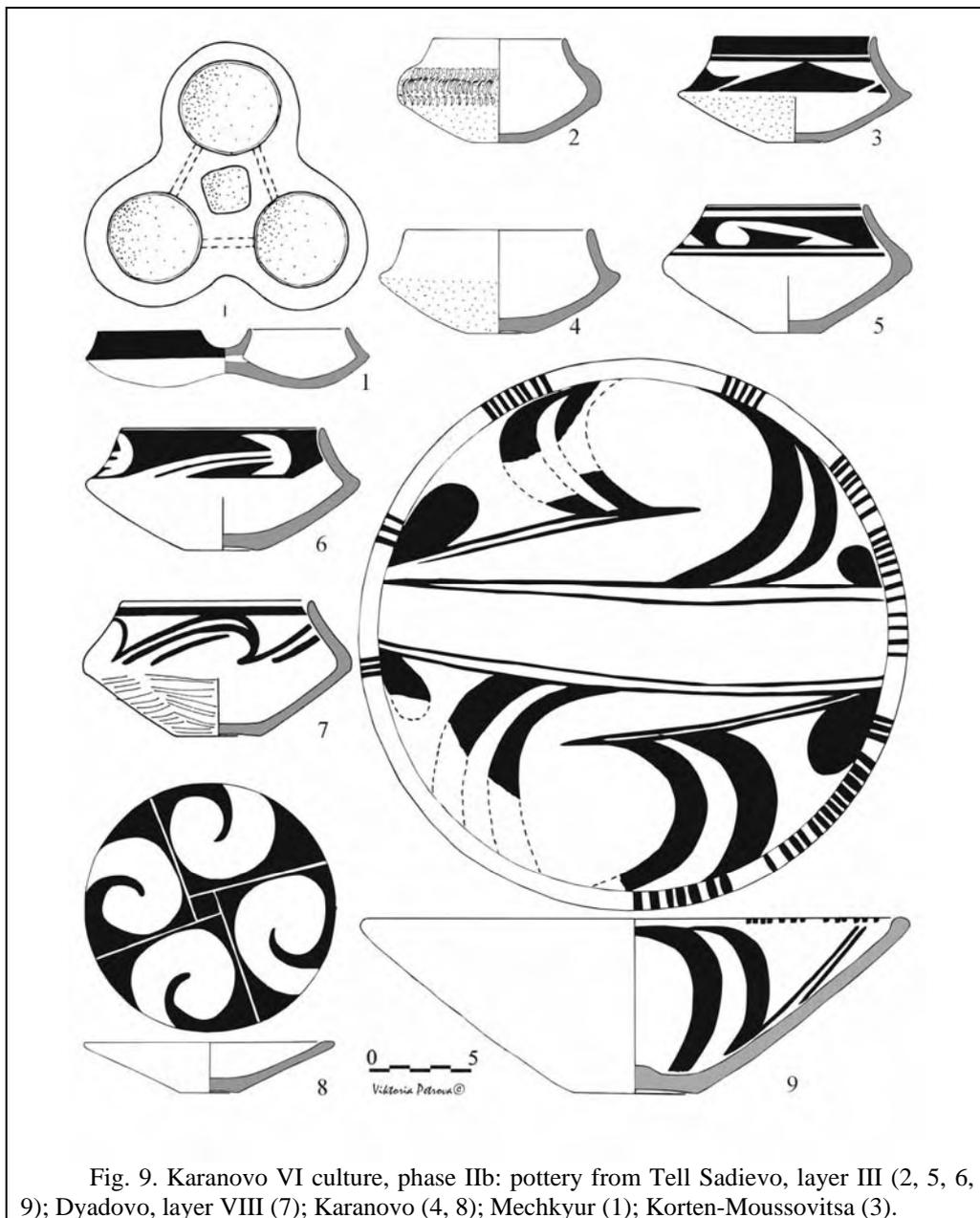


Fig. 9. Karanovo VI culture, phase IIb: pottery from Tell Sadievo, layer III (2, 5, 6, 9); Dyadovo, layer VIII (7); Karanovo (4, 8); Mechkyur (1); Kortzen-Mousovitsa (3).

Acta Terrae Septemcastrensis, VI, 2007

A SEMIOTIC MATRIX TO DISTINGUISH BETWEEN DECORATIONS AND SIGNS OF WRITING EMPLOYED BY THE DANUBE CIVILIZATION

**Marco Merlini,
marco.merlini@mclink.it**

Summary

The present article presents a “Matrix of semiotic markers and rules” in order to inspect the internal structuring of the sign system developed in Neo-Eneolithic-Copper ages in the Danube basin. The matrix is intended:

- a) To verify the possibility that these cultures might have expressed an early form of writing; i.e. the so called “Danube script”;*
- b) To investigate the organizing principles of this system of writing;*
- c) To distinguish inscriptions of the Danube script composed of two or more signs, without of course knowing what each of them stand for, from compounds of marks associated with other communicational codes, among which decorations, symbols, divinity identifiers, schematic but naturalistic representations of objects, structures or natural events, constellations and motions of celestial bodies (sun, moon, and planets).*

1. Framework and restrictive requirements

The choice to account only the inscriptions with two or more signs is due to the fact that the elements of the system of writing share the same schematic geometric root with the agents of the other communicational channels such as for example decorations and symbols, therefore they could overlap their shape. Consequently when a mark appears in isolation, it could be either a sign of writing (with linguistic label or not), a symbol or an artistic motif depending on the context. Its nature is unknown for sure even if it is very rare the contingent probability to find a one-sign decoration, more probable is to come across a sign of writing and most probable is to deal with a symbol.

Here I present some marks engraved isolated on artifacts of the Danube civilization, which I do not submit to the “Matrix of semiotic markers and rules” although they are possibly units of the Danube system of writing occurring in the inventory of its signs. Even if the  is a sign of the Danube script, when it is

Acta Terrae Septemcastrensis, VI, 2007

incised isolated such as on the bottom of a Turdaş vessel from Orăştie-Broos (Romania) (Luca, Pinter 2001, tab. 43/1) it could be either an element of the system of writing or a symbol or an ornament. A comb-based mark occurs on bottoms of Transylvanian vases e.g. from Turdaş and from Orăştie-Dealul *Pemilor* (Luca 2001a: 76; 1997). The shortcut interpretation of these marks on invisible part of vessels or of objects is as personal and non-linguistic identifiers such as craftsman's or owners' marks. According to some authors, this category explains any occurrence of linear, abstract and not decorative signs in the Danube civilization.

Although the ∇ is a recurrent sign in the Danube script, there is no possibility of discerning to which communicative channel this kind of zigzag belongs to, when it is incised alone. It is in the instance of a middle Vinča fragment of base from Gomolava (Republic of Serbia) (Starović 2004: 71) and a late Vinča fragment of base unearthed at Čučuge-Ilića brdo (Republic of Serbia) (Starović 2004: 65).

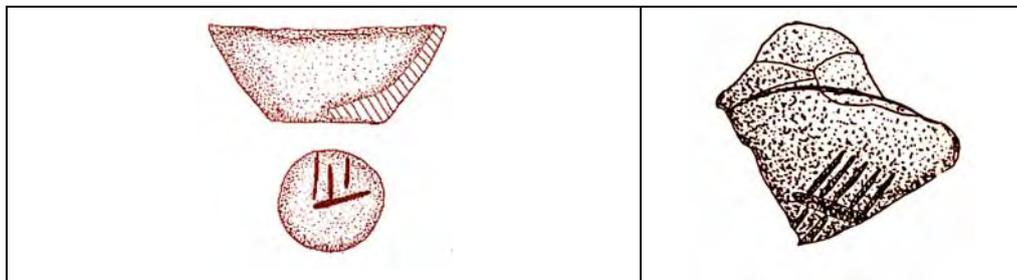


Fig. 1. In case of a single mark it is impossible to discern to which kind of communicative channel it belongs. Here some examples from Transylvania follow: a) a F-like sign on the Turdaş bottom of a vessel recovered at Orăştie-Broos (Romania) (Graphic elaboration Merlini M. after Luca, Pinter 2001, tab. 43/1); b) a comb-based sign from a bottom of a vessel from Turdaş belonging to the Petreşti Ia culture (Graphic elaboration Merlini M. after Luca 2001a: fig. 42/3).

Paradigmatic of the difficulty to identify the nature of the ∇ when it is incised as single mark is a jug-shaped vessel from Battonya-Gödrösök (Hungary) belonging to the Tisza Culture.¹ An evidently symbolic “M” is applied to the cylindrical neck just below the face. The comb-like mark positioned on the nape is another, and more ancient, symbol occurring on the anthropomorphic vessel. In addition, the parallel curved band depicted on the backside is indicative of a symbolic feature that is frequent in Tisza Culture and derived with an essentially unchanged shape

¹ It belongs to the end of the Middle Neolithic according to Raczky and Anders (2003: 170) and to the 5200-5000 BC according to Gimbutas (1989: 22, fig. 34).

Acta Terrae Septemcastrensis, VI, 2007

from the corresponding types of artifacts of the Tiszadob-Bükk-Szilmeg-Esztár pottery, as well as of the Szakálhát ceramics (Raczky 2000). A fourth powerful symbol is the meander pattern chiseled indoors and a fifth symbol is the net incised on different areas of the body. The pithos from Battonya-Gödrösök shows a supernatural creature in a human (female) form and the general surface is brick red, whereas the arms are painted in yellow and red, and the curved belt around the body in white (Gimbutas 1989: 22). It was possibly a protagonist within the given social context (Tilley 1989; Renfrew 1994: 5-11; Renfrew 2001: 129-131; Thomas 1997; Hodder 1989: 190; Hodder et al. 1997: 201-212) belonging to a typology of vessels that, according to the archaeological data, mediated a long chain of religious activities. As a result, the five coded symbols, the combined sets of them and their matching with iconic and decorative patterns must have embodied a complex meaning on a sacral level associated with female features, which of course may have had a secondary content as a formal expression of group identity (Raczky, Anders 2003: 170). Therefore, they were agents of a symbolic communications system that operated within a ritual context and a spiritual tradition (Biehl 1997: 169-171) and that I consider a significant component of the *Danube Communication System* (the semiotic system of expression of the Danube civilization).

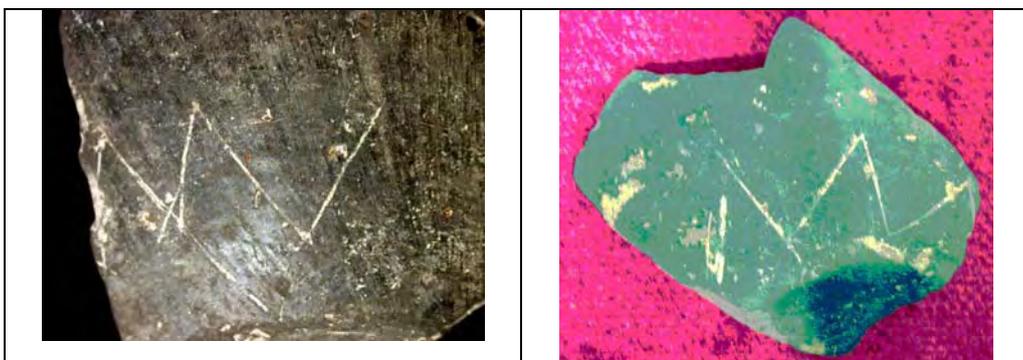


Fig. 2. When observing a single mark it is impossible to discern to which kind of communicative channel it belongs. Here two examples regarding the zigzag follow: a) a zigzag from a middle Vinča fragment of base discovered at Gomolava (Republic of Serbia) (photo Merlini M. 2004); b) the same mark from a late Vinča fragment of base found at Čučuge-Ilića Brdo (Republic of Serbia) (photo Merlini M. 2004).

Studying the human representations in the Central European Linear Pottery, Höckmann drew similar observations regarding the compositional regularities and the semiotic system of the "sacred symbols" (Höckmann 2000-2001: 87-88). Within the more general framework of the Neo-Eneolithic-Copper age cultures across

Acta Terrae Septemcastrensis, VI, 2007

Southeastern Europe, the "sacred symbols" of the "M" and the "comb" seem to have carried the same meaning symbolizing the transcultural and "universal" concept of the female *principium* (Ruttkay 1999: 9). However I think it is not yet demonstrated that they could be interpreted as ideograms, as stated by Ruttkay and other scholars.

Nonetheless, what about the Λ incised on the lower area of the back side of the pithos from Battonya-Gödrösök? According to position and shape, it cannot be considered a decoration. Its communicative value is evident as well as its sacral meaning, but it could be a mono-inscription (an ideogram) as well as the depiction of a constellation (Cassiopeia) or a heraldic mark. The semiotic tools are not sufficient to make a reasonable distinction.

A further Λ placed apart is on a sherd from Parța (Banat, Romania). It is evidently non-decorative (Winn 2004 on line fig. 5) and it is possibly a unit of an inscription broken on the right side, but it is impossible to assert it for sure.

It is also difficult to image a decorative or emblematic nature of the X scratched isolated and uncaredfully on the inner part of the bottom of an unpublished Vinča B sherd from Tărtăria (Transylvania, Romania).²

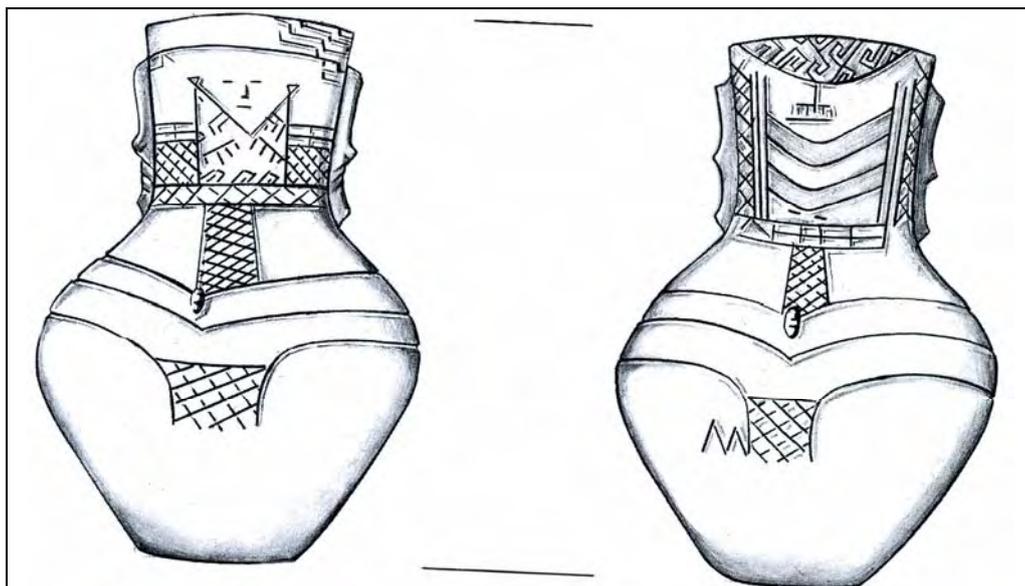
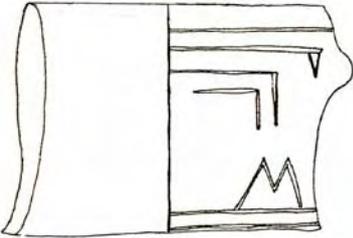


Fig. 3. An isolated mark occur on a vessel from Battonya-Gödrösök (Hungary) belonging to the Tisza Culture (after Raczky P., Anders A. 2003: 168, fig. 6/2).

² It was found at a deep of 120-140 cm.

Acta Terrae Septemcastrensis, VI, 2007

	
<p>Fig. 4. An isolated Λ on a sherd from Parța (Banat, Romania) is evidently not decorative and possibly a unit of an inscription broken on the right side, but it is impossible to assert for sure (after Winn 2004 on line fig 5).</p>	<p>Fig. 5. It is difficult to image a decorative or emblematic nature of the X scratched isolated and uncarefully on an unpublished Vinča B sherd from Tărtăria (Transylvania, Romania) (photo Merlini M. 2006).</p>

The “Matrix of semiotic markers and rules” has been recently tested on some recent discoveries selected from the core area of the Danube civilization and from the peripheral regions in order to document how widespread the Danube script was and some features of its semiotic code (Merlini 2004h; 2005b; 2005c; 2006a).

2. Setting the *Danube script* inside the *Danube communication system*

The early system of writing of Southeastern Europe is lost and what remains of it is unfathomable and tenaciously resists the efforts of scholars attempting to decipher it. Nothing is known about the existence of such a reference language. Moreover, it is too ancient for us to hope to find something like a multilingual “Rosetta Stone” which would permit us to translate it into a known language. Though it is now lost and it is unlikely it will ever be possible to decipher it, some scholars are using semiotic approach trying to crack some elements of its code (Haarmann 1995, 1998a, 1998b; Merlini 2002b, 2003b, 2004a, on line; Winn 1981, 1990, on line).

According to these semiotic researches, the Danube script is a very archaic system of writing and possibly not capable of encoding extended speech or long narratives because phonetic elements are not or are too limitedly rendered in writing. It probably consists of a mix of logograms, ideograms and pictograms plus some phonetic elements occasionally and marginally marked. The connection with the conceptual sphere is much stronger than the connection with the phonetic sphere. Other ancient writings of this type are the Elamite script, the Indus script, the hieroglyphs of the Phaistos disc, the Chinese writing on oracular bones, and the Olmecs glyphs.

Acta Terrae Septemcastrensis, VI, 2007

Although the Danube script was in *statu nascenti* and had a very weak association with phonetics, it should not be confused with other communicational channels used by the Neo-Eneolithic-Copper ages populations of Southeastern Europe such as religious symbols, geometric decorations, devices for memory support, star and land charts, ritualistic markings, numeric notations, family identifiers, community affiliation marks, signs stating the owner/manufacturer of an artifact. The Danube System of Communication was composed of several elements and the system of writing was only one of them. It is a very exciting means of communication for our contemporary literate mind, but it was not possibly the most important communicative device for the communities of the Danube area having been developed it only at the primary stage.

Signs of writing and of extra-writing apart, in Neo-Eneolithic-Copper ages the rich polysemous system for communication of South-eastern Europe included also anthropomorphic figurines, language, mythology, rituals, folklore, etc. The integration of semiotic and typological studies in the common problematic of the enculturation and other symbolic prehistoric communicational means will be an opportunity to approach the deep symbolic and the advanced social development of the populations of the Danube civilization (Nikolova 2005). These notes that I submit to the discussion move some steps in the direction of a future detailed contextual analysis: documentation of the location of the findings, correlation with the features in the houses/villages and especially their relations with the other symbolic objects and means for communication.

The main problem is that the distinction between the Danube script and the other communicational means is not so evident. First, when inspecting the internal structuring of the Danube Communication System evidence of a writing system becomes noticeable based on semiotic indicators, but as it is in a very archaic phase the outline of its signs are not clearly distinguishable from the marks of the other communicational channels. In particular, they share the same geometrical roots (showing sometimes alike outlines) with decorations, symbols, divinity identifiers, owner-manufacturer marks, chronographic representations, astral signs and so on. Second, signs of writing could co-exist on the same object with marks of other informative codes. In fact, sometimes more than one channel of communication was in use at the same time on the same vase, figurine, miniature altar or spindle whorl. In conclusion, in many instances the belonging of a group of signs to the system of writing is more deducible by their organization in the space than from their shape.

3. Ratio of the semiotic matrix for checking possible clues of a script in the Neo-Eneolithic-Copper ages in the Danube basin

Although the Danube script has a very weak association with phonetics and we are not able to read it at all, it should not be confused with other communicational

Acta Terrae Septemcastrensis, VI, 2007

channels used by the Danube populations during the Neo-Eneolithic-Copper ages. But how to distinguish in the field, with a reasonable degree of probability, if a grouping of signs belongs to the writing system or for example to a ritual graffiti, the decorative sphere, the symbolic language, the divinity identifier, the representation of celestial bodies or their motions, the owner-manufacturer marks, the chronographic representations?

I elaborated a matrix of basic semiotic markers and rules in order to distinguish texts of the Danube script composed of bi- or more-signs, without of course to know what they stood for, from compounds of marks associated to other communicational codes:

- i. Ritual markings (empathic action-graffiti; psychograms; and iterated attestations)
- ii. Decorations
- iii. Symbols
- iv. Divinity identifiers
- v. Schematic but naturalistic representations of objects, structures, natural events
- vi. Astral identifiers (star clusters *in primis* the constellations; celestial atlases; reproductions of the sun or moon; and movements of the celestial bodies as sun, moon, and planets)
- vii. Calendrical marks.

In the present article I put under discussion the “Matrix of semiotic markers and rules” regarding the challenge to distinguish between decorations and signs of writing employed by the Danube Civilization. Of course, the suggested indicators and guidelines are in progress because one will be able to distinguish without errors the signs of the system of writing from the marks of different communicational channels only if capable of reading the script. Nevertheless, on the other hand, one will never be capable of reading the inscriptions if not able to isolate their signs from the other marks. It is really a loop that one has to interrupt step by step and by progressive approximations. Once established the procedure in order to distinguish inscriptions of the Danube script from compounds marks associated with other communicational codes, the next steps will be to institute a corpus of the inscribed objects and then an inventory of the signs of the Danube script.

4. How to point out difference between signs of the Danube script and ornamental motifs

4.A. *Decorations undoubtedly ornamental*

A semiotic-archaeological research on Neo-Eneolithic-Copper age aesthetics in South-eastern Europe is more than a study of marks and patterns of ancient ornamentation. Very significant was for example the artistic talent in the design of

Acta Terrae Septemcastrensis, VI, 2007

architecture, the experiments in beauty with stone axes shapes, or the aesthetics of deposition concerning how the deliberate burial of artifacts and other materials occurred. However as key ingredient of a complex aesthetics, a knowledgeable and skilful fashion of decorative shapes, patterns and design played a key role, mainly symbolic but not exclusively, in the art of the Danube civilization.

The fixation of the boundary between ornament and symbol is among the most arduous tasks (Riegl 1893) also in the Danube civilization. I utilize the distinction between “pure decoration” and “emblematic (symbolic) decoration” where most of the scholars agree that the pivotal role was acted by the second one.³ Echoing Haddon, one can state that in the Danube civilization almost every line or dot, from any ornamentation, possesses a meaning, but in many instances we do not understand it. We have eyes but we do not see (Haddon 1895).

Concerning the marks/patterns/design of decoration and the signs/inscriptions/organization of writing, these codes appear to have been quite distinct in the minds of those making them as one can see in an uncountable series of artifacts bearing a blueprint which is unequivocally ornamental. In fact decorating processes developed peculiar techniques considered proper and efficacious (e.g. polychromy, graphite...), styles with regional variations and chronological sequences.

It is important to underline that I am not dealing with the whole range of decorations in the Danube civilization, but only with the distinct ornamental motifs which could be misunderstood for signs of a system of writing. Indeed, in a number of instances, the blueprint employed geometric elements, linear marks, and an abstract rhythm that in some way could recall a sign-like occurrence; nevertheless, its pure or emblematic decorative nature is evident. For example the design based on alternate upward and downward chevrons is unmistakably ornamental on a Neolithic vessel found in 1912 at Vinča (Republic of Serbia) by Miloje Vasić (*Vasić Handscript* 1912: 09 04str89).

Also decorative, although with deep spiritual significance, is the abstract meander motif drawn by Vasić when, in the same year, he recreated a Vinča altar in style of a Greek one, inclusive of a double axe erected between an idol for worship and a fireplace for offerings (*Vasić Handscript* 1912: 09 05str91-2). Indeed numbers of unearthed altars, statuettes and vessels bearing linear geometric motifs that

³ Obviously it does not mean neither (unlike Riegl 1893) that all the decorative motifs were originally conceived as symbols carrying a significance which has been lost during the history, nor that every symbol with an appealing shape is predestined to transform, in the flow of time, into a prevalently ornamental motif, nor that the success of a decorative motif with emblematic root has to be explained only at formal level (opposed to function or meaning).

Acta Terrae Septemcastrensis, VI, 2007

reminded him the inscriptions found on the archaic Greek vessels from Lesbos, Troy and Melos, led him to the assumption that the Vinča settlement belonged to an early Greek colony of the 7th and 6th centuries BC, such as those of southern Italy (Vasić 1910).

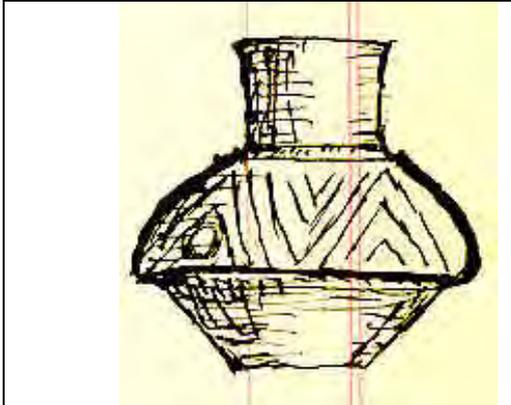


Fig. 6. An ornamental design based on the chevron motif occurs on a Neolithic vessel from Vinča (Republic of Serbia) (after Vasić Handscript 1912: 09 04str89).

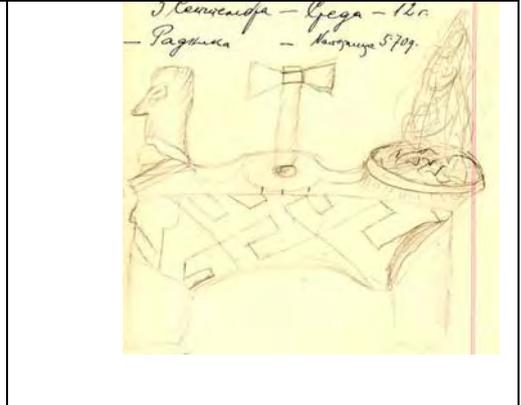


Fig. 7. Decorative, although with spiritual significance, is the meander motif drawn by Vasić when reconstructing in 1912 a Vinča altar in style of a Greek one (after Vasić Handscript 1912: 09 05str91-2).

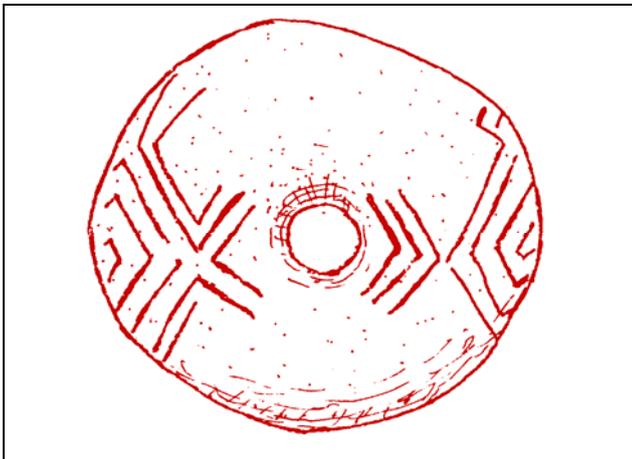


Fig. 8. Chevrons and meanders ornate a spindle from Turdaş (Transylvania, Romania) (graphic elaboration Merlini M. after Winn 1981: 268, fig. 10).

Acta Terrae Septemcastrensis, VI, 2007

Some spindle-whorls from Turdaş (Transylvania, Romania) have clearly ornamental marks, even if Winn inserted the spindle V.9277 among the inscribed objects due to the presence of a chevron and a “meander symbol” (Winn 1981: 376, note 10).

Evidently decorative are the parallel lines on the exterior and the net-shape on the interior of an unpublished zoomorphic altar found at Tărtăria (Transylvania, Romania) at a deep of 1.2 meters.



Fig. 9. A decorative design characterizes the exterior and the interior of an unpublished zoomorphic from Tărtăria (Transylvania, Romania) (photo Merlini M. 2006).

The above presented objects are “obviously” decorated with abstract-geometrical patterns according to the common sense and indeed they are. Therefore they can be discerned without great difficulty from the artifacts bearing signs of the Danube script. Unfortunately in the Danube civilization the decorative nature of an abstract-geometrical mark or a combination of this kind of marks is not always palpable as in the above examples. As I will put on display in the next paragraph, there are many instances when one is looking to an artifact that it is not very comfortable to detect if the incisions or paintings are elements of an ornamental design or units of a written text. How to distinguish with a plausible amount of assurance between signs/inscriptions of the Danube and ornaments / decorative patterns?

4.B. Messages embedded in decorations

If the decorative framework and the system of writing appear to have been quite distinct in the minds of those making them, being signs of literacy and artistic motifs quite dissimilar in shape and spatial organization, they were not completely separate without any connection in some way as we will analyze. Indeed if signs

Acta Terrae Septemcastrensis, VI, 2007

and inscriptions of the Danube possess some peculiarities that differentiate them from the ornaments and the decorative patterns, they are not always easy to detect and in a number of instances it is not a confident distinction that one between decorative marks/patterns and signs/organization of writing. If it is a difficult distinction, it is easy to explain the reason why, as follows.

I. Writing and decoration can both be finalized to transmitting messages, packages of information

In the Danube civilization, the decoration did not function as pure aesthetic ornament, but it carried a symbolic meaning and message. “The whole world outlook of prehistoric farmers was expressed in the ornament: the Land and Underground World, the Sky, the Sun, the Moon, the Stars, the Plants, Animals and People... Observant people can see complete ‘texts’ composed in ornaments: it is raining, the grain is falling on the ground, it is sprouting...” (Videiko 2003). Indeed “in the time before the alphabet the pottery ornamentation was a main visual channel to hand out the tradition (specially speaking)” (Nikolov and Karastoyanova 2004: 174). The significant as well as sacred communicative role played by the ornamentation is outlined by the fact that sometimes it was located on an invisible part of the vessel or of the object (Nikolova on-line).

The basic raising questions are three. What is the meaning of the wide range of decorations on the Neo-Eneolithic-Copper age artifacts? How can one analyze it? Moreover, how can one find inside the decorative patterns evidence about the nature of a prehistoric cognitive system regarding the belief systems and the relationship of people with natural and supernatural world? According to this challenges and taking into account that many of the artifacts, e.g. the vast majority of the figurines, are without any context in which one can neatly set them having been found isolated, some authors make an effort to understand the significance of the figurines with an interpretation of the figurines themselves (Ucko 1968: xvi). In other words, they try to examine them as a whole (a combination of different attributes of form, content and context) and, in this auto-reverse decoding process, to consider typology and interpretation of the decoration as a key for the analyze, the reconstruction and the ‘reading’ of the symbolic meaning of the statuettes how it is was understood by the prehistoric makers and users. In this case, ornament can be used as an efficient regional and chronologic indicator (Biehl 1996: 154-155).⁴

⁴ In order to test this point of view regarding a systematic code system embedded in figurines, Biehl analyzed 381 statuettes from 33 settlements in North-western Bulgaria belonging to the Gradešnica-Krivodol culture complex and inscribed into a time span from late Neolithic to early Eneolithic (Biehl 1996). Unfortunately, Biehl’s contribution was mainly methodological.

Acta Terrae Septemcastrensis, VI, 2007

The rich and packed decoration incised on the front side of a vaulted oven belonging to the Early Neolithic gives us evidence of how articulate could be the message embedded within an ornament. The oven was recovered in the northern room of a dwelling at Slatina-Sofia (Bulgaria). The decoration consists of five zigzag horizontal lines that are 22-30 cm high and 1.90 m long because they go along the wall from one end to the other. The upper three lines are running horizontally close to one another and in parallel zigzags. The lower two lines are positioned at a larger distance from each other and their zigzag is made in a manner that forms rhombuses in-between. According to V. Nikolov: “Structure and iconography of the entire composition remind in a way the painted ornamentation on the Early Neolithic pottery from the Central and East Balkans, and do allow an interpretation alike the one already suggested for that ornamentation” (Nikolov 1981).

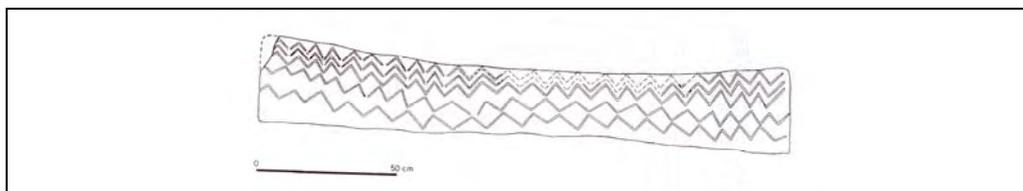


Fig. 10. A decoration finalized to convey a message from a vaulted oven was recovered at Slatina-Sofia (Bulgaria) and belongs to the Early Neolithic (after Nikolov 2001: 30, fig. 3).

The consequent interpretation is that “the upper part of the ornamental composition (the zigzag lines)...probably represents the upper sky with its fertilizing moisture, and the lower belt (of rhomb-like shapes)... should be a symbol for the fertile earth. From the viewpoint of the religious and mythological system of the early farming, the oven that terminated the way of the wheat by baking the bread, presents a logically chosen place for performing the composition as it was described. The analysis has attested the indivisible connection of a household assemblage of utilitarian functions with the cyclic character of cosmic phenomena as it used to be regarded in prehistoric attitude. The transformation of row material into a baked product inside the oven undoubtedly converted this assemblage into an isomorphic image of a womb (of the Mother Goddess) in the prehistoric thought and in that way the oven gained a higher semantics”. (Nikolov 2001: 25).

According to the “Matrix of semiotic markers and rules”, the intention to narrate a complex tripartite cyclical story using the expressive potentiality of geometric patterns combined with iconic elements (as for example dwellings, temples or other structures) is evident on a composite and rhythmically developed decoration from a

Acta Terrae Septemcastrensis, VI, 2007

bowl discovered in the burial SO/17 at the Linienbandkeramik IIA cemetery at Sondershausen (Thuringia, in central Germany) (Kahlke 2004: Pl. 7.1).

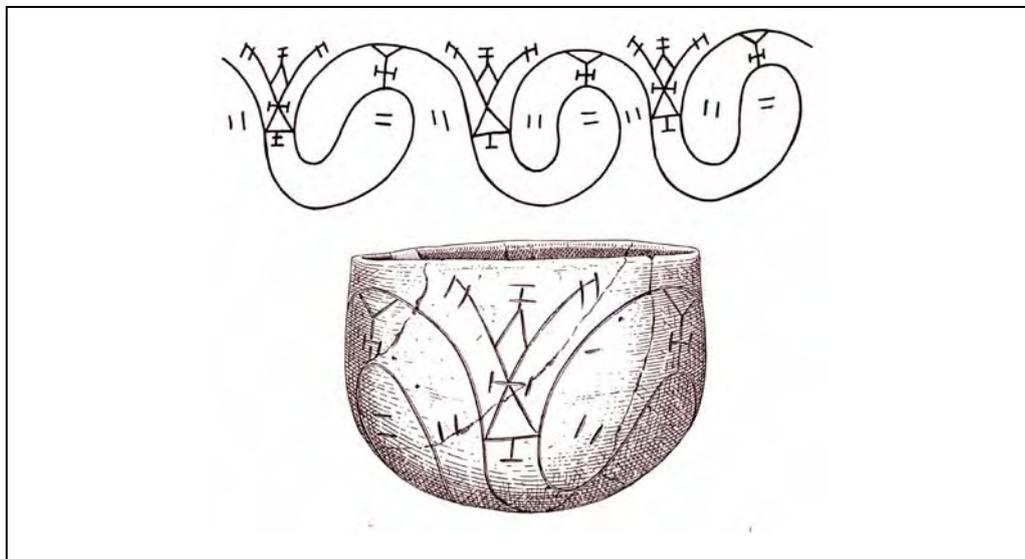


Fig. 11. A rhythmic decoration is finalized to transmit a package of information on a bowl unearthed at the cemetery of Sondershausen (Thuringia in central Germany) and belonging to the Linienbandkeramik IIA culture (after Kahlke 2004: Pl. 7.1).

II. *A number of signs of the script and decorative motifs share the same geometrical abstract root, which is why they sometimes show identical or similar outlines.*

Difficulties arise from certain common elements between signs of writing and decorative motifs (Čohadžiev S. 2006: 71). Deriving many signs of the Danube script and ornamental motifs from the alike abstract graphic source, the outline of some signs of writing appears to be a development of the schematic decorations (e.g. on Lepenski Vir and Vlasac boulders) or an evolution of the linear ornamentations on Starcevo-Cris (Körös). As example, I present some Romanian decorated sherds from each phase of Starcevo-Cris (Körös): from Gura Baciului (Starcevo-Cris (Körös) IIA); Gornea-Căunița de Sus (Starcevo-Cris (Körös) IIB); Bucova III (Starcevo-Cris (Körös) IIIB); Cenad (Starcevo-Cris (Körös) IVA); Ostrovu Golu (Starcevo-Cris (Körös) IVB).

Acta Terrae Septemcastrensis, VI, 2007

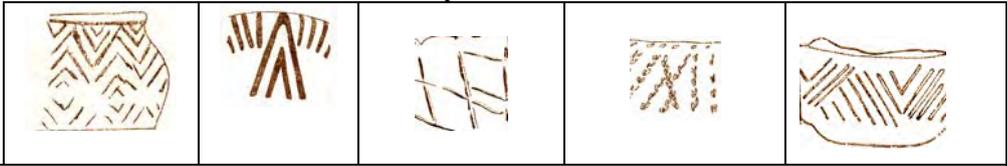


Fig. 12. Decorations from Romanian Starčevo-Criș (Körös) vessels that are bearing linear and schematic motifs, after Lazarovici 1979. A) from Gura Baciului (Starčevo-Cris (Körös) IIA) after Pl. III, 16; B) from Gornea-Căunița de Sus (Starčevo-Cris (Körös) IIB) after Pl. VB, 9; C) from Bucova III (Starčevo-Cris (Körös) IIIB) after Pl. VIII, 43; D) from Cenad (Starčevo-Cris (Körös) IVA) after Pl. VIII F, 42; E) from Ostrovu Golu (Starčevo-Cris (Körös) IVB) after Pl. IX D, 30.



Fig. 13. Geometry is on work in order to depict the features of a masked and beaked head found at Potporani (after Gimbutas 1987: 105, fig. 2).

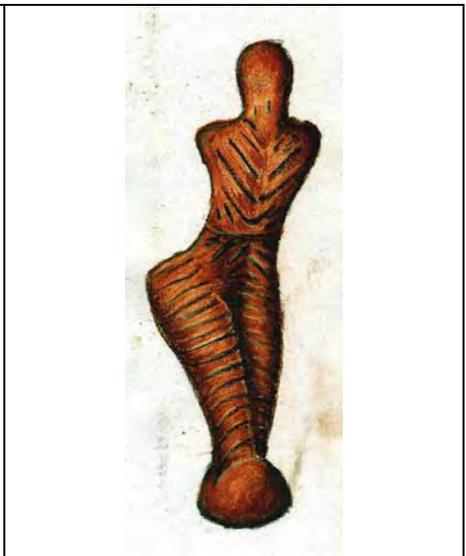


Fig. 14. Decorations that share the same geometrical root with signs of the Danube script (Vs, chevrons, parallel lines) characterizes a Moldavian figurine with a featureless head and wing-stumps (Romania) (after Prehistory Knowledge Project).

Meanders as coiffure stretching across the forehead, triangles as magical eyes, arches as lashes, repeated parallel lines and Vs as eyelids, bi- and tri-parallel lines as streams from the eyes: geometry is on work in order to depict the features of a

Acta Terrae Septemcastrensis, VI, 2007

mid Vinča masked and beaked head dated 5000-4500 BC and found at Potporani (Serbia) (Gimbutas 1987: 105, fig. 2; 1989: 54, fig. 90).

The V and parallel lines as decorative motifs (and not as significant root-signs of the Danube script) are well illustrated by a female figurine from northern Moldavia and dated around the end of the fifth millennium BC. It is completely bandaged by multiplex V and parallel lines. Having a head without face, truncated winged arms, and a leaned forward posture, it reminds a mummy ready to jump or to wriggle like a flash of lightning thanks to a kidney blow. The decoration is marked deeply and re-traced with a white paste. According to Gimbutas, the figurine might represent a Bird Goddess or a Snake Goddess (Gimbutas 1991: 110).

III. Not only the elements of writing, but also decorations follow precise rule of standardization of their shape.

Not only the scribe or the shaman/priest focusing attention on the act of writing, but also the decorator was not entirely free to create or select patterns and their variants as she/he wished. In fact, she/he had to conform to the rule of standardization inside the framework of the above-mentioned geometrical matrix, according to a style and conforming to a shared belief system. Indeed for example the reproduction on painted pottery of the iconographic information together with the semantic, which is hidden behind it, and the stylistic features of motifs and compositions required special training concerning the expertise to apply specific rules (Nikolov and Karastoyanova 2004: 174). Contrariwise the opinion of some authors (Biehl 1996: 155), it is reasonable to assume that in most of the cases the person who decorated was not free to choose the aesthetic decoration even in the instances where the presence of a great variety of ornaments is due to the fact that they were made not by specialized potters but by different “normal” people in the same village.

Observing that the red-slipped pottery with white-painted ornamentation is an essential element of the material culture of the early agricultural communities in Thrace and a main source of information about their religious-mythological system (Nikolov 2002), V. Nikolov and Karastoyanova noticed that it represents a complex ornamental scheme depending on certain principles (Nikolov 1983) and that the shape of the ceramic vessel and the sacred symbolism, encoded in its ornamentation, were both reasons for which this information was handed down from generation to generation answering certain rules and not arbitrary. Therefore they used the evidence of Tell Kazanlak to follow the tradition of handing down rules and standards of the painted ornamentation iconography in early and Middle Neolithic (from Karanovo I to Karanovo III culture), i.e. within nine villages in sequence corresponding to a period of ca. 400-500 years and 27-30 generations. V.

Acta Terrae Septemcastrensis, VI, 2007

Nikolov and Karastoyanova concluded that: “The presentation of the painted ornamentation from Tell Kazanlak earliest horizons from a diachronic point of view evidences the considerable conservatism of its main parameters and enables the assumption of an artistic rule”. All these generations reproduced the white-painted pottery together with all the elements of their everyday and spiritual life. Therefore, the replication of the artistic rule by the inhabitants of nine successive Neolithic villages is “an important indication for the stability of the communication system between the generations; it is a mark for a stability of the reproduction of the entire culture regarded as a functioning information system”. The communities of the Danube civilization paid special attention to the ancestral memory and, in this regard, the artistic culture is extremely important. The constant reproduction of the initial artistic text turns it into a symbol or even into an archetype; that is why special requirements are necessary for the way this reproduction is put into practice to keep a sustainable artistic tradition. “The type of the artistic sense is not natural to the human being and is not genetically inherited and that is why there is a necessity of handing down the culture from generation to generation by special training. It is especially related to the Neolithic painted ornamentation, which obviously has been the only way of visual reproduction of the religious-mythological system. The ceramic vessels with painted ornamentation have been an artistic form to keep and hand down information from generation to generation; being used everyday they served as a means of handing down an accumulated ideological tradition” (Nikolov and Karastoyanova 2004: 179).

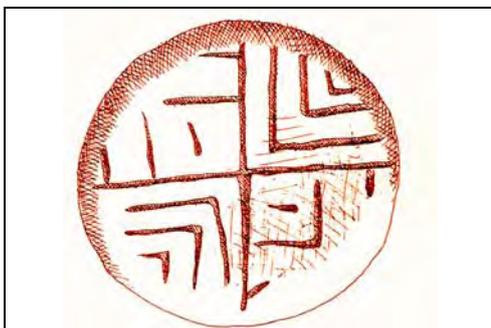


Fig. 15. Standardized decorations form a symmetric and complex decoration on an early Vinča clay seal discovered at Predionica (Kosovo) (graphic elaboration Merlini M. after Galović 1959: pl. 79 1.2).



Fig. 16. Standardized and repeated chevrons ornate a lid from Turdaş (Transylvania, Romania) (after Roska, Torma 1941: 247, tab. CI, fig. 9).

Acta Terrae Septemcastrensis, VI, 2007

One can appreciate the high-standardized pattern of a complex decoration on an early Vinča clay seal from Predionica (Kosovo) (Galović 1959: Pl. 79 1.2). Although Gimbutas stated that it represents “an ideogram of a Bird Goddess” made of crossed chest bands and chevrons (Gimbutas 1982: 117) and in fact it is composed of marks resembling signs of the Danube script, its decorative nature, even if emblematic, is revealed by the symmetric design. The seal is made of brick-red fine fabric and is dated at the end of sixth millennium BC according to Gimbutas.

In addition, the standardized and five-time repeated chevrons on a lid have a clear decorative nature (Roska Torma 1941: 247, tab. CI, fig. 9). Within other semiotic contexts, the chevron is a sign of the Danube script.

IV. *Some marks can be, depending on the context, either a sign of writing or a decoration.*

As seen above in case of the chevron, a number of marks such as “Λ”, “V”, “M”, “X”, “+” and some naturalistic motifs as sun, rain, bird, tree can be, depending on the circumstances, either signs of writing or decorative elements (Gimbutas 1991).

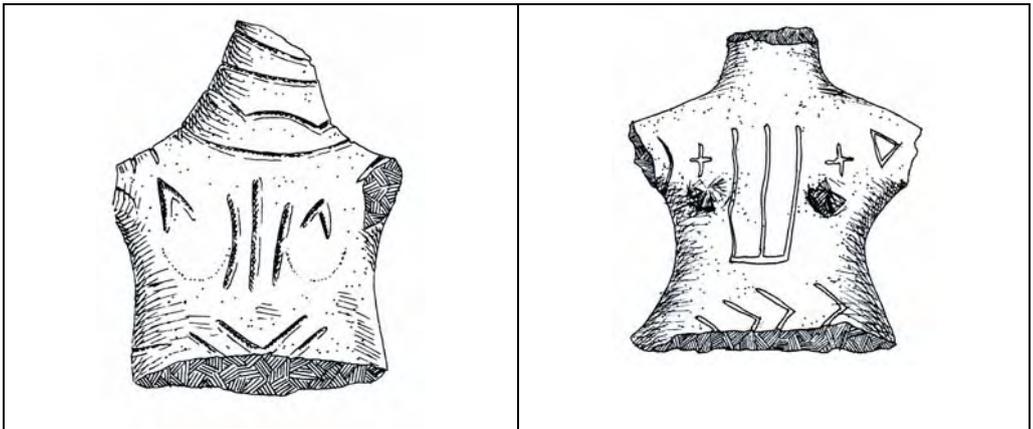


Fig. 17. Some decorative motifs on figurines from Sitagroi III have the same abstract, linear, and geometric outline of signs that belong to the Danube script (after Gimbutas 1982: 116, fig. 75, 76).

Typical signs of the Danube script such as \wedge , parallel tri-lines, ∇ , $+$, \sqcup , \ggg , and $>$ are employed as decorative motifs on some figurines from Sitagroi III belonging to 4000 BC (Gimbutas 1982: 116). Inverted Vs above breasts, triple vertical parallels on the chest and a chevron on the pubic area characterize the first

Acta Terrae Septemcastrensis, VI, 2007

torso. The second torso has crosses above the breasts, a tri-parallel line joint by a bar on the chest, Vs motifs on the pubic area and an eccentric triangle on its left shoulder paralleled by a bracket on the right. Spatial organization and regular distance among the marks, symmetry in design, size and position of the central mark comparing to the other marks reveal in both the cases the decorative as well as symbolic nature of the complex composition made of geometric linear elements.

V. Decorations can arrange artistic motifs in the similar way a text can organize its signs.

If the Danube script aligns the signs mainly in linear rows, sometimes also the decorations can do the same as regards their marks. However, there are significant artistic patterns that could be misunderstood for signs of writing. The misunderstanding could further grow in the exceptional but not infrequent case of marks that are ambivalent and can be signs of the Danube script or decorations depending on the semiotic context. In a subsequent part, I will give some information how to deal with this complex situation.

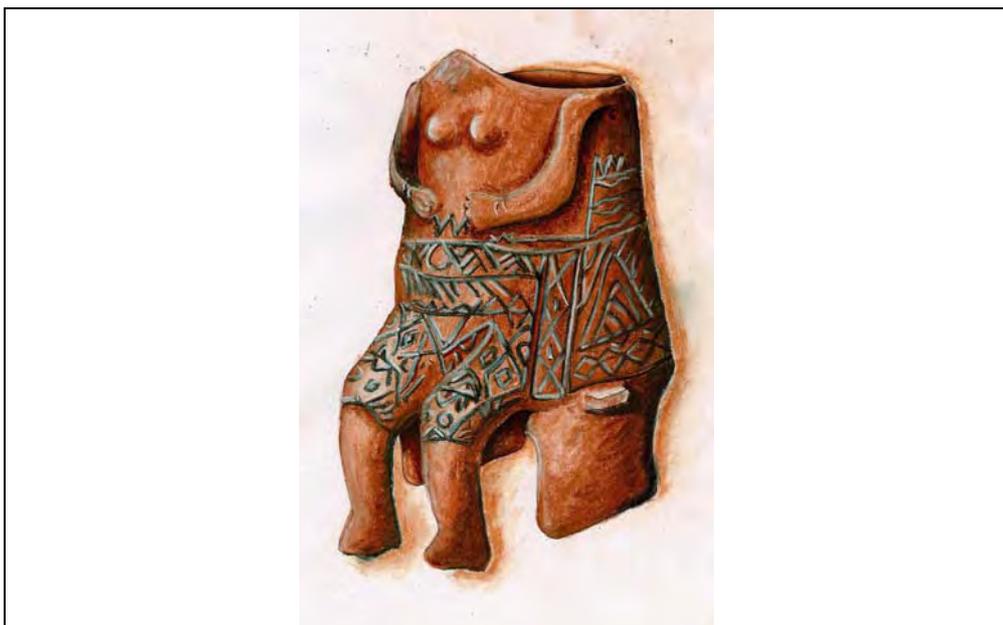


Fig. 18. The Ms, Xs, lozenges, triangles and parallel lines that adorn a vase shaped as an enthroned female divinity record suitably the possibility to line up the decorations along registers as well as their linear, abstract, schematic and high-standardized geometries (after Prehistory Knowledge Project).

Acta Terrae Septemcastrensis, VI, 2007

The Ms, Xs, lozenges, triangles and parallel lines incised and encrusted in white in order to adorn a vase shaped as an enthroned female divinity document appropriately the possibility to line up linear, abstract, schematic, and high standardized ornaments along registers (Banner 1942: pl. I,1-4; 1959: 16, fig. 5; Angeli et al. 1972: 36, fig. 16; Kalicz and Raczky 1987; Gimbutas 1991: 71, fig. 3.23.3; Virág 1998). The vase comes from Kőkénydomb (Hungary) and belongs to the Tisza culture.⁵

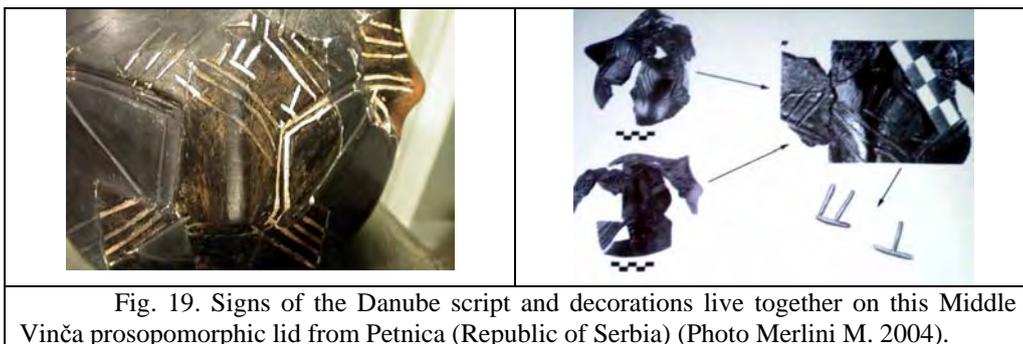


Fig. 19. Signs of the Danube script and decorations live together on this Middle Vinča prospomorphid lid from Petnica (Republic of Serbia) (Photo Merlini M. 2004).

VI. Signs of the script and decorations can live together on the same object.

On a Middle Vinča prospomorphid lid 9 cm. in height and 15 cm. in diameter unearthed from a garbage pit at Petnica at front of Small Cave (Republic of Serbia), a F-sign and a T-sign occur prominently on the front and in the centre of a decoration.

Another apparent case of the blurring of the line between signs of writing and artistic motifs occurs on the typology of figurines wearing a chevron as a “necklace” or a piece of attire. On a statuette from Turdaş (Transylvania, Romania), signs of the Danube script cohabit with an evident decorative quadruple chevron on the neck. Also a bear figurine from Priština (Kosovo) combines a chevron “necklace” (triple in this case) and signs of the Danube script (Winn 1981: 365, fig. 1).

On the one hand, the chevron is one of the most important signs of the Danube script; on the other hand, however, double-triple-quadruple rendition of the V flourished in the art of the Danube civilization carrying the symbolism of divine power and reverence. Indeed, in all the above presented cases the chevron never

⁵ Early 5th millennium, according to Gimbutas (1999: 76).

Acta Terrae Septemcastrensis, VI, 2007

occurs as a sign of writing but is an emblematic decoration associated to signs of writing.



Fig. 20. On a figurine from Turdaș (Transylvania, Romania), signs of writing cohabit with a decorative quadruple chevron on the neck (photo Merlini M. 2004).

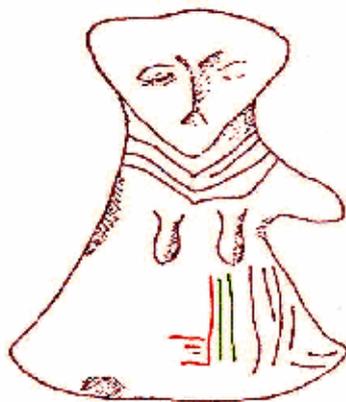


Fig. 21. A bear figurine from Priština (Kosovo) incorporates a triple chevron "necklace" on the neck and signs of the Danube script on the garment (after Winn 1981: 365, fig. 1).

VII. *Decorations and signs of writing could both have been conceived to fulfill an aesthetic satisfaction, although it is normally in the first case and rarely in the second.*

Even if in the Danube script the design is devoted to functionality, in some infrequent instances it seems to have also some aesthetic intention. The artistic rendering could be either in the calligraphic silhouette of the signs or in the spatial organization of the text.

On a Late Vinča stylized head or mask of a bear from Pločnik (Republic of Serbia), in the position of the eyebrows there is a sign of the Danube script on the right-hand side and the same sign, but backwards, on the left-hand one (Winn 1981: 360, fig. 2). The rendition of the same sign is calligraphic, being artistically executed to follow the contours of the figurine. Its back-to-back positioning may have an artistic intent as well as a religious significance (Griffin 2004a: 16; 2006). The animal mask is also marked by triple lines under the eyes (Gimbutas 1982: 59, fig. 32).

Acta Terrae Septemcastrensis, VI, 2007

The design encrusted in white on the front of a black polished figurine with an owl mask and wings is dominated by a labyrinthine and meandering symbol twisting from the vulva toward the heart region up to encircling the breasts (Nikolov 1974; Gimbutas 1989: 194, fig. 300) and symbolizing “the Goddess’ regenerative power” according to Gimbutas (1990: 231, fig. 11.13). Nevertheless, one can observe an inscription under the right armpit made up of a four-parallel line, a V, and a six-parallel line as well as another inscription under the left armpit consisting of a bi-line, a three-stroke, and a five-line. The accompaniment of the text to the curved contour of the armpits and the quite symmetric left-right location of the inscriptions reveal that they had also an ornamental function. The figurine was found at Gradešnica (Northwestern Bulgaria).

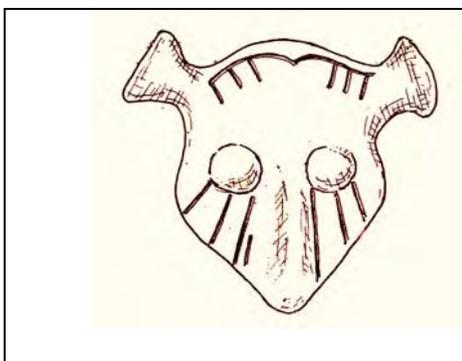


Fig. 22. The curved shape following the silhouette of the forehead and the rendition back-to-back of the same sign of the Danube script in the position of the eyebrows is artistically executed on a head or mask of a bear from Pločnik (Republic of Serbia) (after Winn 1981: 360, fig. 2).



Fig. 23. Decorative function of two inscriptions positioned under the armpits on a black polished figurine dominated by a symbolic, meandering composition (Gradešnica, Northwestern Bulgaria) (after Gimbutas 1989: 194, fig. 300).

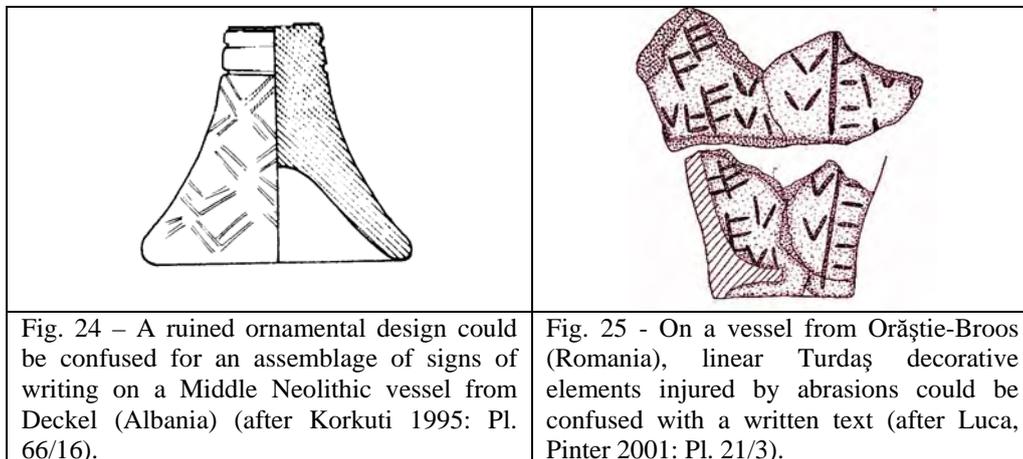
VIII. *Abrasions, corrosion and injury can create some confusion between decorations and signs of writing.*

At times ornamental motifs seem to be strange linear marks without any aesthetic value or to be asymmetrically positioned simply because they are incised on a surface of clay that now is ruined.

On a Middle Neolithic vessel from Deckel (Albania) belonging to Podgorie II culture, the ornamental design composed by chevrons oriented towards the four directions could be confused for an assemblage of signs of writing being injured (Korkuti 1995: Pl. 66/16).

Acta Terrae Septemcastrensis, VI, 2007

On a vessel from Orăștie-Broos (Romania), linear and abstract decorations from Turdaș culture can give the illusion of a written text simply because they are ruined by abrasions (Luca, Pinter 2001).



4.C. *Semiotic indicators to discern between decorative motifs and signs of the Danube script*

Dealing with subtle confines between ornamental design and written text, and facing an uncracked script, which semiotic criteria can one use in order to properly distinguish between artistic applications and inscriptions? Here there are some instructions. As one can note, inscriptions and ornamentations have different purposes, rule of composition and organizational principles.

I. *Inventory of the Danube script vs. corpus of the artistic motifs*

If one sets apart for a moment the uncommon marks that can be involved in writing messages as well in artistic ones, signs of the script are well identifiable in their individuality. Being conventional and standardized, they are repertoriabile in a precise and systematic inventory (in the progress of being built and with much effort by the scholars who are also dealing with regional variants and chronological modification).⁶

From the side of the decorative motifs, if one sets apart for a moment the ambivalent signs that can be ornaments vehicularing messages as well as signs of

⁶ Shan Winn in USA, Harald Haarmann in Finland, Gheorghe Lazarovici in Romania, Andrej Starovic in the Republic of Serbia, Adamantios Sampson in Greece and I in Italy are occupied to build inventories of signs of the Danube script.

Acta Terrae Septemcastrensis, VI, 2007

writing, decorations are gathered in a specific collection which can be articulated on regional and chronological basis: the corpus of the artistic motifs. Here follow some examples from two geographic poles: the Gradešnica-Krivodol cultural complex and the Tripolje cultural complex.

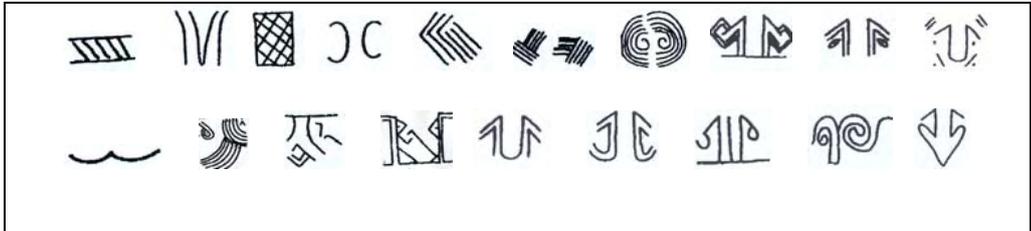


Fig. 26. Some marks that according to the “Matrix of semiotic markers and rules” are only ornaments from the Gradešnica-Krivodol culture complex.

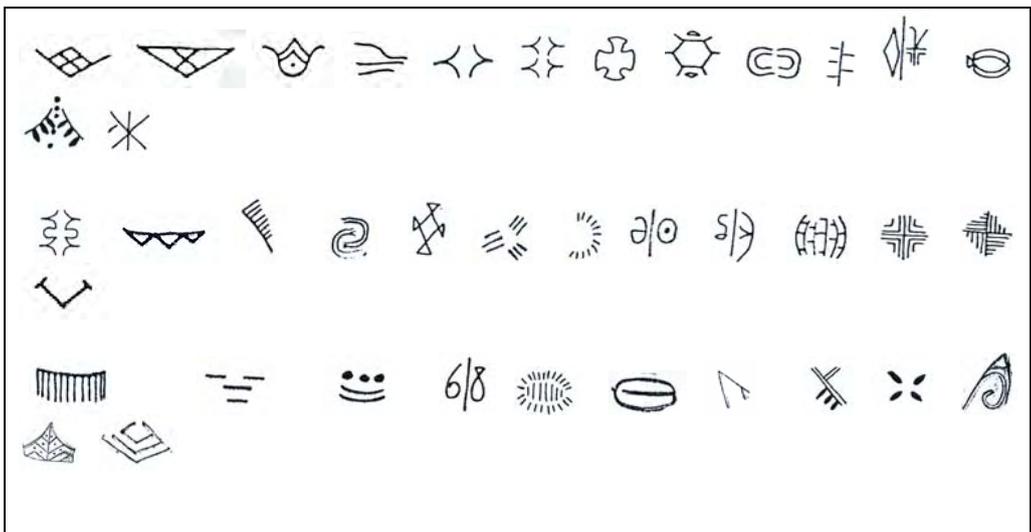


Fig. 27. Some marks that according to the “Matrix of semiotic markers and rules” are only ornaments from the Tripolje cultural complex.

II. *Linearity, abstraction and schematization of the outlines fit better the script elements*

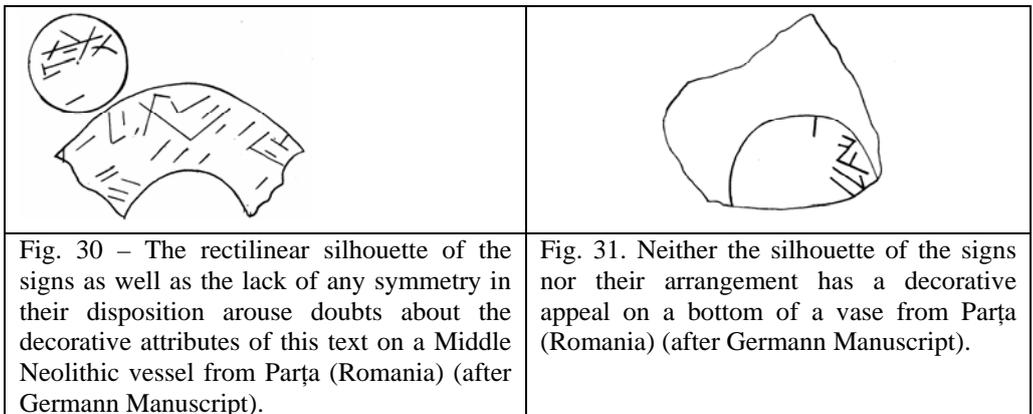
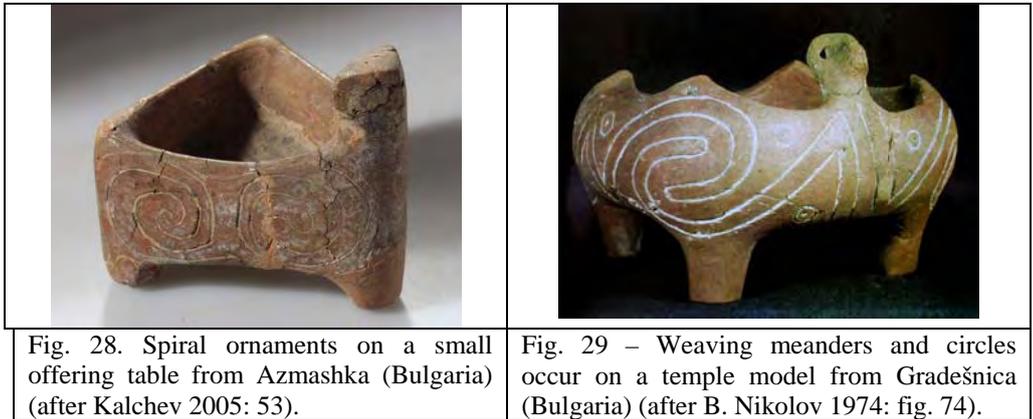
It is more probable that geometric, abstract, high schematic, linear and not very complex marks (as for example Y, M, N, X motifs) stay inside the script framework than inside the ornamental one. In fact it is difficult to appreciate the pleasing of the eye by such “unusual” ornaments: their outline is graphically banal and much less

Acta Terrae Septemcastrensis, VI, 2007

decorative than motifs such as meanders, spirals or labyrinths. At first, rough distinguishing step, maybe it is more productive if we consider them as a means of writing whereas meanders, spirals or labyrinths are more likely ornamental (although mainly emblematic) elements.

Two Bulgarian finds illustrate typical decorative units. Spiral motifs inlaid with white paste ornate an 8.5 cm. ceramic offering table from Azmashka (near Stara Zagora, Bulgaria) belonging to the Early Copper age (5th millennium BC) (Kalchev 2005: 53).

Weaving meanders and circles have been incised and encrusted in white and flying up to saturate the space of an Eneolithic temple model from Gradešnica (Bulgaria), level B, giving the idea of open wings. The artifact has four thin and short legs and is overcome by an anthropomorphic beaked head (B. Nikolov 1974: fig. 74).



Acta Terrae Septemcastrensis, VI, 2007

On the contrary, in an inscription of the Danube script there is nothing of decorative in the outline of the signs as well as in their combination which does not form a harmonious design (although a text could very rarely have a calligraphic and aesthetic value).

The rectilinear silhouette of the signs as well as the lack of any symmetry in their arrangement arouse doubts about the decorative attributes of the texts presented below which have been incised on the vessel A 2351 and on the bottom of a Middle Neolithic vase from Parța (Romania) (Germann Manuscript).

III. *Complex modification of signs in the Danube script vs. absence of employment of diacritical marks in ornaments*

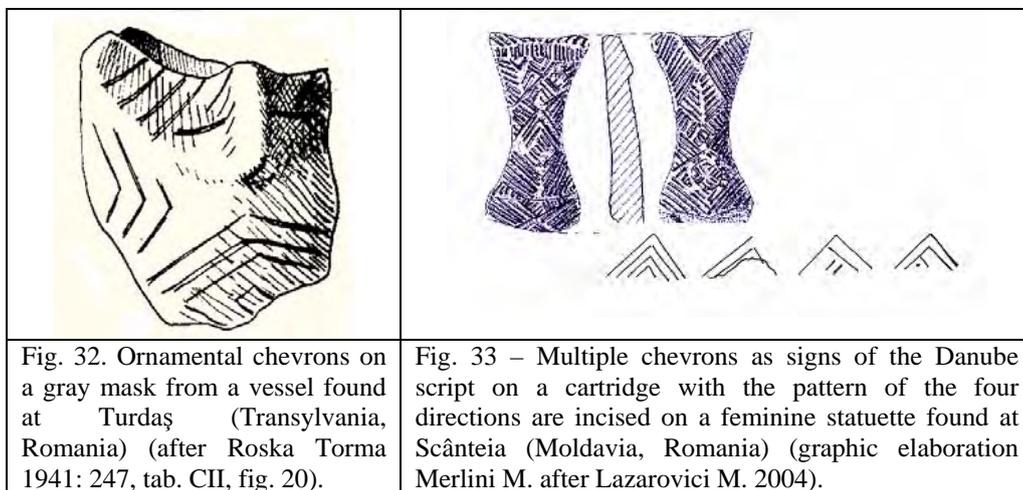
Only signs of writing can be modified from three techniques: a) duplicating-multiplying them; b) turning them round as in a mirror, turning them upside down, turning them round and upside down at the same time; c) applying diacritical marks to them as small strokes, crosses, dots and arches. Focusing on the third technique, one can note that the variations can be simple (applying only one diacritical mark to a sign) or complex (applying two or more diacritical marks to a sign). According to this compositional *modus operandi*, a V can for example be transformed, among the range of its modifications, into ∇ , \sphericalangle , \sphericalangle , \sphericalangle , \sphericalangle or \sphericalangle (simple variations) or into \sphericalangle , \sphericalangle , \sphericalangle (complex variations). Not all the signs of the Danube script have been actually varied on the basis of the sophisticated rule of multiple variations, but all the signs that have been subjected to this rule are signs of writing. I call “root-signs” those subjected to the modification by diacritical marks (V, \wedge , $>$, $<$, $+$, X, $/$, \backslash , \sqcap , \sqcup for example) and “invariant signs” those not subjected to this technique (A, \AA , 7, L, \P , \uparrow , \H for example).

The artistic signs can be varied by duplicating-multiplying them or turning them round as in a mirror, turning them upside down, turning them round and upside down at the same time, but they are not subjected to the technique of multiple variation which is a key characteristic of the Danube script as well as other ancient scripts. If decorations don't become more complex with the application to them of diacritical marks as small strokes, crosses, dots and arches, they could appear in many variants caused by additional ornamentation, for instance with dots, framing lines or spirals (Biehl 1996: 156) as I have above presented accounting the corpus of the artistic motifs in the Gradeșnica-Krivodol cultural complex and the Tripolje cultural complex. The custom to incise or paint additional ornamentation could have ground into the relative freedom in the aesthetic of the artifacts, in the regional or local variability in the representation of main motifs as well as in the necessity to express a message embedded inside the decoration in an articulate manner.

Acta Terrae Septemcastrensis, VI, 2007

Nevertheless the additional ornamentation which varies the decoration never follows the technique of the multiple variations which is a peculiarity of the script.

In order to illustrate briefly the difference between decoration and script with regard to techniques and restrictions in modifications of the outline of the signs, I oppose the unvaried decorative chevrons on a mask which is indeed a fragment of a vessel (Roska Torma 1941: 247, tab. CII, fig. 20) and the variations of the chevron, as a sign of the Danube script, as they occur within a cartridge bearing the pattern of the four directions incised on a feminine statuette from Scânteia (Moldavia, Romania). According to the discoverer: "This cartridge might be symbol of the goddess or could be related with their role in different ritual ceremonies" (Lazarovici M. 2004).



IV. Signs of the Danube script occur isolated as well in groups whereas ornaments preferably co-occur with others in groups as a whole assemble hiding the single element

If signs of writing can appear isolated as well in groups, ornamentations are preferably compositions made up by geometric motifs organized in groups. Indeed in the Danube civilization in many cases an attractive design is formed by the repetition of the same geometric ornamental motif such as a spiral or a meander or is a compound pattern made of dissimilar ornamental motifs arranged in an aesthetic way. In any case, when one looks at a decorated object it is not so much the individual ornamental unit to ask for consideration and possible interpretation, but rather the whole assemble (Frutiger 2004: 57). Indeed in the art of Neolithic-Copper age in South-eastern Europe it is not the single element, but the

Acta Terrae Septemcastrensis, VI, 2007

design as *Gestalt* which impresses itself on one's sensibility and convey an aesthetic experience. Both the immediate, perhaps exclusive and surly definitive appeal as well as the understanding of the significance lay at the level of the decorative structure as integrated totality whereas the single mark hides itself inside it and is a merely element of it. It is only by a closer viewing of the artifact and its decoration that one is lead to inspect the separate details and to question their possible meaning. In many compound arrangements of simple forms the spaces in the background between them appear, more or less clearly, as composed by complementary figures. The simultaneous presence of linear marks and background as complementary marks underlines the expressive significance of the inner space, the interspace between opening and closing of an ornamental element and the visual impact of merging and crossing outlines. For these reasons the distinction between ornaments and inscriptions has a credible amount of assurance only dealing with a syntactic approach i.e. the manner of the arrangement of the various units in a larger setting.



Fig. 34. The complex decoration based on zigzags on a Neolithic seal kept at the national Museum of Skopje (F.Y.R.O.M.) (photo Merlini 2005).



Fig. 35. An illusory perspective and a geometrical volume are created by visual tricks on a decoration incised on an Anzabegovo-Vršnik II seal from Tumba Maxari (F.Y.R.O.M.) (after Sdrankovski 2006).

The decoration on a Neolithic seal kept at the national Museum of Skopje (F.Y.R.O.M.) is composed replying zigzag ornaments framed countless times one after the other as waves rolling and breaking on the shore. These alternate right and left turns are not significant as single elements but merely as units of a complex design because the deep twisting lines on the surface at one time are starting marks and at the same time are separators among the bidimensional zigzags.

Acta Terrae Septemcastrensis, VI, 2007

	
<p>Fig. 36 – On an Anzabegovo III phallus from Mramor Chashka (Veles, F.Y.R.O.M.) it is the whole assemble surrounding the object and not the single ornamental unit to ask for consideration (photo Merlini M. 2006).</p>	<p>Fig. 37. Even if many signs incised on a unpublished Neolithic phallus kept at the National Archaeological Museum of Athens are connected by ligatures, they are individually identifiable (photo Rosa D. 2006).</p>

On another *pintadera* kept at the same museum and discovered at Tumba Maxari (F.Y.R.O.M.) it is possible to account an unusual illusory perspective created by the fact that the key geometrical units (the rectilinear U shapes) are not clearly connected at their edges (e.g. on the lower right area). For a rational point of view the design is unintelligible, but this visual trick united to the deepness of the incision creates uncommon three-dimensionality and deceptive geometrical volume. The illusory outlook is concentrated in a space of 1.4 cm x 2.3 cm. The seal belongs to the Anzabegovo-Vršnik II culture (Sdrankovski 2006).

Broken zigzag lines deeply incised and organized in sequence compose a decorative structure as integrated totality which surrounds an Anzabegovo III phallus discovered at Mramor Chashka (Veles, F.Y.R.O.M.). The single marks are hidden inside the general blueprint at the point that it is difficult to distinguish their individual outline and when one ends and the subsequent starts.

Even if many signs incised on an unpublished Neolithic phallus kept at the National Archaeological Museum of Athens are connected by ligatures and are element of a text, they are individually identifiable and conformed to a standard capable to insert them inside a precise and systematic inventory.

Acta Terrae Septemcastrensis, VI, 2007

V. *Preferential linear alignment and asymmetric coordination of the script vs. grouping arrangement of the decorations finalized to capture the symmetrical rhythm and balance able to exalt the aesthetic value of the object.*

When in groups, signs of the Danube script prefer a linear alignment although a linear arrangement is not an absolute prerequisite for this ancient system of writing as well as for others. Besides the signs show an asymmetric coordination (Haarmann 1975: 21) which arouses further doubts about their decorative attributes to be added to the above noted suspicions concerning their silhouette. If at times the spatial organization of an inscription is in metopes, registers, columns or in lines to facilitate the acts of writing and reading, nevertheless signs of the Danube script are never symmetrically positioned inside the afore mentioned frames.

A linear alignment and an asymmetric coordination characterize the inscription incised on a Starcevo-Cris (Körös) IIIB⁷ fragment of ceramic made of rough paste unearthed at Trestiana (Romania) (Popușoi 2005: 270 fig. 73,3).

Y-like, X-like, vertical lines and other abstract signs are in some way aligned and divided into two reading parts from a horizontal stroke on an inscription incised on a fragmented mignon cup. It was made locally at Mohelnice (Moravia, Czech Republic) and belongs to the late LBK Culture around 5500-5300 BC (Tichý 1971; Makkay 1990: fig. 22). Radomír Tichý considered its signs neither coming from LBK culture nor connected to other prehistoric pot-idols and stressed the hypothesis of a possible symbolic nature of them (Tichý 1971: 10-2). Antonín Bartoněk agreed with Tichý adding that the “decoration made of signs” was engraved from left to right and that signs cannot be separated in their individual meaning, they have to be taken together in order to find a signification (Bartoněk 1977: 422). Milan Licka took into account the incision from Mohelnice as a “form of pictographic writing to be read from right to left” (Licka 2000: 75).

On the contrary to the script, the rhythmic and symmetrical recurrence of a geometrical motif is the principal feature of the decorative system in the Danube Civilization (Todorova 1978; Čohadžiev S. 2006: 71). The symmetry was both horizontal (Earth) and vertical (gravity). The feeling of “center”, to be centered (safety, stasis) is joint to the perception of symmetry. The symmetrical layout recalls the structure of our body; therefore it is very intuitive and attainable. On the contrary, an asymmetric design needs to be caught and metabolized by mind and immediately generates an alert mood. It is significant also to note that the tendency of the Danube aesthetics to develop symmetric blueprint was not a merely “rule of thumb”, but based on precise geometrical statute as the golden rectangle

⁷ It was discovered at level I in the dwelling C/L.2.

Acta Terrae Septemcastrensis, VI, 2007

principle. For example the Cucuteni binocular vessels in general respect the value of golden number in the report between the length and the height (1,618) (Ciacăru 2004). Indeed the exploration of graphic harmony droved the Danube scribes to systemize the decorations along repetitive and regular patterns which in many instances are linear and sometimes ever-widening. In any case, a decorative motif is quite never based on the asymmetric combination of its units.

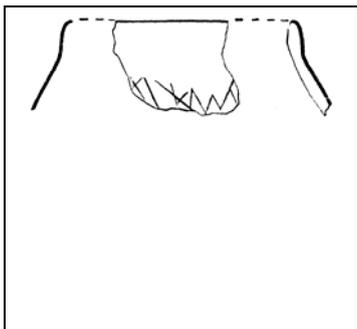


Fig. 38. Linear alignment and asymmetric arrangement of the script characterize a Starčevo-Cris (Körös) IIIB potsherd from Trestiana (Romania) (after Popușoi 2005: 270 fig. 73,3)

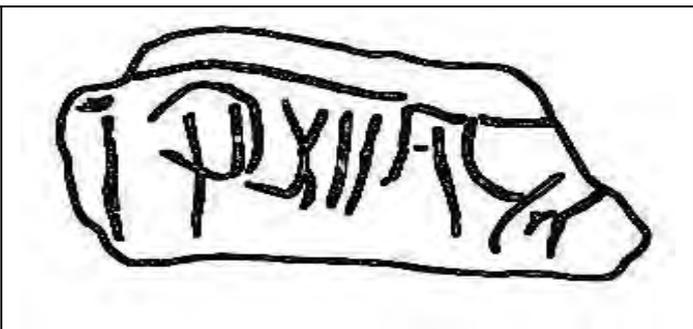


Fig. 39. The signs are in some way aligned on an inscription from a Neolithic fragmented cup unearthed at Mohelnice (Moravia, Czech Republic) (after Licka 2000: cat. N. 125).



Fig. 40. The symmetric repetition of the same double semicircle on the bottom of a vessel from Turdaș (Transylvania, Romania) has an obvious decorative nature (photo Merlini M. 2004).



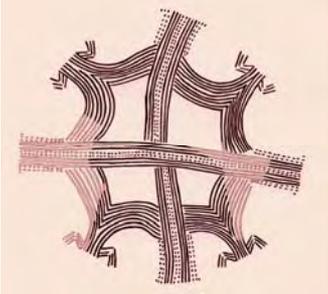
Fig. 41. Symmetrically repeated chevrons ornate a discoid medallion from Turdaș (photo Merlini M. 2004).

Acta Terrae Septemcastrensis, VI, 2007

The symmetric recurrence of the same double semicircle at the corner of the bottom of a vessel from Turdaş has an evident decorative nature (Roska Torma 1941: 314, tab. CXXXV, fig. 31). In other cases, with semicircles which vary in shape and/or dimension, the design depicts the phases of the moon, but in the presented occurrence the four marks are perfectly equal in shape.

The symmetric repetition of the chevron on a clay discoid medallion from Turdaş reveals its ornamental nature, although possibly emblematic, as on some bottoms of vessels from the same settlement (Vlassa 1976: 167).

The signs are linear and abstract (a V contained within diagonal parallel lines), but symmetrically positioned on a late Vinča bowl fragment of shoulder from the eponymous settlement (Starović 2004: 81).

	
<p>Fig. 42. Signs are linear and abstract, but symmetrically positioned on a late Vinča bowl fragment of shoulder from the eponymous settlement (photo Merlini M. 2004).</p>	<p>Fig. 43. The symmetry is rooted in a circular ritual dance on a vessel from Trebur (Upper Rein district, Austria) (after Spatz 2003).</p>

A significant rhythmic decoration comes from Trebur (Upper Rein district, Austria) (Gronenborn 2005: 120). It is bore by a vessel which is decorated with headless human figures whose arms seem to be elevated in an incantation position (not merely for devotion as an orante, but for imploration or supplication). The symmetry is rooted in a circular ritual dance: connecting dancers are forming the decoration and the vessel as well. The artifact is dated 5000 BC by the archaeologist in charge.

Two symmetric decorative patterns made of linear marks characterize a very coarse fabric Vinča A2 altar with a quadrangular receptacle discovered at the eponymous site.

A symmetric decorative design made of marks which have the same geometric outline of signs of the Danube script (<, >, V, zigzag, chevron, tri-line) typifies

Acta Terrae Septemcastrensis, VI, 2007

some schematic figurines from Sitagroi (Greece) and belonging to Sitagroi III (Gimbutas 1991: 99).

If in general the ornamental design does not organize the space in metopes, registers, columns or in lines which are typical of a script layout, nonetheless there are significant exceptions and these could misunderstand signs of writing and artistic motifs. The misunderstanding could further grow in the quite exceptional but not infrequent instance of marks that are ambivalent and can be signs of the Danube script or decorations depending on the semiotic context. In this occurrence the decorative function of the marks is shown up by the convergence of other indicators. For example, a miniature four-legged offering vessel from Starčevo-Criș culture found at Dudești Vechi (Romania) is decorated with Vs (a shape which is also a typical sign of the Danube script) organized with a linear layout, but the pattern always repeats obsessively the same mark and is hit by *horror vacui*, saturating the entire available space.

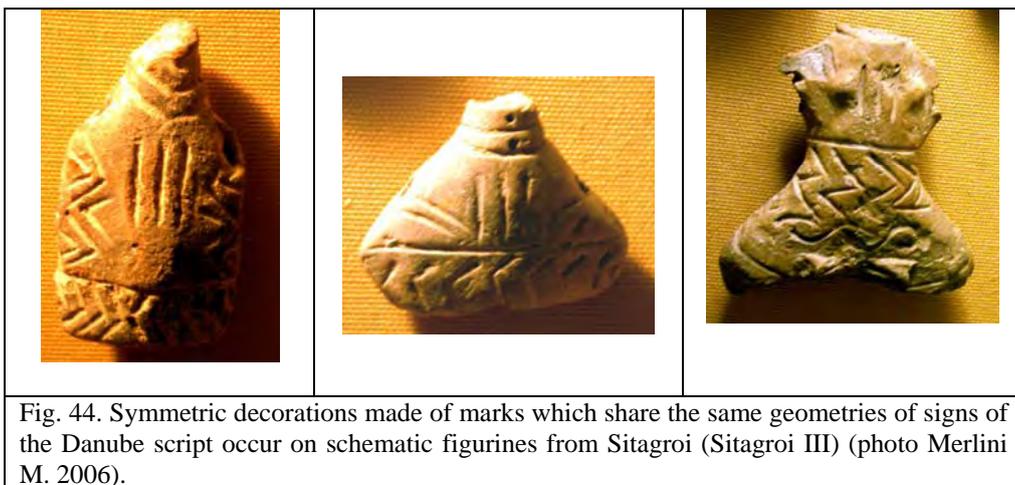


Fig. 44. Symmetric decorations made of marks which share the same geometries of signs of the Danube script occur on schematic figurines from Sitagroi (Sitagroi III) (photo Merlini M. 2006).

On a ritual table from Newestino (Bulgaria) a succession of four decorative ∇ (which is in another context a sign of the Danube script) with emblematic value run above a linear inscription made of four signs of the Danube script. The cultic artifact is squared and 16 cm. in high. It is characterized by four short legs and a cylindrical neck with an internal hole. The table belongs to the Early Neolithic group of Găblănik (*Die Thraker* 2004: 62).

Acta Terrae Septemcastrensis, VI, 2007

	
<p>Fig. 45. A Starčevo-Criș offering vessel from Dudesti Vechi is decorated with series of Vs. (after Gimbutas 1991: 29, fig 2.21.2).</p>	<p>Fig. 46. A line of four decorative ∇ with emblematic value is positioned above a linear inscription made of four signs of the Danube script (after Die Thraker 2004: 62, fig 12).</p>

A decoration made of aligned V (which is in another context a sign of the Danube script) is incised on a cup in form of a four-wheeled wagon (the "draught-pole" is in fact the handle of the cup) with a fixed axle and independently-rotating wheels from Budakalász-Luppacsárda (Hungary). The model was unearthed from a grave of the largest known cemetery (dated 3400–2900 BC) from the Baden culture (Foltiny 1959; Dayton 1978: 179⁸; Milisauskas 1978: 203; Kalicz 1976; Raczky 1995⁹). According to Zsófia Torma this vehicle (probably pulled by oxen) was a "burial wagon" in which the people of the Carpathian Basin used to send their loved ones to the afterlife, just as the Vikings sent their dead on their journey in ships (Zsófia Torma 1972: 202). She also pointed out that Nandor Fettich and Stuart Piggott illustrated many wagons in the Carpathian Basin and in Mesopotamia and that this large quantity indicates that the populations who migrated from the Carpathian Basin not only traveled by wagon but also brought with them their burial customs.

On a globular vessel found on the southern shore of the lake Balaton, a fine and large-scale decoration is composed of linear motifs such as Vs, spirals and bi-parallel lines which are rhythmically and repetitively aligned in horizontal (Marton 2004: 86; Oross 2004). Vs and spirals vaguely depict the upper part of an anthropomorphic figure. The vessel comes from the large Middle Neolithic

⁸ Who dated the burial to about 2900-2400 BC.

⁹ According to which the burial is about 3300-3000 BC.

Acta Terrae Septemcastrensis, VI, 2007

settlement of Balatonszárszó (Hungary)¹⁰ and belongs to the Zseliz III culture (Linear Pottery Culture).



Fig. 47. Aligned Vs decorate a cup in form of a 4-wheeled wagon from Budakalászló-Luppacsárda (Hungary) belonging to the Baden culture (photo Merlini M. 2004).

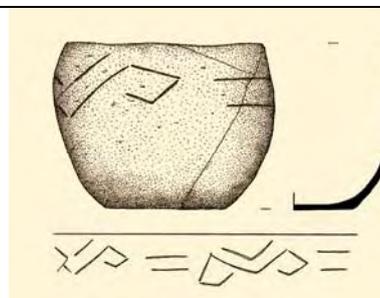


Fig. 48. Fine and macro decorations are rhythmically and repetitively aligned on a globular vessel from Balatonszárszó (Hungary)¹¹ which belongs to the Zseliz III culture (Linear Pottery Culture) (after Marton 2004: 85, fig. 6.1).

On pottery, according to Winn there was a well-developed style of incorporating and aligning decorations in column into a register design delineated by two vertical lines enclosing markings. Even if his statement is reasonable and documented, he sometimes wrongly applied it when identified as “sign-like ornaments” some marks which are actually signs of the Danube script. Observing the vertical panel on a Tisza I mignon vase found at Parța (Romania), he stated that: “Although these markings might be compared to signs I, y and V, I believe, in the light of other ornamentation present on the pot, that they constitute nothing more than decorative elements” (Winn 1981: 46). Therefore he deduced the ornamental nature of the above mentioned signs from an invalid postulate: the not feasible coexistence of text and decoration on the same artifact. Also a miniature vase found at Szegvár-Tüzköves and belonging to the Tisza culture (Csalog 1959: 23, fig. 2, Winn 1981: 46, fig. 6; Gimbutas 1991: 312, fig. 8.7.2) displays similar marks arranged between parallel lines which were wrongly believed sign-like decorations and not elements of a system of writing by Winn.

Other examples given by Winn are pertinent of this type of decoration within vertical registers. However according to the “Matrix of semiotic markers and rules”

¹⁰ It was found in grave 531.

¹¹ It was found in grave 531.

Acta Terrae Septemcastrensis, VI, 2007

it is not possible to confuse their motifs for signs of the Danube script, although their shape strongly recall that one of them, because of their compulsive replication, inclusion in over-all ornamental technique and subordination to *horror vacui*. This is the case of a female statuette from Gomolava (Republic of Serbia) whose body is subdivided into four upright panels filled by multiple and interconnected chevrons and Λ s of different sizes and orientation (Brukner 1962). The panels on the front are divided by a double vertical line and are overcome by a double horizontal line. The panels on the back are divided by a single vertical line and are closed by two bi-lines positioned in diagonal. The figurine belongs to the middle Vinča period (early fifth millennium BC, according to Gimbutas 1991: 315, fig. 8.15). Gimbutas accounted its marks inside the script framework dazzled from their linear shape, different proportions and directions, and their linear positioning along columns. Nevertheless, according to the “Matrix of semiotic markers and rules” we can locate them among the decorations because of the rhythmical arrangement of the motifs, their symmetric disposition, and the tendency to saturate the entire available space.

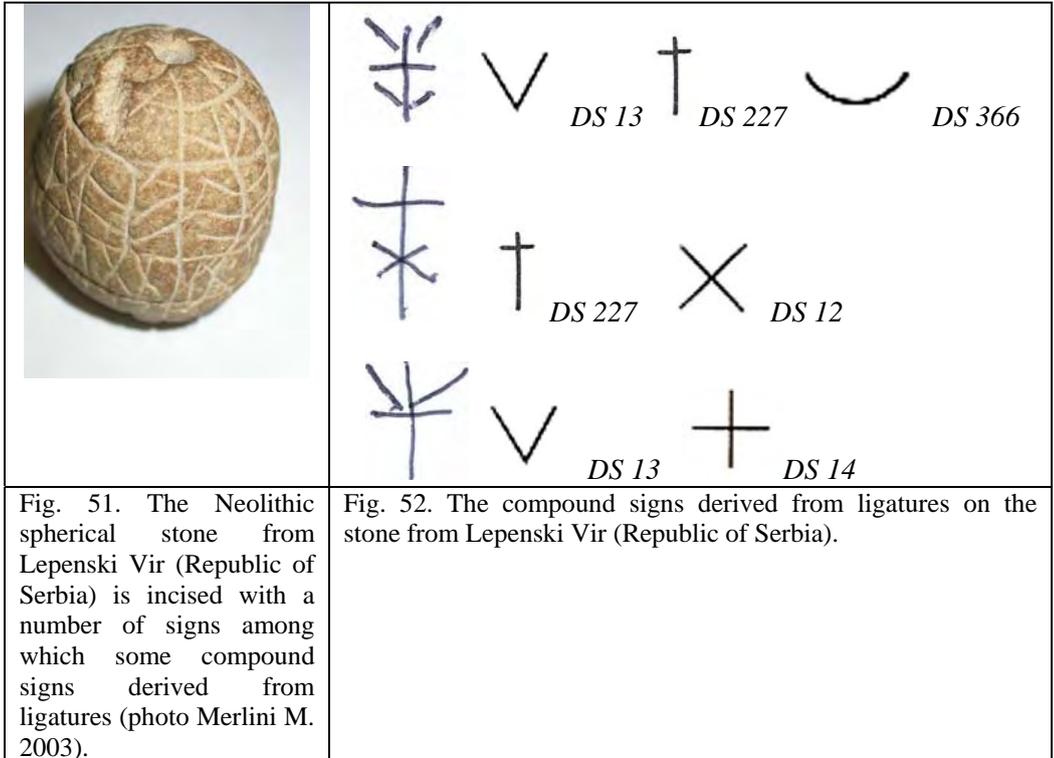
	
<p>Fig. 49. An example from Parța (Romania) of signs of the Danube script considered by Winn merely sign-like elements of a decoration placed in column (that one in the centre) (graphic elaboration Merlini M. after Winn 1981: 46, fig. 5).</p>	<p>Fig. 50. Linear ornaments fill four upright panels on a figurine from Gomolava (Republic of Serbia) (after Prehistory Knowledge Project).</p>

VI. *Ligatures occur within the Danube script, but are absent in the field of ornamentation.*

Signs of writing can be combined by ligatures which occur when two or more signs are written or printed as a unit. The technique to create a compound mark consisting of two or more joined elementary marks is absent in the sphere of the decoration.

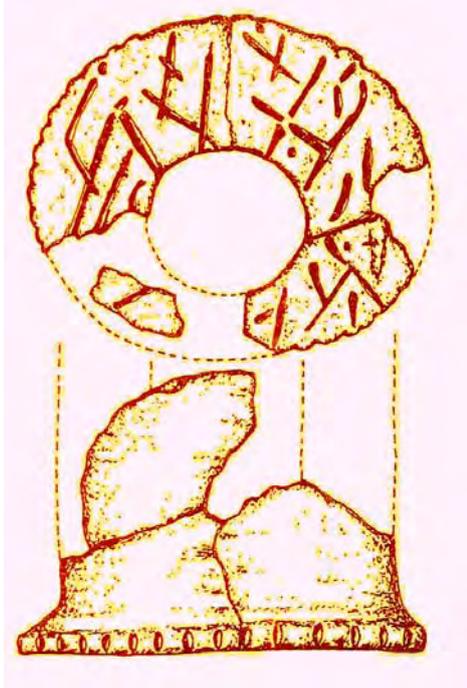
Acta Terrae Septemcastrensis, VI, 2007

I am going to illustrate briefly the technique of the ligature in the Danube script with two examples at the opposite geographical poles: a Neolithic spherical stone found at the village or, perhaps, the necropolis-sanctuary of Lepenski Vir (Iron Gates region, Republic of Serbia) and a fragment of an early Copper age spoon unearthed at Kisunyom-Nádasi (County Vas, Hungary).



The spherical stone from Lepenski Vir is incised with a number of signs some of whose are compound signs derived from ligatures. All the simple linked signs are inscribable inside my inventory of the Danube script (i.e. they occur within a script framework also in other periods and regions) as displayed below. The sign ✚ is possibly an anthropomorphic figure made of three linked elementary signs. Winn noted that the sign ✚ is greatly elongate and may consist of an overlapping “X” added in the lowest possible space of the object (Winn 1981: 262).

Acta Terrae Septemcastrensis, VI, 2007



DS 33



DS 31



DS 12



DS 75



DS 12



DS 12



DS 174



DS 44



DS 4



DS

155

Acta Terrae Septemcastrensis, VI, 2007

	
<p>Fig. 53. The inscribed Lengyel III spoon from Kisunyom-Nàdasi (County Vas, Hungary) (graphic elaboration Merlini M. after Kàrolyi 1994: 107, Taf.1.14)</p>	<p>Fig. 54. All the five compound signs are composed by juxtaposing, interweaving, or merging signs that all I accounted in my inventory of the Danube script.</p>

The shape of the signs, the employment of the technique of the multiple variations in order to vary their outline, their linear alignment and organization inside metopes, and the recurrence of some signs inside the same inscription are all clue of the literary nature of the spherical artifact. The skeptics with regards to the Danube script claim that the low incidence of sign repetition in single inscriptions is a smoking gun to prove the inexistence of a system of writing in South-eastern Europe during Neo-Eneolithic-Copper ages (Farmer 2003a: 28). Unfortunately for them, it is significant to note that the \times recurs seven times (one time in duplicate form and one time in a compound sign), the $+$ reappears six times, the ∇ , the Π , and the ≡ three times, the \dagger two. It is also noteworthy that a high incidence of sign repetition occurs in many other inscriptions.

The clay spoon from Kisunyom-Nàdasi was found in 1981 in a pit in combination with other fragmented finds inscribed with signs and belonging to the western group at the end of Lengyel III culture - early Eneolithic Lasinja culture (half fifth millennium BC). The discoverers maintained the written and not ornamental nature of the signs from Kisunyom-Nàdasi due to their aligned order and unlike shapes (Kàrolyi 1992: 24, 29; 1994: 105; Makkay 1990: 72 according to whom it could be the only piece bearing signs of writing from late Lengyel culture). The spoon is bigger than the ones which have been utilized in daily life and bears a peculiar shape having a round oval handle with wide opening and a flat bottom. A circular chain of signs have been incised before firing on the leveled surface of the bottom, all around the hole. Unfortunately the writing sequence is not complete, but seven signs are identifiable: five compound signs and two basic elementary signs. It is significant to account that *all* the five compound signs are composed by juxtaposing, interweaving, or merging signs that *all* I accounted in my inventory of the Danube script, as shown below. As noted analyzing the sphere from Lepenski Vir, some signs are occurring repeatedly: one sign (DS 12) recurs three times in the inscription and another sign (DS 44) recurs two. It is a strong indicator to prove the existence of early literacy in the Danube basin.

Acta Terrae Septemcastrensis, VI, 2007

The nonexistence of ligatures within the ornamental sphere is underlined by the presence of “false ligatures” which are in fact merely partial overlaps of decorative marks as that one occurring on a potsherd from Parța (Romania).

VII. *In the Danube script, the design is devoted to functionality, whereas the main purpose of the decorations is aesthetic.*

When composing an inscription, signs of the Danube script do not form a harmonious and pleasing design, but a functional one (although occasionally they are calligraphically rendered and placed in an aesthetic way, as I have documented before) aimed to store and transmit a package of information. On the contrary, the main purpose of the decorations is aesthetic and lead to a stylistic investigation, as I have already reported in the paragraphs devoted to the shape of the marks and their symmetric and rhythmic positioning.

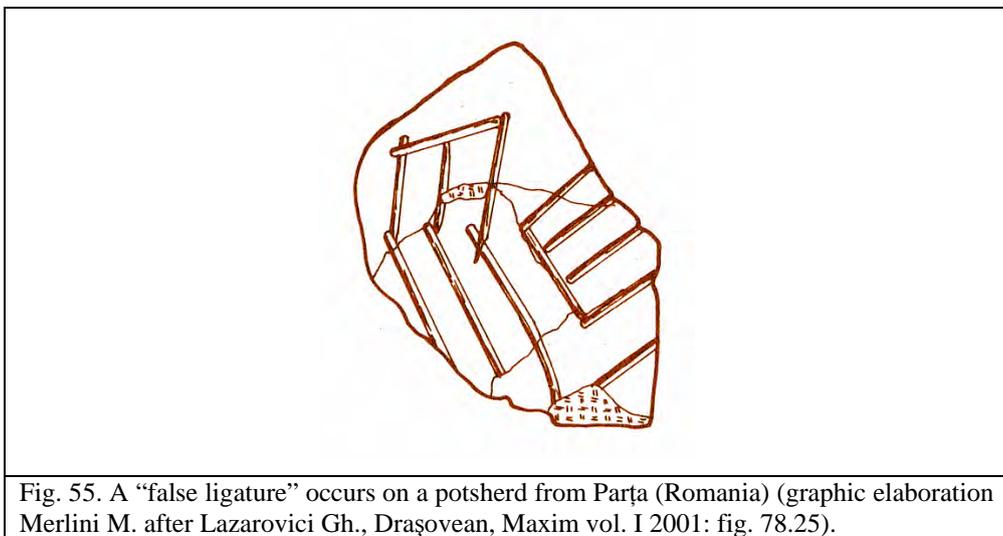


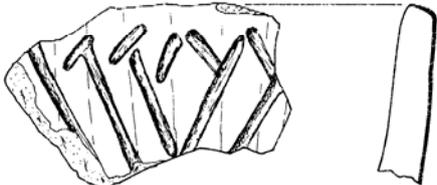
Fig. 55. A “false ligature” occurs on a potsherd from Parța (Romania) (graphic elaboration Merlini M. after Lazarovici Gh., Drașovean, Maxim vol. I 2001: fig. 78.25).

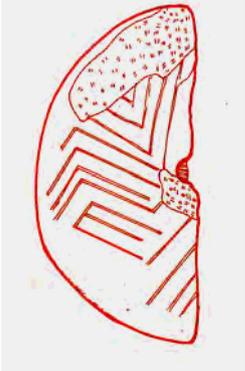
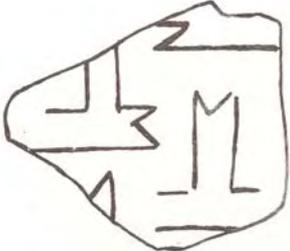
Zero is the aesthetic appeal of the large inscription made of hook, diagonal line, y, and two strokes possibly diacritical marks which has been incised on a Starčevo-Cris (Körös) IIIB¹² fragment of ceramic unearthed at Trestiana (Romania) (Popușoi 2005: 261, fig. 64, 6).

One does not perceive any aesthetic fulfilment when watching at a double inscription (divided by three lines) on a potshard from the mound of Kremenyák (South-eastern Hungary) belonging to the Tisza culture (Banner 1960).

¹² It was found at level I in the dwelling B/L.4.

Acta Terrae Septemcastrensis, VI, 2007

	
<p>Fig. 56. The large inscription incised on a Starcevo-Cris (Körös) IIIB fragment from Trestiana (Romania) was obviously made to transmit a message and not an aesthetic pleasure (after Popușoi 2005: 261, fig. 64, 6).</p>	<p>Fig. 57. One does not perceive any aesthetic fulfilment when watching at an inscription on a Tisza potshard from Kremenyák (South-eastern Hungary) (after Banner 1960).</p>

	
<p>Fig. 58. A fragmented spindle from Parța (Romania) is characterized by a complex and compound design which is composed of linear, abstract, geometric motifs with a too stretched outline to be signs of writing and rhythmically positioned characterizes (graphic elaboration Merlini M. after Lazarovici Gh., Drașovean , Maxim vol. II 2001: fig. 79.11).</p>	<p>Fig. 59. Decorative utilization of the M is well illustrated on a sherd from Bodrogkeresztúr (Hungary) (after Torpa 1929, Pl. XXXIX, 16).</p>

A complex and compound design composed of linear, abstract, geometric motifs with a too stretched outline to be signs of writing and rhythmically positioned characterizes a fragmented spindle from Parța (Romania) and has clearly to be treated with the vocabulary of the language of art.

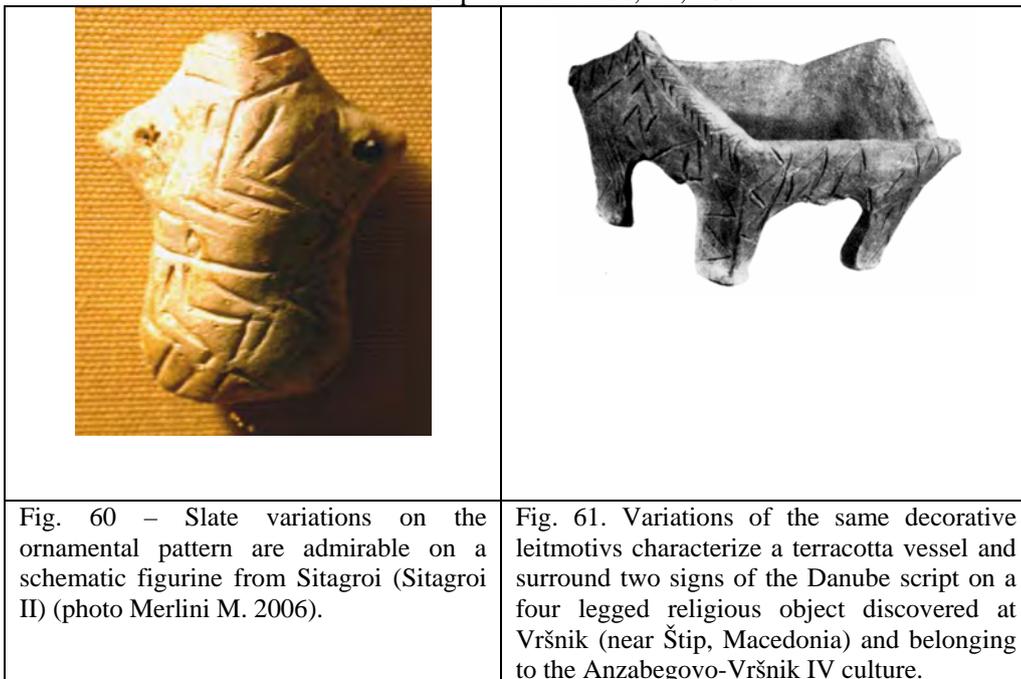
Acta Terrae Septemcastrensis, VI, 2007

The decorative utilization of the M is well illustrated on a sherd from Bodrogkeresztúr (Hungary) belonging to Tisza culture (Tompa 1929, Pl. XXXIX, 16). Within other semiotic contexts the M is a sign of the Danube script or a significant religious symbol (Popović 1965: 45; Gimbutas 1973; 1989). As stated by Winn: “This sign is a good example of how religious symbols, sometimes even ornamental, as in this figure, and writing can be confounded” (Winn 1981: 45).

Now we have to go further in the exploration of the artistic paradigms in the Danube civilizations in order to fix more firm points regarding their dissimilarity to the features of the writing system. And we have to note that a fundamental source of the Danube aesthetics was the exploration of the decorative complexity generated from slight variations of a geometric ornament. Indeed even if an ornament is in general arranged with others in order to cause pleasure in exercising the sense of symmetry, regularity and order the greatest artists of the Danube Civilization were aware that an excess in a standardized monotony of a repeated decoration could dilute its fascination. Therefore they went in search of those variations in the marks outlines and in the marks patterns able to provoke the aesthetic pleasure in the point of balance between boring repetition (on the one hand) and confusion deriving from an excess of innovation, a tangle in the design or an alteration in the proportions (on the other hand). If in the above mentioned paragraph I have pointed out that the symmetrical layout recalls the structure of our body, now we have to observe that human beings have to deal with the *external* symmetry and the *internal* asymmetry (the heart does not beat in the middle of the chest, one is in general right-handed or left-handed...). Similarly, the exploration of the aesthetics generated by the complexity of slight punctiform variations in the framework of a general homogeneity was one of the key principles by which Neo-Eneolithic-Copper age artists realized masterpieces in Southeastern Europe. Still nowadays we can appreciate the motions and the not predictable recurrence of decorative Vs and zigzag signs on a schematic figurine from Sitagroi (Sitagroi II). The emblematic meaning of these ornaments is underlined by the fact that the figurine was encrusted with red ochre.

Variations of two ornamental leitmotifs which under another framework are signs of the Danube script (Vs repeated in series and vertical zigzag) characterize the right and left side of the architrave on the facade of a terracotta vessel in form of a model temple and surround two signs of the system of writing. The four legged religious object is 15.5 cm. high and 14.5 cm. deep; it was discovered at Vršnik (near Štip, Macedonia) and belongs to the early Neolithic, c. 5500 BC, according to Gimbutas (1989: 14) but its is asserted to the Anzabegovo-Vršnik IV culture according to the recent research (Sdrankovski 2006).

Acta Terrae Septemcastrensis, VI, 2007



Sometimes the variations of the decorative elements are minimal and subtle in order to cause an emotional impact on the viewer who is often unconscious of this visual “trick”. For example, when watching at the above presented masked head found at Potporani one perceives the magic of the eyes and supernatural forces emanating from them, but without necessary realizing that the feeling is in part due to the fact that the repeated parallel lines and the Vs compose eyelids through two slightly different patterns.

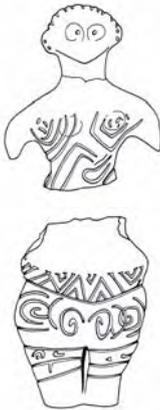
The polychromic decoration is intentionally not symmetric in every respect on the edges of the walls and the areas between legs and walls of a miniature temple (according to B. Nikolov 1974) unearthed at one of the lower levels of excavation at Gradešnica (Bulgaria)¹³. One can account three main breaking of the symmetry: a long diagonal line is inserted inside the first meander on the left which is forced to erect as under a strong pressure but it is not the case for the meander on the right; the meander on the right ends with a sort of tail; and the comb motifs on the legs are quite different in shape as well as in size.

¹³ According to the chronology of the archaeologist in charge it was unearthed at level B6, belonging to the early Neolithic (B. Nikolov 1974).

Acta Terrae Septemcastrensis, VI, 2007

Remaining at Gradešnica site, still nowadays we are astonished when observing the richness and complexity of the design on the garment of Eneolithic figurines as that one I present (B. Nikolov 1974). These features are in part due to the incomplete symmetry of the decorative pattern.

	
<p>Fig. 62. The polychromic decoration is intentionally not fully symmetric on this mignon temple from Gradešnica (Bulgaria) (after B. Nikolov 1974: fig. 6).</p>	<p>Fig. 63. The richness and complexity of the design on the garment of this Eneolithic figurine from Gradešnica (Bulgaria) is in part due to the not perfectly symmetric decorative pattern (B. Nikolov 1974: fig 56).</p>

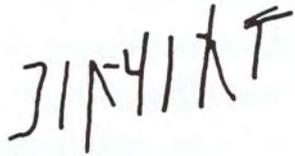
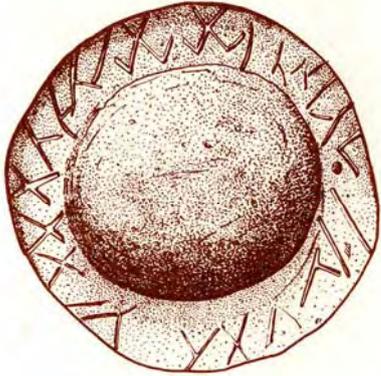

<p>Fig. 64. Three communicative channels are contemporary at work on a figurine from Gradešnica: writing on the breasts, an asymmetric decoration on the waist and a symmetric decoration on the abdomen. (after Todorova 1986: fig. 104).</p>

Acta Terrae Septemcastrensis, VI, 2007

On a female figurine from Gradešnica (Todorova 1986: 202 fig. 104) we have the opportunity to compare signs of the Danube script on the breasts, an asymmetric decoration on the waist and a symmetric decoration on the abdomen.

VIII. *Dots, vertical strokes and horizontal lines sometimes support the reading process, but they have a completely different role in the decorative design.*

The presence of dots, vertical strokes and horizontal lines in separating signs or grouping of signs is a strong marker of the occurrence of an inscription, being subsidiary graphemes for reading. Indeed, they settle the flow of the thought within a structured text.

	
<p>Fig. 65. A horizontal stroke splits in two parts the fifth millennium BC inscription found at Ftelia (Mykonos island, Greece) (after Sampson 2002: 127, fig. 140).</p>	<p>Fig. 66. On the external rim of a Petresti A offering miniature vase unearthed at Daia Română (Alba Iulia county, Romania) four vertical line separate concepts or words (graphic elaboration Merlini M. after Paul 1979: 142, Pl. I-f).</p>

A horizontal stroke splits in two parts (three signs-fours signs) the text found in 1995 at Ftelia (a settlement of the fifth millennium BC on Mykonos island, Greece) (Karantzola, Sampson, Ioannis 2002). I have already presented a similar separator mark on a LBK fragmented mignon cup from Mohelnice (Moravia, Czech Republic). The Greece inscription is composed of many letter-like signs which are made up of geometric abstract marks rather than naturalistic motifs, have a standardize size and are organized in linear alignment. The signs are clearly assembled in a functional way and not in an aesthetic way. According to the

Acta Terrae Septemcastrensis, VI, 2007

discoverer, this inscription and the succession of many others recovered in Aegean area confirm the existence of a “communication code which may have belonged to a Protobalkan script ... existing ...in the Balkans during the Neolithic age” (Sampson 2002: 127).

On the external rim of a Petresti A offering miniature vase unearthed at Daia Română (Alba Iulia county, Romania) (Paul 1979: 142, Pl. I-f; Gimbutas 1991, 8-7.3) four vertical line separate concepts or words. Maybe there was another in the blank area.

In the decorative design of the Danube civilization dots, vertical strokes and horizontal lines are in general not used to separate signs or groups of signs. If (very rarely) so, they are positioned in a symmetric way revealing the ornamental nature of the patterns.

A number of dots ornate the decorative chevrons and the central band on a Vinča C seal from Porodin (F.R.O.M.) 6.3 cm. high and 4.2 in diameter (Catalogue Madedonski: 44).

Diagonal strokes and dots enrich the decoration on a clay discoid medallion found excavating under the bread factory of Nova Zagora (Bulgaria). It is 6.3 cm. in diameter and belongs to late Neolithic (Kantchev: fig. 12).



Fig. 67. Decorative chevrons and central band are embellished by a number of dots on a Vinča C seal from Porodin (F.R.O.M.) (graphic elaboration Merlini M. after Catalogue Madedonski: fig. 251).



Fig. 68. Diagonal strokes and dots enrich the decoration on a rounded medallion from Nova Zagora (photo Merlini M. 2005).

Acta Terrae Septemcastrensis, VI, 2007

IX. *The Danube script can contextually employ abstract and naturalistic signs, whereas the merge between abstract and realistic motifs is uncommon within an ornamental design.*

An inscription can mix both abstract and naturalistic signs. On the contrary, in ornamentation most of the employed design is non-figural and, in the rare cases of presence of non-figural elements, it does not mix naturalistic and abstract motifs, that is to say purely ornamental.

X. *Inscriptions don't suffer from horror vacui which is a peculiarity of ornamental design.*

Signs of writing never saturate the entire available space, whereas often a decoration pervades the whole space at disposal being under the Damocles' sword of the *horror vacui*.

A text is incised on a Neolithic Vinča vessel found in 1912 by Vasić (Vasić *Handscript* 1912: 08 30str82). The signs are abstract and rectilinear in shape, with a standard size, very neatly marked, arranged in linear sequence and visibly positioned under the rim for an easy reading, but they occupy a very limited portion of the vase.

A vertical inscription on a figurine from Parța (Winn online fig. 3) is a good example of the employment of signs of wide size, but not affected by *horror vacui*.

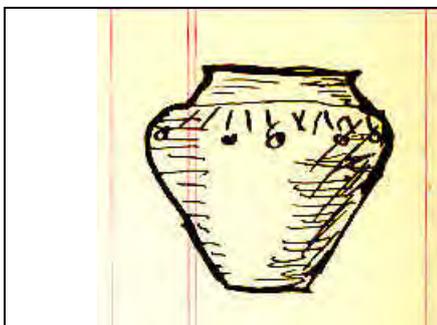


Fig. 69. It is not tamed by horror vacui the linear text incised on a Vinča vessel found in 1912 by Vasić (after Vasić *Handscript* 1912: 08 30str82).

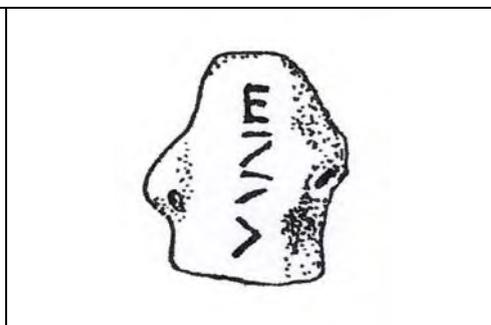


Fig. 70. A vertical inscription on a figurine from Parța is significant because the size of the signs is wide, but it is not affected by horror vacui (after Winn online fig. 3).

The fear to leave an any empty space is a evident feature of the geometric decorative patterns incised on a Early Neolithic series of pots – hemispherical bowls and globular bottles – published by Childe (Childe 1925: 108). Deriving the vessels

Acta Terrae Septemcastrensis, VI, 2007

from the shape of the gourds, the geometric design often depicts the slings in which gourds were carried.

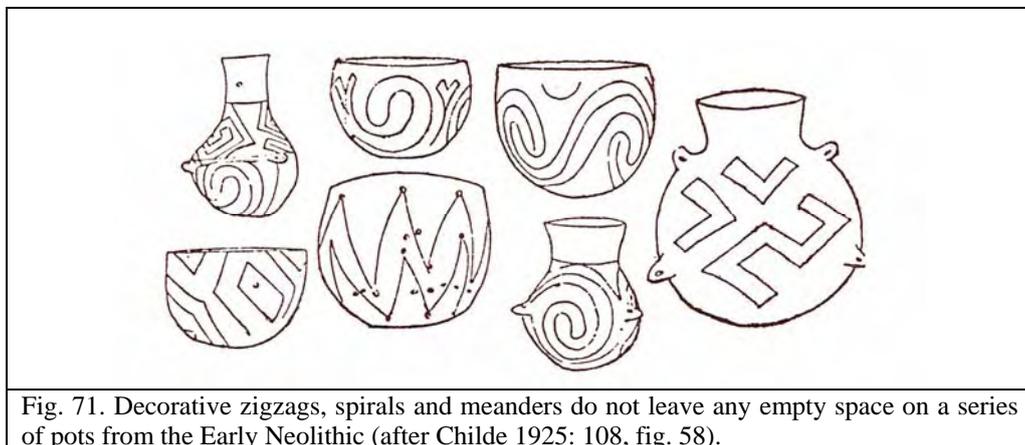


Fig. 71. Decorative zigzags, spirals and meanders do not leave any empty space on a series of pots from the Early Neolithic (after Childe 1925: 108, fig. 58).

A valuable example of ornamental design hit by *horror vacui* come from the pattern incised on the back of an early Vinča figurine held at the museum of Požarevac (Serbia) (Stancović 1988: 123).

A complex and whirling decoration with a spiral design on the right and a chevron design on the left covers and enwraps the lower part of a seated figurine of unclear gender from Korbovo (Eastern Republic of Serbia).

Combining different decorative motifs and patterns overall the available surface, the artists of the Danube civilization managed to avoid bare aesthetically unsatisfactory areas and yet did not create the impression of being overcrowded when many designs were utilized. An intriguing issue for future research is to investigate the principal organizing schemes by which the artists handled the arrangement of varied units and patterns in a larger setting so as to overcome in a pleasant fashion the *horror vacui*.

Acta Terrae Septemcastrensis, VI, 2007

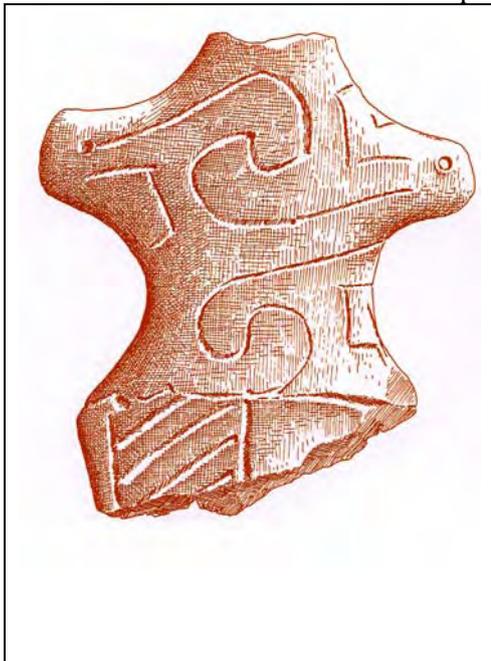


Fig. 72. Horror vacui leads spirals and meanders to saturate the entire available space on the back of an early Vinča figurine held at the museum of Požarevac (Republic of Serbia) (graphic elaboration Merlini M. after Stancović 1988: 123).



Fig. 73. A complex and whirling decoration covers and enwraps the lower part of a seated figurine from Korbovo (Eastern Republic of Serbia) (photo Merlini M. 2004).

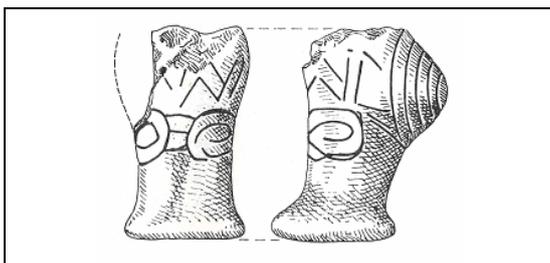


Fig. 74. Signs of writing live together with circular emblematic decorations on a fragmented figurine from Rast (after Dumitrescu 1980: 64, Fig. LXVIII).



Fig. 75. On a Karanovo VI figurine from Bereketskaja Mogila (Stara Zagora, central Bulgaria) a horizontal row of well-ordered decorations opposes to a quite disordered line of signs (after Gimbutas 1989: 68, Fig. 108).

Acta Terrae Septemcastrensis, VI, 2007

5. Distinguishing between writing and decoration when they cohabit on the same artifact

Applying the “Matrix of semiotic markers and rules” is manageable to distinguish not merely between signs of writing and ornaments, but also between these two channels when they coexist on artifacts of the Danube Civilization.

Decorations are present on the legs of a figurine from Rast as revealed by the fact that they are circularly and spirally proceeding, equal in outline and size, joint, saturating the space, symmetrically placed, and symbolic for silhouette. Conversely, signs of the Danube script occur on the abdomen being abstract, linear, modified by the technique of the multiple variations, scattered in the space, not hit by *horror vacui*, and asymmetrically positioned (Dumitrescu 1980: 64, Fig. LXVIII).

On a Karanovo VI cylindrical four-sided figurine from Bereketskaja Mogila (Stara Zagora, central Bulgaria) (Gimbutas 1989: 68. fig. 108), a horizontal sequence of decorations – well ordered, identical in shape and size and depicting in a recurrent way the symbol of the fleece - opposes to a quite disordered line of signs of writing which are not very well aligned and have abstract, linear outline, inhomogeneous size, dissimilar orientation and unlike spacing between one and the subsequent.

6. A matrix of markers and rules to distinguish between signs of writing and decorations

Contraposition	Signs of writing	Decorations
<i>Inventory of the script vs. corpus of the ornamental motifs</i>	If one sets apart for a moment the exception of the ambivalent signs that can be involved in writing messages as well as in ornamental design, signs of writing can be collected in a precise and systematic inventory.	If one sets apart momentarily the exceptionality of signs that can be inserted in an ornamental design as well as in a writing message, artistic marks can be gathered in a specific corpus.
<i>Sign outlines</i>	Geometric, abstract, high schematic, linear and not very complex signs belong, with more probability, to the script framework.	When dealing with geometric, abstract, high schematic, linear and uncomplicated signs one is with less probability inside the decorative framework.
<i>Techniques and restrictions in modifications</i>	Signs of writing can be modified applying to them diacritical marks such as small strokes, crosses, dots and arches as well	The decorations are not subjected to the technique of the multiple variations. They can be varied – and not often anyway -

Acta Terrae Septemcastrensis, VI, 2007

	as duplicating-multiplying them or reversing them as in a mirror, inverting them, reversing and inverting them at the same time.	only by duplicating-multiplying them or turning them round as in a mirror, turning them upside down, turning them round and upside down at the same time.
<i>Balance between isolation and grouping vs. inclination to grouping</i>	Signs of writing occur singly as well as in groups.	Ornaments occur preferably in groups.
<i>Asymmetric co-ordination and linear alignment vs. rhythmic and symmetrical repetition</i>	When in groups, signs of writing show an asymmetric co-ordination and they prefer a linear alignment even if a linear alignment is not an absolute prerequisite of the Danube script. Sometimes they are positioned along different registers, in columns or in lines.	An ornamental element is in general arranged with others in order to capture the symmetrical balance able to exalt the aesthetic value of the object. The rhythmic and symmetrical repetition of a geometrical motif is the principal feature of the Danube decorative system.
<i>Presence vs. absence of ligatures</i>	Signs of writing can be combined by ligatures.	Ligatures are absent in the field of decoration.
<i>Functionality/aesthetics</i>	An inscription assembles signs in a functional way (although signs of writing are sometimes positioned in an aesthetic way).	The main purpose of the decorations is aesthetic as exemplified by the use of slight variations in the framework of general homogeneity.
<i>Dots and vertical strokes</i>	The use of dots and vertical strokes in separating signs or groups of signs is a strong marker of the occurrence of an inscription.	In a decorative design, dots and vertical strokes are in general not used to separate signs or groups of signs. If so, they are positioned in a symmetric way.
<i>Abstract and naturalistic mix</i>	An inscription can mix both abstract and naturalistic signs.	In general, in ornamentation there is no mix between abstract and naturalistic motifs.
<i>Horror vacui</i>	Signs of writing never saturate the entire available space, because they carry a specific message.	It is non infrequent that a decoration saturates the entire available space.

In conclusion, the system of artistic motifs and the system of signs of writing were viewed as separate in the minds of the Danube literates even if strictly connected. Observing in-group marks that are disposed in order to capture the

Acta Terrae Septemcastrensis, VI, 2007

symmetrical balance able to exalt the aesthetic value of the object, have the tendency to saturate the entire available space and are not connected by ligatures, one has high probabilities of dealing with a decoration and not with an inscription. Artistic signs can also be gathered in a specific corpus. Contrariwise, observing geometric, abstract, high schematic, linear and not very complex signs which have been modified applying to them diacritical marks (such as small strokes, crosses, dots and arches), are joint by ligatures and are organized in an asymmetric way, one has high probabilities to be within the script framework.

If the above-mentioned indicators are the main criteria in order to distinguish between an inscription and a decoration, without of course knowing what the assumed text can stand for, there are still some gray areas that need further research. For example, one is when linear geometries occur as independent elements on small potsherds from Starčevo-Cris (Körös) IVA-IVB culture.

Acta Terrae Septemcastrensis, VI, 2007

Bibliographic references

- Angeli W., Csalog J., Kalicz N., Makkay J., Torma I., Trogmayer O., *Idole - Prähistorische Keramiken aus Ungarn*. 52 S, Naturhistorischen Museum in Wien, 1972.
- Banner J., *Das Tisza-Maros-Körös Gebiet bis zur Entwicklung der Bronzezeit*, Szeged-Leipzig, 1942.
- Banner J., "The Neolithic settlement on the Kremenýák hill at Csóka", *Acta archaeologica Academiae Scientiarum Hungaricae* 12, 1960.
- Bartoněk A., "Die altägäischen Schriftsysteme", *Slovenska Archeologia* XXV-2, Bratislava, 1977: 394-427.
- Biehl P. "Symbolic Communication Systems. Symbols on Anthropomorphic Figurines in Neolithic and Chalcolithic Southeast Europe". In *Journal of European Archaeology* Vol. 4, 1996: 153-176, 1996.
- Brukner B., *Neolit u Vojvodini*. Dissertationes V, Belgrad - Novi Sad, 1968.
- Childe V.G., *The Dawn of European Civilisation*, 1925.
- Ciacăru M.R., "Regula „dreptunghiului de aur” aplicată la restaurarea unor vase-binoclu aparținând culturii Cucuteni", *Memoria Antiquitatis*, XXIII: 153-165, 2004.
- Čohadžiev S., *Slatino Prehistoric settlements*, Veliko Turnovo, 2006.
- Csalog J., "Die anthropomorphen Gefäße und Idolplastiken von Szegvár-Tüzköves", *Acta Archaeologica Academiae Scientiarum Hungaricae* 11: 7-38, 1959.
- Dayton J., *Minerals, Metals, Glazing and Man*, London, 1978.
- Dumitrescu V., "The Neolithic Settlement at Rast", *BAR International Series* n. 72, Oxford, 1980.
- Farmer S., "Five cases of 'Dubious Writing' in Indus Inscriptions", *Fifth Harvard Indology Roundtable*, 10 May, 2003a.
- Foltiny S., "The oldest representations of wheeled vehicles in central and southeastern Europe". *American Journal of Archaeology*, Vol. 63, n. 1: 53-58, New York, 1959.
- Frutiger A., *Der Mensch und seine Zeichen*, Marixverlag, 2004.
- Galović R., *Predionica*, Priština Archaeological Museum, 1959.

Acta Terrae Septemcastrensis, VI, 2007

- Gimbutas M., *The Goddesses and Gods of Old Europe: 6500–3500 B.C.*, University of California Press, 1982.
- Gimbutas M., "Excavations at Sitagroi a prehistoric Village in Northeast Greece" *Monumenta Archaeologica* vol. 13, University of California Press, 1987.
- Gimbutas M., *The Language of the Goddess*, San Francisco, 1989.
- Gimbutas M., *The civilisation of the Goddess. The World of Old Europe*, HarperSanFrancisco, San Francisco. 1991.
- Gimbutas M., *The Living Goddesses*, M. Robbins Dexter (edited and supplemented), Berkeley/Los Angeles, University of California Press, 1999.
- Griffen T., "The Inscriptions on Jela 1 and 2", *The Journal of Indo-European Studies* 31: 87-93, 2003.
- , "Deciphering the Inscriptions on Jela 1 and 2", *The Journal of Indo-European Studies* 32: 11-23, 2004a.
- Gronenborn D., "Bauern – Priester – Häuptlinge. Die Anfänge der Landwirtschaft und die frühe Gesellschaftsentwicklung zwischen Orient und Europa", F. Daim and W. Neubauer (eds.) *Zeitreise Heldenberg. Geheimnisvolle Kreisgräben. Niederösterreichische Landesausstellung 2005*, Katalog des NÖ Landesmuseums, Neue Folge Nr. 459: 115-123, 2005.
- Haddon A. C., *Evolution in Art, as illustrated by the Life Histories of Designs*. London, Walter Scott. 1895.
- Haarmann H., *Early Civilization and Literacy in Europe. An Inquiry Into Cultural Continuity in the Mediterranean World*, Berlino-New York, 1995.
- Haarmann H., "Writing technology and the abstract mind", *Semiotica*, n. 122, 1998a.
- Höckmann O., "Bandkeramische Menschenbilder: Göttinnen - oder ??", in *Mitteilungen der Anthropologischen Gesellschaft in Wien (MAGW)* Band 130/131: 77-92, 2000/2001.
- Hodder I. "Post-modernism, post-structuralism and post-processual archaeology". In Hodder (ed.) *The Meaning of Things*. London: Harper Collins: 64-78, 1989.
- Hodder et al. *Interpreting Archaeology*, London: Routledge, 1997.
- Kahlke H.D., *Sondershausen und Bruchstedt. Zwei Gräberfelder mit älterer Linienbandkeramik in Thüringen*, Weimarer Monogr. Ur- u. Frühgesch. 39 Langenweißbach, 2004.
- Kalchev P., *Neolithic dwellings Stara Zagora town*, Regional museum of History, Stara Zagora, 2005.
- Kalicz N., "Ein neues Wagenmodell aus der Umge-bung von Budapest". *Archaeologia Austriaca*, Beiheft 13:188–202, *Festschrift R. Pittioni*, 1976.

Acta Terrae Septemcastrensis, VI, 2007

- Kalicz N., Raczky P., "The Late Neolithic of the Tisza Region: A survey of recent archaeological research". In Raczky P., Tálás L. (eds.) *The Late Neolithic of the Tisza Region*, Budapest–Szolnok: 11–30, 1987.
- Karantzola E., Sampson A., Ioannis L., "Some recorded signs of early writing in Greek prehistory: theoretical considerations on a temporal and spatial dimension", *Settlers and Settlements in Greece, 9000-1000 bc*, Rhodes, 7-11 October 2002.
- Károlyi M., *A korai rézkor emlékei Vas megyében*. [The early copper age in county Vas]. (Öskorunk 1), Vas Megyei Múzeumok Igazgatósága, Szombathely, 1992.
- Károlyi M., "Die Funde der spätesten Phase der Lengyel-Kultur in Westtransdanubien" in *Internationales Symposium über die Lengyel-Kultur 1888-1988*, Znojmo-Kravsko-Těšstice 3-7 10 1988, Brno-Lódz, 1994.
- Korkuti M., *Neolithikum und Chalkolithikum in Albanien*, Magonza, 1995.
- Kruta V., Lička M., *Prime terrecotte dal cuore dell'Europa*, Kronos, 2000.
- Kunst- und Ausstellungshalle der Bundesrepublik, *Die Thraker. Das goldene Reich des Orpheus*, Bonn, 2004.
- Lazarovici Gh., "Faza a IV-a a culturii Starčevo-Criș în Banat", în *ActaMN*, 8, 1971.
- Lazarovici Gh., "Cultura Vinča in Banat", *Banatica* II, 1972.
- Lazarovici Gh., *Gornea -Preistorie*, Reșița, 1977.
- Lazarovici Gh., *Neoliticul Banatului*, Cluj-Napoca, 1979.
- Lazarovici Gh., et al., *Cultura Vinča în România*, Timișoara, 1991.
- Lazarovici Gh., "Vinča-Lengyel and Transylvania" in *Acta Musei Napocensis* 37/I, Cluj, 2000: 7-20.
- Lazarovici Gh., "Casiopea - de la simbolurile neolitice la mitologia astronomică", *Dava international*, n. 5, 2002.
- Lazarovici Gh., "Sacred Symbols in Neolithic Cult Objects from the Balkans". In *Early Symbolic System for Communication in Southeast Europe*, L. Nikolova (ed.), BAR International Series 1139, Vol. I: 57-64, Oxford. 2003a
- Lazarovici Gh., Simboluri sacre pe obiectele de cult. Semnificații. *Festschrift für Florin Medeleț zum 60.Geburstag: 17-59*. 2004a.
- Lazarovici Gh., "Database for spiritual life, signs and symbols". *Signs of civilization: international symposium on the Neolithic symbol system of southeast Europe*, The Institute of Archaeomythology and the Serbian Academy of Sciences and Arts, Novi Sad, 2004b.
- Lazarovici Gh., Drașovean F., Maxim Z., *Parta. Monografie arheologica*, vol. 1 and 2, Timisoara, 2001.
- Lazarovici M. "Signs and Symbols in Cucuteni culture", *Signs of civilization: international symposium on the Neolithic symbol system of southeast Europe*, The Institute of Archaeomythology and the Serbian Academy of Sciences and Arts, Novi Sad, 2004.

Acta Terrae Septemcastrensis, VI, 2007

- Luca S., "Așezări neolitice pe valea Mureșului (I). Habitatul turdășean de la Orăștie–Dealul Pemilor (punct X2)", *BMA* 4, Alba Iulia, 1997.
- Luca S., "A new special discovery from Turdaș", *Banatica*, n. 12, 1993.
- Luca S., *Așezări neolitice pe valea Mureșului*, Alba Iulia, 1997.
- Luca S., *Liubcova-Ornița. Monografie arheologică*, Târgoviște, 1998.
- Luca S., *Așezări neolitice pe valea Mureșului (II). Noi cercetări arheologice la Turdaș-Luncă. I. Campaniile anilor 1992-1995*, Bibliotheca Musei Apulensis, 17, Editura Economică, Bucharest 2001.
- Luca S., *A Short Prehistory of Transylvania (Romania)*, Pläne, Skizzen, 2006.
- Luca S., Pinter Z-K., *Der Böhmerberg bei Broos-Orăștie. Eine archäologische monographie*, Sibiu, 2001.
- Makkay J., *The Tartaria Tablets*, Roma, 1968.
- Makkay J., "The Late Neolithic Tordos group of sings", *Alba Regia* X, Székesfehérvár: 9-49, 1969.
- Makkay J., "A chalcolithic stamp seal from Karanovo, Bulgaria", *Kadmos*, n. 10, 1971.
- Makkay J., *Early stamp seals in South-East Europe*, Budapest, 1984.
- Makkay J., *A tartariai leleteck*, Budapest, 1990.
- Marton T., "Material finds from Balatonszárszó, neolithic settlement: connections within and without the TLPC territory", *Antaeus* 27: 81-86, 2004.
- Merlini M., *Signs, inscriptions, organizing principles and messages of the Balkan-Danube script*, Prehistory Knowledge Project, <http://www.prehistory.it/scritturaprotoeuropai.htm>, 2001.
- Merlini M., "A Neolithic Writing System in Southeastern Europe", in *World IFRAO Congress 2002*, Skopje, 2002b.
- Merlini M., "Inscriptions and messages of the Balkan-Danube script. A semiotic approach", Dava International, 2002, http://www.iatp.md/dava/Dava6/Merlini__6_/merlini__6_.html, 2003b.
- Merlini M., *La scrittura è nata in Europa?*, Avverbi editore, 2004a.
- Merlini M., Did Trypillya, Precucuteni and Cucuteni cultures develop a script?, *World Congress of the Trypilhan Civilization*, Kyiv, October 7-11, 2004h.
- Merlini M., "The 'Danube Script' and the Gradescica Platter. A Semiotic Study based on most recent autopsy of the Bulgarian item", Lolita Nikolova & Jude Higgins (eds.), *Prehistoric Archaeology & Anthropological Theory and Education. RPRP 6-7, 2005, 2005b*
- Merlini M., "Semiotic approach to the features of the 'Danube Script'", *Documenta Praehistorica XXXII*, Ljubljana 2005c.

Acta Terrae Septemcastrensis, VI, 2007

- Merlini M., "The Gradešnica script revisited", in *Acta Terrae Septemcastrensis V*, University of Sibiu, 2006a.
- Milisauskas S., *European Prehistory*, New York, 1978.
- Nikolov B., *Gradechnitza*, Nauka i Iskustvo, 1974.
- Nikolov V., "Aspekti na religiozno-mitologicnata sistema prez rannija neolit", *Izkustvo* 9-10: 67-70, 1981.
- Nikolov V., "Ornamentacija na rannoneolitnata risuvana keramika: sistematizacija i karakteristika", *Arheologija* 1-2: 29-43, 1983.
- Nikolov V., *Rannoneolitna risuvana ornamentatsiya*, Sofia, 2002.
- Nikolov V., D. Karastoyanova, "Painted Pottery Ornamentation as a Communication System between Generations (Based on Evidence from the Early and Middle Neolithic Layers at Tell Kazanlak)", in Nikolova L. (ed.) *Early Symbolic Systems For Communication In Southeast Europe*, Vols. 1-2, British Archaeological Reports, International Series vol. 1139, 173-179, 2004.
- Nikolova L., (ed.) *Early Symbolic Systems For Communication In Southeast Europe*, Vols. 1-2, British Archaeological Reports, International Series vol. 1139, 2004.
- Nikolova L., "The Everyday Life and the Symbolism in the Prehistoric Balkans", *Position Papers*, <http://www.semioticon.com/virtuals/symbolicity/everyday.html>, online.
- Oross K., "Das neolithische Dorf von Balatonszárszó", *Antaeus* 27: 61-80, 2004.
- Paul I., "Das Siegelgefäß von Daia Română", *Forschungen zur Volks- und Landeskunde*, n. 22, Bucarest, 1979.
- Popović V., "Une civilization égéo-orientale sur le moyen Danube", *Revue archéologique*, Paris, 1965.
- Popușoi E., *Trestiana, Monografie arheologică*, Bârlad, Editura Sfera, 2005.
- Raczky P., "The late Neolithic of the Tisza region" 1987.
- Raczky P., "New data on the absolute chronology of the Copper Age in the Carpatian Basin", in T. Kovács (ed) *Neuere Daten zur Siedlungsgeschichte und Chronologie der Kupferzeit des Karpatenbeckens*, IPH, VII, Budapest: 51-60, 1995.
- Raczky P., "An unique face pot from the Öcsöd-Kováshalom settlement of the Tisza culture". *ActaArchHung* 51: 9-22, 2000.
- Raczky P., A. Anders, "The internal relations of the Alföld Linear pottery culture in Hungary and the characteristics of human representation" in E. Jerem and P. Raczky (eds) *Morgenrot der Kulturen: Frühe Etsppen der Menschheitsgeschichte in Mittel- und Südosteuropa*, *Archaeolingua* 15: 156-182, 2003.
- Renfrew C., "Towards a cognitive archaeology", in C. Renfrew (ed.) *The ancient mind*, Cambridge U P 1994.

Acta Terrae Septemcastrensis, VI, 2007

- Renfrew C., "Symbol before concept: material engagement and the early development of society", in I. Hodder (ed.), *Archaeological Theory Today*, Cambridge, Polity Press, 122 – 140. 2001
- Riegl A., *Stilfragen*, Berlin, 1893.
- Roska M., *A Torma Zsófia Gyűjtemény*, Cluj-Napoca, 1941.
- Ruttikay E., "Ein Heilszeichen aus dem 5. Jahrtausend v. Chr. in der Lengyel-Kultur", *Das Altertum* n. 4: 271-291, 1999.
- Sampson A., *The Neolithic Settlement at Ftelia, Mykonos, Rhodes*, 2002.
- Sdrankovski D., *Genesis and Development of the Anzabegovo-Vrshnik Cultural Group*, Phd dissertation, 2006.
- Starović A., *Signs of Civilization: Exhibition Catalogue*, Novi Sad, 2004.
- Thomas J., "Reconciling symbolic significance with being-in-the-world". In *Interpreting Archaeology*, (Hodder et al. eds.). London, Routledge, 1997.
- Tichý R., "Grabungssaison in Mohelnice (Bez. Šumperk)", *Přehled výzkumů*: 17-21, Brno, 1971.
- Tilley C., "Interpreting material culture". In Hodder (ed.) *The Meanings of Things*: 185-194. London, Routledge, 1989.
- Todorova H., *The Eneolithic Period in Bulgaria in the Fifth Millennium BC*, BAR International Series, n. 49, 1978.
- Todorova H., *Kamenno-mednata Epoha v Bulgariya*, Sofia, 1986.
- Tompá F., *A Szalagdiszes Agyagművesseg Kulturaja Magyarországon*. (Die Bandkeramik in Ungarn), Budapest, 1929.
- Torma Z., *Sumer Nyomok Erdélyben*, Buenos Aires, 1972.
- Ucko P., "Anthropomorphic figurines of Predynastic Egypt and Neolithic Crete with comparative material from the prehistoric Near East and mainland Greece", *Royal Anthropological Institute*, Occasional Paper 24, London, 1968.
- Vasić M., *Handscript*, 1912.
- Videiko M., *Trypillian Civilization*, Kyiv, 2003.
- Virág M., "Neuere anthropomorphe Darstellungen der Linienbandkeramik aus der Umgebung von Budapest", in Fl. Drasovean (ed.), *The Late Neolithic of the Middle Danube Region*, Timisoara: 67-89, 1998.
- Vlassa N., "Chronology of the Neolithic in Transylvania in the Light of the Tartaria settlements stratigraphy", *Dacia*, vol. VII, 1963.
- Vlassa N., "Kulturelle Beziehungen des Ne Vorderen Orient", *Acta Musei Napocensis VI*, 1970.
- Vlassa N., "Noi contribuții la problema influențelor orientale în neolitul transilvanei", *Acta Musei Napocensis XII*, 1975: 2-11.
- Vlassa N., *Neolitul Transilvaniei*, Bibliotheca Musei Napocensis, 3, Cluj-Napoca, 1976.

Acta Terrae Septemcastrensis, VI, 2007

Winn S., *Pre-writing in Southeastern Europe: The Sign System of the Vinča Culture ca 4000 BC*, Calgary, 1981.

Winn S., “A Neolithic Sign System in Southeastern Europe”, in Le Cron Foster M., Botscharow L. (ed), *The Life of Symbols*, San Francisco, 1990.

-, on line “The Old European Script. Further evidence, Economic and religious stimuli”. *Prehistory Knowledge Projects*, Rome 2004.

Acta Terrae Septemcastrensis, VI, 2007

**EINIGE BEMERKUNGEN BEZÜGLICH DER
METALLSARKOPHAGE (MIT BESONDERER RÜCKSICHT AUF
DENJENIGEN AUS RÖMERZEITLICHEN DAKIEN)**

Alexandru Gh. SONOC
Brukenthal- Nationalmuseum, Sibiu/Hermannstadt
sandysonoc@yahoo.com

*CÂTEVA OBSERVAȚII CU PRIVIRE LA SARCOFAGELE DIN METAL
(CU SPECIALĂ PRIVIRE ASUPRA CELOR DESCOPERITE ÎN DACIA ROMANĂ)*

- rezumat -

Sicriele din metal (de obicei din plumb), prin costul lor ridicat, au fost mai rare decât sarcofagele din piatră sau cărămidă ori decât cele din lemn, care par a fi fost cele mai frecvente, chiar și atunci când defuncții fuseseră înmormântați în amenajări funerare mai pretențioase; folosirea sicriilor din plumb avea, probabil, anumite semnificații magice, căci el îi era consacrat lui Chronos; dar cu Chronos Ageraos este identificat de către greci și cu Saturnus de către romani chiar Zurvan Akarana, Timpul Veșnic, de la care pornesc toate și care le înghite pe toate. Sarcofage din plumb au fost descoperite în diferite regiuni ale lumii romane, dar mai ales în Liban.

Despre sicriile din plumb descoperite în Dacia există date mai puține, deoarece unele au fost distruse pentru valorificarea metalului. Aici sarcofage din plumb au fost descoperite la Ulpia Traiana Sarmizegetusa, Dierna, Drobeta, Romula și Slăveni (jud. Olt). Datorită posibilității de a închide ermetic aceste sarcofage și a transporta în bune condiții igienice cadavrul defunctului, credem că sarcofagele din plumb puteau fi folosite și pentru transportul cadavrelor sau, în cazul sicriilor de mici dimensiuni, pentru reînhumarea osemintelor unor persoane decedate departe de locul înmormântării lor definitive; din acest motiv, dar poate și datorită semnificației simbolice a plumbului, merit să conserve pentru veșnicie trupul defunctului, sarcofagele din plumb nu erau depuse direct în groapa mormântului, ci, așa cum o arată și descoperirile de la Dierna, în sarcofage din cărămidă sau din piatră. Din păcate, în Dacia nu s-au păstrat inscripții care să confirme expres o astfel de ultimă călătorie a defuncților înhumați în sarcofage din plumb, deși în Dacia există monumente funerare dedicate unor persoane care au murit în alte provincii, fără a se ști însă sigur dacă osemintele lor au fost sau nu readuse în Dacia și se cunosc chiar și cazuri

Acta Terrae Septemcastrensis, VI, 2007

când cadavrul sau doar relicvele unor persoane decedate în Dacia au fost transportate în vederea înmormântării definitive în alte părți ale Imperiului roman. Ar fi, așadar, cu puțință ca, uneori, sicriile din metal să fi conținut cadavre aduse de departe, după o lungă călătorie, în vederea înmormântării lor. Dintre sicriile din plumb descoperite în Dacia, ale căror dimensiuni sunt cunoscute, în cele mai multe par a fi fost înmormântați copii, așa cum o confirmă uneori și osemintele sau inventarul funerar; o explicație ar putea să o reprezinte costul ridicat al sicriilor din plumb pentru adulți, dar și anumite credințe legate de moartea copiilor, din păcate mai greu de surprins. Oricum, inventarele funerare păstrate arată că defuncții înhumați în astfel de sarcofage aparțineau unor categorii cu o foarte bună situație materială. Sarcofagele din plumb descoperite în Dacia au fost datate în sec. II-III, datorită faptului că foarte rar există posibilități de datare mai exactă, pe baza inventarelor funerare. Tot fără datare sigură sunt și sicriile din plumb descoperite în Moesia Superior și Pannonia, în schimb din Moesia Inferior provine unul datat în prima jumătate a sec. IV, pe când cele din Dalmatia, de la Salona, sunt creștine și se datează în sec. V-VI. În Imperiul roman, răspândirea sicriilor din plumb este legată de elementele siriene, care le întrebuițau curent, cu deosebirea că, față de cele din provinciile danubiene și din Dacia, care sunt realizate din simple plăci de plumb îndoite, sarcofagele din plumb descoperite în Syria, Phoenicia și Palaestina, datate în sec. III-IV, sunt foarte bogat ornate. Sicriile din plumb descoperite în Dacia au fost puse în legătură cu mediile frecventate de negustori sau de trupele orientale, dar credem că ar trebui avută în vedere și posibilitatea ca printre defuncții înmormântați în sarcofage din plumb să se afle și unii de origine celtică, romanizați, care au adoptat această tradiție funerară de origine orientală; sarcofagele de la Dierna credem că este posibil să aparțină, de fapt, perioadei de după retragerea trupelor și autorităților romane din Dacia, când această localitate a continuat, datorită poziției sale strategice, să facă parte din Imperiul roman, încât în vremea lui Diocletianus aici a fost construită o fortificație cu un rol important în apărarea provinciei Dacia Ripensis. Contemporan cu aceste sarcofage din plumb de la Dierna sau puțin anterior ar putea fi și sarcofagul din plumb descoperit la Drobeta, în care au fost găsite monede din aur din sec. III. De aceea, admitem că unele dintre sarcofagele din plumb descoperite în Dacia ar putea fi datate, totuși, încă în vremea stăpânirii romane, respectiv în sec. III.

Zu den interessantesten, aber noch unzureichend besprochenen Grabfunde aus Dakien gehören auch die Metallsarkophage, die auch in anderen Provinzen des Römischen Reiches vorkommen. Im Orient haben die Metallsarkophage eine sehr alte Tradition, obwohl in Ägypten handelt es sich vor allem um mumienförmigen Stücke aus Edelmetall, in denen die Könige bestattet wurden, wie etwa der goldene Sarkophag des Tuthankhamun (1333-1325 v.u.Z.) (Abb. 1)¹, der silberne Sarkophag des Psusennes I (1044/1043-994/993 v.u.Z.) (Abb. 2)² und derjenige des Sheshonq

¹ Müller, Thiem 2000, p. 170, Abb. 369.

² Müller, Thiem 2000, pp. 205 und 208, Abb. 428.

Acta Terrae Septemcastrensis, VI, 2007

II (ca. 877-875 v.u.Z.), ebenfalls aus Silber, aber mit Falkenhaupt³, wegen der Betonung der Identifizierung des Pharaos mit dem Gott Horus.

Die provinzialrömischen Metallsärge (gewöhnlich aus Blei) weisen, meistens, eine Quaderform auf, aber, unter dem offensichtlichen Einfluß des Modells der Grabkammer oder anderer Grabbauten oder desjenigen der aus Ziegelsteine gebauten Grabzellen (in der rumänischsprachigen Literatur auch *sarcophage/ciste din cărămidă* also "Sarkophage/Kisten aus Ziegelsteine" genannt), beziehungsweise desjenigen der steinernen Sarkophage, kann der Deckel (*operculum*) manchmal leicht bombiert sein, um ein kleines Gewölbe zu suggerieren oder die Form eines zweiseitigen Daches zu haben. Wegen ihrem hohen Preis, waren die bleiernen Sarkophage seltener als die steinernen Sarkophage, als die aus Ziegelsteine gebauten Grabzellen oder als die holzernen Sarkophage, die die häufigsten gewesen zu sein scheinen, selbst im Fall wenn die Verstorbenen in anspruchsvolleren Grabeinrichtungen bestattet wurden⁴; die Benutzung von bleiernen Sarkophage kann, offensichtlich, durch ihrer geringeren Preis, im Vergleich zu diesem der Sarkophage aus Edelmetall erklärt werden, aber könnte auch einige magischen Deutungen haben⁵. Das Blei war dem Chronos konsakriert, so Origenes, der einen seltsamen mithraischen Kultgegenstand in Form einer Leiter mit 7, jede einer astrologischen Planette entsprechenden Stufen aus unterschiedlichen Metalle erwähnt⁶. Aber von den Griechen wurde Chronos Ageraos, sowie Saturnus von den Römer, gerade mit Zurvan Akarana identifiziert, also mit der Ewigen Zeit, von der alles herkommt und die alles verschlingt⁷, so daß das Blei ein Metall darstellt, das mit der Ewigkeit, mit den ursprünglichen, regenerierenden Energien verbunden ist. Dagegen, im Kult des Thrakischen Reiters, scheint das Blei einiger rituellen Verbote unterworfen zu sein, denn es ist keine Darstellung dieser Gottheit auf Bleigegegenstände bekannt, zum Unterschied vom Kult der Danubianischen Reiter⁸, deren frühe Ikonographie sich von derjenigen des Thrakischen Reiters inspirierte⁹. In Gallien, im von den Treverer bewohnten Gebiete, das aus Britannien gebrachte oder aus Mechernich, in der Nähe von Aachen, ausgebeutete Blei wurde sowohl für die Herstellung der Bleisarkophage (*Abb. 5-6*) benutzt, von denen im Gräberfeld von *Sablon*, in der Nähe von Metz, mehrere Dutzenden entdeckt wurden, wie auch

³ Müller, Thiem 2000, p. 221.

⁴ Floca 1941, p. 54.

⁵ Benea, Şchiopu 1974, p. 120.

⁶ Eliade 1991, II, p. 299; cf. Origenes, *Contra Celsum*, VI, 22.

⁷ Schütze 1972, p. 45, Abb. 20-21; cf. Boulanger 1992, p. 48.

⁸ Hadiji 2006, p. 260.

⁹ Hadiji 2006, p. 256.

Acta Terrae Septemcastrensis, VI, 2007

zum Plattieren des Inneren der steinernen Sarkophage¹⁰. Die bleierner Särge, recht zahlreich in Syrien, aber wenig erforscht vor 1929¹¹, sind in verschiedenen römischen Provinzen verbreitet; in 1935, der Emir M. Chéhab zeigte deren Vorhandensein auf dem Rhein, in Frankreich, in Spanien, Syrien und in Palästina an¹² und stellte fest, daß sie zahlreicher in Libanon sind, in den Gräberfelder der Städten Tyrus, Sidon und Byblos¹³ und daß bei Berytus es vorkommt, daß sie die steinernen Sarkophage ersetzen, die sehr selten sind und, meistens, verzierungslos¹⁴. Die Bleisärge, so wie es der angeführte Verfasser bemerkte¹⁵, der aber keine solche Entdeckung aus den Balkan- und Donauprovinzen erwähnt, wurden auch hier bekannt, denn die Märtyrer Claudius, Castor, Sempronianus und Nicostratus, die christliche Bildhauer, die die Bauarbeiten an dem Palast des Diocletianus geleitet haben, wurden in bleiernen Särge gelegt und im Fluß ertrunken, weil, obwohl sie jede Bestellung erfüllten, sie verweigerten die Statue des Gottes Asklepios zu vollenden und sie haben eingestanden, sie seien Christen¹⁶.

Bezüglich der in Dakien entdeckten bleiernen Särge gibt es wenigere Auskünfte, denn einige wurden zwecks der Metallverwertung zerstört¹⁷, genau so wie im Mittelalter in Syrien, wo der Kalif al-Walid ben Abd el-Malek (705-715) ein Teil der großen Moschee der Omayyaden aus Damaskus mit dem aus dem Schmelzen der römischen Sarkophage gewonnenen Blei bedeckt hat¹⁸; so ist auch der einzige, dem O. Floca im Jahre 1941 bekannte Fund dieser Art verschollen: ein kleiner, korrodierter bleierner Sarg, rechtwinkliger Form, mit einem 2-3 cm dicken horizontalem Deckel, der zufällig im Jahre 1927, im südlichen Teile der Stadt Ulpia Traiana Sarmizegetusa entdeckt wurde und der, von seinen Ausmaße her (ca. 0,60 m Länge und 0,25 m Breite), wahrscheinlich einem Kind zugehören dürfte¹⁹.

¹⁰ CRMS, p. 180, Abb. 120-121.

¹¹ Mouterde 1929, p. 238.

¹² Chéhab 1935, p. 66.

¹³ Chéhab 1935, p. 66sq.

¹⁴ Chéhab 1935, p. 67.

¹⁵ Chéhab 1935, p. 67.

¹⁶ Vornicescu 1987, pp. 205-207. Tendenziös, meinen die kirchlichen orthodoxen Historiker aus Rumänien daß diese Märtyrer dakisch-römischen Herkunft gewesen sein sollen.

¹⁷ Floca 1941, p. 55.

¹⁸ Chéhab 1935, p. 66. Die von P. Claris bezüglich der Zusammensetzung des Metalls von 3 Sarkophage aus dem Nationalmuseum Libanons aus Beirut unternommenen Analysen haben nachgewiesen, daß es sich um eine arsenlose Legierung handelt, mit eine recht konstante Zusammensetzung: 96,50-98,50% Pb, 1,50-2,57 % Sb, 0,15-0,65 % Fe, 0,07-0,13 % Cu, 0,15-0,17 % Zn, 0,03-0,05 % Bi und Spuren von Ag (Chéhab 1935, p. 72).

¹⁹ Floca 1941, p. 55.

Acta Terrae Septemcastrensis, VI, 2007

Im gegenwärtigen Forschungsstand, die meisten Auskünfte, die Gräber mit bleiernen Sarkophage betreffen, beziehen sich auf diejenige, die bei Dierna entdeckt wurden. Unter den Gräber, die im Hof der ehemaligen Kaserne der Honveden, die sich in der Gebäude der ehemaligen gegenüber vom römisch-katholischen Pfarramt liegenden Brauerei Jovanovics befand²⁰ und, also, dem Gräberfeld aus der Nähe des Flußes Cerna zugehören dürfte, ist auch eines erwähnt, das anlässlich einiger Kanalisationsarbeiten entdeckt wurde und dessen reiches symbolische Inventar in einem bleiernen Sarg beigelegt wurde, der selbst in einem steinernen Sarkophag eingeführt wurde²¹; die Behauptung, daß im Hof der erwähnten Kaserne mehrere bleiernen Sarkophage gefunden wurden sollen²² ist aber unrichtig, denn der einzige hier vor dem Jahre 1945 gefundene Sarkophag ist gerade der vorherig erwähnte, weil vom Inventar des im Jahre 1840 entdeckte Grabes schon in 1880 nichts mehr bekannt war und weil ein drittes Grab, mit aus Ziegelsteine gebauten Grabzelle, beinhaltete nur 3 Gefäße ("*Urnen mit Asche*") und mehrere Bronzemünzen aus der Zeit des Kaisers Gordianus²³. Das Inventar des Grabes mit bleiernen Sarkophag, vielleicht auch jene anderer Gräber, kamm nach Wien, wo es zur Zeit im Kunsthistorisches Museum, unter einer einzigen Inventarnummer (VII B 60) aufbewahrt wird, die, so R. Florescu und I. Miclea, sich auf die folgenden Gegenstände bezieht: ein goldener Anhänger in Form der "Herkuleskeule", ein goldener Armband mit Berlocken, ein Anhänger aus 2 Silbermünzen von Traianus, die in goldernen Rahmen eingefast sind, ein Blatt aus Goldblech und 2 Röhre aus Gold²⁴ und ebenfalls aus Dierna glaubt M. Bărbulescu daß auch 2 Silberlöffelchen stammen, die ebenfalls im Kunsthistorischen Museum aus Wien, , unter der Nummern VII A 832 und VII A 833 aufbewahrt sind²⁵. Die von R. Noll unternommenen Archivforschungen haben aber zahlreiche Korrekturen der vorherig bekannten Auskünfte bezüglich dieses Grabes gebracht: laut der Fundchronik von Fr. Kenner, wurde das erwähnte Grab im Hofe der Brauerei Jovanovics (*und nicht Ioanovici, wie manchmal in der rumänischen Literatur!*), irgendwann im Jahre 1856 (*und nicht 1857, wie in der rumänischen Literatur!*) entdeckt, indem ein am 23. Dezember 1856 aufgesetztes Bewertungsprotokoll eingeführt wird²⁶. Laut dieser

²⁰ Böhm 1880, p. 181; Mărghitan 1980, p. 74.

²¹ IDR, III/1, p. 75; cf. Kenner 1860, p. 404sq.; Neigebaur 1851, p. 11; Von Sacken, Kenner 1866, p. 346, Nr. 51; Laitin 1925, p. 55; Benea, Şchiopu 1974, p. 119.

²² Tudor 1968a, p. 21; Benea 1975, p. 95sq.

²³ Mărghitan 1980, p. 74; cf. Böhm 1880, p. 181.

²⁴ Florescu, Miclea 1979, pp. 30sq. und 38sq., Nr. 68-73, 76-77, Abb. 27-34; cf. Bărbulescu 1980, p. 180.

²⁵ Bărbulescu 1980, p. 180.

²⁶ Noll 1984, p. 439, Abb. 1.

Acta Terrae Septemcastrensis, VI, 2007

Aufzeichnungen, im Inneren eines Sarkophages mit den äußeren Ausmaße von 1,50x0,87xca. 0,34 m und die Dicke der Wände von ca. 0,24 m, mit einem 0,24 m hohem zweischenkeligen, auf dessen inneren Seite semicylindrisch ausgehohnten, laut der Beschreibung, mit groben, in der Zeichnung aber nicht zu sehenden Akroterien vorgesehenen Dach, der im Inneren einer Grabbezirkes mit einer ca. 0,30 m dicken Mauer lag, deren Höhe gleich derjenigen des Sarkophages war²⁷, wurde ein stark oxydierter und korrodierter bleierner Sarg mittels eisernen Klammern befestigten Deckel entdeckt, in dem die Gebeine eines Kindes gefunden wurde, dessen Alter, aufgrund der Ausmaße des Sarges (1,03 m Länge, 0,32 m Breite und 0,40 m Höhe, mit einer Wändedicke von ca. 1 cm), von Fr. Kenner zu 5-7 Jahre eingeschätzt wurde²⁸. Das ausschließlich aus im Jahre 1857 angekauften und allen unter der gemeinsamen Inventarnummer VII B 60 eingetragenen Goldschmuckstücke bestehende, aber unvollständig und nur gelegentlich in der älteren Literatur erwähntes Grabinventar hat, in Wirklichkeit, eine andere Zusammensetzung, die sich von der vorherig erwähnten unterscheidet: ein Goldanhänger, in Form der "Herkuleskeule", ein aus einem recht gut erhaltenen, in einer Goldrahme eingefassten Denar von Traianus aus 101-102 hergestellten Medaillon, 2 goldernen, transversal kannelierten Röhrchen, vielleicht Anteile eines Kolliers, ein elyptisches, stark geknittertes Goldblatt und ein golderner Ring²⁹. Von der Inschrift *ut(ere) f(elix) Ceseri* des Ringes³⁰ wird angenommen, daß es sich selbst auf das Kind bezieht, in dessen Grab das Schmuckstück gefunden wurde und das, infolgedessen, Ceserius hieß, ein typischer spätlateinische Name, der laut A. Mócsy mit dem ostlichen oder norditalischen romanisierten keltischen Milieu des 3. Jh. verbunden ist³¹. R. Noll hat dieses Grab im ausgehenden 3. Jh. datiert³² und, aus Gründe die wir nicht näher mit diesem Anlaß besprechen können, können wir die von D. Benea geäußerten Meinungen, daß es sich um ein christliches Grab aus der zweiten Hälfte des 3. Jh. handeln soll, nicht annehmen³³.

Ein anderer Sarg aus Blei (*Abb. 3*), mit gnostischem Inventar, der ebenfalls bei Dierna entdeckt und im Jahre 1974 veröffentlicht wurde, hatte die Seitenwände und den Boden aus einer einzigen flachen, rechtwinkligen Platte, mit den Ausmaße von

²⁷ Noll 1984, p. 439, Abb. 1.

²⁸ Noll 1984, p. 439.

²⁹ Noll 1984, pp. 439 und 441sq., Taf. 65/7-12. Das Goldblatt mag zur Bedeckung des Mundes des Verstorbenen gedient haben, gemäß einem griechischen Brauch, der im 2.-3. Jh. auch im Gräberfeld der Stadt Tomis belegt ist (Papuc 1974).

³⁰ IDR, III/1, 53.

³¹ Noll 1984, p. 442sq.

³² Noll 1984, p. 443.

³³ Benea 1999, p. 66.

Acta Terrae Septemcastrensis, VI, 2007

0,94x0,64 m und die Enden aus zwei trapezförmigen Platten, von 0,32x0,24x0,20 m, die sich mit den Seitenwände verbindet, während der Deckel aus einer rechtwinkligen Platte hergestellt wurde, deren leicht gefalteten Ränder schließen die Kiste des Sarges ein, die die Gebeine eines Kindes und einige Inventargegenstände beinhaltet: ein kleines, gerolltes Goldblatt in der Nähe von Schädelbruchstücke, 2 Ohrringe aus verflochtetem Goldfaden (die verschollen sind) und 2 Medaillons³⁴. Aus den oberen Angaben, ergibt sich daß der Boden des Sarges 0,94x0,32 m gemessen haben könnte. Die Herstellungsweise dieses Sarges ist ähnlich derjenigen der im Gräberfeld *Sablou* aus der Nähe von Metz entdeckten bleiernen Särge³⁵, sowie jener Särge aus dem 5.-6. Jh., die im Gräberfeld *Manastirine* aus der Nähe von Salona gefunden wurden³⁶. Dieses Grab mit gnostischem Inventar aus Dierna kann seit der zweiten Hälfte des 3. Jh. und bis im beginnenden 4. Jh. datiert werden³⁷, aber jüngst hat sich D. Benea für eine Datierung im 3. Jh. ausgesprochen³⁸, genauer in der zweiten Hälfte des 3. Jh. und hat einige dessen Inventarstücke mit der religiösen Politik der Kaiser aus dem ausgehenden 3. Jh. und aus dem beginnenden 4. Jh. in Zusammenhang gestellt, die aber von Heliogabalus angeregt wurde³⁹, obwohl in den dakischen Provinzen der Kult des Sol Invictus began sich, vor allem im militärischen Milieu, schon vor der Herrschaft des erwähnten Kaisers zu verbreiten⁴⁰.

Außer den erwähnten bleiernen Sarkophage aus Ulpia Traiana Sarmizegetusa und Dierna, sind in Dakien noch je 2 bleiernen Särge bei Romula (mit den Ausmaße von 1,30x0,30x 0,30 m) und Drobeta bekannt, während ein anderer (mit den Ausmaße von 1,70x0,40x0,33 m) aus Slăveni (Kr. Olt) stammt⁴¹. Einer der Sarkophage aus Drobeta, der in einer Gruft aus Ziegelsteine eingeschlossen wurde, maß 2x0,50x0,50 m, hatte 1 cm dicke Wände und beinhaltet, nebst seinem eigenen Grabinventar, ein anderer Bleisarg, in dem die Gebeine eines anderen Verstorbenen gelegt wurden⁴²; wie im Fall anderer in Dakien entdeckten Körpergräber mit Bleisarkophage, hatte er einen reichen Inventar (2 goldene Armreife, eine Holzkiste und Münzen von Gordianus III)⁴³. Mit Rücksicht auf diesem letzten

³⁴ Benea, Şchiopu 1974, p. 115sq., Abb. 1-3.

³⁵ CRMS, p. 180, Abb. 120.

³⁶ Rendić-Miočević 1954, p. 62sq., Nr. 7-8, Abb. 6.

³⁷ Benea, Şchiopu 1974, p. 123sq.

³⁸ Benea 1975, p. 95.

³⁹ Benea 1999, p. 62.

⁴⁰ Sanie 1974-1975, p. 336.

⁴¹ Tudor 1968b, p. 413.

⁴² Tudor 1968b, pp. 413 und 415.

⁴³ Benea 1977, p. 137, Nr. 18; cf. Dumitrescu 1883, p. 43.

Acta Terrae Septemcastrensis, VI, 2007

Beweis, können wir die Hypothese nicht ausschließen, daß die kleineren Sarkophage aus Blei, so wie dieser oder derjenige, der in 1927 bei Ulpia Traiana Sarmizegetusa entdeckt wurde⁴⁴ auch zur Umbeerdigung der Gebeine von weit vom Ort der endgültigen Bestattung verstorbenen Personen benutzt wurden; aus diesem Grund, aber vielleicht auch wegen der symbolischen Bedeutung des Bleies, das für Ewigkeit den Körper aufbewahren sollte, wurden die bleierne Särge nicht unmittelbar in der Grabgrube gelegt, sondern, so wie es die Entdeckungen aus Dierna beweisen, in aus Ziegelsteine gebauten Grabzellen oder in steinernen Sarkophage. Bei Berytus, die bleiernen Särge wurden in kleinen, im Gestein ausgehohnten Höhlungen gelegt, deren Tiefe mit ca. 12 cm die Höhe des Sarges überschreitet und die mit ca. 0,30x0,20 m großen Steine zugeschüttet wurden⁴⁵, während bei Sidon die Särge wurden in kollektiven, in Felsen ausgemeißelten Gräber oder sogar in steinernen Sarkophage entdeckt, genau so wie im Stadtgebiet von Tyrus⁴⁶. Wegen den Ausmaße der bleiernen Särge, ist deren Absatz in Terrakottasärge, laut einer, wie es scheint, von der in Libanon häufigen Entdeckung von bleiernen Särge neben Terrakottasarkophage suggerierten Hypothese, unwahrscheinlich⁴⁷.

Andernfalls, dort wo die Körpergräber mit bleiernen Särge seltener sind, es ist notwendig, durch eine vergleichende typologische und stilistische Untersuchung, zu präzisieren ob einige unter ihnen einigen aus der Ferne hergebrachten Verstorbenen zugehören, wegen der Möglichkeit diese Sarkophage luftdicht zu schließen und die Leiche des Verstorbenen in guten hygienischen Bedingungen zu transportieren, ein Brauch der auch in verschiedenen Beschreibungen der Leben der Heiligen, von jene des Leontinus von Askalon bis zu den Säulenheiligen aus dem 5. Jh. erwähnt wird⁴⁸. Leider, sind in den dakischen Provinzen keine Inschriften erhalten geblieben, die ausdrücklich eine solche letzte Reise der in bleiernen Särge beerdigten Verstorbenen belegen, obwohl es hier Grabdenkmäler gibt, die an in anderen Provinzen gestorbenen Leute, wie Aurelia Flora, in Pannonien, bei Poetovio⁴⁹, gewidmet sind, ohne aber sicher zu wissen, wenn ihre Gebeine nach Dakien zurückgebracht wurden oder nicht und sogar Beispiele bekannt sind, wann die Leiche oder die Reliquien einiger in Dakien verstorbenen Leute zwecks ihrer endgültigen Bestattung in anderen Teile des Römischen Reiches transportiert

⁴⁴ Floca 1941, p. 55.

⁴⁵ Chéhab 1935, p. 63.

⁴⁶ Chéhab 1935, p. 63sq.

⁴⁷ Chéhab 1935, p. 64.

⁴⁸ Chéhab 1935, p. 67; cf. Mouterde 1929, p. 249, Anm. 5.

⁴⁹ IDR, III/4, 248 (Orăştie, Kr. Hunedoara).

Acta Terrae Septemcastrensis, VI, 2007

wurden, nach Lambaesis, in Numidien⁵⁰ und selbst nach Rom, im Fall des kaiserlichen Freigelassenen M. Ulpus Hermias, *procurator aurariarum*⁵¹. Es wäre also möglich, daß manchmal die Metallsärge aus der Ferne, nach einer langen Reise, zwecks ihrer Beerdigung hergebrachten Leichen beinhaltet haben sollen. Wir glauben aber daß, unter den in Dakien entdeckten bleiernen Särge, deren Ausmaße bekannt sind, in den meisten scheinen doch Kinder bestattet gewesen zu sein, so wie das manchmal auch die Gebeine oder das Grabinventar belegen; eine Erklärung dafür könnte der hohe Preis der bleiernen Särge für Erwachsenen sein, aber auch gewisse mit dem Tode der Kinder verbundenen Glauben, die leider schwieriger erfaßt werden können⁵². Jedenfalls, die erhaltenen Grabinventare deuten an, daß die in solchen Sarkophage bestatteten Verstorbenen einiger sozialen Kategorien mit einer sehr guten materiellen Lage zugehört haben. Die in Dakien entdeckten bleiernen Särge wurden im 2.-3. Jh. datiert, aber die Datierung ist für sicher nur im Fall eines Sarges aus Drobeta, in dem Goldmünzen aus dem 3. Jh. gefunden wurden⁵³ gehalten, obwohl, gerade weil es sich um Goldmünzen handelt, kann, unserer Meinung nach, diese Datierung etwas später sein und, folglich, müßen die Münzen nur für *termini post quem* gehalten werden; infolgedessen, könnte dieser Sarg, höchstwahrscheinlich, mit dem bei Dierna in 1856 gefundenen zeitgenössisch sein, sowie auch mit jenem mit gnostischem Inventar, der im Jahre 1974 veröffentlicht wurde und der ebenfalls hier entdeckt wurde. Ohne sichere Datierung sind auch die in Moesia Superior (bei Ulpianum, Viminacium und Sočanica)⁵⁴ und in Pannonien (bei Intercisa⁵⁵) entdeckten bleiernen Särge, zum Unterschied zu denjenigen aus Dalmatien, aus Salona, von trapezoidaler Form (*Abb. 12*), die christlich sind und im 5.-6. Jh. datiert werden⁵⁶. Im 5. Jh., Bleisärge wurden im Orient auch zur Bestattung der Säulenheiliger Simeon († 459) und Daniel († 493) benutzt⁵⁷. Ein bleierner Sarg aus dem Nationalen Geschichtesmuseum aus Sofija

⁵⁰ CIL, VIII, 2772; cf. Mancini 2006, p. 458.

⁵¹ IDR, III/3, 366.

⁵² Aus den 4 besser erhaltenen bleiernen römischen Sarkophage, die im Steigerungskatalog des A. Gilmore vorgestellt sind (Gilmore 2000, p. 57, Nr. 250-253), 3 haben Ausmaße, die suggerieren können, daß sie einiger Kinder zugehört haben konnten. Hingegen, aus den vom Emir M. Chéhab veröffentlichten 33 Bleisärge mit bekannten Ausmaße aus dem Nationalmuseum Libanons aus Beirut (Chéhab 1934; Chéhab 1935), nur 5 (also 15,15 %) einiger Kinder zugehören können.

⁵³ Benea, Şchiopu 1974, p. 119sq.

⁵⁴ Benea, Şchiopu 1974, p. 120; cf. Mócsy 1970, pp. 146 und 82.

⁵⁵ Intercisa, II, pp. 383-393.

⁵⁶ Rendić-Miočević 1954, p. 62sq., Nr. 7-8, Abb. 6.

⁵⁷ Mouterde 1929, p. 249, Anm. 5.

Acta Terrae Septemcastrensis, VI, 2007

(Abb. 4), der im Kreis Vraca, also in Moesia Inferior entdeckt wurde, wird in der ersten Hälfte des 4. Jh. datiert⁵⁸, während das Vorhandensein des Motivs "des Kreuzes des Hl. Andreas", der sowohl auf den Wände dieses Sarges, wie auch auf einem Sarkophagdeckel aus dem Gräberfeld *Sablon*, aus der Nähe von Metz (Abb. 6)⁵⁹ dargestellt ist, berechtigt uns zu glauben, daß dieses letztes Stück könnte einigermaßen mit dem in Bulgarien entdeckten Sarkophag zeitgenössisch sein, auch wenn dieser einen flachen Deckel hat, während das erwähnte *operculum* aus dem Gräberfeld *Sablon* die Form einer trapezoidalen Prisma aufweist. Im Römischen Reich, ist die Verbreitung der bleiernen Sarkophage mit den syrischen Elemente verbunden, die sie häufig benutzten, mit dem Unterschied daß, im Gegenteil zu jenen aus Dakien und aus anderen Donauprovinzen, die aus einfachen gefalteten Bleiplatten hergestellt sind, die in Syrien, Phoenizien und in Palästina entdeckten Bleisärge, die im 3.-4. Jh. datiert werden, sehr reich verziert sind⁶⁰; andernfalls, unter den 5 verzierten (mit pflanzlichen Motive, Sphingen, Medusenhaupt, Säulen, *kantharoi* etc.)⁶¹, die im Steigerungskatalog des A. Gilmore vorgestellt sind (fig. 7-11), datieren 2 Stücke aus dem 3.-4. Jh.⁶², andere 2 aus dem 3. Jh.⁶³ und nur ein einziges aus dem 1.-2. Jh. u.Z.⁶⁴. Die Verzierung der in Libanon entdeckten bleiernen Särge, die vom Emir M. Chéhab im 3. Jh. und im beginnenden 4. Jh. datiert wurden, der auch die Verbindung dieser mit Münzen von Maximianus

⁵⁸ Guide Sofia, p. 24.

⁵⁹ CRMS, p. 180, Abb. 121. Im 3.-4. Jh. datierten bleiernen Särge, die mit dem einfachen oder in komplexeren, manchmal mit offensichtlich heidnische Motive verbundenen Muster strukturierten Motiv "des Kreuzes des Hl. Andreas" verziert sind, wurden auch in Libanon, im Territorium der Städten Berytus, Sidon und Tyrus entdeckt (Mouterde 1929; Chéhab 1934; Chéhab 1935); andernfalls, gibt es auch keine Argumente um sie einiger christlichen Verstorbenen zuzuschreiben, auch wenn dieses Motiv auch in der christlichen Ornamentik übernommen wurde.

⁶⁰ Benea, Şchiopu 1974, p. 120; cf. Mouterde 1929; Chéhab 1934; Chéhab 1935; Renard 1968, p. 297, Abb. 33.

⁶¹ Wir glauben daß diese Sarkophage aus dem syrisch-palästinensischen Gebiet stammen oder, wenigstens, daß sie in Werkstätte aus Phoenizien erzeugt wurden, weil durch Form und Verzierung sind diese Sarkophage mit denjenigen, die in Libanon entdeckt wurden ähnlich (Mouterde 1929; Chéhab 1934; Chéhab 1935), vor allem mit jenen aus Tyrus und Sidon (Chéhab 1934, pp. 338-343; Chéhab 1935, p. 67sq.); die enge Verwandtschaft, die es zwischen den in Palästina entdeckten Sarkophage und denjenigen aus Libanon gibt, wurde, andernfalls, schon vom Emir M. Chéhab bemerkt (Chéhab 1934; Chéhab 1935).

⁶² Gilmore 2000, p. 57, Nr. 252 und 253.

⁶³ Gilmore 2000, p. 57sq., Nr. 251 und 254.

⁶⁴ Gilmore 2000, p. 57, Nr. 250.

Acta Terrae Septemcastrensis, VI, 2007

Herculius und Constantius Chlorus, aber auch von Probus bis Theodosius und in Palästina mit konstantinischen Münzen erwähnt⁶⁵, bewahrt die Traditionen der phoenizischen Ornamentik, die von der neubabylonischen und ägyptischen beeinflußt wurde, aber auch der hellenistischen Ornamentik, zu denen römische, der hellenistischen Kunst fremden Einflüsse und später auch die christlichen hinzugekommen sind⁶⁶. Die Kisten und die Deckel der vermutlich erst nach dem Tode des Verstorbenen errichteten Sarkophage wurden durch Zusammenfalten und Verbindung durch Verlöten der entsprechend ausgeschnittenen Bleiblechtafeln geschaffen, deren Verzierung angelegt wurde durch Gießen vom Blei, aus dem die Blechplatten gemacht werden sollen, in nach jedem Guß zerstörten Gußformen aus weichem Material, in dem die entsprechenden Motive eingedruckt waren, was auch einige, vor allem im Fall einer schlechten Endverarbeitung offensichtlichen Unvollkommenheiten und selbst Variationen der Verzierung der Wände desselben Sarkophages oder von einem Sarkophag zum anderen erklärt⁶⁷.

Die in Dakien entdeckten bleiernen Sarkophage, bezüglich der es recht wenige Auskünfte gibt, wurden mit den von den Händler oder den orientalischen Truppen frequentierten Milieus in Zusammenhang gestellt⁶⁸, aber wir glauben daß auch die Möglichkeit, daß unter den in bleiernen Särgen bestatteten Verstorbenen auch einige keltischer Herkunft waren, die aber romanisiert wurden und diesen Bestattungsbrauch orientalischer Herkunft angenommen haben, könnte in Betracht genommen werden; mit Rücksicht auf der recht späten Datierung der römischen Särgen aus Blei, einige derjenigen aus Dakien könnten im 3. Jh. datiert werden, während diejenige aus Dierna wären, höchstwahrscheinlich, in der Zeit nach dem Aufhören der römischen Herrschaft im restlichen Dakien einzustufen, wann diese Ortschaft, wegen ihrer strategischen Lage, weiter dem Römischen Reich zugehörte, so daß zur Zeit von Diocletianus hier eine Festung mit einer wichtigen Rolle in der Verteidigung der Provinz Dacia Ripensis gebaut wurde⁶⁹.

⁶⁵ Chéhab 1935, p. 71sq.

⁶⁶ Chéhab 1935, pp. 67-72.

⁶⁷ Chéhab 1935, p. 65.

⁶⁸ Benea, Şchiopu 1974, p. 120; cf. Mouterde 1929; Chéhab 1934; Chéhab 1935; Renard 1968, p. 297, Abb. 33.

⁶⁹ Tudor 1968a, pp. 19 und 22; IDR, III/1, p. 63; Benea 1975, p. 97.

Acta Terrae Septemcastrensis, VI, 2007

Abrevieri bibliografice

- ActaMN - Acta Musei Napocensis, Cluj-Napoca.
AEM - Archaeologisch-epigraphische Mittheilungen aus Oesterreich(-Ungarn), Wien.
AÖG - Archiv für Kunde österreichischer Geschichts-Quellen, Wien.
Apulum - Apulum. Acta Musei Apulensis, Alba Iulia.
ArchJug - Archaeologia Iugoslavica, Beograd.
Banatica - Banatica, Reșița.
CIL - *Corpus inscriptionum Latinarum*, Berlin.
CRMS - * * *, *La civilisation romaine de la Moselle à la Sarre. Vestiges romaines en Lorraine, au Luxembourg, dans la région de Trèves et en Sarre. Paris, Musée du Luxembourg, 6-31 octobre 1983*, Mayence, 1983.
Fontes Historiae - Corneliu Gaiu, Cristian Găzduc (ed.), *Fontes Historiae. Studia in honorem Demetrii Protase*, Bistrița – Cluj-Napoca, 2006 (= *Biblioteca Muzeului Bistrița*, seria *Historica*, 1-2).
Guide Sofia - * * *, *Nationalhistorisches Museum. Guide*, Sofia, 2004.
IDR - *Inscripțiile Daciei romane*, București.
Intercisa - Mária R. Alföldi, László Barkóczi, Jenő Fitz, Klára Sz. Póczy, Aladár Radnóti, Agnes Salaman, Károly Sági, János Szilágyi, Eszter B. Vágó, *Intercisa (Dunapentele – Sztálinváros). Geschichte der Stadt in der Römerzeit*, Budapest, I (1954) und II (1957).
JRGZM - *Jahrbuch des Römisch-Germanischen Zentralmuseums*, Mainz.
Pontica - Pontica. Studii și materiale de istorie, arheologie și muzeografie, Constanța.
Potaissa - Potaissa. Studii și comunicări, Turda.
Sargetia - Sargetia. Acta Musei Devensis, Deva.
Syria - Syria. Revue d'art oriental et d'archéologie, Paris.

Bibliografie

- Bărbulescu 1980 – Mihai Bărbulescu, *Potaissa după mijlocul secolului al III-lea*, in: *Potaissa*, 2 (1980), pp. 161-187.
Benea 1975 – Doina Benea, *Observații cu privire la topografia Diernei în epoca romană*, in: *Banatica*, 3 (1975), pp. 91-98.

Acta Terrae Septemcastrensis, VI, 2007

Benea 1977 – Doina Benea, *Cîteva considerații cu privire la topografia Drobetei în secolele II-III*, in: *ActaMN*, 14 (1977), pp. 133-145.

Benea 1999 – Doina Benea, *Dacia sud-vestică în secolele III-IV. Interferențe spirituale*, Timișoara, 1999.

Benea, Șchiopu 1974 – Doina Benea, Ana Șchiopu, *Un mormînt gnostic la Dierna*, in: *ActaMN*, 11 (1974), pp. 115-125.

Böhm 1880 – Leonhard Böhm, *Alterthümer längs der Donau von Pancsova bis Orsova*, in: *AEM*, 4 (1880), pp. 174-184.

Boulanger 1992 – André Boulanger, *Orfeu. Legături între orfism și creștinism*, București, 1992.

Chéhab 1934 – Maurice Chéhab, *Sarcophages en plomb du Musée national Libanais*, in: *Syria*, 15 (1934), pp. 337-350.

Chéhab 1935 – Maurice Chéhab, *Sarcophages en plomb du Musée national Libanais (deuxième article)*, in: *Syria*, 16 (1935), pp. 1-72.

Dumitrescu 1883 – V. Dumitrescu, *Istoria orașului T. Severin*, [Turnu Severin], 1883.

Eliade 1991 – Mircea Eliade, *Istoria credințelor și ideilor religioase*, ed. a II-a, 3 vol., București, 1991.

Floca 1941 – Octavian Floca, *Sistemele de înmormântare din Dacia superioară romană*, in: *Sargetia*, 2 (1941), pp. 1-116.

Florescu, Miclea 1979 – Radu Florescu, Ioan Miclea, *Tezaure transilvane la Kunsthistorisches Museum din Viena*, București, 1979.

Gilmore 2000 – Andrew Gilmore, *Антики от Рим и Византия*, s.l., 2000.

Hadji 2006 – Maria Vasinca Hadji, *Cultul Cavalerilor Danubieni: origini și denumire (I)*, in: *Apulum*, 43/1 (2006), pp. 253-267.

Havas 1978 – Laslo Havas, *Die Ägypter. Triumph der Macht und der Herrlichkeit*, 3. Aufl., Zürich, 1978.

Kenner 1860 – Friedrich Kenner, *Beiträge zu einer Chronik der archäologischen Funde in der österreichischen Monarchie (1856-1858)*, in: *AÖG*, 24 (1860), pp. 225-423.

Laitin 1925 – Daniil Laitin, *Dunărea între Baziaș și Turnu Severin*, București, 1925.

Mancini 2006 – Eleonora Mancini, *A proposito di una iscrizione di Lambaesis (CIL 8, 2772)*, in: *Fontes Historiae*, pp. 455-459.

Mărghitan 1980 – Liviu Mărghitan, *Banatul în lumina arheologiei*, vol. II (*Epocile: daco-romană și romano-bizantină*), Timișoara, 1980.

Mócsy 1970 – A. Mócsy, *Gesellschaft und Romanisation in der römischen Provinz Moesia Superior*, Budapest, 1970.

Acta Terrae Septemcastrensis, VI, 2007

Mouterde 1929 – René Mouterde, *Sarcophages de plombe trouvés en Syrie*, in: *Syria*, 10 (1929), pp. 238-251.

Müller, Thiem 2000 – Hans Wolfgang Müller, Eberhard Thiem, *Comorile faraonilor*, Oradea, 2000.

Neigebaur 1851 – J. F. Neigebaur, *Dacien. Aus den Überresten des klassischen Alterthums mit besonderem Rücksicht auf Siebenbürgen*, Kronstadt, 1851.

Noll 1984 – Rudolf Noll, *Zwei römerzeitliche Grabfunde aus Rumänien in der Wiener Antikensammlung. Mit einem Exkurs Goldene Herkuleskeulen*, in: *JRGZM*, 31 (1984), pp. 435-454.

Papuc 1974 – Gh. Papuc, *Un sarcofag de epocă romană din Tomis*, in: *Pontica*, 7 (1974), pp. 307-316.

Renard 1968 – Marcel Renard, *Sphinx à masque funéraire*, in: *Apulum*, 7/1 (1968), pp. 273-305.

Rendić-Miočević 1954 – Duje Rendić-Miočević, *Neue Funde in der altchristlichen Nekropole Manastirine in Salona*, in: *Archlug*, 1 (1954), pp. 53-70.

Sanie 1974-1975 – Silviu Sanie, *Cultul lui Sol Invictus în Dacia*, in: *Sargetia*, 11-12 (1974-1975), pp. 331-341.

Schütze 1972 – Alfred Schütze, *Mithras. Mysterien und Uhrchristentum*, Stuttgart, 1972.

Tudor 1968a – D. Tudor, *Orașe, tîrguri și sate în Dacia romană*, București, 1968.

Tudor 1968b – D. Tudor, *Oltenia romană*, ed. a III-a revizuită și adăugită, București, 1968.

Von Sacken, Kenner 1866 – E. von Sacken, F. Kenner, *Die Sammlungen des k. k. Münz- und Antikenkabinetts*, Wien, 1866.

Acta Terrae Septemcastrensis, VI, 2007

Verzeichnis der Abbildungen

Abb. 1. Der goldene Sarkophag des Tuthankhamun, entdeckt im Tal der Könige (nach Havas 1978).

Abb. 2. Der silberne Sarkophag des Psusennes I, entdeckt im königlichen Gräberfeld aus Tanis (nach Müller, Thiem 2000).

Abb. 3. Bleierner Sarg (3.-4. Jh.), entdeckt bei Dierna (nach Benea, Şchiopu 1974).

Abb. 4. Bleierner Sarg (erste Hälfte des 4. Jh.), entdeckt im Kreis Vraca aus Bulgarien (nach Guide Sofia).

Abb. 5. Bleierner Sarg, entdeckt bei Metz (Frankreich), im Gräberfeld *Sablon* (nach CRMS).

Abb. 6. Bleierner Sargdeckel, entdeckt bei Metz (Frankreich), im Gräberfeld *Sablon* (nach CRMS).

Abb. 7. Bleierner Sarg (1.-2. Jh.) mit unpräzisiertem Fundort (nach Gilmore 2000).

Abb. 8. Bleierner Sarg (3. Jh.) mit unpräzisiertem Fundort (nach Gilmore 2000).

Abb. 9. Bleierner Sarg (3.-4. Jh.) mit unpräzisiertem Fundort (nach Gilmore 2000).

Abb. 10. Bleierner Sarg (3.-4. Jh.) mit unpräzisiertem Fundort (nach Gilmore 2000).

Abb. 11. Bleierne Sargwand mit unpräzisiertem Fundort (nach Gilmore 2000).

Abb. 12. Bleierne Särge (5.-6. Jh.), entdeckt in der Nähe von Salona, im Gräberfeld *Manastirine* (nach Rendić-Miočević 1954).

Lista ilustrațiilor

Fig. 1. Sarcofagul din aur al lui Tuthankhamon, descoperit în necropola din Valea Regilor (după Havas 1978).

Fig. 2. Sarcofagul din argint al lui Psusennes I, descoperit în necropola regală de la Tanis (după Müller, Thiem 2000).

Fig. 3. Sarcofag din plumb (sec. III-IV), descoperit la Dierna (după Benea, Şchiopu 1974).

Fig. 4. Sarcofag din plumb (prima jumătate a sec. IV), descoperit în județul Vraca din Bulgaria (după Guide Sofia).

Acta Terrae Septemcastrensis, VI, 2007

Fig. 5. Sarcofag din plumb, descoperit la Metz (Franța), în necropola *Sablon* (după CRMS).

Fig. 6. Capac de sarcofag din plumb, descoperit la Metz (Franța), în necropola *Sablon* (după CRMS).

Fig. 7. Sarcofag din plumb (sec. I-II) cu loc de descoperire neprecizat (după Gilmore 2000).

Fig. 8. Sarcofag din plumb (sec. III) cu loc de descoperire neprecizat (după Gilmore 2000).

Fig. 9. Sarcofag din plumb (sec. III-IV) cu loc de descoperire neprecizat (după Gilmore 2000).

Fig. 10. Sarcofag din plumb (sec. III-IV) cu loc de descoperire neprecizat (după Gilmore 2000).

Fig. 11. Perete de sarcofag din plumb (sec. III) cu loc de descoperire neprecizat (după Gilmore 2000).

Fig. 12. Sarcofage din plumb (sec. V-VI) descoperite la Salona, în necropola *Manastirine* (după Rendić-Miočević 1954).

Acta Terrae Septemcastrensis, VI, 2007



Fig. 1 / Abb. 1.

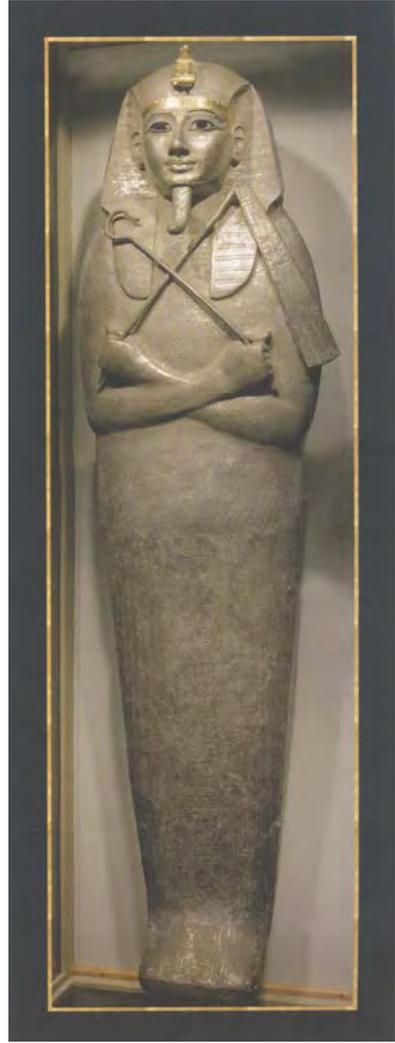


Fig. 2. / Abb. 2.

Acta Terrae Septemcastrensis, VI, 2007

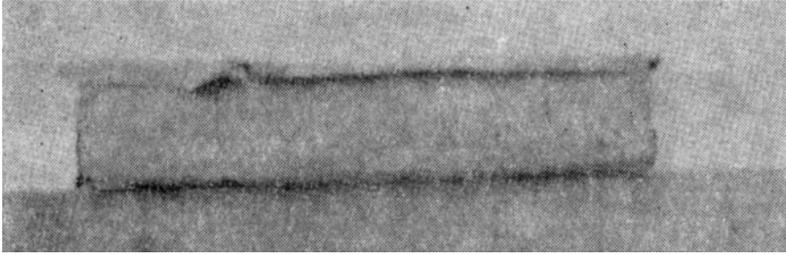


Fig. 3. / Abb. 3.



Fig. 4. / Abb.4.



Acta Terrae Septemcastrensis, VI, 2007
Fig. 5 / Abb.5



Fig. 6. / Abb. 6.

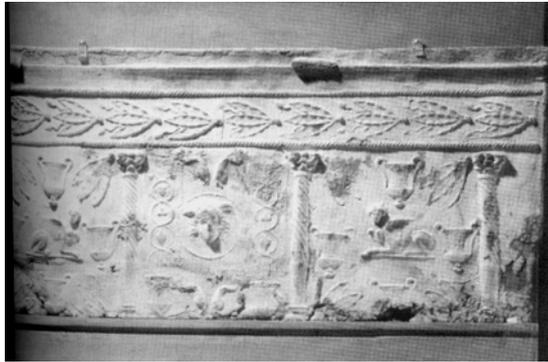
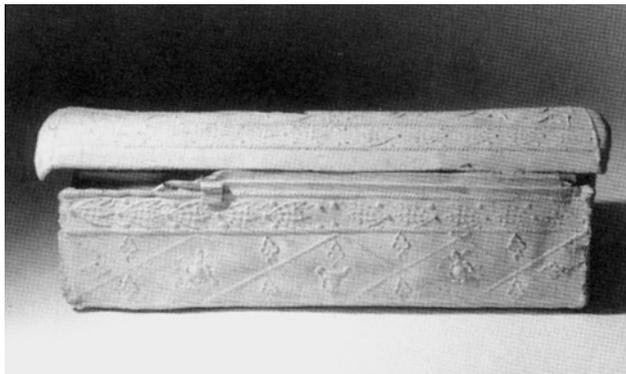


Fig. 7. / Abb. 7.



Acta Terrae Septemcastrensis, VI, 2007

Fig. 8. / Abb. 8.



Fig. 9. / Abb. 9.



Fig. 10. / Abb. 10.

Acta Terrae Septemcastrensis, VI, 2007



Fig. 11. / Abb. 11.

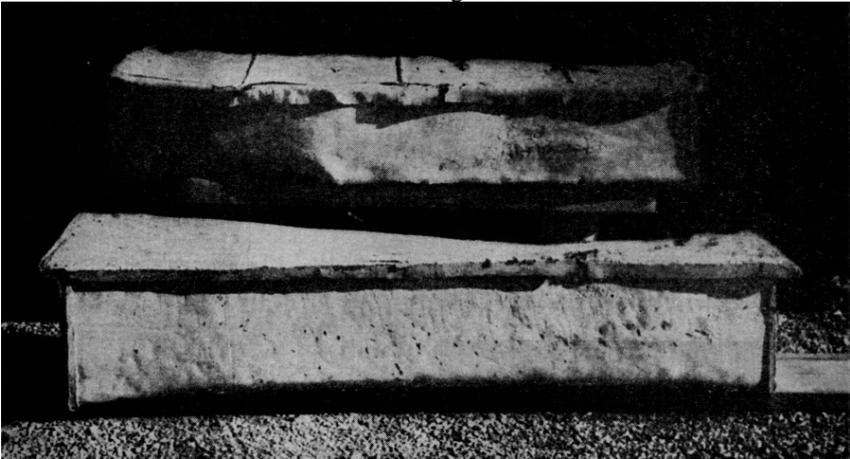


Fig. 12. / Abb. 12.

Acta Terrae Septemcastrensis, VI, 2007

Acta Terrae Septemcastrensis, VI, 2007

**A VIRTUAL RECONSTRUCTION
OF THE TWO ROMANIC CHURCHES
FROM SOUTH OF TRANSYLVANIA**
Case studies at Cislădoara and Șura Mică Churches

Maria-Emilia ȚIPLIC
“Lucian Blaga” University Sibiu, cringaci27@yahoo.com¹

Martin WHITE
University of Sussex, M.White@sussex.ac.uk²

*O reconstituire virtuală a două biserici romanice din Transilvania. Studiu de caz al
bisericii din Cislădoara și Șura Mică
- rezumat -*

*Studiul descrie munca de reconstituire virtuală a două biserici romanice din sudul
Transilvaniei. Sunt urmărite elementele de arhitectură și evoluția celor două monumente. În
același timp se pune accentul pe modul în care au fost implementate ultimele tehnologii din
domeniul realității virtuale în cel al patrimoniului cultural.*

*Keywords: Romanic Architecture from Transylvania, Cultural Heritage, Virtual Reality
Target group: scientific community, students and interested public*

1. Introduction

This study is about the three-dimensional reconstruction of two Romanic churches from the south of Transylvania using virtual reality technology. An important part of my doctor's degree paper, which is entitled *The Archaeological and Architectural Proofs about German Colonisation in the South of Transylvania during the 12th-13th Centuries*, is represented by the chapter dedicated to the early medieval architecture from the south of Transylvania and especially the Romanic

¹ Phd student at the University “Lucian Blaga” Sibiu, research assistant in The Institute of Socio-Human Science Sibiu of the Romanian Academy and Marie Curie fellow in the Marie Curie Training Site for Computer Graphics and Virtual Reality (MAVRIC), Department of Informatics, Centre for VLSI and Computer Graphics, University of Sussex.

² Director of the Centre for VLSI and Computer Graphics, Reader in Computer Science.

Acta Terrae Septemcastrensis, VI, 2007

architecture. Most of the Romanic churches from the south of Transylvania have been dismantled and the initial form of the Romanic churches has been modified during the centuries. So, our purpose is reviving the lost or altered Romanic churches using virtual reconstruction.

From tens of the Romanic churches built by the Saxon settlers in the south of Transylvania in the 12th-13th centuries, had disappeared or had been altered along the centuries, I chose 3 Romanic monuments different from the planimetric point of view and in the same time the most representative and typical Romanic Churches for the south of Transylvania, revelling the 3 general types of planimetry, used by the Saxons builders in the south of Transylvania. The 3 planimetric types specific to the south of Transylvania are rotunda, short basilica and the basilicas with an ampler longitudinal development. I tried to remodel and animate a three dimensional church from each planimetric type, thus choosing the rotunda from Orăștie, the short basilica from Cîsnădioara and the Romanic basilica from Șura Mică. But in this paper we present only two churches, the ones from Cîsnădioara and Șura Mică, and the third one from Orăștie due to its special characteristics, will be the subject of writing.

Through this paper we attempt to present the importance and the necessity of the virtual reality and 3d computer graphics in medieval archaeology and architecture from Romania, mainly Transylvania, the importance and the necessity that have been already demonstrated in other countries. Unfortunately, we must admit that virtual reality is used for the first time in medieval archaeology and monuments work field from Transylvania (Romania)³.

The achievement of the virtual reconstruction of the three named medieval churches was possible due to a three month fellowship offered by the Marie Curie Training Site for Computer Graphics and Virtual Reality (MAVRIC) located in the Centre for VLSI and Computer Graphics, Department of Informatics, University of Sussex (UK). Thus, our work of the “visualisation of the past” has been facilitated by the access to a performing PC and to a “render farm” made of a cluster of 14 machines; further, Marie Curie Training Site for Computer Graphics and Virtual Reality (MAVRIC) has provided me the access to many software applications that require very expensive licensing costs (Windows XP professional edition⁴, 3d studio max version 7⁵, Macromedia Dreamweaver MX 2004⁶, ARCO System work

³ In Romania the three-dimensional modelling has been used for Neolithic ages (see Cosmin Suciú et alii 2006), and for daco-roman period (virtual reconstruction of Ulpia Traiana Sarmizegetusa)

⁴ <http://www.microsoft.com/windowsxp/pro/default.mspx>

⁵ <http://www4.discreet.com/3dsmax/>

⁶ <http://www.macromedia.com/software/dreamweaver/>

Acta Terrae Septemcastrensis, VI, 2007

experience in virtual and augmented reality⁷), which are not easily available in an archaeological or historical department.

2. Related work

Nowadays is well known that the use of virtual reality (VR) and 3D models visualisation in archaeology and cultural heritage is having a growing interest. Virtual Reality technology is widely spreading over various fields and has already reached the level of maturity allowing it to be introduced into real life applications such as industry, medicine, entertainment, education and cultural heritage. There are numerous examples of researches on using Virtual, and very recently on using Augmented Reality (AR) for cultural heritage, such as:

The **ARCO** projects⁸ – *Augmented Representation of Cultural Objects* – aims at developing the whole chain of technologies to help museums to create, manipulate, manage and present digitized cultural objects in virtual exhibitions accessible both inside and outside museums (Wojciechowski et alii 2004, p. 135 sqq);

ARCHEOGUIDE project⁹ (Augmented Reality-based Cultural Heritage On-site GUIDE) intended to develop a wearable AR tour guide at cultural heritage sites. ARCHEOGUIDE provides visitors to see virtual reconstructions of ancient buildings. Visitors equipped with a small mobile computer and a display unit (a head-mounted display) are able to experience the real site while appreciating visualisations of the virtual reconstructions integrated seamlessly into the natural field of view (Gleue, T., Dähne, P. 2001, p. 161).

The **3D Murale** project¹⁰ is aimed at developing a system capable of recording archaeology excavation phases using Virtual Reality techniques being associated with the archaeological excavation site at Sagalassos in Turkey. In addition to the artifacts also stratigraphical layers can be also modeled. This requires utilizing diverse 3D capture techniques. Furthermore, the project offers the reconstruction of excavated remains of pottery, sculptures and buildings as well as their visualization in a way as they possibly looked like throughout ages (Edward Grabczewski et alii 2001, p.315-321);

Virtual Museum project – its main object was to create a virtual environment for enhancing the experience of visiting a museum by affording viewing and manipulation certain exhibits. Ten real museums which exist in Athens participated

⁷ <http://www.arco-web.org/>

⁸ <http://www.arco-web.org/>

⁹ <http://www.archeoguide.intranet.gr/>

¹⁰ <http://www.brunel.ac.uk/project/murale/home.html>

Acta Terrae Septemcastrensis, VI, 2007

in the project and provided 2D and/or 3D content to be digitised and presented within the virtual environment (Charitos D. et alii, 2001);

The **Ename 974** project traced the development of multimedia and VR technologies in presenting the archaeological site of the early medieval fortress and St. Salvator Abbey at Ename (Belgium) and in the archaeological exhibits in the Ename Provincila Museum; visitors are offered with virtual reconstruction of early-medieval buildings in stationary AR kiosk¹¹ (Pletinckx D. et alii 2001, p. 197)

VOP project – Virtual Old Prague¹² – suggests and implements a virtual model of part of the Old Prague town. They have developed a system that brings several new approaches to the world of virtual reality on Internet. The system allows to view the 3D model of Prague in a web browser through the Internet. The virtual world is presented to the user in a frame of a HTML page. Users can interactively walk through the old Prague town and examine the buildings closely or take one of the system-directed tours along the most attractive sight-seeings (J. Zara et alii 2003, p. 92-96).

2.1. About virtual archaeology and virtual cultural heritage

This article is written from the point of view of an historic-archaeologist and is addressed to the archaeologists or to those who are occupied with the cultural patrimony. Taking into account that the virtual archaeology or the virtual cultural heritage is a new field in Romania, I want to bring some general explanations for some new terms.

Virtual Reality (VR) means an interactive, self-directed, multisensory, computer-generated experience which gives the illusion of participating in a synthetic three-dimensional environment (Melissa Terras 1999, 2.4. Virtual Reality: a brief history). VR is – still – a novel and innovating technology which, through its current applications, has proved to be a useful visualisation tool for a variety of domains, especially those that involve the visualisation of abstract concepts and ideas, spaces that are unreachable or not longer exists, or object that must be examined from diverse and unique point of view. Research in virtual reality and archaeology is a recent application which has lately shown considerable growth, as the development of interactive computer technologies has inevitably impacted even the more traditional sciences and arts. To virtualize heritage means to actualize it digitally, to simulate it using computer graphics technology. *Virtual archaeology* refers to use of three dimensional computer models of ancient and medieval buildings and artefacts visualized through digital interface technologies that offer some degree of immersion and/or interaction with the connect. Virtualization, as

¹¹ <http://www.ename974.org/>

¹² <http://www.cgg.cvut.cz/vsp/>

Acta Terrae Septemcastrensis, VI, 2007

experienced today, is a technological condition that is generalized beyond of what we understand as being the virtual reality. In this sense, virtual heritage involves the synthesis, conservation, reproduction, representation, digital reprocessing, and display with the use of advanced imaging technology (Roussou M. 2002, p. 93).

2.2. The theoretical background for the implications of virtual reality in archaeology and medieval monuments

In Romania the archaeologists and the historians of art have been researching different monuments. The results of these works are usually presented in two different ways: printed publications for a board or unboard public and media coverage, exhibitions and museum displays; a third way, which is even recently, is that of the internet publication. But, the important parts of the archaeological results, such as the ruins of medieval buildings cannot be shown to visitors, because the monuments were destroyed or damaged. But the Virtual Reality applications in medieval archaeology and cultural heritage can offer many opportunities both for the historical researcher and for the general public. For the researcher a well 3D modelling can provide a useful tool for understanding a particular problem and for presenting alternative representations and visualize different theories (fig. 9-12) or to present the building stages of a monument that was irreversible changed along the time. For the general public, especially for the children and students, virtual reality in archaeology or history can be a learning tool and can be incorporated into the learning process. Taking into account the fact that we belong to a world of information and communication technologies, the chance for keeping the interest alive for this field, are to generally integrate the archaeology and history in the virtual world. Besides, with 3D virtual medieval monuments we can visualize and provide “access” to places and sites that no more exist or are unreachable.

3. Description of the Romanic churches from Cisnădioara and Șura Mică

A short historical overview: The Romanic churches from Cisnădioara and Șura Mică, like the other Romanic churches from the crown land (German: Königs Boden; Latin: fundus regius), have been built in the 13th Century by the German colonists. These colonists of Middle Ages are commonly called Transylvanian Saxons (German: Siebenbürger Sachsen), but among the settlers there were not only Germans (Teutonic from Southern Germany or Saxons from Middle and Northern German), but also Romanic people from the western regions of the Holy German Empire (Flandrenses and Romanic-Walloon). They had been recruited with winning promises (lands and a lot of privileges) by the Arpadian kings. Especially King Geysa II (1141-1162) was successful in attracting German and Flemish farmers, craftsmen, trades people and lower nobility. They settled in Zips (today's Slovakia) and in Transylvania (Romania). The King Geysa II offered the advantageous

Acta Terrae Septemcastrensis, VI, 2007

conditions of the "Hungarian right of hospitality" to all those he had invited to his empire. His successor Andrew II put it in writing, issuing the document of privileges, the "Guarantee of Freedom" (Goldenen Freibrief) in 1224 (Nägler, Th. 1979; Gündisch, K. 1998, p. 10 sqq.)

Thus, on their new land at the end of the 12th and in the 13th Centuries the German settlers started to build churches in the Romanic style.

In the south of Transylvania, the Saxons settlers have imposed the Romanic basilica – another type of Romanic church being met in the area of the German colonisation with an earlier dating is the church of central plan type (rotunda), but which has not such a larger radiation–, with three naves separated of two parallel rows of rectangular pillars bounded through strongly masonry arches. But the main feature of these Saxon churches is that the central nave was done in framework of wood. These basilicas from the Eastern side are usually finished with a semicircular apses being preceded of a square chore near the central nave, but in some cases the lateral naves are endowed with absidoles.

From the point of view of the plan metrical, the representative type of the churches built by the German in Transylvania is the Romanic basilica type. In south of Transylvania, this type is of two ways: *the short Romanic basilica*, like those from the Sibiu's surroundings and in the way down the Hartibaciu valleys (German: Harbachtal) (Cisnădioara, Rosia, Daia) (Al. Avram 1981) and *the basilicas with an ampler longitudinal development* like those from Șura Mică, Gușterița, Cisnădie, Șelimber, Hamba, Cristian, Avrig, Alțâna, Veșeud, Dealul Frumos etc. A considerable number of Romanic basilicas have a tower usually included in the central nave.

The Romanic churches from Cisnădioara and Șura Mică (map 1) – case study

Cisnădioara – the church from the fortress, formerly having the name of St Michael, is one of the most representative monuments of Romanic architecture from Transylvania, being the only ecclesiastical edifice of Romanic structure that hasn't been altered along the centuries. The first documentary attestation of this church dated from 1223; it refers to its donation by the clerk magister Gocelinus to the Cistercian monastery from Cârța (Zimmermann et alii, I, p. 27). The church dates, probably, from the 12-13th century, while the western portal, unique in Romanic architecture from Transylvania, seems to have been applied in the second half of the 13th century. The Romanic church from Cisnădioara is framed in the short Romanic basilicas category, with three naves, square chore, semicircular apses, absidoles in the eastern side of the lateral naves and two towers projected in the western side of collaterals, towers that haven't been finished yet. Both of the central nave and

Acta Terrae Septemcastrensis, VI, 2007

collaterals are covered with an opened wood framework; the chore is arched in crossways without ribs; the low rooms of the towers are covered with arches as a cross; the access in the towers is done through stairs included in the wall. In the chore there are visible traces of mural painting, but the crosses of devotion are kept in many places in church. The stonework is from rough stone, except the front side, where the portal relatively shaped is framed by dead arches. There are other two portals on the north south axle of the basilica and they are simply shaped. The wall around the church had a tower in the west and an inner tower gate in the south had been built in the second half of the 13th century with a passage for battle and crenels. On the east there was a tower (15th century) situated to several metres to the outside wall of precincts and joint with it through a mobile bridge.

The church was archaeologically researched between 1965 and 1966, the results being published only partially (Heitel, R. 1974).

Șura Mică – The place is documentary certified for the first time in 1323 but the church dates from the 13th century, being built by Saxon settlers as the Romanic basilica with an ampler longitudinal development specific to the south of Transylvania. At the end of the 15th century and the beginning of the 16th century the church – having the name of Saint Mary – is strengthened and is completely changed, being added elements of the Gothic architecture. The Romanic semicircular apses is demolished, the chore is prolonged, arched in network and closed with a polygonal apses. With the same reason is built the new Gothic arch of triumph from shaped stone and is arched the central nave and the entrance from the north is fortified with a tower; also in the west is built a tower added to front side. From the original building of the Romanic basilica there are only fragments, the west front side, a side from the north portal, the south collateral nave with small Romanic windows, the four pairs of pillars of square section, joint between them with unstrengthen semicircular archway. The two collaterals have small bays arched in a cross way, separated through doubling arches. One might never know if the collaterals were closed towards East with small absidoles, typical for the oldest churches around Sibiu, because when building the chore in Gothic style in 1506, the eastern walls of collaterals were rebuild, and an archaeological research didn't take place (Fabini, H. 1998, p. 388-389).

4. Virtual reconstruction of two Romanic churches: Cisnădioara and Șura Mică (The procedural approach)

The three-dimensional reconstructions of the two Romanic churches were created with the *3D Studio Max* program (7.0 version), using the photos and the plans prepared prior. In the case of the church from Cisnădioara, we also try to reconstitute a part of the landscape, namely the fortification around the church and

Acta Terrae Septemcastrensis, VI, 2007

the hill where the church with the fortification lies. For a precise plan metrical render of the church from Cisnădioara, we used the church plan (fig. 1-2), and for rendering the church elevation we used photos made by us (fig. 1-7).

There was no problem in a virtual shaping of the church, because it is wholly and without major changes maintaining. Its virtual interpretation is correct from an informational and architectural point of view, the accuracy of giving back being almost completely. There were problems when dealing with the giving back of the towers because they are no longer kept (for the East and West tower are maintained only the foundations, and the south tower is partially maintained and modified). Thus, the shape of the towers and their height could only be estimated (fig. 3), and can never be reconstructed with 100% accurate. The crenellation of the western tower was assumed that existed (fig. 5), because the excavations demonstrated that it was the oldest tower of the fortification, being dated from the second half of the 13th century (Heitel, R 1974). There is no evidence for the access to the towers' insides, so the doors were also assumed as being at the suggested height in the reconstitution. The texture of the walls is based on the texture of the wall stones of the church from Cisnădioara, as extracted from the photos made by us. The texture of the inner walls (plaster) of the church is based on photos took from the inside of our church, but the texture do not reproduce exactly all the details, being a little distorted (fig. 7-8). The texture of the wood is also original, and it is taken from the wood used for the doors of the church. The southern and northern portals from our virtual representation are photos applied on the virtual reconstruction of the church (fig. 3-4). The eastern portal is in part created by us, and then applied to the original texture (grit stone) (fig. 6).

The goal of the virtual reconstruction of the Romanic church from Cisnădioara, then the animation of the model was to provide many possibilities in re-examining the building and to be observed from different angels, "flying" in time and space throughout the medieval monument from the south of Transylvania.

Through the virtual reconstruction of the Romanic church from **Șura Mică** we want to present the first phase of the construction of the church, due to the fact that the church had changed during the centuries (see photos 8-10 and fig. 9-12). In this paper we propose the initial form of the church (this monument was not excavated archaeologically), the Romanic phase from the 13th century. The used texture of the walls is partial the original one being based on the texture of the wall of the church from Șura Mică (fig. 11-12). But for the outer walls we proposed another solution (fig. 9-10), because the actual plaster is not the original from the 13th century. The two portals are not the originals, because they don't preserve, so for a much more realistic model we applied the Romanic portals from another churches from Transylvania, which then we modified them.

Acta Terrae Septemcastrensis, VI, 2007

The aim of the virtual reconstruction of the church from Țura Mică is that of a better understanding of a sequence of the transformation and the changes of the monument during the centuries.

5. The Landscape

The render of the landscape in the virtual reconstruction of the medieval monuments is necessary, because it's the only way through which we can talk of a complete realistic render and visualisation.

So, we attempted to reconstruct in part the landscape (the fortification and the hill) of the church from Cîsnădioara. In the case of recreation of the hill we used satellite photography (Map 2) and an old picture from the 19th centuries (Fabini, H. 1998, p. 487) (fig. 13-14). The three-dimensional representation of the hill has big lacks because we had not the topographical data and for this reason our representation has a theatrical illustration (fig. 15).

6. Conclusions and perspectives

Through this paper we wanted to answer to the modern trends asked by the Romanian public and to realise a virtual reconstruction of a frame from the medieval Transylvania.

Through the publishing on the web site (<http://arheologie.ulbsibiu.ro/>) of 3D animated reconstruction of the two Romanic churches we want to offer to the public the possibility of knowing, understanding and appreciating a world partially dead.

(<http://arheologie.ulbsibiu.ro/membri/maria/virtual%20medieval.htm>)

We want that our animated 3D model of the Romanic churches and other archaeological data will be completed in 3D Virtual Museum for the Internet. In addition, taking into consideration that the technical tools are improving every day, we hope that our attempts will be a small transition step for better methods that will probably follow.

Acta Terrae Septemcastrensis, VI, 2007

7. References

AVRAM, Al., *Câteva considerații cu privire la bazinele scurte din bazinul Hârțibaciului și zona Sibiului*, în *Revista Muzeelor și Monumentelor. Seria Monumente Istorice și de Artă*, 50, nr. 2. 1981.

CHARITOS D., Lepouras G., Vassilakis C., Katifori V., Charissi A., Halatsi L., *Designing a virtual museum within a museum*. In *Proceedings of the 2001 conference on Virtual reality, archeology, and cultural heritage*, 2001, p. 284.

FABINI, H., *Atlas der siebenbürgisch-sächsischen Kirchenburgen und Dorfkirchen*, vol. I, Sibiu, 1998.

GLEUE, T., DÄHNE, P., *Design and Implementation of a Mobile Device for Outdoor Augmented reality in the Archeoguide Project*. In *Proceedings of the 2001 conference on Virtual reality, archeology, and cultural heritage*, 2001, p. 161-168.

GÜNDISCH, K., *Siebenbürgen und die Siebenbürger Sachsen*, München, 1998.

HEITEL, R., *Das romanische Baudenkmal von Cislădioara (Michelsburg)*, în: *Forschungen*, 1974, nr.17/2.

NÄGLER, Th., *Die Einwanderung der Siebenbürgen-Sachsen*, Bukarest, 1979.

PINTER, Z. K., *Rotonda de la Orastie*. In *In memoriam Radu Popa*, 2003, p. 263-286.

PLETINCKX, D., SILBERMAN, N., CALLEBAUT, D., *Presenting a Monument in Restoration: The Saint Laurentius Church in Ennemy and Its Role in the Francia Media Heritage Initiative*. In *Proceedings of the 2001 conference on Virtual reality, archaeology, and cultural heritage*, 2001, p. 197-204.

ROUSSOU, M., *Virtual Heritage: from the research lab to the broad public*. In: *Virtual Archaeology. Proceedings of the VAST Euroconference, Arezzo 24-25 November 2000, 2002*, p. 93-100.

SUCIU, C., LUCA, S.A., WHITE, M., *Reconstruction and study of the Vinča architecture and artifacts using virtual reality technology. Case study at Parța and Miercurea Sibiului sites*. In *Acta Terrae Septemcastrensis*, V, 2006.

TERRAS, M., *A virtual Tomb for Kelvingrove: Virtual Reality, Archaeology and Education*. In: *Internet archaeology*, **7**, **1999**, 2.4. Virtual Reality: a brief history (<http://intarch.ac.uk/journal/issue7/terras/con4.htm>).

WOJCIECHOWSKI R., WALCZAK K., WHITE M., CELLARY W., *Building Virtual and Augmented Reality Museum Exhibitions*. In *Proceedings of the ninth international conference on 3D Web technology Monterey, California, 2004*, p. 135-144.

Acta Terrae Septemcastrensis, VI, 2007

ZARA, J., SLAVIK, P., *Cultural heritage presentation in virtual environment: Czech experience*. In: *Database and Experts Systems Applications 2003. Proceedings. 14th International Workshop on*, 2003, p. 92-96.

ZIMMERMANN, F., WERNER, C., *Urkunderbuch zur Gesischte der Deutschen in Siebenbürgen*, vol I, Sibiu, 1892.

Acta Terrae Septemcastrensis, VI, 2007

8. List of illustration:

Map 1. Geographical localization of churches from Cisnădioara and Șura Mică.

Map 2. Satellite photo of the hill and of the Romanic church from Cisnădioara.

Figure 1. Plan of church from Cisnădioara (Fabini, H. 1998, p. 487).

Figure 2. Partial view of the 3D reconstruction of the church and fortification from Cisnădioara.

Figure 3. A 3D reconstruction of the Romanic church from Cisnădioara.

Figure 4. Virtual reconstruction of the Romanic church from Cisnădioara.

Figure 5. Virtual reconstruction of the Romanic church from Cisnădioara.

Figure 6. Virtual reconstruction of the western portal of the Romanic church form Cisnădioara.

Figure 7. Virtual reconstruction of the inside of Romanic church form Cisnădioara.

Figure 8. Virtual reconstruction of the inside of the Romanic church form Cisnădioara.

Figure 9. Proposal of virtual reconstruction of the church from Șura Mică in the 13th from point of the texture. West-southern view.

Figure 10. Proposal of virtual reconstruction of the church from Șura Mică in the 13th from point of the texture. West-southern view.

Figure 11. Proposal of virtual reconstruction of the church from Șura Mică in the 13th. Inside view.

Figure 12. Proposal of virtual reconstruction of the church from Șura Mică in the 13th. Inside.

Figure13. The fortification from Cisnădioara. Picture from the 19th century by M. Schlichting (after H. Fabini 1998, p. 487).

Figure 14. The fortification from Cisnădioara. Picture from 1864-1887 by L. Rohbock (after H. Fabini 1998, p. 487).

Figure 15. The Romanic church from Cisnădioara with the a partial virtual representation of the landscape.

Figure 16. The Romanic church from Cisnădioara without the landscape.

Photo 1. Romanic church from Cisnădioara. Southern view (after H. Fabini 1998).

Photo 2. Romanic church from Cisnădioara. The western portal.

Photo 3. Romanic church from Cisnădioara. Southern view (detail).

Photo 4. The southern portal from Cisnădioara.

Photo 5. The northern portal from Cisnădioara.

Photo 6. View from inside of the church from Cisnădioara.

Photo 7. View from inside of the church from Cisnădioara.

Photo 8. The church from Șura Mică. The west-southern view.

Photo 9. The church from Șura Mică. The east-southern view.

Photo 10. The church from Șura Mică. The east-northern view.

Acta Terrae Septemcastrensis, VI, 2007



Map1.

Acta Terrae Septemcastrensis, VI, 2007

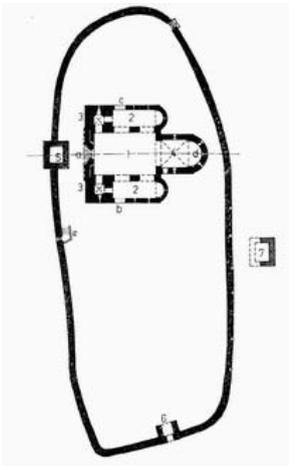


Figure 1.

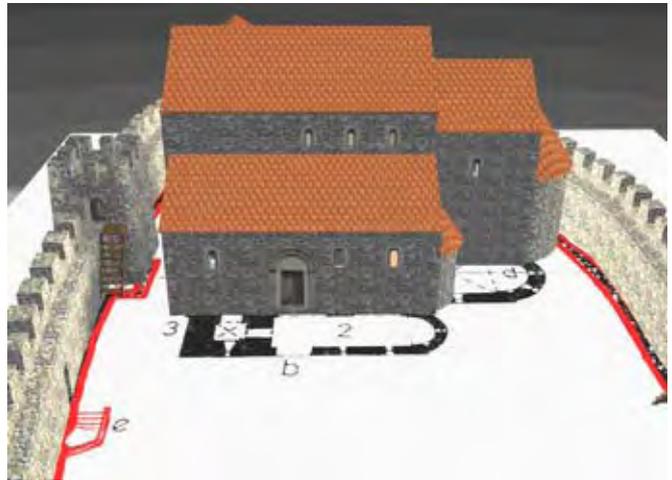


Figure 2.

Acta Terrae Septemcastrensis, VI, 2007



Foto 1.



Foto 2.



Foto 3.



Foto 4.



Foto 5.



Foto 6.



Foto 7.



Figure 3.



Figure 4.

Acta Terrae Septemcastrensis, VI, 2007



Figure 5.



Figure 6.

Acta Terrae Septemcastrensis, VI, 2007



Figure 7.



Figure 8.

Acta Terrae Septemcastrensis, VI, 2007



Foto 8.



Foto 9.



Foto 10.



Figure 9.

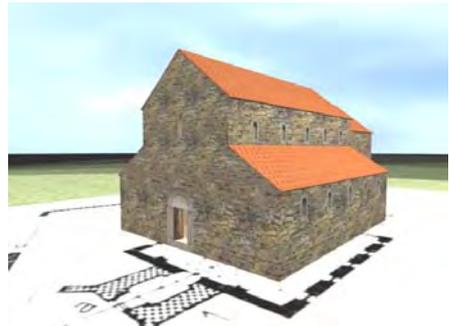


Figure 10.



Figure 11.



Figure 12.

Acta Terrae Septemcastrensis, VI, 2007



Map 2.

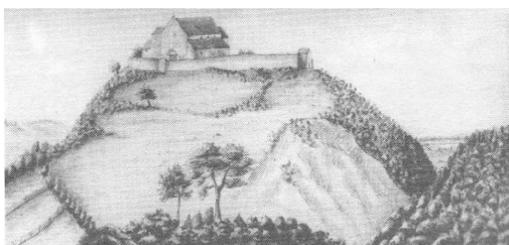


Figure 13.



Figure 14.



Figure 15.

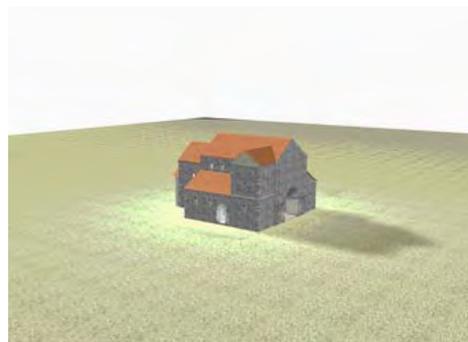


Figure 16.

Acta Terrae Septemcastrensis, VI, 2007

Acta Terrae Septemcastrensis, VI, 2007

DEAR COLLEAGUE,

This is to remind you that on the 31st of December (every year) is the deadline for sending your papers at the **Acta Terrae Septemcastrensis**, in order to be published. The editorial board will review it and you will be notified until 15 January if your paper was accepted. Six months after the publication of a printed version, **Acta Terrae Septemcastrensis** will also be electronically available on-line at <http://arheologie.ulbsibiu.ro/>

We are sending you our terms required for publishing your paper:

1. The articles should not extend 20-25 pages (an average 40,000 characters with spaces) plus illustrations - singles (figures) or in numbered plates (no more than 10-15 plates).
2. The text must be written in English, French, or German.
3. It must be printed using Word '97 or a later version.
4. All notes must be in the text (Luca 2004, 740, fig. 5).
5. Please use *Times New Roman* font.
6. The bibliography should be at the end of the text, in alphabetical order.

Examples:

For books

Luca 1999 – Luca S.A., *Das ende des Spätäneolithikums auf dem innenkarpatischen boden Rumäniens. Die Bodrogheresztúr-Kultur*. Alba Iulia (1999).

For papers in edited volume

Sîrbu 2004 – Sîrbu V., Sacrifices et inhumations rituelles des chevaux chez les Thraces du Nord des Balkans au cour de l'Âge du Fer. In: *Orbis Antiquus. Studia in honorem Ioannis Pisonis*, Cluj-Napoca (2004), 735 – 754.

For a journal article

Acta Terrae Septemcastrensis, VI, 2007

With one author

Luca 1999-2000 – Luca S.A., Aspekten des Neolithikums und des Äneolithikums aus dem Süden und Südwesten Siebenbürgens. In: *AnB(SN)*, 7-8 (1999-2000), 53 – 74.

With two authors

Luca, Suciu 2005 – Luca S.A., Suciu C., The Beginning of the Early Neolithic in Transylvania. In: *Scripta Praehistorica*, Iași (2005), 139 – 156.

With more than two authors

Vasiliev et alii, 2002 – Vasiliev V., Balaguri E. A., Rustoiu A., Cosma C., *Solotvino-Cetate (Ucraina Transcarpatică). Așezările din epoca bronzului, a doua epocă a fierului și din evul mediu timpuriu*. Cluj-Napoca (2002).

Abbreviations

AnB(SN) - Analele Banatului (serie nouă), Timișoara

7. The text and the illustrations must be recorded on a CD – For pictures please use JPG format / 300 pixels resolution.

8. The text and the illustrations must be offered on a CD, send by post - mail or at the door.

9. Please provide us, attached to your article, a post-address or an e-mail address and your phone number.

By E-mail only the text will be accepted. In order to avoid any errors, you are kindly asked to send also a printed copy of your paper.

Deadline for receiving the papers is the 31st of December every year.

Thank you in advance for your kind cooperation.

Best regards!

Prof.dr. Sabin Adrian Luca

e-mail: sabinadrian.luca@ulbsibiu.ro