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STUDIA ARCHAEOLOGICA

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**Editura MEGA**  
Cluj-Napoca  
2020

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Tel. 0040-257-281847.

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

Layout: Francisc Baja, Florin Mărginean, Victor Sava

ISSN 2392-8786



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

# Contents

<b>Emil Grigorescu</b> Middle Neolithic at Oradea-Salca “Pepinieră”.....	7
<b>Ana Fetcu, Alina Bințișan, Mihai Gligor</b> An Early Eneolithic isolated non-adult burial from Alba Iulia – <i>Lumea Nouă</i> (Romania).....	25
<b>Alin Frînculeasa</b> Earthen burial mounds and the Coțofeni Culture south of the Carpathians. The archaeological research in Ariceștii-Rahtivani – <i>Movila pe Râzoare</i> .....	35
<b>Mária Bondár, Anna Szécsényi-Nagy</b> Skull cult in the Late Copper Age.....	91
<b>Tünde Horváth, Attila Botond Szilasi</b> Salgótarján–Baglyas-kő: A multi-period prehistoric site and medieval castle.....	105
<b>Călin Ghemiș</b> The Bronze Age Shaft-hole Axe Discovered in Loranta, the Municipality of Brusturi, Bihor County.....	119
<b>Sofia Bertea</b> Preliminary analysis of the bronze age pottery from Dudeștii Vechi- <i>Cociohatul Mic</i> .....	125
<b>Alexandra Găvan, Marian Adrian Lie</b> A casting mould uncovered in the Bronze Age tell settlement from Toboliu. Notes on the origin and distribution of socketed chisels.....	157
<b>Andrei Stăvilă, Alexandru Hegyi, Bogdan Alin Craiovan</b> Non-invasive archaeological researches performed in the Middle Bronze Age settlement from Alioș-Valea Alioșu (Timiș County, Romania). Structures, chronology, and perspectives.....	169
<b>Florin Gogâltan, Andrei Stăvilă</b> The Late Bronze Age Settlement from Giroc (Timiș County). The 1992–1993 archaeological excavations ....	189
<b>Ioan Cristian Cireap</b> A spearhead discovered at Săvârșin – <i>Cetățuia</i> .....	243
<b>Remus Mihai Feraru</b> Feasts in Honor of Demeter in the Megarian Colonies on the Shores of Pontus Euxinus.....	249
<b>Andrei-Cătălin Dișcă</b> Roman Sites and Discoveries Around Potaissa (III). New Data and Clarifications Regarding the Topography of the Sites in Aiton.....	259
<b>Sorin Nemeti, Ștefana Cristea</b> New Reliefs Plaques from Pojejena (Caraș-Severin county) depicting the Danubian Riders.....	277
<b>Igor’ Khrapunov, Anastasiya Stoyanova</b> A Grave with Roman Imports in the Cemetery of Opushki in the Crimea.....	287
<b>Norbert Kapcsos</b> An attempt to reconstruct the chronology of the Roman and Early Migrations Period in the Lower Mureș Valley.....	305

<b>Vitalie Bârcă</b>	
Funerary Ditched Enclosures in the Sarmatian Funerary Ritual. Observations Regarding Their Introduction, Distribution, Use, and Dating.....	325
<b>Călin Cosma</b>	
Dwellings with Weapons from the Early Medieval Settlement in Sfântu Gheorghe (Mureş County).....	377
<b>Melinda Takács</b>	
Late Avar Age Sites in Szabolcs-Szatmár-Bereg County.....	411
<b>Margareta Simina Stanc, Daniel Ioan Malaxa, Dan Băcuet-Crişan</b>	
The Exploitation of Animal Resources During the Early Medieval Period. Case Study: The Settlements in Popeni <i>Pe Pogor</i> and Cuceu <i>Valea Bochii</i> (Sălaj County).....	431
<b>Daniela Tănase, Balázs Major</b>	
Preliminary Data Regarding the Archaeological Research Performed between 2016 and 2019 at the Cistercian Abbey in Igriş/Egres, Timiş County.....	439
<b>Florin Mărginean, Tamás Emődi</b>	
The Medieval Church in Iermata Neagră – <i>Feketegyarmat</i> (Arad County).....	455
<b>Dan Băcuet-Crişan</b>	
A Medieval Knight Passionate about Dice games. The Spur Decorated with “Dice” Discovered in Aghireş <i>Sub păşune</i> (Sălaj county).....	479
<b>Andrea Demjén</b>	
Glass Artefacts Uncovered at the Pricske Quarantine Facility (Harghita County).....	489
<b>Calin Ghemis, Constantin Iosif Zgardan</b>	
Oradea 1703–1710 – the Blockade Coins.....	501
Abbreviations.....	511

# An attempt to reconstruct the chronology of the Roman and Early Migrations Period in the Lower Mureş Valley\*

Norbert Kapcsos

**Abstract:** The present study summarizes a chapter from my PhD dissertation regarding the possible chronology of the Lower Mureş Region from the Roman and Early Migrations periods. The analysis was necessary because of the lack of consistency in the literature regarding the periodization of the before mentioned periods. From a methodological point of view I used an inductive approach, by analyzing the grave goods of the burials from the micro-region with seriation and correspondence analysis. As a result I have managed to distinguish six phases in the evolution of the archaeological material, from the turn between the 1<sup>st</sup> and the 2<sup>nd</sup> century and the middle or the second third of the 5<sup>th</sup> century, even though some critiques had to be formulated in relation to the suggested chronology.

**Keywords:** Lower Mureş Valley; Roman age; Migrations Period; Chronology; Burials.

**Introduction.** The research of the chronology of the Roman Age and the Early Migrations Period in the Lower Mureş Valley was hallmarked by several circumstances, which led to the elaboration of several distinct chronological systems that are sometimes difficult to compare. One of these circumstances is apparently prosaic, but more decisive: i.e. two separate political-administrative units share the territory of the analyzed micro-region of the Lower Mureş Valley. As a result, in the Hungarian part of the so-called „Sarmatian Barbaricum” Mihály Párducz has elaborated a broadly tripartite chronological system<sup>1</sup> which was further developed by Andrea Vaday. The latter system was based on the archaeological data – from Szolnok County – correlated with the written sources and it reestablished the limits of each period<sup>2</sup>. Meanwhile the Romanian research was characterized by the alternation and competition of chronological systems. In his earlier works Egon Dörner used a century-based division, while in his later works he adopted the chronology of Mihály Párducz<sup>3</sup>, but made it available only for the territories north of the river Mureş, while the territories on the southern part of the river were considered an integral part of the province of Dacia<sup>4</sup>. After a few decades – the earlier known –, mainly loose division of periods according to centuries became predominant, more cautious from the perspective of historical bias, but more arbitrary as well from the perspective of the evolution of the archaeological material<sup>5</sup>. Later, Vitalie Bârcă and Lavinia Grumeza independently adapted the chronological system suggested by Mihály Párducz and reevaluated by Andrea Vaday, however with further remarks referring to the characteristics of the archaeological data mainly from the Banat region<sup>6</sup>, and occasionally deductively correlating it to the Central European chronological systems<sup>7</sup>.

Several critiques have been formulated, that the evolution of the archaeological material does not always follow the course of the major historical events proposed as chronological boundaries<sup>8</sup>. To resolve this problem a very promising research program is being carried out, aimed at clarifying the

\* Translated by: Norbert Kapcsos.

<sup>1</sup> Párducz 1941; Párducz 1944; Párducz 1950.

<sup>2</sup> Vaday 1989, 205–210. Early, middle and late Sarmatian periods. Also adapted by Gabriella Vörös and Mihály Kóhegyi. See: Kóhegyi, Vörös 2011, 328.

<sup>3</sup> Dörner 1971, 683.

<sup>4</sup> Based on the misinterpretation of the archaeological material, and on historical preconceptions incorporated in the theory broadly developed by Carl Patsch (Patsch 1925, 194–196.) and promoted by Constantin Daicoviciu (Daicoviciu 1942). A theory contested and in the meantime disproved (see: Nemeth et. al. 2005, 99; Bârcă 2014, 24–27; Grumeza 2014, 17; Istvánovits, Kulcsár 2018, 235–236).

<sup>5</sup> Hügel, Barbu 1997, 570; Rep. Arch 1999.

<sup>6</sup> Bârcă 2014a, 29–33; Grumeza 2014, 15–25.

<sup>7</sup> Bârcă 2014a, 31–33; Grumeza 2019, 30–31.

<sup>8</sup> Istvánovits 1998, 42; Kóhegyi, Vörös 2011, 328.; Istvánovits, Kulcsár 2018, 305.

chronological issues of the Sarmatian Period in the Carpathian Basin by analyzing the evolution of the archaeological material. The survey is based on a complex burial database and its future results, based on the seriation of the burial finds, will be decisive for most of the region of the Carpathian Basin<sup>9</sup>.

As a result of the difficulties in comparing the different chronological systems of the Roman Age and Early Migrations Period, and correlating them with other chronological systems, I made an attempt to elaborate inductively the chronology of the micro-region under discussion. The seriation together with correspondence analysis seemed to be an appropriate method<sup>10</sup>.

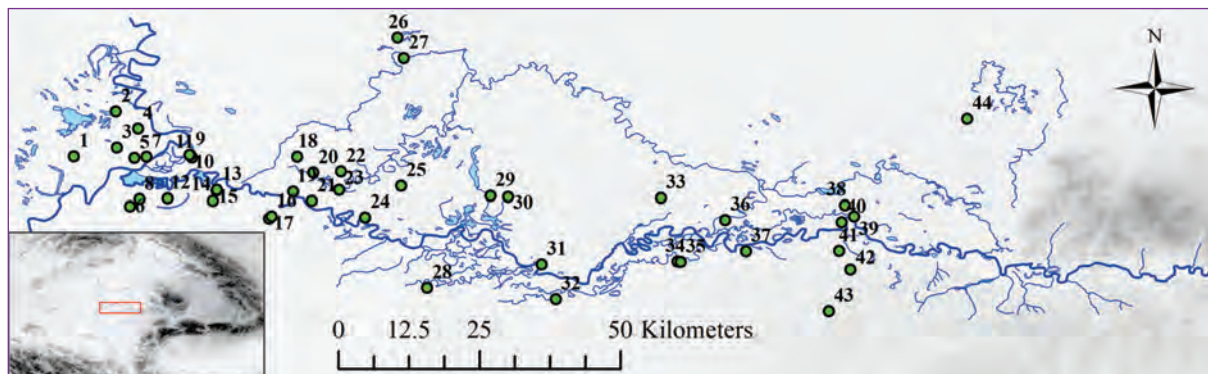


Fig. 1. The analyzed funerary places from the Lower Mureș Valley. The name of the burial places in Appendix/Table no. 2.

**Methodological aspects.** The analyzed material comes from "the closed" funerary features (477 graves) of the burial places from the Lower Mureș Valley (Fig.1). Considering the fact that the majority of objects from the graves are gender-related and that the rhythm of change in female fashion could differ much from those of male fashion, the seriation of the graves was carried out according to the gender of the deceased<sup>11</sup>.



Fig. 2. Division of the graves according to the gender of the deceased.

Unfortunately only 38% of the graves was anthropologically analyzed<sup>12</sup>, so in the majority of the cases – if it was possible – the gender of the deceased buried in these graves was archaeologically defined in earlier publications (Fig. 2). However the overall proportion of child graves and those without data (uncertain – 51%) is almost the same as the overall proportion of the anthropologically and archaeologically defined female and male graves (certain – 49%). In order to avoid omitting the uncertain graves from the analysis or to apply any other arbitrary solutions, as a conventional solution of this methodological dilemma I chose to define statistically the gender of the children in these graves and of those of without data (NA) according to the functional categories of the objects from the graves (Fig. 3)<sup>13</sup>.

<sup>9</sup> Istvánovits, Kulcsár 2017.

<sup>10</sup> For a similar approach see: Diaconescu 2014; Iarmulschi 2016.

<sup>11</sup> Jensen, Høilund Nielsen 1997, 34. Otherwise the graves will form two separate clusters in the correspondence analysis, female and male, and with the child graves between them, as well as those without data referring to their sex. Referring to the seriation Zsuzsanna Siklósi draws attention as well about this issue (Siklósi 2010, 63.). For a similar model see: Stadler 2015, 28–29.

<sup>12</sup> A great part of the burial places were excavated before the 1990s when the anthropological analysis of the graves was not carried out.

<sup>13</sup> For the inspirational model see: Stadler 2015, 30.



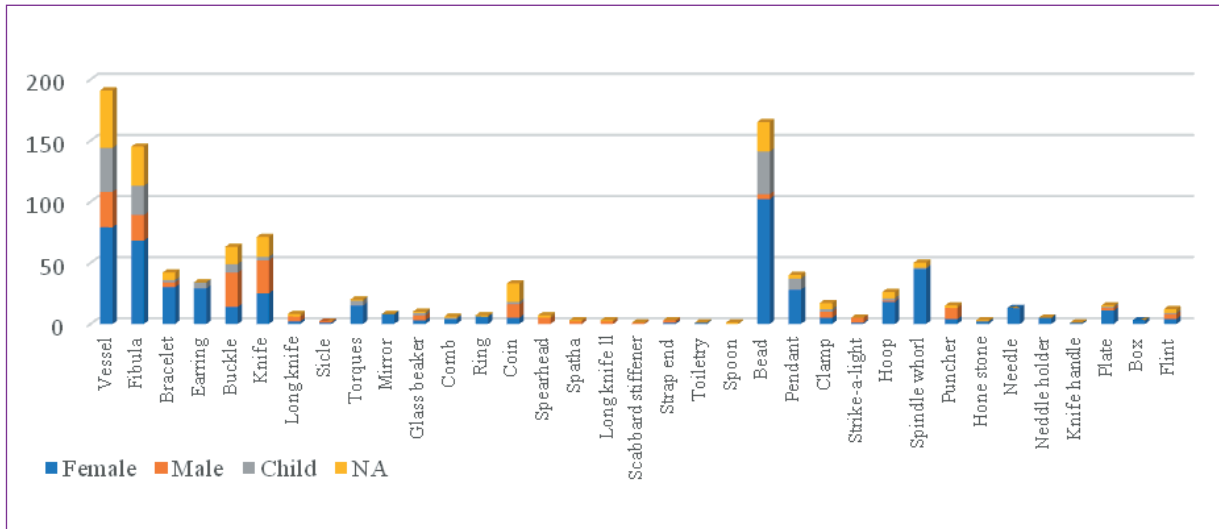


Fig. 3. Division of function-related categories according to the gender of the deceased in certain graves (female and male graves – certain; child and NA – uncertain).

The gender of the anthropologically and archaeologically defined bodies in these graves were considered statistically certain and the rest of the graves were considered uncertain from this point of view, so following this method with the help of correspondence analysis I managed to statistically separate the female graves from the male ones. The correspondence analysis of the graves includes 351 units (graves) and 35 variables (grave good categories), in a presence/absence data matrix. PAST 3.25 software was used for performing the correspondence analysis (Fig. 4).

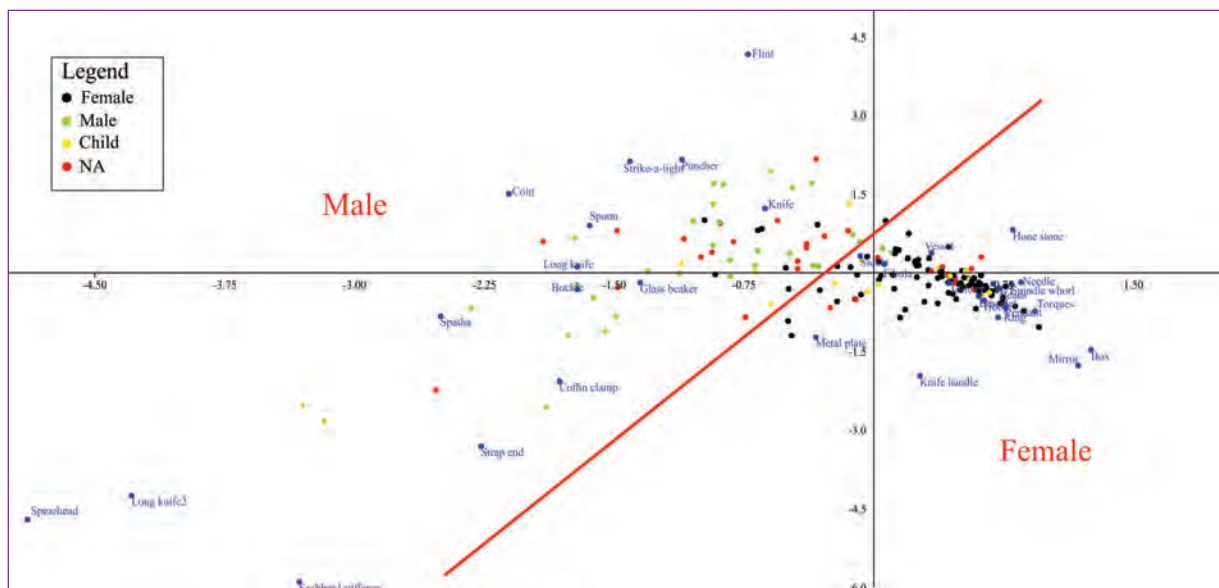


Fig. 4. Distribution of funerary features according to their statistical gender.

**Correspondence analysis and seriation.** The analyzed data matrix included 477 units (graves) and 389 variables (object types) in a presence/absence data matrix. It was also necessary to elaborate a proper typology of the grave goods/object categories available in the analyzed micro-region. The typology of the objects was elaborated according to the morphological traits of each object categories<sup>14</sup>. Although I couldn't use the typology of Yvett Kujáni<sup>15</sup> because of its chronological limits, the study was very useful as well as Andrea Vaday's in the elaboration of my own object typology. The only

<sup>14</sup> In the case of ceramics the typology was built exclusively upon their morphological features, which did not include their decoration. Earlier publications did not allow for such an approach.

<sup>15</sup> Kujáni 2016.

typology that I could use was the bead typology proposed by Vitalie Bârcă<sup>16</sup> enriched and modified with the new specimens.

As a methodological work hypothesis I had to eliminate *a priori* the beads from the analysis, because of the lack of basic information from earlier works regarding their material, size, and/or color. I also had to omit the 1–2<sup>nd</sup>-century coins from the analysis, because they were also very popular in the funerary practices of later periods<sup>17</sup>. I omitted the flints from the analysis as well, because of their pure function-related character.

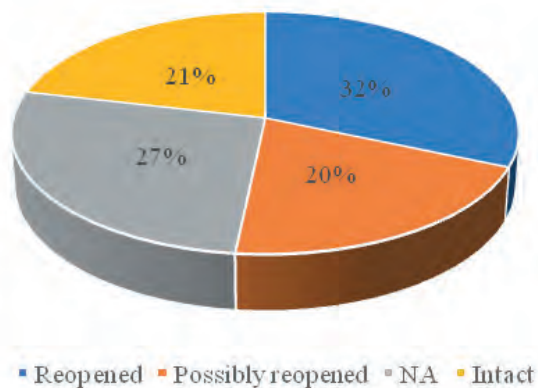


Fig. 5. The proportion of reopened and intact graves.

As another *a priori* feature of the analyzed graves is that one should be aware that a significant part of them was „reopened” even in antiquity (Fig. 5). This influences the correspondence analysis in a way that there are many graves with few but mainly unique variables<sup>18</sup> that could spoil the plot. A method to resolve this peculiar situation is to automatically eliminate the unique variables, but in this case this solution results in the loss of many graves attached to the main body of the data matrix with only one variable. As a solution to minimize this loss I chose to eliminate manually the odd units and variables<sup>19</sup>. PAST 3.25 software was used to perform the correspondence analysis and the seriation of the female and male graves.

### Female graves

After eliminating the “null” and “single” units<sup>20</sup> and “null” variables<sup>21</sup>, and the *a priori* excluded variables according to the work hypothesis, the seriation of female graves initially included 147 units (graves) and 268 variables (object types). The parabola shape in the correspondence analysis expresses

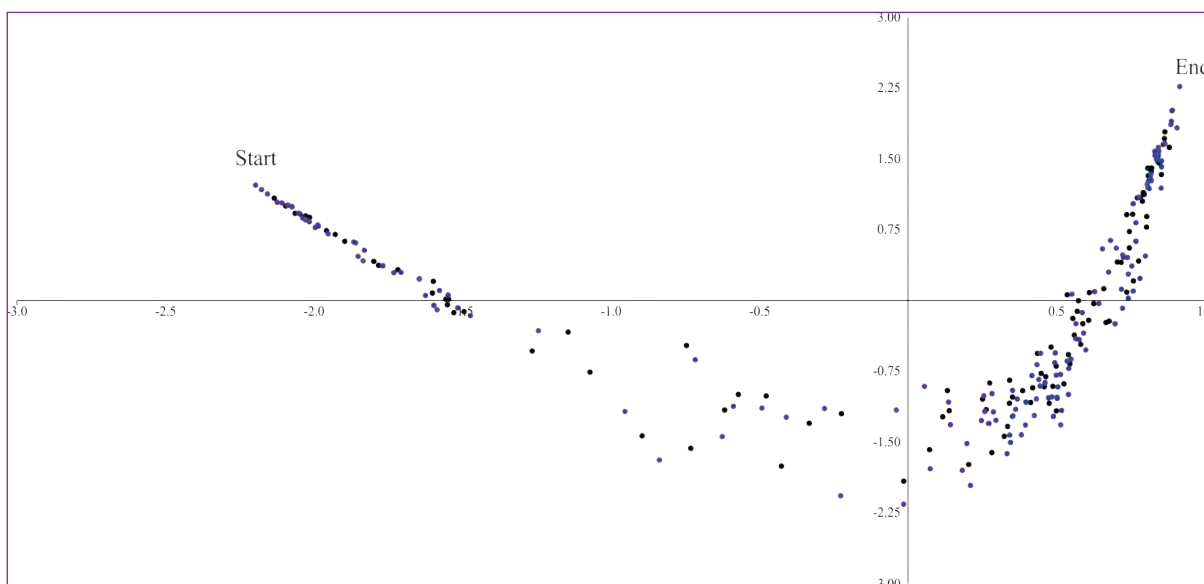


Fig. 6. CA results of the female graves. (black dots: units – graves; blue dots: variables – object types)

<sup>16</sup> Bârcă 2014a, 127. Elaborated by Lavinia Grumeza, Luciana Rumeșă-Irimuș and Vitalie Bârcă.

<sup>17</sup> Istvánovits Eszter and Kulcsár Valéria had also pointed out that they were in use for a wide period. See: Istvánovits, Kulcsár 1994, 70.

<sup>18</sup> Units with many or “heavy” foreign variables fall outside the main plot in the correspondence analysis (Jensen, Høilund Nielsen 1997, 49).

<sup>19</sup> Single occurrences of odd variables do not influence in a significant manner the results of the seriation (Jensen, Høilund Nielsen 1997, 45).

<sup>20</sup> Graves without funerary objects.

<sup>21</sup> Object types which are not present in female graves.

the acceptable seriation<sup>22</sup>, and to get an acceptable seriation I used the instructions of Claus Kjeld Jensen and Karen Høilund Nielsen<sup>23</sup> during the "experimental data analysis"<sup>24</sup>. After the elimination of the redundant units and/or variables the parabola shape revealed<sup>25</sup> in the data matrix of the female graves, based on 106 units and 186 variables (Fig. 6).

One could distinguish between six phases in the relative chronological sequence of the female burials based on the clustered spacing point of the eigenvector plot (Fig. 7), however there is only a slight gap between phases IV<sub>F</sub>-V<sub>F</sub>-VI<sub>F</sub>.<sup>26</sup> As the parabola shape has revealed, the seriation of the graves was considered acceptable (Fig. 8).

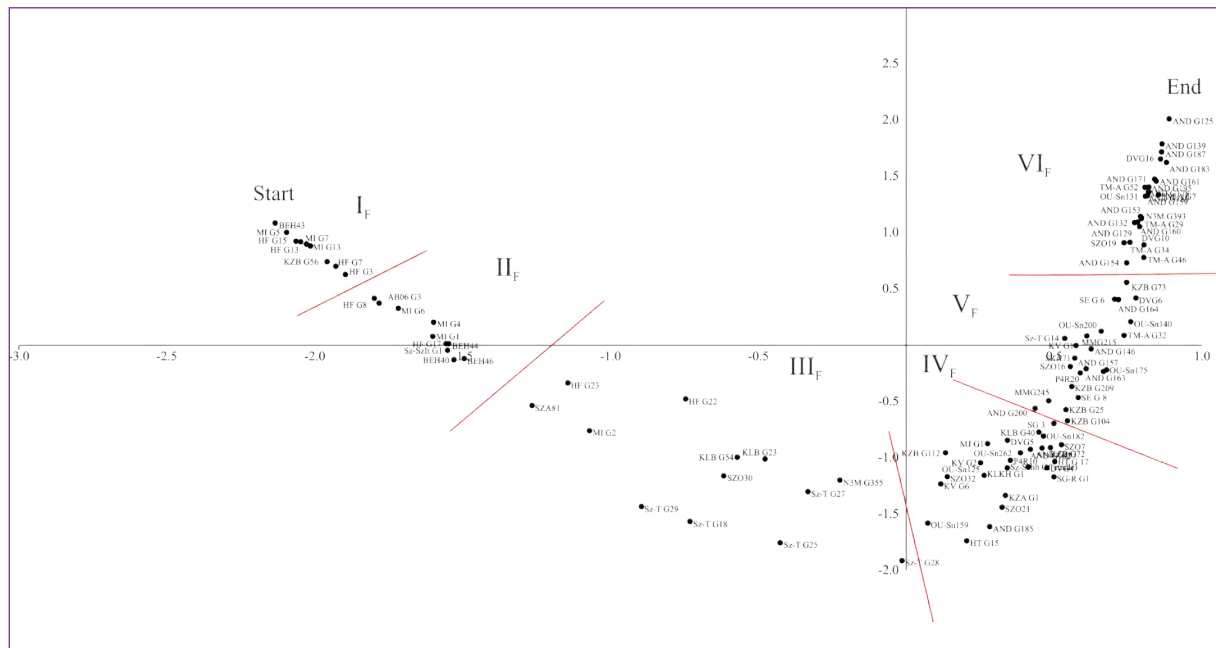


Fig. 7. CA results of the female graves and the phases in their development.

### Male graves

In the case of male graves I eliminated the "single" and "null" units, the "null" variables, and *a priori* defined variables as well. The analysis of male graves thus initially included 69 units (graves) and 101 variables (object types). After following the former method of "experimental data analysis" – the elimination of redundant units and variables – the parabola shape has revealed based on 58 units, and 86 variables (Fig. 9)<sup>27</sup>. In contrast with the female graves, in the development of the male graves only five phases could be distinguished, with two sub-phases in Phase II<sub>M</sub>, and Phase V<sub>M</sub> (Fig. 10). According to the parabola shape in the plot of the CA I the seriation is considered acceptable (Fig. 11).

<sup>22</sup> Jensen, Høilund Nielsen 1997, 38.

<sup>23</sup> Jensen, Høilund Nielsen 1997.

<sup>24</sup> The concept of "experimental data analysis" refers to the elimination of the distorting factors to obtain the ideal parabola structure in the data matrix (Jensen, Høilund Nielsen 1997, 49).

<sup>25</sup> It was necessary to perform 51 manual eliminations to obtain a parabola shape in the data matrix.

<sup>26</sup> The explanation of this „phenomenon” in the plot is due to the rhythm of change in the data matrix. As one can observe the parabola has an asymmetrical shape. The skewed legs of the parabola depict a rapid change, where the incidents are at a larger distance from each other, while the vertical leg of the parabola illustrates a slower change, and the incidents are closer to each other (Jensen, Høilund Nielsen 1997, 48.). Basically it also reflects the current state of research. There are known three large burial places from the „Sarmatian Period”, namely the ones from Tápé-Malajdok A, Apátfalva Nagyút-dűlő, Óföldaák-Ürmös. Even if the burials were „reopened” in a large percent, the number of intact graves is quite considerable, which means that in the case of rich assemblages many graves can represent slight changes, while graves with poor assemblages may have only a few burials to represent a major change (Jensen, Høilund Nielsen 1997, 44.).

<sup>27</sup> The parabola shape has revealed after 14 manual eliminations.

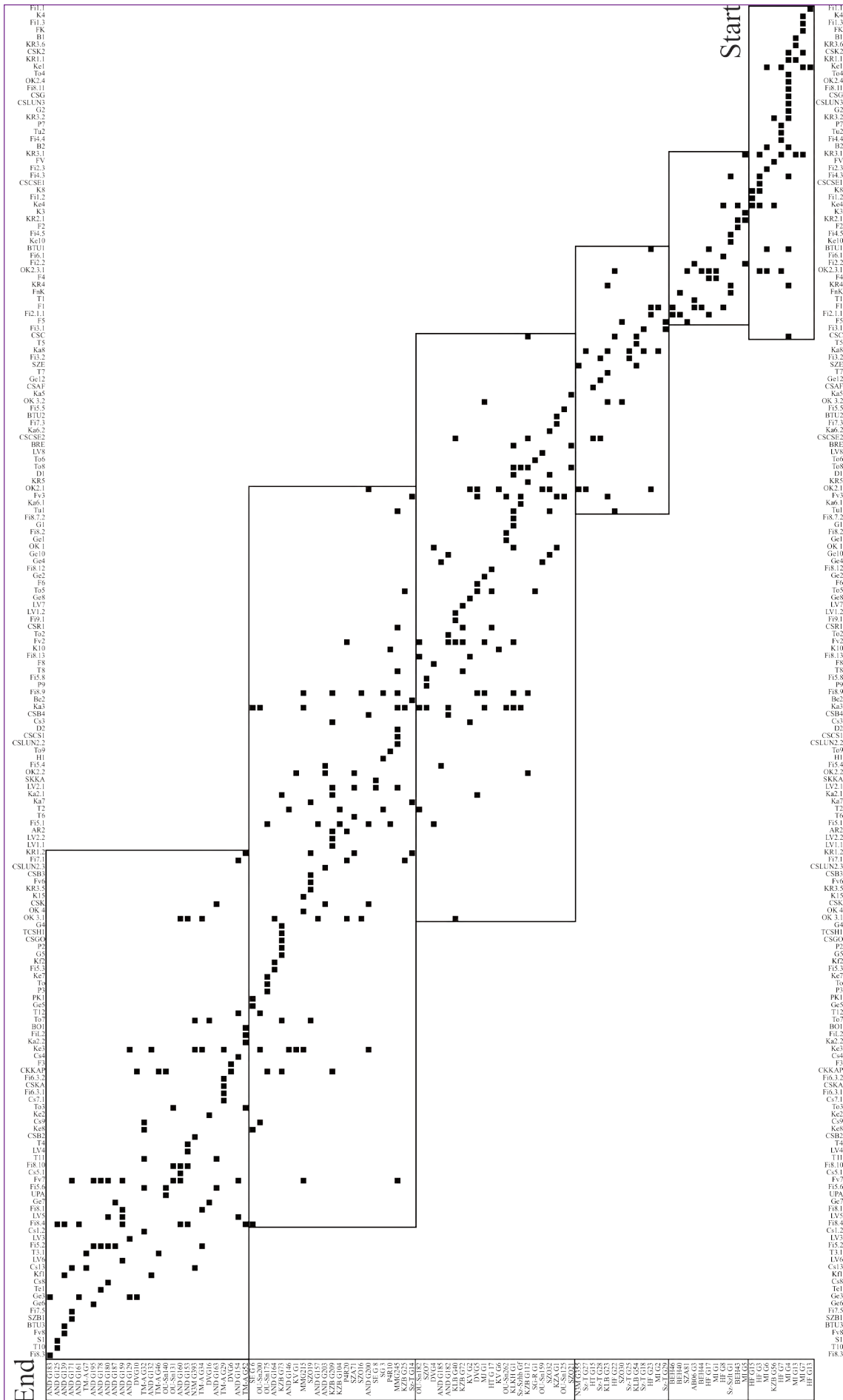


Fig. 8. Seriation matrix of female graves.

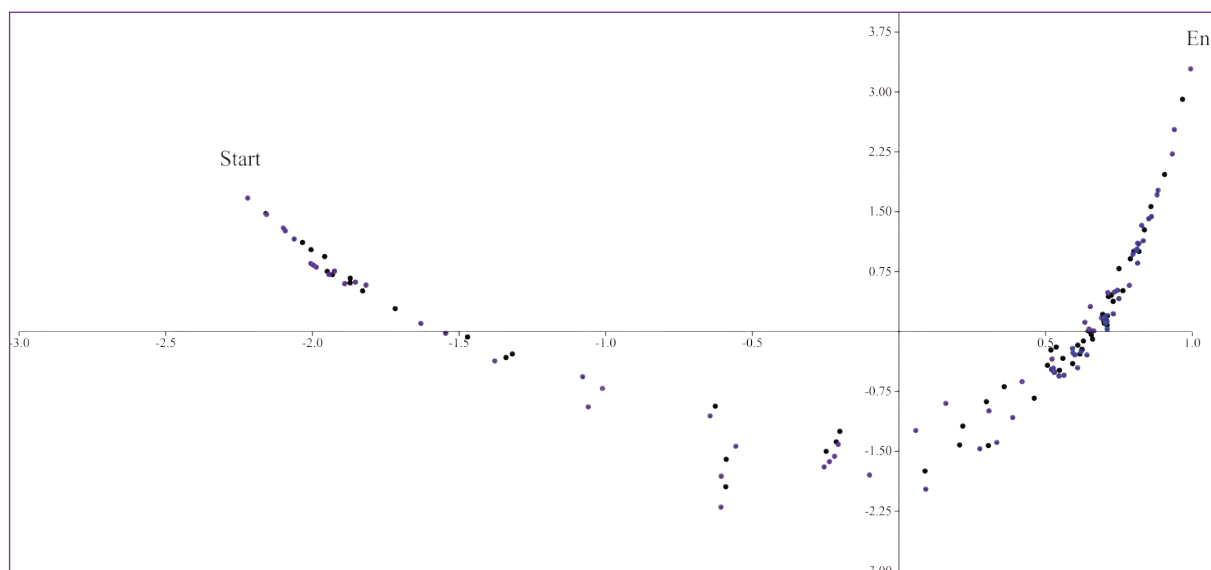


Fig. 9. CA results of the male graves. (black dots: units – graves; blue dots: variables – object types).

**The correlation of the sequences.** The analysis resulted with two separate sequences for the female and male graves, which are independent from each other. As one can observe the number of phases for each sequence are unequal, and their boundaries are not necessarily contemporaneous<sup>28</sup>, or in other words they are dissimilar and asynchronous. Still, there are 37 shared variables/object types (Table no. 1) between the two sequences which could be useful in the merging of the different phases.

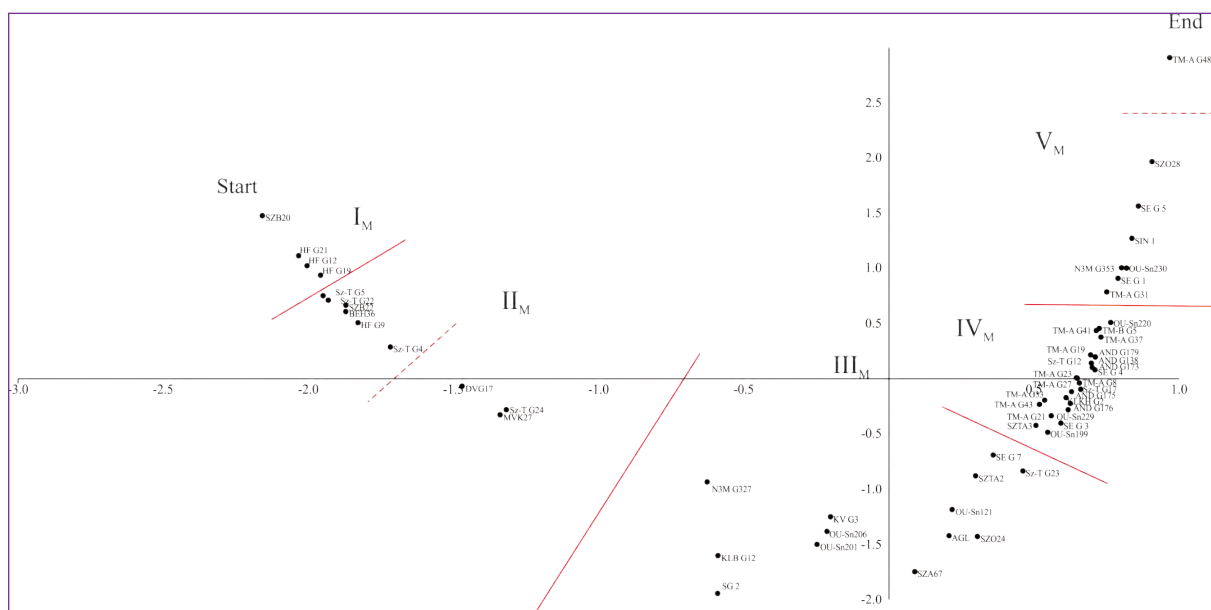


Fig. 10. CA results of the male graves and the phases in their development

Based on the object type combinations of each phase (Table no. 1 and Fig. 12), five main phases could be outlined, where Phase VI can be split in the case of male graves, and the sub-phases Phase IIa<sub>M</sub> and Phase IIb<sub>M</sub> are in fact broadly similar with Phase III<sub>F</sub> and IV<sub>F</sub>. As a result of the correlation, Phase I=I<sub>F</sub>=∅<sub>M</sub>; Phase II=II<sub>F</sub>=I<sub>M</sub>; Phase III=III<sub>F</sub>=IIa<sub>M</sub>; Phase IV=IV<sub>F</sub>=IIb<sub>M</sub>; Phase V=V<sub>F</sub>=III<sub>M</sub>; Phase VI=VI<sub>F</sub>=IV<sub>M</sub>+V<sub>M</sub> (Fig. 13, and 15/B).

<sup>28</sup> A similar case was described at the late Iron Age and Migrations Period graves from Gotland (for further information see: Rundkvist 2003, 27–29).

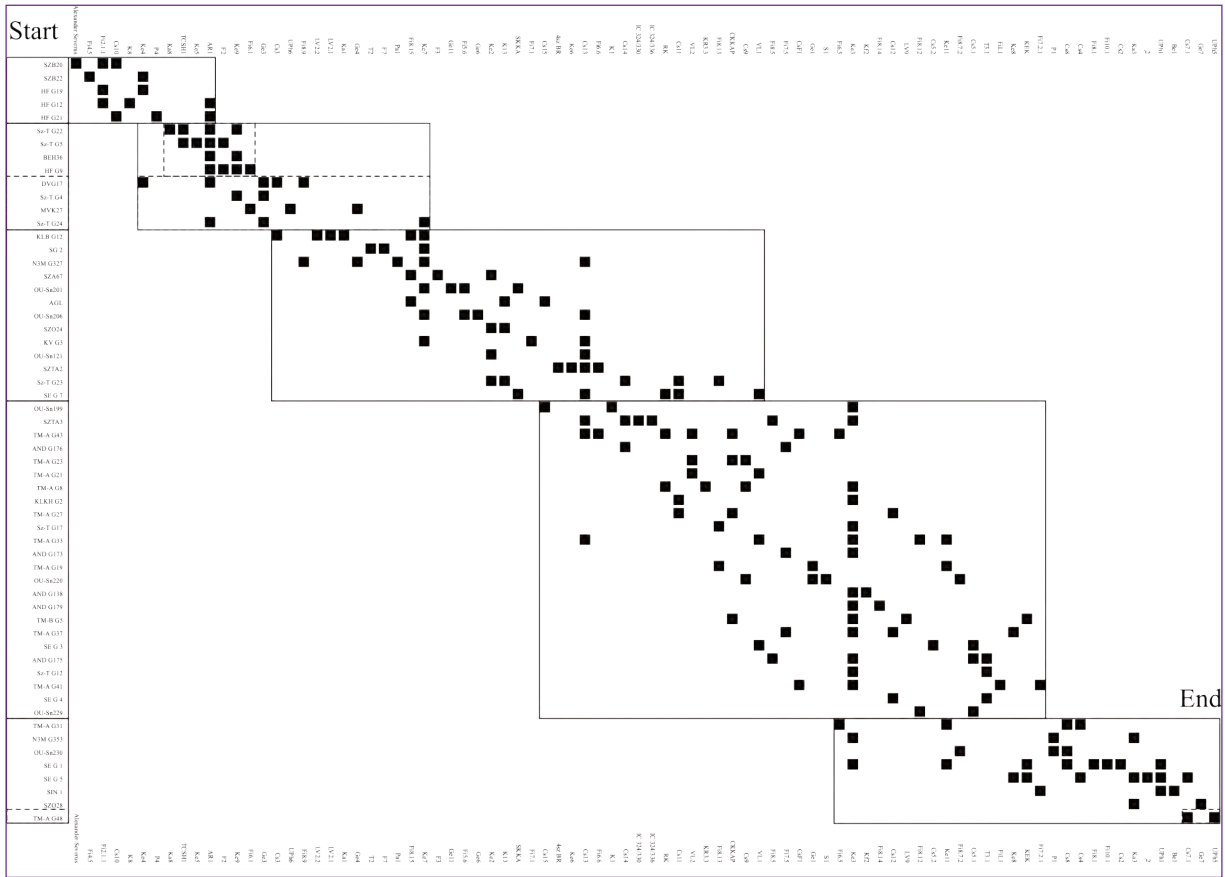


Fig. 11. Seriation matrix of male graves.

**Absolute chronology.** In order to propose an absolute chronology for the synchronized phases (Fig. 13 and Fig. 16/B.) the safest possible solution offered was to follow the chronological indications highlighted by the brooch types of "Roman" and "barbarian" origin (Fig. 13)<sup>29</sup>. As one can observe mainly the brooch types of "Roman origin" have a more elaborated chronology which could be useful in the determination of the absolute chronological frames of each phases from the sequence, while most of the „barbarian” ones seems to have generally a wider chronological distribution<sup>30</sup> (Fig. 14).

	Fi4.5	Fi6.1	Fi2.1.1	Fi8.9	Fi5.6	Fi7.1	Fi8.13	Fi8.7.2	Fi8.1	Cs3	Cs13	Cs9	Cs5.1	Cs8	Ka8	Ka3	Ke4	Ke7	Ke2	Ke3	Ke8	K8	F2	Ge4	T2	F3	Ge1	Ge6	Ge7	Kf2	T3.1	LV2.1	LV2.2	CKKA	SKKA	S1	TCSH1		
Phase IIF	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Phase IM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase IF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

<sup>29</sup> Though a great part of the burials from Makó-Igási Jándó has available C<sub>14</sub> data, they were not sufficient to elaborate an absolute chronology, as several samples would have been required for each period. Still, they confirmed very well the results of the seriation and the chronological value of the Roman brooches from Phase IF.

<sup>30</sup> It is not surprising if one takes account, that each "barbarian" brooch type has a wide variability. The production technology of these types is quite simplistic, which can explain the varied morphological traits of each type (Kapcsos 2019b, 56. note 34). This resulted difficulties in the elaborations of earlier typo-chronologies as accurate as the "Roman" origin brooches have.

	Fi4.5	Fi6.1	Fi2.1.1	Fi8.9	Fi5.6	Fi7.1	Fi8.1.3	Fi8.7.2	Fi8.1	Cs3	Cs13	Cs9	Cs5.1	Cs8	Ka8	Ka3	Ke4	Ke7	Ke2	Ke3	Ke8	K8	F2	Ge4	T2	F3	Ge1	Ge6	Ge7	Kf2	T3.1	LV2.1	LV2.2	CKKA	SKKA	S1	TCSH1		
Phase IIaM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Phase IIbM	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase IIIF	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phase IIIM	0	0	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	1	1	0	1	0	0	0	1	1	0	1	0	0	0	0
Phase IVF	0	0	0	1	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Phase IVM	0	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	0	1	0	0
Phase V F	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	1	0	1	1	1	1	1	0	1
IF Phase VM	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Phase VIF	0	0	0	0	1	1	0	0	1	0	1	1	1	1	0	0	0	1	1	1	1	0	0	0	0	1	0	1	1	0	1	0	0	1	0	1	0	0	0

Table no. 1. Object type combination of each phases.

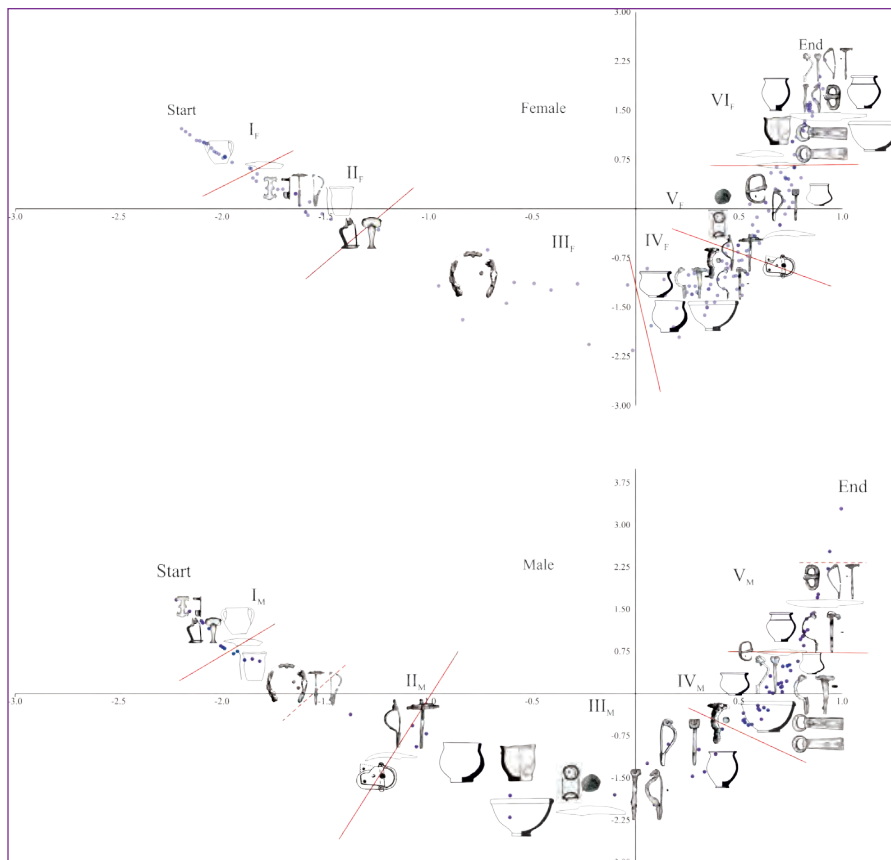


Fig. 12. Object type combination of each sequence.

Phases	Female	Male
I		
II		
III		
IV		
V		
VI		

Fig. 13. Characteristic brooch types for each phase. Red line: correlated phase boundaries. Blue dashed line: phase boundaries of female and male sequences. Orange dashed line: sub-phase boundaries.

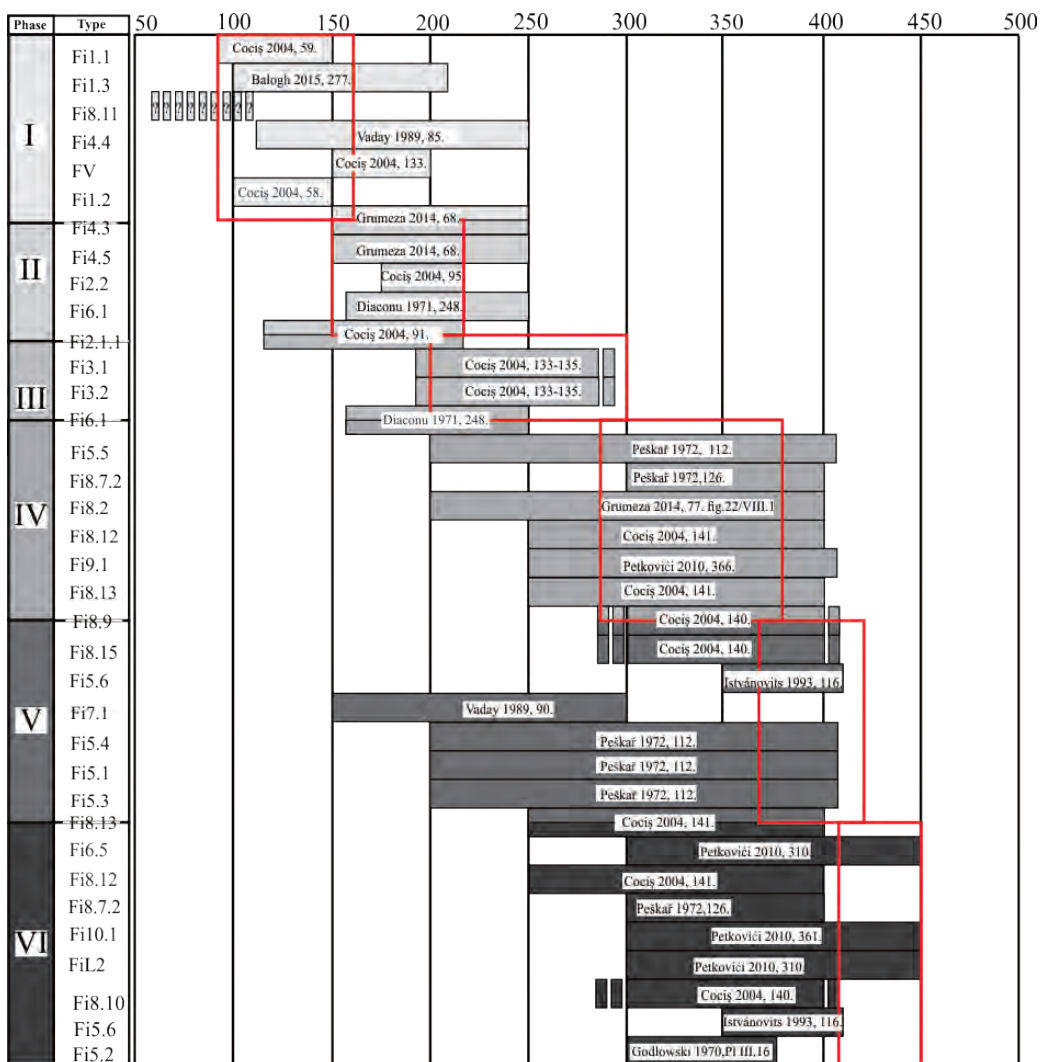


Fig. 14. The chronology of the characteristic brooch types from each phase.



**Phase I** – turn of the 1<sup>st</sup>–2<sup>nd</sup> centuries – and the middle or the 60' of the 2<sup>nd</sup> century.

The earliest dating element for Phase I is the strongly profiled brooch with trapezoidal foot (Fig. 13. Fi1.1), which can be dated to the end of the 1<sup>st</sup> – first half of 2<sup>nd</sup> century (Fig. 14), and it nearly coincides with the dating of the strongly profiled brooch of the Cociş 8a9 type<sup>31</sup> (Fig. 13, Fi1.2) to the first half of the 2<sup>nd</sup> century. The Fi1.3 type brooch (Fig. 13.) is a unique specimen, and it has an uncertain dating mainly to the 2<sup>nd</sup> century<sup>32</sup> (Fig. 13), while the FV type or so-called "Victoval" type brooch (Fig. 13. FV) is dated to the second half of 2<sup>nd</sup> century (Fig. 14). An interesting type represents the Fi8.11 type brooch, its morphological characteristics reminds one to the traits of late La Tène period brooches, though its dating still remains uncertain<sup>33</sup>. The enameled brooch of Fi4.3 (Fig. 13) – which is dated between the second half of 2<sup>nd</sup> century and the first half of the 3<sup>rd</sup> century (Fig. 14) – seems to be the type that is a common element in phase I and phase II.

**Phase II** – the middle or the 60' of the 2<sup>nd</sup> century – and the first two decades of the 3<sup>rd</sup> century

To define the chronological limits of Phase II, the relevant brooches were type Fi2.2 which can be dated between 170–220 (Fig. 13), Fi6.1 or the so-called "Dacian" type brooch with underturned leg, made of two pieces, which is dated around 160–250 (Fig. 14), and the Fi2.1.1 "Knee brooch" type (Fig. 13). The latter type is dated from the beginning of Hadrianus' reign and the middle of 2<sup>nd</sup> century until the end of 2<sup>nd</sup> – the beginning of the 3<sup>rd</sup> centuries<sup>34</sup>. The chronological limits of the phase seems to be confirmed by the so-called "Sarmatian type" buckles, which can be dated to the end of the 2<sup>nd</sup> – beginning of the 3<sup>rd</sup> centuries<sup>35</sup>.

**Phase III** – the beginning of the 3<sup>rd</sup> century – and the last two decades of the 3<sup>rd</sup> century

The brooches of type Fi2.1.1 and Fi6.1 are also present in Phase III, while the so-called "Sarmatian type" brooches of type Fi3.1 and Fi3.2 (Fig. 13) also seems characteristic for this phase, which can be dated to the end of the 2<sup>nd</sup> century and the last third of the 3<sup>rd</sup> century<sup>36</sup>.

**Phase IV** – the end of the 3<sup>rd</sup> – last third of the 4<sup>th</sup> century.

One of the characteristics of this phase is the great variety of the brooches, but this time mainly of "barbarian" origin, which makes it complicate to date this phase. One of the most certain dating elements is the box type disc shaped brooch of type Fi9.1 (Fig. 13) which has been dated between the second half of the 3<sup>rd</sup> century and the end of the 4<sup>th</sup> century (Fig. 14). The lower chronological limit of this phase could be narrowed by the glass beaker with glass thread ornament dated to the 3<sup>rd</sup> century<sup>37</sup> (Fig. 15) and the Fi6.1 type brooch already mentioned (Fig. 13). The most representative type is the so-called "Bügelknopf fibel" of type Fi8.9 (Fig. 13) which is dated between the end of the 3<sup>rd</sup> century and the end of the 4<sup>th</sup> with the mention that they are also frequent at the beginning of the 5<sup>th</sup> century<sup>38</sup>. As one can observe, it also represents a transition type between Phase IV and Phase V.

**Phase V** – Last third of the 4<sup>th</sup> century – the first two decades of the 5<sup>th</sup> century.

The beginning of this phase is hallmarked by the above-mentioned Fi8.9 type brooch, while there are several type of brooches with under and side-turned legs made of one or two pieces, which mainly have an uncertain dating (Fig. 13 and Fig. 14). One of the brooches with a more certain dating is the one with underturned leg made of iron, of type Fi5.6 which type was dated by Eszter Istvánovits around the second half of the 4<sup>th</sup> century and the beginning of the 5<sup>th</sup> century. Referring to the dating of this phase a slight clue consists of the bronze flitters of grave 209 from Kiszombor B, which shows remarkable similarities with the semispherical golden flitters of the female grave from Untersiebenbrunn<sup>39</sup>.

<sup>31</sup> Cociş 2004, 57–58.

<sup>32</sup> According to Csilla Balogh (Balogh 2015, 277.), but as she already mentioned, it has remarkable similarities with the Okorág type brooches, and their dating starts from the end of the 1<sup>st</sup> century (Maráz 2008, 86).

<sup>33</sup> Csilla Balogh identified it as a T type brooch and dated it around the middle of the 3<sup>rd</sup> century (Balogh 2015, 275), but its morphological characteristics remind one of the traits of the brooches Rustoiu type 7 (Rustoiu 1997, 40–41), and Zirra type 46 (Zirra 2017, 75–79.) from late La Tène period, though in the lack of exact analogies it is hard to confirm this assumption.

<sup>34</sup> Cociş 2004, 90. With the remark that they were also (re)produced in the Barbaricum, according to the moldings from Tiszaföldvár-Téglagyár (Vaday 2005, 158; see also: Kóhegyi, Vörös 2011, 374). Beside the uncertainties in the dating of these types, another interesting aspect is if they were considered prestige goods for persons with higher social status in the early periods and were „imitated" during a later period (see more on this topic: Miller 2006, 89.)

<sup>35</sup> Istvánovits, Kulcsár 2002, 97.

<sup>36</sup> See also: Cociş, Bârcă 2014.

<sup>37</sup> Löffler, Borsódi 2019, 71.

<sup>38</sup> Grumeza 2014, 76.

<sup>39</sup> Tejral 2011, 163.

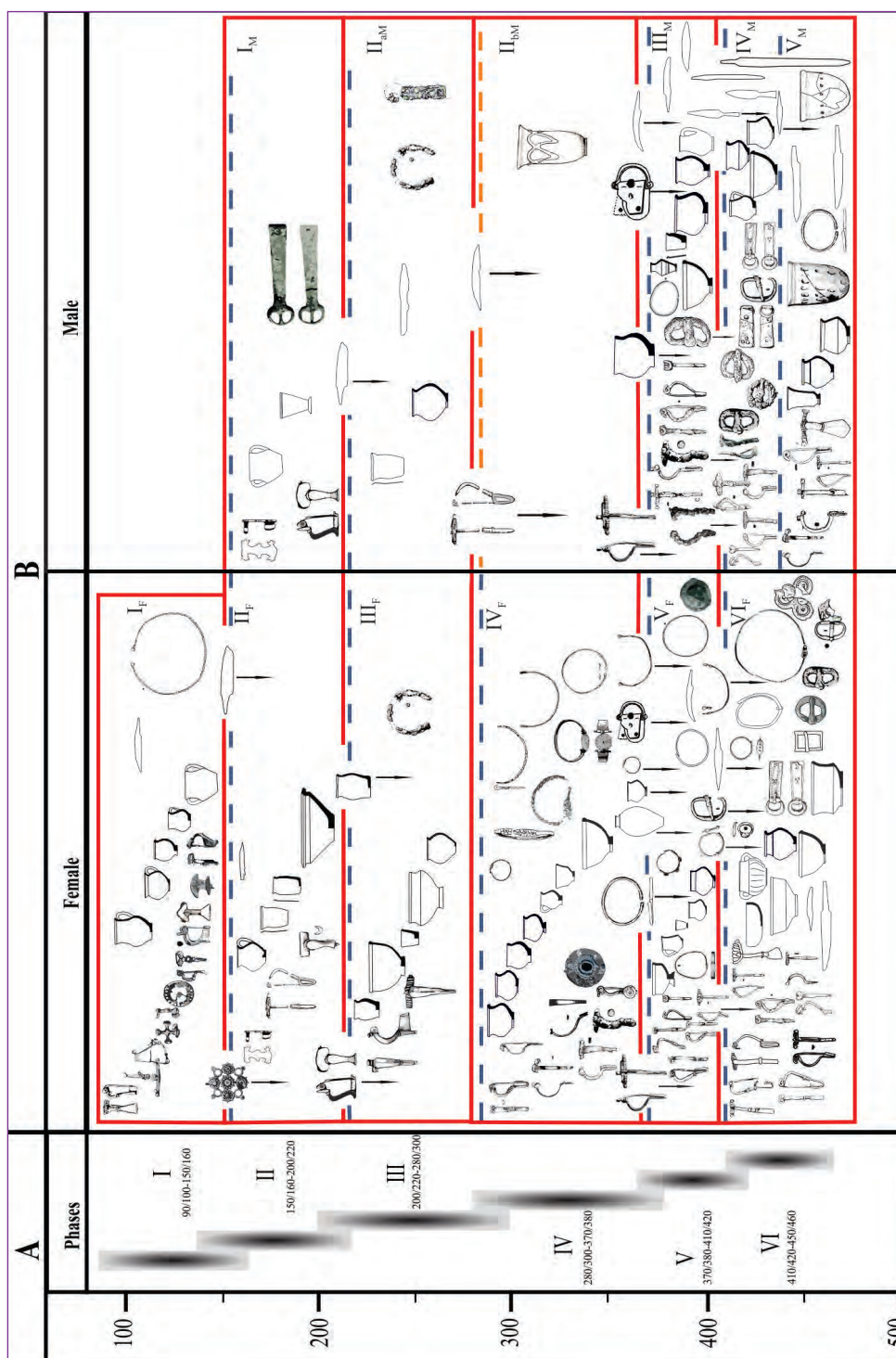


Fig. 15. Selected types of artifacts according to each phase. Red line: correlated phase boundaries. Blue dashed line: phase boundaries of female and male sequences. Orange dashed line: sub-phase boundaries.

**Phase VI** – First decades of the 5<sup>th</sup> century – around the middle or the 60' of the 5<sup>th</sup> century (or slightly later)

In this phase one can observe even a greater variety of the "barbarian" type brooches (Fig. 13), unfortunately all of them with a wide chronological framework. The onion-shaped brooch of type Fi10.1 (Fig. 13) has a wide dating to the 4<sup>th</sup> century and the first half of the 5<sup>th</sup> century, but this dating of the phase could be reduced with the help of the Kowalk/Straume IA type glass beakers, which are mainly dated to the end of the 4<sup>th</sup> – first quarter of the 5<sup>th</sup> century,<sup>40</sup> with the mention that they are also present in the middle third of the 5<sup>th</sup> century<sup>41</sup>. The oval shaped bronze buckle with four-squared

<sup>40</sup> Kapcsos 2018, 145–146.

<sup>41</sup> Bóna, Szabó 2002, 240–241.

strap end (Fig. 15) is characteristic of the Hun Period according to Andrea Vaday,<sup>42</sup> so this supports the dating of the phase according to the beakers. The tripartite circle bronze flitter (LV 6) of grave 159 from Apátfalva-Nagyút-dűlő (Fig. 15/B) reminds one of the tripartite semispherical gold flitters of the Untersiebenbrunn find<sup>43</sup> which seems to confirm the dating of the above-mentioned objects.

**Some notes regarding the interpretations.** Before unconditionally accepting the results of the analysis and the proposed absolute chronology one should be aware of several aspects. **1.** As I mentioned before, the great majority of the funerary features – indifferently of their purpose – are reopened, and this influences the results in multiple ways. One cannot tell exactly which kinds of objects were usually taken/gathered from these burials, or even if there was any kind of norm in these acts. This means that the place of the reopened burials in each chronological sequence is defined by the “remaining” items, which may or may not reflect the proper dating of the burial. Another aspect of this problem is that these gathered objects were possibly reused, which means that they may have a wide dating. The frequency of reopening varies in each burial place and even in each period and region, which – depending on the percent of these graves – is also a factor that may relativize the boundaries of each sequence. Even if one burial is placed in a given phase according to the common object types, sometimes its chronological position should be reconsidered by analyzing the whole assemblage, because the object types do not have the same weight in the analysis, there are “heavier” and “lighter” ones<sup>44</sup>. **2.** There are only fortunate cases when one object type is specific for only one phase. In most of these cases they are mainly unique specimens. The rule is that they gradually appear, increase, and then gradually disappear in a different rhythm, available for most of the object types. For instance the lifespan of a certain brooch type does not correspond to the lifespan of a certain pottery type even if they were commonly present in a given phase. This reflects a parallel and asynchronous evolution of each object type<sup>45</sup>, which means that the start of a new phase does not necessarily mean the end of the previous one and these boundaries might overlap (Fig. 15/A). Presumably the pace of change in the fashion of each community differed and was influenced by different factors. **3.** In the case of the brooches used as absolute chronological reference points there are other several aspects to take into account. I mainly used the chronology of the “Roman brooches” put forward by Sorin Cociş. Unfortunately, the origin of the analyzed brooches is unknown, so I had to accept as a premise, that the analyzed micro-region is directly connected by the valley of the River Mureş with the province of Dacia, this way the chronology of the brooches from the province may be broadly available also in this micro-region. As another critique, one should be aware that the lifespan of the Roman brooches in the Barbaricum sometimes could be wider than in the Roman provinces, and due to their – before mentioned – copying/imitation, one should be cautious as well. **4.** Unfortunately some burials with a great chronological value, – like grave 7 from Sânicolau-Mare-Selişte, grave 168/sn221 from Óföldaák-Ürmös, Apátfalva-Kossuth Utca, graves 1 and 2 from Arad-Micalaca, the single graves from Tápé-Lebő, Periam-Tizedszerű and Makó-Bahnhofsbrunnen – had so many unique object types that they distorted the plot of the data matrix in a manner that they had to be eliminated, during the *experimental data analysis*. This is a great loss from a chronological point of view because these burials hallmark the beginning and the end of the entire analyzed period. **5.** An interesting aspect of the analysis, already pointed out by Eszter Istvánovits and Valéria Kulcsár<sup>46</sup>, is that in the first phase the male burials are practically unknown, from archaeological point of view they are barely “visible” starting from the second phase, and remain underrepresented until the final two phases<sup>47</sup>. **6.** The proposed chronology is only available for the analyzed micro-region, the results cannot be extrapolated to other

<sup>42</sup> Vaday 1989, 68–69. See at Phase VI from Fig. 15.

<sup>43</sup> Tejral 2011, 163.

<sup>44</sup> Jensen, Høilund Nielsen 1997, 49.

<sup>45</sup> As Sebastian Brather has already pointed out. See Brather 2005, 41.

<sup>46</sup> In the case of the so-called early “golden horizon” the characteristic golden objects belong exclusively to female graves, (Istvánovits, Kulcsár 2001, 22), the male burials are barely known, and their inventory is very modest (Istvánovits, Kulcsár 2018, 249; Farkas 1998, 78). See further: the burial places from Makó-Igási-járandó, Békéssámson-Erdőhát halom and Hódmezővásárhely-Fehértó. The explanation of this phenomenon exceeds the boundaries of this paper, although it seems to be of social character.

<sup>47</sup> One should not forget that from the last two phases there are known three large burial places like Tápé-Malajdok, Óföldaák-Ürmös and Apátfalva-Nagyút-dűlő.

micro-regions or to the entire Barbaricum of the Carpathian-Basin. In other micro-regions the phases could have different chronological boundaries, or some of them might be absent.

**Careful conclusions.** According to the nature of the analysis, which was aimed at establishing the chronology of a given micro-region, the results only permit a limited range of historical conclusions.

In absolute chronological terms the "Sarmatian" cultural horizon<sup>48</sup> seems to have appeared in the Lower Mureş Valley around the turn of the 1<sup>st</sup>–2<sup>nd</sup> centuries (beginning of I<sup>st</sup> phase). This early phase is mainly hallmarked by the burial places from Makó-Igási járandó 25 and Hódmezővásárhely-Fehértó.<sup>49</sup> Referring to the historical context it would be difficult to point out a plausible historical event that could have triggered the introduction of this cultural horizon in the Lower Mureş Region, although it most likely took place gradually during and/or after the Roman-Dacian wars and the organizing of the Province Dacia<sup>50</sup>, which apparently coincided in this region with the disappearance of the so-called "golden horizon" represented by grave 7 from Sânicolau-Mare.

It is an interesting question if the brooch type Fi8.11 from the first phase could be traced back to earlier late La Tène traditions, although the decoration of the handmade pots from Arad B06, Békéssámson and Makó, furthermore the fruit bowl from Arad B06 suggests the survival of late La Tène traditions in pottery production until Phase II. The rest of the brooch set of the micro-region reflects a significant relationship with the Roman provinces until the III<sup>rd</sup> Phase (200/220–280/300) the nature of which is not clear yet<sup>51</sup>, but as one can observe from this phase the "barbarian type" brooches became predominant and they show remarkable connections towards the Upper-Tisa region<sup>52</sup>, that after the Marcomannic Wars possibly became an important political factor in the Carpathian Basin, although this aspect needs further analysis<sup>53</sup>.

Roman-made products – like the box shaped brooch from Klárafalva B grave 40 and the glass beaker from Makó-Vöröskereszt II – became scattered in the IV<sup>th</sup> Phase (280/300–370/380), the connection of the micro-region with the Upper Tisa region remains predominant according to the brooch set, but according to the bracelet with a disc shaped mobile part<sup>54</sup>, shows further connections with the North Pontic region<sup>55</sup>. Starting with the V<sup>th</sup> Phase (370/380–410/420) the finds from male burials became increasingly diverse, and in some of these burials weapons also gradually appeared, reflecting the importance of a warrior stratum. The latter phenomenon suggests a major social change possibly triggered by the integration of the micro-region in the Hun power-structure. Unfortunately the end of phase VI cannot be specified exactly, though there are slight hints that it exceeds the middle of the 5<sup>th</sup> century. Similarly, the exact relation of phase VI with the so-called D2/D3 period known from the archaeological literature, hallmarked by the large plate brooches with semispherical headplate, cannot be established, though this is not surprising if one takes account that it was mainly defined by (female) elite graves<sup>56</sup>.

<sup>48</sup> For the use of the terminology see Gáll et. al. 2017, 133; Rustoiu, Ferencz 2019.

<sup>49</sup> Grave 7 from Sânicolau-Mare had to be eliminated during the *experimental data analysis*, though its recent dating seems to support this statement. See further: Bărcă 2016.

<sup>50</sup> Already pointed out by Eszter Istvánovits and Valéria Kulcsár regarding to the Trans-Tisa region. (See more in this topic: Istvánovits, Kulcsár 2018, 244; Bărcă 2014a, 67–69; Grumeza 2014, 142–143.). The dispersion map of the strongly profiled brooches with trapezoidal foot basically shows two major concentrations in the Barbaricum along the Morava River and the Trans Tisa Region with a preponderance in the latter (see the dispersion map of Jacek Andrzejowski: Andrzejowski 1992, 113. fig. 2; see also: Sósuti 2017, 143. 25. kép). Several major conflicts took place in the Barbaricum between the romans and barbarian power structures in the period hallmarked by this type of brooch – Domitianus *Expeditio Suebica et Sarmatica*, Trajan's Roman-Dacian wars, followed by the attack of the Jazyges in 107 and 117 – which could facilitate the spread of this brooch type also found in funerary contexts related to the „Sarmatian” cultural horizon.

<sup>51</sup> The graves of the burial place from Hunedoara Timișană also suggest this observation, even though the great part of the burials had to be eliminated during the analysis. The inventory of the burials points to the III<sup>rd</sup> phase.

<sup>52</sup> So-called „Sarmatian type” crossbow brooches (Fi 3.1 and Fi3.2), and brooches with underturned legs made of a single piece (Fi5.1 – Fi5.6). Sorin Cociș and Vitalie Bărcă highlighted that their origin points to so-called Przeworsk cultural environment. See further: Cociș, Bărcă 2014, 208–209; Bărcă 2014b, 30.

<sup>53</sup> It also corresponds with Phase III<sub>M</sub>, which is characterised by a rapid change in female fashion (Fig. 7.).

<sup>54</sup> Vörös 1986, 25. II. tábla, 1.

<sup>55</sup> Kazanski 2009, 358. Fig. 80.

<sup>56</sup> The burials from Arad-Micala, Periam-Tizedszerű and Makó-Bahnhofsbrunnen and Tápé-Lebő possibly belonging to this period had to be eliminated.

## **Acknowledgements**

I would like to thank Dragoş Diaconescu for verifying the results of the analysis and for his kind suggestions which were very helpful in overcoming the methodological obstacles. I also owe thanks to Erwin Gáll for suggesting and explaining to me the use of seriation, and for his tutorial of the Past software. I also would like to express my gratitude to Manfred Woidich for his endless patience while explaining to me the use and the possibilities of correspondence analysis. Florin Mărginean and Victor Sava helped me to find solutions to methodological problems on a daily basis and I owe them many thanks for that. The english grammatical correction of the whole text was carried out by Ana-Maria Gruia, to whom I am gratefull.

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## Appendix

Nr	Burial place	Code	State	Bibliography
1	Szeged-Öthalom	SZO	HU	Párducz 1960
2	Sándorfalva-Eperjes	SE	HU	Vörös 1985
3	Szeged-Tarján	SZTA	HU	Vörös 1988
4	Szeged-Algyó	SZA	HU	Kőhegyi, Vörös 1992
5	Tápé-Széntégláégető	TS	HU	B. Tóth 1994
6	Szóreg-Iván téglagyár	UT	HU	Párducz 1942
7	Szeged-Tápé	SZT	HU	Vörös 1996
8	Szóreg-Homokbánya	SZ-SZHB	HU	Vörös 1986
9	Tapé-Malajdok A	TMA	HU	Párducz, Korek 1948
10	Tapé-Malajdok B	TMB	HU	Párducz, Korek 1948
11	Tapé Lebő	TL	HU	Párducz 1959
12	Deszk-Új major	DV	HU	Párducz 1945
13	Kláralfalva-Községháza	KLKH	HU	Párducz 1951
14	Kláralfalva B	KLB	HU	Párducz 1950
15	Kláralfalva-Vasútállomás	KLV	HU	Párducz 1950
16	Kiszombor B	KZB	HU	Párducz 1950
17	Kiszombor A	KZA	HU	Párducz 1950
18	Óföldreák-Ürmös 10	OU	HU	Gulyás 2014
19	Makó-Vöröskereszt II	MVK	HU	Löffler, Borsódi 2019
20	Makó-Innenső Jángor 3	MI	HU	Sóskuti 2012
21	Mako-Bahnhofsbrunnen	MB	HU	Diaconu, Dörner 1967
22	Makó-Igási Járandó 25	MJ	HU	Balogh 2015
23	Makó-Mikócsa 31	MMK	HU	Pópity 2014
24	Apátfalva-Kossuth utca	AK	HU	Béres, Vörös 1998
25	Apátfalva-Nagyút dűlő 43	AND	HU	Kujáni 2015
26	Hódmezővásárhely-Fehértó	HF	HU	Párducz 1948
27	Békéssámson-Erdőháti halom	BSH	HU	Rózsa 2005
28	Sânicolau Mare-Seliște	SMS	RO	Bejan et. a. 2011
29	Nădlac-1M	N1M	RO	Bărcă, Cociș 2013
30	Nădlac-3M N	N3M	RO	Grumeza-Ursuțiu 2016
31	Șeitin-İmaș/Nimaș	SIM	RO	Dörner 1970
32	Periam/Perjámos-Tizedszerű	PT	RO	Prohászka 2003
33	Pecica-4R	P4R	RO	Kapcsos 2014
34	Sânpetru German-Hotarul Rech	SG-R	RO	Dörner 1970
35	Sânpetru German-Fântana Vacilor	SG-FV	RO	Dörner 1970
36	Pecica-Sit 18	P18	RO	Kapcsos 2017
37	Felnac Complexul Zootehnic	F	RO	Grumeza 2014
38	Arad-Grădiște Str Lucreției	AGL	RO	Kapcsos 2019a
39	Arad-Mikelaka	AM	RO	Prohászka 2004
40	Arad-Moise Nicoară	AMN	RO	Kapcsos 2019a
41	Arad B05	AB05	RO	Grumeza et. al. 2013
42	Arad B06	AB06	RO	Bărcă 2014a
43	Hunedoara Timișeana B07-B08	HT	RO	Bărcă 2014a
44	Sântana-Gara	SG	RO	Dörner 1960
45	Szeged-Bogárzó	SZB	HU	Párducz 1931

Table no. 2. List of the burial places from Fig. 1

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# Abbreviations

ActaArchHung	Acta Archaeologica Academiae Scientiarum Hungaricae.
AAC	Acta Archaeologica Carpathica, Cracow.
ActaMN	Acta Musei Napocensis, Cluj-Napoca.
ActaMP	Acta Musei Porolissensis, Zalău
AnArchRessoviensia	Analecta Archaeologica Ressoviensia, Rzeszów.
AAS at CEU	Annual of Medieval Studies at CEU, Budapest.
Apulum	Acta Musei Apulensis – Apulum, Alba-Iulia.
Alba Regia	Alba Regia, Székesfehérvár.
Antaeus	Antaeus, Budapest.
Arrabona	Arrabona, Győr.
ArhMed	Arheologia Medievală, Cluj-Napoca, Brăila, Reșița.
ArchBaltica	Archaeologia Baltica, Vilnius.
Arch.Inf	Archäologische Informationen.
ATS	Acta Terrae Septemcastrensis, Sibiu.
ArchÉrt	Archaeologiai Értesítő, Budapest.
Banatica	Banatica, Reșița.
BBMÉ	A Béni Balogh Ádám Múzeum Évkönyve, Szekszárd.
BUFM	Beiträge zur Ur- und Frühgeschichte Mitteleuropas.
BCMI	Buletinul Comisiei Naționale a Monumentelor, ansambluri situri istorice. București.
CommArchHung	Communicationes Archaeologicae Hungaricae, Budapest.
CCA	Cronica Cercetărilor Arheologice, Comisia Națională de Arheologie, București.
CIL	Corpus Inscriptionum Latinarum, Berlin.
CMA	Complexul Muzeal Arad.
Dolgozatok	Dolgozatok az Erdélyi Múzeum érem- és régiségtárából, Cluj.
Dolg.	Dolgozatok a Magyar Királyi Ferencz József Tudományegyetem Archaeologiai Intézetéből, Szeged.
Dolg. ÚS	Dolgozatok az Erdélyi Múzeum Érem- és Régiségtárából, Új Sorozat. Cluj-Napoca / Kolozsvár.
EphNap	Ephemeris Napocensis, Cluj-Napoca.
HOMÉ	A Hermann Ottó Múzeum Évkönyve. Miskolc.
JAHA	Journal of Ancient History and Archaeology, Cluj-Napoca.
JAM	Jósa András Museum, Nyíregyháza.
JPMÉ	Janus Pannonius Múzeum Évkönyve.
JRGZM	Jahrbuch des Romisch-Germanischen Zentralmuseums, Mainz.
KRRMK	Kaposvári Rippl Rónai Múzeum Közleményei, Kaposvár.
LMI	Lista monumentelor istorice, updated in 2015.
MittArchInst	Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften.
MOL	Magyar Olaj- és Gázipari Részvénytársaság / Hungarian Oil and Gas Public Limited Company
Marisia	Marisia, Târgu Mureș.
NyJAMÉ	A nyíregyházi Jósa András Múzeum Évkönyve, Nyíregyháza.
PBF	Praehistorische Bronzefunde. Berlin.
Przegląd Archeologiczny	Przegląd Archeologiczny, Wrocław.
Rad	Jósa András Museum, Archaeological Archive
RégFüz	Régészeti Füzetek, Budapest.

RKM	Régészeti Kutatások Magyarországon/Archaeological Investigations in Hungary, Budapest.
RAJ Arad	Repertoriul Arheologic al Mureşului Inferior. Judeţul Arad. Timişoara 1999.
RAN	Repertoriul Arheologic Naţional.
Sargetia	Sargetia. Acta Musei Devensis, Deva.
SCIV(A)	Studii şi Cercetări de Istorie Veche şi Arheologie, Bucureşti.
SGB	Studii de Geografie a Banatului, Timişoara.
SIB	Studii de Istorie a Banatului, Timişoara.
Slavia Antiqua	Slavia Antiqua, Poznań.
SlovArch	Slovenská Archeológia, Nitra.
SMK	Somogyi Múzeumok Közleményei, Kaposvár.
SovArh	Sovetskaja Arheologija, Moskva.
SRTM	Shuttle Radar Topography Mission.
StudiaUBB Historia	Studia UBB Historia, Cluj-Napoca.
SzKMÉ	A Szántó Kovács Múzeum Évkönyve, Pécs.
Századok	Századok, Budapest.
Terra Sebus	Terra Sebus. Acta Musei Sabesiensis, Sebeş.
Tibiscum S. N.	Tibiscum S. N., Caransebeş.
TransRev	Transylvanian Review, Cluj-Napoca.
ZalaiMúz	Zalai Múzeum, Zalaegerszeg.
ZSA	Ziridava. Studia Archaeologica. Arad.
Živa Antika	Živa Antika, Skopje.