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CULTURAL INTERFERENCES AT THE END OF THE ENEOLITHIC WITHIN THE MIDDLE MURES WATER BASIN, CONSIDERED IN RESPECT OF THE RESEARCH IN AMPOIŢA-*LA PIETRI* AND ŞEUȘA-*GORGAN* (ALBA COUNTY)

DOCTOR'S DEGREE THESIS (SUMMARY)

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CONTENT

KEY TERMS

Eneolithic, Copper Age, archaeological research, culture of Petreşti, Ariuşd, Tiszapolgár, Decea Mureşului, Bodrogkeresztúr, Herculane extent of handles with discoid attachments **(**Schaibenhenkel), cultural interferences, contacts, archaeological mixtures, Bayesienne shapings, Transilvania, middle Mures basin.

INTRODUCTION

This document presents the results of the field research work developed during the time the author was acting as Archaeologist of Alba Iulia National Union Museum[1]. Reference will be made to new archaeological research from Ampoiţa- *La Pietri* and the preliminary published archaeological research from Șeușa-*Gorgan*.

Findings will be presented on a lesser known period of time from Transylvania prehistory, defined as the "*Herculane cultural extent*", of whose communities mark the final phase of the eneolithic. In this period of time (approx. 4.300/4.200 and 3.800/3.700 calBC)[2] the communities of Petreşti, Ariuşd, Tiszapolgár, Decea Mureşului and Bodrogkeresztúr cultures developed their activities in Transylvania, being accompanied, in various ways, by the Herculane extent of the handles with discoid attachments(Schaibenhenkel**)**[3]. The analysis of these cultural evolutionswill consider the Bayesiane C14 data processing.

Observations regarding the main technological discoveries of this Age and their impact on the society will be submitted. Reference is mainly to the copper and gold metallurgy, its extent within the region and the generated chronological relationships between the communities of this time on a relatively broad area.

CHAPTER I. GEOGRAPHICAL FRAMEWORK

I. 1. Introduction

The geographical framework represents a complex concept which includes several orographic (relief), edaphic (soils), hydrographical (water system and water table), climate (humidity, temperature, eolian regime) and biotic factors (flora and fauna)[4]. These are important to understand, because they enable a better understanding of the evolution and/or involution direction of a society within a context where it is accepted that people are associative human beings and their activity is intrinsically linked with the geographical environment which facilitates or conditions them and which they reshape according to their needs. The human collectivities are defined through territoriality, the most important characteristic being offered by the human habitat.

The habitat represents a spatial structure which includes a physical support – sub-layer, climate, waters, vegetation, soil etc, and a human component (people, dwellings, products of their activity), with all these placed within a whole referred to as a human settlement. This can be understood as a materialisation of the social and territorial features, where the territory represents the space in which the society's actions are materialised and which needs a complete geographical support[5].

I starting from the premise that the **geographical space** can be considered to be

[1] Between 1997-2002.

[2] According to the new remodeling of C14 data, we consider that the first Herculane type manifestations begin at the level of Sălcuţa IIb-IIc and they are concurrent with the ending phase of Tiszapolgár culture and begining of Bodrogkeresztúr culture from Transylvania.

[3] Some of the listed cultures fit in the described time period only partial or in certain phases of their evolution.

[4] Vasiliev *et alii* 1991, p. 12.

[5] Mac 2000, pp. 84-85.

aconcrete, coherent, changing area, then the *landschaft-environment*[6] report becomes essential for understanding how the prehistorical human was influenced by the natural conditions. Given these circumstances, the environment[7] can be regarded as a pluri-dimensional reality, which includes both the natural environment and the human creations, and the human from dual aspects: as a component of the environment and as beneficiary of it. The geographical space, which became, for the eneolithic communities, a "consumable good", will end up being anthropized, a fact which surely proves a certain life mentality of the respective populations.

With respect to prehistorical ages, it is difficult, if not impossible, to interpret the spatial-temporal evolution of the human communities without consideration of the geographical-climate conditions. Given this context, the approach of geography disciplines is not unexpected if the analogies and their convergences with the archaeology[8] are considered. As such, it is concluded that the Romanian archaeological research has given greatest attention to integrating the discovered artefacts and realities in the system of geographical processes[9]. The undertaking is not placed in a singular sphere of preoccupations of this kind[10]. Therefore, the concern is to emphasise and reason the role played by the entire complex of natural components – abiotic and biotic – from a geographical space on the development of the human cultures.

The geographical area assessed by this report overlaps the corridor of Middle Mures and is bordered upstream by the Aries Valley confluence and downstream by Mintia town[11]. The Basin[12] of Middle Mures was selected for examination in order to include a broader area framed by the Apuseni Mountains in the north-west and the Transylvania Plateau in the south-east[13], comprising portions of two large physical-geographical units: the **Transylvania Plateau** and the **Apuseni Mountains**. From an administrative perspective, this territory is shared by Alba and Hunedoara Counties and, partly, by Cluj, Mureş and Sibiu.

CHAPTER II. BACKGROUND OF RESEARCH AND DEFINITION OFCONCEPTS

II. 1. The evolution of the archaeological research and the interpretation of trends in the Transylvanian eneolithic

In respect of the evolution of recording and interpreting the archaeological evidences related to the presented subject, four significant periods of time were identified for the Transylvanian area[14]: the pioneering work of the Transylvanian archaeology (19th century until the First World War), the Interwar period (1918-1945), the Communism period (1945-1989), post-Communism period (1990-unil present). The next section presents the main interpretative aspects of the phenomenon and a brief description of each period.

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[6] Vasiliev *et alii* 1991, p. 12.

[7] Roşu, Ungureanu 1977, p. 10. A widely accepted definition designates the environment as the assembly of both factors, natural as well as created through various human actions which, in close interdependence, determine the living conditions for people.

[8] Mac 1987-1988, p. 869. The outlining of an interference science within the abroad literature, bearing the name of geo-archaeology is observed

[9] Mac 1987, p. 869.

[10] Ciută 1996, pp. 9-19.

[11] Mihăilescu 1969, p. 201.

[12] Buta, Pişotă 1975, p. 145; Mac 1986, p. 98. The water basin or the drainage basin is consisting of the main river, which has a collecting role, and several tributaries from a certain area; in other words, it designates the area from which surface run-off supplies the river with water.

[13] Draşovean 1981, p. 33. A study of Fl. Draşovean refering to this area identifies the upper border of the Mures Middle Basin at its confluence with the Aries Valley, and the lower border near Zam town. S.A. Luca also proposed similar borders, by indicating Ocna Mures town and Ilian locality. Luca 1999, p. 5.

[14] The arrangement of the results in these four periods is based only on the understanding of the research evolution and unification of the key features for the assessed periods.

1. The pioneering work of the Transylanian archaeology (19th century until the First World War)

The oldest information about the Eneolithic Age is based on chance-finds from the second half of the 19th century. A special role in the collection of the "*antiques*" was held by the cultural-museum societies which were set-up towards the end of the 19th century in all big cities of Transylvania. These societies set-up museums in Arad, Timişoara, Oradea, Carei, Satu Mare, Alba Iulia, Sibiu and Cluj until 1900[15].

The materials discovered in this period and introduced into the scientific forum will generate discussion and intellectual ferment which will lead, in this first phase, to a general cultural-chronological framing, characterised by denominations and different cultural classification which were, sometimes, subsequently proven to be erroneous[16], but in agreement with the overall understanding specific to the beginnings of the archaeology in the entire region. The interpretation trend for the materials discovered in this period was characterised by personal proposals of chorological framing, applying the terminology and reference system which was generally accepted at that time – "*the Stone Age*".

2. The Interwar period (1918-1945)

This is the period when the first synthesis papers on the assessed cultures are published. It is also when the term of Copper Age[17] is introduced – *Kupferzeit* – along with the use of the term Eneolithic[18] – *Steinkupferzeit.* In 1942, M. Roska publishes „*Repertoriul arheologic al Transilvaniei*" (*Archaeological Repertoire of Transylvania*). His contributions reflect the approach characteristic of this science within this period and that is, the general presentation and assessment of all materials, irrespective of the Age which they belong to, and the attempt to culturally frame them[19].

The interwar period is when the first archaeological research work is developed in an organised manner, yet at low scale, enabling general stratigraphic observations and chronological positioning of these manifestations related to previous and later communities. This is the period when the material culture, mainly the ceramic, becomes "science" by applying the comparative and typological dating methods, thus enabling the individualisation of the main cultural groups and manifestations. This is also the period when "the German archaeology school" enjoins within the Transylvanian space, publishing a series of papers of whose conclusions will sometimes persist until the 1970's. The interpretation trend for the materials discovered in this time period was characterised by the proven preoccupation for detail description of the material culture and for concluding the typological and comparative analysis.

3. The Communism period (1945-1989)

This is the period when significant funds are granted to archaeological research, enabling an approach of the archaeological sites' surface and settlements' planimetry. As such, the descriptions of the main cultures are compiled, as well as the complex proposals for their internal division into periods of the economic, social and religious aspects. It is the period when the research becomes "*multidisciplinary*", contact sciences appear and the problem of absolute dating is initially developed. The interpretation trend of the materials discovered in this time period is characterised by international experience exchange. In this period, the archaeology becomes a science with regional applicability, where the definition of new cultures and cultural groups need contextualising and cultural contacts must be analysed and understood at a macro-regional level.

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[15] Chidioşan 1972, pp. 101, 106; Iercoşan *et alii* 1986-1987, pp. 477-488; Dulgău, Lazin 1990, pp. 21-28.
[16] Roman 1971.
[17] Schroller 1933, p. 248; Paul 1992, p. 7
[18] Nestor 1928.
[19] Roska 1927-1932; Roska 1929; Roska 1937; Roska 1942; Roska 1947-1949.

4. Post-Communism period (1990 – to present)

The last two decades lead to several changes of the specific legislation, mainly after the time when Romania joined the European Union. As such, 1990-2000's are characterised by a quantitative regress in the systematic archaeology which was followed by the implementation of the preventive archaeological research concept after 2000 by the development of several big archaeological sites. This is also the period when the programs of international research grants are advanced, enabling the access to modern research methods and techniques, to research scholarships and important bibliographical capital. As such, it is the period when the scientific discoveries are prevalent and sometimes, elaborated upon in new doctorate papers (Petreşti, Ariuşd, Tiszapolgár, Bodrogkeresztúr, Herculane and important contributions regarding Decea Mureşului) in which specific topics provide a better understanding of this Age. The interpretation trend of the cultural manifestations and their multidisciplinary analysis (analysis of stable isotopes, archaeometry, archaeo-photogrammetry, etc.) in the context of modern dating methods (AMS and Bayesian modelling), led to chronological repositioning of the Neolithic and Eneolithic cultures in the regional context.

II. 2. Terminology issues recorded by the specialty literature

In regards to the terminology, conventions and the use of different concepts which reflect or refer to the same cultural manifestations, may be accepted, providing that they are "equivalent" in a practical sense. It would be useful to standardise the special terminology through agreement and then implementation by research peers..

The current trend encountered by the Romanian historiography is to no longer use the term of "transition period" or, at least, not for the time interval designated by the Baden-Coţofeni-Kostolak-Vučedol bloc, but, eventually, for the interval designated by the Cernavoda I-III, Celei, Boleráz, Folteşti, Horodiştea, Gorodsk, Usatovo manifestations. Different framings of certain cultural manifestations within the developed (after 5.000 BC) or final Eneolithic (after 4.500-3.700 BC) still persist and, so common use of the "Eneolithic" or "Copper Age" denomination for the same time interval. Actually, what could archaeologically have been observed is that this last time interval experienced a change of the habitat organisation which was probably due to the changes brought about by the mobile, semi- nomadic pastoral economy.

As such, several guiding concepts are identified which mark the last 40 years of archaeological research, the specialty literature continuing to perpetuate the ideas of the "archaeological schools" which were drafted in the '70-'80s, even though all researchers are somehow in agreement that some conventions are encountered:

- Under the theoretical concept of "**transition" period**, the final eneolithic is distinguished by the cultures of Tiszapolgár, Decea Mureşului, Bodrogkeresztúr, the complex of Sălcuţa IV - Herculane - Cheile Turzii - Hunyadihálom, Cernavoda I, followed by a long transition period towards the Bronze Age which includes the Coţofeni şi Baden cultures[20].
- Under the theoretical concept of **"long eneolithic" period** and/or Copper Age, a tripartite evolution of the eneolithic is distinguished: - early eneolithic: Boian, Vădastra, Hamangia, Precucuteni, Vinča C, Turdaş, Iclod, Suplac, Gilău, Tisa; developed eneolithic: Cucuteni-Ariuşd, Gumelniţa, Sălcuţa, Petreşti, Tiszapolgár, Bodrogkeresztúr, Cernavoda I; final eneolithic: Spherical amphorae, Horodiştea-Erbiceni, Folteşti-Cernavodă II, Renie II, Cernavoda III, Coţofeni, Baden, Kostolac[21].
- Under the theoretical concept of "**long early bronze**", early eneolithic (Vinča C, Boian, Vădastra, Hamangia, Turdaş, Iclod, Tisa, Suplac, Stoicani-Aldeni, Precucuteni); developed eneolithic (the cultures of Gumelniţa, Sălcuţa, Petreşti, Cucuteni-Ariuşd-

[20] Supporter of this theory is P. Roman and the disciples of the „tracology school".
[21] Supporters of this theory are Fl. Gogâltan, H. Ciugudean.

Tripolie, Tiszapolgár, Bodrogkeresztúr, Cernavodă I and Decea Mureşului)[22], followed by: a short period of "transition", (Cernavoda I-III, Celei, Boleráz, Herculane II-Cheile Turzii (?), Folteşti, Horodiştea, Gorodsk, Usatovo etc.), followed by the early bronze phase which is established once the Baden- Coţofeni[23] cultural bloc appears.

Therefore, the term of eneolithic or the copper age remains relevant. The first one which we believe it has a wider coverage for the stone and copper processing as well as the for automatically embracing of the socio-cultural goods gained from the Neolithic age, and the second one, which underlines the "revolution", the change generated in the respective societies through the manufacturing of the big copper tools. But, from the perspective of the evolution and characterisation of this period's cultures in Balkans and Central Europe, slow transformations are observed "from the inside" with the copper axes appearing and disappearing in around the same time with the communities that made them. This is probably through technology import from the south and the existence of some expert craftsmen. The tools made of stone, bone and horn continue to exist and they are still used on a large scale.

From a social perspective, the lifestyle of the developed eneolithic cultures - Petreşti, Ariușd, Gumelniţa, Cucuteni and Sălcuţa – continuespredominantly in the same manner as that of the late Neolithic communities (during the early evolution phases) in stable settlements, so-called "proto-urban"[24], where agriculture was dominant. There were small copper tools discovered in all these cultures, as well as axes with cross arms, especially in the late phases, along with stone tools which were prevalent.

With respect to the cultures of Tiszapolgár, Decea Mureşului, Bodrogkeresztúr and Herculane, there are various behaviours observed from a social perspective: short-term settlements with few archaeological finds, differentiation on gender in what concerns the offerings from the graves, a greater interest in cattle breeding rather than in the cultivation of crops and an assumed semi-nomadic pastoralism. Most of the big tools and axes constructed with copper are associated with these cultures, but the stone tools continue to be commonly used.

Therefore, the most significant changes are given by the cattle breeding and the semi-nomadic life style in comparison with the sedentarism and cultivation of crops, and not by the copper processing technology and big tools and arms manufacturing which, otherwise, is lost once the final eneolithic cultures wane. These new skills – manufacturing of big copper tools – don't satisfy the necessary qualities for denominating an Age.

Therefore, the **grounds** for which we would use the term of Copper Age are not obvious and the use of the term Eneolithic Age, within the internal historiography, should be divided into three phases – early, developed/classic and final (Fig. 1). If these are appliedthrough extrapolation and drawing parallels with the Hungarian terminology and chronology (Fig. 2), the Baden-Coțofeni[25] cultural bloc should be classified in the final eneolithic while, in this case, a real change of the subsistence socio-economic system of these communities is recorded, much closer to the characteristics of the **early bronze age** and **not eneolithic**. Thus, we consider the following general data:

- **Early Eneolithic**: Foeni - Sălcuţa I - Precucuteni III - Cucuteni A1 - Ariușd 1 - Tiszapolgár A;
- **Developed Eneolithic**: Sălcuţa IIa-IIb - Petreşti A, A-B - Tiszapolgár B1, Cucuteni A2 - Ariușd 2;

[22] XXX 2001, M. Petrescu-Dîmboviţa, N. Ursulescu.

[23] Supporter of this theory is Al. Vulpe.

[24] We underline the fact that no social differentiation elements through constructive architectural structures were outlined within the settlements, but only within necropolis through the outstanding richness of some graves (e.g. Varna). Therefore, the „proto-urban" term designates only arrangement and organisation elements of the space built in certain settlements, such as Cucuteni, but where only few alignments of some approximately identical constructions and settlement delimitation elements were observed.

[25] Assigned in Hungary to the Late Copper Age or Early Copper Age.

- **Final Eneolithic**: Sălcuţa IV – Petreşti B - Cucuteni A3, A-B, B1 - Ariuşd 3 - Ceramica „C" - Tiszapolgár B2 - Decea Mureşului - Bodrogkeresztúr A, B - Herculane I, II, III - Hunyadihálom
- **"Transition" period**: the manifestations of Cernavoda I - Renie II - Cernavoda III – Celei – Boleráz – Folteşti – Horodiştea – Gorodsk - Usatovo etc.
- **Early Bronze Age**: Baden – Coţofeni - Kostolac - Vučedol.

See also Fig. 1, Fig. 2, Fig. 3[26]

II. 3. Definition of the theoretical framework for assessing and interpreting the cultural-chronological realities

In regards with the eneolithic cultures from the Middle Mures Basin, this document refers to the following cultural manifestations: Petreşti, Ariuşd[27] culture, Tiszapolgár, Decea Mureşului, Bodrogkeresztúr and Herculane type manifestations. These independent or mixed cultural manifestations, based on slow or dynamic contacts, as is the case of Decea Muresului type of intrusion, are found consistently listed under the syntagma: „the only certain thing is that they belong to the time interval from Petreşti[28] and Ariuşd[29] cultures, on one hand, and Renie II/Cernavoda III, Coţofeni on the other hand. However, from the beginning, the following chronological sequence is considered valid: A) Petreşti – Ariuşd – Tiszapolgár; b) Tiszapolgár târziu – Decea Mureşului; c) Bodrogkeresztúr; d) the Horizon of handles with discoid attachments (Schaibenhenkel**)**; e) the horizon related with Cernavodă II – Celei; f) Coţofeni"[30]. The presented cultural manifestations are accompanied according to the phase and region, by the **ceramic with handles with discoid attachments** (Schaibenhenkel**)**, which, according to P. Roman, ***cannot be considered as chronological guiding fossil,*** because this appears in very broad areas, as also noticed by I. Bognár-Kutzián[31]. Eastern intrusions specific to this phase are observed within the research area, as Decea Mureşului type manifestations and "C" type ceramic from Șeușa-*Gorgan* or original material culture developed by the people of this culture in the mentioned resort[32].

Therefore, in a chronological sense, the **Herculane** type manifestations **(Petreşti B – Ariuşd 3 – Tiszapolgár - Decea Mureşului – Bodrogkeresztúr –- Hunyadihálom)** a starting point around year **4.250 calBC**[33] and an ending point around year **3.800 calBC**[34] (Fig. 1, Fig. 2, Fig. 3) can be identified.

The reference made by this document to the „ ***handles with discoid attachments"*** (Schaibenhenkel**)** shall be named „**Herculane Horizon"** (Fig. 1). As such, a long period of time is investigated when cultural changes take place and which are generated by the movement populations with various material cultures, with different occupations in some cases, with different lifestyles, but which, according to the research and assessed sites, don't emphasise any antagonist relationships between them, but rather a mutual support and, perhaps, the

[26] The proposal related to the cultural evolution and main synchronisms.

[27] Even though they are secondary to the researched area, it would be useful to also include in the presentation of Ariuşd manifestations.

[28] Without direct contacts with Herculane.

[29] With direct contacts or Herculane imports just in the final phase.

[30] Roman 1973, pp. 61-66.

[31] Bognár-Kutzián 1969, pp. 31-60. The author points out that these communities are spread on a wide area, comprising the East of Slovakia, Hungary, Transylvania, Moldavia, Oltenia, Banat, Serbia and Bosnia. Their chronological horizon is delimited by: Bubanj-Hum Ia-Sălcuţa IV-late phase of Petreşti culture and Bodrogkeresztúr-Cucuteni A-B (?) culture - Hunyadihálom, especially stressing on the relation of this horizon with the late Bodrogkeresztúr culture.

[32] Ciută, Gligor 2001; 2002; 2003; 2006; Ciută, Marc 2010; 2012.

[33] If we refer to C14 dating related to the beginning of Bodrogkeresztúr culture from Hungary or linked to Petreşti B.

[34] If we take into consideration the datings for Hunyadihálom from Hungary and for the handles with discoid attachments (Schaibenhenkel**)** from Cheile Turzii.

transformation into a culture/mixed cultures in time. In this sense, a large mixture of communities mingle together and/or develop intercultural exchange contacts. Therefore, reference shall be to the cultural manifestations from the end of the Transylvanian eneolithic, seeking to understand the meaning of the inhabitants from Ampoiţa-*La Pietri* and Şeuşa-*Gorgan* within the broader context of Herculane type manifestations.

CHAPTER III. CULTURES AND CULTURAL COMPLEXES OF THE TRANSYLVANIAN ENEOLITHIC[35]

III. 1. Petreşti Culture

Petreşti culture was regarded, in time, as the cultural manifestation which is parallel and comparable to the Cucuteni culture, with the painted ceramic from Moldavia. The culture's development is related to Middle Mureş Basin and to agricultural practice from this area. It is known, as seen in the previous chapter, from the end of the 19th century and, as monographic described by I. Paul[36], at the beginning of the '90s of the 20th century.

Even since the publishing of Petreşti culture monographic, I. Paul accepted the fact that the origin of this culture is still unclear[37]. After more than 20 years[38] the beginnings of this culture are starting to become clearer through the defining of Foeni group in Banat and then, the progression of these communities within the intra- Carpathian area. As such, the specific material culture was defined and the main evolution phases for the Foeni group were proposed until its "thawing" in what nowadays is called Petreşti culture. *C14* published data, marks out the development and evolution of this group starting with **4.750 calBC** – in Banat – and until around year **4.500 calBC** – in Transylvania - when, it is believed that the beginnings of Petreşti culture[39] occurred.

In what is regarded as the end of Petreşti culture, *C14* data is presented from a closed complex of Petreşti B phase from Ampoiţa-*La Pietri*. These data are from approx. year **4.250 calBC**. An evolution a bit shorter than it was assumed for the life duration of Petreşti culture (**4.500-4.250 calBC**), yet a longer evolution for the **Foeni-Petreşti cultural complex (4.750-4.250 calBC)** can be seen.

The Petreşti culture is considered to be an "original" culture, which develops based on the Southern contribution of Foeni group. Judging by the number of settlements, it could be concluded that a relatively large population for that period existed, which was forced to move, especially during the developed evolution and final phases, in searching for the resources needed for living. Petreşti communities are mainly characterised by the painted ceramic of very good quality, which can be compared with that of Cucuteni, burnt at a temperature exceeding 850° C. The dwellings are built on solid wood structures, including facilities for maintaining a dry habitat and removing the humidity.

The culture's coverage area remains the intra-Carpathian arch. But, during the B phase, new populations appear and a withdrawal towards the piedmont and gauges areas is apparent, with the occupation of caves or cliffs which offered protection, as it is the case from Ampoiţa or

[35] Some cultures develop both in the developed and the final eneolithic. We aimed to make a general, concise presentation of each culture, trying to extract from the bibliography of specialty and emphasise the main characteristics of each manifestation. Our intention was not to thoroughly describe them, as this was already done by other colleagues in doctorate thesis from the past 10 years, of whose character was monography or synthesis (Botond 1998, Luca 1999, Sălceanu 2008, Diaconescu 2009, Tincu 2011, Sztáncsuj 2011).

[36] Paul 1992. Thesis presented and submitted in the '70-'80s, but fully published only in 1992.

[37] Paul 1992, pp.130-131

[38] Lazarovici, Drașovean, Luca, Gligor etc.

[39] Drașovean 2004, p. 34. Level II from Daia Română (Phase A Petreşti), at a certain chronological moment belonging to phase Vinča C1/C2.

Cheile Turzii (*Turda Gauges*). While new populations slowly appear, the big eneolithic cultures disappear, being replaced by semi-nomadic "native" communities, of Tiszapolgár, Bodrogkeresztúr and Herculane type, with poor settlements which emphasise the dynamic[40]. These new communities underline the beginning of changes in relation with the subsistence way of life, the semi-nomadic grazing becoming preponderant in comparison with the sedentary practicing of agriculture, completed by hunting and so often mentioned "*ownership of the natural resources*". The most superficial archaeological evidences related to the "ownership and exploitation" of the copper resources refer to the area of Apuseni Carpathians, in contrast with the numerous big copper tools which were discovered.

In regards with the origin and beginnings of Petreşti culture, changes "from the inside" are occurring, with modifications and slow cultural transformations, specific to the classic and final eneolithic age, when due to, perhaps climate changes, as H. Todorova[41] said, the subsistence way of life of these communities changes on a broad area, comprising the Balkans and Central Europe. The period of time is generally ruled by peaceful and exchange relationships, within the entire area, that is if we think only to the neighbours represented by the Cucuteni and Gumelniţa cultures.

In the overall context of the cultures presented in this document, it is considered that the people of Petreşti culture were the last "natives" of this place, even though it was observed that they were also born through cultural contributions and transformations from the Southern world. Unfortunately, no detailed research on Petreşti settlements was undertaken, as there was for Cucuteni or Gumelniţa culture and which would enable complete conclusions. This research remains needed for understanding the culture.

Based on the imports in Petreşti culture from other cultural areas, the Petreşti imports in other cultures and existing *C14* data related to Foeni group, the following is noted

- **Late Foeni - Petreşti A** – Tiszapolgár B1 - Cucuteni A2/Ariuşd 1 - Gumelniţa A1 - Sălcuţa IIa.
- **Petreşti A-B** - Tiszapolgár B1 - Cucuteni A2/Ariuşd 2 - Gumelniţa A2 - Sălcuţa IIb
- **Petreşti B** - Tiszapolgár B2 - Decea Mureşului - Bodrogkersztúr A - Cucuteni A3/„C"- Gumelniţa B1 - Sălcuţa IIc-III – H I.

Please also see Fig. 1, Fig. 2, Fig. 3[42].

III. 2. Ariuşd[43]*Culture*

During the V-IVBC millenniums, Eastern Europe, representing an area of cultural convergence, encountered a special bloom of the eneolithic civilisation. Among the creations originating from here, there is the Cucuteni-Ariuşd-Tripolie culture distinguishing; the name was given after the discoveries made in the eponym resorts from Ariuşd – Covasna County, near Sf. Gheorghe; Cucuteni – Iaşi County, near Târgu Frumos and Tripolie - Ukraine, not far from Kiev. There are more than 1800 settlements recorded for Cucuteni culture, in addition to other 500 between Prut and Nistru[44].

Cucuteni culture development – considered by some specialists as being in a pre-urban stage in what concerns the settlements' organisation, the flow complexity of the merchandise, ideas, ceramic forms and its processing techniques, as well as the copper metallurgy – encountered several influences from outside which, added to the internal causes, generated the

[40] It appears that for the end of Petreşti culture, the main role was played by the western communities of Tiszapolgár, Bodrogkeresztúr and Herculane, and not by the eastern ones, of Decea Mureşului type of "C" ceramic.

[41] Todorova 1998, p. 68; Gogâltan, Ignat 2011, p. 20.

[42] Our proposal on cultural evolution and cultural synchronisms.

[43] The name of „Ariuşd Culture" was used in the recent doctorate paper, S. Sztáncsuj 2011.

[44] Monah, Cucoş 1985, p. 15; Popovici 2000; László 1988, pp. 121-135; Cavruc 1998; Magda Mantu 1998a, pp. 83-100; Buzea, Lazarovici 2005, p 45.

dynamic of the communities[45]. One of these transformations is represented by the so-called Ariuşd cultural aspect, from the south-eastside of curvature Carpathian Mountains, area of contact with the contemporaneous neighbouring communities.

There is a debate referring to how this cultural group/culture/complex was formed. The relationship and transformation of some Cucuteni communities in a facies which managed to gain original material characters is unquestionable. This enabled the specialists to individualise it. Equally, it seems that there were also some influences from Transylvania – of a developed, late Foeni type – and from Muntenia – of early Gumelniţa type. The influence of these elements on the formation of Ariuşd culture remains an debatable. If somehow the contribution of Petreşti communities to the formation of this facies would've been accepted, even just through contacts and exchanges, then it would be obvious that those communities were not Petreşti, but belonging to **Foeni group.**

The *C14* data related to the beginning[46] and the end of this culture[47], obtained in the past years, and which refer to the internal evolution phases and contacts with the neighbouring cultures, are able to outline the temporal spatiality where these communities developed their activities. The coverage area is relatively small and is framed within the curvature Carpathian Mountains. The specific of this area is given by the material culture, emphasised by a neat processed and well burnt ceramic, richly painted with spiral forms, anthropomorphic and zoomorphic figurines. The multi-layers settlements, as well as the surface dwellings with timber structure, are elements which ranks it among the cultures of developed eneolithic, but which ends its existence in the final phase of the eneolithic through imports of Herculane II and Bodrogkerestúr type observed within these settlements, as well as within the area ruled by the Cucuteni-Ariuşd complex for a certain period of time. But, the archaeological discoveries prove that the region where Ariuşd communities evolved, was not part of the development area of Bodrogkeresztúr and Herculane cultures; it only encountered imports from them.

It is a culture which mainly developed "from the inside", through the occupation and organisation of an area situated at the border of Cucuteni-Tripolie complex; its identity shaped-out due to the activity developed within a relatively small space, within a context which later-on became identifiable. These Ariuşd type communities were tributary, mainly during the phases 1 and 2, as well as connected and participant to the social community of Cucuteni-Ariuşd complex and, during the 3rd phase, they also had material contacts with the Western cultures encountered through the communities of Herculane II/Bodrogkeresztúr B. But, equally, a Herculane III/Hunayadihálom phase cannot be identified, as emphasised within the south-east of Transylvania. The most eastern point of this phase[48] could be identified if the Herculane III phase at that point is known, by publishing the materials from Turda Gauges in detail; otherwise, this phase is only seen in Banat and Pannonian Plain. Currently, the discovery from Reci is the most eastern penetration of Bodrogkeresztúr type in the research area; mostly, the other instances are important only due to the nature of chronological synchronisms which they suggest.

It seems that the social climate was relatively peaceful; this assumption is suggested by the lasting multi-layered settlements, the solid dwellings, erected by the people of this culture, but also due to the contacts and dynamic of the exchange relationships for material imports. But, the height and fortification elements, present starting with the second development phase of Ariuşd culture, suggest the need for security and demarcation of the settlements.

Starting from the Bodrogkeresztúr type imports and that of the handles with discoid attachments (Schaibenhenkel**)** in the late inhabiting levels of Ariuşd culture, S. Sztáncsuj believes that these contacts seem to prove the existence of a later phase of Ariuşd culture, which could've survived in the eastern regions of Transylvania up to a chronological horizon which is

[45] Dumitroaia 2000, p. 19; Buzea, Lazarovici 2005, p. 45.
[46] The settlement from Malnaş Băi.
[47] The settlement from Păuleni-*Ciuc*.
[48] We refer to Herculane type inhabiting, and not to the imports which are known within the Cucuteni environment from Moldavia.

contemporaneous with the end of Cucuteni A-B phase, perhaps the beginning of B[49]. This author uses the tripartite periods division system of the eneolithic, according to which the researched cultural phenomenon (Ariuşd together with Cucuteni culture) belongs to early and middle eneolithic, parallel with other contemporaneous cultures from the Romanian area (Gumelniţa, Sălcuţa, Petreşti, Tiszapolgár and Bodrogkeresztúr, and, partially, with the horizon with handles with discoid attachments (Schaibenhenkel**)** of Herculane III-Cheile Turzii-Pecica-*Şanţu Mare*-Hunyadihálom type). Therefore, the following sequence can be outlined for the sybchronisms: late Ariuşd -Cucuteni A-B-early Cucuteni B -Bodrogkeresztúr B-Herculane II-III. On the basis of imports from other cultural areas within Ariuşd culture, Ariuşd appearances within the space of other cultures and *C14* data, we note the following synchronisms:

- **Ariuşd 1 – Cucuteni A 2 – late Foeni - Petreşti A - Tiszapolgar B1(?) - Sălcuţa IIa**
- **Ariuşd 2 – Cucuteni A 2, 3 - Petreşti A-B - Tiszapolgar B 1 – Sălcuţa IIb - Herculane I**
- **Ariuşd 3 – Cucuteni A 4, A-B - Tiszapolgar B 2 - „C" Ceramic - Bodrogkeresztúr A - Sălcuţa IV - Herculane II**

Please also see Fig. 1, Fig. 2, Fig. 3[50]

III. 3. Tiszapolgár Culture

Tiszapolgár Culture was mainly defined by the discoveries made within the funerary environment of Hungary where strict social common laws were observed in relation with the funerary cult. This is also one of the communities to which several items, arms and copper and gold jewels were attributed to, even though the stratigraphic discoveries were poor.

Due to multiple regional aspects, the culture's origin still encounters many discussions, but its population is "local" and presents Mediterranean, southern accents. It's a culture which developed from "the inside" and whose beginning is hard to identify through distinct material elements; only its transformation is certain. Regarding this transformation, and giving this stage of the research, it is accepted that the technological and material changes which happened extremely slow, are difficult to archaeologically detect and credible explain. This is also the case of the end of Tiszapolgár culture and the transition towards Bodrogkeresztúr culture, where the *C14* data from Basatanya cemetery indicate the possibility of certain synchronisms of those two cultures to have lasted more than 100 years. If, in this case, becomes certain that the ceramic typology and adornment approach doesn't represent an element for chronological definition and that these communities were synchronic for a significant period of time, then the need for certain reconsiderations is clear. Other differentiation criteria will need to be identified for the internal development phases, apart from the material culture, or, otherwise, its role will need to be repositioned and a different "guiding fossil" will have to be sourced.

The Tiszapolgár culture penetrates Mureşului Valley up to the south-east of Transylvania, but only in its late phase, as well as in the south-west of Transylvania, in the region which wasn't occupied by the communities of Petreşti culture, in its peek development phase. As such, the research conducted during the last century in Deva-*Ciangăi* is most relevant and only indirectly to the newer research from Şeusa-*Gorgan*, attributed to Decea Mureşului culture, but underlining its contacts with the late Tiszapolgár phase. The contacts with Petreşti culture, Decea Mureşului and Herculane group from intra-Carpathian Transylvania represent a subject which still needs to be assessed. The new discoveries from Şeuşa-*Gorgan* highlight the contacts with the Decea Mureşului communities from the late phase of the culture. But, the eponym necropolis from Decea Mureşului is also marked by the cultural print of Tiszapolgár[51]. Therefore, it is probable

[49] Sztáncsuj 2011, p. 13.

[50] The proposal on cultural evolution and cultural synchronisms.

[51] In ceramic forms, powdery greyish paste from the final Tiszapolgár phases, the poor ornamentation with circular impressions, etc.

that when the Decea Mureşului group initially appeared, these communities developed their activity within Middle Mureş Basin.

Through Tiszapolgár culture, the first significant changes occurred in the economy and life style in comparison with the previous period; the main occupation becomes transhumance grazing, to the detriment of sedentary type agriculture. This occupational change will immediately generate an increased dynamic of the habitat locations[52]; this detail was also recorded by the poverty of the settlements. An increase of hunting also occurred, its rate evolving for some sites, up to two thirds of the overall number of osteological remains of mammals[53].

In regards with the cultural difference and separation between Tiszapolgár and Bodrogkeresztúr cultures, this subject needs reassessing due to the challenge raised by the Bayesian modelling which indicate the same time interval for certain graves of these two cultures and which were considered being at certain time distance from one another. Giving this context, we observe the contributions of D. Diaconescu in relation with the description of the material culture as well as the spatial development of Tiszapolgár culture, but mainly in relation with the redefinition of the culture's evolution phases which enable both the repositioning of the beginning and the final moment in **4.600-4.200 BC**[54].

On the basis of the analysis conducted on artefacts, the relationships, influences and mainly on the basis of the existing *C14* data, the following are highlighted:

- **Tiszapolgár A** - Foeni - Cucuteni A1 (final) - Ariuşd 1 - Sălcuţa I – Vinča D2 (beginning)
- **Tiszapolgár B1 -** late Foeni - Petreşti A - Cucuteni A2 - Ariuşd 2–Sălcuţa IIa-IIb (beginning) – Vinča D2
- **Tiszapolgár B2/Bodrogkerestúr** A - Decea Mureşului group – "C" ceramic – Petreşti B (final ?) - Cucuteni A3-A4 (beginning) – Ariuşd 3, 4 – Sălcuţa IIc-III–IV – Herculane I - Balaton-Lasinja.

Please also see Fig. 1, Fig. 2, Fig. 3[55]

III. 4. Decea Mureşului Culture

The opening of a gravel pit in 1912 at Decea Mureşului (Mirăslău communa, Alba County, Marosdecse) has led to the finding of a plane burial necropolis out of which 19 graves were studied. This discovery presented different characteristics than those of cultures with Petreşti sau Ariuşd type painted ceramic, known at that time; it was attributed to some steppe communities which arrive in Transylvania in a moment when the Tiszapolgár culture was undergoing its final phase. From this discovery, there were only chance-finds encountered on Romania territory of quadrelobate bludgeons, zoomorphic sceptre ends or isolated burials.

For Transylvania, it was considered that the necropolis from Decea Mureşului underlines the first moment which certifies the existence of a contact between this space and the communities with Northern -Pontic [56] origin. It is probable that this moment may be related to the funerary discoveries from Dereivka, Căinar, Giurgiuleşti, Casimcea, Feldioara and Csongrád belonging to Suvorovo-Novodanilovka culture - dating 4.500-4.350 BC[57] -, but representing, according to the C14 data modelling, a late or final moment of them.

[52] It is likely that this migration for searching new pastures was done on relatively short distances, of few tens of km and at a relatively slow pace.
[53] Diaconescu 2009.
[54] Diaconescu 2013, p. 51.
[55] The proposal on cultural evolution and cultural synchronisms.
[56] Dodd-Opritescu 1978, pp. 87-97.
[57] Bicbaev 2010, pp. 212-225, fig. 10-9/10-14.

A first group of burials in the area of Cucuteni settlements can be identified, on Prut-Nistru Valley, including the funeral from **Căinar dated 4.455-4.355 BC** (Ki-369, 5580±50 BP).

One of the most important necropolises of this type is represented by a group of 5 graves which have rich inventories discovered at **Giurgiuleşti**, South of Moldavia Republic, in the North-East of Danube Delta. Here, there was a horse sacrificed on top of an adult man grave and, very interestingly, the offering items, the ceramic, are of gumelniţean nature[58]. **The dating of this C14 necropolis is 4.490-4.330 BC** (Ki-7037, 5560±80 BP).

Another grave with stone sceptre (having the shape of a horse?) was discovered at **Casimcea**, South of Danube Delta, an area with rocks and pastures of Dobrogea, **dated 4.330-4.050 BC** (KIA–368, 5380±40 BP).

According to the current data, Decea Mureşului group is part of the first wave of migrations to the West and South-West of the steppe populations. These population migrations were able to be followed-up and researched only through the isolated place burials, areas on top of which were erected, after almost 1000 years, big tumulus[59]. According to B. Govedarica, Decea Mureşului group belongs to the second phase of the early complex of graves with ochre (*Early Ochre Burial Complex*), which were believed to have lasted approx. **500-600** years, between **4.650-4.000 calBC**[60] and it is marked by the above mentioned funerals which took place in Ukraine and up to the Pannonia plain.

As such, there was a period of several generations of interactions between the old cultures of Europe and the new group of intruders. In this period, there was a significant quantity of items and copper arms made in the Balkans discovered in the Ukranian steppes, on the lower flow of Nipru river, within a group of graves with rich inventory, named **Novodanilovska Group** or **Skeyla Group.** It appears that the horse was important for the economy of these steppe communities, especially for the settlement from Dereivka, which provided many arguments related to the horse taming within this area, in 4.600-4.500 BC[61].

The following synchronisms are highlighted:

- **Decea Mureşului - Sredni Stog II**[62] **- Tripolie B/I–B/II - Cucuteni A-B**[63] **- Cucuteni "C" - Herculane I.**
- **From chronological stand-point, this period would be comprised between 4.300-4.200 calBC and matches the beginning of Cernavodă I – Suvorovo group (Sredni Stog II) and fazei Karanovo VI phase, Varna**[64].

Please also see Fig. 1, Fig. 2, Fig. 3[65]

III. 5. Bodrogkeresztúr Culture

Framed at the end of the eneolithic from Transylvania, Banat and Crişana, the Bodrogkeresztúr culture represents an important phenomenon for the chronologic and cultural evolution of the period, being spread along the Tisza Valley and, during the classic phase, reaching up to the Mureş springs and exceeding Danube alignment at South[66]. The definition process of this cultural manifestation was long, complex and especially related to the Hungarian historiography where the Copper Age term was also born for the archaeological realities designated by the Tiszapolgár-Bodrogkeresztúr-Baden manifestations[67].

[58] Bicbaev 2010, pp. 212-225, fig. 10-9/10-14. Cultural aspect of Bolgrad-Aldeni II.
[59] Tumulus which belong, in general to Yamnaya culture.
[60] Govedarica 2004.
[61] Anthony 2010, p. 45, 48-49.
[62] Cucoş 1985, p. 72 note 75 and the following.
[63] Cucoş 1985, p. 72.
[64] Mantu 1998, Fig. 51, Ciută, Marc 2012, p. 29.
[65] The proposal on cultural evolution and cultural synchronisms
[66] Luca 1999, p. 11-12
[67] Patay 1974-1975, p. 3.

Also referring to the Hungarian area, the new Bayesiene modelling indicates both the earlier data for the birth of this culture, as well as, apparently, a certain cohabitation with the late manifestations of Tiszapolgár type. In the Transylvanian space, the Bodrogkeresztúr discoveries are relatively rare and often accompany or they are accompanied by the communities of the handles with discoid attachments (Schaibenhenkel**)**.

In the case of Bodrogkerestúr culture, no *C14* data from Romanian sites exists, thus reference was made to discoveries and datings from the neighbouring area of Hungary. In the light of the new C14 data, it is probable that **Bodrogkeresztúr** culture begins around year **4.300 calBC,** and the last burials didn't take place later than **4.000calBC,** but they are completed by the **Hunyadihálom** phase with the **3.990–3.810 calBC** up to **3.910–3.700 calBC.** As such, it appears that the graves attributed to **Bodrogkeresztúr** culture begin around year **4.300 calBC** and end with the **Hunyadihálom** phase**,** around year **3.800 calBC**. The authors of the presented study[68] believe that these data can be carefully extrapolated for the area of Eastern Carpathians, thus for the Bodrogkeresztúr culture development within the intra-Carpathian space.

A "new" population in an old area, previously described by the typological changes recorder by the material culture can be defined. In the case of Bodrogkeresztúr culture, a culture which developed "from the inside", with several slow and constant / local and regional contacts - Tiszapolgár, Sălcuţa – as well as Southern contacts - handles with discoid attachments (Schaibenhenkel**)** – and then Western contacts – of old Furchenstich type. From social stand-point, the triggers and creative elements could be related, in a first phase, with the Southern manifestations of the ceramic communities with handles with discoid attachments (Schaibenhenkel**)**, then with Western ones of the producers of ceramic garnished with complex spirals, old Furchenstich and milk pots; during the Herculane III phase, these representations "melt-away" to make room for the majority elements with **toarte pastilate** described by Hunyadihálom phase. The fact that Herculane horizon outlives the Bodrogkeresztúr culture, doesn't mean that this eventually existed prior to Bodrogkeresztúr culture, as it is suggested by the newer discoveries from Şeuşa-*Gorgan* where there was discovered, within the culture layer, a ceramic piece typical to the handles with discoid attachments (Schaibenhenkel**)**, at a later Tiszapolgár chronological moment.

The Bodrogkeresztúr communities advanced a dynamic way of life in comparison with the classic civilisations of the local eneolithic, but very close, as burial ritual and social organisation, with the Tiszapolgár communities. The settlements emphasise the lack of needing or impossibility of creating stable centres, while the necropolises suggest the existence of the order, of certain social and ritual standards which they complied with. In other words, important gold and copper items were attributed to this culture, without clear stratigraphic contexts. Equally, the relatively broad spectrum of axes which, very likely, assume the existence of various craftsmen, different (cultural?) areas/environments which made them and different time frames when they were produced. These observations, together with the *C14* dating, which emphasise certain synchronisms for some Tiszapolgár and Bodrogkeresztúr graves from the same necropolis, outlines a timeframe when these communities lived in parallel or together.

The most important observations referring to the early beginning moment of the Bodrogkeresztúr communities, are those generated by the *C14* data modelling. In Banat and the intra-Carpathian area, the presence of the Tiszapolgár ceramic tradition, with circular prints, typical to the B final phase, in context with incised ceramic, typical to the early Bodrogkeresztúr phase, emphasised within the sites from Pecica-*Forgaci*[69], Deva-*Ciangăi*[70] and Şeuşa-*Gorgan*. It is likely that these settlements outline the specific phase or those transition communities between these two cultures. At Deva-*Ciangăi* and Pecica-*Forgaci,* the elements with the exemplified late Tiszapolgár shapes and ornaments are related to elements with thin and incised strips, classic for the beginning of Bodrogkeresztúr culture.

[68] Raczky, Siklosi 2013.
[69] Luca 1999, Fig.13/3.
[70] Floca 1943, Pl. II/Fig. 4, Pl. III, Fig.1,2, Pl.VII/Fig. 4-7; Luca 1999, Fig. 1/5, Fig. 2/2-3.

The necessity for reassessing the end of Tiszapolgár culture and beginning of Bodrogkeresztúr culture, through the existence of a phase which perhaps brings together elements from both cultures, as they were defined. The above exemplified settlements open the idea of assessing the Tiszapolgar-Bodrogkeresztúr cohabitation or the existence of an eventual **Tiszapolgár-Bodrogkeresztúr cultural complex**. These assumptions, highlighted by the C14[71] data, should yet be completed with vertical stratigraphic observations.

In regards with the cultural-chronological classification for the manifestations developed within the intra-Carpathian arch during the eneolithic period, we note the following:

- **Petreşti B – Tiszapolgár B2 - Decea Mureşului – Bodrogkeresztúr A – Cucuteni A3 Herculane I (early) - Gumelniţa A2 (late) – Sălcuţa IIc-III – Balaton I – Ludanice;**
- **Bodrogkeresztúr A – Cucuteni A4 – Ariuşd 3 - Gumelniţa B – Sălcuţa IV - Balaton II (Furchenstich elements) – Herculane I (late) – Lasinja;**
- **Bodrogkeresztúr B – Cucuteni A-B – Herculane II - Sălcuţa IV – Cernavodă Ib – Balaton III (Furchenstich elements)**
- **Herculane III - Cucuteni B - Cheile Turzii (?)–Pecica-*Şanţu Mare* – Hunyadihálom (without Furchenstich).**

Please also see Fig. 1, Fig. 2, Fig. 3[72]

III. 6. Herculane type manifestations

The timeframe attributed to Herculane horizon overlaps, within the intra-Carpathian area, Banat and Oltenia, the late manifestations of Petreşti, Sălcuţa IIc-III-IV, Tiszapolgár, Decea Mureşului, Bodrogkeresztúr cultures, being overlapped, at its turn, by Cernavodă I, Renie II, Cernavoda III manifestations. These occurrences in the intra-Carpathian area starting with the late Tiszapolgár manifestations and early Bodrogkeresztúr (after year 4.300 BC) and which continue after the end of Bodrogkeresztúr culture, until around year 3.800 BC. The contacts with the Southern world are observed within this timeframe, by either the reference to the typical applied handles, or by reference to the painting with graphite or channels which differently accompany, depending on region and time, the cultural manifestations above mentioned. The contacts with the Western world are also presented through the old *Furchenstich* type elements and the typical "*milk pots*".

Herculane I phase – is represented by elements specific to the ceramics from **phases IIc and III from Sălcuţa and by Sălcuţa IV incipient phase.** In the cave from Băile Herculane, it would correspond to the stratigraphic levels **a şi b.** The ceramics of Herculane I type also present influences of **Tisza** character: grey ceramic, some vessel shapes and ornamental patterns. In order to synchronise it with the cultural phases from Tisza region, P. Roman believes that Herculane I ceramic has analogies with the discoveries from **Deva-***Ciangăi*, settlement from the transition period of Tiszapolgár culture to Bodrogakeresztúr culture. Therefore, the Herculane I phase is characterised by the association of the handles with discoid attachments (Schaibenhenkel**)** with Sălcuţa IIc and III elements**,** early Sălcuţa IV element in Oltenia, Petreşti B[73] and/or late Tisapolgár in Transylvania, late Tisapolgár or early Bodrogkeresztúr in Banat[74].

In addition to the discovery of the items having these characteristics, the newer indications from Transylvania, from Şeuşa-*Gorgan* where, besides the material elements of Decea Mureşului type, late Tiszapolgár, handles with discoid attachments (Schaibenhenkel**)** and "C" ceramic associations are present which are synchronic with, or belong to the timeframe and space delimited by the Herculane I phase in Transylvania.

[71] Raczky, Siklosi 2013.
[72] The proposal on the cultural-chronological evolution and of the synchronisms.
[73] But without direct contact with Petreşti B communities; there is only sometimes when these follow them in time.
[74] Roman 1971, p. 81, Pl.19, 5 = VI, 17, 12, 14, 28.

Herculane II Phase – this phase is represented by the author through the stratigraphic levels **c1-c2** from Băile Herculane. First of all, the discoveries from Herculane II phase, in comparison with those from the early Sălcuţa IV settlements (Herculane I) present close relationships with the **Bodrogkeresztúr culture**. According to the understanding level of the 70's, the Herculane II phase was later than the Sălcuţa IV settlements known in Oltenia[75]. It is the phase when the vessels were ritchly decorated and the **old Furchenstich** technique was specific to this period, along with the handles with discoid attachments (Schaibenhenkel**)**, spiral, geometrical ornaments, some made on painted background. For this phase, P. Roman distinguishes ceramic shapes and characteristic ornaments (tureen, bowls, "*milk pots*", dishes with pouring beak, ornaments made through old type successive stinging technique, with meanders patterns, on a grazed background, or spiral forms, painted before burning or "raw", applied handles which he though considers being a very far occurrence from the first inhabiting of the Hoţilor Cave. This phase has contacts with **Cernavodă I**, actually **Renie II**, which is an intermediate phase between Cernavodă I and Cernavodă III, due to the crushed shells existing in the ceramic's paste[76].

P. Roman believes that the characteristic of this development phase is represented by the settlement from **Cheile Turzii** where old Furchenstich type elements as well as Bodrogkeresztúr B are present. The ceramic pieces from Românești and from *Peştera Spurcată* from Nandru are also matching the limits of Herculane II phase[77].

In Transylvania, the beginning phase of Herculane II corresponds to the Herculane inhabiting from Ampoiţa-*La Pietri*, where the presence of the handles with discoid attachments (Schaibenhenkel**)** is linked to the Southern elements: ceramic painted with graphite, channelled and garnished ceramic with parallel embossed frieze, with "*metallic*" aspect; Western elements: complex ornaments made by means of circular impressions places on strips alignment of V shape rows, horizontal friezes made also from circular impressions belonging to late Tiszapolgár, early Bodrogkeresztúr phase.

Herculane III – for this last phase, P. Roman believes that the prevailing material elements are those with handles with discoid attachments (Schaibenhenkel**)** and they are no longer accompanied by Furchenstich/Bodrogkeresztúr tradition elements. In the cave from Băile Herculane, it would correspond to the stratigraphic level **e.** The sudden disappearance of certain types of vessels – bowls with bent, thickened, high brims, of sălcuţean type – or of some metal pieces – the absence of *those* with bent end from the levels of phase III -, the significant decrease of the garnished ceramic, so often met during the second phase, demonstrate the fact that between phase II and III from Herculane, there is a timeframe (a hiatus, level **d**), time when the cave was not inhabited. Even though the comparison elements are few, he believes that the Southern neighbours of the Herculane III phase creators were probably tribes of the forming **Cernavoda III** culture. The same author believes that the settlement which characterises this phase is **Pecica-***Şanţu Mare,* and, within the Pannonia space, it corresponds to the **Hunyadihálom** discoveries which he considers identical with those from Pecica, also without Furchenstich ceramic, as well as Lažňany[78] group from Central Europe. The archaeological inventory of the lower layer from Pecica-*Şanţu Mare* comprises tools made of flint, obsidian, bone, copper (awls, a dagger, bracelets, etc) and a broad spectrum of ceramic shapes with applied handles. The poor garnishing of the vessels and the absence of successive pricking technique characterise the material from Pecica[79] and Herculane III phase.

According to the defining elements described by P. Roman, there weren't any Herculane III settlements discovered in Transylvania, but it it possible that the inhabiting from Cheile

[75] Roman 1971, p. 82.
[76] Roman 1973, pp. 58-59.
[77] Roman 1973, p. 60.
[78] Roman 1971, p. 118.
[79] Roman 1973, p. 59.

Turzii to have reached this phase in the late phases, even though it is linked with other material elements and not as a "clean" horizon of the handles with discoid attachments (Schaibenhenkel**)**.

In regards to the chronological position of Herculane horizon within **Transylvania**, at Petreşti-*Groapa Galbenă*, the ceramic material with handles with discoid attachments (Schaibenhenkel**)** was discovered on top of the upper level containing petreştean[80] painted ceramic. There was noticed, through the excavations conducted within the caves' complex from Cheile Turzii, the same cultural-chronological relationship: Petreşti B culture layer overlaps the one with handles with discoid attachments (Schaibenhenkel**)** and old Furchenstich (Bodrogkeresztúr), which is overlapped by Coţofeni[81] culture. At Pianu de Jos-*Podei*, Herculane II discoveries level overlaps the Petreşti B material, being overlapped, at its turn, by the Coţofeni[82] manifestations. At Nandru-*Peştera Curată* and Nandru-*Peştera Spurcată*, it was concluded that the Herculane II horizon overlaps Tiszapolgár manifestations, and not Petreşti, this area being considered the access way for the Herculane manifestations within the Carpathian arch[83]. At Ampoiţa-*La Pietri* the handles with discoid attachments (Schaibenhenkel**)** overlap the late petreştean inhabiting without having direct contacts, and they are, at their turn, overlapped by the Coţofeni manifestations from the second evolution phase of this culture. As such, for Transylvania, the following chronology and associations can be distinguished:

- **H I = handles with discoid attachments** (Schaibenhenkel**) – late Tiszapolgár - Decea Mureşului - "C" ceramic (the settlement of Şeuşa-*Gorgan* and Deva-*Ciangăi*).**
- **H II = handles with discoid attachments** (Schaibenhenkel**) - Bodrogkeresztúr with or without Furchenstich elements (the settlement of Ampoiţa-*La Pietri,* the classic elements from Cheile Turzii).**
- **H III = handles with discoid attachments** (Schaibenhenkel**) without Furchenstich elements (possible late elements from Cheile Turzii).**

Please also see Fig. 1, Fig. 2, Fig. 3[84]

In **Banat**, within the eneolithic settlements from Pecica-*Şanţu Mare* and Peştera Româneşti, there are noticed strong tisoid traditions. But, at Româneşti, it was noticed that ceramic pieces with handles with discoid attachments (Schaibenhenkel**)** are subsequent to Tiszapolgár inhabiting and prior to Coţofeni ones which follow them[85]. The same chronological relationship is supported by the discoveries from Peştera Oilor, where the handles with discoid attachments (Schaibenhenkel**)** are directly followed by Coţofeni remains[86]. Thus, for Banat, we distinguish the following sequence and associations:

- **H I = handles with discoid attachments** (Schaibenhenkel**) - Sălcuţa IIc-III and early Sălcuţa IV - Tiszapolgár B (the settlement of Băile Herculane levels a and b).**
- **H II = handles with discoid attachments** (Schaibenhenkel**) - Sălcuţa IV - Bodrogkeresztúr B with Furchenstich (the settlement of Băile Herculane level c_1 – c_2, Nandru-*Peştera Curată* and Nandru-*Peştera Spurcată*).**
- **H III = handles with discoid attachments** (Schaibenhenkel**) without Furchenstich - Hunyadihálom (the settlement of Băile Herculane level e, Pecica-*Şanţu Mare*).**

Please also see Fig. 1, Fig. 2, Fig. 3[87].

[80] We believe that the two civilizations haven't „met" and that the materials of handles with discoid attachments (Schaibenhenkel**)** are post-Petreşti B.
[81] Paul 1969, p. 79; Roman 1971, pp. 97-100; Lazarovici, Meşter 1996, pp. 31-32.
[82] Paul 1969, p. 79; Roman 1971, p. 97.
[83] Roman 1971, p. 95; Roman 1973, p. 60.
[84] Our proposal on cultural evolution and cultural synchronisms.
[85] Roman 1973, p. 60.
[86] Rogozea 1986, pp. 197-198; Petrescu 1993, pp. 5-27.
[87] The proposal on cultural evolution and cultural synchronisms.

The newer archaeological discoveries from **Ariuşd**, in the **curvature Carpathian Mountains**, indicate that the site ends its evolution from chronological point of view by archaeological material belonging to the horizon of the handles with discoid attachments (Schaibenhenkel)[88]; in regards with Cucuteni culture, there was discovered, at Traian-*Dealul Viilor*, ceramic material with handles with discoid attachments (Schaibenhenkel) within a level which corresponds with the end of A-B phase[89]. As such, for the south-east of Transylvania, the following sequence and associations can be distinguished:

- **H I = there aren't any materials with handles with discoid attachments** (Schaibenhenkel) **noticed in the phase within Ariuşd environment.**
- **H II = handles with discoid attachments** (Schaibenhenkel) **- Cucuteni A-B – final Ariuşd - Bodrogkeresztúr B with Furchenstich (the settlement of Băile Herculane horizon c2a, Ariuşd, Mereşti, Reci).**
- **H III = Cucuteni A-B – early Cucuteni B, handles with discoid attachments** (Schaibenhenkel) **(possibly the materials discovered at Traian, Calu, Poduri, Văleni, Tg Mureş).**

Please also see Fig. 1, Fig. 2, Fig. 3[90].

In regards to **Oltenia**, there were identified, within the excavations conducted within the eneolithic cemetery from Ostrovul Corbului-*Botul Cliuciului*, some graves with inventory specific to Herculane II–Cheile Turzii–Bodrogkeresztúr II as well as Sălcuţa, Cernavodă I, Bodrogkeresztúr, evolved up to the Herculane II evolution phase[91]. But the investigations from the eneolithic settlement conducted on the same spot (*Botul Cliuciului*) suggested a dating which is prior to Sălcuţa IV phase, through the absence of the handles with discoid attachments(Schaibenhenkel) from the inventory of material culture[92]. Thus, for Oltenia, the following sequence and associations can be distinguished:

- **H I = handles with discoid attachments** (Schaibenhenkel)**- Sălcuţa IIb-IIc-III - Sălcuţa IV - Tiszapolgár B (the settlement of Băile Herculane levels a and b, Sălcuţa phases IIb-IIc).**
- **H II = handles with discoid attachments** (Schaibenhenkel)**- Sălcuţa IV – Bodrogkeresztúr Bcu Furchenstich (the settlement of Băile Herculane level c_1 – c_2, Ostrovul Corbului-*Botul Cliuciului*).**
- **H III = handles with discoid attachments** (Schaibenhenkel) **without Furchenstich - Hunyadihálom (Băile Herculane level e).**

Please also see Fig. 1, Fig. 2, Fig. 3[93].

It is probable that Herculane cultural horizon had its first manifestations and cultural becoming in the south-western area of Oltenia and South of Banat, on a late sălcuţean background of **Sălcuţa IIb-IIc-Sălcuţa III** type**,** meaning around year **4.350 BC,** completed by the latent contacts with the southern world and late Tiszapolgár communities; it ends with the level of **Pecica-*Şanţu Mare*** and **Hunyadihálom** from Hungary, around year **3.800 BC**. The origin of the discussed cultural complex was also related to the synthesis generated by the intrusion of the Cernavodă culture tribes in Muntenia and Oltenia, as well as Tiszapolgár and

[88] Or, more accurately, there should probably be said that the site ends its evolution at a chronological level which synchronic with the handles with discoid attachments (Schaibenhenkel) horizon, probably at Herculane II phase level.
[89] Luca 1999b, p. 47.
[90] Our proposal on cultural evolution and cultural synchronisms.
[91] Roman, Dodd-Opriţescu 1989, pp. 11-38.
[92] Simon 1989, pp. 107-145.
[93] The proposal on cultural chronological evolution and synchronisms.

Bodrogkeresztúr in Transylvania and Banat, and with new cultural and, eventual, ethnical impulses from South (early Bronze from Macedonia and Greece)[94].

A cultural development/becoming "***from the inside***" is apparent to which it seems that **southern elements** were added to: brown ceramic with black shades, highly polished in some cases, with metallic look and painted with graphite, channels, handles with discoid attachments (Schaibenhenkel**)** – as transposition in ceramic shapes of the cups with two copper or gold handles and dispersion of this fashion towards south-eastern and central Europe. The contact elements are also provided from the **western** area, for the beginning, at level of **Herculane I**, through late Tiszapolgár contacts, and from **eastern** areas, with Decea Mureşului elements and "C" ceramic. The contacts with Tiszapolgár culture took place, according to the current data, in a moment when these manifestations deviated and transformed into what is currently known as early Bodrogkeresztúr, within a space and timeframe where the Decea Mureşului communities made their presence noticed, around year 4.300-4.250 BC. These elements are most probably characterising the Herculane I phase.

The material culture crystallises during **Herculane II** phase through Bodrogkeresztúr elements of old Furhenstich type. In the same time, the indications according to which the Bodrogkeresztúr culture is born earlier; for a while, it is parallel with Tiszapolgár and ends, as far as the traditional forms are concerned, in around year 4.000 BC. There are unequal regional aspects and local developments, depending on the contacts. These elements characterise most probably Herculane II phase.

The third phase, **Herculane III**, is defined being "the clean one" of the handles with discoid attachments(Schaibenhenkel**)**, namely on the background of Bodrogkeresztúr culture evolution ending and disappearance of the incised and excised elements of Furchenstich type. This phase can be evidenced in Romania only through the material from the investigations conducted at the beginning of the last century in Pecica-*Şanţu Mare* and, perhaps redefined through the inhabiting from Cheile Turzii, where seem to have survived, until year **3.900 calBC**[95], composite Herculane elements. In the western area, the Hungarian archaeologists define this phase as „*Hunyadihálom culture*", which also represents a phase of the handles with discoid attachments (Schaibenhenkel**)**, post-Bodrogkeresztúr, without Furchenstich[96] and which lasts until around 3.800 BC. These elements characterise most probably Herculane III.

Accepting that these were the contacts and cultural evolutions, the reasons are not evident for the Herculane cultural horizon, which perhaps begins earlier and ends later than Bodrogkeresztúr culture, occupies larger areas, presents diverse cultural-material expressions, be assimilated as "*a phase*" of the Bodrogkeresztúr culture. We believe that these proposals are not applicable.

The change of these communities' socio-economic behaviour is important, when the semi-nomadic pastoralism on small areas and the cattle growing becomes the main occupation within this timeframe. Thus, perhaps, explaining the poor and short term inhabitation, and, in many cases, seasonal. The migration on relatively short distances becomes probably a way of life; the search for pastures for animals – mainly small horned animals – force them to not stay for too long in one location. The occupation of the piedmont areas, of gauges and caves becomes a constant thing within the seasonal inhabiting which later on will continues and intensifies during the early Bronze Age. The exchange of goods – mainly copper items – also records an increased dynamic, on broader areas than before. It is a period of time when it's assumed that the eastern steppes were the place where the horse was tamed and, moreover, was invented and implemented the animal traction and the cart[97]. These technological discoveries will probably change the society, due to the real mobility which they offer and the movement possibility on longer distances, taking with them the entire infrastructure of the community. The migration of

[94] XXX 2001, p. 168.
[95] Lazarovici, Lazarovici 2013, p. 60.
[96] Patay 1974, 2008; Raczky 1988, 1991, 1995; Raczky, Siklósi 2013.
[97] Sherat 1980, 1981, 1982, 1983; Anthony 1986, 2010; Anthony, Brown 2011

these populations is recorded within the discussed area at the end of the presented period of time and will irreversible change the societies which they meet[98].

Petreşti B layer from the caves of Cheile Turzii overlaps the level of ceramic materials belonging to the horizon of handles with discoid attachments (Schaibenhenkel)[99]. The radiocarbon analysis, recently conducted in the caves from Cheile Turzii[100] provide, for the materials' level belonging to Herculane horizon, calibrated data within: **4.260/4.050-3.980/3.790 calBC**. Radiocarbon data modelling supports the proposal advanced by the authors for Herculane inhabiting from Cheile Turzii between **4.100–3.900 calBC**[101]. This timeframe confirms, on one hand, the chronological level at which Petreşti culture ends its evolution and, on the other hand, the development time of the horizon of handles with discoid attachments (Schaibenhenkel**).**

In comparison with the C14 data for the neighbouring civilizations, it is noticed that they belong to the post- **Sălcuţa IIc** period and post-**Cernavodă I** which are approx. 200 years older, starting around year **4.400 BC**.

A such, in chronological manner, a starting point for Herculane Horizon in the area of Oltenia, at approx. **4.350-4.300**[102] can be distinguished as well as an ending point in the Pannonia area at approx. **3.800 calBC**[103]. Given this context and the chronological position of the **Herculane (I-II)** discoveries within the cultural evolution from the current Romanian territory, is it proposed, through C14 data analysis, the following chronological scheme and synchronisms (Fig. 1).

CHAPTER IV. ENEOLITHIC INHABITING FROM AMPOIŢA-*LA PIETRI*

Ampoiţa locality is a village belonging to Meteş communa (Alba County), situated at approx. 12 km north-west from Alba Iulia municipality. Ampoiţa-*La Pietri* archaeological resort is situated on the left bank of Ampoiţa stream, near the entrance in the village; this area is named by the locals *Gura Ampoiţei* (Pl. 20). Prehistorical inhabitation took place around three limy rocks (the tallest one has approx. 60 meters); there are these geomorphological units which provide the above-mentioned toponym. The altitude of *La Pietri* eneolithic site is around 335-340 meters above sea level.

The archaeological research on Ampoiţa-*La Pietri* site was developed in three campaigns, starting with year 2000 until 2002 and benefitted of funds from the Ministry of Culture[104]. Due to the various themes of the scientific interests, the responsibility of processing the materials belonging to Coţofeni culture, early and middle Bronze represented by Wietenberg culture was granted to H. Ciugudean; the author was responsible for the presentation of the petreşten vestiges of the community which occupied this plateau for the first time, and those of Herculane type which shortly followed them.

The inhabitation of Ampoiţa-*La Pietri* starts once the terrace was arranged by Petreşti community and is continued by the Herculane communities. The research from Ampoiţa provided a certain stratigraphic context which, along with the typological-stylistic analysis of the ceramic material, enabling advancement of the cultural-chronologic framings related to the inhabitation of this site.

[98] Anthony 2010, after year 3.600 BC, when the Cernavoda III presence intensifies.
[99] Lazarovici *et alii* 1995, pp. 553557.
[100] Biagi, Voytek 2006, p. 199, fig. 5.
[101] Lazarovici, Lazarovici 2013, p. 60.
[102] According to C14 data for Sălcuţa IIb-IIc (Bankoff & Winter 1990) for Tiszapolgár culture from Hungary (Diaconescu 2013).
[103] According to the data from Cheile Turzii - Biagi, Voytek 2006 and those for Hunyadihálom horizon from Hungary – Raczky, Siklosi 2013.
[104] Scientifically responsible, Dr. Horia Ciugudean, the undersigned being member of the research team. Major contributions to these research campaigns were broght by the participants I. C. Băltean, D. Anghel, M. Voinaghi.

Within the **Ampoiţa-***La Pietri* resort, one **Petreşti B was inhabiting**, with surface dwellings (?), having floor board built on split tree trunks platform, overlapped by a Herculane inhabiting, associated with elements from a late Tiszapolgár and possibly, early Bodrogkeresztúr phase. The research revealed that the Petreşti-Herculane contemporaneity is excluded; this was documented once the "*closed*" Petreşti L2 complex was researched (this complex ended in fire); there weren't any Herculane ceramic pieces found here. The mixture of materials belonging to these two manifestations, found in Herculane archaeological layer, is explained by the arrangement of the terrace done by Herculane communities and by their low intensity inhabitation.

Petreşti settlement was small due to the land configuration which, even at the depth indicated by the stepping level of Petreşti inhabiting, couldn't be more extended on horizontal due to the sudden "fall" of those two slopes of the land which delimit the plateau. The possibility of the neighbouring areas inhabiting, offering arrangement advantages around the rocks or near-by terraces is not excluded.

In general, regarding the Petreşti B communities inhabitations, it is possible to witness a withdrawal starting phenomenon from the agricultural terraces area of Mureşului Valley and Secașelor plateau towards the depressions of piedmont valleys, generated by the western and southern communities of Tiszapolgár, Herculane and Bodrogkeresztúr. Referring to the life of Petreşti community, , habitat elements of the **Dwelling 2** type are noted, with floor suspended on clayed tree trunks and thermal insulationachieved by clay lining of the dwelling's walls, in comparison with the native rock. The dwelling was most probably used only by one generation or, anyhow, for a relatively short period of time; no remaking was noticed. It is also obvious that the lime klippa provided an extremely easy shelter even if afterwards, in case of a "*siege*" it would proof itself useless due to the lack of food and water. The ceramic inventory is rich and consistent, specific to similar discoveries, such as the one from Pianu de Jos-*Podei*[105]. Petreşti community, which lived in Ampoiţa, avoided the contacts (if they would've been possible) with the communities outside Petreşti culture. No element outside this culture was identified within the material inventory, as this was defined. Thus, from material culture stand-point, the Petreşti B phase from Ampoiţa doesn't highlight a technological regress but, in contrary, emphasises a blooming, but small community, as indicated by the evidence which we managed to document. It is impossible to ascertain the reason for which this inhabitation ended; the fire could have been accidental or purposely lit to "*chase*" inhabitants away from the area[106]. What is certain is that the Petreşti inhabiting from Ampoiţa emphasises an "*uncontaminated*" community, without contacts from outside the culture.

The people of Petreşti culture from Ampoiţa were most probably involved in agricultural activities; the climate and nearby terraces activities were not much different from those developed on Mureşului Valley. The fishing was also beneficial[107] along with a perhaps more abundant hunting than Mureşului Valley[108] offered. The identification and exploitation of natural resources in the form of alluvial gold and native copper, which we have noticed that were processed and used[109], could have also been an occupation of these communities or of some *experts*. A significant number of bovidae bones were recorded within the culture layer, as well as mainly in dwelling L1, proving an important interest in cattle farming.

Taking into consideration the ceramic material as "*guiding fossil*" with chronological valences in this case, for the start, the absence of three-chromatic painting is noticeable. This aspect could somehow render more difficulty in accurately ranking within the evaluative system proposed by I. Paul. As such, it is observed that the bichrom painted tureens and bowls, garnished with spiral patterns almost on the entire surface of the vessel, are found both in phase

[105] Paul 1992.
[106] We regard this assumption less probable
[107] Ampoiţa stream is located at a few hundred meters away and which, in less than 1 km, flows in Ampoi river.
[108] The hunting was able to be richer or, anyway, more diverse due to the existence of the forests.
[109] Please see the discovered small chisel and the loop ring.

A-B and B of the culture. The spiral and meandering patterns of brownish, dark-brown or black colour, applied on an orange, reddish-brick colour, engobe background, well-polished, represent the main ornamental elements of the later A-B and B phase design of Petreşti culture[110]. As such, the colouring of Ampoiţa ceramic was an important element, representing a brown pictorial layer on a dark yellowish background of the vessel, specific to phase B, in comparison with the more lighter and colourful palette used in A-B phase (Pl. 4). Then, the streamline of the bowls and tureens from Ampoiţa is short and slightly sharpen, less flatten than in phase A-B, and the shape is tall, more slimmer than those lightly flattened, opened, as found in phase A-B. The base vessel is though short, less slim, and found more frequently within the phase B than A-B.

In this context, analogies are identified for the ceramic from Ampoiţa in the painted ceramic materials from Mihalţ[111], Ghirbom[112], Alba Iulia-*Lumea Nouă*[113] and Alba Iulia-*Str. Clujului f.n.*[114], Petreşti-*Groapa Galbena*[115] - the research authors classified these materials as belonging to phase A-B of Petreşti culture; they also present the late elements of the culture -, as well as Pianu de Jos[116], Cheile Turzii-*Balica Mare/Peştera Ungurească*[117] and Tărtăria[118], phase B. The closest analogies for the ceramic from Ampoiţa were found in the last three mentioned sites, specific to phase B. The bowls and tureens discovered at Ampoiţa are almost identical with those discovered at Pianu de Jos-Podei[119] and published by I. Paul.

Should the archaeological context where most of the painted ceramic was discovered be considered(that being L2 surface dwelling), it would seem a more probable classification of it within the final phase, given the fact that several surface dwellings with timber clay-covered platforms belonging to phase B were studied at Pianu de Jos-*Podei*[120], similar to that from Ampoiţa. Highlighted is the strong presence of painted ceramic, of good quality, typical for these cultural manifestations, with well-known shapes (tureens, bowls, base vessels, etc) and already defined domestic uses. The identification of the small chisel and copper loop ring are, also, a casual presence within this culture and this phase.

The C14 analysis was conducted on large animal bone samples taken from Petreşti L2 dwelling, complex which were considered the most certain for dating the Ampoiţa-*La Pietri* inhabiting. The calibration of the results was conducted in OxCal[121] and supplied the following results for Poz-5.8217: 4.169–4.127 calBC(1σ), and 4.234–4.037 calBC(2σ), and for Poz-5.9131: 4.270BC–4.229 calBC(1σ), 4.332–4.223 calBC(2σ). Thus, the modelling of C14 data from Ampoiţa indicates, for the final phase of Petreşti culture, a chronological moment around year **4.250 calBC**.

Herculane inhabiting from Ampoiţa is also typical for this cultural horizon. It ranges among the tendencies of these communities for inhabiting, in this phase (Herculane II), the piedmont areas or the limy gauges and caves[122]. The Herculane inhabiting from Ampoiţa is emphasised only through a culture layer; no complexes were identified. Herculane ceramic reveals two main "roots" which represent the overall print of the post-Petreşti time within the intra-Carpathian area and that is: **southern elements** transferred, in time, in the shape of "metallic" polished vessels, garnished by painting with graphite, channels (these could also

[110] Paul 1992, p. 69.
[111] Paul 1981, Abb. 15/4; Paul 1992, Pl. XXXVII/2a-2b, Pl. XXXVIII/2.
[112] Paul 1992, Pl. XXXVII/1a-1c.
[113] Gligor 2009, Pl. CXLII-CXLIII.
[114] Gligor 2004, Pl. I.
[115] Gligor *et alii* 2013, Pl. 2-5.
[116] Paul 1981, Abb. 15/1-3; 1992, Pl. XLVII/1-3.
[117] Paul 1977, p. 22; Paul 1992, pp. 139, 142-143.
[118] Paul 2007, Pl. XIX/4; Lazarovici *et alii* 2011, Fig. IV/41b.
[119] Paul 1981, ceramic from Pianu de Jos-*Podei*, Abb. 15, 1a-3c, Abb. 16/1; Tafel 56/1-3, 8, 9a-9b, 11a/11b, 4; Tafel 57, 5-6; Paul 1992.
[120] Paul 1981, Abb. 16/1-5; 1992, p. 104-106, Pl. LII/2-3.
[121] http://www.14c.uni-erlangen.de/en/auftrag/erlaeuterung.html.
[122] Such as Cheile Turzii, Cheile Ampoiţei-*Colţul Caprei*, Cerişor-*Cauce*, Baile Herculane-*Peştera Hoţilor*, Mereşti, Nandru-*Peştera Curată* şi *Peştera Spurcată* etc.

suggest the contacts with early Cernavodă communities or Renie II) and the typical handles with discoid attachments (Schaibenhenkel**)**, and **western elements** given by the presence of the milk pots of which some were garnished with circular impressions, intricately organised. But, the Bodrogkeresztúr B evolution point of the old Furchenstich ornaments is not reached; but, the final post-Tiszapolgár horizon and probably early Bodrogkeresztúr and Decea Mureşului influences are approached, these being specific to a theoretical Herculane IIa or early horizon. These „*material mixtures*" most probably characterise Herculane horizon and the period between 4.250-3.800 calBC.

It was noted that at Ampoiţa, between Petreşti inhabiting and Herculane II, a caesura in the meaning that at the time when Herculane II community arrived, the Petreşti community has already ended its existence. A similar occurrence is noted with the inhabitation from Cheile Turzii[123]. It ia apparent that between the end of Petreşti culture and Herculane II Horizon, noticed at Ampoiţa and Cheile Turzii, there were late Tiszapolgár communities which existed in this area, in the broad meaning of the word, such as those from Deva-*Ciangăi* and Şeuşa-*Gorgan*, together or in parallel with the people of Decea Mureşului communities.

These communities, assumed to be existed post-Petreşti time, used to control the piedmont sites and, probably used to wash and process alluvial gold along with other activities needed for subsistence. The entrance of the narrow Ampoiţa valley, guarded by those 3 lime klippa was, for a while, under the observation of these communities.

CHAPTER V. THE ENEOLITHIC INHABITING FROM ŞEUŞA-*GORGAN*[124]

On the upper side of the terraces, on the left bank of Mureş river, several prolonged peaks of various sizes are in alignment, which belong to the lower erosion level of Secaşelor Plateau. They continue towards east with the hills belonging to the upper erosion level of Secaşelor Plateau (named by Gr. Poses, Visa level) comprised between 440 and 550 m and reaching 440 meters at *Gruiu Cetăţii* 440 m, 548 m at *Măgura Străjii*, and 463 m at *Gorgan* – the point of interest for this research. From a geomorphological stand-point, *Gorgan* hill belongs to the contact area between the western frame of Secaşelor Plateau and Mureşului Valley which, in this sector, has the shape of a wide corridor.

The archaeological research took place in several campaigns, starting with year 2000 and benefitted of funds from the Ministry of Education and Research, through Alba Iulia "1 Decembrie 1918" University; the scientific person in charge was M. Ciută, the undersigned being member of the research team. This report includes the presentation of the results obtained from the field archaeological campaigns developed between 2000 and 2002, in which the author participated, as well as the preliminary work assumptions published together with M. Ciută[125]. The recent publications related to *Gorgan* site and the general issue of Decea Mureşului communities[126] will be referenced and opinion in relation to these events will be presented. Given the thorough subject for compiling the doctorate paper, only data referring to the eneolithic inhabiting by the Decea Mureşului communities[127] will be presented.

A first phase in approaching the site took place in 2000 and consisted on a stratigraphic information drill, marked as S1/2000, whose size was 5 x 2 m, north-east toNE-south-west and located at 11.40 meters south-eastfrom the boundary marker mentioned at the beginning of the presentation. The second phase of the 2000 campaign followed based on these results and took place in the fall of the same year. The main determinant for the opening of an area adjoining the

[123] Lazarovici, Lazarovici 2013

[124] A section of this chapter presents the data preliminary published by M. Ciută, A. Gligor in 2001-2006. It also presents the recent discoveries made at *Gorgan* site, published by M. Ciută and A. Marc in 2010-2012.

[125] Ciută, Gligor 2001, 2002, 2003, 2006.

[126] Ciugudean 1978; Dodd-Opriţescu 1978; 1980; Mantu 1998; Luca 1999; Govedarica 2004; Mazăre 2007; Ciută, Marc 2010; Gogâltan, Ignat 2011; Ciută, Marc 2012 etc.

[127] Ciută, Gligor 2001, 2002, 2003, 2006.

north-west end of S I/2000 (and maintaining a witness point of 30 cm), was the full discovery of a Coţofeni dwelling (marked as L1/2000) found during the original drilling[128]. Then, another area was opened, marked as S II/2000, measuring 8 x 4 m, perpendicular on the SI/2000 direction, with north-east to -south-west orientation. This research unit emphasised the surface dwelling Coţofeni L1/2000, but it also revealed, within the lower level, an unprecedented rectangular structure made of adobe, marked as C1/2000. This had the shape of a trough with the edges lifted in the form of chime which had, on one of the shorter sides, used grinders, in basic position, as well as whole vessels or which could fully be put together, in basic position, too. In order to fully research and keep this structure within the overall context of the archaeological complex which it belongs to, it was decided to preserve this structure *in situ* so it can be uncovered during a future campaign[129].

Taking into consideration the encouraging results from 2000, the research from Șeușa-*Gorgan* resumed in 2001, under the coordination of M. Ciută. The site approach strategy was to continue the research from the previous year in SI/2000 (which was renamed as SI/2000-2001) and to fully uncover the complex C1/2000-2001, which included the rectangular arrangement with probably cultic functionality (altar-granary), belonging to Decea Mureșului eneolithic inhabiting[130]. A new area was opened in parallel (SIII/2001) whose size was 8 x 4 m, which continued SII/2000 towards north-north-east, with a 50 cm witness point between them; its purpose was to uncover the previously partially discovered complexes. The stratigraphic situation was similar to that of SII/2000: Decea Mureșului eneolithic culture layer was consistent as thickness and comprised one level of inhabiting, especially marked by the C1/2000 complex[131].

In order to fully uncover the dwellings and complexes, there was a new area opened on the south-east long side, between S III/2001 and S VI/2001, with a 50cm witness point between those two research units. Thus, the VI/2001 section became a trapeze (S VI/bis/2001-2002) with the sides of 10 x 4,35 x 6,50 x 10,50 m[132].

In 2002[133], the objective of the archaeological research was to focus solely on SVI bis/2001 area, became SVI bis/2001-2002 area (Pl. 128-129). Below Coţofeni level, within the 3-4-8-9 grids (in the north-west half of VI/bis area), at approx. 1.70-1.80 m depth, there was a surface dwelling belonging to Decea Mureşului culture (marked as C2/2002); its shape was relatively rectangular and comprised my ceramic vessels of various sizes, broken on the spot, remains of walls made of collapsed adobe, outside of which there was an arranged fireplace of whose thickness was approx. 4 cm[134]. In the complex, as well as near it, there were grinders and pieces of grinders, stone crushers, whole ceramic vessels and pieces which could be put together[135].

After the campaign from 2002, the research of Șeușa-*Gorgan* site was continued by the team coordinated by M. Ciută with important results for understanding the final eneolithic from Transylvania[136], out of which we present the "C" ceramic, discovered during the campaign from 2002 and later-on published by colleagues along with eastern elements of the type of *Unio*[137] shell.

If this inhabitation was attributed to the Tiszapolgár[138] culture when the the preliminary reports were published, then, with the new knowledge, this classification would have varied to

[128] Ciută, Gligor 2001, 2002, 2003, 2006.
[129] Ciută, Gligor 2001, 2002, 2003, 2006.
[130] Ciută, Gligor 2001, 2002, 2003, 2006.
[131] Ciută, Gligor 2001, 2002, 2003, 2006.
[132] Ciută, Gligor 2001, 2002, 2003, 2006.
[133] I attended this research campaign on and off.
[134] Ciută, Gligor 2003; Ciută, Gligor 2006.
[135] Ciută, Gligor 2003; Ciută, Gligor 2006.
[136] Ciută, Marc 2010; Ciută, Marc 2012.
[137] Ciută, Marc 2010; Ciută, Marc 2012.
[138] Ciută, Gligor 2001, Ciută, Gligor 2002, Ciută, Gligor 2003; Ciută *et alii* 2001.

use the term of Tiszapolgár-Decea Mureşului[139]; M. Ciută attributed it, within the recent studies, to the Decea Mureşului[140] culture or group, as this is known[141]. The defining element of the material culture from *Gorgan* is the **ceramic's paste** – this is different even from the late Tiszapolgár manifestations, as the examples from Aiud-*Microraion III*[142], Deva-*Ciangăi*[143] or early Bodrogkeresztúr from Pecica-*Forgaci*[144] are. The small tureens have a greyish aspect and floury paste, printed circular ornaments or pointed conical applications; these are elements of material culture discovered at *Gorgan* with the closest similarities in Decea Mureşului[145] cultural manifestations. The elements from Şeuşa-*Gorgan*, specific to Tiszapolgár, such as some shapes of vessels or decoration (stem cup), we currently see them more as a background element within a geographical and cultural environment previously controlled by Tiszapolgár[146] communities or as the remains of these elements on which the people of Decea Mureşului culture settled down.

The inhabitation from *Gorgan* is situated at post-Deva-*Ciangăi* chronological level, synchronic with the end of Tiszapolgár B[147] phase. But, the materials present some early Bodrogkeresztúr elements, too, as they were randomly found at Pecica-*Forgaci:* strip types and "V"s made from circular impressions, but without hatchings from narrow incisions.

The materials provided by the eneolithic complexes from Şeuşa-*Gorgan* (C1/2000-2001 and C2/2002) support the idea that they belong to Decea Mureşului culture; the nature and shape of the ceramic vessels proof an individualised aspect in comparison with similar products from Tiszapolgár area. The peripheric geographical position of the settlement from *Gorgan* and the possibility of producing certain phenomenon of cultural mixture, on the previous and contemporaneous Transylvanian eneolithic background, they all point to this conclusion. But, the eneolithic inhabitation from Şeuşa-*Gorgan* does not reach the evolution phase towards Bodrogkeresztúr culture; it only reaches the late Tiszalogár culture. The research of at least another settlement which would be synchronic with that from Şeuşa-*Gorgan*, with similar ethnic elements, would be able to clarify the accuracy of these attributions.

It should be noted that within the Decea Mureşului cultural layer, there was a ceramic piece found, typical to Herculane horizon of the handles with discoid attachments (Schaibenhenkel)[148]. Actually, this is a natural thing, which supports the theory of cultural contacts on large areas and the existence of this "fashion" at the chronological level from the end of Tiszapolgár culture with Decea Mureşului contacts. The presence of these material culture expressions in the area is also known in the nearby settlements from the late Petreşti environment, such as the one from *Groapa Galbenă* or Ampoiţa-*La Pietri*. Gorgan site presents the general elements which are found within early Herculane I cultural environment[149].

The material culture of this community proof the late Tiszapolgár contacts and the elements specific to Decea Mureşului ceramic, completed by the poor ornamentation specific to the time and area. The piece of handle with discoid attachment, discovered within the layer, as well as the Cucuteni "C" ceramic discovered in C2/2001/2002, places this settlement at the level of late Cucuteni A, probably A-B, late Tiszapolgár, Herculane I in Transylvania. Assessing the

[139] Ciută, Gligor 2006, p. 275, at that time pleading for situating it at the end of phase B of Tiszapolgár culture.
[140] Ciută *et alii* 2006, pp. 355-356; Ciută *et alii* 2007; Ciută *et alii* 2008; Ciută *et alii* 2009; Ciută *et alii* 2010; Ciută *et alii* 2011; Ciută 2009; Ciută, Marc 2010; Ciută, Marc 2012.
[141] There is an agreement among the Romanian specialists regarding its attribution to the eneolithic or Copper Age, somewhere around late Tiszapolgár-early Bodrogkeresztúr manifestations (Roman 1971, pp. 113-114; Roman 1976, Roman 1986; Dodd-Opriţescu 1978; Lazarovici 1983; Ciugudean 1998; Luca 1999; Lazarovici, Lazarovici 2007, pp. 296-307; Diaconescu 2009, pp. 259-260), cf. Gogâltan, Ignat 2011, p. 21 with the related bibliography.
[142] Ciugudean 1978.
[143] Floca 1950, eneolithic settlement from Deva-*Ciangai.*
[144] Luca 1999.
[145] Govedarica 2004.
[146] Diaconescu 2009, p. 259, nota 891.
[147] Floca 1950, Pl. I/1-6; II/1-5; III/1-2.
[148] The piece of handle with discoid attachment was handed-over to the site coordinator.
[149] In Decea Mureşului culture layer, a ceramic piece with the typical handle with discoid attachment was also found

discoveries specific to the surrounding areas, we notice that the elements from Deva-*Ciangăi* or Pecica-*Forgaci* along with Decea Mureșului elements, are the ones which characterise the spirit of these times, emphasised by exchange contacts and cultural interferences.

In Transylvania, these cultural interferences are recorded after the necropolis from Decea Mureșului, through several discoveries of sceptres and quadrelobate bludgeons, and now, through the settlement from Șeușa-*Gorgan*, but also through contacts and exchanges with the Southern world. The occurrence of some ceramic pieces of "C" type in the Ariușd area, at Leț and Șeușa-*Gorgan*, suggests that the interior of the Carpathian arch was also impacted by the contacts with the eastern communities[150].

In regards with the "C" type ceramic, known as "adorning pottery", "decorated with fake string" or "with adorning ornament"[151], triggered the interest of the archaeologists all the time and raised several problems related to the interpretation of its origin and evolution[152]. The attention and meaning given to the ceramic decorated with string impressions is well known within the issues of cultural phenomenon from the end of classic eneolithic, being related to the so-called process of indo-europeanising [153]. The majority of researchers accept the fact that this type of ceramic appears early within the Cucuteni culture inhabiting, **since phase A3**[154], the possibility of an even earlier appearance than this phase not being excluded[155]. By studying several resorts where this type of ceramic appeared, it was concluded that the adorning doesn't appear only in the settlements of Cucuteni A-B and B phase; the ornament with honeycomb, channels and horizontal or waved incisions are considered older, specific to phases A3 and A4[156].

The vessel of "Cucuteni C" type, discovered in the dwelling C2/2002-2003 from Șeușa-*Gorgan*, represents, along with the presented materials to which older discoveries are added[157], items which proof the influence of certain nomadic shepherds' groups from the Pontic steppes, which start from Stredni Stog cultural complex area, evolve to the west on yet insufficiently archaeological documented directions and penetrate the Transylvanian intra- Carpathian area at a post-Petreşti horizon[158], contemporaneous with the end of Tiszapolgár culture's evolution – of whose elements from the eastern border comes into contact -, arriving as enclaves which probably evolved until the cultural phenomenon of Bodrogkeresztúr[159] appeared.

The presence of the "C" ceramic in a Decea Mureşului settlement, in Transylvania[160], at approx. 300km away from the nearest settlement with similar discoveries from Cucuteni area,

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[150] Roman 1973, p. 73.

[151] Ciută, Marc 2010, 2012.

[152] Dodd-Opriţescu 1980, pp. 547-557; Dodd-Opriţescu 1981, pp. 511-528; Cucoş 1985, pp. 71-92 with the related notes; Dragomir 1982, pp. 422-429; Roman 1986, pp. 14-30; Marinescu-Bîlcu, Bolomey 2000, pp. 104-110; Diaconescu 2009; Ciută, Marc 2010, 2012.

[153] Please see: Dodd-Opriţescu 1980, p. 547-557; Roman 1986, p. 14-30, Ciută, Marc 2012, p. 26. on research background and discussions

[154] Dodd-Opriţescu 1980, pp. 547-557; Dodd-Opriţescu 1981, pp. 511-528; Cucoş 1985, pp. 63-92; Dragomir 1982, pp. 422-429; Roman 1986, pp. 14-30; Marinescu *et alii* 2000, pp. 104-110; Lazarovici 2010, pp.129-162; Ciută, Marc 2010, 2012.

[155] Dragomir 1982, p. 426. Cucoş 1985, p. 63. Ciută, Marc 2010, 2012.

[156] Dragomir 1982, p. 426; Ciută, Marc 2012, p. 26.

[157] Ciugudean 1998, p. 32, cu bibliografia; Gogâltan, Ignat 2011; Ciută, Marc 2010, 2012.

[158] Dodd-Opriţescu 1980, p. 556; Ciută, Marc 2010, 2012.

[159] Luca 1999; Luca 1999a; Ciută, Marc 2012, p. 31.

[160] Vulpe 2008, pp. 23-28. Al. Vulpe proposes a discussion focused on the archaeology's possibilities for demonstrating the migration phenomenon. The main purpose of its article is to introduce a restraint in the use of migration process when arguing some theories. As such, Al. Vulpe presents the example of Indo-European languages circulation, claiming that for an archaeologist with critical spirit, a movement of the population, at such scale, during the Copper and Bronze Age, is hard to accept. According to his opinion, we should assess at what extend the migration of some artefacts can contribute to concreting some theories on certain big population movements and how other factors (economic and social), have the power to question these assumed population movements. He considers that the presence of some artefacts on a territory can be explained by the exchanges or trade, which proves a migration of the artefacts and not of a population.

clarifies, from a certain point of view, the cultural-chronological position of the eneolithic from here; it establishes its position post-Tiszapolgár and prior-Bodrogkerestur, respectively within the short time frame defined by Decea Mureşului culture[161]. Within the Cucuteni-Tripolie cultural area (A4 final phase and AB phase), which is much better understood, there were frequently identified late Tiszapolgár and/or Bodrogkeresztúr imports[162].

For Transylvania, it was considered that the necropolis from Decea Mureşului marks the first moment which proves the existence of a contact between this space and the community of Northern-Pontic origin[163]. This event must have been happened somewhere around 4.300-4.200 BC, as it is suggested by the C14 data sampled from M12 grave from Decea Mureşului, indicating the date KIA-368: 55380±40 BP, meaning **4.237 calBC**[164].

Decea Mureşului inhabiting from *Gorgan* is most probably situated after the burial moment from the eponym necropolis, so, according to C14 data modelling, on a more recent timeframe than the burials from Căinar and Giurgiuleşti (Republic of Moldovia) belonging to Suvorovo-Novodanilovka culture.

More recently and according to C14 data from Decea Mureşului, they can be positioned between **4.300-4.200 BC,** thus being contemporaneous with Cucuteni A2/3-Tripolie B1 period[165]. Regarding the absolute chronology table of the Romanian eneolithic and cultural relationships[166], it is concluded that in Moldavia, the Sredni Stog II phase corresponds to the Cucuteni A-B phase, which, at its turn, in Transylvania, partially corresponds to the chronological sequence comprised between the end of Petreşti culture and final Tiszapolgár evolution, around the moment when the mixture phase is reaching the Bodrogkeresztúr culture. As such, the chronological and cultural position of the first eneolithic depositions from Şeuşa-*Gorgan* is once again confirmed. From chronological stand-point, this would refer to the time frame characterised by the syntagm "*transition phase from Tiszapolgár to Bodrogkeresztúr phase*". From cultural point of view, the parallel of this moment in time was done according with the following chronological series:

- **Decea Mureşului - Sredni Stog II[167] - Tripolie B/I–B/II - Cucuteni A-B[168] - Cucuteni "C" - Herculane I.**
- **From chronological point of view, this period would be comprised between 4.300-4.200 calBC and matches the beginning of Cernavodă I - Suvorovo (Sredni Stog II) group and Karanovo VI, Varna phase[169].**

Please also see Fig. 1, Fig, 2, Fig. 3[170]

The systemic research from **Şeuşa-*Gorgan*** offers, at its turn, a certain stratigraphic context, as well as the sampling of artefacts from "*confined*" complexes which enable the cultural-chronological positioning of this site inhabiting. The inhabiting of *Gorgan* hill started with earthworks and arrangement conducted by Decea Mureşului community and ended with the late Coţofeni inhabitation.

By assessing the materials provided by Decea Mureşului complexes[171], we believe that the inhabitation from *Gorgan*, at the time when it reaches the mixture phase towards

[161] Luca 1999; Luca 1999a; Ciută, Marc 2010, p. 22.
[162] Mantu 1998, pp. 126, 140-141 with the related bibliography; Ciută, Marc 2010, 2012.
[163] Dodd-Oprițescu 1978, pp. 87-97.
[164] Maxim 1999, p. 124; Govedarica 2004, pp. 72-73, Abb. 9, p. 263; Govedarica 2006, p. 418.
[165] Gogâltan, Ignat 2011, p. 24; Ciută, Marc 2012, p. 30.
[166] Mantu 1998, Fig. 51; Ciută, Marc 2010, 2012.
[167] Cucoş 1985, p. 72 note 75 and the following; Ciută, Marc 2010, 2012.
[168] Cucoş 1985, p. 72; Ciută, Marc 2010, 2012.
[169] Mantu 1998, Fig. 51, Ciută, Marc 2012, p. 29.
[170] Th proposal on the cultural evolution and cultural synchronisms.
[171] Ciută, Gligor 2003.

Bodrogkeresztúr phase[172], matches a chronological frame which equivalents the end of Tiszapolgár culture, at a synchronic level with Herculane I horizon from Transylvania. The particularities of the ceramic – shapes and ornaments[173] - proof the contacts with Tiszapolgár communities, but the paste and the burning, as well as the calotte form small tureens have the most appropriate analogies in the necropolis from Decea Mureşului[174].

The research reveals the fact that Decea Mureşului settlement from *Gorgan* had a single level of inhabiting, of short duration, probably marked by one generation only. We investigated two surface dwellings belonging to this culture; in one of them we found a clay rectangular arrangement, on a "bad" of twigs, having chime at the ends, the so-called "altar-granary". The stone grinders, crushers and rubbers discovered in these two complexes proof the grounding of grains and their storage, or of the flour obtained within the container named also "altar-granary". The bones of the animals found in these two complexes have no quantitative importance; it wasn't possible to determine if they resulted from cattle farming or hunting[175].

From the daily occupations and magical-religious practices stand-point, the old residents of *Gorgan* prove agricultural interests, tributary to the "local" eneolothical fund and which, if proven among other discoveries, also, will enable the definition of how Decea Mureşului communities evolved within the Transylvanian area. Until now, the time of the existence and burial of an allogeneous community from an area previously dominated by agricultural, eneolithic communities was strictly marked by the discovery of the eponym necropolis. Through this discovery, a first characterisation of this community evolution in time can be attempted, which seems to maintain the contacts with the Eastern communities – please see "C" type ceramic -, to reach the contact area with the local communities – please see the late Tiszapolgár ceramic and handles with discoid attachments (Schaibenhenkel**)** – and to borrow the way of life and economy of the local eneolithic fund – please see the grinders, the big vessels for keeping the agricultural products or the "trough" for grounding the grains.[176].

The dwellings have a rectangular shape, small-medium sizes, on light timber structure. Their location is near the water sources, but not on the rivers' terrace, near them, in a spot which offered visibility over the entire valley of Middle Mureş; this aspect indicates the place where perhaps these communities should be looked for. Judging by the position of this inhabiting, we comprehend a period of time when the human communities used to observe each other, communicate with each other by means of visible elements, have the need to control the area which they use. Perhaps, they have a semi-nomadic way of life, on short distances, dominated by an incipient pastoralism and agriculture. The migrations are slow during this relatively peaceful time, but triggered by an overall insecurity caused, perhaps, by the basic occurrence of the buried group from Decea Mureşului.

Using the discoveries from Şeuşa-*Gorgan*, we can sketch the internal picture of the Decea Mureşului evolution in time, after the moment marked out by the existence of the eponym necropolis. Decea Mureşului group used to be regarded as an independent cultural aspect, born through the arrival of some human groups from the North-Pontic steppes, characterised by patriarchal social structure elements – an individualist group, pastoral economy, namely an enclave on the local eneolithic fund[177]. Due to the artefacts (such as long knives and quadrelobate bludgeons), it was believed that they had a violent impact on the local environment. Therefore, the most important assumption consists of modulating the paradigm which describes this human group. These old realities should be reassessed taking into consideration the occupations which were revealed from the discoveries from Şeuşa-*Gorgan*, the cultic practices

[172] The Bodrogkeresztúr elements are suggested by the presence of the circular impression rows, placed in oblique position and in V shape, such as those from Deva-*Ciangăi* or Pecica-*Forgaci*, but without incised elements.
[173] Please see, for example, the punched stem cup, garnished with circular impressions (Pl. 143/1, 1a).
[174] Govedarica 2002, 2004, 2006.
[175] Beldiman *et alii* 2005.
[176] The „altar-granary" suggests, also, the likely cultic shades related to the movement of the planets (the sun), where offerings should be brought.
[177] Luca 1999b, p. 40.

and the most probable peaceful contacts with the neighbouring communities, proving, at least within this site, learning and taking over, meaning **taking/borrowing** and not **giving/imposing**[178] new life and social models on those whom they found in the Middle Mureş Basin. The population buried at Decea Mureşului belonged to a group or perhaps, to the first group of the Decea Mureşului community, thus an allogeneous population. But, the community that lived at Șeusa-*Gorgan* doesn't keep this basic originality.

It seems that these communities took over the occupational aspects from the Tiszapolgár communities which they had contact with. The character of Decea Mureșului settlement from Șeușa is the closest to the local, agricultural eneolithic fund, and not to that "*on movement*" of the communities from the original area. Currently, the habitat of this culture can only be described incipiently, based on this discovery and through the above-mentioned assumption. Thus, the connection links to the East are provided only by the funerary discoveries of the **Suvorovo** group. Discoveries with similar contents were identified in the centre of Transylvania, at Decea Mureşului[179], at Feldioara[180], in south-eastof Hungary at Csongrád[181], Căinar, Casimcea and Giurgiuleşti[182] and, more recently, in Bulgaria (Gonova Mogila near Tergovište)[183]. The plane burials group (4.500-4.200 cal BC)[184] – entitled **Suvorovo** according to the grave discovered in Ukraine, where a man was buried together with a stone sceptre in the shape of a **horse head** – is not yet attributed to any settlement.

In the light of the research from Șeușa-*Gorgan*, we believe that the people of Decea Mureșului culture were **assimilated**, from social stand-point, by the "*local*" eneolithic communities, of late Tiszapolgár type. As such, for an important period of time (4.250-3.800 BC), this area was still controlled by the communities tributary to the Bodrogkerestúr-Herculane Southern and Western environment, with seldom exchanges and contacts with the Eastern environment. We assume that these communities (Decea) didn't evolve for a long period of time, because, shortly, the Bodrogkeresztúr and Herculane II manifestations become more and more striking. If we report ourselves to the C14 date from the Decea Mureșului necropolis, as well as to those applicable for the time and space appropriate cultural manifestations, we will notice that an incipient moment related to the presence of this culture in Transylvania could be assigned around **4.237 calBC,** at the eponym necropolis and not long after, at *Gorgan* (perhaps, a final phase of these communities). The copper metallurgy, through superior processing of this metal – axes with crossed arms, strings of beads, small chisels, etc – was also known by these communities; the proof is given by the small chisel found within *Gorgan* settlement, as well as by the copper items appeared in the eponym necropolis from Decea Mureșului. But, given the current stage of the research, there can't be understand if the copper items were manufactured internally or were obtained through exchanges; but, it is certain that they were appreciated.

Therefore, additional research is required to confirm their life and organisation style, which, according to the settlements from Șeușa-*Gorgan*, is seems different than how they were considered on the basis of the funerary discoveries or sceptres and quadrelobate bludgeons. It seems that the agriculture and a certain pastoral sedentarism characterised the evolution of these communities which, at *Gorgan*, appear to mirror a recent or even final phase of these communities undergoing transformation. Thus, a new cultural mixture process, of cohabitation, of borrowing material elements by these communities is identified. This material expression is probably provided by the socio-cultural contacts which characterise the consistency as well as

[178] The material elements of these communities are characterised by the presence of quadrelobate bludgeons, sceptres and flint knives.
[179] Kovács 1932, pp. 89-101; Kovács 1944, pp. 3-20.
[180] Dodd-Opriţescu 1978.
[181] Ecsedy 1979, p. 11-13 Ecsedy 1979, pp. 11-13.
[182] Bicbaev 2010; Anthony 2010, pp. 48, 29-57.
[183] Gogâltan, Ignat 2011, p. 21, Ciută, Marc 2012, p. 30.
[184] Anthony 2010, pp. 48, 29-57.

the cultural diversity of the Herculane manifestations and existing exchanges between the communities on broad areas[185].

Likewise, we believe that Decea Mureşului group developed a short internal chronology; its evolution ended once the Bodrogkeresztúr culture appeared in the area, during the development classic phase[186].

CHAPTER VI. CULTURAL MANIFESTATIONS SPECIFIC TO THE FINAL ENEOLITHIC WITHIN THE INTRA-CARPATHIAN AREA

VI. 1. Copper and gold metallurgy. The impact on the eneolithic society transformation

The evolution of the eneolithic communities is related, according to some researchers, to the exploitation and processing of the copper from the East Carpathian Mountains and Apuseni Mountains, these being organically linked to the phenomenon which comprise Tisa Plain, Middle and Lower Danube and, further on, the Southern world[187]. The copper metallurgy gained the interest of many researchers who approached this field variously, starting from the raw material sources, processing and typology, up to sophisticated physical-chemical analysis[188].

The natural resources were exploited throughout the entire period of the eneolithic (in Apuseni Mountains – copper, flint; in Someşului Valley, Secaşelor Plateau, Mureşului Valley – salt; in East Carpathian Mountains – copper, flint, salt), using the same routes known for many years: Someşului Valley, Mureşului Valley, Crişului Repede Valley, Oltului Valley. Transylvania, rich in copper deposits, is known for the numerous items made of this metal, discovered randomly or within deposits. Thus, there were certified **179** localities where discovery of axes were mentioned and attributed to Petreşti, Cucuteni-Ariuşd, Tiszapolgár and Bodrogkeresztúr culture[189].

During our investigations, we identified three copper items: two were found at Ampoiţa-*La Pietri* and one at Şeuşa-*Gorgan*; they are presented in Chapters IV and V. The trait of this period is given by the superior level of the copper and gold metallurgy[190]. The following sections present the main technological caracteristics and the experts' findings in relation with this matter.

1. Copper metallurgy

The most outstanding changes encountered by the evolution of the metal production within the Balkan-Carpathian region, occur due to the increase of the economic importance of the copper tools by intensifying their production and exchange. It is about more than **4,000 metal items**, this number exceeding very much the total quantity of metal discoveries of this type from the Anatolian area, during the entire period of the eneolithic and Bronze Age[191].

The Balkan-Carpathian metallurgy develops strongly during the eneolithic phase, differentiating two regions: eastern region, less developed, and western region, with an advanced level of metallurgical techniques. The western region comprises the Carpathian Basin, the Northern Balkans and the region between Carphatian Mountains and Nipru. These borders are marked by the distribution of large quantities of metal quantity. The hammer axes, the axes with crossed arms and the axes-chisel are specific to the entire mentioned area. The eastern region comprises the steppes and forest steppes from the North-Pontic area and Volga region. Here, the copper tools are fewer, but the jewels are very diverse. The production centres from the western

[185] Roman 1971; 1973; 1978.
[186] Luca 1999, pp. 44-45.
[187] Raczky 1988, pp. 32-51.
[188] Tylecote 1978; Beşliu *et alii* 1992; Jovanovič 1995; Pernicka *et alii* 1997.
[189] Maxim 1999, p. 128.
[190] Lazarovici, Lazarovici 2007.
[191] Ryndina 1998, p. 194.

area of the region played a decisive role in inducing the technical progress within the Circumpontic area[192].

During the development of the Circumpontic metallurgical area, Ryndina distinguishes two phases which relate to the evolution of the metal processing techniques. In this case, the **first phase** is of interest; this corresponds to the cultures of Gumelnița, Varna, Sălcuța I-III, Vinča-Pločnik II, Tiszapolgár, Lengyel III, Bogrogkeresztúr, Cucuteni-Tripolie A late and Bl, where the number of metal items exceeds **2,500** and represents 60% from the total of metal discoveries attributed to the eneolithic. Most of them are ornamented objects (60.6%), followed by penetration tools (23.9%) and heavy items, such as axes and hatchets (14.2%) and, finally, secondary products (1.4%)[193].

N. V. Ryndina identifies 6 production centres-regions named: Tisza-Transylvania region, Middle Danube region, Lower Danube region, the region between the Carpathian Mountains and Nipru, the North-Pontic region and the region of Middle Volga. Each region comprises centres which have a certain peculiarity related to the metal production. The Lower Danube area was characterised by a high production and export level; his opinion is that the raw materials and the metal items manufactured here, circulated on large area, mainly in the eastern area[194].

The influence of Tisza-Transylvania region is observed towards the end of eneolithic, in relation with the area from Carpathian Mountains and Nipru; this assumption is also supported by the chemical analysis and the typology of the objects imported from this area. This phase is characterised by the stability of the metal production, improvement of the manufacturing techniques, proven through advanced metal smithing at temperatures reaching almost the melting temperature of 900-1,000^0 C, already standardised methods for pouring the pieces. The practice consisted on pre-heating the clay moulds, which are assumed to have been replaced the stone moulds[195]. Transylvania area, from Tisza-Transylvania production centre-region, had expertise in manufacturing big tools, by applying both the smithing techniques and the pouring in moulds. At the end of eneolithic, the prevailing piece is the Jászladány axe, even though the older types of axes continued to exist (such as Handlová, Mezökeresztes hammer-axes or various types of chisels and flat axes). The circulated metal quantity is significant; the weight of one Mezökeresztes type axe is 4 kilograms[196]. Jászladány axes, in the absence of moulds, seemed to be poured in two or three pieces. From this point of view, there is an unbalance between the big number of metal items and the settlements which could have produced these artefacts; this is interpreted as indicator of the semi-mobility related to the communities involved in these processes[197]. The Jászladány axe-pick type from Romania is located within the area of Petreşti, Tiszapolgár, Bodrogkerestúr, Ariușd-Cucuteni and Sălcuța civilisations[198]. The most numerous are in Transylania and Banat, and less in Oltenia and Northern Moldavia. Also, such axes were discovered in Hungary, Slovakia, Bulgaria (NW), Serbia, Croatia, West Ukraine and Republic of Moldavia (one piece)[199].

There is another discrepancy noticed on the metal distribution map: the metal items distribution from the end of eneolithic doesn't spread to the south, in the Balkanic Peninsula or to the west of Anatolia. Based on this observation, C. Renfrew issued the theory of independent metallurgic development from the south-eastof Europe. The studies carried out by the Russian, Serbian and Bulgarian researchers confirm the assumption of Renfrew. Moreover, this approaching method of the issue, where a metallurgical centre with several furnaces was defined, demonstrates their cultural and historical implications. The particularities of the metal production from various regions demonstrate the continuity of the technical experience within these

[192] Ibidem
[193] Ryndina 1998, p. 194; Mareş 2002, pp. 174-175.
[194] Ryndina 1998, p. 194; Mareş 2002, pp. 174-175.
[195] Ryndina 1998, p. 194; Mareş 2002, pp. 174-175.
[196] Mareş 2002.
[197] Pernicka *et alii* 1997, p. 56.
[198] Vulpe 1973, p. 228, fig. 4; Vulpe 1975, p. 47, pl. 52, A.B., 53, A.
[199] Mareş 2002, p. 113.

production centres, at the level of eneolithic, early and middle Bronze. All these are unquestionable realities which emphasised the metal processing technique as representing an occupation other than the agriculture and grazing, which operated at both: community and inter-community levels. The routes used for the metal circulation during eneolithic have sometimes lengths of 1,500-2,000 km; by this time, there probably existed already a well branched-out exchange network[200].

The recent researches carried out in relation with the copper processing reveal the fact that, during the Romania eneolithic, existed a copper metallurgy practiced by **expert craftsmen** who used the elaboration mechanical procedures (smithing, lamination, welding, grinding, bending, punching, engraving, sharpening, tempering, twisting, possibly figurative beating), as well as the techniques of reduction, melting and pouring. But, archaeologically, no proof referring to the melting and pouring of the copper was identified in the local eneolithic[201].

As such, I. Mareş distinguishes two technological phases of the copper processing. **The first phase** of the copper metallurgy is marked by the moment when the beating mechanical techniques were established in the Neolithic and early Eneolithic, for the native copper parts. There is the small quantity of copper parts that suggests this "initiation" phase in the field of old metallurgy. **The second phase** of copper metallurgy develops in the same time with the usage of the ore mining techniques, reduction, melting and pouring, along with the mechanical ones. He believes a real copper metallurgy is apparent, with all its characteristic features, starting **from the developed Eneolithic** and **final Eneolithic** in the cultures of Vinča-Gradac, Gumelniţa, phases A, B, Sălcuţa phases III, IV, Petreşti phases A-B, B, Tiszapolgár, phases A, B, Decea Mureşului group, Bodrogkeresztúr, phase I, II, Cucuteni, phases A, A-B, B[202]. He is certain that the copper melting was directly and interdependently related with the development of the ovens for the superior burning of the ceramic. It is known that the copper melting requires a temperature of **1.085^0 C,** and the ore reduction, around 700-800^{0}C[203]; thus, the relation with the ceramic burning techniques in ovens is obvious[204].

I. Mareş believes that mining, the identification of resources in the south-eastof Europe (Balkans) was practiced by a category of "***professional miners***" – who firstly exploited the native copper surface deposits. Systematic researches revealed, also, the independence of the copper metallurgy within Europe, from the Eneolithic period, in relation with the Near Orient and Anatolia, but without excluding the ongoing relationships between these areas, supported by the mutual technique borrowings.

Copper metallurgy can be discussed, in the true meaning of the word, as E. Sangmeister[205] observes, from the moment when the melted copper was obtained either from a sulphuric or oxide ore, or from copper ore; this was possible when the technical facilities existed, these being the temperature exceeding 1.000^0 C. Thus, the copper metallurgy development from the south-eastEurope has undergone an ascending period starting from Neolithic; the peak was reached in the developed and final Eneolithic, during the Kodjadermen-Gumelniţa-Karanovo VI, Varna, Vinča-Pločnik, Krivodol-Sălcuţa-Bubanj-Hum Ia, Petreşti, Tiszapolgár, Decea Mureşului cultural group, Bodrogkeresztúr, Cucuteni-Tripolie, Cernavoda I civilisations. But, in the next phase, a sudden decrease in the production of the copper items and the disappearance of certain types of items from the developed and final Eneolithic – axes with crossed arms[206].

[200] Mareş 2002, p. 176.
[201] Mareş 2002.
[202] Mareş 2002, p. 85.
[203] Nestor 1954, p. 43; Nestor 1995, p. 2; Vulpe 1973, p. 218; Vulpe 1976, p. 134.
[204] Berciu 1967, p. 203; Renfrew 1969, p. 36; Vulpe 1973, p. 217; Vulpe 1976, p. 135; Pares 2002, p. 85.
[205] Sangmeister 1975, p. 297.
[206] Mareş 2002, pp. 345-346, author's terminology.

2. Gold metallurgy

The area addressed in this report used to be, in prehistory times, better afforested, dominated by large river terraces, proper for agriculture and supplied by the rivers of Mureş, Ampoi, Arieş, which probably led towards the **gold sources**. In prehistory, there were two way for these mineral resources to be exploited. **First of all,** the alluvial gold could've been recovered from the rivers' bed and had the form of sequins, without a gravitational concentration, or small size grains which could've been separated using a gold pan „*şaitroc*", thus obtaining a concentrate of golden "powder" or visible nuggets. The mineralogical and archaeometric studies proved that the so-called alluvial gold or secondary gold is actually an alloy of Au-Ag, named *electrum*[207]. The water transport of the so-called alluvial gold and its prolonged residence in the geological formations tributary to the water courses (river paleobeds, terraces, river meadows) contribute to its enrichment in Au content and reduction of the Ag content; as such, the alluvial gold are characterised by Au contents which can be extremely high (over 90% percentage of weight)[208]. It is worth remembering that, at Cheile Turzii, there were practiced the main operational phases of the technological procedures required to locally produce sophisticated jewels, and Arieşului river-bed, known for its emphasised gold character, was very close[209].

Then, **secondly**, according to the recent results from mining archaeology, it seems that the basic gold deposits were identified and started to be exploited through surface excavations during the limit period between the 4th and 3rd millennium BC (for example, at Sakdrissi, Georgia[210]) and took a swing of development during the 3rd and 2nd millennium BC, as it was the case of the "*Eastern Desert*", Egypt[211]. Using the analogy with these results, it is possible that, starting from the alluvial gold, some experts of this extraordinary occupation of that time, to have gone up on the water courses until the outcrop of the raw deposits, that is at the source areas, where the native gold *cropped out* at surface and could have been identified by the people with a certain experience[212].

In comparison with the previous phases, it is the Transylvania Eneolithic period – reflected by Petreşti B, Tiszapolgàr, Decea Mureşului, Bodrogkeresztúr, Herculane cultures -, when the copper and gold metallurgy reaches, from technological stand-point, the highest level of development[213]. It seems that Transylvania plays a special role in this regard, along with other well-known areas in metals' processing[214]. In relation with the copper tools and gold jewels, it is emphasised that their main characteristic suggests the mobility and dynamic of the discussed communities. Also noted is the common denominator of manufacturing and using these tools, arms and jewels is represented only by period and space, and not by the cultural belonging; these were common goods of a broad usage environment which probably, not by chance, substitutes itself as time and territory with what is identified through the Herculane horizon. The identification of the mining and processing areas for these raw materials is to be researched. There is a need for a mountainous archaeology school, inexistent in Romania, even though it is believed that the Carpathians' area represents a centre for both: the copper and native gold mining, and for the manufacturing of these tools and jewels[215].

The final Eneolithic was firstly marked by a stronger and stronger social differentiation – at person level. This aspect is noticed in the case of the graves with rich inventory and objects

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[207] Hauptmann, 2005.
[208] Hauptmann, 2005.
[209] Lazarovici, Lazarovici 2013, with the bibliography. Please see Chapter III. 6.
[210] Hauptmann 2005.
[211] Klemm *et alii* 2001.
[212] But, it should be mentioned that no archaeological proof exists in relation with the area which we discuss here, and concerning both the first and the second possibility of obtaining the gold in prehistory, but only later. It is also likely that the later exploitations destroyed the initial ones.
[213] Lazarovici, Lazarovici 2007, pp. 24-27, 269-282.
[214] Serbia, Bulgaria, with palpable proof in relation with these ores mining and processing.
[215] Lazarovici, Lazarovici 2007, pp. 269-282.

which emphasise the social position. The discoveries from the Eneolithic necropolis from Varna are suggestive; here were discovered more than 3000kg of gold items[216]. All these demonstrate the idea of using these items as prestige indication, either as cenotaph or ritual offering for divinities. There were also some important and spectacular gold jewels found in an Eneolithic grave from Serbia (Vajska)[217].

The gold processing and manufacturing of "en violon" big idols, led to the assumption that a sort of pastoralism already existed during the time of Tiszapolgár and Bodrogkeresztúr communities, as well as an oscillating way of living and possible existence of the "totem" type signs which could have been easily transported by the community when, due to various reasons, chose to change its location. Considering the discoveries of big, gold items from Varna and Vajska necropolis, changes through which the society was already going can be observed, as well as the increased symbolism which the man of those societies gains in the day-to-day life. The gold jewels workshop discovered at Cheile Turzii proves these technological gains accumulated by the local Eneolithic communities from Transylvania, and encourages a comparison with the gold items, with sophisticated ornaments, discovered in the southern world where the jewellers already reached performances which are hard to match, even nowadays. Thus, the smithing, welding, superior processing of both, the copper and the gold, unquestionably represent a characteristic of the discussed period. The obsidian blades, the shell strings, randomly discovered in the final Eneolithic, as well as other composite jewels also prove an inclination towards the "social image" and its representation within the society.

It is concluded that, at least in Transylvania, the existence of a metallurgical centre is suggested for copper and gold processing, where several specific types of tools, arms and jewels were made. Otherwise, it seems that some of the metal items deposits from Cucuteni environment are related to this area.

VI. 2. Chronological reference points of the Transylvanian final Eneolithic within south-east European context

1. Approaches of chronology reconsideration in the light of C14 data modelling

Starting with the '50s, the chronology of the prehistorical cultures was indirectly established through correlations and synchronisms with the successions from the Balkans and through cross-dating with Aegea and Troia[218]. With the support of radiocarbon data, this chronology was reconsidered starting with the '80s[219] and, currently, it continues to be perfected through the application of Bayesian analysis on AMS data obtained so far. From here on, based this approach, we will assess the chronology of the final Eneolithic from the intra- Carpathian basin which raises questions about the validity of the previous schemes, substantiated on the ceramic's typology[220].

From the end of the '90s, the statistic implementation of the Bayesian analysis led to a third revolution of the radiocarbon method[221]. This method, which models calibrated AMS measurements, made on certain samples, enables the determination of very precise periods of time[222]. In comparison with the previous dating systems which provided a low resolution in regards with the prehistorical cultures and chronological periods, this method enables the reconstruction of time dynamics of a site at a high fineness level. This thing has obvious

[216] Slavcev 2010, pp. 192-211. 310 graves; 105 graves are disturbed; 5 graves didn't contain a funerary inventory; 11 out of the disturbed graves didn't contain ceramic vessels; 80% of the inventory pieces are made of non-local raw materials; 3 cenotaph graves with rich inventory; 3,000 gold pieces (approx. 6 kg); 4 graves contain pieces weighting more than 5 kg; 62 graves have gold jewels; funerary inventory consisting of 160 copper pieces, 230 lithic artefacts, 90 polished axes, 1100 items of *Spondylus*, 12,200 items from *Dentalium*; the flint blades and copper axes don't present any usage traces.

[217] Roman 1981a, p. 27.

[218] Banner, Bognar-Kutzian 1961; Kalicz 1963; Makkay 1976, p. 271.

[219] Hertelendi *et alii* 1995, p. 242; Raczky 1995; Gläser 1996; Yerkes *et alii* 2009.

[220] Raczky, Siklosi 2013, p. 555.

[221] Bayliss 2009.

[222] Bayliss *et alii* 2011.

implications in relation with the material culture and, especially, the interpretation of the chronology based on the ceramic typology assessment. For certain regions and cultures, this approach already led to the replacement of a significant number of previous typo-chronological schemes, by precise space-time models[223].

2. Cultural and chronologic synchronisms according to C14 AMS dating

The presented eneolithic settlements, Ampoiţa-*La Pietri* and Şeuşa-*Gorgan*, confirm the former cultural-chronological successions, but suggest the need for introducing some notes regarding the absolute chronology. There is required to mention a few work assumptions related to C14 data when seeking to delimit the time frame which we referred to. Considering Foeni group being part of the Foeni-Petreşti cultural complex, it results a time interval of approx. **500 years** cumulated by the **Foeni-Petreşti** communities, between **4.750-4.250 calBC,** out of which Petreşti culture had around 250 years. In regards with **Ariuşd** culture, it is emphasised that the interval **4.550/4.450-4.210-4.050 calBC;** regarding the **Tiszapolgár** culture, it can be claimed that its beginning was around **4.600 calBC**[224]**,** while its end was prior to **4.200 calBC**[225]. In Transylvania, the Tiszapolgár culture develops its activity only during the final phase, most probably between 4.300-4.200 BC. **Decea Mureşului,** through a single C14 existing carbon data, indicates its presence in around **4.237 calBC**. **Bodrogkeresztúr** culture begins, according to the new calibrated C14 data, from the Basatanya cemetery, around **4.300 calBC,** and the last burials don't pass year **4.000 calBC,** but they are completed by **Hunyadihálom** phase until around **3.990/3.810 calBC.** The radiocarbon analysis, recently carried out in Cheile Turzii, propose in relation with the level of materials belonging to **Herculane** horizon, the calibrated data for the interval: **4.260/4.050-3.980/3.790 calBC**[226]. Therefore, the interval **4.600-3.800 calBC**[227] for the time horizon delimited by the Petreşti-Ariuşd-Tiszapolgár-Decea Mureşului-Bodrogkeresztúr-Herculane-Hunyadihálom series (Please also see Fig. 1, Fig. 2, Fig. 3).

The modelling of the recent data for the final Eneolithic from Transylvania, related to Petreşti culture from *Groapa Galbenă* (Petreşti A-B), Ampoiţa (Petreşti B), Decea Mureşului and Cheile Turzii, indicates the interval between 4.400 şi 3.900 calBC.

In regards with the chronology based on classic, typological, comparative and stylistic observations, which are extremely valuable for understanding the social behaviour of a civilization, as a final result, we believe that some vertical stratigraphic observations are needed for supporting the recorded typological-stylistic and cultural differentiations. The dating and chronologic positioning based only on the inventories and ritual-cultic practices from necropolises has its weak points when it comes to accuracy; this is due to the fact that some typological cliché were created and then applied at large scale. In this meaning, the most interesting work assumptions are provided by the C14 dating results from Basatanya cemetery, which, from chronological point of view, raise questions about the positioning of Tiszapolgár and Bodrogkeresztúr cultures, and which very seldom could've been verified through vertical stratigraphic observations.

3. Regional synchronisms.

The southern relationships are the oldest, having a certain constancy, dynamic and specificity, reason for which these are more difficult to define or archaeologically position, because they are "slow" and based on relationships which enable the technology import through inter-cultural exchanges, tributary to the "sedentary" agricultural way of life. From spiritual point of view, the characteristic is provided by the fecundity and maternal fertility cult,

[223] Müller 2001; Müller 2002; Raczky, Siklosi 2013, p. 556.
[224] Samples from the Hungarian culture development area.
[225] Diaconescu 2013, p. 51. The interval 4.600-4.200 BC represents the time frame for the culture's duration, mainly in the Pannonia area.
[226] Biagi, Voytek 2006, p. 199, fig. 5.
[227] This time frame has different applicability for Pannonia and Transylvania.

generalised during the Eneolithic classic period within the entire "old world" of south-east Europe and Balkans.

P. Raczky[228] believes that the discoveries of handles with discoid attachments (Schaibenhenkel**)** from Rachmani, Kephala-Aigina-Agora cultural complex and Anatolian area of the Ic horizon from Troia, confirm the contemporaneity with the Northern cultural complex defined by Sălcuţa IV - Hissar I - Vajska – Galatin - Herculane II-III - Cheile Turzii - Bodrogkeresztúr B – Hunyadihálom – Lažňany, already suggested by P. Roman[229]. But, P. Raczky thinks that the above statement doesn't represent or it can't be necessarily described as a parallel cultural horizon, developing simultaneously, but more of a time development horizon, having a **starting point** and **an ending point**, delimited by the first and last appearance of a "*Scheibenhenkel horizont*" in the south-eastof Europe. He also thinks that, in Tisza area, at the level of Bodrogkeresztúr B and Hunyadihálom, there is the demarcation of the **end of Copper middle age**. He also believes that, based on these parallelisms and chronological arguments, the "*Scheibenhenkel horizont*" discovery within the Aegean areas means that the Karanovo VI - Gumelniţa – Sălcuţa – Tiszapolgár horizons preceded the Rachmani şi Kephala-Aigina–Agora complex; he proposes a new chronological table of the Balkan and south-eastEuropean context of the Neolithic and Copper Age[230]. This conclusion supports the assumption that a "**long chronology" is more credible that the "short" version for the European Prehistory**.

In regards with the relationships with the **Balkan, near area**, it is proposed, from the perspective of the Bubanj Hum site, the following[231]:

- **Bubanj-Hum Ia Phase** represents the Serbian version of the **Sălcuţa-Krivodol-Bubanj** middle eneolithic complex which, otherwise, is widespread in the central Balkans. Sites of this complex are known both in Oltenia and western Bulgaria, as well as in the centre and south of Serbia, Macedonia and Albania, in the same period with the late Vinča.
- **Bubanj-Hum Ib Phase** which, in Oltenia, is synchronic with **Cernavodă–Renie II** culture. After this inhabiting, there is noticed at Bubanj, a caesura period; late Sălcuţa (IIc-IV) communities develop in Oltenia, and Cernavodă I in Muntenia. The inhabiting caesura from Bubanj, after Bubanj-Hum Ib and Bubanj II phases, is equivalent with the time when, at north, appears the Cernavodă III/Boleraz type ceramic; in other words, during the early phase of Baden type ceramic[232].

We have two data from Oltenia which place **Sălcuţa IIb and IIc** at the end of **Bubanj-Hum Ia phase**[233], that is between **4.425 and 4.305 BC**. Thus, **the contacts with the Southern area** are led by exchange relationships and slow population movements originated from the Neolithic Age. We firstly distinguish here, for the period to which we refer, the typical handles with discoid attachments (Schaibenhenkel**)** which are found in the Danube's gorge and sălcuţean environment and then, at the level of Troia Ic, at Atena-*Agora* or Pevkakia Magula. In regards with the relationships between the south-eastEuropean civilizations and Anatolia's, especially the stratigraphy from Troia, S. A. Luca believes that no relationship with Troia could've taken place earlier than the end of Bodrogkeresztúr culture, even though the occurrence of the *en violon* idols suggests it[234].

In relation with the **Western** neighbouring communities, intercultural exchanges are noticed along with new becomings of the human communities which could be archaeologically recorded on a relatively short term. With reference to the Tiszapolgár and Bodrogkeresztúr cultures, we notice that these are present within the intra-Carpathian area and Pannonia, along with some specific elements constantly borrowed from the Southern area, through the

[228] Raczky 1991.
[229] Raczky 1991, pp. 329-346, fig. 1-7.
[230] Raczky 1991, fig. 8.
[231] Bankoff, Winter 1990, pp. 178-179.
[232] Bankoff, Winter 1990, pp. 178-179.
[233] Garašanin 1983, p. 165.
[234] Luca 1999.

communities of Sălcuţa IIc-III, Sălcuţa IV. Thus, A timeframe starting within Pannonia, around **4.600 BC** and lasts until around **3.800/3.700 BC** is observed. Due to the fact that the transformations from this area and period were slow [235], the differences of the ceramic culture are not so striking as to provide punctual explaining of the imports or cultural contacts. This is the more so as it can be seen that through Bayesian modelling, there is a longer period mentioned than for the synchronism of Tiszapolgár and Bodrogkeresztúr cultures[236]. This period as one of slow transformations, with constant exchanges between the communities from Mureşului Valley. There will be new elements noticed towards the end of this phase, when the cultural standardisation started during Herculane I phase is brought into discussion; these new elements, of Decea Mureşului type, were defined as "*allogeneous*" but which, as oberved, came from East.

Traditionally, the chronology of **Eastern Hungary** was mainly built on the basis of three key ceramic prints: Tiszapolgár (for the early Copper Age), Bodrogkeresztúr-Hunyadihálom (for the middle Copper Age) and Baden (for the late Copper Age)[237]. The introduction of calibrated radioactive carbon analysis established, in comparison to what it was previously established through traditional analysis, that different than the Aegean area, the cultures' succession is maintained, were correctly defined, but the **Copper Age, as a whole, was pushed back with almost 1500 years**; thus, the previous two cultural definitions are no longer contemporaneous[238].

Therefore, according to the proposals of P. Raczky, the horizon of handles with discoid attachments (Schaibenhenkel**)** from the **European and Balkan** geographical area, is synchronic with the Bodrogkeresztúr and Hunyadihálom manifestations from **Hungary**, Balaton–Lasinja–*old Furchenstich* from **Slovakia**, Bubanj–Hum Ia-Sălcuţa IV from **Serbia**, Galatin, Herculane II–III din **Bulgaria**, Rachmani from **Thesalia** and Troia Ic from **Anatolia**[239].

The earliest intrusions with eastern character. In regards with the relationships with the Eastern neighbouring communities, a situation arises which is different than the contacts with the south-west due to the punctual presence of the allogeneous groups or the imports from the Eastern world, existing within the intra-Carpathian Transylvania. There is this described background on which the first eastern elements appeared in the cucutenian space, through the so-called "C" type ceramic and, later-on, through the group buried at Decea Mureşului, Casimcea and Feldioara. Due to these long exchanges and constant archaeological records starting with **phase A3**[240] - 4.300 BC – the occurrence of "C" ceramic of Cucuteni culture is emphasised as being a material component of the Cucuteni environment which absorbs these impulses. This ceramic is discovered within the timeframe which we assess, also on the site of Şeuşa-*Gorgan* as one single vessel, within a cultural environment which is different than the one known in Moldavia, timely synchronic (Fig. 3).

Afterwards, irrespective of the points of view, somehow differently expressed by the researchers, there is one thing which is certain: the cultural elements of Eastern origin made their presence felt within the current territory of Moldavia even since the developed Eneolithic; then, during the final Eneolithic, they have a higher increase suggesting the penetration, at first, slow, of the nomadic or semi-nomadic pastoral communities from east and nNorth-east in the area occupied by the cucutenian agricultural communities[241].

The Eastern discoveries (such as those from **Decea Mureşului** necropolis, Fig. 3) in the final intra-Carpathian eneolithic environment, are placed **in a phase subsequent** to the penetration of the above-described eastern elements – after 4.250 BC. These discoveries, singular for a long time, were completed by the discovery of Şeuşa-*Gorgan* settlement which

[235] I.E. Foeni group development, civilization with southern cultural print, and its advancement towards Transylvania up to near Ariuşd area.
[236] Raczky, Siklosi 2013.
[237] Banner 1956; Kutzián 1955; Bognár- Kutzián 1963; Bognár- Kutzián 1969; Bognár- Kutzián 1972; Kalicz 1958; Kalicz 1979; Kalicz 1982; Patay 1974; Patay 1984; Ecsedy 1979; Ecsedy 1981.
[238] Renfrew 1973, pp. 93-120; Evans, Rasson 1984, pp. 713-718, 724, 725; Raczky 1988, pp. 9-13.
[239] Raczky 1991
[240] Lazarovici 2010, pp.129-162.
[241] Dumitroaia 2000, p. 20.

opens new assumptions regarding the evolution of these communities. How would Şeuşa-*Gorgan* settlement be attributed if it would have been discovered prior to the necropolis from Decea Mureşului?! Perhaps, it would have been attributed to the final Tiszapolgár phase, along with the "C" type vessel. These communities (Tiszapolgár-Bodrogkerestúr and Herculane II), though different than those of the developed Eneolithic of Petreşti type, seemed to still be tributary to the agricultural magical-religious practices, at least if the community from Şeuşa-*Gorgan* is considered. The intra-Carpathian territory operates, from around **4.200 BC –** when probably *Gorgan* settlement was born, and until around **3.800/3.700 BC –** when the presence of eastern elements is very much noticed, under the influence of southern and western, slow contacts, without a spectacular impact or which would be possibly archaeologically explained as major changes.

In a broader context, it is noted that after 4.500 BC, in the north-west of the Black Sea, the Bolgrad-Aldeni II aspect ceased. This moment probably corresponds with the time when the first burial with ochre occurred and was attributed to the nomadic population of North-Pontic origin, under the name of **Suvorovo**[242]. The territory which they occupied was stretched from the region of Nipru (Novodanilovka, Capli, Krivoy Rog, Vorosilovgrad, Mariupol etc.)[243] until the Lower Danube (Căinari, Giurgiuleşti, Fundeni, Suvorovo, Falciu, Casimcea etc.) They neighboured other post-Mariupol communities: Novodanilovka, Chvalinsk-Sredni Stog II, Skelya (Fig. 3). In the NW side, the Suvorovo communities had contact with the tribes of Cucuteni A-Tripolie B1 agriculturists (Cuconeştii Vechi, Varatik, Costeşti)[244], and in the Southern area, with the Kodzaderman-Gumelniţa-Karanovo VI[245] complex; this was evidenced by the discoveries from Reka Devnja[246]. Besides the stretching area of the Suvorovo group[247], there were funerary inventories identified in Transylvania at Decea Mureşului[248], in south-east of Hungary at Csongrád[249], and recently in Bulgaria (*Gonova Mogila* near Tergoviste)[250]; their content was alike. Then, at approx. 30km downstream from the Decea Mureşului necropolis, there was discovered the settlement from Şeuşa-*Gorgan,* which we believe it belongs to **the same chronological horizon** (Fig. 3)**.**

We add to these archaeological evidences A number of discoveries are added to these archaeological evidences, most of them chance-finds or, some, within an uncertain archaeological context, such as **sceptres and quadrelobate bludgeons** which are generally attributed to Decea Mureşului culture or match this phase of the Eneolithic marked by the cultures of **Ariuşd-Cucuteni-Tiszapolgár-Bodrogkeresztúr-Herculane**.

Giving the presented context, it is believed that the connections with the Eastern world are provided, in a first phase, by the slow population movements or intrusions from the North-Pontic and Caucasian steppes of the following cultural realities: "C" type ceramic in Moldavia and its intrusion in the Transylvanian space (e.g. the vessel from Şeuşa), followed by the discoveries of Decea Mureşului type – the necropolis, the settlement from Şeuşa-*Gorgan* and the discovery of bludgeons and stone sceptre of Suvorovo origin.

The first contacts between the Transylvania agriculturists and the populations of North-Pontic origin take place, most probably, after **4.300 BC, at the level of Cucuteni A3**. Most specialists established direct connections between the graves from Decea Mureşului and Feldioara, and those of the **Suvorovo** group, specific to the NW Pontic space[251]. In the north-

[242] Dergacev 1986, pp. 65-74; Manzura, Sava 1994, pp. 147-155; Manzura 1994, pp. 94-95; Govedarica 1998, pp. 179-190; Burtănescu 2002, pp. 386-387; Govedarica 2004, pp. 266-268.
[243] Govedarica 1998, pp. 181-182.
[244] Dergacev 1998, p. 39.
[245] Lichardus 1991b, pp. 189-191, Abb. 13.
[246] Lichardus 1993, pp. 9-100.
[247] Rassamakin 2004, p. 18, Abb. 5
[248] Kovacs 1932, pp. 89-101; Kovacs 1944, p. 3-20.
[249] Ecsedy 1979, p. 11-13
[250] Kancev 1991, pp. 45-46, 56-57; Gogâltan, Ignat 2011, pp. 20-21.
[251] Gogâltan, Ignat, 2011, p. 25.

west of the Black Sea, the Sovorovo group is then replaced by the Cernavodă I culture, which brings together the characteristics of the local population (tell type settlements), as well as important steppe elements[252]. To NW, it maintains strong relationships with the Cucuteni A-B/B-Tripolie BII/CI manifestations[253] and is contemporaneous, within the North-Pontic steppe area, with the lower level of the settlement from Mikhailovska, with Dereivka phase of the Sredni Stog complex and the early manifestations of the Maykop Khutor Repin cultures[254]. No direct relationship can be proven for this sequence as existing between Transylvania and the North-Pontic world. Otherwise, during the time named by M. Gimbutas *„Kurgan II*" phase, in the east of the Oriental Carpathian Mountains, the intensity of the connections with the North-Pontic world was extremely low[255]. During a subsequent phase, the manifestations of Horodiştea Folteşti and Cernavodă I, Renie II and then Cernavodă III/Boleraz which progress towards the Central and Southern Europe, on the Danube, encouraging the formation of the cultural blocs which precede the Bronze Age, Baden, Coţofeni, Kostolac and Vucedol.

4. Types of contacts[256]

The issue of identifying a phase, a moment of the proto- Indo-European linguistic consistency, as well as the mechanism through which this linguistic family spread, remains open, but the previously discussed interpretation models, as that one of M. Gimbutas, should benefit of reconsideration, approaching the new archaeological realities and chronological models[257]. The funerary findings indicate that it was after 4.500 BC when a movement of small human groups starts from east, also reaching the intra-Carpathian space after 4.250 calBC. These populations has a slow and, apparently, peaceful advancement[258] in the east of Romania and then, in the intra-Carpathian area; they were, most probably, assimilated by the local communities.

CHAPTER VII. GENERAL CONSIDERATIONS

Irrespective of how this period[259] is named, *Eneolithic* or *Chalcolithic*, *Copper Age*, or *transition*, it is understood that it represents a "***bridge***" between the classic age of the Neolithic and that of the Bronze Age. In the same time, the recent researches indicate that this period, assigned by the former research as a short transition period between the Neolithic and the Bronze Age, recently inclines to be understood as a historical period which started earlier (around 4.700/4.600 BC) and lasted longer than it was understood by the traditional archaeology (3.800/3.700 BC). As such, the material culture's and socio-economic-cultural transformations recorded for the end of the Eneolithic Age, can be regarded in the light of the new researches as a result of gradual changes which took place during a long period of time, rather than events based of dramatic changes of some migrations. In the same time, there are some major changes

[252] Manzura, Sava 1994, pp. 155-161; Manzura 1994, pp. 95- 96; Parzinger 1998, pp. 123-134; Manzura 1999, pp. 95- 174.
[253] Morintz, Roman 1969, p. 67; Cucoş 1999, pp. 150-151.
[254] Manzura, Sava 1994, p. 157; Manzura 1994, p. 99; Govedarica 2002, pp. 781-797.
[255] Gimbutas 1997, pp. 58-59.
[256] Datorită faptului că necropola de la Decea Mureşului a fost cuprinsă în teoria "valurilor" migraţioniste, am prezentat pe scurt principalele ipoteze de lucru.
[257] Ignat 2011, p. 37.
[258] For example, the ceramic inventory from Giurgiuleşti burials was taken over from the communities of Bolgrad-Aldeni type which they probably had contact with.
[259] In regards with the subject and cultures discussed in this report, we distinguish several significant terminological trends: „Hungarian school" of archaeology which uses, for the eneolithic age, the term of *Copper Age*, respectively, the early age – marked by the Tiszapolgár culture, middle age – marked by the Bodrogkeresztúr, Hunyadihálom culture and late copper age – marked by Baden culture. The „Bulgarian school" of archaeology uses the terms of *eneolithic* or *copper age*. The "Serbian school" of archaeology uses the terms of *eneolithic* or *copper age*, and the „Romanian school" of archaeology uses, many times, for the same time frame, the terms of *eneolithic*, *copper age* and/or *transition*.

in the south-east of Europe during this period, in relation with the settlements' organisation and subsidence economy, marked by the freeing from the classic, agricultural economy of the Neolithic Age. These changes include the abandonment of the Neolithic traditional settlements and the appearance of some short-time settlements, scattered on a broad territory, as well as an increased dependence on the breeding (growing) of cattle and grazing[260]. In fact, these changes characterise, from the economic point of view, the society of the final Eneolithic; they will support the necessary premises for transforming the society into that of the Bronze Age[261].

We describe this period using the term of **final eneolithic**, which is considered to cover the phenomenon of the copper metallurgy at an unprecedented level – and without a continuation of it in the following phase -, as well as the socio-cultural component of the former "*agrarian*" remaining economic activities, still deeply related with the Neolithic world. Added to this heritage, in new forms[262], are the magic-religious roots related to the perpetuation of the fecundity and fertility cult of the *mother Goddess.*

The presented cultural manifestations, either independent or mixed, based on slow or dynamic contacts, were found in the syntagm: „the only certain thing is that they occupy the time frame between Petreşti[263] and Ariuşd cultures[264], on one side, and Renie II/Cernavoda III, Coţofeni on the other side"[265]. Therefore, in chronological meaning, we distinguish a time frame which starts in the Pannonia around the date of 4.600 calBC[266] and ends in around 3.800 calBC. For this timeframe, the cultures of Petreşti, Ariuşd, Tiszapolgár, Decea Mureşului, Bodrogkeresztúr and Herculane-Hunyadihálom were examined. In Transylvania, the time frame marked by the above mentioned cultures, starts, the earliest, around 4.500 calBC through the early phase of Petreşti culture, which reflects the *developed eneolithic* and continues its evolution between 4.250 - 3.800 calBC, through which we named the **Herculane Horizon**, in the same time with the occurrence of the late Tiszapolgár, Decea Mureşului and Bodrogkeresztúr manifestations which are attributed to the *final eneolithic*.

In regards to the **Petreşti** culture, I. Paul saw the entire development of the culture as taking place during a period of 500–600 years[267], matter which, in the light of the new researches, must be modulated. As such, for the end of Petreşti culture, *C14* data is presented from a confined complex of Petreşti B phase from Ampoiţa-*La Pietri*, which belong to around **4.250 calBC**[268]. In regards with the beginning of Petreşti culture, it is probable that I. Paul[269] included in Petreşti A phase[270] what currently is defined as Foeni cultural group. Therefore, considering the former proposal[271] to assess these manifestations under the syntagm of „**Foeni-Petreşti cultural complex**", the timeframe cumulated of these communities starts at around **4.750 calBC** through the early manifestations from Banat[272], is indicated at around **4.550 calBC** within the intra- Carpathian arch[273] and ends its evolution around **4.250 calBC** through the late phases of Petreşti culture. As such, it is concluded that a shorter evolution for Petreşti culture, which doesn't seem to exceed **300-250** years (**4.500-4.250 calBC**) and an evolution of almost 500 years for the „Foeni-Petreşti cultural complex" **(4.750-4.250 calBC)**.

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[260] Sherratt 1980, pp. 261-306.
[261] Bankoff, Winter 1990, pp. 175-191.
[262] Please see, for example, the big gold idols of *en violon* type.
[263] Without direct contacts with Herculane horizon.
[264] With direct contacts or Herculane imports only during the final phase.
[265] Roman 1971; 1973; 1978.
[266] Year 4.600 calB.C. is given by the early phases of the Tiszapolgár culture in Pannonia, according to Diaconescu 2013.
[267] Paul 1992, p. 132.
[268] We are aware of the fact that additional data are required from various complexes/contexts, but this is a good start for the time frame proposal for the end of Petreşti culture.
[269] Paul 1992.
[270] Please see the ceramic material described as Petreşti A from Daia Română.
[271] Lazarovici, Lazarovici 2007; Draşovean 2013
[272] Draşovean 2013; 2014
[273] Gligor 2009; 2009a; 2014; Draşovean 2013; 2014.

In this context, it seems that **Ariuşd culture** received the influences of Foeni group and not of Petreşti. The number of elements which generated the regional individualisation in the form of Ariuşd manifestations is still debated by specialists. But, it is certain that the evolution of these communities is close related with the Cucuteni-Tripolie complex to which, otherwise, they belong, and end with Herculane II elements, and perhaps Herculane III. The earliest manifestations of Ariuşd type can be noted at around 4.550 BC, and the latest ones at around 4.050 BC.

In regards with **Tiszapolgár** culture**,** according to the last C14 modeling, it is observed that the culture's beginning takes place in Pannonia, at around **4.600 calBC**, and its ending, just before **4.200 calBC**[274]. Concerning the intra-Carpathian arch, the Tiszapolgár culture makes its presence noticeable only at the end of the second development phase[275] and, mainly, during the mixture phase towards Bodrogkeresztúr culture, meaning at around 4.250 calBC. Once these communities in Transylvania are established, the socio-economic transformation starts to take place through the practice of transhumance on "short" areas.

In regards to **Decea Mureşului** culture**,** the synchronism with the late phase of Tiszapolgár culture is verified through the recent discovery from Şeuşa-*Gorgan*. These proofs are completed by the "C" ceramic import from the same site, which belong to a Cucuteni A-B[276] chronological period. The inhabiting from *Gorgan* is, probably, more recent than the burials from Căinar, Giurgiuleşti (Rep. Moldavia), Casimcea and even than the one from Decea Mureşului belonging to Suvorovo-Novodanilovka culture (**4.490-4.330 calBC)**[277]. The life of these communities, as well as short-time evolution[278] Decea Mureşului group can be outlined through these discoveries, after the moment established by the eponym necropolis. Judging by how the material culture identified in the settlement of Şeuşa-*Gorgan* looks, it is believed that the people of Decea Mureşului culture took from the way of life of Tiszapolgár communities; shortly after, the early elements of Herculane and Bodrogkeresztúr, made their presence felt.

In the light of the new C14 data, the **Bodrogkeresztúr** culture seems to have its beginning in Panonnia, at around **4.300 calBC,** while the last burials didn't pass year 4.000 calBC[279]. The data suggests, as noted at Basatanya, a contemporaneity of 100 years with the burials attributed to Tiszapolgár culture. These manifestations are most probably making their presence felt in Transylvania, a just before year 4.200 BC through the early manifestations from Ostrovu Corbului or Pecica-*Forgaci* in Banat, and then through the cultural mixtures observed at Deva-*Ciangăi*. The culture's evolution is marked by the contacts with Herculane horizon which outlives the culture of Bodrogkeresztúr until around 3.800 BC. The assumption of describing a Tiszapolgár-Bodrogkeresztúr cultural complex is to be considered by the current and future researches.

P. Roman proposes in relation with **Herculane** cultural horizon on Romania territory, the denomination of „ *Herculane II-III - Cheile Turzii – Hunyadihálom Group"*; he observed in the researches from Oltenia, Transylvania and Banat, and especially, in the the stratigraphics from *Peştera Hoţilor,* three development phases: Herculane I phase, Herculane II phase and Herculane III phase[280]. The name of „*Herculane*" has been nominated for these manifestations; the reasons are presented in Chapter II and III.6. In regards to the chronological position of Herculane horizon from **Transylvania**, we outline the following: **H I =** Petreşti B, Tiszapolgár B2, Decea Mureşului, "C" Ceramic, Bodrogkeresztúr A (noticeable in the settlements from Şeuşa-*Gorgan* and Deva-*Ciangăi*); **H II** = handles with discoid attachments (Schaibenhenkel**)**, southern elements – graphited, channelled, painted -, western elements of Bodrogkeresztúr B type with

[274] Diaconescu 2013, p. 51.
[275] According to the culture's timeline proposed by Diaconescu 2013.
[276] The earliest presence of C ceramic are noticed in Moldavia, at Cucuteni A3 horizon
[277] C14 dating from the eponym necropolis from Decea Mureşului indicate the date of 4.327 cal B.C.
[278] For example, the settlement from *Gorgan* „hosted" one generation only.
[279] Raczky, Siklosi 2013; Diaconescu 2013, dating done in the mixed necropolis (Tiszapolgár, Bodrogkeresztúr and Hunyadihálom) from Basatánya.
[280] Roman 1973, p. 68.

Furchenstich (noticeable in the settlements from Ampoiţa-*La Pietri* and Cheile Turzii); **H III =** handles with discoid attachments (Schaibenhenkel**)**, without *Furchenstich* elements (in Banat at Pecica-*Şanţu Mare* and, possible, at Cheile Turzii). Comparing the data and C14 modeling, it is noted that the Herculane manifestations fit in the post-**Sălcuţa IIb-IIc** timeframe, respectively **Cernavodă I,** which are by approx. 200 years older, starting with around **4.400 BC**. In this meaning, and also taking into account the cultural phenomenon above-presented, the Herculane manifestations within the Carpathian arch are placed in the interval of 4.250-3.800 BC. In the **West European** and **Balkanic** geographical area, the Herculane horizon is synchronic with the Bodrogkeresztúr and Hunyadihálom manifestations from Hungary, Balaton–Lasinja– *old Furchenstich* from Slovakia, Bubanj–Hum Ia-Sălcuţa IV from Serbia, Galatin, Herculane II–III from Bulgaria, Rachmani from Tesalia and Troia Ic from Anatolia[281].

As such, it is likely that the earliest phases of Herculane horizon be recorded in Romania within the context of Sălcuţa IIc from N-W of Oltenia.

The last phase of the south-east Europe eneolithic raises several questions related to the **changes** occurred in the material culture, types of settlement and the overall subsistence way. A major change in the ceramic's inventory is recorded through the disappearance of the Neolithic tradition of painted ceramic manufacturing. These occupations decline in volume, as well as in technical skills and technological know-how, thus witnessing a real cultural replacement[282]. Then, the majority of multi-layered sustained settlements of the developed Eneolithic from Eastern Balkans[283], suddenly end their evolution. The settlements from final eneolithic are usually characterised by a short duration and modest living arrangements. These social changes are, perhaps, related to the occupations of these communities, where oscillating grazing prevails, this leading to the abandonment of the traditional settlements from the open terraces of the rivers. It is also noted that many caves begin to be used as seasonal shelter, suggesting an increase of the shepherds' migration between the lower and higher territories[284]. But, the field in which the final eneolithic excels is represented by the copper metallurgy, through the manufacturing of axes with crossed arms and perfecting the processing of gold jewels. From historical stand-point, and in comparison with the society of developed eneolithic characterised by the stability of human agricultural communities, this period is understood as one when the society's changes and transformations begin. These transformations were explained on the basis of the existing researches, through some work assumptions which are presented below.

In this context, between **4.600/4.500** and **3.800/3.700 BC**, cultural evolutions are recorded that could not be defined as a "*transition*" phase and where the evolution of a culture is documented, generally characterised by social order – if referenced by the organisation manner of the Tiszapolgár and Bodrogkerestúr necropolises –, of maximum blooming of the copper metallurgy and dynamic material exchange relationships. The researched age is relatively long and relates to changes which are, perhaps, the hardest thing to distinguish, because they come from several directions, they are generally slow, such as the southern material elements of Herculane type, recorded for a long period of time, or the western elements of old *Furhenstich* type. Some items are imported ("C" vessel from Şeuşa), and other are perhaps generated by the contacts of matrimonial relations or well-guarded by specialists in various fields (metallurgists and Golders). The period is characterised by the slow centrifugal movement of the communities, by the beginning of the "*seekers*" and village abandonment specific to the developed eneolithic, and by the entire social system promoted by these communities.

Normally, these changes – along with others of more recent date and which include the inhumation in plane necropolises and then in tumulus, of the communities with string ornamented ceramic (e.g. "C" ceramic from Cucuteni environment which we also found in Şeuşa-*Gorgan* site*),* were attributed to the first phase of the nomadic shepherds movements from

[281] Roman 1971; 1973; 1978.
[282] Anthony 2010, p. 45.
[283] Dennel 1978.
[284] Anthony 2010, p. 52

the Russian steppes[285]. These assumed nomads have a great importance, being considered by some researchers, as the first Indo-Europeans who arrived in the European landscape[286]. The observations related to the linguistic exchanges[287], the contacts between various populations and the inter-cultural exchanges of some material goods were usually ignored[288]. If the final eneolithic phase is long, as we noticed, filled with socio-economic exchanges and inter and intra-group competitions, as well as regional and inter-regional contacts, then there is a sound reason to assume that, also, the linguistic exchanges played an integratory role in these processes[289]. Giving the long period of time when these transformations took place, then the linguistic exchanges represent a logic assumption. As such, one of the fundamental assumptions is represented by the importance of the cultural changing rhythm or by the assembly which, in most cases, determine how this change is explained. Therefore, if the change is perceived as **slow and ongoing**, then it is explained as being a "***local development***"; if it is perceived as **sudden**, then it automatically proves the **invasion or "*migration*"** of a new group[290].

It is also important to underline the theoretical contribution of these population movements, the innovating, progressive and/or involution elements on the social transformations from the researched area, and moment when they actually happened. Referring to the historical transformations of an area and to the communities which generate these transformations, the cultural continuity and shocks recorded archaeologically, two ideas are highlighted:

- **"local" development,** by continuous transformation of the communities through cultural contacts which, in our opinion, they also include inherent population movements, sometimes of fairly broad areas. These changes are slow, in continuous transformation on some "*locals*" (e.g. Tiszapolgár, Bodrogkeresztúr, Herculane cultures),
- Changes generated by the "**migrations**" of population with an impact which is strong enough to modify the social structure of the "*old*" communities, by the "*new*" ones. These changes are dynamic, where the presence of allogeneous elements can be recorded as a foreign appearance in a conservatory environment (e.g. Cernavodă III/Boleraz, Baden-Coţofeni).

In accordance with the socio-cultural context, the development level, the good- neighbour or cohabitation relationships of various human groups which were encountered, meaning the needs of these communities in these micro-areas, we record unequal transformations of the respective societies. Some transformations are easy to archaeologically perceive, others, more difficult. As such, for the presented period and discussed communities, we have the following results:

- **"C" Ceramic** – penetrates the Cucuteni-Ariuşd environment and, randomly, the intra-Carpathian area, as it is the example from Leţ or Şeuşa-*Gorgan* – it is understood that this as a **slow migration** of some communities and the existence of some constant trade exchanges. In this case, the transformations come "***from the outside***", but they aren't strong enough to impose new social and cultural behaviours, resulting in their assimilation by the existing conservatory communities.
- **Tiszapolgár, Bodrogkeresztúr, Herculane** communities – in the case of these communities, we understand a process of **slow migration** of some "*locals*", on relatively small areas, controlled by them, as well as the existence of the exchange contacts with the southern and western world. As such, the changes come "from the inside" of the communities, generating slow transformations, difficult cu archaeologically identify, if

[285] Gimbutas 1977, p. 277; Thomas 1982, p. 61-86; Tasic 1982-1983, p. 15-20.
[286] Childe 1925; 1929; Ghimbutas 1977.
[287] At this stage of research, it's impossible to scientifically follow it, as we observed in the statements of Vulpe 2008.
[288] Anthony 1988, p. 441-45.
[289] Evans, Rasson 1984, p. 718, Anthony 1988, p. 441-45.
[290] Evans, Rasson 1984, p. 718, Anthony 1988, p. 441-45.

we refer, for example, to the becoming of **Bodrogkeresztúr** culture from **Tiszapolgár** culture[291].

- **Decea Mureşului** communities – in this case, a new occurrence is noted within a slow developing environment generated by Tiszapolgár communities, already present in this area. As such, the transformations come "***from the outside***" but, again, they aren't quantitative and qualitative (technologically speaking) strong enough to impose the change. Their **melting** is thus concluding in an existing social system, as noted in the settlement from Şeuşa-*Gorgan*.

The assimilation of these communities is also supported, at this level of research, by the absence of other similar discoveries which would outline the presence Decea Mureşului people under the basic cultural-material identity, emphasised within the original discovery from the eponym necropolis. The finding of several sceptres and quadrelobate bludgeons probably relates to the original moment of this group's occurrence and a certain dispersion or processing of these goods carried out by the communities which they seem to have been in contact with.

Therefore, the question about the belonging of the Decea Mureşului or Cucuteni „**C**" communities and, later-on, the Cernavodă ones to a proto-Indo-European group, remains a work assumption. But it is certain that through the record of the necropolises and isolated graves of Suvorovo type (i.e. Dereveika → Căinar → Giurgiuleşti → Casimcea → Feldioara → Decea Mureşului → Csongrád), we can probably talk about a first movement of the populations, and not just about an exchange of artefacts. In all these cases, though the allogeneous communities were assimilated by the local communities.

As such, during the studied age, the slow southern and western migration (Tiszapolgár, Bodrogkeresztúr, Herculane) occurs, in parallel with the slow eastern migration of Cucuteni **„C"** (assimilated by Cucuteni communities), then the eastern, dynamic migration, Decea Mureşului (assimilated, at its turn, by Tiszapolgár, Bodrogkeresztúr, Herculane fund). Therefore, recorded interferences of the human communities, result in groups with mixed cultural qualities, sometimes with common elements, which become pan-cultural or unequally used by various human groups.

The constant pressures generated by the groups on-the-move from the East[292] - Decea Mureşului phenomenon – as well as the already established mixture from Panonnia area - Tiszapolgár, Bodrogkeresztúr groups – or the intrusions from the southern area – given by the so-called handles with discoid attachments (Schaibenhenkel**)** – generate the dislocation of the stable, matriarchal eneolithic communities which used to produce their food mainly from the cultivation of plants. These changes happen gradually within the assessed area, starting with 4.300/4.250 BC and lasting until around 3.700/3.600 BC, when the Danube's area will be dominated by Cernavodă III-Boleraz communities. But, once these communities and Horodiştea, Folteşti and Spherical Amphorae cultural groups occur, the things change; the allogeneous elements, through the constant pressures and movement generated from East to West, mainly on the Danube's valley corridor, will succeed to impose that transformation (quantitative and qualitative) of the societies "***from the outside***".

The described cultural contacts and interferences take place for a duration of almost 1000 years and they actually reflect the specific of this period when the exchanges of material goods and the contacts with the South-West are constant, gradual, becoming "local", and those with the East, reveal the contact with two different worlds, in relation with both the material culture and the social structure.

In regards to the chronological sequences established more than 40 years ago for the discussed area, it is believed that, generally, these don't encounter modifications. A better understanding of each culture and, surely, of their relationships is realised. In this context, we understand the final eneolithic inhabiting from Şeuşa-*Gorgan* and Ampoiţa-*La Pietri* as belonging to this time frame when, within intra-Carpathian Transylvania, several cultural

[291] The new C14 data reveal the cohabitation period of these two „cultures".
[292] Gogâltan, Ignat 2011, p. 21-26, fig. 1.

interferences take place „*from the inside*" and „*from the outside*", resulting in proximities and long term cohabitations of some communities and "*original*" material cultures. Should in the case of the material culture print from Şeuşa-*Gorgan* we observed the "*migration*" through eastern intrusion during a time level equivalent with Herculane I, then at Ampoiţa the "*local*" cultural mixture of late Tiszapolgár and early Bodrogkeresztúr is outlined, with significant south-western contacts, taking place during the beginning of Herculane II chronological timeframe.

YEARS Cal B.C.	TERMINOLOGY RO	TERMINOLOGY HU	TRANSYLVANIA	HUNGARY	S-E CARPATHIAN MTS / MOLDOVIA	GREECE	WEST ANATOLIA	STEPPES Ukrain	STEPPES EAST
3.500	EARLY BRONZE	LATE COPPER AGE	Coţofeni	Baden/Coţofeni	Usatovo	Eth II	Troia III	Usatovo	Iamnaya
3.600	TRANSITION		Cenavoda III	Cernavoda III/ Boleraz	Cucuteni B3/Usatovo	Eth I	Troia II	Cucuteni B3	
3.700	FINAL ENEOLITHIC	MIDLE COPPER AGE	?	Huniadyhálom	Cucuteni B1, B2	Rachmani III	Troia I	Cucuteni B2	Mikhailovska I
3.800			H III/without Furchentich (Cheile Turzii?)		H III/Cucuteni A-B 2/early Cucuteni B, handles with discoid attachments (possible the materials found at Traian, Calu, Poduri, Văleni, Tg. Mureş)	Rachmani II			
3.900			H II/Bodrogkeresztúr B (Cheile Turzii)	Bodrogkeresztúr B	Cucuteni A-B 1, 2		Kum Tepe Ib	Cucuteni B1	Dereivka
4.000			H II/Bodrogkeresztúr B (Ampoita, Cheile Turzii)		H II/Cucuteni A-B1– Ariuşd 3, Bodrogkeresztúr B, Furchentich (correspond to C2 horizon from Băile Herculane, Ariuşd, Mereşti, Reci)			Cucuteni A-B2	
4.100		EARLY COPPER AGE	H I/Bodrogkeresztúr A	Bodrogkeresztúr A	Cucuteni A4/Ariuşd 3/ Cucuteni "C"	Rachmani I	Kum Tepe Ia		Suvorovo/Novodanilovka/ Skelya/Sredni Stog II
4.200			Petreşti B/Tiszapolgár B2/Decea Muresului/"C"/H* I (Seusa *Gorgan*, Deva *Ciangai*)	Tiszapolgár B2/ Csongrád / Bodrogkeresztúr A	Cucuteni A 3/Cucuteni "C"/Ariuşd 2			Cucuteni A-B1	
4.300	DEVELOPED ENEOLITHIC		Petreşti A-B/ Tiszapolgár B1?	Tiszapolgár B1/ Bodrogkeresztúr A	Cucuteni A2/Ariuşd 2			Cucuteni A4	
4.400			Foeni/Petreşti A	Tiszapolgár B1	Cucuteni A 2/Ariuşd 1			Cucuteni A 3	
4.500	EARLY ENEOLITHIC		Foeni	Tiszapolgár A	Cucuteni A 1/Ariuşd 1	Dimini II Otzaki II	?	Cucuteni A 2	?
4.600					Cucuteni A 1			Cucuteni A 1	?
4.700			Foeni	Proto-Tiszapolgár	Pre-Cucuteni 3			Pre-Cucuteni 3	Khvalynsk

*H = HERCULANE Horizon

Fig. 1. Cultural synchronism of Herculane horizon in the light of C14 cronology.

YEARS Cal B.C.	TRANSYLVANIA	PHASE RO	PHASE HU	HUNGARY	CHARACTERISTIC SETTLEMENTS
3.500	Coţofeni	EARLY BRONZE	LATE COPPER AGE	Baden/Coţofeni	
3.600	Cenavoda III/Boleraz	TRANSITION		Cernavoda III/Boleraz (?)	
3.700	?	FINAL ENEOLITHIC H III	MIDDLE COPPER AGE	Huniadyhálom	Pecica-*Şanţu Mare*
3.800	H III/without Furchentich		BODROKERESZTÚR/ HUNYADIHALOM		Pecica-*Şanţu Mare*, Cheile Turzii?
3.900	H II/Bodrogkeresztúr B	H II		Bodrogkeresztúr B	Herculane Horizon Cheile Turzii
4.000					Herculane Horizon Ampoiţa - *La Pietri*
4.100	H I/Bodrogkeresztúr A	H I		Bodrogkeresztúr A	Şeuşa-*Gorgan*, Deva-*Ciangăi*
4.200	Petreşti B/Tiszapolgár B2/Decea Mureşului, "C" Ceramic/H* I		EARLY COPPER AGE TISZAPOLGÁR	Tiszapolgár B2/Csongrád Bodrogkeresztúr A	Petreşti B Ampoiţa - *La Pietri* Decea Mureşului Necropolis
4.300	Petreşti A-B/Tiszapolgár B1?	DEVELOPED ENEOLITHIC PETREŞTI		Tiszapolgár B1/ Bodrokeresztúr A	
4.400	Foeni/Petreşti A			Tiszapolgár B1	
4.500	Foeni (Transylvania)	EARLY ENEOLITHIC FOENI		Tiszapolgár A	
4.600	Foeni (Banat)			Tiszapolgár A	
4.700	Foeni (Banat)			Proto-Tiszapolgár (?)	

*H = HERCULANE Horizon

Fig 2. Cultural synchronism between Transylvania and the Hungarian Plain

YEARS Cal B.C.	AGE		TRANSYLVANIA	BANAT	S-E CARPATHIAN MTS	OLTENIA
3.500	Early Bronze		Coţofeni	Baden/Coţofeni	Cucuteni B3	Coţofeni
3.600	"Transition"		Cenavoda III	Cernavoda III/Boleraz	Cucuteni B2	Cernavoda III/Boleraz
3.700	FINAL ENEOLITHIC	H III	?	H III/Pecica – *Şanţu Mare*	Cucuteni B1	Cernavoda III developing
3.800			H III/without Furchentich	H III/without Furchenstich, Huniadyhálom (Băile Herculane level e, Pecica *Şanţu Mare*)	H III/Cucuteni A-B/early Cucuteni B, handles with discoid attachments (possibly the materials discovered at Traian, Calu, Poduri, Văleni, Tg Mureş)	H III/without Furchentich/Huniadyhálom (Băile Herculane level e)
3.900		H II	H II/Bodrogkeresztúr B	H II/Sălcuţa IV/ Bodrogkeresztúr B (Băile Herculane level c_1 – c_2, Nandru-*Peştera Curată* and Nandru - *Peştera Spurcată*)	H II/Cucuteni A-B/Ariuşd 3/ Bodrogkeresztúr B (correspond to level c2a fom Băile Herculane, Ariuşd, Mereşti, Reci)	H II/Sălcuţa IV/Bodrogkeresztúr B, (contacts with Cernavoda I/Renie
4.000			H II/Bodrogkeresztúr B	H II/Sălcuţa IV, Bodrogkeresztúr B elements (Băile Herculane level c_1 – c_2, Nandru-*Peştera Curată* and Nandru - *Peştera Spurcată*)		H II/Bodrogkeresztúr B/handles with discoid attachments (Băile Herculane level c_1 – c_2, Ostrovul Corbului - *Botul Chiciului*)
4.100		H I	H I/Bodrogkeresztúr A	H I/Sălcuţa IV/ Bodrogkeresztúr A	Cucuteni A4/Ariuşd 3/Cucuteni C	H I/Sălcuţa IV/Tiszapolgár B2/ Bodrogkeresztúr A
4.200			Petreşti B/Tiszapolgár B2/Decea Mureşului/"C"/H* I	Sălcuţa IIc-III/Sălcuţa IV/Tiszapolgár B2/H I (Băile Herculane levels a and b)	Cucuteni A3/Cucuteni „C"/Ariuşd 2	H I/Sălcuţa IIc-III/Sălcuţa IV/Tiszapolgár B2 (Băile Herculane nivelurile a şi b)
4.300	**DEVELOPED ENEOLITHIC**		Petreşti A-B/Tiszapolgár B1?	Tiszapolgár B1	Cucuteni A2/Ariuşd 2	Sălcuţa IIb/Tiszapolgár B1
4.400			Foeni/Petreşti A	Foeni	Cucuteni A2/Ariuşd 1	Sălcuţa IIa
4.500	**EARLY ENEOLITHIC**		Foeni	Foeni	Cucuteni A1/Ariuşd 1	Sălcuţa I
4.600			Turdaş III/Iclod III	Foeni	Cucuteni A1	Sălcuţa I
4.700			Turdaş III/Iclod III	Foeni	Pre-Cucuteni 3	Sălcuţa I (?)

H* = HERCULANE Horizon

Fig 3. Table of synchronisms between Southern, Western and Eastern cultural horizons.

ANNEX 1. DIRECTORY OF FINDINGS

We chose to use the specialty bibliography of the most current data published in the doctorate theses and illustrate, by marking-out on maps, the areas occupied by the presented cultures.

The directory of findings belonging to Petreşti culture[293] (Map 2)
The directory of findings belonging to Ariușd culture[294] (Map 5)
The directory of findings belonging to Tiszapolgar culture[295] (Map 8)
The directory of findings belonging to Decea Mureșului culture[296] (Map 11)
The directory of findings belonging to Bodrogkeresztur culture[297] (Map 14)
The directory of findings belonging to Herculane horizon[298] (Map 17)

ANNEX 2. LIST OF FIGURES AND MAPS

[293] Tincu 2011a, undergoing printing, pp. 123-172, Fig. 101, 102. We used the entire directory and the map of Petrești culture discoveries from the quoted author, keeping only the information related to the locality, spot/indication of the discovery and the type of record, i.e. settlement, the other information, including the bibliographical references can be assessed in the publication of the author who has the merit for gathering this information.

[294] Sztáncsuj 2011, manuscript. We used the entire directory and map of discoveries related to Ariusd culture from the quoted author, keeping only the information related to the locality, spot/indication of the discovery and the type of record, i.e. settlement, the other information, including the bibliographical references can be assessed in the publication of the author who has the merit for gathering this information.

[295] Diaconescu 2009. We used the entire directory and map of discoveries related to Tiszapolgar culture from the quoted author, keeping only the information related to the locality, spot/indication of the discovery and the type of record, i.e. settlement. The other information, including the bibliographical references can be assessed in publication of the author who has the merit for gathering this information.

[296] Luca 1999. We used the entire directory and map of discoveries related to Decea Mureșului culture from the quoted author and we added Șeușa-*Gorgan*, keeping only the information related to the locality, spot/indication of the discovery and the type of record, i.e. settlement. The other information, including the bibliographical references can be assessed in the publication of the author who has the merit for gathering this information.

[297] Luca 1999. We used the entire directory and map of discoveries related to Bodrogkeresztur culture from the quoted author, keeping only the information related to the locality, spot/indication of the discovery and the type of record, i.e. settlement. The other information, including the bibliographical references can be assessed in the publication of the author who has the merit for gathering this information.

[298] Sălceanu 2008. We used the entire directory and map of discoveries related to Herculane culture from the quoted author, keeping only the information related to the locality, spot/indication of the discovery and the type of record, i.e. settlement. The other information, including the bibliographical references can be assessed in the publication of the author who has the merit for gathering this information. We also underline the fact that the author includes in this directory, some discoveries which other authors usually classified them „more tightly”in cultures such as Tiszapolgár, Bodrogkeresztúr, Hunyadihálom, Petreşti, Sălcuţa, Ariuşd, Cucuteni or Decea Mureşului.

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XXX 1995 - *Istoria României de la începuturi până în secolul al VIII-lea*, Bucureşti, 1995.

XXX 2001 - *Istoria românilor*, vol. I, coord. M. Petrescu-Dâmbovița, Al. Vulpe, Bucureşti, 2001.

BIBLIOGRAPHICAL ABBREVIATIONS

ABSA	-	Annual Brithanic School Athens, Athens.
AÉ	-	Archaeologiai Értesitö, Budapest
ActaMN	-	Acta Musei Napocensis. Muzeul Naţional de Istorie a Transilvaniei, Cluj-Napoca.
ActaMP	-	Acta Musei Porolisensis. Muzeul Judeţean de Istorie şi Artă Zalău, Zalău.
Acta Siculica	-	Acta Siculica, Anuarul Muzeului Național Secuiesc, Sfântu Gheorghe.
AAH	-	Acta Archaeologica Academiae Scientiarum Hungariae, Budapest.
AH	-	Archaeologia Hungarica, Budapesta.
AJA	-	American Journal of Archaeology
AICSU	-	Anuarul Institutului de Cercetări Socio-Umane, Sibiu.
Aluta	-	Aluta (Studii și Comunicări), Sfântu Gheorghe.
AMM	-	Acta Moldaviae Meridionalis, Muzeul Județean „Ștefan cel Mare" Vaslui, Vaslui.
Antaeus	-	Antaeus. Comunicationes ex Instituto Archaeologico Academiae Scientiarum Hungaricae, Budapest.
Antiquity	-	Antiquity. A Quartely Review of World Archaeology, York.
AO	-	Arheologia Olteniei, Craiova
Apulum	-	Apulum. Acta Musei Apulensis, Muzeul Național al Unirii Alba Iulia, Alba Iulia.
AnB	-	Analele Banatului. Muzeul Banatului, Timişoara.
Angustia	-	Angustia. Muzeul Carpaţilor Răsăriteni, Sfântu Gheorghe.
ArchHung	-	Archaeologia Hungarica, Dissertationes Archaeologicae Musei Nationalis, Budapest.
ArchMold	-	Arheologia Moldovei, Institutul de Arheologie Iaşi, Iași.
ATS	-	Acta Terrae Septemcastrensis. Institutul pentru Cercetarea şi Valorificarea Patromoniului Cultural Transilvănean în Context European, Sibiu.
Atti	-	Atti del X Simposio Internationale sulla fine del Neolitico e gli inizi dell'etá del Bronzo in Europa, Lasize-Verona, 8-12 aprile, 1980.
AVSL	-	Archiv des Vereins für Siebenbürgische Landeskunde. Neue Folge, Hermannstadt.
BAM	-	Brukenthal. Acta Musei, Muzeul Naţional Brukenthal, Sibiu.
Banatica	-	Banatica. Muzeul Banatului Montan, Reşiţa.
BA	-	Biblioteca de Arheologie. Institutul de Arheologie din București, București.
BAR, IS	-	British Archaeological Reports (International Series), Oxford.
BB	-	Bibliotheca Brukenthal. Muzeul Național Brukenthal, Sibiu.
BCȘS	-	Buletinul Cercurilor Științifice Studențești, Universitatea „1 Decembrie 1918" din Alba Iulia, Alba Iulia.
BerRGK	-	Bericht der Römisch-Germanischen Kommission 1939, Deutsches Archäologisches Institut, Darmstadt.
BHAB	-	Biblioteca Historica et Archaeologica Banatica, Timișoara.
BHAUT	-	Biblioteca Historica et Archaeologica Universitas Timisiensis, Centrul de Studii de Istorie Veche şi Arheologie „Constantin Daicoviciu", Timişoara.
BMA	-	Bibliotheca Musei Apulensis. Muzeul Naţional al Unirii, Alba Iulia.
BMAnt	-	Bibliotheca Memoriae Antiquitatis, Piatra-Neamț.
BMMK	-	A Békés Megyei Múzeumok Közleményei, Bekescsaba.
BMN	-	Bibliotheca Musei Napocensis, Cluj-Napoca.
BUA		Bibliotheca Universitas Apulensis, Universitatea „1 Decembrie 1918" Alba Iulia.
BS	-	Bibliotheca Septemcastrensis, Institutul pentru Cercetarea Patrimoniului Cultural Transilvănean în Context European, Sibiu.

CA	-	Cercetări Arheologice, Muzeul Național de Istorie a României, București.
CAnt	-	Curent Antropology, Chicago.
CAB	-	Cercetări Arheologice în București, București.
CAH	-	Communicationes Archaeologicae Hungariae, Budapesta.
CCA	-	Cronica Cercetărilor Arheologice din România, Ministerul Culturii, Institutul Naţional al Patrimoniului.
Corviniana	-	Corviniana. Acta Musei Corvinensis, Muzeul Catelul Corvinilor, Hunedoara.
Crisia	-	Crisia, Muzeul Ţării Crişurilor, Oradea.
Dacia	-	Dacia. Recherches et Découvertes Archéologiques en Roumanie/Revue d'Achéologie et d'Histoire Ancienne, Bucharest.
Dolg.	-	Dolgozatok az Erdélyi Nemzeti Múzeum Érem – és Régiségtárából (Travaux de la Section Numismatique et Archéologique du Musée National de Transilvanie), Cluj.
Drobeta	-	Drobeta. Muzeul Regiunii Porților de Fier, Drobeta Turnu-Severin.
Eurasia Antiqua	-	Eurasia Antiqua. Zeitschrift für Archäologie Eurasiens, Mainz am Rhein.
Germania	-	Germania. Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts. Frankfurt am Main, 1917-1920; Bamberg, 1921-1931; Berlin, 1932-1975; Mainz, 1976 și urm.
GMKM	-	Glasnik Muzeja Kosovo i Metohije, Metohije.
Hesperia	-	Hesperia. American School of Classical Studies at Athens, Athens.
JAA	-	Journal of Anthropological Archaeology.
JahrbRGZM	-	Jahrbuch der Römisch-Germanischen Zentral Museums, Mainz.
JIES	-	Journal of Indo-European Studies.
KözlCluj	-	Közlemények az Erdélyi Nemzeti Múzeum. Érem-és Régiségtárából, Cluj.
MAIUAW	-	Mitteilungen des Archaeologischen Instituts der Ungarlandischen Akademie der Wissenschaften.
MCA	-	Materiale şi Cercetări Arheologice, Academia Română, Comisia Naţională de Arheologie, Bucureşti.
MFMÉ	-	A Móra Ferencs Múzeumok Évkönyve, Szeged.
MHOMÉ	-	A Miskolci Herman Otto Múzeum, Évkönyve, Miskolc.
PA	-	Patrimonium Apulense. Direcţia Judeţeană pentru Cultură, Culte şi Patrimoniul Cultural Naţional Alba, Alba Iulia.
PArch	-	Pamatky Archeologicke.
PBF	-	Prähistorische Bronzefunde, München.
PISC	-	Publicaţiile Institutului de Studii Clasice, Cluj.
PJZ	-	Praistorija jugoslavinskih Zemalja.
PMMB	-	Publicaţiile Muzeului Municipiului Bucureşti, Bucureşti.
Pontica	-	Pontica. Anuarul Muzeului de Istorie Națională și Arheologie Constanța, Constanța.
PPS	-	Proceedings of the Prehistoric Society, Cambridge.
PZ	-	Prähistorische Zeitschrift. Deutsche Gesellschaft füer Anthropologie, Ethnologie und Urgeschichte, Institut für Prähistorische Archäologie, Berlin.
RA	-	Rassegna di Archaeologia (L'Etáet del Rame in Europa), Florența, 1988.
Radiocarbon	-	Radiocarbon. Arizona Board of Regents on Behalf of the University of Arizona, Arizona.
RI	-	Revista de Istorie (din 1990 Revista Istorică), București.
RM	-	Revista Muzeelor. Centrul pentru Formare, Educaţie Permanentă şi Managemnt în domeniul Culturii, Bucureşti.
SAA	-	Studia Antiqua et Archaeologica, Universitatea „Alexandru Ioan Cuza" Iaşi, Iași.
Sargetia	-	Sargetia. Acta Musei Devensis, Muzeul Civilizaţiei Dacice şi Romane

		Deva, Deva.
SCBK	-	Symposiun über die Entstellung und Chronologie der Badener Kultur, Bratislava.
SCIV(A)	-	Studii şi Cercetări de Istorie Veche, Bucureşti (din 1974, Studii şi Cercetări de Istorie Veche şi Arheologie).
SIB	-	Studii de istorie a Banatului, Universitatea de Vest Timişoara, Timişoara.
SIT	-	Studii de istorie a Transilvaniei, Cluj-Napoca.
SA	-	Slovenská Archeológia. Slovenská Akademia Vied. Nitra.
SympTrach	-	Symposia Thracologica, Bucureşti.
SUBB	-	Studia Universitatis Babes-Bolyai. Series Historica, Cluj-Napoca.
StComCar	-	Studii și Comunicări-Caransebeș (din anul 1986- Tibiscum).
StComSm	-	Studii și Comunicări. Muzeul Județean Satu Mare, Satu Mare.
StIstRomânia	-	Studii şi Referate privind Istoria României, Bucureşti.
Stratum plus	-	Stratum plus. Journal High Anthropologica School University, Cultural Anthropology and Archaeology.
SZ	-	Studijné Zvesti, Archaeologického ústavu Slovenskei Akademie Vied, Nitra.
Terra Sebus	-	Terra Sebus. Acta Musei Sabesiensis, Muzeul Municipal „Ioan Raica”, Sebeş.
ThPRAE	-	Thracica Praehistorica, SUPPLEMENTUM PULPUDEVA III, SEMAINES philippopolitaines de l’histoire et de la culture thrace, Plovdiv, 4-19 octobre, 1978, Sofia, 1982.
Tibiscum	-	Tibiscum. Studii și Comunicări de Etnografie și Istorie, Muzeul Regimentului Grăniceresc din Caransebeș, Caransebeș.
Thraco-Dacica	-	Thraco-Dacica, Institutul Român de Tracologie, București.
Transilvania	-	Transilvania. Foia Asociațiunii Transilvane pentru Literatura Română și Cultura Poporului Român, Braşov.
Tyragetia	-	Tyragetia. Muzeul național de Arheologie și Istorie a Moldovei, Chișinău.
ZfA	-	Zeitschrift für Archäologie, Institut für Ur-und Frühgeschichte der Deutschen Akademie der Wissenschaften zu Berlin, Berlin.

FIGURES