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ARTICLES

Archaeological palynology in Romania — a review of its past and current state

Mihaela DANU¹, George BODI²

Abstract. Pollen analyses in Romanian archaeology are not new and the interest concerning the opportunities offered by this discipline is on the rise. The increasing visibility of the discipline reflects a mentality change in terms of research methodology in Romanian archaeology, especially in prehistoric archaeology. This paper will focus on a short critical survey of the development of archaeological palynology in Romania, from its beginning in the early 20th century to present.

Rezumat. Analizele de polen nu reprezintă o noutate în România, iar interesul pentru oportunitățile oferite de palinologie este în creștere. Interesul crescând pentru această disciplină dezvăluie o schimbare de mentalitate în ceea ce privește metodologia de cercetare în arheologia românească, în special în arheologia preistorică. Lucrarea de față se concentrează pe o scurtă trecere în revistă critică a dezvoltării palinologiei arheologice în România, de la începuturile sale în prima parte a secolului XX până în prezent.

Keywords: palynology, archaeology, prehistory, Romania, palaeoenvironment.

Introduction

The study of palaeoenvironments raises for several years an increased interest among archaeologists, palynology playing an ever more important role in the archaeological literature. Since the discipline deals with the study of pollen and spores, it is mainly used to reconstruct vegetation history and it has proved to be a good tool to reconstruct the past and to construct archaeological scenarios with an ever growing level of complexity, through the integration of the natural environment as an explanatory factor of human behaviour, or through the integration of the anthropogenic impact as a shaping element of the environment. From this point of view, archaeological palynology highlights aspects of the existing interactions between ancient human communities and their environment from the point of view of their agricultural practices, but may also shed light on other different

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quotidian aspects such as ancient diets³, funeral practices⁴, the function and use of various classes of artefacts⁵ etc.

Archaeological background

We must clarify from the onset that we will restrict our interest to the Neolithic and Chalcolithic, these being the prehistoric periods with the most intense and dynamic research activity. For Romania, situated in Eastern Europe, the Neolithic period starts at approximately 6600 BC, with the arrival of the agricultural populations characterised by the Starčevo-Criş painted pottery, which spread over the entirety of its current territory. These are later replaced in the western part of the territory by populations producing Vinča type pottery, while the east is occupied by late LBK communities. The transition to Chalcolithic marks the ending of massive population movements and the beginning of local cultural synthesis. In the south and west we must note the evolution from Dudeşti roots of the Gumelniţa culture (part of the Gumelniţa-Kodžadermen-Karanovo VI cultural complex). The south-west and west are dominated by the presence of the Sălcuţa culture (part of the Sălcuţa-Krivodol-Bubanj cultural complex) and Tisza, Tiszapolgár and the Bodrogkeresztúr cultures, while in the east we observe the evolution of Precucuteni and Cucuteni cultures, components of the Ariuşd-Cucuteni-Trypillia cultural complex. The Chalcolithic period ends at approximately 3000 BC, with the beginning of EBA. However, due to the predominance of a positivistic approach towards the study of prehistoric communities⁶, it is only recently that aspects concerning the complex relationship between ancient human communities and the environment has entered the focus of Romanian archaeologists.

Historical review of archaeological palynology in Romania

In Europe since the '50s, archaeologists have collaborated with other researchers (biologists, geologists, pedologists, etc.) in an attempt to identify the natural environment in which human communities have evolved during prehistory and protohistory. These collaborations started from the desire to explain certain processes of landscape transformation and to understand important shifts in humanity's existence such as the emergence of agriculture and its consequences: increased demographic pressure and migration. Palynology has been shown to contribute, through the study of spores and pollen

³ BERG 2002.

⁴ LEROY-GOURHAN 1968.

⁵ ADAMS, GASSER 1980; PEARSSALL 2000.

⁶ ANGHELINU 2004; BODI 2012.

grains, to a fuller understanding of the prehistoric sites investigated by archaeologists⁷. As a secondary effect, with the increase of archaeo-palynological studies the existence of the human impact on the ancient vegetation cover has also been noticed and constituted itself into a matter of concern.

In Romania, palynology investigations are conducted since the early twentieth century⁸. Following this primary initiative, Emil Pop created a palynological school in Cluj⁹, where the evolution of the vegetation during the Holocene was reconstructed through the study of sedimentary sequences originating from peat bogs. The activity of the group continues to the present with exceptional results¹⁰. However, only a small fraction of their studies impact on the archaeological research¹¹.

Later, Marin Cârciumaru organized in Bucharest the first Archaeo-Palynology Laboratory in Romania (initially created in 1968 in Craiova), where a special attention was paid to the analysis of pollen spectra from Palaeolithic settlements. As a result of the laboratory's activity, in 1980 an ample monograph was published on the environment of upper Pleistocene in Romania¹². Later on this direction of research has lost momentum and, starting with the '80s, the focus switched on the study of Chalcolithic sites from Moldova. This change of priorities may find an explanation in the earlier publication of the results of a study conducted on the Neolithic site from Vădastra¹³. The study of the vegetation and climate change during the Neolithic and Chalcolithic was continued by the Archaeo-Palynology Laboratory through further pollen analysis from the Chalcolithic site at Drăgușeni-Ostrov (Moldova)¹⁴. It allowed the reconstitution of the subsistence systems employed by the Cucuteni communities during fifth and fourth millennia BC. These data were complemented through the investigations from Tărpești (Neamț county), where Marin Cârciumaru obtained thought-provoking results concerning the agricultural practices during the fifth millennia BC, but also on deforestation caused by sedentary farmers and climate change during the final period of the Atlantic¹⁵.

In 1994 Marin Cârciumaru and Alexandru Tomescu published the first book in Romanian dealing with methodological issues on the integration of palynological investigations in

⁷ RICHARD 1999.

⁸ POP 1929.

⁹ POP 1943; 1945; 1960.

¹⁰ TANȚĂU *et al.* 2009; 2011; FEURDEAN *et al.* 2011; etc.

¹¹ FEURDEAN, ASTALOȘ 2005; FĂRCĂȘ *et al.* 2003.

¹² CÂRCIUMARU 1980.

¹³ LEROI-GOURHAN *et al.* 1967.

¹⁴ MARINESCU-BÎLCU *et al.* 1984.

¹⁵ MARINESCU-BÎLCU *et al.* 1985.

archaeological research¹⁶. Two years later, Marin Cârciumaru published a monograph that included his palynological studies carried out in prehistoric settlements from Romania¹⁷.

We cannot end this short review without mentioning a synthesis paper published in 2000 by Alexandru Tomescu, where all palynological studies conducted during 1967–1999 for 10 archaeological sites located within the Romanian Plain are critically examined¹⁸.

Review of past research

While in the '80s, in Europe, palynological studies were successfully applied in archaeology, in the Romanian archaeological literature such occurrences had an exceptional character. Later on, such investigations made a shy debut and these do however require some critical observations regarding the methodology, especially the studies previous to the year 2000.

The first aspect refers to the fact that the palynological investigations tried to address issues related to the reconstruction of vegetation and climate evolution starting from samples originating from a strongly anthropized context. That is to say that many of the samples were collected from cultural layers found within the archaeological sites¹⁹ and thus it is obvious that the pollinic spectrum obtained bears a heavy imprint of human activity. In natural environments, pollen “rain” offers rigorous information about vegetation from a certain territory²⁰, but within an archaeological site, many other factors act in a manner which distorts the real image of the vegetation in the surrounding area. Among these, the human action is an essential sedimentation vector and an aspect often overlooked²¹. Contamination with pollen brought within the site, voluntarily or involuntarily, through human actions and stratigraphic disturbances, are factors that influenced pollen spectra obtained from archaeological sediments²². Since it is common knowledge the fact that the reconstitution of the surrounding vegetal environment of an archaeological site, starting from data derived from the analysis of the inhabited area constitutes the exception rather than the rule²³, the palaeovegetation and palaeoclimate reconstruction which might be thus obtained becomes questionable. We must also add that another factor that must be accounted for when interpreting the pollen spectrum is the phenomenon of differential preservation of pollen grains. It has been demonstrated that, most often, the nature of archaeological sediments is

¹⁶ CÂRCIUMARU, TOMESCU 1994.

¹⁷ CÂRCIUMARU 1996.

¹⁸ TOMESCU 2000.

¹⁹ CÂRCIUMARU 1996.

²⁰ HEIM 1970.

²¹ RICHARD 1994.

²² TOMESCU 2000.

²³ RICHARD 1994.

not suitable for optimal pollen preservation²⁴. In this context, any opinion regarding the reconstruction of palaeo-vegetation and palaeoclimate may be considered hazardous at best.

Another issue refers to the manner in which the results are being published, quite often with missing or incomplete information. Such is the case of the number of pollen grains counted for each sample and the number of samples analysed since, in most of cases, the published results do not mention the minimum number of pollen grains per sample. Often, even the number of samples which were analysed from a palynological point of view is not specified. However, when these data are presented, their values are statistically insufficient for the study to be valid. Secondly, although some studies present definitive results, the palynological analyses are not accompanied by pollen diagrams, but only tables with percentages, although the content of the samples would have allowed for the completion of diagrams. In several cases where pollen diagrams are presented, the accompanying stratigraphic data are either vague or missing. A similar situation may be observed when dealing with corroboration with absolute chronology. When ¹⁴C data are presented, these lack the specification of the type of the sample used and, in most cases, palynological analyses performed on samples from surveys carried out outside the archaeological site do not benefit from absolute dating²⁵.

Current state of research

Currently in Romania, multi- and interdisciplinary researches are focused especially on sites dating from the Neolithic and Chalcolithic and palynology constitutes common occurrence when the reconstitution of the palaeoenvironment is sought after.

The Neolithic economy and the diversification of occupations (specialised crafts, plants cultivation, animal breeding) have led to a certain decrease in the mobility of human communities, which in addition to the need for farming land, in the context of existence of an extensive agriculture, led undoubtedly to a complex process of deforestation with a strong environmental impact.

Today, the pollen spectra obtained from within archaeological sites are correlated, through radiocarbon dating, with the spectra obtained from wet environments, especially swamps, leading to the construction of the evolution of post-glacial vegetation; pollen spectra from within the archaeological sites offer information on plants and eventually the plant environment belonging to the specific loci of occupation, pollen spectra of wetlands in its vicinity allow the assessment of long term anthropogenic impact on palaeoenvironment.

The use of palaeobotanical indicators, such as pollen and non-pollen palynomorphs allows further finer analysis on the agro-pastoral practices of prehistoric human communities. Non-

²⁴ KING *et al.* 1975; HALL 1981.

²⁵ CÂRCIUMARU 1972; 1977; 1979; ALEXANDRU 1990.

pollen palynomorphs may highlight the location of stables and animal pens being used successfully in the study of north-European archaeological sites²⁶. Non-pollen palynomorphs analysis can be performed either on archaeological deposits or coprolites (when present). It must be highlighted that non-pollen palynomorphs study has been rather overlooked until present in Romania²⁷.

In eastern European countries (Hungary, Bulgaria, Ukraine etc.) there are numerous programmes for coherent analysis of subfossil pollen to reconstitute the vegetation, climate and agriculture during prehistoric period and protohistory²⁸ and, in the last decade in Romania are also made efforts to align this line of research to international standards, both through national projects funded by the National Research Council (CNCS), but, also, through collaboration with researchers affiliated to various laboratories in Europe.

Since 2004, a Romanian-French project focused on the study of salt water springs exploitation, provided also a series of palynological data which highlight the impact of salt exploitations on the natural environment surrounding the salt springs areas²⁹.

Palynological investigations are also conducted within the “Integrated analysis of archaeological, pedological, palynological and archaeozoological data from Eneolithic sites in NE Romania” project which is a CNCS PN II project (code TE 172/2010), which aimed to conduct complex interdisciplinary investigations on several Neolithic and Chalcolithic settlements³⁰.

The CNCS project PN-II-ID-PCE-2011-3-0982 “Human and environment co-evolution patterns in the wetland area of Balta Ialomiței”³¹ aims to define the specific characteristics of human communities (from the Neolithic to the Middle Ages) by underlining their connection to the natural environment. In this context, the palynological research focuses on the reconstruction of palaeoenvironmental changes and the impact of human activities on the landscape (agriculture, animal breeding) through pollen analysis from a combination of natural sequences and archaeological records.

Conclusions

The archaeo-palynological research from Romania had a delayed start compared to other countries from Central and Western Europe. It would have been a beneficial aspect if the situation could have been used to build collaborations with colleagues from abroad in order

²⁶ van GEEL *et al.* 2003; BOS *et al.* 2005.

²⁷ DANU *et al.* 2010.

²⁸ SKAKUN 1993; DOLUKHANOV 1995; 1997; KREMENETSKI 1997; PASHKEVICH 1997.

²⁹ WELLER *et al.* 2009; DANU *et al.* 2010.

³⁰ *Integrated analysis* n. d.

³¹ *Human & Environment* n. d.

to assimilate a correct working methodology in the field. However, as presented above, this is not the case and the causes are multiple: lack of funding, absence of Romanian researchers interested to develop research programs in this area, poor access to information, but, also, the—still present—dominance of a cultural-historical approach within the archaeological practice. All these issues have put their imprint on the development of a truly interdisciplinary approach on landscape archaeology. Nevertheless, past pollen analyses are important through the constitution of a preliminary knowledge pool concerning the palaeoenvironment, but, most importantly, in our opinion, it kept an opened communication between palynologists and archaeologists.

Today, due to both the existence of this type of background, as well as to the development of research networks, and the implementation of different research funding programs, the archaeological palynology in Romania began to be considered an indispensable tool in multi- and interdisciplinary research sites. The real-time access to specialised publications and the regular exchange of information between researchers reflects positively on the advancement of archaeological palynology.

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Technological characteristics of the Cucuteni C pottery from Poduri–Dealul Ghindaru*

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Abstract. The present work aims at investigating the technology used in the production of the Cucuteni C ceramic ware discovered at Poduri–Dealul Ghindaru archaeological site, with the help of a multidisciplinary approach making use of chemical and mineralogical analysis. The studied potsherds have shown the presence of different types of tempers, as determined by scanning electron microscopy (SEM), energy dispersive X-ray spectroscopy (EDX) and X-ray diffraction (XRD). The type of tempers present within the ceramic matrix was identified by EDX and XRD analysis, while the dispersion of the different additives in the ceramic microstructure was determined by SEM measurements.

Rezumat. Prezentul studiu analizează tehnologia de realizare a ceramicii Cucuteni C din situl arheologic Poduri–Dealul Ghindaru, printr-o abordare multidisciplinară utilizată pentru determinarea compoziției chimice și mineralogice. Analizele au arătat prezența în pasta ceramicii a diferite tipuri de degresant, identificate prin microscopie electronică de baleaj (SEM), analize disperzive de raze X (EDX) și difracție de raze X (XRD). Pentru identificarea tipului de degresant au fost realizate analize EDX și XRD, iar pentru determinarea microstructurii fragmentelor ceramice analize de microscopie electronică (SEM).

Keywords: pottery technology, Cucuteni C, Poduri–Dealul Ghindaru, SEM-EDX analysis, XRD analysis.

Introduction

The most abundant material identified within archaeological sites is ceramics, an important source of information for the study of prehistoric communities in terms of their technological knowledge, ancient trade patterns and social, cultural and economic

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complexity. A straightforward way to unravel some of the *technological skills* of the prehistoric communities and how different technologies were diffused and/or adopted is to analyse into more detail their ceramic artefacts.

In this context, mineralogical and chemical characterization of pottery may offer significant information about the provenance of the raw materials used⁵ and also on the technology involved in the manufacturing process⁶. Additionally, important information regarding the techniques used to prepare the raw material (levigation, tempering with non-plastic materials and/or mixing of clays) and to assemble the vessel can be obtained by microscopically examining the shards⁷. The presence or absence of certain mineral phases provides information regarding the firing conditions (temperature and atmosphere) used during pottery production⁸. Further on, by analysing the firing process we can understand the clay mineral decomposition and reaction with the tempering minerals⁹.

Accordingly, the use of archaeometric methods for determining the pottery production technology can widely complement archaeological knowledge especially on its economic aspects which are related to the vessels function as well as on the entire production system.

Ceramic studies have occupied a forefront position in the archaeological analysis of the Cucuteni culture material remains since the discovery of the eponymous site in the 19th century. Much of the initial work related to Cucuteni ceramics focused on the development of typological sequences for decorated wares in order to develop relative chronologies.

Therefore, the archaeometric study of the Cucuteni pottery has focused mostly on determining the type of pigments used in the pottery production¹⁰. The pottery function¹¹ and the technological choices as determined by physical and chemical analyses¹² were investigated only recently.

⁵ VAUGHN, NEFF 2004, 1577–1586; ERAMO *et al.* 2004, 157–165; MARTINEAU *et al.* 2007, 23–52; SPATARO 2013, 175–197; RAMÓN, BELL 2013, 595–613; EERKENS, LIPO 2014, 25–31; CHIRIKURE *et al.* 2015, 23–32.

⁶ MANGONE *et al.* 2009, 97–102; GLIOZZO *et al.* 2008, 1074–1089; VŠIANSKÝ *et al.* 2014, 414–422; ÖZÇATAL *et al.* 2014, 2153–2160; JUNG *et al.* 2015, 455–463; ECKERT *et al.* 2015, 1–12.

⁷ TITE, MANIATIS 1975, 122–123; MENTESANA *et al.*, 2015.

⁸ RASMUSSEN *et al.* 2012, 1705–1716.

⁹ MAGGETTI 1982, 121–133; CULTRONE *et al.* 2001, 621–634.

¹⁰ CHIRIBUȚĂ 1979, 709–717; NICULESCU *et al.* 1982, 205–207; ELLIS 1984, 81–92; BURGHELEA *et al.* 2003, 251–258; CONSTANTINESCU *et al.* 2004, 125–134; 2007, 281–288; BUGOI *et al.* 2008, 195–199; BUZGAR *et al.* 2010a, 5–14; 2010b, 95–108; 2013, 2128–2135.

¹¹ BODI 2010a, 127–183; 2010b, 199–210; 2015, 451–464; BODI, SOLCAN 2010, 315–323; MUNTEANU, GARVĂN 2015, 120–122; MUNTEANU 2015.

¹² CHIRIBUȚĂ 1979, 709–717; ELLIS 1980, 211–230; 1984, 157–159; GÂTĂ 2000, 113–130; OLARU 2008; SANDU *et al.* 2010, 75–82; IONESCU, HOECK 2011, 937–958; 2012, 193–209; GRĂMĂTICU *et al.* 2010, 5–20; 2012, 229–246; MĂȚĂU *et al.* 2013, 914–925; 2014, 381–389; BODI 2015, 451–464.

This research is part of a more systematic archaeometric study focused on the Cucuteni C pottery¹³. In the previous investigation we took into consideration just a few samples which were analysed in comparison with the painted Cucuteni ware, especially in terms of firing technology¹⁴.

The present study aims to characterize the Cucuteni C pottery from Poduri–Dealul Ghindaru by determining its main technological features in order to assess the degree of variation in the Cucuteni C pottery production between sites. We present the characteristics of the raw materials used, and show a correlation between pottery composition and firing temperature, combining macroscopic examination with scanning electron microscopy with energy dispersive X-ray spectrometry (SEM-EDX) and X-ray diffraction (XRD). Our aim is not to address the origin of the Cucuteni C ware which is impossible to accomplish in one-step study without a systematic investigation of its chemical composition combined with clay analysis but to investigate its main technological parameters.

The archaeological context

The Cucuteni C pottery has interested scholars for more than eight decades because of its distinctness in terms of decorative patterns and paste composition in comparison with the painted Cucuteni ware¹⁵. Unlike Cucuteni A, A-B and B phases defined mainly based on changes in the painted pottery styles, the Cucuteni C has no chronological value¹⁶. C-type pottery existed for about 800 years, during Cucuteni A₃-B₂ stages (4300–3500 cal BC), being more frequent in the Cucuteni B sites¹⁷.

This pottery type was considered, based on its decorative style and paste composition (the use of shells as temper), to be a foreign element in the Cucuteni culture area. H. Schmidt argued for a Baltic origin for the Cucuteni C pottery fragments present in the upper strata of the B layer from Cucuteni–Cetățuia site¹⁸. Later on, archaeologists have considered these potsherds as belonging to ethnic groups originating in the Eastern Europe steppe region¹⁹. A. Dodd-Oprîtescu in her systematic investigation which focused on identifying the “steppic” elements present in the Romanian Chalcolithic mentions the great variety of this ware type in

¹³ MĂȚĂU, MUNTEANU 2015; MUNTEANU, MĂȚĂU 2015; MĂȚĂU *et al.* 2015a; 2015b; 2015c.

¹⁴ MĂȚĂU *et al.* 2013, 914–925.

¹⁵ SCHMIDT 1932, 42–45; NESTOR, ZAHARIA 1968, 17–19; DODD-OPRÎTESCU 1977, 50–75; 1980, 547–557; 1981, 511–528; 1982, 70–79; CUCOȘ 1985, 63–92.

¹⁶ DODD-OPRÎTESCU 1977, 53.

¹⁷ DODD-OPRÎTESCU 1977, 63–68; CUCOȘ 1985, 63–92; for the Cucuteni culture chronology see: MANTU 1998, 111–133 and BEM 2001, 25–123.

¹⁸ SCHMIDT 1932, 42–45.

¹⁹ See DODD-OPRÎTESCU 1977, 50–53 with references therein.

terms of vessel shape and decoration during the same cultural phase²⁰. Recent systematic analysis of the fire traces in relation with the vessel shape and the technological characteristics advanced the possible use as cooking pots for the Cucuteni C pottery²¹.

Because this ceramic is commonly believed to be a foreign element in the Cucuteni tableware it is important to determine its main technological characteristics before making any assumptions on its possible origin. Also, it became increasingly clear that there are significant regional and local variations in both form and techniques of production²². The history, nature and extent of these differences cannot be investigated based only on stylistic and typological analysis. All the archaeological hypotheses which considers the Cucuteni C pottery as being inferior in comparison with the painted ware need to be complemented by a multi-analytical approach, based on a combination of macroscopic, mineralogical, chemical and microscopic analysis of both temper and clay matrix.

The *tell* settlement from Poduri–Dealul Ghindaru is considered as a significant site for understanding the evolution of the Cucuteni culture (Figure 1). The multi-layered site is located in the Subcarpathian area, on the high terrace of the Tazlău Sărat River, being situated on its right bank.

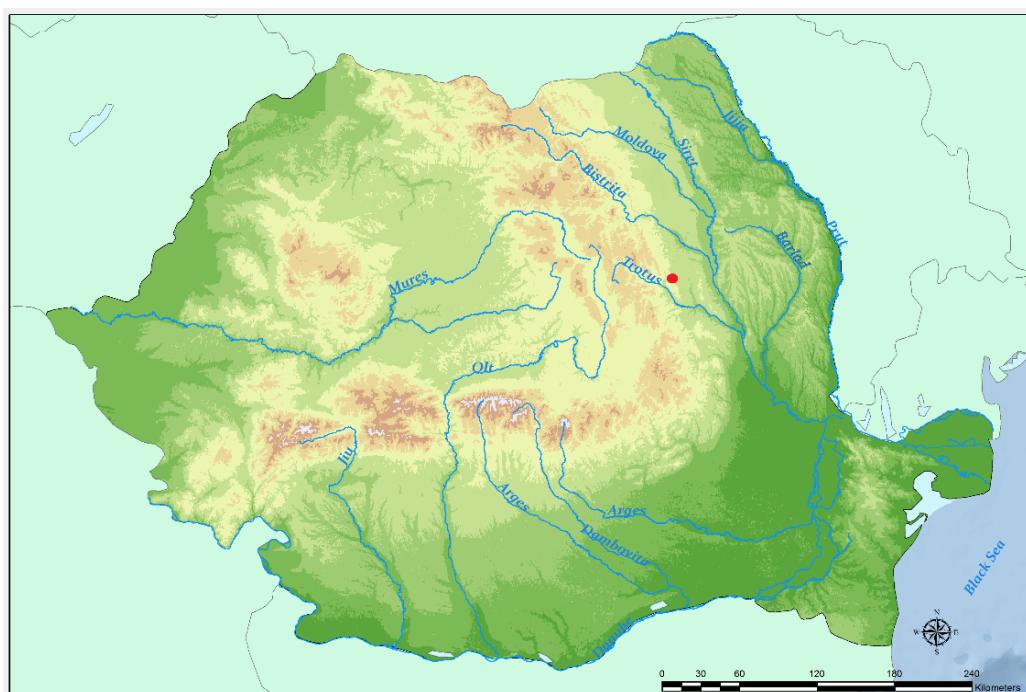


Figure 1. Map showing the location of the Poduri–Dealul Ghindaru archaeological site.

²⁰ DODD-OPRIȚESCU 1977, 73.

²¹ MUNTEANU, GARVĂN 2015, 122; MUNTEANU 2015.

²² DODD-OPRIȚESCU 1977, 73–79; CUCOŞ 1985, 63–92.

Recent non-invasive geophysical investigations suggests that the site was extend over around 6 ha²³, being twice larger than previously considered²⁴. The site is bordered by steep slopes on the northern and eastern side²⁵. On the south-western side three ditches were revealed by the archaeomagnetic researches. However, no intrusive researches were conducted so far to demonstrate the relationship of these features with one or the other of the chalcolithic layers²⁶. The *tell* was systematically excavated by different teams coordinated by D. Monah in 1979–1997 and 2000–2005 and by Gh. Dumitroaia during 2006–2009²⁷. The anthropic deposit, more than 4.80 m thick, encompasses several Precucuteni and Cucuteni layers, starting from Precucuteni II until Cucuteni B₂. Precucuteni III and Cucuteni A₂ phases are the best represented²⁸. More detailed data are published from the later excavations which encompassed a Bronze Age layer and Cucuteni B and A₂ phases²⁹. The inventory was discussed mainly in terms of *special finds* represented by painted pottery and anthropomorphic figurines.

At Poduri–Dealul Ghindaru, the Cucuteni C pottery has rather a scarce presence in comparison with the painted ware. D. Monah mentions its existence in the pottery assemblage even from the early excavations, assessing that there are no shells used as temper³⁰. In the exhibition catalogue published in 2003, two Cucuteni C vessels are illustrated³¹, while in 2009 another five are reported³². In a systematic survey regarding the possible Cucuteni C pottery function, R. Munteanu mentions that 46 such vessels were retrieved between 1983 and 2009 at Poduri–Dealul Ghindaru. Just one of these is shell-tempered, the other 45 being attributed to C category based on their stylistic features³³. Chronologically, the Cucuteni C pottery can be assigned broadly to the Cucuteni B phase.

Materials and methods

The potsherds analysed here consists of 8 samples which were selected mostly from known stratigraphic units. Information regarding their microlocation and excavation year is

²³ DUMITROAIA *et al.* 2012, 167, 173.

²⁴ MONAH *et al.* 1980, 86.

²⁵ MONAH *et al.* 1980, 86.

²⁶ DUMITROAIA *et al.* 2012, 173.

²⁷ DUMITROAIA *et al.* 2009, 11–13.

²⁸ MONAH *et al.* 2003, 29–32.

²⁹ DUMITROAIA *et al.* 2009, 15–32.

³⁰ MONAH *et al.* 1987, 13.

³¹ MONAH *et al.* 2003, cat. no. 331, 374.

³² DUMITROAIA *et al.* 2009, cat. no. 25–27, 103, 182.

³³ MUNTEANU 2015.

provided in Table 1. The pottery samples were selected to represent the typological and stylistic variability of the Cucuteni C pottery present at the site.

For information regarding the production technology, the selected pottery samples were studied by means of an integrated analytical approach combining macroscopic observation with chemical, mineralogical and microscopic investigations.

The macroscopic observation of ceramic pastes is very useful for preliminarily defining the technological and compositional variability of the pottery production. This approach can add important information on the different stages of the pottery production such as: paste preparation, firing conditions, manufacturing procedures and the surface finishing.

Table 1. The analysed pottery samples and their excavation context.

Sample ID	Excavation year	Excavation unit	Sample	Excavation unit	Excavation year	Pottery Sample
C1	-	-		C5	1982	SIII, □ 20 – 22
C2	1984	CAS A, □ A – D, -0.25 -0.35 cm		C6	-	-
C3	2006	CAS C, □ C4, -0.55-0.85 cm		C7	1982	SIII, □ 20 – 22
C4	-	-		C8	1987	CAS A, □ 7-10, -0.80-0.90 cm

The chemical composition of all samples, in terms of major and some minor elements, and the microscopic analysis for detailed study of groundmass microstructure (low magnification) and the degree of vitrification (high magnification) was determined by Environmental Scanning Electron Microscopy – Energy Dispersive X-Ray (ESEM-EDX) analysis. The pottery fragments were sectioned and the resulting small sections were fixed on copper supports and their surface was examined using an Environmental Scanning Electron Microscope (ESEM) type Quanta 200, operating at 20 kV with secondary electrons in Low vacuum mode. The Quanta 200 microscope has an Energy Dispersive X-Ray (EDX) detection system for qualitative and quantitative analysis and elemental mapping.

The mineralogical composition was determined using a Shimadzu XRD 6000 diffractometer using CuK α radiation ($\lambda=1.54059$ Å) in reflection mode. A small quantity of each pottery sample (2 g) was powdered using an agate mortar and then side-pressed into a top-loaded holder in order to minimize the preferred orientation and analysed in the range of $2\theta=4^\circ - 100^\circ$ with a scan rate of 0.02° and 4s/step. Phase compositions were automatically identified by comparison with the reference powder patterns included in ICDD Powder Diffraction Files (PDF-4).

Results and discussion

The macroscopic examination of the Cucuteni C pottery from Poduri-Dealul Ghindaru on the outer and inner surface revealed the existence of different colour shades which were determined by the adopted raw material and the variations in the atmosphere during firing (Figure 2). The colour of the outer surface of the selected samples varies from 7.5YR 5/3 (C1), 7.5YR 6/2 (C2), 7.5YR 6/3 (C7, C8), 7.5YR 7/3 (C3, C5) to 7.5YR 7/4 (C4, C6). For the cut-section of the Cucuteni C potsherds the colour ranges from 7.5YR 3/2 (C2), 7.5YR 4/2 (C5, C7, C8), 7.5YR 4/3 (C1) to 7.5YR 5/2 (C4). The colour spectrum for samples C1, C2, C4, C5, C7 and C8 is relatively uniform, while for samples C3 and C6 is more patchy varying from 7.5YR 7/4 to 7.5YR 5/3 (C3) and from 7.5YR 6/4 to 7.5YR 5/3 (C6).

All these differences in colours observed on the inner and outer surface and on the fresh sections are determined by the firing conditions which varies from inhomogeneous oxidizing with black core (C1, C3, C4, C5 and C7) to a more homogeneous oxidizing (C6) or reducing (C2 and C8). In the case of fragments exhibiting a black core and a lighter colour on the inner and outer surfaces the change in colour from core to margin is sharp for samples C5 and C7 and with more shaded boundaries for samples C1, C3 and C4. These samples corresponds to the so-called “sandwich structure”³⁴ which can be the result of a complex combination of oxidizing and redox conditions and, also, of the bulk chemical composition of the raw materials³⁵.

³⁴ NODARI *et al.* 2004, 119–128.

³⁵ MARITAN *et al.* 2006, 1–15.

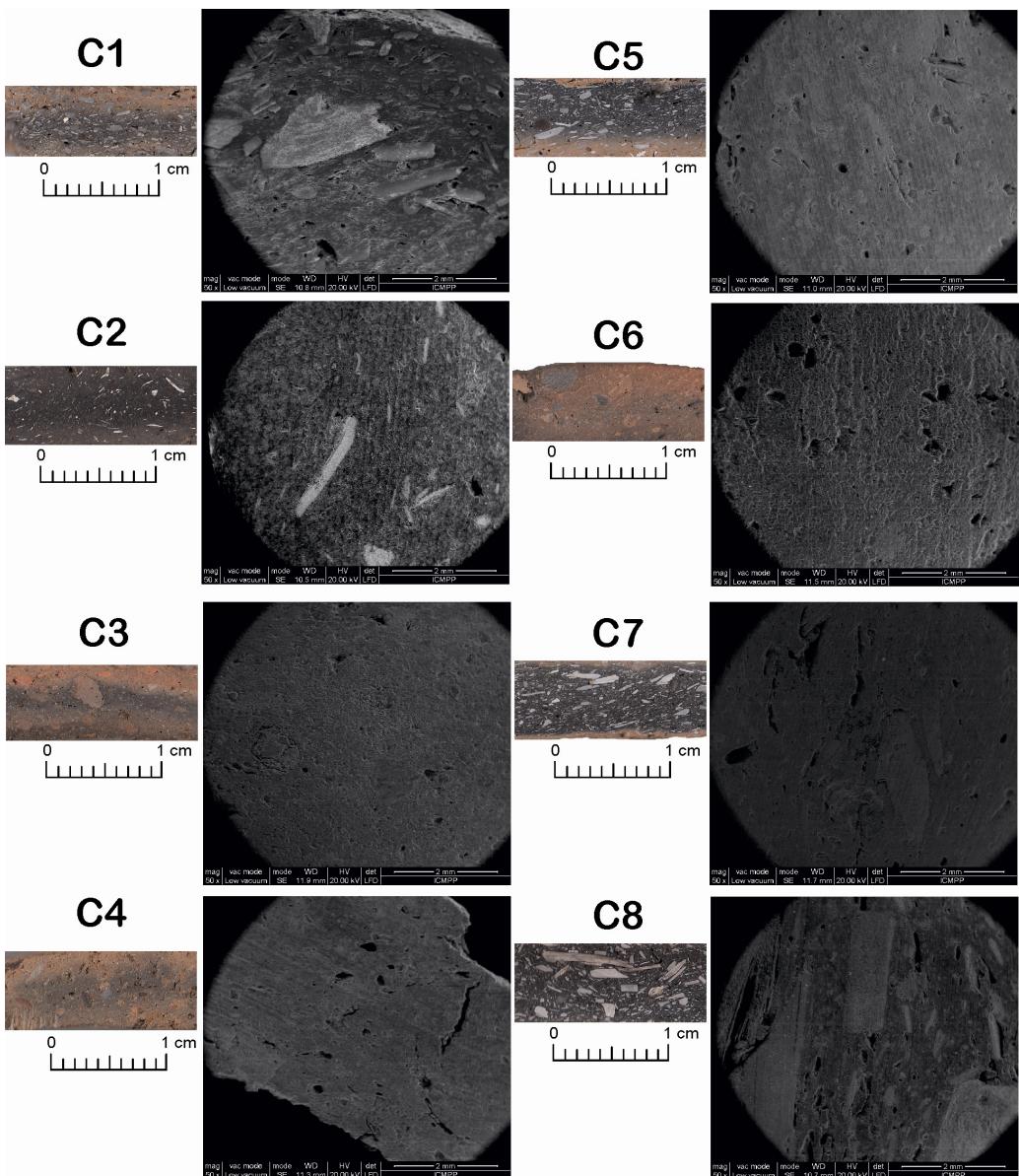


Figure 2. Macro-photograph and low-magnification micro-photograph (50x) of the vessel cut sections.

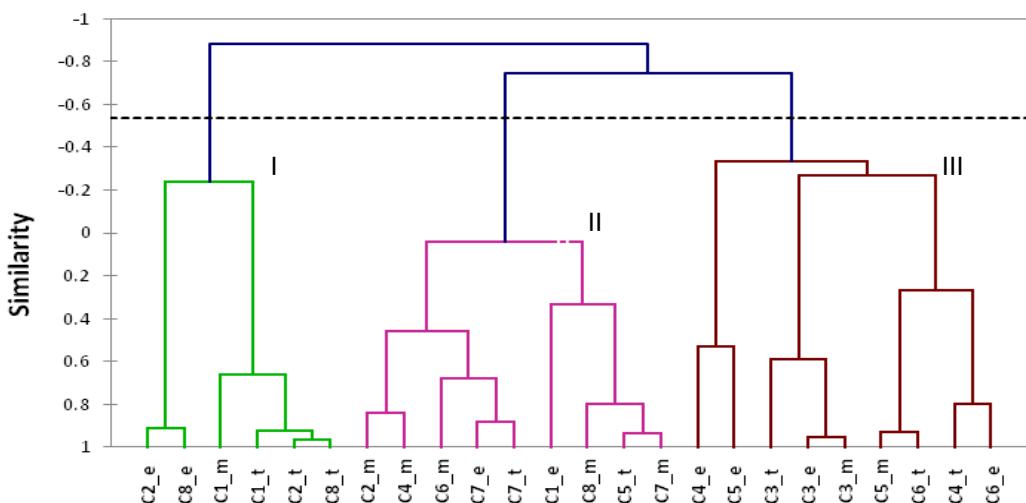


Figure 3. Hierarchical cluster analysis (HCA) dendrogram of the chemical composition of the outer surface, matrix and temper of the Cucuteni C pottery fragments.

The macro-photograph and the low-magnification micro-photograph (50 \times) of the selected pottery samples, presented in Figure 2, indicate two main categories of Cucuteni C pottery: one containing bioclasts as temper (C1, C2, C5, C7 and C8) and the other having grog and quartz as temper (C3, C4 and C6). The bioclasts represented by shells fragments have a curved structure, sometimes with an observable lamination, being very frequent in samples C1, C5 and C7, while in sample C2 are smaller and less frequent (Figure 2). The abundance of grog and quartz inclusions, which are usually elongated and subangular, varies in sizes and quantities, being coarser in samples C3 and C6 in comparison with C4 potsherd.

In order to evaluate the degree of variability present in the chemical composition of the outer surface of the pottery fragments, their matrix and intentionally added temper we performed a multivariate statistical analysis using XLSTAT 2014 software. Hierarchical cluster analysis (HCA) enables to identify groups of objects within the data set.

The HCA analysis (Figure 3) revealed the presence of three main chemical groups within the Cucuteni C pottery from Poduri–Dealul Ghindaru. Shards belonging to group I are characterized by the shells used as tempering agent. The cluster analysis revealed the similarities between the outer surface chemical composition and between the shell fragments of the C2 and C8 samples which express a similar treatment of the outer surface and a similar composition of the additives. Sample C1, which is included in the same group, exhibits the existence of similar composition between the matrix and the temper. This may be the effect of the firing process which caused the disintegration of the shell structure and the increase of the CaO content also in the clay matrix.

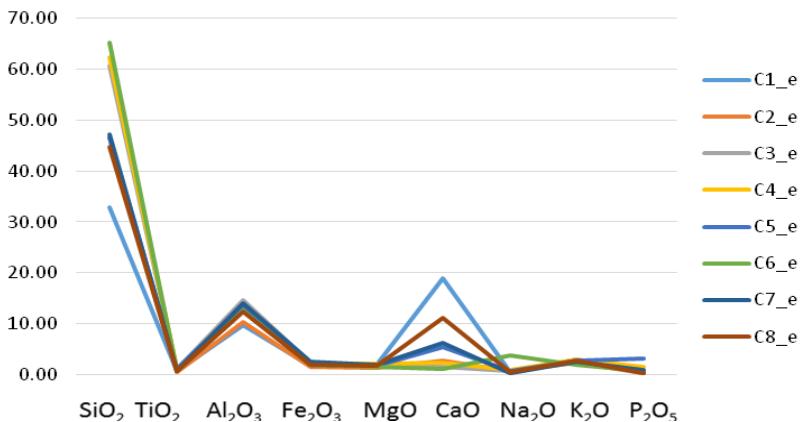


Figure 4. Major element patterns of the outer surface of the pottery fragments.

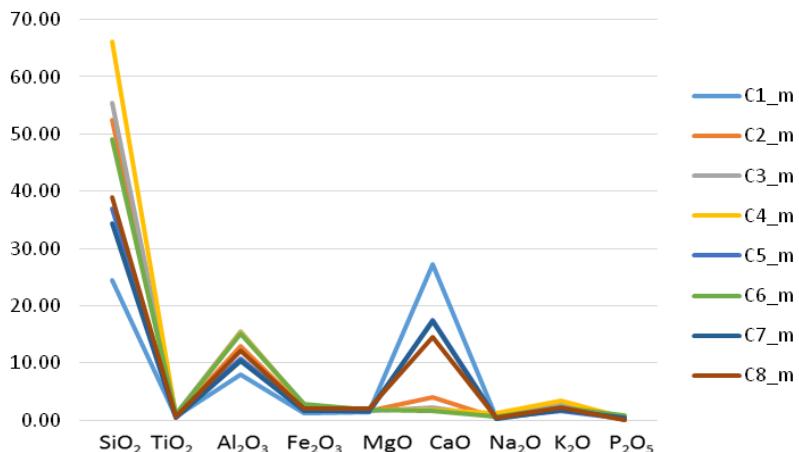


Figure 5. Major element patterns of the pottery fragments matrix.

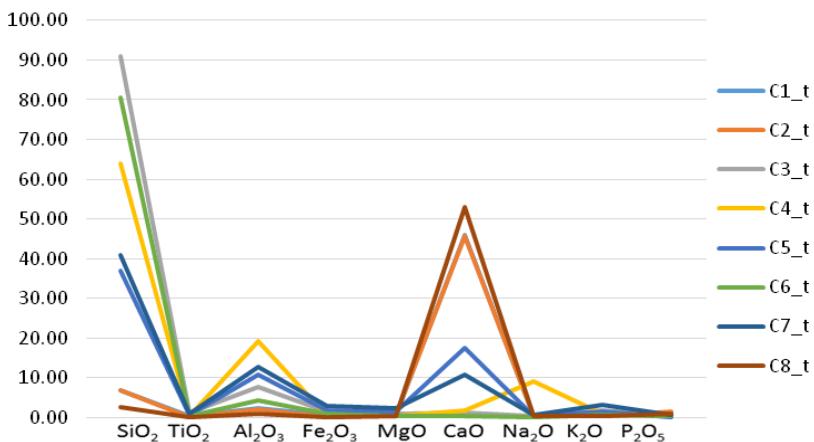


Figure 6. Major element patterns of the temper present in the pottery fragments.

Group II shows the similarities between the matrices of the grog tempered potsherds (C4 and C6) and of a shell tempered potsherd (C2) which can be the result of using a similar type of clay which was than processed with different type of additives and subjected to different firing protocols. The other pottery fragments included in this group are characterized by the presence of shells as intended additives. Also, the grouping of fragments which shares similar matrices (C7, C8), temper (C7, C5) and also outer surface (C1) compositions may be the result of the chemical reactions induced by the firing process.

The main characteristic of Group III is determined by the presence of samples which have a higher amount of SiO₂ in the outer surface (C3, C4, C5, C6), in the matrix (C3 and C5) or in the temper (C3, C4 and C6). Another interesting feature of this group which reveals valuable information about the Cucuteni C pottery technology is represented by the existence of a similar matrix between a shell tempered pottery fragment (C5) and a grog tempered one (C3). C5 shell tempered pottery fragment shows also a similar chemical composition of the outer surface with the grog tempered fragments (C3, C4 and C6).

The spread between all the three groups of the shell tempered fragments in terms of pottery matrices composition reveals the existence of more than one recipe for the manufacturing of this pottery type. Also, the grouping of some of the grog and shell tempered fragments in terms of matrix chemical compositions shows that the archaeological separation based on visual examination does not corresponds to the existence of major differences between the different pottery types in all sequences of the *chaîne opératoire* pottery processing.

With the aim of highlighting the features of the Cucuteni C pottery from Poduri–Dealul Ghindaru and, in the future, to integrate them in a more extend regional archaeometric Cucuteni C pottery analyses, the chemical composition of the outer surface, matrix and temper for the selected pottery samples was processed graphically on separate charts.

The major elements analysis for the outer surface of the analysed pottery fragments is presented in Figure 4. The data plotted in Figure 4 shows that the SiO₂ varies from 32.94% (C1) to 65.16% (C6), the highest content being specific to the grog and quartz tempered pottery. The samples with the lowest SiO₂ (32.94% for C1 and 44.84% for C8) have the highest content of CaO (19% for C1 and 11.19% for C8) which can be the effect of using a different clay source.

The high amount of Na₂O in sample C6 (3.67%) is possible to be determined by the salt added to the pottery paste or to the use of salty water in pottery manufacture.

In the calcareous clay, the use of salt may contribute to the delay of the calcination process and may prevent the appearance, in combination with H₂O, of calcium hydroxide (CaOH) which can deteriorate the pottery, being volumetrically greater than the initial CaCO₃ and H₂O³⁶. The chemical composition of sample C6 exhibits rather a non-calcareous clay,

³⁶ HAMDAN *et al.* 2014, 997.

having the lesser amount of CaO (1.05%). A possible origin of the high Na₂O present in sample C6 may relate to the feldspar content which is the result of a variation in the production recipe, or of the pottery alteration after its production or during the post-depositional process³⁷.

The P₂O₅ content is less than 1% in six of the analysed pottery samples, while in C4 is 1.44% and 3.05% in sample C5. High concentration of P₂O₅ can be influenced by the ancient content and/or post-depositional process³⁸. This is determined by the exchange reaction of phosphorous between soil and shards takes place at the surface of the pottery vessel, at vesicles or at least at the phase boundaries³⁹. For the high amount of P₂O₅ in the outer surface of samples C4 and C5, we infer a rather post-depositional origin.

The major element analysis for the pottery matrix of the analysed samples is shown in Figure 5. The SiO₂ and CaO content exhibits almost the same pattern as for the outer surface chemical composition, except for sample C5 which has the highest SiO₂ content (74.47%) from all the samples.

The dataset presented in Figure 5 can be correlated with the one from Figure 3 which shows a similar grouping for C5 and C3. The similar grouping pattern observed for samples C5 and C3 can be assigned to the use of a similar type of clay in the pottery production. Also, sample C5 has the lowest values for all the other major elements. The content is more homogeneous and has lower concentrations than in the outer surface. The very similar P₂O₅ concentrations mean that the core surface was not affected by post-depositional contamination.

The major element composition for the temper used in pottery production is given in Figure 6. The data presented in Figure 6 are more scattered than the initial grouping in shell tempered and grog and quartz tempered pottery as defined by macroscopic observation. The shell tempered pottery shows a greater variation in the SiO₂ and CaO concentrations when compared with the grog and quartz group which is caused by reaction with the clay matrix during the firing process.

In the grog and quartz temper group, sample C4 has the highest content of Na₂O which corresponds to the increase in the Na-feldspar (albite) during the firing process.

The P₂O₅ content shows increased values, especially, in the pottery fragments with bioclasts as temper. The presence of P₂O₅ in the temper cannot be assigned to the vessel content but was rather formed during the firing process by the partial melt of the organic temper⁴⁰.

³⁷ BUXEDA I GARRIGÓS *et al.* 2002, 9.

³⁸ KLEIN *et al.* 2004 with the references therein.

³⁹ KLEIN *et al.* 2004, 350.

⁴⁰ KLEIN *et al.* 2004, 350.

In view of the matrix homogeneity of the studied samples, based on the variations observed in the chemical composition, it is possible to assume that the slight differences among the identified two main groups (shell tempered and grog and quartz tempered) could be related to the heterogeneous features of the initial clays or, alternatively, to the use of different raw materials.

Micro-morphological analyses by scanning electron microscopy allows estimation of the textural characteristics of groundmass and temper, offering information on the transformation reached by the samples during the firing process. When the micro-morphological analyses are combined with the mineralogical information we can obtain a rough estimation of the equivalent firing temperatures.

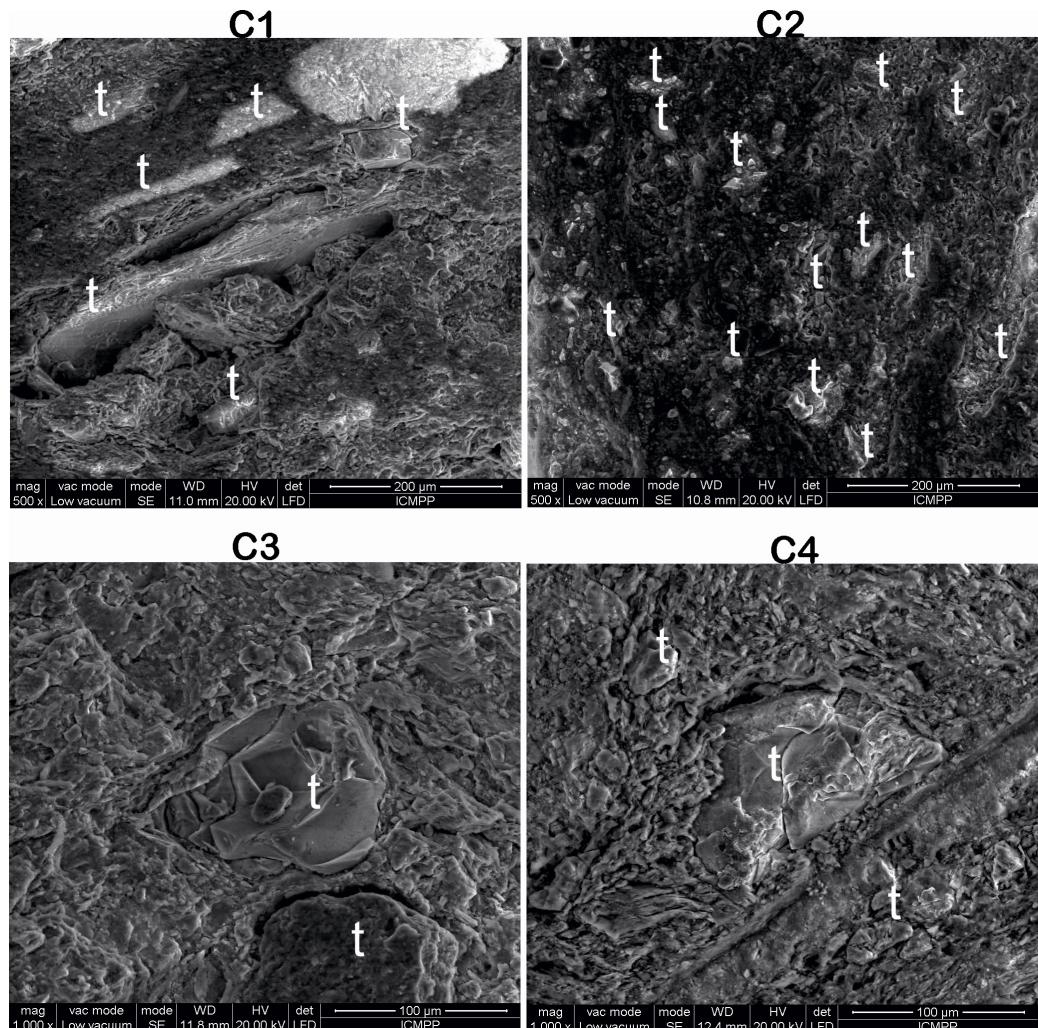


Figure 7. Microphotograph showing the microstructure of the C1, C2, C3, and C4 pottery fragments.

The results of the microscopic analyses for samples C1, C2, C3 and C4 are presented in Figure 7, while Figure 8 contains the results for samples C5, C6, C7 and C8.

SEM microphotographs exhibit the differences in microstructure between the two groups: the shell tempered and the grog and quartz one. These differences developed during firing consist in the appearance of new mineral phases in the clay matrix or at the boundaries between clay matrix and the used temper⁴¹.

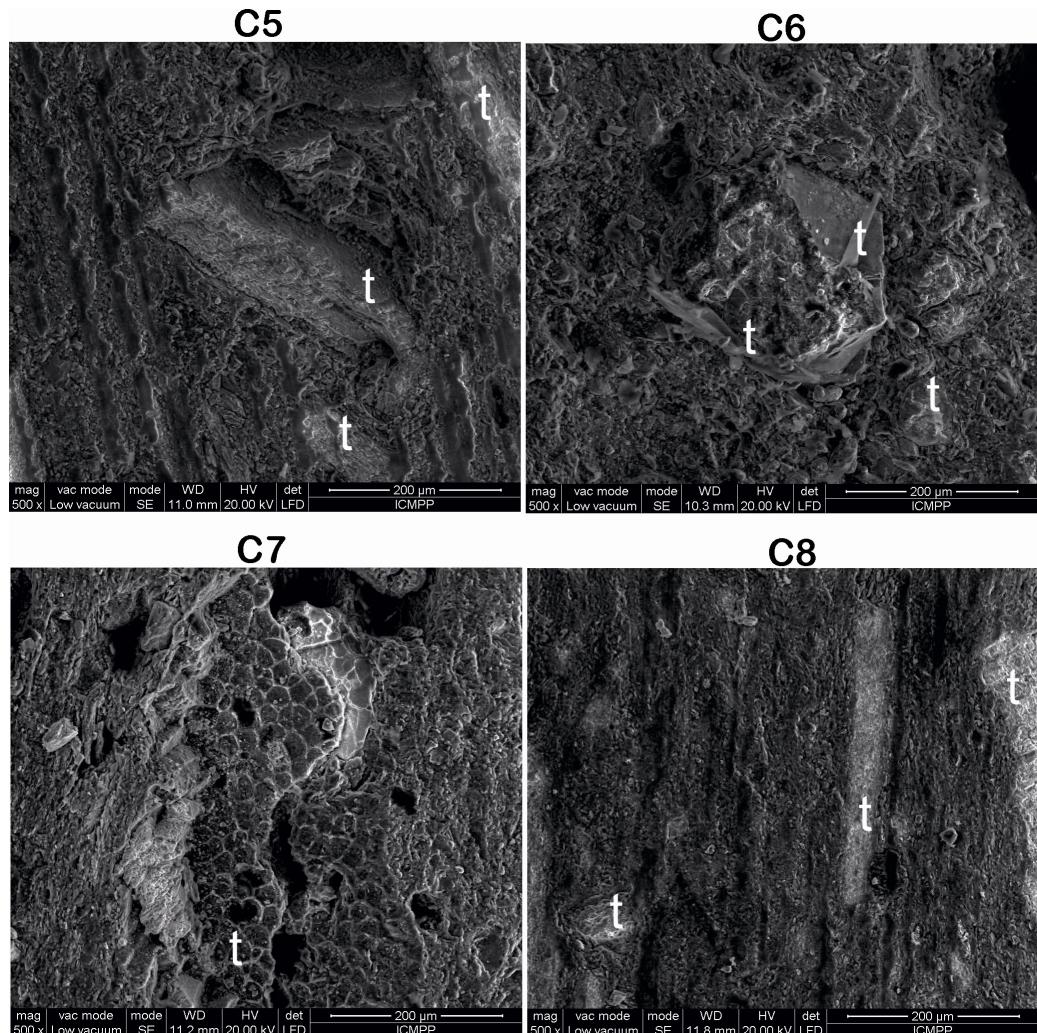


Figure 8. Microphotograph showing the microstructure of the C5, C6, C7 and C8 pottery fragments.

⁴¹ RICCARDI *et al.* 1999, 393–409.

The microstructural characteristics of the groundmass for the shell tempered samples show similar characteristics in terms of pore distribution as can be observed for samples C1, C5, C7 and C8 (Figure 7 and 8). Sample C2 (Figure 7) groundmass presents some differences in the distribution and pore sizes in comparison with the other samples containing shells as temper. These differences are determined by the firing reducing atmosphere.

As regards the microstructural changes due to the firing process, the shell fragments used as additives exhibits some variety. Shells present in samples C1, C5 and C8 (Figure 7 and 8) have a lamellar structure and are characterized by the appearance of intra- and inter-layer pores. The appearance of inter-layer pores can be caused by the decomposition of the organic compounds present in the shell structural elements or to the calcite decomposition⁴².

Based on the presence of intra-layer pores, we may consider that the firing temperature does not exceed 800°C⁴³. The shell fragments present in sample C2 (Figure 7) are much smaller and embedded in the clay matrix making difficult to assess their microstructural transformations. In sample C7 (Figure 8), the shell fragment has a prismatic morphology which is related to the differences in shell species⁴⁴. Based on the reduced number of pores and on their location between adjacent layers, but also inside the layers we can assume that the firing temperature was in the range of 750–800°C⁴⁵.

SEM study of the grog and quartz tempered pottery fragments enabled us to determine some differences between the samples. Textural features revealed two types of tempers: a sandy grog associated with larger quartz grains (samples C3 and C4 — Figure 7) and a carbonate grog (sample C6 — Figure 8). The carbonate grog present in sample C6 (Figure 8) presents a matrix which varies from sandy to clayish⁴⁶. Samples C3 and C4 (Figure 7) display large grains of quartz which show no grain-to-grain contact with the matrix. All three samples show no sign of vitrification which enable us to consider that the firing temperature did not exceed 800°C⁴⁷.

The mineralogical composition as determined by XRD analyses is shown in Figure 9. The major minerals which are present in all the analysed pottery samples (Figure 9) are quartz and calcite. Micas and clay minerals (illite), feldspars and plagioclase are the minor phases in the ceramics, while hematite and magnetite are present as trace phases.

XRD patterns of the Cucuteni C pottery revealed the presence of illite/muscovite in all the pottery samples. The existence of the phyllosilicate minerals indicates that the firing

⁴² MARITAN *et al.* 2007, 536.

⁴³ MARITAN *et al.* 2007, 537.

⁴⁴ ESTEBAN-DELGADO *et al.* 2008, 153–165; GÉNIO *et al.* 2012, 86–103.

⁴⁵ MARITAN *et al.* 2007, 535–536.

⁴⁶ ZULUAGA *et al.* 2011, 446.

⁴⁷ MANIATIS, TITE 1981, 61.

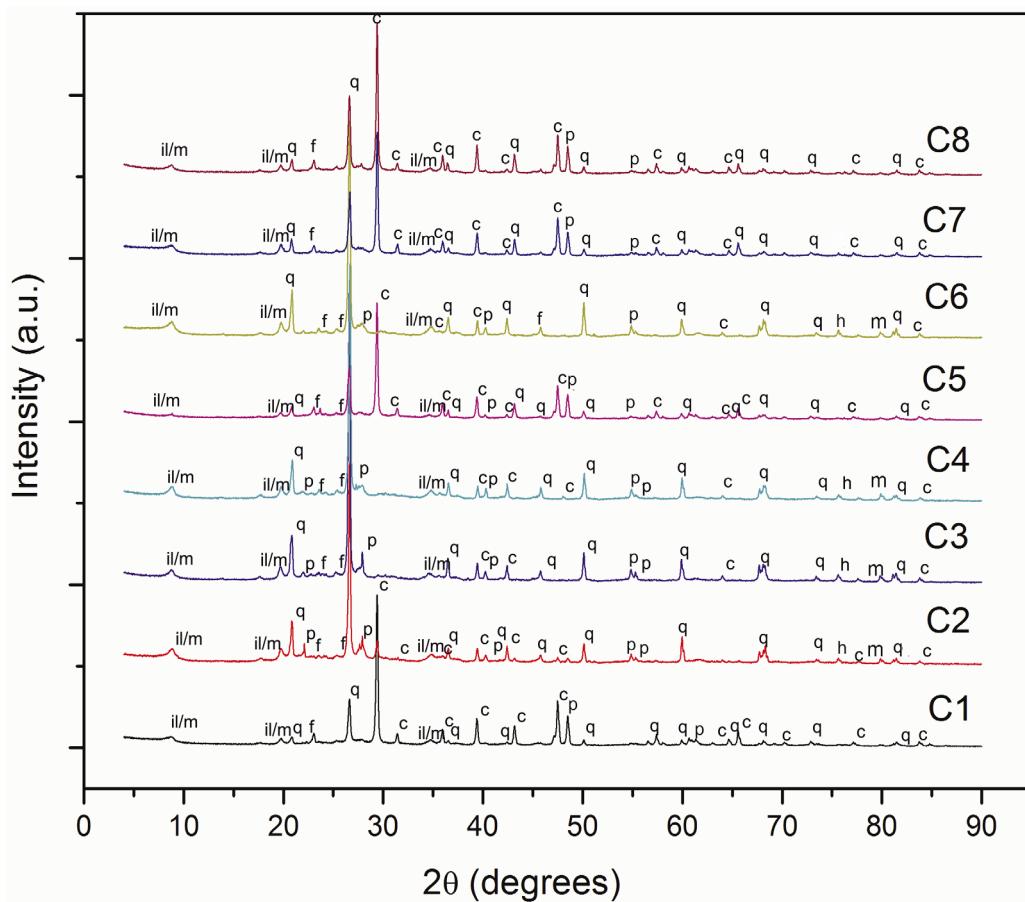


Figure 9. XRD spectra of the Cucuteni C pottery from Poduri–Dealul Ghindaru

(Abbreviations: il/m-illite/muscovite, q-quartz, c-calcite,
p-plagioclase, f-feldspar, m-magnetite, h-hematite).

temperature did not exceed 850–900°C⁴⁸. In samples C1, C5, C7 and C8, due to the high amount of shell tempers, the calcite reflection prevails. As a result of lowering the temper quantity, sample C2 is not dominated by the calcite peak.

The grog and quartz tempered group (samples C3, C4 and C6) are dominated by the quartz reflection. Moreover calcite dominant peak is not present and the other calcite peaks have lower intensity. Additionally, plagioclase peaks are more intense, while alkali feldspars (f) have rather a sparse intensity.

Hematite and magnetite are present in samples C2, C3, C4, and C6, but with peaks of lower intensity. The formation of hematite and magnetite depend on the firing atmosphere prevalent during the manufacturing process. The presence of weak intensity peak of

⁴⁸ DAMJANOVIĆ *et al.* 2011, 825.

magnetite is determined by the transformations of Fe_3O_4 to Fe_2O_3 during the firing process⁴⁹. Samples C3, C4 and C6 exhibit a pale ununiformed orange colour which is determined by the alternation of oxidative and redox condition during the pottery firing⁵⁰.

The association of both hematite and magnetite in the pottery C3, C4 and C6 potsherds reveals that samples are fired under changing conditions established from the ununiformed colour range. On the other hand sample C2 which has both hematite and magnetite exhibits a black colour which is the result of the carbon formed during reduced atmospheric firing using charcoal and wood⁵¹.

These observations can be correlated with the results of the chemical composition HCA analysis. Moreover, they show the same pattern in the mineralogical composition as the one in the chemical composition of C2 sample with the grog and quartz tempered group. This trend suggests the use of a similar clay source for the matrix composition, even if they were subjected to different tempering and firing process.

XRD data analysis can also provide some insights into the production process used to manufacture the Cucuteni C pottery. The appearance of phases such as hematite and magnetite in samples C2, C3, C4 and C6 suggests that the firing temperature attained 850°C, while the maintenance of illite/muscovite enable us to consider that the temperature did not exceed 900°C⁵².

Conclusions

A multi-analytical approach to the investigation of the Cucuteni C pottery excavated at the archaeological site of Poduri–Dealul Ghindaru enabled us to gain insight into its production technology. By determining the microscopic characteristics, the chemical and mineralogical composition it was possible to clearly determine the similarities and differences between the two groups determined macroscopically. In addition, the investigation of pottery production process clearly indicates the *technological choices* made by potters regarding raw material selection, paste recipes and firing process⁵³.

As a group, the shell tempered Cucuteni C pottery show general similarities in textural characteristics, mineralogical and chemical composition. Compared to the grog tempered Cucuteni C pottery, the shell tempered samples have a higher CaO content and a lower SiO₂, and with the exception of C2 sample show now traces of newly formed mineral phases.

⁴⁹ PALANIVEL, KUMAR 2011, 59.

⁵⁰ NODARI *et al.* 2007, 4665.

⁵¹ MANOHARAN *et al.* 2015, 45.

⁵² DAMJANOVIĆ *et al.* 2011, 825.

⁵³ SILAR, TITE 2000, 2–20.

The grog and quartz tempered Cucuteni C ware exhibit a higher content of SiO₂ and small amounts of CaO. Their mineralogical composition shows the existence of hematite and magnetite as newly formed phases, alkali feldspars and plagioclase as minor phases. The similarity in terms of chemical composition between the grog tempers and the pottery matrices in which they are embedded allow us to consider that previous potteries was worked with clay from the same source area.

While differences between shell and grog-quartz tempered pottery from Poduri–Dealul Ghindaru are quite apparent, equally striking are the similarities between the two, especially in matrices composition and morphology. Nevertheless, the variability in the chemical data seems to point to the use of a non-standardized recipe in the paste preparation.

Physicochemical characterization methods therefore provide experimental evidence which can help us to understand the Cucuteni culture pottery production technology and to clarify the initial archaeological hypothesis. Much more work is clearly needed, but the results achieved to date shed new insights on the production and technology of the Cucuteni C pottery. Finally, more detailed archaeological and archaeometric analyses are needed for explaining the timing, tempo and significance of the Cucuteni C pottery in the whole area of the Cucuteni-Trypillia civilization.

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Les découvertes des armes en bronze de la fin de l'âge du bronze sur le plateau de Bârlad

Ciprian-Cătălin LAZANU¹

Abstract. A surge in bronze metalworking can be seen taking place at the end of the Bronze Age, with ten deposits, containing 109 objects, and 28 isolated finds taking place in the Bârlad Plateau. The list of discoveries contains sickles, celts, broadswords, daggers, spearheads, and ornaments and dress elements; the least represented are weapons, with only seven items. The broadsword from Epureni is of the Krasnyj Majak type, typical of the Sabatinovka culture, while the daggers are of the Labojkovka type, Malye Kopani variant. The three spearheads are of the Dremajlovka and Krasnyj Majak type. The weapons are typical of the Sabatinovka culture and are rare east of the Prut, in the region of the Noua culture.

Résumé. A la fin de l'âge de bronze on peut observer une explosion de la métallurgie du bronze, dans la région du Plateau de Bârlad, 10 dépôts de bronzes en étant découverts, dépôts qui comprennent 109 objets en bronze et 28 découvertes isolées d'objets en bronze. Les objets font partie de la catégorie des fauilles, des haches de type celtique, des épées, des poignards, des fers de lance, des ornements et des vêtements. Les armes en sont les moins nombreuses, seulement sept pièces. L'épée d'Epureni est le type Krasnyj Majak, caractéristique pour la culture Sabatinovka, et les poignards sont de type Labojkovka, la variante Malye Kopani. Les trois fers de lance sont de type Dremajlovka et Krasnyj Majak. Les armes sont caractéristiques pour la culture Sabatinovka et apparaissent isolément à l'ouest de Prout, dans la région de la culture Noua.

Rezumat. La sfârșitul epocii bronzului se poate observa o explozie a metalurgiei bronzului, în zona Podișului Bârladului fiind descoperite zece depozite de bronzuri, cuprinzând 109 obiecte, și 28 de descoperiri izolate. Obiectele descoperite fac parte din categoria secerilor, topoarelor de tip celt, spade, pumnale, vârfuri de lance, obiecte de podoabă și port. Dintre toate categoriile de obiecte, armele sunt cele mai puține la număr, doar șapte piese. Spada de la Epureni este tipul Krasnyj Majak, caracteristică culturii Sabatinovka, iar pumnalele sunt de tipul Labojkovka, varianta Malye Kopani. Cele trei vârfuri de lance sunt de tipul Dremajlovka și Krasnyj Majak. Armele sunt caracteristice culturii Sabatinovka și care apar izolat la vest de Prut, în aria culturii Noua.

Keywords: Bârlad Plateau, Bronze Age, broadsword, spearhead, dagger, Krasnyj Majak, Dremajlovka.

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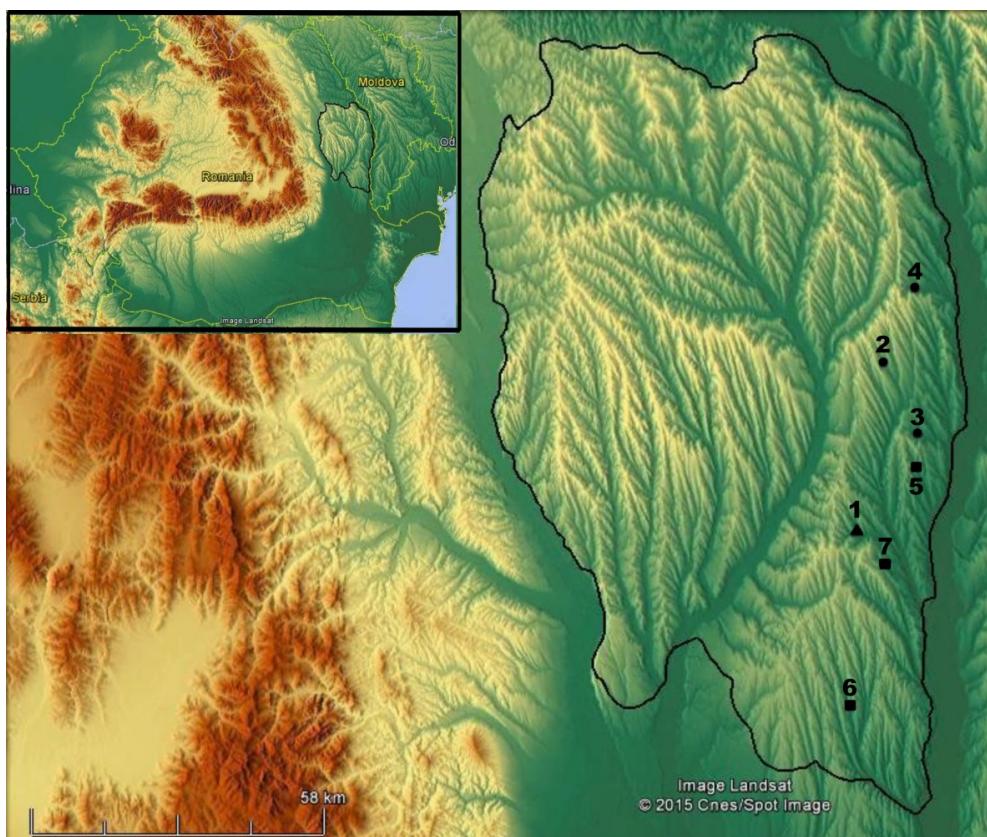
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Introduction

Le Plateau de Bârlad a été une région intensément habitée. Le plateau se trouve entre la vallée du Prout et celle du Siret, et c'est une zone de connexion entre l'espace nord-pontique et celui de Transylvanie, c'est pourquoi on peut observer, le long de l'histoire, de nombreuses interférences culturelles, situation valable pour l'âge du bronze aussi.

Si l'âge du bronze est bien connu pour le territoire de notre pays, en ce qui concerne le Plateau de Bârlad, la situation est un peu confuse, parce que dans cet espace les recherches archéologiques exhaustives sont limitées, et c'est pourquoi on doit faire attention. Généralement, les recherches sur un petit espace ont le rôle de contribuer, par leurs résultats, à la réalisation des études plus approfondies, des synthèses.

Le Plateau de Bârlad, qui a une superficie d'environ 10.000m², représente la partie du sud du Plateau de la Moldavie et il est caractérisé par une série de collines hautes de 400–450 m, dans le secteur du nord, qui descend vers 30–50 m dans le secteur de sud-est, la moyenne de



Carte 1. Le Plateau de Bârlad et les découvertes d'armes en bronze : (1) Epureni, (2) Oțeleni, (3) Stuhuleț, (4) Huși, (5) Lătești, (6) Crucișoara, et (7) Copăceana (d'après Google Earth. World Maps Overlay).

l'hauteur en étant de 200m². Le Plateau de Bârlad est traversé par un réseau d'eaux avec l'axe central sur la rivière Bârlad. Les principaux affluents sont Rahova et Lohan³.

Dans cet espace on a découvert plusieurs artefacts en bronze, datés à la fin de l'âge du bronze, qui proviennent soit des découvertes isolées, singulières, soit des établissements, des nécropoles ou des dépôts de bronzes. On a trouvé, jusqu'à ce moment, dix dépôts, qui comprennent 109 pièces⁴. A ce nombre, on ajoute 28 de découvertes isolées. Les pièces en bronze font partie d'une gamme variée typologique, qui comprend des fauilles, des haches à douille, des poignards et des épées, des fers de lance, objets d'ornement et des vêtements. Une catégorie spéciale est représentée par les armes en bronze: les épées, les poignards et les fers de lance. Dans le Plateau de Bârlad ont été découvertes six pièces (une épée, deux fers de lance et trois poignards) (Carte 1).

Les découvertes des armes en bronze

L'épée

La pièce d'Epureni fait partie de la catégorie des épées (Figure 1). Elle a 17,9 cm de longueur, la largeur de la lame est de 5,3 cm et elle pèse 290g⁵. L'épée est coupée depuis longtemps, au niveau de la lame, dont lui manque 80%. La lame était en forme de feuille de saule, fortement élargie, avec une nervure au milieu. Sur l'un de ses côtés, au niveau de la nervure, on observe un coup qui a partiellement sectionné la nervure. La garde est demi-circulaire et finit par deux arcades collées de la lame. La poignée, qui continue avec une tige, a une forme conique, avec l'épaisseur maximale dans la zone où la lame adhère à la poignée, arrondie en section et pourvue d'une proéminence en forme de champignon. On y peut observer aussi les rivets disposés en croix. L'épée a une patine verte sur toute sa surface. La lame et la poignée ont été réalisées dans un moule bivalve, dans deux parties séparées, puis collées à chaud avec des rivets en bronze.

Les fers de lance

Une autre catégorie d'armes est représentée par les fers de lance. On doit mettre en discussion la pièce découverte à Oțeleni. Le fer de lance a une longueur totale de 17,8 cm, la longueur du tube de serrage est de 11,8 cm, la lame a 2,7 cm et pèse 90g. Le fer de lance a été

² BĂCĂUANU 1980, 297–298.

³ BĂCĂUANU 1980, 300.

⁴ DINU, COMAN 1964, 471–474; PETRESCU-DÎMBOVIȚA, 1953, 443–486, 461–462; 1960, 193, nr. 45; 1966, p. 345–350; 1971, 7, R39; 1977, 74, fig. 78/13, 14–16, 75, fig. 81/1–15, 82/1–3, 84/1–8, 76–77, fig. 85/1–7, fig. 86/4–12, 87/1–9; 1978, 109, nr. 89, 110, nr. 92, 93, 97; MELINTE, 1975, 309–313; LESKOV, 1981, 81, 85, 99; DERGAČEV, V., BOČKAREV, V. 2006, 301, nr. 1182, pl. 85/1182; PALADE, 1976, 233–245; COMAN, 1980, 99, XIX.6, fig. 117/2–4; LAZANU, URSACHE, 2013, 175–194.

⁵ COMAN 1980, 127, XXVIII.8, fig. 115/1.

Les découvertes des armes en bronze de la fin de l'âge du bronze sur le plateau de Bârlad

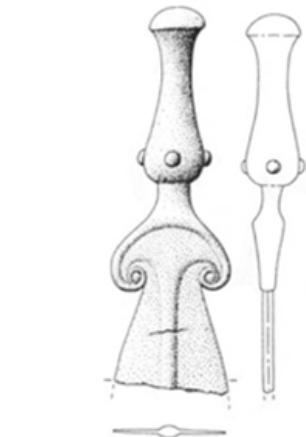


Figure 1. Epée courte en bronze d'Epureni
(d'après COMAN 1980).

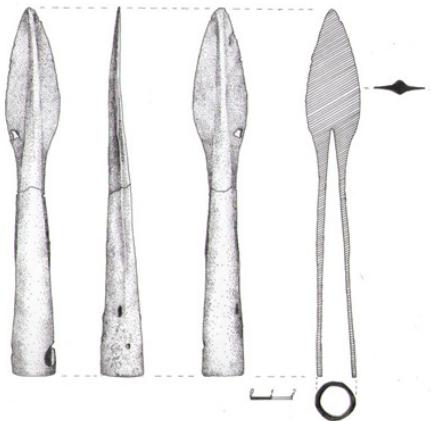


Figure 2. Fer de lance d'Oțeleni.

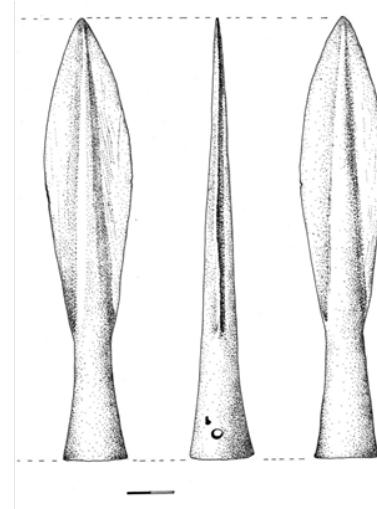


Figure 3. Fer de lance de Stuhuleț.

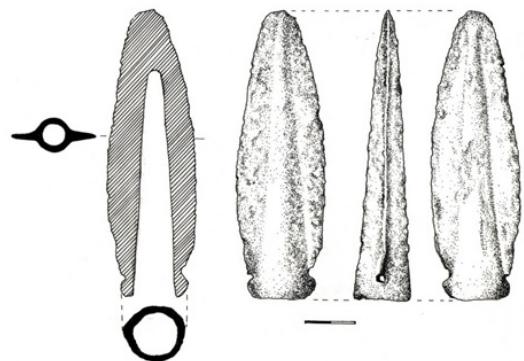


Figure 4. Fer de lance de Huși.

découvert dans un dépôt de bronzes, où il y avait aussi cinq fauilles avec l'orifice de serrage de type Heleșteni et un couteau conservé partiellement⁶ (Figure 2).

De telles pièces apparaissent à Oleshev — une lance avec le tube et la lame en forme de feuille de laurier — éléments composants d'un dépôt⁷, Losovichi. La lance a la lame en forme de feuille de laurier, le tube en est long et conique. Cette pièce est incorrectement encadrée dans le type Krasnyj-Mayak parce qu'elle est dépourvue des ailes latérales⁸. Ces pièces apparaissent dans le contexte de la culture Sabatinovka.

Le deuxième pièce est trouvée à Stuhuleț et provient d'un dépôt de bronzes, où il y avait aussi deux fauilles, trois fragments de bronzes et, peut-être, une barre en bronze⁹ (Figure 3). Elle a une longueur totale de 19 cm, la longueur de la lame en est de 13,5 cm et celle du tube de serrage de 5,5 cm. Son ouverture est droite, arrondie en plan. Le tube est court, conique et prévu d'une nervure qui devient mince vers le bout de la lance. La nervure, qui renforce la lame, est ronde. La lame est en forme de feuille, uniforme et a l'extrémité pointue. Elle présente des déformations légères, produites pendant la découverte. La pièce a été réalisée dans un moule bivalve. La feuillure a été soigneusement éliminée par martelage. La patine noble est présente sur l'un des côtés, vert-clair sur la partie supérieure et vert — foncé sur le tube. L'autre côté n'en présente pas, la patine a été enlevée. Sous l'ouverture du tube ont été disposés deux orifices de serrage selon la disposition de la lame, l'un contre l'autre. La feuillure a été soigneusement éliminée. Le tube présente une fissure à cause du moulage.

Quant au fer de lance de Huși, les conditions de la découverte ne sont pas claires¹⁰ (Figure 4). Le fer de lance a une longueur totale de 11,6 cm, le tube de serrage — 9,4 cm, la lame — 10,2 cm et la largeur maximale, dans la zone médiane de la lame, est de 3,4 cm. La pièce a été versée dans un moule bivalve, les traces de la feuillure en étant visibles sur les côtés latéraux du tube de serrage. La pièce est fortement oxydée, les traces en étant visibles sur 90% de la surface. Le tube de serrage est très court, gros et continue au niveau de la lame jusqu'à l'extrémité pointue. Sur les côtés latéraux il y a deux orifices de serrage. La lame est en forme de feuille, étroite et longue. Les deux côtés de la lame présentent une asymétrie légère : un côté est large à la moitié de la longueur, l'autre est épais vers la base, l'extrémité pointue de la lame est arrondie.

Les poignards

La troisième catégorie d'armes est représentée par les poignards, des armes de petites dimensions destinées à la lutte corps à corps. On en dispose de trois pièces découvertes dans le Plateau de Bârlad.

⁶ LAZANU, URSACHE 2013, 178–179.

⁷ KLOSHKO 1993, 13, fig. 2/3

⁸ KLOSHKO 1993, 23, fig. 9/8.

⁹ COMAN 1980, 68, VIII.13.

¹⁰ COMAN 1980, fig. 115/6.

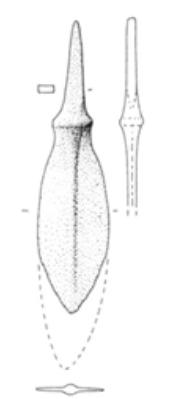


Figure 5. Le poignard de Lătești
(d'après COMAN 1980).

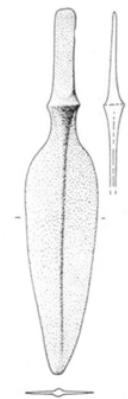


Figure 6. Le poignard de
Crucișoara
(d'après COMAN 1980).

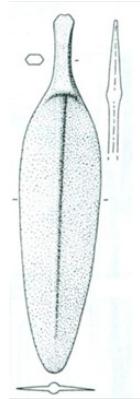


Figure 7. Le poignard de
Copăceana.

La première pièce a été découverte à Lătești¹¹ (Figure 5). Elle a 13,3 cm de longueur, la largeur maximale, dans la zone médiane de la lame, est de 3,3 cm, la longueur de la poignée est de 4,8 cm et celle de la lame, de 8,5 cm. Le poignard pèse 40 g. Puisqu'il a été rompu, il y a seulement un fragment de lame et la poignée. Le poignard a la lame en forme de feuille de saule, large vers la poignée, pointue, et présente une nervure sur toute la longueur qui va de la garde, ce qui différencie la lame et la poignée. La pièce a été récemment utilisée, ce qui a provoqué une détérioration accentuée de la lame.

Le deuxième poignard a été découvert à Crucișoara (Figure 6). Les dimensions en sont : la longueur totale – 20,8 cm, la largeur maximale – 13,1 cm, la longueur de la lame – 13,1 cm et celle de la poignée – 7,7 cm ; il pèse 80 g. La lame est pointue, en forme de feuille de saule avec la largeur maximale vers la poignée, et présente une nervure sur toute la surface qui va de la garde, ce qui différencie la lame et la poignée. La poignée du poignard est un tube large et étroit. Le poignard a été réalisé dans un moule bivalve, les feuillures en étant éliminées par martelage à froid. La patine noble a été totalement enlevée.

Le poignard de Copăceana a été découvert à côté d'une hache de type celtique. Ces pièces font partie, le plus probable, d'un dépôt (Figure 7)¹². Le poignard a 20,2 cm de longueur, la largeur maximale de 4,5 cm, la longueur de la lame en étant de 15,8 cm et celle de la poignée de 4,4 cm. Il pèse 85 g.

Discussions et conclusions

L'épée d'Epureni est de type des épées courtes (*Kurzschwerter*), longues de 35–50 cm, la lame longue et la poignée court et ajourée, la garde arquée et une nervure centrale sur toute la longueur de la lame¹³.

L'épée s'encadre dans le type Krasnyj-Mayak et elle fait partie de la série des bronzes Krasnyj Majak, dénommée ainsi après les découvertes de l'établissement éponyme, qui comprenait un grand atelier métallurgique¹⁴. Cette série de bronzes est caractéristique pour la culture Sabatinovka, les épées étant répandues jusqu'à la zone du Dniepr.

Les épées courtes ont été découvertes à Lozova¹⁵, Antonovka¹⁶ dans des dépôts de bronzes. D'autres découvertes isolées des épées courtes ont été faites à Ekaterinoslva¹⁷, Tigheci¹⁸,

¹¹ COMAN 1980, 190, XLV.46, fig. 115/5.

¹² UDRESCU 1973, 25, nr. 133. La pièce est déformée comme fer de lance; COMAN 1980, 139, XXIX.16.

¹³ DERGAČEV 2002, 124–125.

¹⁴ KLOCHKO 1993, 36.

¹⁵ KLOCHKO 1993, 36, fig. 24/2, 3, 8, 9; DERGAČEV 2002, 37, 124, pl. 33–34, 35/17.

¹⁶ KLOCHKO 1995, 133–134, fig. 34/5.

¹⁷ KLOCHKO 1993, 133, fig. 34/7.

¹⁸ DERGAČEV 2002, 41, pl. 43/C.

Ciutulești¹⁹, et à Voloskoe²⁰ et Borisovka²¹ comme inventaire funéraire des tombeaux. On a découvert aussi des moules à Novokievka²² et Krasnyj Majak²³.

La pièce d'Epureni a été découverte dans un établissement associé avec les matériaux de type Noua, l'épée en étant une découverte singulière et inédite de cette région.

Les épées courtes de type Krasnyj Majak apparaissent isolément dans la région de la culture Noua, ce type de pièce en étant découvert dans les établissements, raison pour laquelle peut être une importation de l'espace nord-pontique. Les découvertes des dépôts, des moules, renforcent l'hypothèse selon laquelle la zone de production est dans la région de la culture Sabatinovka, avec le fort centre métallurgique de Krasnyj Majak.

Le fer de lance d'Oțeleni est de type Krasnyj Mayak, avec le tube long et la lame courte et large, des pièces spécifiques pour la culture Sabatinovka. Des découvertes semblables ont été enregistrées dans le bassin du Dniepr, par deux pièces²⁴, l'île Igren²⁵, Lozovo²⁶, Razdolnoye²⁷ et les moules de Krasnyj Mayak²⁸ et Ostrovets²⁹. La découverte d'Oțeleni est la seule découverte de l'espace entre les Carpates et le Prout, toutes les deux, composantes des dépôts de bronzes.

Le fer de lance de Stuhuleț fait partie du type Dremajlovka, avec le tube court et conique et la lame longue. Les découvertes de ce type ont été faites à Dremajlovka³⁰, Nenasytets³¹, Sabelniki³², Grisincy³³, Cjuripinsk³⁴, Kalinovka³⁵, Chmel'na³⁶ et les deux moules à Novokievka³⁷. Les fers de lance de type Dremajlovka sont typiques pour la culture Sabatinovka, la pièce de Stuhuleț étant la seule découverte à l'ouest de Dniestr, et la plus occidentale.

¹⁹ KLOCHKO 1993, 36, fig. 24/6; DERGAČEV 2002, 42, 124, pl. 44/C.

²⁰ KLOCHKO 1993, 36, fig. 24/10.

²¹ KLOCHKO 1993, 36, fig. 24/1; DERGAČEV 2002, 124, pl. 69/A422.

²² KLOCHKO 1993, 36, fig. 33/4.

²³ KLOCHKO 1993, 36, fig. 24/4,5.

²⁴ KLOCHKO 1993, 39, fig. 28/7,8.

²⁵ KLOCHKO 1993, 39, fig. 28/6.

²⁶ KLOCHKO 1993, 39, fig. 28/4.

²⁷ KLOCHKO 1993, 39, fig. 28/5.

²⁸ KLOCHKO 1993, 39, fig. 28/2, 3.

²⁹ KLOCHKO 1993, 13, fig. 2/4.

³⁰ KLOCHKO 1993, 39, fig. 27/8; KLOCHKO 1995, 91; DERGAČEV 2002, 132; BADER 2014, 372, nr. 4.

³¹ KLOCHKO 1993, 39, fig. 27/5; DERGAČEV 2002, 132; BADER 2014, 372, nr.7.

³² KLOCHKO 1995, 94; DERGAČEV 2002, 132; BADER 2014, 374, nr. 9.

³³ KLOCHKO 1993, Fig. 9/12; KLOCHKO 1995, 94, fig. 8/1; DERGAČEV 2002, 132; BADER 2014, 372, nr. 5.

³⁴ KLOCHKO 1993, fig. 26/1; KLOCHKO 1995, 94, fig. 7/2; DERGAČEV 2002, 132; BADER 2014, 371–372, nr. 3.

³⁵ KLOCHKO 1995, 94, fig. 7/4; BADER 2014, 372, nr. 6.

³⁶ KLOCHKO 1993, 94, fig. 7/5; BADER 2014, 372, nr. 2.

³⁷ KLOCHKO 1993, 39, fig. 27/1–3; DERGAČEV 2002, 132; BADER 2014, 373, nr. 8.

Le fer de lance de Huși a des analogies dans les découvertes isolées de Grebeny et Obukhovka³⁸, spécifiques pour Sabatinovka. La pièce de Huși est découverte dans la région de la culture Noua.

Les poignards de Lătești, Copăceana et Crucișoara ont été découverts dans la région de la culture Noua, en étant de type Labojkovka, variante Malye Kopani, caractéristique pour la culture Sabatinovka³⁹. Les poignards Malye Kopani sont trouvés dans la zone nord-pontique comme des importations dans la culture Srubnaya⁴⁰. On a des analogies à Beriozchi⁴¹, Goian⁴², Tîrnuca IV⁴³, Răcătău⁴⁴, Vâncători⁴⁵, Antonovka⁴⁶, la zone des Carpates⁴⁷, Golovurovo⁴⁸, Derevyannovye⁴⁹, Mazepintsy⁵⁰, Labojkovka⁵¹ et Dancu⁵².

On peut observer qu'une série d'objets, selon les découvertes — l'épée d'Epureni, les fers de lance de Stuhuleț et Huși constituent des découvertes isolées, en étant les plus occidentales découvertes de ce type. Dans les dépôts ont été trouvés les fers de lance d'Oțeleni, à côté des fauilles de type Heleșteni et d'un couteau, des pièces caractéristiques pour la culture Noua, dans des établissements on situe seulement les découvertes d'Epureni, l'épée courte et Lătești.

Les armes en bronze, découvertes dans le Plateau de Bârlad, apparaissent dans les vallées des rivières, par exemple l'Elan, qui peut être considéré une porte d'entrée des objets en bronze, de l'est à l'ouest.

Les découvertes de ces armes, à côtés d'autres objets en bronze (fauilles, haches à douille, objets d'ornement et vêtements) composent le tableau culturel de la fin de l'âge de bronze, pendant lequel le complexe culturel Noua-Sabatinovka-Coslogeni s'est manifesté, à partir de la zone nord-pontique jusqu'à la région d'entre les Carpates.

Remerciements

Remerciements à Mme Georgeta Vrânceanu, dessinateur au Musée Départemental de Vaslui, pour les dessins des pièces analysées dans cet article.

³⁸ KLOCHKO 1993, 39, fig. 29/1, .

³⁹ DERGAČEV 2002, 125–126, 203/A423, pl. 70/A423, pl. 103.

⁴⁰ KLOCHKO 1993, 132, charte 1.

⁴¹ DERGAČEV 2002, 125–126, 203/A423, pl. 40/A.

⁴² DERGAČEV 2002, pl. 43/B.

⁴³ DERGAČEV 2002, pl. 44/B.

⁴⁴ DERGAČEV 2002, pl. 70/424.

⁴⁵ DERGAČEV 2002, pl. 70/427.

⁴⁶ DERGAČEV 2002, pl. 70/428.

⁴⁷ KLOCHKO 1993, 12, fig. 2/5,6.

⁴⁸ KLOCHKO 1993, 20, fig. 7/1,4.

⁴⁹ KLOCHKO 1993,20, fig. 7/2.

⁵⁰ KLOCHKO 1993, 20, fig. 7/3.

⁵¹ KLOCHKO 1993, 27, fig. 16/4,5.

⁵² DERGAČEV 2002, 42, fig. 1/8.

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Ancestral DNA — an incontestable source of data for Archaeology*

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Abstract. *The DNA is present in every cell of a person's body, not only in the cell's nucleus but also in its cytoplasm, in mitochondria. Of great importance is the fact that, except for the rare occurrence of a mutation, the DNA in every cell of the person's body is identical. As a result, DNA can be taken from saliva, sweat, blood, hair, skin or bone cells for individual identification. The many opportunities to obtain DNA evidence can be seen, for example, in the number of places where saliva has been identified: a bite mark, an area licked, bed linens, a mask worn, paper tissue, a washcloth, a cigarette butt, a toothpick, the rim of a bottle or glass, but all of those sources are available just for present DNA. In the case of old DNA, also called ancient DNA (aDNA), the things are different and the possibilities to analyse the substrate of genetic information are limited to bone fragments or teeth. Even in these conditions, the DNA analysis is a very accurate and powerful tool for getting useful information in Archaeology.*

Rezumat. Fiecare celulă dintr-un organism conține ADN (Acid dezoxiribonucleic) care este prezent atât în nucleu, cât și în mitocondriile din citoplasmă. Cu excepția unor mutații genetice, ADN-ul este identic în toate celulele unui organism. Din acest motiv există foarte multe posibilități de obținere a ADN-ului cum ar fi: analiza salivei, a transpirației, a sângei, a părului, a pielii sau a oaselor. Multiplele posibilități de obținere a ADN-ului pot fi exemplificate foarte bine prin numeroasele locuri din care poate fi recuperată saliva unui individ: o mușcătură, o zonă linsă, lenjeria de pat, o mască purtată, șervețel, prosop, țigără, scobitoare, sticlă sau pahar. Dar toate acestea sunt valabile doar pentru ADN-ului actual. În cazul probelor vechi, obținerea informației genetice se poate face, în general, doar prin analiza oaselor și a dinților. Chiar și în aceste condiții, analizele ADN reprezintă o importantă sursă de informații pentru arheologie.

Keywords: ancient DNA, nuclear DNA, mitochondrial DNA, haplogroups, archaeological analysis.

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Introduction

DNA analysis can describe the latest developments in different scientific areas, with a clear and accessible discussion of the results of mitochondrial DNA and Y-chromosome analysis and of their integration with the archaeological⁵ and geo-climatic records⁶.

If we are interested in peoples of a specific region⁷, like countries⁸ or even continents, how long ago the peoples move into this specific area⁹, how many peoples moved, how many times they moved, we can get the genetic data (mainly the mitochondrial DNA sequences) that will show us the patterns of variations in population and we can compare this data with patterns of variation from different populations¹⁰, but we need calibration points from archaeological records¹¹, to know when we see evidences of past societies and how they are related with other communities¹². Generally, it is a comparative process involving genetics, archaeology and sometimes linguistics or even fossil records if we are going back deep in time¹³, which requires a multidisciplinary analysis, because we need to create a complete image of that times. Even if genetics is a powerful tool to look into the history, it couldn't tell us anything by itself, it has to be integrated in a comparative framework¹⁴.

The analysis of ancient DNA (aDNA) is a relative new research tool in a wide variety of fields, from history and anthropology through genetics and emerging diseases to forensic medicine¹⁵. The human evolution and population history was often investigated using aDNA study¹⁶. During the last three decades since the first genetic data supporting the recently *out of Africa* hypothesis were produced¹⁷, hundreds of analyses of mtDNA, Y chromosome, and nuclear markers have largely continued to develop the model. The degree in which the molecular studies have included, in general, other anthropological information¹⁸, and the degree in which all this data where included in the archaeological models, is still highly variable¹⁹. However, in the introduction to a volume dedicated to reviews of human

⁵ BADRO *et al.* 2013, 1–11.

⁶ van ANDEL 2003, 31–39.

⁷ de-la-RUA *et al.* 2015, 306–311.

⁸ CHILVERS *et al.* 2008, 2707–2713.

⁹ IZAGIRRE, de la RÚA 1999, 199–205.

¹⁰ REICH *et al.* 2009, 489–494; MILLER *et al.* 2011, 12348–12353; NOVEMBRE *et al.* 2008, 98–101; YANG *et al.* 2012, 725–731.

¹¹ HELED and DRUMMOND 2012, 138–149; DORNBURG *et al.* 2011, 519–527; WILKINSON *et al.* 2011, 16–31; NOWAK *et al.* 2013, e66245.

¹² DODGE 2012, 22–30.

¹³ GREEN, SHAPIRO, 2013, 286–288.

¹⁴ FU *et al.* 2013, 553–559.

¹⁵ ELANGO 2007, 28–36; KUMAR, RAO 2007, 36–77.

¹⁶ DASKALAKI 2014, 14–15; KIRSANOW, BURGER 2012, 121–129.

¹⁷ CANN *et al.* 1987, 31–36.

¹⁸ GREALY *et al.* 2015, 37–47.

¹⁹ MATISOON-SMITH, HORSBURGH 2012, 112.

dispersals, C. Renfrew identified the *out of Africa* hypothesis as an archaeo-genetic very inspiring story which take into considerations the genetic, archaeological, and linguistic data in the pursuit of more accurate and nuanced reconstructions of early prehistory²⁰.

The aDNA analysis contributed to the understanding of human evolution, studying various hominids and their relation to modern humans²¹. The Denisovans and Neanderthals complete mitochondrial genome²² and the draft nuclear genome for both species²³ has led to the evaluation of their contribution to present-day ancestry and their geographic ancestor area²⁴. Later studies demonstrated the origin of Denisovans and Neanderthals in Africa that migrated to Eurasia, much earlier than the modern humans²⁵.

Also, the picture of the Neolithic process in Europe was mostly revealed by mtDNA analysis of human remains from Central Europe, Northern Europe and Iberia²⁶. The aDNA was an important tool in understanding the process of plants and animals' domestication. Recent studies show that dogs are derived from wolves of Europe²⁷, contradicting the theories that suggest dogs were domesticated either in the Middle East or in East Asia²⁸. All these results were possible because the researchers working on human genetics and the one doing archaeology have moved to a more balanced understanding of the potential and limits within both disciplines²⁹.

Recently, K. Kristiansen considers that the next generation of sequencing of ancient DNA which is now able to produce genomic data represents an important part of the so-called *Third Science Revolution*³⁰. The mtDNA provided interesting information about major changes in the genetic composition of Europeans during the Neolithic³¹. The increasing data generated new haplogroups, some with possible origins in the east³², others in the Iberian Peninsula³³. All these changes where almost completed by the Bronze Age³⁴.

²⁰ RENFREW 2010, 162–165.

²¹ DASKALAKI 2014, 14–15.

²² REICH *et al.* 2010, 1053–1060; GREEN *et al.* 2008, 416–426.

²³ MEYER *et al.* 2012, 222–226; GREEN *et al.* 2010, 710–722.

²⁴ NOONAN *et al.* 2006, 1113–1118.

²⁵ KRAUSE *et al.* 2010, 231–236; LALUEZA-FOX, GILBERT 2011, 1002–1009; LOWERY *et al.* 2013, 83–94; REICH *et al.* 2010, 1053–1060;

²⁶ BRAMANTI *et al.* 2009, 137–140; HERVELLA *et al.* 2012, e34417; LEE *et al.* 2012, 571–579; MALMSTRÖM *et al.* 2009, 1758–1762.

²⁷ THALMANN *et al.* 2013, 871–874.

²⁸ DASKALAKI 2014, 14–15.

²⁹ BROWN, PLUCIENNINK 2001, 101–104.

³⁰ KRISTIANSEN 2014, 13.

³¹ HAAK *et al.* 2015, 207–211.

³² HAAK *et al.* 2010, 1–16.

³³ OLALDE *et al.* 2015, 1–11.

³⁴ ALLENTOFT *et al.* 2015, 167–172.

Within the *Genetic Evolution: New Evidences for the Study of Interconnected Structures. A Biomolecular Journey around the Carpathians from Ancient to Medieval Times* (GENESIS) project we intend to create a database which will give us the possibility to connect our genetic approach and results with other European research programs which are targeting South-eastern Europe³⁵. We are focusing on understanding at a regional scale the genetic characteristics, the appearance of different haplogroups and the dynamic of some communities from prehistory to the Middle Ages. A timespan that yielded major genetic changes at a European scale and represents a central theme of our investigations is Early Bronze Age. One can say that some of the *moving communities* which can be traced archaeologically from the Steppes towards Central European regions originate in the Steppes Pit Grave culture³⁶.

Despite its huge potential, the archaeological genetics has a variety of challenges, from DNA preservation and contamination to the sample access³⁷. These challenges, have led this field to become stricter and more highly method oriented, in order to overcome this issues and to recover all genetic information that can be obtained from a specimen.

In this study we will describe technical aspects associated with successful, authentic and reliable DNA recovery from old samples. We hope to give an interesting and comprehensive overview of the process of analyzing DNA obtained from archaeological remains and of their possible use in the archaeological analysis.

The basic DNA structure

DNA, or deoxyribonucleic acid, is the hereditary material in almost all living organisms, a small percent being RNA based organism. Every human cell has the same genetic information and the same DNA structure. Most DNA is located in the cell nucleus (referred as nuclear DNA) and a small amount of DNA can also be found in the mitochondria (referred as mitochondrial DNA or mtDNA).

DNA consists of two parallel spiral strands that form a double-helix³⁸. Each strand is actually a linked chain in which the links consist of a very large number of units called nucleotides, representing the genetic information stored as a code made up of four chemical bases. Every nucleotide is made up of three smaller chemical compounds: a phosphate, a sugar, and a base³⁹. There are four different bases, which are referred to by using the first letter of their names: A (adenine), T (thymine), G (guanine), and C (cytosine). A and G are double-ringed nitrogen-containing compounds, called purines; T and C are single-ringed

³⁵ Excellence Cluster Topoi, Research Project A-2-1. *Pastoralism on the Eurasian Steppe*. www.topoi.org/project/a-2-1/.

³⁶ BOLOHAN *et al.*, 2014; BOLOHAN *et al.*, 2015.

³⁷ DASKALAKI 2014, 15.

³⁸ LODISH *et al.* 2004, 102–108.

³⁹ ANTHONY-CAHILL *et al.* 2012.

nitrogen-containing compounds, called pyrimidines⁴⁰. The base is the important identifying part of a nucleotide⁴¹. Each phosphate group is linked to a sugar molecule, which, in turn, is attached to one of the four nitrogen-containing bases. The phosphate group of each nucleotide is also chemically bonded to the sugar molecule of the adjacent nucleotide, forming the polynucleotide chain⁴².

Nuclear and mitochondrial DNA

The offspring of sexually reproducing organisms inherit approximately half of their DNA from each parent. In a diploid, sexually reproducing organism for example, this means that within the nuclear genome one allele at each locus came from the mother and the other allele came from the father⁴³. This is known as biparental inheritance. However, even in sexually reproducing species, not all DNA is inherited from both parents. Two important exceptions are the uniparentally inherited organelle genomes of mitochondria (mtDNA) and plastids, with the latter including chloroplasts (cpDNA)⁴⁴. These are both located outside the cell nucleus. Mitochondria are found in both plants and animals, whereas plastids are found only in plants. Organelle DNA typically occurs in the form of supercoiled circles of double-stranded DNA, and these genomes are much smaller than the nuclear genome. For example, at between 15000 and 17000bp the mammalian mitochondrial genome is approximately 1/10000 the size of the smallest animal nuclear genome⁴⁵, but what they lack in size they partially make up for in number – a single human cell normally contains anywhere from 1000 to 10000 mitochondria. Molecular markers from organelle genomes, particularly animal mtDNA, have been exceedingly popular in ecological studies⁴⁶ because, as we shall see below, they have a number of useful attributes that are not found in nuclear genomes. Nuclear and mitochondrial chromosomes consist of two types of nucleotides: (1) those that make up the genes, called coding sequences, and (2) those whose function is largely unknown, referred to as noncoding regions⁴⁷. The nucleotides in coding and noncoding portions of a chromosome are exactly alike in chemical composition and bonding characteristics; they differ solely in whether or not they contribute to one or more of the individual's traits (phenotype).

⁴⁰ ALBERTS *et al.* 2002.

⁴¹ MAO 2004, 2036–2038.

⁴² ANTHONY-CAHILL *et al.* 2012.

⁴³ RIDLEY 2006.

⁴⁴ BUTLER 2005, 123–145.

⁴⁵ LEWIN 2004; GREGORY *et al.* 2007.

⁴⁶ HARRISON 1989, 6–11.

⁴⁷ WATERS 2013.

Finally, the nuclear chromosomes and cytoplasmic mitochondria are transferred from one generation to the next along different paths, which greatly affects their applications in Archaeology.

In the last decade, advances in genomic sequencing are starting to provide insight into the complex narrative of human ancestry embedded in human DNA, particularly through genetic variation. Genetic variants are sequences of DNA base pairs that differ from more common ancestral sequences and can be traced to specific human populations, either present or past by ancient DNA. The genetic analysis of human ancestry is a search for variants in an individual's genetic code and determine how related that person is to specific ethnic and geographic populations. For males, if the samples are very good preserved, the Y chromosome is sequenced since this allele is always passed down from father to son; for females, mitochondrial DNA is sequenced, since a daughter inherits the DNA from her mother. Genetic variants found in these sequencing data can be used to construct a paternal or maternal evolutionary tree, showing how certain human populations connect to each other.

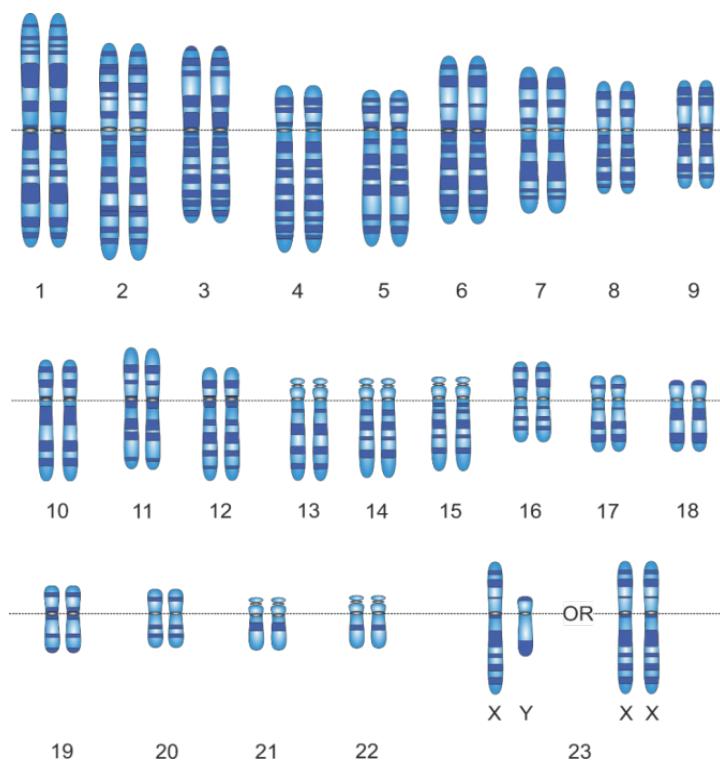


Figure 1. Graphical representation of the normal human karyotype showing the organization of the genome into chromosomes. The karyotype indicates the number and morphology of chromosomes in a eukaryotic cell undergoing mitosis (44 somatic autosomes and 2 sex chromosomes XX for females or XY for males).

Nuclear DNA

Although DNA in the nuclear chromosome and the cytoplasmic mitochondria of a cell are composed of complementary poly-nucleotide chains, their numbers, sizes, and geometric arrangements are quite different. A normal human somatic cell has 46 or, 23 pairs of chromosomes (Figure 1), having received one of every pair of homologous chromosomes from each parent. The number varies slightly depending on whether the set of chromosomes being considered includes the X, resulting in more base pairs, or the Y chromosome.

The total human genome, or 99.9% of it, was originally decoded and published in 2001 and updated in 2002 and 2004⁴⁸. This was the culmination of a joint multinational effort and nearly 10 years of work. The total size of the human genome was found to be approximately 3.2 billion bp.

In nuclear chromosomes, the coding and noncoding sequences are distributed intermittently along the length of each DNA double helix (Figure 2).

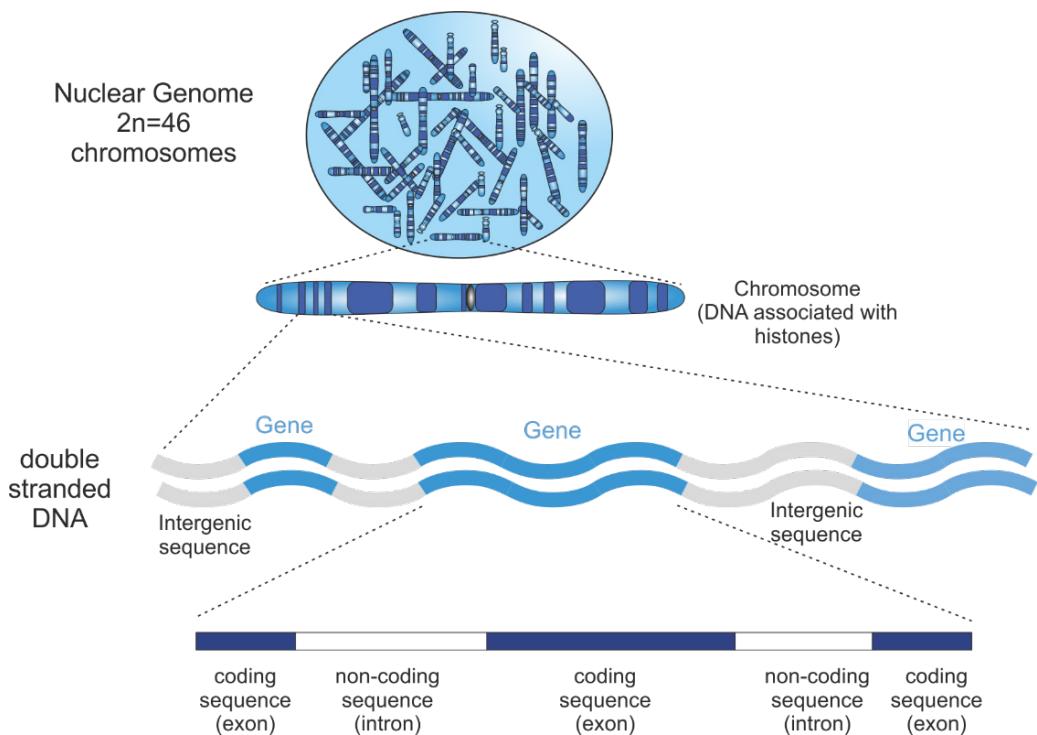


Figure 2. Chromosome internal structure.

⁴⁸ LANDER *et al.* 2001, 860–921; VENTER *et al.* 2001, 1304–1351; COLLINS *et al.*, 2004, 931–945.

The ability to designate whether a sample originated from a male or female contributor is extremely valuable in case of incomplete human remains, bone fragments, if sex identification is required. The most popular method for sex typing is the short tandem repeat (STR) analysis. Recently, Y chromosome-STR analysis has become available and has provided identification where STR analysis was not definitive. Several genetic markers have been identified on the Y chromosome that are distinct from autosomes markers, being useful for human (male) identification. The Y-STR markers are found on the noncoding region located on both arms of the Y chromosome. The Y-STR markers produce a haplotype profile when amplified from male DNA and are extremely valuable in the analysis of lineage and the reconstruction of family relationships. Because these markers are only paternally inherited, they are useful in paternity-related matters. In order to determine the sex of the individuals studied a dimorphism in the amelogenin gene can be analysed. This gene encodes a protein involved in the formation of dental enamel; it is a single copy gene located at position Yp11.2 of Y chromosome with its counterpart in the region Xp22.3-p.22.1 the X chromosome. In the X chromosome a 6bp deletion is present. This marker is used in forensic studies and it is of great importance in archaeology, allowing sexing individuals even when not all the skeletal parts are available to establish it by their morphological characteristics. In this case, a small region where the dimorphism is located can be amplified and the sizes of the fragments obtained can be compared in 2.5% agarose electrophoresis.

In addition, Y-STR markers' use and effectiveness in lineage studies can extend to answering questions of common ancestral geographical origin. Y-STR markers, together with mitochondrial DNA (mtDNA) markers will complement each other in these ancestral analyses.

Mitochondrial DNA

The mitochondria (singular, mitochondrion) are cytoplasmic structures (organelles) involved in cells' energy production⁴⁹. Although mitochondria contain their own DNA genomes, mitochondrial genes are inherited in a different manner from nuclear genes because the zygote's mitochondria come only from the mother's egg, because the father's sperm contributes only nuclear DNA to the new embryo. For this reason, all sons and daughters have the same mitochondrial DNA (mtDNA) as their mothers, and mtDNA is passed on, virtually unchanged, from one generation to the next through the maternal line of a family. No meiosis is involved in mtDNA replication, and therefore no segregation of alleles or independent assortment takes place. Since little to no genetic recombination occurs on the mitochondrial chromosome⁵⁰, all genes are inherited as if they were a single unit. Because only maternal DNA is present, mtDNA can be considered haploid for mitochondrial genes.

⁴⁹ HENZE, MARTIN 2003, 127–128.

⁵⁰ EYRE-WALKER *et al.* 1999, 477–483; AWADALLA *et al.* 1999, 2524–2525.

The number of mitochondria varies greatly with the type of cell and stage of its development, ranging usually between 200 and 1000; the number of nucleotides in a mitochondrial DNA molecule is fixed at 16569 base pairs⁵¹ (Figure 3). Each mitochondrion, however, typically contains two or three DNA molecules.

In a mitochondrial ring chromosome, the coding and noncoding areas are entirely separate, with the noncoding portion of the chromosome being located in a region referred to as the control region (also called the displacement loop or D-loop). The control region contains about 1,100 base pairs and is divided into 2 distinct sections, hypervariable 1 (HV1) and hypervariable 2 (HV2). The various base sequences of the control region nucleotides are the most useful in identifying a, human genetic variation and population genetics, but also the human populations migration.

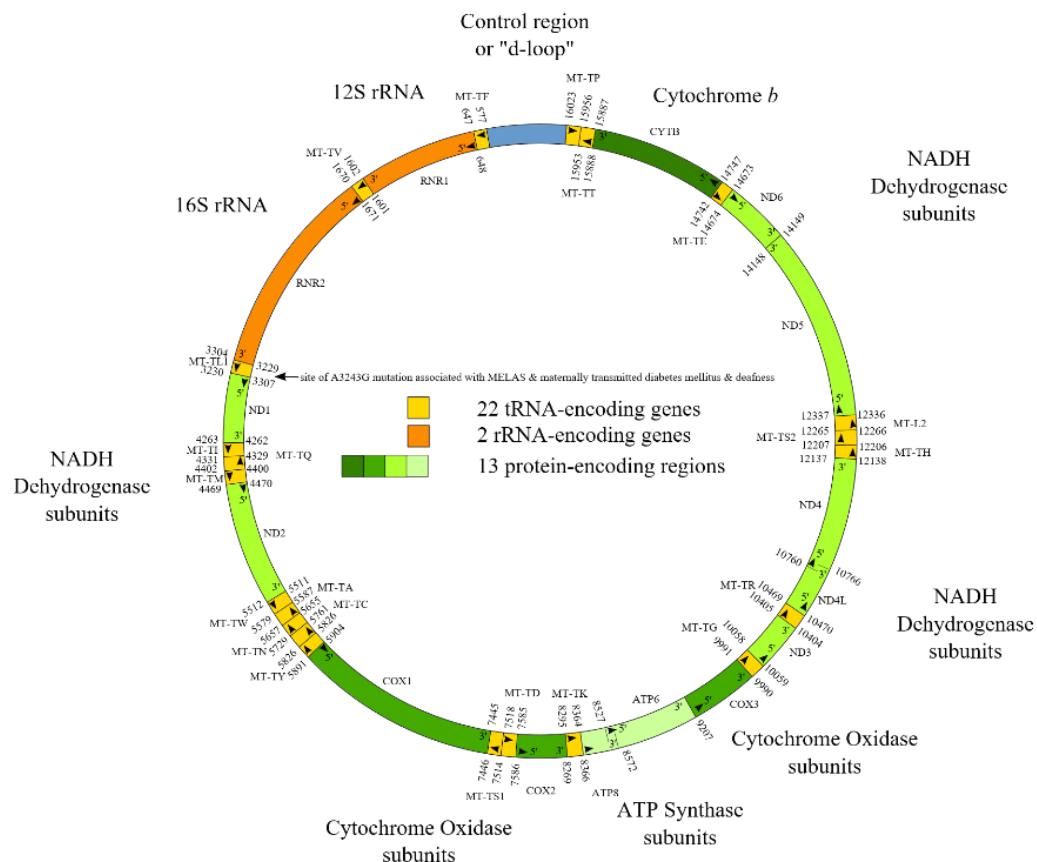


Figure 3. Human mitochondrial DNA.

⁵¹ ANDERSON *et al.* 1981, 457–465.

Furthermore, the ends of each mitochondrial DNA molecule are bonded together, forming a total of two or three circular DNA rings per mitochondrion. By common agreement, the ring chromosome is viewed as the face of a clock with the base pairs numbered from 1 at the 12 o'clock position and proceeding clockwise to 16569.

In addition, mtDNA contains no STRs (Single Tandem Repeats) and is analysed, instead, for the sequence of bases in its DNA. STR DNA typing does not work for all biological samples. MtDNA analysis can, however, frequently be used to obtain some DNA typing information when samples contain DNA that is highly degraded or insufficient for nuclear DNA STR analysis. Older biological samples that contain very little nucleated cellular material (for example, hair, bones, and teeth) cannot be analysed for STRs, but such samples can frequently be analysed for mtDNA⁵². Although nuclear DNA contains much more information than mtDNA, it is present in only two copies per cell; a cell contains hundreds to thousands of copies of mtDNA. For archaeological purposes, mtDNA is considered to be inherited solely from one's mother. Because a mother passes her mtDNA to all of her children, all siblings and maternal relatives have the same mtDNA sequence, and unlike nuclear DNA, mtDNA is not unique to an individual. This pattern of maternal inheritance is helpful in identifying the genetic structure of human populations at different moments in time and the evolution of these populations from an ancient time to present, also the estimation of the admixture degree between populations⁵³.

MtDNA is analysed by sequencing, a process that determines the order (sequence) of the DNA nucleotides in a DNA segment. The particular regions of the mtDNA genome sequenced are those that are the most variable among individuals, that is, the hypervariable control regions HV1 and HV2⁵⁴. Methods for sequencing DNA are usually performed with the same CE instruments that are used for STR analysis; different PCR and CE analysis strategies, however, are used for this type of DNA analysis.

For mtDNA sequencing, the DNA of each hypervariable region is first amplified. The amplified PCR product for each particular region is then individually used in another PCR reaction, in which, in addition to the usual dNTP building blocks, special types of nucleotides that stop DNA replication (dideoxyribonucleotide triphosphates: ddNTPs) are also present. Each of the four ddNTPs is labelled with a fluorescent dye of a different colour. When a ddNTP is added to a growing segment of DNA instead of a dNTP, DNA extension stops immediately, and no new nucleotides are added. Because both types of NTPs are present, different PCR products will be terminated at different points on the DNA template, and a mixture containing a series of DNA fragments, each differing by one base pair in length, is formed. CE then separates these fragments, and because each has the label of the last base (ddNTP)

⁵² RENFREW 2001, 4830–4832.

⁵³ ELHAIK *et al.* 2014.

⁵⁴ STONEKING 2000, 1029–1032.

added, the entire sequence of bases in the DNA region examined can be obtained. After the sequence is generated, it is compared to a reference sequence for mtDNA, and differences are noted. MtDNA coming from the same person or from a person with the same maternal lineage is expected to have the same DNA sequence and therefore the same differences from the reference sequence.

The analysis of mtDNA

When sample size is limited, as is the case when only a small segment of bone or a tooth is found, mitochondrial DNA sequencing is the method of choice to determine the origin of such samples⁵⁵. Mitochondrial DNA sequencing is also useful when an evidentiary biological specimen is degraded by environmental factors or aging, and nuclear DNA testing fails. Unlike nuclear DNA, mtDNA is present in high copy number, with hundreds of mitochondria present in most cells.

The mitochondrial genome is a closed circle of DNA that consists of 16569 base pairs. The two strands of the molecule are referred to as the heavy (H) and light (L) strands. The former strand has the largest number of guanine nucleotides. These bases have the largest molecular weight of all four DNA building blocks. As a result, the H strand can easily be separated from the L strand by centrifugation. The genome contains regions that code for 36 gene products, including specific proteins and ribonucleic acids that are involved in the structure and function of the mitochondrion as well as a control region, whose purpose is to regulate mitochondrial DNA replication. The control region contains two segments of DNA that are highly polymorphic and described as hypervariable (HV). Thus, the researcher is primarily interested in regions HV1 and HV2. The first, HV1, has a sequence of 342 bp (16,024–16,365) and the second, HV2, has a sequence of 268 bp (73–340)⁵⁶. All of these bases (610 bp combined) are sequenced in ancient mtDNA analysis.

It would be very difficult to totally sequence exemplars (known reference samples) and evidentiary items and then report this total sequence information from beginning to end. To avoid any confusion in the comparison of two specimens, the researcher compares each specimen's mtDNA sequence to a reference sequence, and then describes differences found at specific sites. These differences are used for identifying the haplotypes.

A haplotype is a group of genes within an organism that was inherited together from a single parent. The word "haplotype" is derived from the word "haploid", which describes cells with only one set of chromosomes, and from the word "genotype", which refers to the genetic makeup of an organism. A haplotype can describe a pair of genes inherited together from one parent on one chromosome, or it can describe all of the genes on a chromosome

⁵⁵ LUTZ *et al.* 1996, 205–209.

⁵⁶ STONEKING 2000, 1029–1032.

that was inherited together from a single parent. This group of genes was inherited together because of genetic linkage, or the phenomenon by which genes that are close to each other on the same chromosome are often inherited together. In addition, the term "haplotype" can also refer to the inheritance of a cluster of single nucleotide polymorphisms (SNPs), which are variations at single positions in the DNA sequence among individuals⁵⁷.

In human genetics, a human mitochondrial DNA haplogroup is a group of similar haplotypes that share a common ancestor having the same single nucleotide polymorphism (SNP) mutation in all haplotypes⁵⁸. Because a haplogroup consists of similar haplotypes, it is possible to predict a haplogroup from haplotypes. An SNP test confirms a haplogroup. Haplogroups are assigned letters of the alphabet, and refinements consist of additional number and letter combinations. Haplogroups are used to represent the major branch points on the mitochondrial phylogenetic tree⁵⁹. Understanding the evolutionary path of the female lineage has helped population geneticists trace the matrilineal inheritance of modern humans back to human origins in Africa and the subsequent spread around the globe⁶⁰.

The letter names of the haplogroups (not just mitochondrial DNA haplogroups) run from A to Z. As haplogroups were named in the order of their discovery, they (meaning the accidental dictionary ordering of the letters) do not reflect the actual genetic relationships.

The hypothetical woman at the root of all these groups (meaning just the mitochondrial DNA haplogroups) is the matrilineal most recent common ancestor (MRCA) for all currently living humans. She is commonly called Mitochondrial Eve⁶¹.

aDNA recovery

Initially, the development of the polymerase chain reaction (PCR) induced an early trend of DNA recovery reports from various source like plant fossils⁶², dinosaurs⁶³ and insects trapped in amber⁶⁴. Throughout time, more of these early reports are regarded with caution and considered to be products of contamination or artefacts⁶⁵. However, despite its controversial past, the field of archaeogenetics is a reliable research area due to recent methodological improvements⁶⁶. Due to the recent PCR development, that allows

⁵⁷ The International HapMap Consortium 2003, 789–796.

⁵⁸ SHARMA *et al.* 2005, 497–506.

⁵⁹ VAN OVEN, KAYSER 2009, E386–E394.

⁶⁰ TOLK *et al.* 2001, 717–723; BEKADA *et al.* 2013, e56775.

⁶¹ SHARMA *et al.* 2005, 497–506.

⁶² GOLENBERG *et al.* 1990, 656–658; SOLTIS *et al.* 1992, 449–451.

⁶³ WOODWARD *et al.* 1994, 1229–1232.

⁶⁴ CANO *et al.* 1993, 536–538; DESALLE *et al.* 1992, 1933–1936.

⁶⁵ AUSTIN *et al.* 1997, 467–474; PÄÄBO *et al.* 2004, 645–679; HEBSGAARD *et al.* 2005, 212–220; PENNEY *et al.* 2013, e73150.

⁶⁶ RIZZI *et al.* 2012, 21–29.

amplification of aDNA even if a small number or just a single copy is available, a rapid increase and diversification of ancient DNA research⁶⁷ was observed. However, the aDNA recovery is still a challenge, mainly determined by the aDNA damage and the contamination with modern DNA⁶⁸. The archaeological remains presents, in general, a small amount of endogenous genetic material, ancient DNA, able to be amplified by PCR. Mainly two types of damage are likely to affect DNA in archaeological deposits. The DNA macromolecule possess a limited chemical stability without a repair mechanisms⁶⁹. After cell death, the DNA is cut into fragments by nucleases⁷⁰ or is digested by micro-organisms⁷¹. Long-term degradation of the DNA is done by the hydrolysis of amino groups, resulting the loss of purine or pyrimidine residues⁷², or by oxidative damage mediated by free radicals⁷³.

Another major issues in aDNA recovery is the contamination risk, especially when dealing with human ancient DNA than with animal or plant ancient DNA⁷⁴. Several studies reported that modern human DNA contamination is the top priority in the amplification process from aDNA template⁷⁵. Also, it is impossible to completely remove modern human DNA from ancient bones even with extensive UV or bleach treatments⁷⁶. An alternative in order to avoid contamination with modern DNA is to use teeth when are well preserved and directly removed from the jaw or maxilla. They present a lower risk of contamination in comparison with bone remains. Several studies⁷⁷ recommend hair as a more reliable source for studies on human ancient DNA, even if its presence is less common in ancient specimens.

Overall, the main source of sample contamination seems to be the human handling during and after excavation. Washing procedures and direct handling more often contaminate the both sample surfaces and depending on the porosity, also the interior of bones⁷⁸. To avoid contamination, samples should be collected at the archaeological site using disposable gloves (changed between different samples), facemask, head-dress gown and lab coat. Another, important factors are the storage conditions (preferably at -20°C and as dry is possible), in

⁶⁷ RIZZI *et al.* 2012, 21–29.

⁶⁸ HOFREITER *et al.* 2001, 353–359; MAROTA *et al.* 2002, 310–318; IÑIGUEZ *et al.* 2003, 67–69.

⁶⁹ LINDAHL 1993, 709–715.

⁷⁰ DARZYNKIEWICZ *et al.* 1997, 1–20.

⁷¹ LINDAHL 1993, 709–715; EGLINTON *et al.* 1991, 315–328.

⁷² LINDAHL, ANDERSSON 1972, 3618–3623; LINDAHL, T., NYBERG, B. 1972, 3610–3618.

⁷³ LINDAHL 1993, 709–715; DIZDAROGLU 1992, 331–342.

⁷⁴ RIZZI *et al.* 2012, 21–29.

⁷⁵ KRINGS *et al.* 1991, 1166–1176; KOLMAN, TUROSS 2000, 5–23; HOFREITER *et al.* 2001, 353–359.

⁷⁶ GILBERT *et al.* 2005, 541–544.

⁷⁷ GILBERT *et al.* 2004, R463–R464.

⁷⁸ GILBERT *et al.* 2006, 156–164; MALMSTRÖM *et al.* 2005, 2040–2047; SALAMON *et al.* 2005, 13783–13788; SAMPIETRO *et al.* 2006, 1801–1807.



Figure 4. Researchers required dress code in aDNA analysis.



Figure 4. Samples preparation steps: (A) drying after sodium hypochlorite wash, (B) UV exposure, and (C) bone powder sampling.

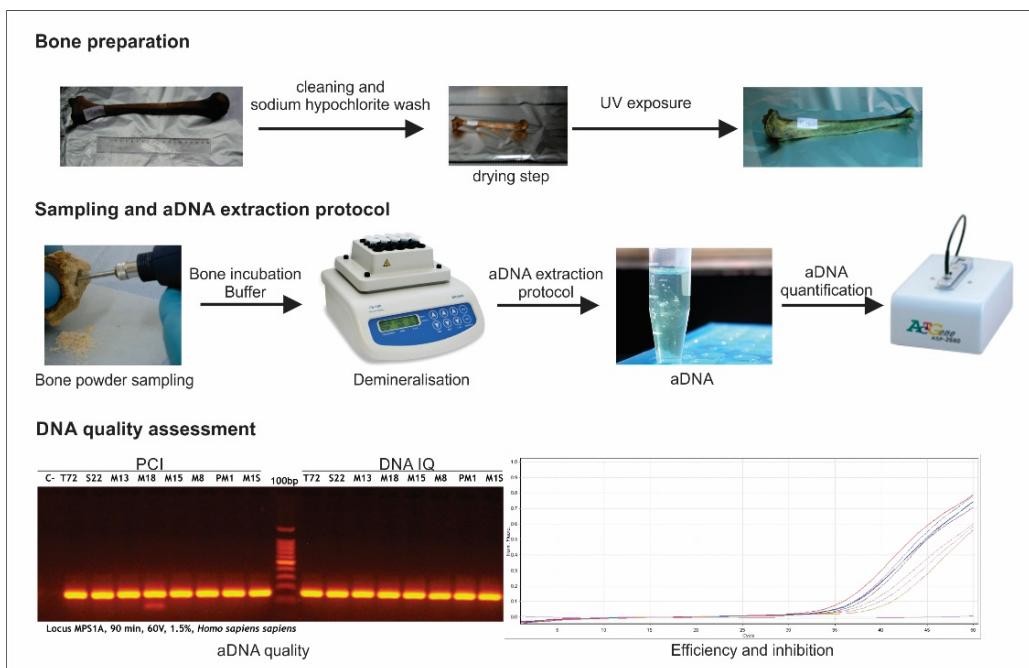


Figure 5. Graphical abstract of aDNA extraction steps.

order to minimize further DNA damage⁷⁹. Finally, if a sample is susceptible to contamination, saliva samples should be taken from each person who has handled the material, as a control.

aDNA extraction: millstones and limitations

DNA extraction is probably the most crucial step in any ancient DNA analysis⁸⁰. In this prior phase there is a huge risk to lose all potential genetic information. Even if the extraction is by far the most important step, there are few debates about the most appropriate method⁸¹.

The extraction of aDNA from bone remains involves two main activities: samples preparation and extraction protocol. Behind the strict condition needed in the extraction room, like total isolation, positive pressure and UV decontamination overnight, the researcher himself could and most often represent a contamination source, therefore some measures must be followed (facemask, gloves, disposable lab coat and other accessories so that no layer of skin remains uncovered, Figure 4).

Sample preparation also requires specific steps to avoid the contamination. After the cleaning of the potential debris with a dry brush of the bones remains⁸², two supplementary steps are needed: washing with sodium hypochlorite (NaOCl) and UV exposure. In a different study⁸³, was shown that the NaOCl treatment minimizes the risk of modern DNA contamination. UV irradiation for short time also minimizes the risk of contamination with modern DNA, damaging all potential exogenous DNA. Finally, with a dedicated bone drill in a small area the bone surface is removed and then bone powder can be sampled (Figure 5).

Extraction protocol of aDNA from bone remains has transformed over the years, known many variants that have been developed and used for accessing DNA from ancient material. Some methods utilize somewhat unusual reagents, for example Coca Cola⁸⁴, but the most prevalently used in recent years are the silica based approaches⁸⁵ and phenol/chloroform extraction and its derivatives. Regardless of the extraction method used, is necessary a prior demineralization step⁸⁶, total or just partially. After aDNA extraction one more supplementary step is required, DNA quality assessment (Figure 6). PCR application is a crucial step after extraction, being able to infer if the aDNA is or it is not contaminated. Furthermore, the inclusion of many blank controls in all processing stages is important in

⁷⁹ RIZZI *et al.* 2012, 21–29.

⁸⁰ HUMMEL 2003, 57–63.

⁸¹ FISHER *et al.* 1993, 60–68; LALU *et al.* 1994, 160–163; CATTANEO *et al.* 1997, 1126–1135; VANDENBERG *et al.* 1997, 1624–1626; VINCE *et al.* 1998, 349–351.

⁸² DASKALAKI 2014, 14–15.

⁸³ SALAMON *et al.* 2005, 13783–13788.

⁸⁴ SCHOLZ, PUSCH 1998, 283–286.

⁸⁵ DASKALAKI 2014, 15.

⁸⁶ JAKUBOWSKA *et al.*, 2012, 173–178.

order to control for potential lab contamination⁸⁷. Even if all precautions are taken, periodically contamination can be observed in negative controls⁸⁸, in which case all the samples have to be discarded⁸⁹.

Exogenous DNA was an important issue since the beginning of archaeogenetics studies⁹⁰, leading to establishment of specific guidelines (Textbox 1) by the pioneers of the field⁹¹.

“Ancient DNA: Do It Right or Not at All”

“Physically isolated work area. To avoid contamination, it is essential that, prior to the amplification stage, all ancient DNA research is carried out in a dedicated, isolated environment. A building in which large amounts of the target DNA are routinely amplified is obviously undesirable.

Control amplifications. Multiple extraction and PCR controls must be performed to detect sporadic or low-copy number contamination, although carrier effects do limit their efficacy. All contaminated results should be reported, and positive controls should generally be avoided, as they provide a contamination risk.

Appropriate molecular behavior. PCR amplification strength should be inversely related to product size (large 500- to 1000-base pair products are unusual). Reproducible mitochondrial DNA (mtDNA) results should be obtainable if single-copy nuclear or pathogen DNA is detected. Deviations from these expectations should be justified; e.g., with biochemical data. Sequences should make phylogenetic sense.

Reproducibility. Results should be repeatable from the same, and different, DNA extracts of a specimen. Different, overlapping primer pairs should be used to increase the chance of detecting numts or contamination by a PCR product.

Cloning. Direct PCR sequences must be verified by cloning amplified products to determine the ratio of endogenous to exogenous sequences, damage-induced errors, and to detect the presence of numts. Overlapping fragments are desirable to confirm that sequence variation is authentic and not the product of errors introduced when PCR amplification starts from a small number of damaged templates.

Independent replication. Intra-laboratory contamination can only be discounted when separate samples of a specimen are extracted and sequenced in independent laboratories. This is particularly important with human remains or novel, unexpected results.

Biochemical preservation. Indirect evidence for DNA survival in a specimen can be provided by assessing the total amount, composition, and relative extent of diagenetic change in amino acids and other residues.

Quantitation. The copy number of the DNA target should be assessed using competitive PCR. When the number of starting templates is low (<1,000), it may be impossible to exclude the possibility of sporadic contamination, especially for human DNA studies.

Associated remains. In studies of human remains where contamination is especially problematic, evidence that similar DNA targets survive in associated faunal material is critical supporting evidence. Faunal remains also make good negative controls for human PCR amplifications.”

Textbox 1. The golden rule — guidelines for aDNA good laboratory practice by Cooper and Poinar 2000.

⁸⁷ DASKALAKI 2014, 14–15.

⁸⁸ IZAGIRRE, de la RÚA 1999, 199–207; LEONARD *et al.* 2007, 1361–1366; MALMSTRÖM *et al.* 2005, 2040–2047; YANG *et al.* 2003, 355–364.

⁸⁹ DASKALAKI 2014.

⁹⁰ HIGUCHI *et al.* 1987, 283–287; HOSS *et al.* 1996, 1304–1307.

⁹¹ COOPER, POINAR 2000, 1139–1139; HANDT *et al.* 1996, 368.

Even when all the golden rules are respected and all laboratory restrictions are satisfied, still the contamination can appear. In this case the contamination occurred during excavation and post-excavation and this is a limit that cannot be exceeded in the lab. The communication between geneticists, archaeologists and anthropologists seems to be the only solution able to overcome the limits of the archaeogenetics.

As Mende considered in 2006⁹², the application of scientific results in the interpretation of historical processes is frequently influenced by major difficulties and limitations. It is therefore necessary to analyse these limitations which determine the direct applicability of results obtained by archaeogenetic research:

- limitations on conclusions and difficulties of interpretation and chronology, mainly due to the fact that samples subjected to genetic analysis already represent an archaeological-historical, consequently also chronological, preconception.
- limitations posed by the "inaccuracy" of databases – during the results evaluation, it is also important to consider the relationships between the available databases, which shall be evaluated according to geographical and chronological aspects. The majority of reference databases are built on "modern" samples, which means that the information concerning the population of a given area either has little or no time depth, or offers possibilities of interpretation of extremely long time spans, as is the case of mtDNA haplogroups.
- limitations raised by diachronic and taphonomic processes on DNA preservation, depending on the microenvironment and the significance of sampling problems either should not be underestimated. These aspects are mostly important when there are no opportunities to select the best of several samples. Previous studies have shown that the relationship between the DNA preservation potential of bones (and the related success of analysis) and time of deposition is not as important as the effects of micro- and macro-environmental factors, burial rite and isolation that all influence the success of the PCR reaction. It is also problematic to evaluate the remains of children, because in the case of juvenile skeletons, which already contain only a negligible amount of cortical bone, it is more difficult to take non-contaminated samples, being a fundamental issue upon the success of viable DNA isolation and amplification. Meanwhile, in order to clarify internal kinship relations and chronological sequences within groups of burials, one should know their genetic affiliations as well. An additional difficulty is posed by the unfortunate fact that many physical anthropologists are hesitant when destructive sampling techniques must be used, even on a relatively small scale.
- limitations of technology and financing research.

⁹² MENDE 2006, 29–33.

Applications of DNA analysis in archaeology

One of the most intriguing questions in archaeology is the possible reconstruction of *phylogeny* and the elucidation of the *evolutionary processes*. The genetic relationship between extinct hominins, mostly Neanderthals and modern humans represents a very contentious subject in archaeology⁹³. Even if some inferences about the human population's history were done already by the pioneering study of Cann and co-workers⁹⁴, the determination of phylogenetic relationship between modern humans and extinct hominins can get more reliable results using aDNA analysis. Because there are no Pleistocene anatomically modern human's genomes, the detection and quantification of levels of interbreeding between anatomically modern humans and Neanderthals is approached by comparing modern human DNA and Neanderthal aDNA⁹⁵. The limits of this approach are due to the fact that *Homo sapiens sapiens* and *Homo sapiens neanderthalensis* had a close evolutionary relationship and the number of the expected differences between the two is small⁹⁶. In order to clarify the phylogenetic relationship and possible patterns of interactions or degrees of affinity between hominin groups , mitochondrial and nuclear DNA have been used to estimate population and genomic divergences between Neanderthals, early modern humans and the archaic hominins of the Denisova cave⁹⁷. Even if most of the physical evidence of hominin evolutionary history lies irretrievably beyond the limits of aDNA molecular survival, palaeogenetic analysis of non-Neanderthal extinct hominins has the potential to extend our knowledge on the hominin evolutionary history⁹⁸. Palaeogenetic data have also influenced the study of hominin philogeography, offering important information about the ecological and geographic context of archaic hominins. mtDNA data have been used to determine the eastward extent of the Neanderthals⁹⁹, while Denisovans aDNA data has been used to compare the putative range of these archaic hominins with that of the Neanderthals¹⁰⁰. For a better image on the spatial distribution of the modern human genetic lineages it was used also the mitochondrial sequence data obtained from archaeological modern human specimen such as the Tyrolean Iceman (Ötzi) even if the informational content obtained from a single human lineages in space and time are very limited¹⁰¹.

⁹³ KIRSANOW, BURGER 2012, 122.

⁹⁴ CANN *et al.* 1987, 31–36.

⁹⁵ KIRSANOW, BURGER 2012, 122.

⁹⁶ GREEN *et al.* 2006, 330–336; GREEN *et al.* 2008, 416–426; GREEN *et al.* 2009, 2494–2502; GREEN *et al.* 2010, 286–288.

⁹⁷ GREEN *et al.* 2006, 330–336; GREEN *et al.* 2008, 416–426; KRAUSE *et al.* 2010, 231–236; NOONAN *et al.* 2006, 1113–1118; REICH *et al.* 2010, 1053–1060.

⁹⁸ KIRSANOW, BURGER 2012, 122.

⁹⁹ KRAUSE *et al.* 2010, 894–897.

¹⁰⁰ REICH *et al.* 2010, 1053–1060.

¹⁰¹ ERMINI *et al.* 2008

aDNA recovered from specimens representing a diachronic sequence can be used to interpret the development of population structure¹⁰², changes in diversity¹⁰³, population movements¹⁰⁴ and the relationship of these factors to cultural development and socioeconomic exchange patterns¹⁰⁵. Data obtained from aDNA were used in the debate concerning the nature of the transition from foraging to agriculture in Europe. Depending on the model proposed for the transmission of agricultural technology, different models for the genetic relationships between hunter-gatherers and farmers were inferred. The *demic diffusion model* considers that farming may have become established through the replacement of indigenous hunter-gatherers by immigrant farmers, while the *cultural diffusion model* does not take into consideration population replacement and is compatible with genetic continuity from pre-Neolithic times to present¹⁰⁶. Based on the aDNA analysis it has been argued that modern Central and Northern Europeans bear regionally variable proportions of ancestry from both original hunter-gatherers and early farmers¹⁰⁷. Recent data from the Iberian Peninsula found similar haplogroup compositions in the Neolithic populations and modern Iberians, which is compatible with the *demic diffusion model* of agriculture to region¹⁰⁸. mtDNA from Scandinavian hunter-gatherers reveals a genetic discontinuity between prehistoric hunter-gatherers and modern Scandinavians, supporting a population shift with the adoption of agriculture, which, also, supports the *demic diffusion model*¹⁰⁹. Recent data obtained for the Neolithic from Central Europe indicate a demic influence from the steppe and point to a more complex and dynamic process of the Neolithic transition in some regions of Europe¹¹⁰. The complexity and dynamism of the *demic diffusion model* in South-eastern Europe is supported, also, by the recently published mtDNA from Romania¹¹¹. If the Neolithic agricultural transition was more similar to a *mosaic* which supports also the *demic diffusion model* and the *cultural diffusion model*, this has to be supported by future regional aDNA datasets.

Conclusions

There are several reasons why the mtDNA markers have been used extensively in archaeological investigations. First of all, mtDNA is relatively easy to work with. Its small size,

¹⁰² IZAGIRRE, de la RÚA 1999, 199–207; CHILVERS *et al.* 2008, 2707–2714; de-la-RUA *et al.* 2015, 306–311; BRANDT *et al.* 2015, 73–92.

¹⁰³ BROTHERTON *et al.* 2013, 1764; 1–6; ERMINI *et al.* 2015, 4–20.

¹⁰⁴ HAAK *et al.* 2015, 207–211.

¹⁰⁵ SZECÉSNYI-NAGY *et al.* 2015, 1–9.

¹⁰⁶ HAAK *et al.* 2005, 1016–1018; PINHASI *et al.* 2012, 496–505; KIRSANOW, BURGER 2012, 123.

¹⁰⁷ PINHASI *et al.* 2012, 496–505

¹⁰⁸ SAMPIETRO *et al.* 2007, 2161–2167; OLALDE *et al.*, 2015, 1–11.

¹⁰⁹ MALMSTRÖM *et al.* 2009, 1758–1762.

¹¹⁰ HAAK *et al.* 2015, 207–211.

¹¹¹ HERVELLA *et al.* 2015, 1–20.

coupled with the conserved arrangement of genes, means that many pairs of universal primers will amplify regions of the mitochondria in a wide variety of vertebrates and invertebrates. This means that data often can be obtained without any a priori knowledge about a particular species' mitochondrial DNA sequence. Second, although the arrangement of genes is conserved, the overall mutation rate is high. The rate of synonymous substitutions in mammalian mtDNA has been estimated at 5.7×10^{-8} substitutions per site per year¹¹², which is around ten times the average rate of synonymous substitutions in protein-coding nuclear genes. The non-coding control region, which includes the displacement (D) loop, evolves particularly rapidly in many taxa. The high mutation rate in mtDNA may be due partly to the by-products of metabolic respiration and also to less-stringent repair mechanisms compared with those acting on nuclear DNA¹¹³. Regardless of the cause, these high mutation rates mean that mtDNA generally shows relatively high levels of polymorphism and therefore will often reveal multiple genetic lineages both within and among populations.

The third relevant property of mtDNA is its general lack of recombination, which means that offspring usually will have (barring mutation) exactly the same mitochondrial genome as the mother. As a result, mtDNA is effectively a single haplotype that is transmitted from mothers to their offspring. This means that mitochondrial lineages can be identified in a much more straightforward manner than nuclear lineages, which, in sexually reproducing species, are continuously pooling genes from two individuals and undergoing recombination. The effectively clonal inheritance of mtDNA means that individual lineages can be tracked over time and space with relative ease, and this is why, as we will see later, mtDNA sequences are commonly used in studies of phylogeny and phylogeography.

Finally, because mtDNA is haploid and uniparentally inherited, it is effectively a quarter of the population size of diploid nuclear DNA. Because there are fewer copies of mtDNA to start with, it is relatively sensitive to demographic events such as bottlenecks. These occur when the size of a population is temporarily reduced, e.g. following a disease outbreak or a catastrophic event. Even if the population recovers quickly, it will have relatively few surviving mitochondrial haplotypes compared with nuclear genotypes. As we will see in later, inferring past bottlenecks can make an important contribution towards understanding the current genetic make-up of populations.

The ability to genotype from bone and teeth remains depends entirely on whether DNA can be recovered from these calcified tissues. It is often the case that only small fragments of bone or teeth can be recovered and thus methods of extraction must be efficient and nondamaging to the endogenous DNA available. The anthropology and archaeology alike have benefited from the genetic analyses of DNA contained in fragments of well-preserved

¹¹² BROWN *et al.*, 1982, 225–239.

¹¹³ WILSON *et al.*, 1985, 375–400.

bone or tooth. Such DNA can provide invaluable links to the past and help to determine indigenous foundations and reveal ancestral flow.

aDNA data can be used to clarify the evolutionary relationships between hominin species and to understand the evolutionary processes affecting the hominin lineage, answering to the previously formulated questions by the archaeologists. Except this, aDNA analyses are very useful for exploring the affinities and interactions between members of the same populations, and between hominin populations and their hypothetical ancestors and descendants. By adding aDNA data to archaeological and linguistic evidences we can investigate the relationship between population dynamics and sociocultural change.

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The art of the British Celts. A critical review

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Abstract. The article discusses Celtic art in pre-Roman Britain. The author of the article disagrees with the opinion expressed by R.G. Collingwood and certain other scholars that the art of British Celts, being fragile, linear and abstract, having shallow social foundations (since it was the art of the nobility), was doomed to decline and extinction, even if the Roman conquest of Britain had not taken place. The sources referred to in the article demonstrate that Celtic art, whose intrinsic feature was that bent for poetic abstraction which was typical of Celtic mentality in general, had great potential for growth that lay dormant during the Roman period. The view that the artistic style of British Celts possessed creative capacity which remained hidden under Roman reign is confirmed by the Celtic art's revival in medieval Britain during the Anglo-Saxon domination.

Rezumat. Articolul tratează problema artei celtice în Britania preromană. Autoarea nu este de acord cu opinile emise de R.G. Conningwood și un număr de alți cercetători potrivit cărora arta celților britanici, fiind fragilă, lineară și abstractă, având fundamente sociale superficiale (deoarece era o artă a élitei nobiliare), era condamnată să decadă și să dispară, chiar dacă cucerirea romană a Britaniei nu ar fi avut loc. Sursele menționate în articol demonstrează că arta celtică, a cărei trăsătură întrinsecă era acea aplecare spre abstracțiune poetică, tipică mentalității celtice în general, a avut un mare potențial de creștere care a rămas latent în perioada romană. Opinia că stilul artistic al celților britanici a avut o capacitate creativă care a rămas ascunsă sub stăpânirea romană este confirmată de renașterea artei celtice în Britania medievală în timpul dominației anglo-saxone.

Keywords: British Celts, Celtic art, pre-Roman Britain, post-Roman Britain.

The prevailing trend (so to say, the mainstream) of Celtic art emerged and developed in Continental Europe, within the territories populated by Celts during the La Tène period (5th–1st century BC), named after the archaeological site at the eastern end of Lake Neuchâtel, Switzerland.

“Early Celtic Art”, a most thorough, two-volume study by P. Jacobsthal² is justly considered the fundamental work on Celtic art of the pre-Roman period, a classic in the field. One of the volumes contains a large number of photographs and line drawings of Celtic artworks. The other provides a careful and in-depth analysis of the artworks, and also includes a systematic survey of Celtic art. Jacobsthal was the first to devise a stylistic

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² JACOBSTHAL 1944.

classification of Celtic art, outlining the three stages of evolution it went through. He also identified the main sources of origin of the art. Subsequent scholars to a large extent follow the line of research developed by Jacobsthal, using his theories, his definitions and his periodization of Celtic art.

The distinguishing characteristic of Celtic art is that the beauty, originality and creative power of Celtic genius found its expression in applied arts, rather than in monumental art. It is the applied art that made the most valuable contribution to the formation of artistic styles of Europe in later times. Externally Celtic applied art stands in marked contrast to works of monumental art. Set against the austere, sometimes primitively uniform, sometimes formidably grim stone monuments, Celtic applied art blossoms into a fanciful and intricate device of costly gold jewellery which was ordered and paid for, coveted and enjoyed by Celtic nobility (the art of the La Tène period was the art of Celtic nobles)³.

Aristocratic burials dating back to the early La Tène period—the so-called “princely burials”—include both male and female graves. Men were buried with weapons. Finely decorated two-wheeled chariots, as well as food offerings (such as half a boar) and feasting gear, e.g., paired drinking horns, are often found among the grave-goods. Female burials contain a lot of ornate necklaces, bracelets (Figures 1 and 2) and anklets, as well other items of female jewellery⁴. It is in this aristocratic world, imbued both with the spirit of barbaric splendour and refined subtlety—a product of imported luxury items—that the first works of applied art of the La Tène period appear. They mostly come from the excavations of princely burials found in the region of the Saarland.

P. Jacobsthal⁵ and other scholars⁶ in his wake believed that Celtic art has a triple root. Two major branches of the root are classical Graeco-Italic forms and Irano-Persian, with a smattering of Central Asian elements. The input of the classical heritage was the lotus buds and flowers, and the palmettes used in floral patterns that became an integral part of Celtic ornamentation, while human masks and zoomorphic ornaments in Celtic art have eastern origins.

The third source of Celtic art is to be found in the local Hallstatt tradition, which derives its name from the type site, Hallstatt, a lakeside village in Upper Austria. The La Tène culture followed the Hallstatt culture. The regions where the early La Tène culture developed were notable for advanced crafts. Hallstatt workshops housed highly skilled craftsmen well-versed in complex techniques of metalworking. Bronze casting, gold repoussé, piercing, soldering

³ POWELL 1958, 98; MEGAW 1970, 17.

⁴ MEGAW 1970, 17.

⁵ JACOBSTHAL 1944, 155.

⁶ POWELL 1966, 187; MEGAW 1970, 24.

cut-out shapes of sheet gold to iron or bronze surface — all these methods were known to Hallstatt artisans⁷.

Hallstatt art boasted a considerable number of varied ornamental motifs. For the most part it was abstract geometric patterns, including the meander, which is by no means characteristic of Ancient Greece alone. Sometimes one encounters human faces, reduced to the most basic linear elements, or animal motifs—water birds being the most typical example—depicted in an almost jocular style⁸. Therefore, Celtic art found a plentiful source of inspiration close at hand.

According to the three stages of development Celtic artistic style underwent, Paul Jacobsthal recognized three periods in the La Tène epoch, the first of which he termed as “Early Style”. The “Early Style” is a time of experiment and innovation, spanning about a century and a half, from the beginning of the 5th century BC till the middle of the 4th century BC. During this period Celtic art was profoundly influenced by early classical floral patterns and archaic orientalising symbolism.

Jacobsthal called the second stage of La Tène art evolution (the 3rd century BC) “Waldalgesheim Style” in honour of the magnificent gold jewellery of very high quality, crafted in a manner more advanced in comparison to the Early Style and discovered in the female grave of the Waldalgesheim burial mound in the Mainz-Bingen district in Rhineland. It was during the Waldalgesheim period that one of the most typical and original features of Celtic ornamentation manifested and developed, namely the tendency for merging two adjacent identical motifs, which led to the creation of a new image, sometimes transformed in a most unexpected way enabling one to interpret the resulting image differently every time. “Double, triple, multiple interpretation; the temptation of metamorphosis, illusory though it may be, and here we are, finding ourselves in the climate which is typically Celtic”⁹, wrote P. Duval.

The crowning achievement of the Waldalgesheim style was the rejection of the rigid symmetry that Celtic art inherited from geometric patterns of the Hallstatt period, and the introduction of fluid, unconstrained, intense compositions that T.G.E. Powell compared to a rippling tracery of lines seen on the surface of a swift current¹⁰.

In the 2nd century BC the third style of La Tène art became prevalent. Jacobsthal termed it as the “Plastic Style”. Patterns favoured during the previous period of Celtic art were mostly two-dimensional and executed in the technique of low relief; though some ornamental motifs, e.g. S-scrolls, tended towards bulging and gaining certain plasticity from the very

⁷ JACOBSTHAL 1944, 158–159.

⁸ MEGAW 1970, 23–24.

⁹ DUVAL 1977, 65.

¹⁰ POWELL 1966, 201.



Figure 1. Bronze bracelet and a detail, the beginning of the 3rd century BC, La Charme, France.



Figure 2. Gold bracelet, 3rd century BC, Aurillac, France (CC BY-SA 3.0 by Siren-Com on wikipedia.org).

beginning. This trend reached its logical culmination in the Plastic style, resulting in distinctly three-dimensional, raised works. There are certain works, originating from western parts of the Celtic world and executed in the Plastic style, that demonstrate ornamental patterns constantly transforming classical foliage motifs now into zoomorphics, now into human imagery, appearing element by element from curving tendrils. Those items fell into the category of the “Cheshire (cat) style”¹¹, as it was termed by Jacobsthal, since they reminded the scholar of the Cheshire cat — a wonderful character from *Alice’s Adventures in Wonderland* by Lewis Carroll that appears and disappears at will and finally melts away leaving only a grin in his wake. The Cheshire style displays most prominently the tendency Celtic artists had towards ambiguity, towards creating blurry, elusive images that, being dreamily enigmatic and vague, constitute the charm of Celtic art.

To properly evaluate the Celtic art of pre-Roman Britain it would be advisable to take into account the opinion of R.G. Collingwood, one of the most brilliant English philosophers and historians of the first half of the 20th century, whose works to a considerable degree shaped the subsequent English historiography of Roman Britain¹². Noting that the art of pre-Roman Britain was an offshoot of the continental La Tène style, the scholar still credited it with its own path of development. To reveal the characteristic features of Celtic art in Britain Collingwood started with a general description of continental La Tène art. He wrote that “the finest works of continental La Tène art have in their repertory of motives a large remnant of naturalistic material: the lotus and the palmette are still everywhere recognizable, even though in a shadowy form, as if remembered in a dream; human masks, often strange and terrifying, are common; birds and beasts not rare. In their style, they have a certain fullness or roundness. The artist has not altogether lost his sense for the solidity of things. His world may be a dream-world, but the dream has three dimensions. And in their tradition they stand sometimes within sight of Graeco-Etruscan work, sometimes even more clearly in sight of eastern models, Scythian or Iranian. These, however, are not the dominant characteristics even of continental La Tène art; they are recessive; they appear most strongly in its early days, and as time goes on they tend to be overcome by their own opposites: naturalistic motives gradually turn into abstract patterns, the plump forms become more and more wire-drawn, and the reminiscence of southern and eastern originals fades away into an art that is more and more turned inward upon itself”¹³.

In his description Collingwood accurately identifies the key feature of Celtic art: its tendency towards reverie and creating phantom-like, elusive images hovering on the border between dream and wakefulness. So it was with good reason that V. Megaw, who is

¹¹ JACOBSTHAL 1944, 162.

¹² COLLINGWOOD 1937, 247–250.

¹³ COLINGWOOD 1937, 248.

considered by M. Henig “one of the best commentators on Celtic art in our time”¹⁴, wrote of the “elusive image”¹⁵ in his book *Art of the European Iron Age*. However, Collingwood’s idea of the direction in which Celtic art developed—from vibrant three-dimensional images whose originals were recognizable to a certain extent to planar linear abstractions—is contrary to fact. As we have seen, P. Jacobsthal termed the last period of independent Celtic art as Plastic style referring to its characteristic three-dimensional works executed in high-relief. Some of these works bear ornamentation of plant motifs resembling leaves, flowers and fruit, forming astonishingly dynamic compositions that have an aura of baroque restlessness and tropical abundance around them. Jacobsthal considered the Plastic style the pinnacle of achievement of Celtic art¹⁶.

When describing Celtic art of pre-Roman Britain, Collingwood built on his main idea that Celtic artistic style evolved from three-dimensionality and naturalism into linearity and abstractness. According to him, the art of the La Tène Celts was transplanted to British soil when the above-mention evolution process had already gone some distance. Collingwood argued that “cut off from its original source, British art lost almost all vestige of naturalism, and much of its plastic feeling; and although it could still do fine work in the round, it became chiefly an affair of abstract design in two dimensions”¹⁷. The vocabulary of decorative motifs, from Collingwood’s point of view, consisted almost exclusively of S-scrolls and the spiral curves that in the art of continental Celts had been tendrils. But in Britain their origin, as well as the tradition of weaving these motifs into subtle and delicate linear patterns was forgotten.

At the same time Collingwood gave to the achievements of British art their due. He wrote that while “no school of art maintains a constant level; ... among the works of this British school there are individual pieces so perfect, so entirely rich and harmonious in design, that within the narrow limits of the problem he has set himself we cannot deny to their maker the name of a great artist”¹⁸.

Besides, Collingwood drew attention to another peculiarity of Celtic art which led nineteenth-century Europeans to misapprehend it. He wrote that “this concentration on abstract design, practically all of it made out of a single type of line, is a most unusual thing in the history of art: to a person brought up in the nineteenth-century belief that the artist must always be returning to nature for his material and inspiration, a monstrous and unnatural thing”¹⁹. Yet, the more familiar one becomes with the work of the artists of pre-Roman

¹⁴ HENIG 2003, 21.

¹⁵ MEGAW 1970.

¹⁶ JACOBSTHAL 1944, 47.

¹⁷ COLLINGWOOD, MYRES 1937, 248.

¹⁸ COLLINGWOOD, MYRES 1937, 249.

¹⁹ COLLINGWOOD, MYRES 1937, 249.

Britain, the more impressive one finds it, and also becomes better able to look at it from the point of view of those for whom this work had been designed.

V. Megaw viewed Celtic art from roughly the same angle, though as a result he arrived at far-reaching conclusions which turned him into a veritable apologist of the artistic style of pre-Roman Celts, both continental and insular. The scholar noted that Celtic artworks were based on aesthetic principles different from those which constituted the foundation of antique art, since they were not marked with ideal harmony and proportionality. They were often full of preternatural mysticism, and sometimes evoked formidably repulsive or grotesque images, which however capture imagination and excite the mind now by dreamlike mysteriousness and subtlety of their elusive images, and now by vibrating tension and extraordinary expressive dynamics of composition²⁰.

La Tène art was brought to Britain by Celtic tribes that invaded the island in the middle of the 3rd century BC. The culture of this group (sometimes called the Marnians since they came from the Marne region in France) is referred to as “Iron Age B” in Britain. The formation of the artistic style of insular Celts of the pre-Roman period was completed as influenced by the art of the Belgae, a confederation of tribes living in northern Gaul who made their way across the English Channel into southern Britain in the 1st century BC.

One of the earliest, and most striking, objects of La Tène art, discovered on British soil, is a mysterious round bronze item, which was found near the Thames at Brentford (Figure 3). V. Megaw argues that this is a bronze detail of a cup²¹, while T.G.E Powell refers to it as a “chariot fitting”²². Be it as it may, this item demonstrates a superb example of a typically Waldalgesheim pattern. The pattern which is found on the interior surface of the disk consists of a circular band of lyres and inverted palmettes with volutes transforming into tendrils, resembling at the same time a head of a duck whose eyes have not been traced.

The pattern also includes shields morphing into grotesque masks. Three pairs of tendrils of a different variety than those in the centre are placed on the periphery. Their static row girdles the composition counterbalancing the illusion of rotary motion in the centre. This elegant ornamental pattern incorporates the most significant achievements of the Waldalgesheim style, being notable for its free composition, the absence of complete symmetry in every detail and the tendency to the “discrete metamorphosis”²³.

Hence, at least this beautiful object is free of the shortcomings Collingwood listed as typical of the art of British Celts. The repertoire of its decorative motifs is quite extensive, by no means limiting itself to S-scrolls and spiral curves forming solely abstract patterns. As we have demonstrated, the pattern includes all the elements characteristic of Celtic

²⁰ MEGAW 1970, 9–39.

²¹ MEGAW 1970, 35.

²² POWELL 1966, 204.

²³ DUVAL 1977, 130.

ornamentation at its zenith: lyres, made up by two adjacent S-scrolls; inverted palmettes; curving tendrils ending in a duck head; shields turning into grotesque masks. All this abundance blends together, creating a subtle and elegant composition, rich with typically Celtic mysterious, elusive images tending towards metamorphosis. So, Collingwood was in error, thinking that insular Celts had lost the tradition of weaving ornamental motifs into such delicate tracery.

One might think that the beauty and opulence of the pattern decorating the Brentford disc are the result of it being an “import” of Waldalgesheim style of the 3rd century BC; and thus the item could have been crafted by a Gallic artisan or a British one deeply and positively influenced by the Gallic tradition. However, such floral pattern as can be found on the Brentford disc—including tendrils which terminate in raised “buds” doubling as the heads of water birds with or without engraved eyes—is typical of the Celtic art of Britain of later periods as well.

Among the best examples of such artefacts is an unusual set consisting of a bronze pony-cap and a pair of horns placed on the front section of the cap (Figure 4). Characteristically, duck’s heads form the terminals of the horns. The cap and the horns were found together at Torrs Farm in Galloway, the pieces are dated around 2nd century B.C.²⁴. Though the function of the Torrs cap and horns is not completely clear, it is argued that the items might have served as part of parade armour for a horse (albeit a small one). The design on the surface of the cap comprises familiar motifs: tendrils terminating in stylized bird’s heads and domed buds.

The characteristic features of this floral pattern may be seen even more distinctly on the magnificent bronze shield boss dated 1st century BC and found in the river Thames at Wandsworth (Figure 5). The curves of the tendrils, terminating now in peltate leaves, now in duck’s heads with embossed eyes²⁵, stand in rotational relationship around the hemispherical umbo, underlining the circular form of the flange in which they are inscribed. I. Finlay wrote that the elements of the ornamental pattern are arranged symmetrically, a detail that argues for precise calculation, yet the design conveys an impression of spontaneity, which testifies to the Celtic artisan’s skill and talent²⁶.

The art of insular Celts, just as the art of their continental brethren, was the art of their nobility. In this regard the artefacts discovered in the British Isles mostly belong to luxury goods: parade armour, such as helmets, shields and swords; elements of horse-harness adornment; torcs — symbols of high rank of the wearer; mirrors created for high status women.

Another splendid artefact is the Waterloo Helmet (Figure 6), a Celtic bronze ceremonial horned helmet dated the 1st century BC and found in the River Thames by Waterloo Bridge.

²⁴ FINLAY 1973, 82.

²⁵ The whole design is executed using the technique of repoussé.

²⁶ FINLAY 1973, 83.



Figure 3. Bronze disc, 1st century AD, River Thames at Brentford, England.



Figure 4. The Torrs chamfrein, 2nd century BC, Galloway, Scotland (CC BY-SA 3.0 by Kim Traynor on wikipedia.org)



Figure 5. The Wandsworth shield boss, 1st century BC, River Thames at Wandsworth, England (CC BY-SA 3.0 by Johnbod on wikipedia.org).



Figure 6. Bronze horned helmet, 1st century BC, River Thames by Waterloo Bridge, England (CC BY-SA 3.0 by Ealdgyth on wikipedia.org).

The Waterloo Helmet is decorated with an asymmetric floral pattern. Besides, there are bronze roundels on the front and on the back of the helmet which have cross scores on them. Each disc is riveted to the helmet with a red glass enamel stud²⁷. The appearance and location of the discs—between the curving tendrils terminating in peltate leaves—evokes the image

²⁷ TOYNBEE 1964, 17.

of decorative flowers. On the whole, the artefact gives off an aura of might and vigour. So it was with good reason that I. Finlay compared the works of British armourers of the pre-Roman period to those of Italian and German Renaissance craftsmen which he considered the most skilfully and wonderfully wrought arms of all time²⁸.

The Witham Shield, an elongated bronze shield facing of the typical shape (Figure 7), was found in the River Witham in Lincolnshire, and is believed to date from the 3rd century BC. It has an ornamental midrib (I. Finlay uses the term “spine”) which forms a domed umbo over the handgrip and terminates in roundels that resemble torcs in appearance and are covered with the engraving of a delicately balanced asymmetric ornamental design. Around the central boss there once had been a highly-stylized silhouette of a wild boar made of leather



Figure 7. Bronze shield, Iron Age, River Witham, Lincolnshire, England (CC BY-SA 3.0 by Garth on [wikimedia.org](#)).



Figure 8. Bronze covering of a shield, detail (bronze, enamel), around 2nd century BC(?), River Thames near Battersea, England (CC BY-SA 3.0 by Jorge Royan on [wikimedia.org](#)).

²⁸ FINLAY 1973, 80.

and riveted to the shield. Under certain lighting conditions one can make out this ghostly outline by the discolouration in the bronze (where the leather had been fixed to the shield) and by the rivet-holes that follow the outline. I. Finlay notes that the Witham Shield, like many other items of military accoutrements and weaponry of British Celts, demonstrates the ambiguity that Jacobsthal discovered in Celtic art, the evasiveness and absence of straightforwardness that attracted Diodorus' attention in a conversation between Celts. If a Greek or a Roman warrior had conceived a plan to decorate his parade shield, he would have placed in the centre some formidable image or at least something connected with the chief function of the item. A Celt could not have acted in so apparent a manner. The only veiled hint of the shield's true purpose was the silhouette of the boar (it is known that Celtic banners displayed a boar)²⁹.

Along with the horned helmet dredged from the bed of the Thames by Waterloo Bridge, the famous Battersea Shield (Figure 8) is one of the most striking examples of parade armour. It was also found in the Thames and is dated approximately to the 2nd century BC. The shield is decorated with a splendid ornamental design, complete with red 'enamel' inlay settings that contrast vividly with the bronze background and, according to I. Finlay, breathe life and fire into the pattern³⁰. While the horned helmet's decoration pattern is asymmetrical, the design of the shield is one of strict symmetry. The 'enamel' settings are placed in small round compartments in raised bronze³¹; the curving tendrils, connecting them, form a sort of swastika. The symmetry of the design creates an impression of harmony and extraordinary dynamics at the same time, which is underscored by the vibrant colours of red glass and golden-hued bronze. I. Finlay was greatly impressed by the decoration of this item, writing that it was not merely filling the space with a pleasing pattern, but rather creating a work of art—elegantly wrought, perfect and thrilling; likening it to a piece of music full of elusive images—in a word, to "a bronze sonata in three movements"³².

The charm typical of the works by British Celts is greatly enhanced by their bright colouring. I. Finlay noted that highly-emotional Celts were quick to comprehend the significance of colour, yet being subtle and refined in this regard, they would not settle for a low level technique. In the end, British Celts developed the enamelling technique to a degree of perfection. In the 3rd century BC enamel started to replace coral inlays that Celtic craftsmen had previously used for decorating their works. Artisans began to understand that if they wanted to fully take advantage of colour adorning the elaborate fluid designs that pleased them so much, it would have to be placed in some perfectly plastic substance. Definitely, vitreous enamels constitute just the medium. But achieving the technical solution

²⁹ SHIROKOVA 2004, 164.

³⁰ FINLAY 1973, 85.

³¹ The technique of cloisonné.

³² FINLAY 1973, 81.

took a long time. At first heated vitreous substance was simply pushed into crisscrossed recesses whose roughened surface kept the inlay in place. Later a different method came into use: the so-called champlevé technique which resorted to carving troughs or cells into the metal surface of an object, filling them with powdered glass and firing the object until the enamel fused. There is an opinion that in the Celtic world it was insular Celts who pioneered in development of this technique, which came to be called *opus Britannicum*³³. Different pigments could add colour to enamels — copper oxide tingeing glass red was the first to be used by Celtic artisans. Celts undoubtedly valued the beauty of highly-polished bronze surface shining through semi-transparent enamel. Yellow, blue and other colours came into use much later.

Contrary to R.G. Collingwood's opinion that the Celtic art of Britain mostly evolved into planar, two-dimensional, abstract forms, archaeological findings prove that British craftsmen widely used both linear and plastic technique in their work. Sumptuous gold torcs from Broighter (Co. Derry, Ireland, 2nd century BC) (Figure 9) and Snettisham (Norfolk, England, 2nd half of the 1st century BC) can serve as examples since they are both executed in the purely Plastic style³⁴. These neck ornaments are outstanding specimens of magnificent jewellery worn by Celtic royalty and nobility.

Along the full length of the Broighter Collar stretches the ornamental design that consists of raised and incised tendrils blossoming into fleshy, chunky leaves; lentoid bosses; trumpet motifs and curvilinear foliage pattern. The design avoids strict symmetry, though it is wonderfully harmonious; and the engraved arcs create texture through cross-hatching that serves to set off the relief parts. Even more impressive is the Great Torc from Snettisham (Figure 10), very skillfully made from eight gold ropes twisted around each other. At the ends of the necklace there are two massive rings cast in gold and welded onto the metal ropes.

A sizable group of mirrors³⁵ created for women's personal use will serve as an important addition to male ceremonial jewellery of predominantly military character. I. Finlay underscores the aesthetic and spiritual value this item held in ancient world, especially in the aristocratic world of insular Celts. He notes that "the mirror, in its way, is as evocative as the sword. If one is a symbol of knightly honour, the other reflects the graces and virtues of woman, and the craftsmen of most of the great civilizations have therefore lavished their talents on both".

I. Finlay, who generally gave a glowing account of Celtic culture, being its apologist, wrote that "the Celt, with his peculiar sensibility, created the most delicately beautiful and

³³ FINLAY 1973, 85.

³⁴ FINLAY 1973, 89–90.

³⁵ Nine engraved mirror were discovered in the territory of southern Britain: in Cornwall, Gloucestershire, Bedfordshire, Northamptonshire and Essex (TOYNBEE 1964, 19).



Figure 9. Gold torc, 2nd century BC, Broighter, Co. Derry, Ireland (CC-NC-ND 2.0 by Pomax on Flickr.com).



Figure 10. The “Great torc”, 2nd half of the 1st century BC, Snettisham, Norfolk, England (CC BY 2.0 by Alistair Paterson on Flickr.com).



Figure 11. Bronze mirror with a cast handle, 1st century BC, Desborough, Northants, England.

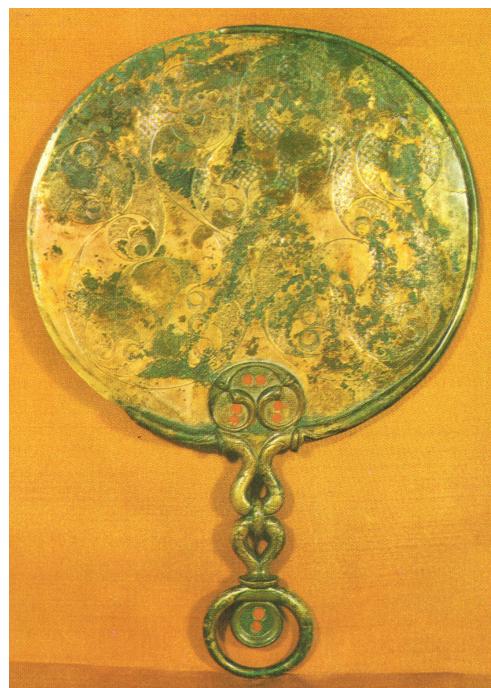


Figure 12. Bronze mirror with enamel dots, the early 1st century BC, Birdlip, Gloucestershire, England.

significant mirrors of all”³⁶. In his opinion, even Chinese bronze-workers during the Tang dynasty, though refined and artistic in their craft, often chose to decorate the backplates of their mirrors with scenes more appropriate for temple ceremonies or hunts than for a woman’s bower. “The mind of the Celt was subtler and more *galante* than any courtier of the Louvre, and he would never have offered his lady an instrument for her toilette encrusted with masculine imagery”³⁷.

J.M.C. Toynbee, being both more reserved and less enthusiastic, noted that the tradition of decorating the backplates of mirrors with etched ornaments had already been of long standing among ancient Greeks and Etruscans when it entered the world of late La Tène art as a skill of British craftsmen – one without parallel among continental Celts. However, while mirror-making was not a new craft, the designs of mirror ornaments in Britain were completely original³⁸.

Although mirrors were often kidney-shaped, this slight departure from the perfect circle only furthers the sense of balance and harmony of their form. The cast handle, at once exquisite and massive, being attached to the backplate, brings everything together into a whole. The elements of the ornamental design covering the backplate of a mirror unfold into luxurious flower buds, curving and coiling, but keeping within two or three circles, or opening as a single fan-like petal, spanning the entire surface of the backplate.

The best examples of Celtic mirror style are a bronze mirror from Desborough (Northants, 1st century BC) (Figure 11) and an enamelled bronze mirror found in a female burial near Birdlip, Gloucestershire (the early 1st century BC) (Figure 12)³⁹. The design of the gorgeous, striking, very well-preserved mirror from Desborough displays near-perfect symmetry. The florid scrolls of the ornament are shining against the darker background created by cross-hatching in a basket pattern. This basketry hatching is a decorative element of itself. The Birdlip mirror, also in a good condition, with the exception of a part of the rim, shows the design etched into the metal. Cross-hatching, again resembling a basket-weave pattern, makes the pattern of interlocking triskeles stand out. To sum up, we may say that craftsmen of pre-Roman Britain fully realized their potential both in plastic and in planar forms.

Although R.G. Collingwood’s argues that the art of insular Celts finally tapered to completely abstract designs, the fact remains that there are enough zoomorphic images in the repertoire of Celtic artists. While these images are not exactly drawn from nature, their originals are recognizable. Animals and birds played a major role in Celtic mythology and cult, so Celtic artists carefully studied their habits and external features, yet depicted them in a refined and

³⁶ FINLAY 1973, 86.

³⁷ FINLAY 1973, 86.

³⁸ TOYNBEE 1964, 19.

³⁹ FINLAY 1973, 87–88.

symbolic manner⁴⁰ which formed the basis of Celtic art.

A Celtic artisan immediately grasped the essence of what he saw, disregarding insignificant details, often over-emphasizing and exaggerating the defining features of the original. Even when he appeared to create a realistic picture, upon examination it turned out highly stylized. Sometimes an ancient artist, like a modern cartoonist, sensed certain eccentricity typical of a depicted being. In this case he created a comical image, like that of the amusing duck with a longish bill from Milber Down (1st century AD, Devon) (Figure 13)⁴¹. As we have already pointed out, North European Hallstatt tradition, which is one of the sources of Celtic art, included depicting water birds in a jocular, humorous manner.

Another striking part of the legacy left by ancient Celts is the White Horse of Uffington (Figure 14). The huge (about 374 ft. in length) image is formed from deep trenches filled with chalk and situated on the upper slopes of a hill in Oxfordshire (Iron Age). The figure is thought to represent the horse goddess Epona, worshipped throughout the Celtic world. Executed on such a vast scale, this religious symbol was intended to be seen from afar⁴². The White Horse of Uffington also confirms that a Celtic artist could diverge from the original realistic model and transform the depicted being into a decorative pattern of a fantastic design. I. Finlay terms this image as a formula of mystic sense⁴³.

In conclusion, after the analysis of the most outstanding specimens of Celtic artistic style is completed, researches try to make a careful evaluation of the art in general and speculate what its fate would have been if the Roman conquest had not taken place. Opinions on the Celtic art of pre-Roman Britain differ widely. E.T. Leeds, for one, argued that “Celtic art at this period contained within it all the seeds of a rapid and complete decay; it was breaking up on the rocks of petty details”⁴⁴. Then, “nature, it seems, was to them almost a closed book. Throughout their artistic history it is impossible to detect those natural powers of accurate observation, the lack of which must constitute an eternal bar to the entry into the higher spheres of art, among which plastic art takes a leading place”⁴⁵.

Sh. Frere thought that shortly before the Roman conquest Celtic art was already past its prime. Although the process of degeneration had not gone too far, the simple motifs that constituted the inherent power of Celtic artistic style started to disintegrate and disappear in the excess of too elaborate and whimsical details⁴⁶.

M. Henig, remarking on the technical excellence typical of many Celtic artworks of pre-Roman period, still argues that they had “more to do with the mastery of a skill than with

⁴⁰ FINLAY 1973, 95.

⁴¹ FINLAY 1973, 95.

⁴² HENIG 2003, 18.

⁴³ FINLAY 1973, 95.

⁴⁴ LEEDS 1933, 62.

⁴⁵ LEEDS 1933, 86.

⁴⁶ FRERE 1967, 316.

what we would describe as ‘art’”⁴⁷. Nor is he the only scholar who upholds this opinion. In France F. Benoit thought that works of Celtic artisans had not outgrown honest craftsmanship⁴⁸. Russian scholar A. Mongait also adhered to the opinion that Celts did not know fine arts, only highly artistic crafts⁴⁹.



Figure 13. Bronze animal figurines, 1st–2nd century AD, Milber Down, Devon, England.



Figure 14. White horse — a prehistoric hill figure of white chalk bedrock, Iron Age, Uffington, Oxfordshire, aerial photography (CC BY-NC-ND 2.0 by Dave Price on Flickr.com).

⁴⁷ HENIG 2003, 21.

⁴⁸ BENOIT 1945, 7.

⁴⁹ MONGAIT 1974, 261–277.

In reality, this belief has already been abandoned. The most prominent scholars of Celtic art noted that the title ‘primitive’ is often granted to an art whose vocabulary differs from that of Europeans brought up on antique artworks. They advocated the high value, uniqueness and originality of Celtic art which let it compare favourably to antique art, though it is built on completely different, non-classical principles⁵⁰. P. Duval, while describing Celtic artistic style, wrote about many aspects of Celtic art “whose flexibility creates charm, whose elegance seduces, whose austerity guarantees its value, and knowledge vouches for its authenticity”⁵¹. He called Celtic art “the Celtic miracle” occurring in barbaric Europe when in Greece “the Greek miracle” was happening⁵².

Thus, the above-mentioned opinion on Celtic art expressed by M. Henig is groundless, just like his further arguments are when he compares Celtic culture to modern primitive cultures, concluding the comparison with the following general statement: “‘Primitive’ cultures, ancient and modern, are valuable because they tell us about ourselves, the more primitive sides of our natures and untutored talent and imagination”⁵³. Such statements are inapplicable to the complex, mature, highly developed art of Celts. Referring to Celtic ornamentation itself, Henig notes that while “almost every item of Celtic art challenges the beholder to admire the virtuosity of the creator in organizing a pattern, but like a kaleidoscope such pattern-forming has no potential to lead onto other developments”⁵⁴.

In contrast to these unflattering descriptions of Celtic art I. Finlay offers the opinion that it fell to the Celtic tribes of pre-Roman Britain that were shielded from the direct influence of the cultures of the antique south to develop the La Tène style to a high degree of perfection, so it might have been for the first time in history that the original Celtic genius shone, free of the slightest hint of this compromise with the classical tradition that tinges so many other works of Gallic art⁵⁵.

Reflecting on the future of art in pre-Roman Britain, Collingwood adopted a rather unusual position. On the one hand, he considered Celtic art genuine high art; on the other hand, certain characteristics lying in its artistic quality boded ill for its future. Among these characteristics was the (typical of Celts, in Collingwood’s opinion) love of abstraction built upon the play of planar curvilinear patterns. He writes that to make great art, or even good art, by the purely abstract manipulation of curved lines is a feat of extreme difficulty, demanding the rarest combination of favourable circumstances. Such circumstances would

⁵⁰ MEGAW 1970, 9–39.

⁵¹ DUVAL 1977, 8.

⁵² DUVAL 1977, 9.

⁵³ HENIG 2003, 23.

⁵⁴ HENIG 2003, 21.

⁵⁵ FINLAY 1973, 79.

include isolation from external influences that would permit the artist and his patron to develop their canons of taste remaining in ignorance of any other art possible.

The second dangerous characteristic of Celtic art according to Collingwood was its dream-like quality that to some extent pervaded all Celtic art but reached its culmination in Britain. “So delicate is the meditative poise of the best early British art, that a touch will destroy it”⁵⁶, wrote Collingwood.

The researchers who adopted the position that the Celtic art of the pre-Roman period did not show potential for growth, shared the view that the weakness of the art lay mostly in its narrow social basis. The art of British Celts was the art of their aristocracy; it was royalty and nobility that commissioned British artisans to create parade armour, jewellery and other luxury goods for them. Hence, the lower strata of society had little access to works of art; only decorated pottery and ivory works contained some typically Celtic ornamental motifs⁵⁷. In a more radical manner this point of view is introduced by M. Henig who argues that Celtic art “was narrowly based both socially and in its repertoire of forms and would surely have become ever more repetitive if it had continued without new influences, until it became moribund”⁵⁸.

Presenting compelling arguments, I. Finlay stood in opposition to all those who predicted speedy decline of Celtic art if there had been no Roman conquest and if the art of insular Celts had been left to its fate. He argued that Roman art that gained ground in Britain after it had become a province of the empire was just as narrowly based socially. Its influence was limited to the settlements, where provincial administration concentrated and Roman colonists lived, and to forts built by the ancient Romans to defend the borders of the province. As to those of British noble class who adopted the Roman way of life, their control did not go beyond their lands⁵⁹.

Besides, the bent for poetic abstraction, which was vital for Celtic art and which was destroyed by classical realism, however ideal it might be, represented an intrinsic part of Celtic mentality. When the King and Queen of the Fairies in British folklore (who later came to be called Oberon and Titania) assumed human shape, they lost a significant part of their magical charm. Symbolism was a second nature to Celts. Their visions were woven from symbols; those symbols—graceful, unusual, and dreamily enigmatic—were embodied and Celtic art and folklore. In this regard the awareness of the national culture, so deeply rooted in Celtic mentality, and the affection for it did not wane even in the territories conquered by Rome; rather they lay dormant during the Roman period. In the territories outside the Roman

⁵⁶ COLLINGWOOD, MYRES 1937, 251.

⁵⁷ TOYNBEE 1964, 20.

⁵⁸ HENIG 2003, 23.

⁵⁹ FINLAY 1973, 103.

sphere of influence (Northern Scotland and Ireland) the traditional Celtic style survived and had enough potential for development.

To the presence of hidden powers within the artistic style of British Celts—the powers that did not manifest during the Roman period—testifies the style's revival in the medieval Britain at the time of Anglo-Saxon invasion. The main medium for artistic expression among Celtic tribes was metal-working, both in this epoch and before the Roman conquest. The most outstanding works of art of this epoch are bronze artefacts, crafted with the use of the techniques that Celtic artisans had mastered in the pre-Roman period, and decorated in the Celtic tradition.

These include the so-called 'hanging bowls' from the Sutton Hoo ship burial⁶⁰. They are bronze bowls, complete with rings by which they were suspended. It is thought that during the Roman period they were used as oil burners. In medieval Britain such bowls were suspended within a tripod and used in religious ceremonies for ritual hand-washing⁶¹.

On the outer surface of the big bronze 'hanging bowl' from Sutton Hoo one can see round ornamental mounts resembling escutcheons. Flowing curvilinear ornament on the escutcheons forms a complex pattern: every curving tendril rotates around a pair of adjacent heads of some unknown tiny monsters; the rotary motion of these vortexes, although compositionally precise and set out with immaculate taste, appears spontaneous and unconstricted, not limited even by the wires holding enamel inlays into which these ornamental designs are fused⁶². In such artefacts the poetic beauty of ornamental motifs adorning La Tène metalwork becomes richer: the size of images shrinks but they shine in new splendour.

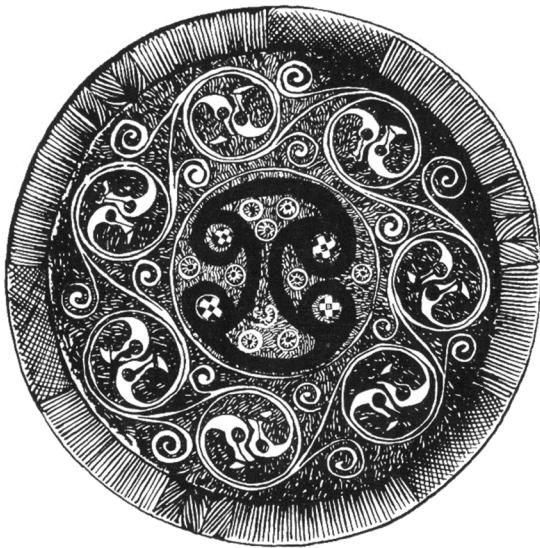


Figure 15. Escutcheon from a bronze hanging bowl, 6th–7th century AD, Sutton Hoo burial, Suffolk, England.

⁶⁰ Sutton Hoo, near Woodbridge, in Suffolk, is the site of two 6th and early 7th cemeteries which were excavated in 1938–1939. One cemetery contained an undisturbed ship burial of an Anglo-Saxon king, including a wealth of artefacts of outstanding historical and archaeological significance.

⁶¹ FINLAY 1973, 106–107.

⁶² FINLAY 1973, 107.

On the whole, it was a much more expressive art than the works of Anglo-Saxon goldsmiths of the same period, who, while decorating jewellery, imposed severe limits on their fantasy literally confining it to the compartments of cloisonné works.

In conclusion, we can say that although it is impossible to find traces of direct influence of Celtic artistic style on Gothic architecture or see the Celtic inner flow in Rococo art or decorative styles of the early 20th century, as some unrestrained apologists of Celtic art do, we would be perfectly within rights to view Celtic art (the art of insular Celts included) as the first significant contribution of barbaric peoples to the formation of the future European civilization, the first important chapter of European art⁶³. I. Finlay was not far from the truth when writing that “without this ascending flow Europe might have remained desolate wilderness surrounding the ruins of Mediterranean civilizations”⁶⁴.

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⁶³ JACOBSTHAL 1944, 163.

⁶⁴ FINLAY 1973, 17.

Gaias Rechtsstreit und Caracallas Alexandria-Aufenthalt.

Zum Kontext des Privatbriefs P.Oxy. 43/3094

Patrick REINARD¹

Abstract. *The article offers a detailed interpretation of the private letter P.Oxy. 43/3094. This letter deals with a lawsuit which was carried on before three governors (M. Aurelius Septimius Heraclitus, L. Valerius Datu and Iulius Basilius). A chronological reconciliation with the events and implications of Caracalla's journey to Alexandria in the winter of 215/16 AD enables a detailed reconstruction of the course of the lawsuit, which lasted approximately three years. Furthermore the paper discusses the meaning of ὑπόμνημα in a juridical and administrative context.*

Zusammenfassung. In dem Aufsatz wird eine ausführliche Interpretation des Privatbriefes P.Oxy. 43/3094 geboten. Dieser Brief thematisiert einen Rechtsstreit, der vor insgesamt drei Statthaltern (M. Aurelius Septimius Heraclitus, L. Valerius Datus und Julius Basilius) geführt worden ist. Ein chronologischer Abgleich mit den Ereignissen und den Folgen von Caracallas Alexandria-Reise im Winter 215/16 n. Chr. ermöglicht eine detaillierte Rekonstruktion des Verlaufes des Rechtsstreits, der ca. drei Jahre gedauert hat. Außerdem wird in dem Aufsatz die Bedeutung von ὑπόμνημα in einem rechtlich-administrativen Kontext erörtert.

Rezumat. Articolul oferă o interpretare detaliată a scrisorii private P.Oxy. 43/3094. Această scrisoare se referă la un proces ce a avut loc în fața a trei guvernatori (M. Aurelius Septimius Heraclitus, L. Valerius Datu și Iulius Basilius). Racordarea cronologică la evenimentele și implicațiile călătoriei lui Caracalla la Alexandria în iarna lui 215/16 d.Hr. permite o reconstituire detaliată a desfășurării procesului, care a durat aproximativ trei ani. Mai departe, articolul discută semnificația termenului ὑπόμνημα în context juridic și administrativ.

Keywords: P.Oxy. 43/3094, Alexandria, Caracalla, hypomena, lawsuit.

Der Brief P.Oxy. 43/3094, der von Gaia und Sarapas an Eutychidas/Eutyches² gerichtet ist (Z. 1f. u. 43), besitzt für ein privates Briefzeugnis eine bemerkenswerte Besonderheit: Sein monothematischer Inhalt behandelt einen Rechtsstreit, mit dem drei *praefecti Aegypti* befasst waren und der über einen Zeitraum von ca. drei Jahren angedauert haben muss. In aller Regel behandeln Privatbriefe Geschehnisse aus der jüngeren Vergangenheit, die unmittelbar

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² Zur Variation des Namens cf. den Zeilenkommentar.

pragmatische Bedeutung für die Briefpartner haben. Zudem steht die lange Dauer des Rechtstreites mit den Folgen der Geschehnisse des Winters 215/216 in Verbindung, als Caracalla in Alexandria weilte.

Da der Briefinhalt, abgesehen von der umsichtigen Einleitung und Kommentierung in der Edition, bisher wenig Beachtung³ in der Forschung gefunden hat, soll nachfolgend eine Analyse geboten werden. Der Wortlaut des Briefes auf dem Recto lautet:

[χαῖρε] πολλά, Εύτυχίδα, Σαραπᾶς καὶ / [Γαῖα] ἀσπαζόμεθά σε καὶ τὸ προσκύ/[νημ]ά σου ποιοῦμεν καὶ τοῦ ἀδελφοῦ / [σου] Ἡ[ρα]κλείδου καὶ τῶν συνβίων / (5) [ὑμῶ]γε καὶ τῶν τέκνων παρὰ τῷ μεγά/[λῳ] Σαράπιδι. Γεινώσκε (l. γιγνώσκε) ὅτι μετὰ [τ]ὴν / ἄγομογ ἀπόφασιν ἦν προήνεγκεν / κατὰ ἡ[α]ίας Ἀγρίππας, ἐνέτυχεν τῷ ἡ[α]γεμονίσαντι Δάτῳ ἀξιοῦσα εἰς τρο/φάς (10) τὸν τόκον τῆς χάριτος αὐτῆς ἀπο/λαβεῖν καὶ ἐκέλευσεν αὐτὴν διὰ ὑπο/γραφῆς ἐντυχεῖν τῷ αὐτῷ Ἀγρίππα. ἐνέ/τυχεν δὲ καὶ Ἀγρίππα καὶ ἀνεδέξατο / τὴν διάγνωσιν. Ὅστερον δέ, τοῦ ὑπο/μνήματος (15) προτεθέντος καὶ τοῦ εὔτυ/χοῦς ἡγεμόνος Ἰουλίου Βασιλιανοῦ εὐ/τυχῶς ἐπιβάντος τῇ πόλει, ἐνέτυχον / αὐτῷ διὰ βιβλιδίων προτάξασα τὴν / ὑπὸ Ἀγρίππα μεμφθεῖσαν διάταξιν / (20) καὶ ἀλλας καὶ ὅλον τὸ Ἡρακλείτου / βιβλίδιον καὶ τὴν ὑπογραφὴν καὶ / τὸ Ἀγρίππα ὑπόμνημα μεμ/ ψαμένη ὡς αὐτοῦ παρὰ τοὺς νόμους / ἀποφηναμένου, μεμψαμένη δὲ / (25) καὶ τὸν ρήτορα ἐφ' οἵς οὐ παρέθετό / μου δικαίοις καὶ ἀξιώσασα ἡ τὰ προσ/φωνηθέντα μοι ἀποδοθῆναι ἡ τὰ ἐμά. / ἐκέλευσέν μοι διὰ ὑπογραφῆς τὸ ὑπό/μνημ[α] παραπεμψάμενος τοῖς νομί/μοις (30) μο[u] χρή[σ]ασθαι. καὶ ἐπεὶ ἀμφίλωξος (l. ἀμφίλοξος) ἦν / ἡ ὑπογραφὴ ἔτερον αὐτῷ ἔδωκα / [πά]λιν πάντα τὰ προειρημένα ἔτα/[ca. 3-4] . α καὶ ἀξ[ι]ώσασα εἰ τῇ τοῦ Ἡρακλείτου / [ὑπο]γραφῇ χρήσασθαι με θέλει. καὶ πά/[λιν] (35) ὑπέγραψεν συντιθέμενος αὐτῇ / [κελε]υση μοι τῇ τῶν νομίμων τάξει / [ca. 4-5] . ειν. διὸ γράφω σοι ἴνα καὶ σύ μοι συν/ [ca. 4-5] . . ἀσπάζεται ὑμᾶς Σαραπάμμων. ἐρρῶσ / [vac. ?]θαὶ (l. ἐρρῶσ/θαὶ) ὕμᾶς ε[ύ]χόμεθα.

Die Absender schildern, dass sich Gaia nach einem ungerechten Urteil des Agrippa ([τ]ὴν / ἄγομογ⁴ ἀπόφασιν⁵; Z. 6f.) an den damals amtierenden Präfekten L. Valerius Datus⁶ (τῷ ἡ[α]γεμονίσαντι Δάτῳ) gewandt habe (Z. 6-9). Dieser war 216-217 *praefectus Aegypti*⁷. Gaias genaues Anliegen ist aus dem Wortlaut nicht sicher zu erschließen: ἀξιοῦσα εἰς τρο/φάς τὸν τόκον τῆς χάριτος αὐτῆς ἀπο/λαβεῖν (Z. 9-11) wurde von dem Editor mit „asking to receive the interest of her grant for her maintenance“ übersetzt und im Zeilenkommentar dahingehend diskutiert, dass mit χάρις Geld für den Kauf von Land⁸, aus welchem jährliche

³ Cf. Anagnostou-Cañas 1984, 348; Haensch 1994, 528; Kelly 2011, 89f.

⁴ Zur unsicheren Lesung, die jedoch durch inhaltliche Aspekte eindeutig gestützt wird, cf. den Zeilenkommentar.

⁵ WB I 200; MASON 1974, 24.

⁶ PIR¹ V 46.

⁷ JÖRDENS 2009, 540; REINMUTH 1967, 111.

⁸ Cf. auch P.Oxy. 43/3094 Einl. Die üblicheren Bedeutungsmöglichkeiten (cf. WB II 721-723; zur *donatio* cf. auch Taubenschlag 1955, 399-401) machen an dieser Stelle keinen Sinn.

Einkünfte generiert werden, gemeint sein und es um ein „investment producing an income for Gaia“ gehen könnte. L. Valerius Datus hat Gaia schließlich mittels einer *scriptio* bzw. ὑπογραφή — hier im Sinne einer „Entscheidung der Behörde auf eine Eingabe“ (WB II 656) zu verstehen — an den besagten Agrippa (τῷ αὐτῷ Ἀγρίππῳ) zurückverwiesen (Z. 11f.). Eben dies tat Gaia nun und Agrippa nahm die Eingabe (erneut) zur Erkenntnis: καὶ ἀνεδέξατο / τὴν διάγνωσιν (Z. 13f.). Im Zeilenkommentar wird angegeben, dass die Formulierung eine Entsprechung zu *cognitionem suscepit* sein könnte⁹. Ob es jedoch jemals zu einer Anhörung gekommen ist, bleibt offen¹⁰. Jedoch geht die Schilderung der beiden Absender damit weiter, dass ein mit ὑπόμνημα bezeichnetes Dokument veröffentlicht worden ist: τοῦ ὑπὸ/μνήματος προτεθέντος (Z. 14f.) wird in der Edition mit „the petition has been posted in public“ übertragen. Im Zeilenkommentar wird ergänzt, dass es sich um ein „posting of the petition in public with a subscription“ handeln könnte¹¹. Antrag und Entscheid wären dann terminologisch als ein Dokument mit ὑπόμνημα bezeichnet worden; vielleicht könnte ὑπόμνημα auch einen Bericht über die besagte Verhandlung/Anhörung meinen, doch erscheint — wie dies der Editor im Zeilenkommentar bereits angemerkt hat — eine Veröffentlichung dann nicht sinnvoll. Auch in Z. 28f. wird ὑπόμνημα verwendet, was an dieser Stelle allerdings nicht die von dem Editor vorgebrachte Bedeutung „Petition samt Subskription“, sondern, wie der Kontext zweifelsfrei zeigt, nur „Petition“ bedeuten müsste. In Z. 18 u. 21 unterscheiden Sarapas und Gaia jedoch terminologisch genau zwischen Petition und Subskription. Folgt man der Interpretation des Editors, stellt sich die Frage, warum diese Variation der Begriffe erfolgt? Ferner deutet der Wortlaut des Briefes eher daraufhin, dass das ὑπόμνημα ein von Agrippa verfasstes Dokument zu sein scheint. Eine „Petition“ kann dann nicht gemeint sein. Haensch hat mit Recht angemerkt, dass man ὑπόμνημα an dieser Stelle auch in der durchaus verbreiteten Bedeutung „Auszug aus den *commentarii*“ auffassen kann¹², wodurch das Problem der Variation der Begriffe gelöst wird. Interessant und wichtig für das Verständnis des Briefes ist das den Satz eröffnende ὕστερον (Z. 14). Es verweist meiner Meinung nach darauf, dass mit ὑπόμνημα zu diesem Zeitpunkt eine abschließende Entscheidung des Agrippa gemeint sein muss, auf welche Gaia jedoch länger warten musste; d.h. die Publikation des Auszugs aus den *commentarii* erfolgt nicht binnen kurzer Zeit. Ein zweiter Aspekt kann hinsichtlich der Funktion von ὕστερον aufgezeigt werden. Es kann auch bewusst gemeint sein, dass einige Zeit verstrichen ist, seitdem Gaia von L. Valerius Datus zum zweiten Mal an Agrippa verwiesen worden ist. Ferner bezieht sich ὕστερον nicht nur auf die ὑπόμνημα-Publikation, sondern auch auf die Ankunft des neuen Präfekten von Ägypten und

⁹ Cf. auch THOMAS 1982, 117 Anm. 35, der dieser Interpretation folgt.

¹⁰ Cf. P.Oxy. 43/3094 Einl.

¹¹ Zur Bedeutung von ὑπόμνημα als „Petition“ auch FOTI TALAMANCA 1979, 226f. Anm. 515. u. FOTI TALAMANCA 1984, 122 Anm. 159; THOMAS 1982, 115; allg. auch WEISER 1952, 31–33.

¹² HAENSCH 1994, 528 Anm. 15 (= BL X 151); cf. auch MASON 1974, 96.

Nachfolgers des Datus, Julius Basilianus¹³ (Z. 15f.). Die Entscheidung des Agrippa muss für Gaia erneut negativ gewesen sein, was zwar nicht aus dem Wortlaut, gleichwohl aber aus dem weiteren Inhalt des Briefes zweifelsfrei ersichtlich ist. Somit verstärkt ὅτερον hier auch die Wirkung auf den Adressaten des Briefes: Es verging nach der schlechten Entscheidung des Agrippa einige Zeit, bis schließlich Julius Basilianus nach Ägypten kam. In dieser Zeit bestand nicht die Möglichkeit neuerlich gegen den Entscheid zu petitieren; oder zumindest bestand keine Aussicht auf einen Erfolg. Gaia wartete die Ankunft des neuen Statthalters ab. Julius Basilianus amtierte im Jahr 217/218¹⁴. Er wird von Sarapas und Gaia als „glücklicher“ oder „heilsbringender“ Statthalter attribuiert und seine Ankunft in der Stadt zugleich als „glückverheißen“ oder „segensreich“ gepriesen (καὶ τοῦ εὐτυχοῦ γεμόνος Ιουλίου Βασιλιανοῦ εὐτυχῶς ἐπιβάντος τῇ πόλει; Z. 15–17); die Stadt ist sicherlich mit Alexandria zu identifizieren, was auch der Auffassungsort des Briefes gewesen sein muss, wie durch die Nennung des „großen Sarapis“ (Z. 5f.) in der Präskriptformel nahegelegt wird¹⁵. Die auffällige Dopplung (εὐτυχοῦ / εὐτυχῶς) ist aus der Retrospektive der beiden Absender bewusst gewählt, schließlich hat Julius Basilianus später in dem Rechtsstreit zugunsten der Gaia entschieden (s.u.). Der ganze Satz ist also mit dieser besagten Intention formuliert, was auch die vorgebrachte Überlegung zu dem sehr bewusst eingesetzten ὅτερον am Satzanfang stützt. Gaia wendet sich nun mit einer weiteren Petition (διὰ βιβλιδίων; Z. 18) an den neuen Präfekten. Der Brieftext, der jetzt in die erste Person Singular wechselt, wird nun ausführlicher, wenn auch inhaltlich nicht detaillierter. Der Wechsel der Person ist meiner Ansicht nach bewusst gewählt: Gaia referiert nun die aktuellsten Ereignisse¹⁶. Sie beanstandet „Anordnungen, die von Agrippa kritisiert“ (προτάξασα τὴν / ὑπὸ Ἀγρίππα μεμφθεῖσαν διάταξιν; 18f.) worden seien, sowie wie weitere Verordnungen (καὶ ἀλλας; Z. 20) und reichte auch die komplette an Heracleitus gerichtete Petition samt der erfolgten *subscriptio* (ὅλον τὸ Ἡρακλείτου / βιβλίδιον καὶ τὴν ὑπογραφὴν; Z. 20f.) sowie das ὑπόμνημα-Dokument des Agrippa (τὸ Ἀγρίππα ὑπόμνημα; Z. 22) ein. Der besagte Heracleitus ist mit M. Aurelius Septimius Heraclitus¹⁷, dem *praefectus Aegypti* von 215¹⁸ und Vorgänger des L. Valerius Datus, zu identifizieren. Bereits im Jahr 215 hatte Gaia also in dem in Rede stehenden Rechtsstreit eine Petition eingereicht. Damit erklärt sich auch die Formulierung τῷ ἡγεμονούσαντι

¹³ PIR² I 201.

¹⁴ REINMUTH 1967, 112; JÖRDENS 2009, 530.

¹⁵ Cf. GERACI 1971, 172–179.

¹⁶ Der Überlegung des Editors im Zeilenkommentar, dass der Beginn des Briefes den Wissensstand des Adressaten Eutychidas/Eutyches spiegelt, ist zu zustimmen. Sarapas und Gaia beginnen in ihrer Schilderung mit der Petition vor Datus, kommen dann — in der ersten Person Singular — zu den jüngsten Ereignissen, den Petitionen an Julius Basilianus, und erwähnen erst dabei auch die früheste Eingabe an M. Aurelius Septimius Heraclitus. Sie müssen nicht chronologisch stringent vorgehen, da der Adressat bis zu der Petition an Datus über die Vorgänge informiert ist.

¹⁷ PIR¹ S 330.

¹⁸ JÖRDENS 2009, 530.

Δάτω in Z. 8f. Gaia legte bei dem damals amtierenden Statthalter Beschwerde gegen die Entscheidung des Agrippa ein, gleichwohl der Fall bereits während der Amtszeit des Vorgängers in der Schwebe war. Heraclitus' Subskription muss mit großer Wahrscheinlichkeit vor das ungerechte Urteil des Agrippa, welches vor L. Valerius Datus angeklagt wurde (Z. 6–9), datieren. Die von M. Aurelius Septimius Heraclitus erfolgte *subscriptio* war für Gaia offensichtlich besser bzw. ihrer Ansicht nach gerechter als die beiden späteren Entscheidungen des Agrippa. Ansonsten wäre die Vorlage dieser Dokumente nicht sinnvoll gewesen. Warum aber nach dem Entscheid des Statthalters im Jahr 215 der Rechtsstreit überhaupt weiterging und vor Agrippa kam, bleibt offen. Durch die Vorlage der verschiedenen Dokumente möchte Gaia beweisen, dass Agrippa wider den geltenden Gesetzen zu ihren Ungunsten entschieden hat (ώς αὐτοῦ παρὰ τοὺς νόμους / ἀποφηναμένου; Z. 23f.). Die von Agrippa kritisierten Anordnungen (Z. 18f.) sowie dessen ὑπόμνημα (Z. 22) könnten vielleicht identisch sein, d.h. sich auf den gleichen Vorgang beziehen. Denkbar wäre es aber auch, dass ein Bezug zu den beiden unterschiedlichen Entscheidungen möglich ist. Schließlich richtete sich Gaias Eingabe vor dem neuen Statthalter nicht nur gegen Agrippa, sondern auch gegen einen anonymen Anwalt, der ihre Rechte angeblich nicht korrekt vertreten hat (καὶ τὸν ρήτορα ἐφ' οἷς οὐ παρέθετο / μου δικαίοις; Z. 25f.). Aus diesem Fehlverhalten leitet Gaia Ansprüche ab: Entweder soll etwas, das in einem Bericht festgehalten worden ist, oder aber ihr eigener Besitz an sie ausgegeben werden (καὶ ἀξιώσασα ἢ τὰ προσ/φωνηθέντα μοι ἀποδοθῆναι ἢ τὰ ἔμα; Z. 26f.); mit προσφώνησις dürfte, wie im Zeilenkommentar angemerkt wird, am ehesten an „evidence submitted to the court in the form of a written report“ gedacht werden. Die Ausführungen zu dem unbekannten Anwalt sind kryptisch, jedoch kann man zumindest sicher sagen, dass es eindeutig einen Zusammenhang mit dem „Agrippa-Fall“ geben muss. Nach der Auflistung der Dokumente (Z. 17–22), die Gaia als Beweismittel dem Julius Basilianus vorgelegt hat, schließt sich die Zielsetzung der neuerlichen Eingabe an, die sowohl hinsichtlich Agrippa als auch hinsichtlich des Anonymus jeweils mit μεμψαμένη (Z. 22f. u. 24) ausgedrückt wird. Die besagten Dokumente enthielten also, nach Ansicht Gaias, auch Beweise, um die Ansprüche gegenüber dem ρήτορ geltend machen zu können. Julius Basilianus gab Gaia nun Recht. Allerdings bereitet der Wortlaut Probleme: ἐκέλευσέν μοι διὰ ὑπογραφῆς τὸ ὑπό/μνημα παραπεμψάμενος τοῖς νομί/μοις ‘μο[ν]’ χρή[σ]ασθαι (Z. 28–30). Durch eine *subscriptio* wurde das ὑπόμνημα-Dokument beantwortet. Der Editor übersetzt ὑπόμνημα — wie bereits gesagt — hier mit Petition. Jedoch liegt sicher auch an dieser Stelle die Bedeutung „Auszug aus den *commentarii*“ zugrunde. Der Editor verstand παραπεμψάμενος als „zurücksenden“ des ὑπόμνημα-Dokumentes. Eine andere Deutung erscheint aber schlüssiger. Gemeint ist hier, dass Julius Basilianus den „Auszug aus den *commentarii*“ nicht berücksichtigt, übersehen oder

weggelassen hat; diese Bedeutung¹⁹ ist für παραπέμπω hinreichend bezeugt und wurde auch von Haensch²⁰ erkannt. Die Formulierung τοῖς νομίμοις ‘μον’ χρήσασθαι ist ungewöhnlich, die wenigen Vergleichsstellen sind im Zeilenkommentar zusammengetragen. Übersetzen darf man wörtlich mit „Er wies mich durch eine Subskription den Auszug aus den *commentarii* übersehenden an, dass ich ‚meine‘ Rechte geltend machen darf“; oder „meine‘ Rechte ausnutzen darf/soll“. Diese Entscheidung, die am ehesten als Zustimmung für die Sache der Gaia aufzufassen ist, stellt die Klägerin nicht zufrieden. Sie bezeichnete die ὑπογραφή als „mehrdeutig“ und reichte eine weitere Petition ein: καὶ ἐπεὶ ἀμφίλαξος (l. ἀμφίλοξος) ἦν / ἡ ὑπογραφὴ ἔτερον αὐτῷ ἔδωκα / [πά]λιν πάντα τὰ προειρημένα ἔτα/[ca. 3-4] .α καὶ ἀξ[ι]ώσασα εἰ τῇ τοῦ Ἡρακλείτου / [ὑπο]γραφῇ χρήσασθαι με θέλει. (Z. 30-34). Der Textverlust am Beginn der 33. Zeile verhindert zwar eine wortgenaue Erkenntnis, doch ist der Sinn dennoch fassbar. In der neuen Petition an Julius Basilianus brachte Gaia nochmals sämtliche Ereignisse der letzten drei Jahre vor, die sich seit ihrer ersten Eingabe an M. Aurelius Septimius Heraclitus im Jahr 215 ereignet hatten. Dies ist der Sinn von πάντα τὰ προειρημένα. Durch ἀμφίλοξος wird die oben vorgebrachte Deutung von παραπεμψάμενος schlüssig. Julius Basilianus hat nach Ansicht der Gaia den entscheidenden Passus im Entscheid des Agrippa nicht berücksichtigt. Die Frage, ob Julius Basilianus wolle, dass sie von der Subskription des Heraclitus Gebrauch mache, erklärt auch die Formulierung τοῖς νομίμοις μο[u] χρή[σ]ασθαι (Z. 29f.). Die Anweisung ‚ihre Rechte auszunutzen/wahrzunehmen‘ war nach Gaias Ansicht nicht genau genug formuliert, da sie sich nicht sicher wahr, ob dies wirklich bedeutet, dass sie nun nach der Entscheidung des M. Aurelius Septimius Heraclitus aus dem Jahr 215 verfahren durfte oder ob vielleicht doch — wieder? — der Auszug aus den *commentarii* des Agrippa ihr negativ ausgelegt werden konnte²¹. Julius Basilianus antwortet ihr erneut zustimmend: καὶ πά/[λιν] ὑπέγραψεν δυντιθέμενος αὐτῇ / [κελε]υσούσῃ μοι τῇ τῶν νομίμων τάξει (Z. 34-36). Aus dem Wortlaut wird ersichtlich, dass Gaia nach dem Entscheid aus dem Jahr 215 verfahren sollte. Nun war man also wieder bei dem Stand angekommen, den M. Aurelius Septimius Heraclitus einst festgelegt hatte; *e silentio* kann man vielleicht folgern, dass der Streitfall bzgl. des anonymen Anwalts ebenfalls bereits durch Heraclitus im Sinne der Gaia entschieden worden ist. In dieser Sache wird zumindest keine weitere Information gegeben. Der Hauptteil des Briefes endet mit der Erfolgsnachricht, dass die Anordnung aus dem Jahr 215 rechtsgültig sei.

Wie konnte es dazu kommen, dass das ganze Verfahren über zwei, wahrscheinlich sogar drei Jahre (s.u.) andauerte und sich aus Gaias Sicht letztlich im Kreis drehte? Welche amtliche Stellung hatte Agrippa? Er muss, wie im Zeilenkommentar ausgeführt, natürlich hierarchisch

¹⁹ LSJ 1320.

²⁰ HAENSCH 1994, 528 Anm. 15.

²¹ Cf. KELLY 2011, 89.

unter dem Statthalter gestanden haben²². Vielleicht war er ein *iuridicus*, zumindest wird durch P.Oxy. 43/3093 Z. 11 u. 26 ein Agrippa bezeugt, der ehemals dieses Amt ausgefüllt hat. Die entsprechende Textpassage ist sehr fragmentarisch, die Deutung keinesfalls gesichert. Allerdings indiziert die Datierung auf den 21. Sept. 217, dass es sich vielleicht wirklich um den Agrippa aus 3094 handeln könnte. Der Brief selbst bietet durch die Nennung des Julius Basilius einen Datierungsansatz (Z. 16). Er muss 217 oder wahrscheinlicher 218 entstanden sein. Als Julius Basilius zugunsten der Gaia entschied, wäre Agrippa demnach nicht mehr als *iuridicus* im Amt gewesen. Mit Thomas darf man aber auch das Amt eines *epistrategos* in Betracht ziehen²³.

Kelly interpretiert die lange Verzögerung des Rechtsstreits lediglich als ein „product of the sheer volume of business with which the prefect's office had to deal“²⁴. Diese Erklärung ist aber nicht hinreichend befriedigend, bedenkt man die Zeitumstände der Jahre 215 und 216 sowie die Tatsache, dass die Eingabe ja nachweislich bearbeitet worden sind. Man kann Gaia indirekt als ein „Opfer“ der turbulenten und wirren Vorkommnisse ansehen, die sich während Caracallas Alexandria-Besuch im Winter 215/216 ereigneten²⁵. Angeblich hat Caracalla — nach der literarischen Überlieferung²⁶ — gegen die Bevölkerung Alexandrias, die den Kaiser verhöhnt haben soll, gewütet. Dieser soll angeordnet haben, zunächst die Vornehmen der Stadt bei einem Gelage, später dann auch in Alexandria ausgehobene Rekruten²⁷ — im Stile des Ptolemaios VIII. Euergetes II.²⁸ — sowie die alexandrinischen Quartiergeber niederzuschlagen. Die Schriftquellen sind an dieser Stelle durch das insgesamt negative Caracalla-Bild motiviert, was den historischen Kern, der vielleicht in einem Aufstand

²² Cf. auch THOMAS 1982, 126. Er vermutet eine Stellung „between the prefect and the nome officials“ (209).

²³ THOMAS 1982, 209.

²⁴ KELLY 2011, 90.

²⁵ Die Geschehnisse von Caracallas Alexandriabesuch im Winter 215/216 können und müssen hier nicht detailliert behandelt werden. Ein kurzer Überblick sowie ein Verweis auf die einschlägige Forschungsliteratur ist ausreichend: grundlegend RODRIGUEZ 2012, ferner PFEIFFER 2010, 202–205; JÖRDENS 2009, 454–456; BÉRENGER-BADEL 2005, 121–139; CLAUSS 2004, 196–201; BURASELIS 1995, 166–188; SÜNSKES-THOMPSON 1990, 159–166; BENOÎT, SCHWARTZ 1948, 17–33; kurze Ausführungen bei SCHÖPE 2014, 264; PARSONS 2009, 114f.; HALFMANN 1986, 123; ältere Literatur bieten RODRIQUEZ 2012, 229; BURASELIS 1995, Anm. 24 und HALFMANN 1986, 225.

²⁶ Als wichtigste Quellen sind Cass. Dio 77,22f., Herod. 4,8–9 und SHA, Car. 6,2–3 zu nennen; zu den Quellen, die inhaltlich unterschiedliche Abläufe der Ereignisse bieten, cf. Rodriguez 2012, 234–246; Kolb 1972, 97–111; ferner auch Bernard 1998, 161–165 und Łukaszewicz 1989, 491–496.

²⁷ BENOÎT, SCHWARTZ 1948, 28 sowie CLAUSS 2004, 196 gehen von einer authentischen Rekrutierung für eine nach Alexander dem Großen benannte Phalanx aus, die — gemeinsam mit in Sparta ausgehobenen „spartanischen“ und „pintanatischen“ Einheiten — im Partherfeldzug Caracallas eingesetzt werden sollte; zu den Rekruten auch kurz BIRLEY 2005, 190.

²⁸ In der Historia Augusta (Car. 6,3) wird explizit der Vergleich mit Ptolemaios VIII. Euergetes II. bemüht; cf. zu dessen Blutbad Val. Max. 9,2 ext. 5 sowie Ampel. 35,3; KOLB 1972, 97–99.

der Stadtbevölkerung bestanden haben könnte²⁹, nur schwerlich erfassbar macht. Erwähnenswert sind die bezeugte Abschaffung von Spektakeln und Syssitien; letztere hat Buraselis als „Handwerkervereine“ gedeutet³⁰. Zudem wurden Ägypter, die in der Landwirtschaft aktiv waren, aus der Stadt ausgewiesen, was durch P.Giss. 1/40 II³¹ dokumentiert ist. Bestimmte Teile der Stadt wurden durch den Bau von Mauern abgetrennt und gesichert. Vielleicht war — wie Pfeiffer plausibel vermutet hat³² — auch die Überführung der *sacra Isidis* nach Rom eine Strafmaßnahme Caracallas. Die tumultuarischen Vorgänge in Alexandria datieren zwischen Gaias Eingabe an M. Aurelius Septimius Heraclitus und die neuerliche Eingabe an L. Valerius Datus. Vielleicht könnten Sarapas und Gaia von den Ausweisungen aus Alexandria betroffen gewesen sein. Für die Kontextualisierung von P.Oxy. 43/3094 ist aber wichtiger, dass der Präfekt M. Aurelius Septimius Heraclitus, welcher ursprünglich ein für Gaia zufriedenstellendes Urteil gefällt hat, während den Tumulten sein Leben verloren hat. Ein direktes Quellenzeugnis, das von dem Tod des Statthalters berichtet, existiert nicht. Allerdings kann aus dem fragmentarischen Prozessprotokoll SB 6/9213 = Act. Alex. 18³³ erschlossen werden, dass der Kaiser den Präfekten absetzen und wahrscheinlich hinrichten ließ³⁴. In der Forschung wurde wiederholt diskutiert, dass eine von Johannes Malalas geschilderte Passage, die der Chronist durch Namensverwechselung fälschlich in die Zeit des Antoninus Pius datierte, eigentlich auf die Ereignisse des Winters 215/216 zu beziehen sein könnte³⁵: Der Chronist schildert Unruhen in Alexandria, die zu dem Tod eines *Augustalis* geführt haben sollen, sowie einen Feldzug eines Kaisers gegen die Stadt. Wie zuletzt Jördens³⁶ plausibel in Erwägung gezogen hat, könnte Caracallas Winteraufenthalt die Grundlage für Malalas Ausführungen darstellen. M. Aurelius Septimius Heraclitus könnte eventuell mit dem *Augustalis* zu identifizieren und somit hier eine Parallelüberlieferung zu SB 6/9213 greifbar sein, doch ist Gewissheit an dieser Stelle auf der Grundlage der aktuell vorliegenden Quellenbasis unmöglich zu erzielen. Dass der Statthalter im besagten Winter sein Leben verloren hat, wird jedoch — neben dem Zeugnis des bereits angesprochenen Prozessprotokolls — dadurch ersichtlich, dass während Caracallas Aufenthaltszeit die Amtsgeschäfte durch Aurelius Antinous übernommen wurden³⁷. Dieser scheint vielleicht

²⁹ Gewiss abzulehnen ist die Einschätzung von Christ, es habe sich um ein „prophylaktisches Exempel“ Caracallas gehandelt; cf. CHRIST 2002, 623.

³⁰ BURASELIS 1995, 173–180.

³¹ KUHLMANN 1994, 246–255.

³² PFEIFFER 2010, 204f.

³³ Cf. BENOÎT, SCHWARTZ 1948, 17–33; MUSURILLO 1954, nr. 18; RODRIGUEZ 2012, 269f., nr. 5.

³⁴ Cf. die Kommentierung bei BENOÎT, SCHWARTZ 1948 und MUSURILLO 1954; ferner auch JÖRDENS 2009, 455 Anm.

³⁵ REINMUTH 1967, 111; zu M. Aurelius Septimius Heraclitus jüngst auch RODRIGUEZ 2012, 238–244 und 259f.

³⁶ Mal. 11,367 (p. 280).

³⁷ JÖRDENS 2009, 452–455 mit der weiteren Literatur.

³⁷ JÖRDENS 2009, 455. Dieser könnte vielleicht als *iuridicus* anzusprechen sein, allerdings ist eine klare Erkenntnis aus dem papyrologischen Befund nicht zu gewinnen; cf. JÖRDENS 2009, 530.

schon im Frühjahr 216 — allerspätestens in den ersten Tagen des Juni — von L. Valerius Datus abgelöst worden zu sein, der dann als *praefectus Aegypti* amtierte; eine Maßnahmen des neuen Präfekten war ein Rückkehrgebot³⁸, was als Konsequenz der Winter-Ereignisse zu deuten ist³⁹. Gaias erste Auseinandersetzung mit dem *iuridicus* (?) Agrippa könnte mit einiger Wahrscheinlichkeit in die Zwischenzeit datieren, in der Aurelius Antinous die Geschäfte leitete. Der zweite Verweis an Agrippa erfolgte schließlich 216, als L. Valerius Datus in Alexandria eingesetzt war. Dieser amtierte jedoch auch nur kurz. Es verging wieder einige Zeit — vermutlich die Zeitspanne, die Gaia mit ὕστερον beklagt — bis der nächste Statthalter, Julius Basilianus (217–218), nach Alexandria kam. Der Wortlaut des Briefes legt nahe, dass Gaia gleich nach dessen „glücklicher“ Ankunft, also noch im Jahr 217, neuerlich petitierte und die nicht hinreichend eindeutige Antwort erhielt, weshalb eine nochmalige Eingabe nötig geworden ist. Da die erste Eingabe an Julius Basilianus sicherlich noch 217, gleich nachdem dieser Alexandria erreicht hatte, erfolgt ist und zwischen beiden Petitionen einige Zeit vergangen sein dürfte, spricht einiges dafür, dass die finale Entscheidung und damit auch der vorliegende Brief in das Jahr 218 datieren. Als *Terminus ante quem* können die erste Junitage angesehen werden, denn Julius Basilianus verweigerte nach der Niederlage des Macrinus die Anerkennung des Elagabal und floh nach Italien⁴⁰. Der ganze Rechtsstreit hat also ca. drei Jahre gedauert. Schließlich wurde die ursprüngliche Entscheidung des M. Aurelius Septimius Heraclitus wieder bestätigt. Man darf mit guten Recht annehmen, dass Gaia, wären die turbulenten Ereignisse des Winters 215/216 aus- und M. Aurelius Septimius Heraclitus länger im Amt geblieben, die erste Entscheidung des Agrippa sicherlich bei diesem Statthalter angeklagt und gewiss in ihrem Sinne — d.h. im Sinne der Entscheidung des Heraclitus — Recht bekommen hätte. Der komplizierte Inhalt von P.Oxy. 43/3094, der viele Frage offen lässt, zeigt sehr eindringlich, wie das alltägliche Leben einer Person durch die wirren Ereignisse rund um Caracallas Ankunft und Aufenthalt in Alexandria maßgeblich beeinflusst worden sein muss.

³⁸ BGU 1/159 = W. Chr. 408, der Papyrus datiert auf den 5. Juni, was als *Terminus ante quem* für den Erlass des Ediktes anzusehen ist. Ebenfalls zu bedenken ist, dass das Rückkehrgebot auch im Zusammenhang mit einem baldigen Zensus stehen könnte; cf. JÖRDENS 2009, 443. Es drängt sich die Frage auf, ob auch die beiden Briefabsender von dem Rückkehrerlass betroffen waren. Eine Antwort muss jedoch gänzlich hypothetisch bleiben, da der Heimatort der Absender nicht bekannt ist. Zwar ist der Brief an den in Oxyrhynchos lebenden Adressaten gerichtet und auch dessen Bruder, seine Ehefrau (?) sowie Kinder werden im Präskript begrüßt (Z. 1–5), jedoch geht daraus nicht hervor, dass auch Sarapas und Gaia dort lebten.

³⁹ JÖRDENS 2009, 443 u. 454.

⁴⁰ Cass. Dio 79,35,3; ICKS 2014, 22 u. 25.

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Terminology of salt in Ancient Greek

Roxana-Gabriela CURCĂ¹

Abstract. This study addresses for the first time in the dedicated literature, the lexical reflexes of salt in ancient Greek, as part of an extended research project. An inventory was realized as comprehensively as possible on grammatical categories (nouns, adjectives, verbs and adverbs), derived from nominal compound ἄλ (ἄλς, ἄλος) in the initial and secondary position, emphasizing a majority of adjectives and a wide semantic spectrum (e.g. physical world, exploitation, food consumption and conservation, social and economic contexts, symbolic uses). This lexical variety indicates the crucial role of salt and sea in the development of Greek civilization.

Rezumat. Acest studiu abordează pentru prima dată în literatura de specialitate reflexele lexice ale sării în greaca veche, fiind parte a unui proiect de cercetare mult mai amplu. S-a realizat un inventar cât mai cuprinzător, pe categorii gramaticale (substantive, adjective, verbe și adverbe) derivate de la compusul nominal ἄλ (ἄλς, ἄλος) aflat în poziție inițială și secundară, constatăndu-se o majoritate a frecvenței adjecțivelor și un spectru semantic extins (e.g. univers material, exploatare, consum și conservare de alimente, contexte socio-economice, utilizări simbolice). Această varietate lexicală indică rolul esențial al sării și a mării în dezvoltarea civilizației grecești.

Keywords: Salt, terminology of salt, ancient Greek, semantic spectrum.

Introduction

Except the ancient writers who discussed some aspects of salt, one of the first's authors who underlined systematically the importance of salt for the human life was the Spanish erudite Bernardino Gómez Miedes (1515–1589), who wrote an impressive monograph on various aspects related to the so-called “white gold”, as the titles of his *libri* prove it (I. *De sale physico sive philosophico*; II. *De sale medico sive empirico*; III. *De loco, tempore et modo salis in mensa*; IV. *De sale geniali sive iocosu*; V. *De sale mystico sive theologico*). The amplitude of the discussed

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themes in the work of Bernardino Gómez Miedes and the researches conducted in the framework of EthnosalRo project (ethnosalro.uaic.ro) has determine the Romanian scholar Marius Alexianu from “Alexandru Ioan Cuza” University of Iași to propose a new discipline in 2012, the *anthropology of salt* – “as a discipline of the future, which will gradually become autonomous as the inter- and trans-disciplinary approaches to common salt will prevail over the mono- or multi-disciplinary ones”². Among the disciplines related to salt, he includes archaeology, history, ethnology, linguistics, geography, heritage, chemistry, medicine, symbology, literary studies, etc.

In this context, the terminological approach in one of the oldest attested Indo-European languages is relevant to the proper understanding of this mineral, indispensable for a good living in so many fields. It should be emphasized that the term *salt* (**she_a-(e)l-*) belongs to common Indo-European lexicon, and it is attested in languages from the western and eastern part of the Indo-European language family (e.g. Old Irish *salann*, Latin *sāl*, New English *salt*, Latvian *sāls*, Old Church Slavonic *soli*, Greek *háls*, Armenian *al*, Tocharian B *salyiye*, Lithuanian *sólumas*, Albanian *njelmët*, Sanskrit *salilā*)³.

The aim of our article is to analyse, from a semantic and linguistic perspective, the vocabulary of salt⁴ in ancient Greek, focused especially on the compounds of ἄλιξ, ἄλος—as first and second position as compound—, underlying the multitude of derivates of this term, especially as first position⁵. We want to emphasize that the Greek language present a particular situation, because she has the same Indo-European lexeme for *salt* and *sea*, the only differentiation being made by gender (masculine—salt, feminine—sea).

In order to illustrate the multifaceted dimensions of salt identified in the works of ancient Greeks authors, I will give only a few examples, such as: alimentation⁶, salt production⁷, halotherapy⁸, different mentalities regarding the salt⁹, symbolism (e.g. the divine character of salt)¹⁰, various utilizations of brine¹¹, embalming the body of the deceased¹²,

² ALEXIANU 2015, 1.

³ MALLORY, ADAMS 2006, 261; 264; see also GRANDSAIGNES D'HAUTERIVE 1948, 179; THIEME 1961; CHANTRAIN 1968, 65; HOFMANN 1974, 14–15; BONFANTE 1991. For the study of noun formation, see CHANTRAIN 1933.

⁴ For a lexicographical study on salt in Spanish for the 12th–17th centuries, see HERNANDO GARCÍA-CERVIGÓN, ALONSO SUTIL 2007.

⁵ For the lexeme *sea*, Greek language also has the term θάλασσα, a substrate word, who has not developed so many derivatives as ἄλιξ, ἄλος.

⁶ Plut., *Mor.*, 684e.

⁷ Ar., *Ach.*, 520–522.

⁸ Hp., *Acut.*, 7 L. XXI, 3; II, XLV. 1–2; *Aēr.*, VII, 11 ; *Acut.*, II, 2, XVIII (VII), 1–2 ; II, 2, XLVIIa (XXXVIa), 2–5 ; II, 2, XLVIIb (XXXVIIb), 1–2 ; *Loc. Hom.*, XVII–XIX ; *Arist.*, *Pr.*, I, 38.

⁹ Archil., 166 ; Plat., *Ti.*, 60d ; Plut., *Symp.*, VII, 1, D.

¹⁰ Hom., *Il.*, IX, 205–217.

¹¹ Hdt., II, 77.

¹² Hdt., II, 87.

natural crystallization¹³, houses construction¹⁴, decrees¹⁵, control and conflict¹⁶, eulogy of salt¹⁷, barter, commerce, price, markets¹⁸, salting¹⁹, salt sources²⁰, food and wine conservation²¹, scientific explanations of the sea²², etc. In the modern exegesis, the interest manifested by the scholars for the study of salt at ancient Greek authors comprises two major directions: a more general overview of different occurrences of salt on sites production, commerce and economic value²³, symbolism and epistemology²⁴, geography²⁵, utilizations and mentalities²⁶ and more specialized studies treating various, sometimes, unexpected aspects, related to etymology²⁷, toponymy²⁸, paroemiology (different aphoristic expressions analysed from the semantic and historical perspective)²⁹, halotherapy (treatment of dental or gingival, mouth and ear diseases, headaches, skin burns, tonsillitis, angina, furuncles, inflammations of the skin and dermatosis, animal bites, joint, lumbar, leg, kidney or stomach pains, frostbites, bleeding)³⁰, saltiness³¹, quantification³², demand for salt³³, tax regulations and monopole³⁴, dispute and control³⁵, solar evaporation and crystallization³⁶, barter³⁷, wine conservation³⁸, sexuality³⁹, funerary practices⁴⁰, etc.

¹³ Hdt., IV, 53 ; VII, 30 ; Str., VII, 5, 11 (C 317).

¹⁴ Hdt., IV, 185.

¹⁵ Arist., *Mir.* 138.

¹⁶ Ar., *Ach.*, 754–761; Str., VII, 5, 11 (C 317).

¹⁷ Plat., *Conv.*, 177 b.

¹⁸ Arist., *Oec.*, II, 3a ; Plut., *Dem.*, 33, 1–6.

¹⁹ Str., III, 4, 2 (C 156); XI, 2, 3 (C 494).

²⁰ Str., IV, 1, 7 (C 182).

²¹ Plut., *Mor.*, 685b–c.

²² Arist., *Mete.*, II, 3 [35; 6b] ; II, 3 [357a–359b].

²³ MOINIER 2007a; CARUSI 2007b; 2008a–b.

²⁴ MOINIER 2012.

²⁵ MORÈRE MOLINERO 2001; MOINIER 2007b; CARUSI 2008a.

²⁶ MOINIER, WELLER 2015.

²⁷ PORUCIUIC 2011.

²⁸ FALILEYEV 2011.

²⁹ ALEXIANU 2011; PARASCHIV 2011; 2015a–b.

³⁰ CURCĂ 2007; SANDU *et al.* 2010.

³¹ MOINIER 2008.

³² MOINIER 2011.

³³ CARUSI 2011.

³⁴ CARUSI 2007a.

³⁵ ALEXIANU 2007.

³⁶ MIRCEA 2007.

³⁷ ALEXIANU 2011.

³⁸ MOINIER, ALEXIANU 2011.

³⁹ MOINIER 2007c.

⁴⁰ RAMOS MALDONADO 2000.

Inventory of lexemes

The lexical corpus illustrated below contains, in alphabetical order, the occurrences of the compounds of ἄλς, ἄλος classified in morphological categories, followed by the translation of each lexeme⁴¹. As expected, the compound ἀλ-/άλι-/άλο-/άλν- (first position in the compounding term) represents the majority in the inventory. By contrary, with a lower frequency, we find it in the second position (-αλ-) mostly due to the prefixes (e.g. ἀμφί-, ἀν-, ἐξ-, ἔφ-, καθα-, παρα-, σύν-).

	ἀλ-				
	Nouns	Adj.	Verbs	Adv.	Translation
ἄλαδε				✓	'to or into the sea'
ἄλαδρομος, -ου (ό)	✓				'race over the sea'
ἄλας, -ατος (τό)	✓				'salt'
ἄλατιζω			✓		'sprinkle with salt'
ἄλατικόν, -ου (τό)	✓				'salary'
ἄλατινος, -η, -ον		✓			'made of salt'
ἄλατιον, -ου (τό)	✓				'salt'
ἄλατοπωλία, -ας (ή)	✓				'right of vending salt'
ἄλέλαιον, -ου (τό)	✓				'salt in oil'
ἄλή, -ῆς (ή), only pl.	✓				'salt-works'
ἄληγός, -όν		✓			'carrying salt'
ἄλια, -α ξ(ή)	✓				'salt-cellar, mark of extreme poverty'
ἄλιάδης, -ου (ό)	✓				'seaman'
ἄλιάετος, -ου (ό)	✓				'sea-eagle'
ἄλιαζης, -ές		✓			'blowing seaward'
ἄλιανθής, -ές		✓			'sea-blooming'
ἄλιαρός, -όν		✓			'salted'
ἄλιβαπτος, -ον		✓			'dipped in sea, drowned therein'
ἄλιβδύω			✓		'sink or submerge in the sea'
ἄλιβρεκτος, -ον		✓			'washed by the sea'
ἄλιβρομος, -ον		✓			'murmuring like the sea'
ἄλιβρωτος, -ον		✓			'swallowed by the sea'

⁴¹ For the translation of the lexemes, we have used the *Greek-English Lexicon of LIDDELL, SCOTT 1996*.

άλιγείτων, -ον		✓			'near the sea'
άλιγενής, -ές		✓			'sea-born'
άλιδινής, -ές		✓			'sea-tossed'
άλιδουπος, -ον		✓			'sea-resounding'
άλιδομος, -ον		✓			'running over the sea'
άλιεία, -ας (ή)	✓				'fishing'
άλιειος, -α, -ον		✓			'fisher's'
άλιειδής, -ές		✓			'sea-coloured'
άλιεργής, -ές		✓			'working in the sea, fishing'
άλιεργός, -όν		✓			'working in the sea, fishing'
άλιερκής, -ές		✓			'sea-fenced, sea-girt'
άλιευμα, -ατος (τό)	✓				'draught of fish'
άλιεύς, -έως (ό)	✓				'one who has to do with the sea, fisher, seaman, sailor'
άλιευτής, -οῦ (ό)	✓				'fisher'
άλιευτικός, -ή, -όν		✓			'of or for fishing'
άλιευτικόν, -οῦ (τό)	✓				'the fishing population'
άλιεύω			✓		'to be a fisher'
άλιζω			✓		'to be salted, supply with salt or salt food'
άλιζωνος, -η, -ον		✓			'sea-girt'
άλιζως, -α, -ον		✓			'living on or in the sea'
άλιηγής, -ές		✓			'broken on by the sea'
άλιήρης, -ες		✓			'sweeping the sea'
άλιηχής, -ές		✓			'resounding like the sea'
άλικά, -ῶν (τά)	✓				'charges for salt'
άλικλυστος, -η, -ον		✓			'sea-washed, sea-beaten'
άλικνήμιας, -ίδος (ό/ή)	✓				'sea-borne'
άλική, -ῆς (ή)	✓				'salt-tax'
άλικρας, -ατος (ό/ή)	✓				'mixed with salt water'
άλικρείων, -οντος (ό)	✓				'lord of the sea'
άλικρήπις, -ίδος (ό/ή)	✓				'person at the sea's edge'
άλικτυπος, -ον		✓			'sea-smitten'
άλικύμων, -ον		✓			'surrounded by sea-waves'
άλιμα, -ων (τά)	✓				'seaside'
άλιμέδων, -οντος (ό)	✓				'lord of the sea'
άλιμος, -ον		✓			'of or belonging to the sea'
άλιμυρήεις, -εσσα, -εν		✓			'flowing into the sea'

Terminology of salt in Ancient Greek

ἀλιμυρής, -ές		✓			'salt surging'
ἀλιναέτης, -ου (ό)	✓				'person dwelling in the sea'
ἀλινήκτειρα, -ας (ή)	✓				'person swimming in the sea'
ἀλινηχής, -ές	✓				'of swimmers'
ἄλινος, -η, -ον		✓			'of salt'
ἄλιος, -η, -ον		✓			'of the sea'
ἄλιοτρεφής, -ές		✓			'feeding in the sea, sea reared'
ἄλιπαστος, -ον		✓			'sprinkled with salt'
ἄλιπεδον, -ου (τό)	✓				'plain by the sea'
ἄλιπλαγκτος, -ον	✓				'sea roaming'
ἄλιπλακτος, -ον		✓			'sea-beaten'
ἄλιπλανής, -ές		✓			'sea wondering'
ἄλιπλοιος, -ον		✓			'covered with water'
ἄλιπνοιος, -ον		✓			'redolent of sea'
ἄλιπόροιος, -ον		✓			'through which the sea flows'
ἄλιπόρφυροιος, -ον		✓			'of sea-purple'
ἄλιπτοίητος, -ον		✓			'driven by fear across the sea'
ἄλιραγής, -ές		✓			'against which the tide breaks'
ἄλιραιστης, -ου (ό)	✓				'ravaging in the sea'
ἄλιραντος, -ον		✓			'sea-surging'
ἄλιρόνιος, -α, -ον		✓			'sea-beaten'
ἄλιροθοιος, -ον		✓			'of the roaring sea'
ἄλιρυτος, -ον		✓			'washed by the sea'
ἄλις, -ίδος (ή)	✓				'anything salt (salt humour, salt scum, salt soil or land), saltiness'
ἄλισμάραγος, -ον		✓			'sea-resounding'
ἄλισμηκτος, -ον		✓			'washed by the sea'
ἄλισμός, -οῦ (ό)	✓				'one who sprinkles with salt'
ἄλισπαρτος, -ον		✓			'sown or sprinkled with salt'
ἄλιστέφανος, -ον		✓			'sea-crowned, sea-girt'
ἄλιστονος, -ον		✓			'sea-resounding, groaning on the sea'
ἄλιστός, -ή, -όν		✓			'salted, pickled'

ἀλίστρεπτος, -ον		✓			'sea-tossed'
ἀλιτενής, -ές		✓			'projecting into the sea'
ἀλιτέρωμον, -ον		✓			'bounded by sea'
ἀλίτης, -ου (ό)	✓				'salted person'
ἀλιτρεφής, -ές		✓			'sea-bred'
ἀλίτροφος, -ον		✓			'sea-nurtured'
ἀλίτροχος, -ον		✓			'rushing through the sea'
ἀλίτρυτος, -ον		✓			'sea-beaten, sea-worn'
ἀλίτυπος, -ον		✓			'sea-beaten'
ἀλίτυπος, -ου (ό)	✓				'seaman, fisherman'
ἀλίτυρος, -ου (ό)	✓				'salted cheese'
ἀλιφθερόω			✓		'shipwreck'
ἀλιφθορία, -ας (ή)	✓				'disaster at sea'
ἀλιφθόρος, -ον		✓			'destroying on sea'
ἀλιφθόρος, -ου (ό)	✓				'pirate'
ἀλιφλοιος, -ου (ό/ή)	✓				'sea-bark'
ἀλίφρων, -ονος		✓			'with a lost, misled spirit'
ἀλμαία, -ας (ή)	✓				'brine'
ἀλμαία, -ων (τά)	✓				'salted provisions'
ἀλμάς, -άδος (ή)	✓				'salted, steeped in brine'
ἀλμάω					'being salty'
ἀλμεύσις, -εως (ή)	✓				'pickling'
ἀλμεντής, -οῦ (ό)	✓				'seller of pickled fruit'
ἀλμεύω			✓		'steep in brine'
ἄλμηη, -ης (ή)	✓				'brine, sea-water, salt incrystation on soil, saltiness, salt soil'
ἀλμήεις, -εσσα, -εν		✓			'salt, briny'
ἀλμήζομαι			✓		'to be made salt'
ἀλμοποσία, -ας (ή)	✓				'brine drinking'
ἀλμοπότις, -ίδος (ή)	✓				'brine drinking'
ἀλμότης, -ητος (ή)	✓				'saltiness'
ἀλμόω			✓		'to make salt'
ἀλμυρίδιον, -ου (τό)	✓				'salted'
ἀλμυρίζω			✓		'to be saltish'
ἀλμυρίς, -ίδος (ή)	✓				'anything salt (salt humour, salt scum, salt soil or land), saltiness'

Terminology of salt in Ancient Greek

ἀλμυρόγεως, -ων	✓				'with salt soil'
ἀλμυρός, -ή, -όν		✓			'salted, briny, bitter, distasteful'
ἀλμυρότης, -ητος (ό)	✓				'saltiness'
ἀλμυρόω			✓		'make salt'
ἀλμυρώδης, -ες		✓			'saltish, impregnated with salt'
ἀλμώδης, -ες		✓			'saltish, impregnated with salt'
ἀλόθεν				✓	'from the sea'
ἀλούθηη, -ης (ή)	✓				'salt-box'
ἀλοπήγιον, -ου (τό)	✓				'salt-works, salt-pit'
ἀλοπηγός, -όν		✓			'one who prepares salt'
ἀλοπώλης, -ου (ό)	✓				'dealer in salt' (m.)
ἀλοπώλια, -ων (τά)	✓				'salt stores'
ἀλοπώλις -ίδος (ή)	✓				'dealer in salt' (f.)
ἀλοσάνθινος, -η, -ον		✓			'prepared with efflorescence of salt'
ἀλόσανθον, -ου (τό)	✓				'efflorescence of salt'
ἀλοσάχνη, -ης (ή)	✓				'sea-foam'
ἀλοτρίβανος, -ου (ό)	✓				'pestle to pound salt'
ἀλοτροφέω			✓		'feed with salt'
ἀλουργής, -ές		✓			'wrought in or by the sea, sea-purple'
ἀλοφόρος, -ου (ό)	✓				'one who conveys with salt'
ἄλς, ἄλός (ό/ή)	✓				'salt, sea'
ἄλυκεία, -ας (ή)	✓				'salting'
ἄλυκίς, -ίδος (ή)	✓				'salt spring, saltiness'
ἄλυκός, -ή, -όν		✓			'salted'
ἄλυκότης, -ητος (ή)	✓				'saltiness'
ἄλυκώδης, -ες		✓			'like salt, saltish'
ἄλωδης, -ες		✓			'like salt'
ἄλώνης, -ου (ό)	✓				'contractor for salt works'
ἄλώνητος, -ον		✓			'bought with salt, slaves-for-salt-barter'
ἄλωρῆται, -ων (αῖ)	✓				'watchers of salt'

-αλ-

	Nouns	Adj.	Verbs	Adv.	Translation
ἀγχίαλος, -ον		✓			'near the sea'
ἀμφίαλος, -ον		✓			'of the two seas'
ἄναλμος, -ον		✓			'not salted'
ἄναλος, -ον		✓			'without salt, not salted'
ἄναλτος, -ον		✓			'not salted'
ἀναξίαλος, -ου (ό)	✓				'lord of the sea, epithet of Poseidon'
ἐξαλμίζω			✓		'deprive of saltiness'
ἐξάλμυρόμαι			✓		'became salt'
ἐξάλμυρος, -ον		✓			'having lost its saltiness'
ἔξαλος, -ον		✓			'out of the sea'
ἔφαλμος, -ον		✓			'stepped in brine, salted'
ἔφαλος, -ον		✓			'on the sea'
καθαλμάω			✓		'become crusted with salt'
καθαλμής, -ές		✓			'salt, saltish'
κάθαλος, -ον		✓			'full of salt, over salted'
νεοαλής, -ές		✓			'freshly salted'
παραλίτης, -ου (ό)	✓				'seaman'
πάραλος, -ον		✓			'by or near the sea'
σύναλμος, -ον		✓			'salted'
σύναλος, -ον		✓			'eating salt with one'
συναλίζω			✓		'eat salt with, eat at the same table with'
ύδραλμη, -ης (ή)	✓				'salt water'
ύφαλμος, -ον		✓			'somewhat salt'
ύφαλμυρίζω			✓		'to be or taste somewhat salt'
ύφάλμυρος, -ον		✓			'somewhat salt'
ύφαλος, -ον		✓			'under the sea'
ύφαλυκός, -ή, -όν		✓			'somewhat salt'

Preliminary conclusions

With no claim to exhaustiveness, the above inventory allows us, however, to draw an image about the prolific term ἄλς, ἄλος with his compounds in ancient Greek. A general overview on the synoptic table suggests a wide semantic spectrum:

- mineral (ἄλς);
- physical world (ἄλις, -ίδος, ἀλμυρότης, -ητος, ἀλυκίς, -ίδος, ἀλυκότης, -ητος)
- salt water, salt soil (ἄλιμα, -ων, ἀλμαία, -ας, ἄλμη, -ης, ἀλμυρόγεως, -ων, ἀλόσανθον, -ου, ἀλοσάχνη, -ης, ἀλυκίς, -ίδος, ἄλς);
- animal world (ἄλιευτικόν, -οῦ, ἀλιάτος, -ου);
- salt exploitation (ἄλή, -ῆς, ἀλοπήγιον, -ου);
- food consumption (ἄλας, -ατος, ἀλάτιον, -ου, ἀλίτυρος, -ου, ἀλμοποσία, -ας, ἀλμοπότις, -ίδος, ἀλμυρόδιον, -ου, ἀλυκεία, -ας and in combination with other substances ἀλέλαιον, -ου, ἀλίκρας, -ατος);
- food preservation (ἄλμαία, -ων, ἀλμάς, -άδος, ἀλμεύσις, -εως, ἀλμευτής, -οῦ)
- social context (ἄλατικόν, -ου);
- occupational denominations (ἄλιεύς, -έως, ἀλιευτής, -οῦ, ἀλίτυπος, -ου, ἀλιφθόρος, -ου, ἀλοπάλης, -ου, ἀλοπάλιμ, -ίδος, ἀλοφόρος, -ου, ἀλώνης, -ου, ἀλωρῆται, -ων);
- law (ἄλατοπωλία, -ας);
- taxes (ἀλικά, -ῶν, ἀλική, -ῆς);
- commerce, barter (ἀλοπάλιμ, -ων, ἀλώνητος, -ον);
- symbolic uses (ἀλία, ἀλίς, -ίδος);
- actions related to salt/sea (ἄλατζω, ἀλιβδύω, ἀλιεύω, ἀλίζω, ἀλιφθεόρω, ἀλμεύω, ἀλμίζομαι, ἀλμόρω, ἀλμυρίζω, ἀλμυρόρω, ἀλοτροφέω, ἐξαλμίζω, ἐξάλμυρόμοιμαι, καθαλμάω, συναλλίζω, ὑφαλμυρίζω);
- various features of salt/sea (ἄλιβαπτος, -ον, ἀλίβρεκτος, -ον, ἀλίβρομος, -ον, ἀλίβρωτος, -ον, ἀλιγείτων, -ον, ἀλιγενής, -ές, ἀλιδινής, -ές, ἀλίδουπος, -ον, ἀλίζωος, -α, -ον, ἀλιηγής, -ές, ἀλιήρης, -ες, ἀλιηγής, -ές, ἀλίκλιντος, -η, -ον, ἀλίκτυπος, -ον, ἀλικύμων, -ον, ἀλιμος, -ον, ἀλιμυρήεις, -εσσα, -εν, ἀλιμυρής, -ές, ἀλινηγής, -ές, ἀλινος, -η, -ον, ἀλιος, -η, -ον, ἀλιοτρεφής, -ές, ἀλίπαστος, -ον, ἀλίπλακτος, -ον, ἀλιπλανής, -ές, ἀλίπλοος, -ον, ἀλίπνοος, -ον, ἀλιπόρος, -ον, ἀλιπόρφυρος, -ον, ἀλιπτοίητος, -ον, ἀλιραγής, -ές, ἀλιμυρήεις, -εσσα, -εν, ἀλιμυρής, -ές, ἀλινηγής, -ές, ἀλινος, -η, -ον, ἀλιος, -η, -ον, ἀλιοτρεφής, -ές, ἀλίπαστος, -ον, ἀλίπλακτος, -ον, ἀλιπλανής, -ές, ἀλίπλοος, -ον, ἀλίπνοος, -ον, ἀλιπόρος, -ον, ἀλιπόρφυρος, -ον, ἀλιπτοίητος, -ον, ἀλιραγής, -ές, ἀλίραντος, -ον, ἀλιρόθιος, -α, -ον, ἀλιρόθιος, -ον, ἀλίρυτος, -ον, ἀλισμάραραγος, -ον, ἀλίσμηκτος, -ον, ἀλίσπαρτος, -ον, ἀλιστέφανος, -ον, ἀλίστονος, -ον, ἀλιστός, -ή, -όν, ἀλίστρεπτος, -ον, ἀλιτενής, -ές, ἀλιτέρωμων, -ον, ἀλιτρεφής, -ές, ἀλίτροφος, -ον, ἀλίτροχος, -ον, ἀλίτρυτος, -ον, ἀλίτυπος, -ον, ἀλιφθόρος, -ον, ἀλίφρων, -ονος, ἀλμήεις, -εσσα, -εν, ἀλμυρός, -ή, -όν, ἀλμυρώδης, -ες, ἀλμώδης, -ες, ἀλοπηγός, -όν, ἀλοσάνθινος, -η, -ον, ἀλουργής, -ές, ἀλυκός, -ή, -όν, ἀλυκώδης, -ες, ἀλώδης, -ες, ἀλώνητος, -ον, ἀγχίαλος, -ον, ἀμφίαλος, -ον, ἄναλμος, -ον, ἄναλος, -ον, ἄναλτος, -ον, ἐξάλμυρος, -ον, ἔξαλος, -ον, ἔφαλμος, -ον, ἔφαλος, -ον, καθαλμής, -ές, κάθαλος, -ον, νεοαλής, -ές, πάραλος, -ον, σύναλμος, -ον, σύναλος, -ον, ὑφαλμος, -ον, ὑφαλος, -ον, ὑφαλυκός, -ή, -όν.

From a morphological perspective, the adjectives dominate, followed by nouns, verbs and adverbs. The analysis of the inventory reveals also a series of: synonyms, such as the epithet of Poseidon, 'lord of the sea' (ἀλικρείων, ἀλιμέδων, ἀναξίαλος), 'seaman, fisher' (ἀλιάδης, ἀλιεύς, ἀλιευτής, ἀλίτυπος, παραλίτης), 'saltiness' (ἀλίς, ἀλμυρίς, ὑφάλμυρος, ὑφαλυκός); diminutives: ἀλμυρίδιον derivative from ἀλμυρίς or ἀλάτιον derivative from ἄλας; or family of words (e.g. ἀλμυρίζω, ἀλμυρός, ἀλμυρώδης, -ες, ἀλμυρότης, -ητος, ἀλμυρός, -ή, -όν, ἀλμυρόγεως, -ων, ἀλμυρίς, -ίδος, ἀλμυρίδιον, -ου).

Most of the occurrences have a positive meaning, however, in the case of the adjective ἀλμυρός, -ή, -όν, besides the basic meaning of 'salted, briny', also appears in a negative context, with the sense 'distasteful'. It is worth mentioning also a metaphorical meaning of two compound lexemes (e.g. ἀλίφρων = 'with a lost, misled spirit' or ἀλία = 'salt-cellar, mark of extreme poverty').

Unlike other fundamental minerals, the lexical reflexes of salt occur abundantly in grammatical categories and semantic fields. The majority of the terms recorded are compounds, which attests, from the lexical point of view, to an inexhaustible combinatorial disposition of the base-etymon, and, from the semantic point of view, the need to convey concretely or figuratively the profound and diverse implications of salt and the sea in the material and spiritual life of the Greeks.

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Dall’“Epiclassico” di Franz Wieacker
al “Esplosione di Tardoantico” di Andrea Giardina

Daniele Vittorio PIACENTE*

Abstract. *The late antiquity in modern historiography has generated two schools of thought: one side is seen as a time of slow transition to the Middle Ages, the other is regarded as a time of crisis and decline. Franz Wieacker spoke of period “epiclassic” and Andrea Giardina has commented the explosive and sudden interest of researchers in the last thirty years.*

Sommario. *Il periodo tardoantico nella storiografia moderna ha generato due scuole di pensiero: da una parte è visto come un’epoca di lenta transizione al medioevo, dall’altra è considerato come un momento di crisi e di declino. Franz Wieacker ha parlato di periodo “epiclassico” e Andrea Giardina ne ha commentato l’esplosivo ed improvviso interesse degli studiosi negli ultimi trent’anni.*

Keywords: late antiquity, epiclassic, Franz Wieacker, Andrea Giardina.

L’analisi delle problematiche storiografiche che riguardano il periodo compreso tra l’avvento di Diocleziano e il VI secolo attraversa l’inserimento del tardoantico all’interno dello sviluppo storico che si ha dall’età antica a quella medievale. La storiografia moderna è divisa in due grossi schieramenti che hanno generato la formazione di diverse scuole di pensiero: da una parte il periodo in questione è visto come un’epoca di lenta transizione al medioevo, dall’altra è considerato come un momento di crisi e di declino.

Franz Wieacker illustra magistralmente “*la fin de la jurisprudence classique apparaît comme une faille profonde et nette dans le profil évolutif du droit romain*”¹; essa, sono sempre parole di Wieacker, sarebbe comparabile ad un’eclissi che avrebbe condotto ad una lunga notte. Dopo Modestino, infatti, mancano altre testimonianze; i giuristi classici — ad esclusione di Celso, Giuliano, Papiniano e Ulpiano — ci sono noti in quanto autori di libri giuridici, come dimostrano la legislazione tardoantica, prima della legge delle citazioni, la dottrina postclassica e Giustiniano: questi ultimi dati documenterebbero che i giuristi di questo

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¹ WIEACKER 1961, 201 ss.

periodo costituirebbero un gruppo ‘canonico’, i *veteres*, i *conditores iuris*, distinto da quello di tutti gli altri giuristi successivi per l’autorità personale dei loro scritti e per l’autorevolezza che i loro nomi esprimono.

Dal punto di vista storico, questa cesura, che si situa intorno al 240 d.C., anno a cui risalgono le ultime informazioni su Modestino, è così netta che sembra presagire una catastrofe della scienza giuridica². Tra essa e la crisi economica, sociale, culturale e politica dell’impero vi sarebbe una stretta relazione. La fine della giurisprudenza non coincide con quella dell’ordinamento giuridico, semmai la prepara, fino alla “distruzione” dell’*ordre juridique* da parte di Costantino. Si è costretti ad ammettere l’esistenza prima della “rivoluzione diocleziana e costantiniana di uno strano iato di cinquant’anni durante i quali la giurisprudenza sarebbe mummificata, pietrificata”. Conseguentemente la maggior parte dei romanisti è obbligata a vedere in questo periodo l’inizio dell’epoca postclassica.

Fin qui la ricostruzione di Wieacker del pensiero della dottrina dominante sull’epoca che ci interessa. Ad essa il Maestro tedesco non intendeva opporre un’altra diametralmente contraria: *natura non facit saltus*, ma dare conto e cercare di spiegare un “fenomeno paradossale”, costituito dal rispetto da parte di Diocleziano e della sua cancelleria per la tradizione giuridica romana, le *romanisme*, contrapposto a l’*hellenisme* e a l’*orientalisme*, in un quadro politico-istituzionale che l’imperatore modifica profondamente. Forse ciò è dovuto, secondo l’autore, alla “latinità provinciale” della patria illirica di Diocleziano. Essa avrebbe provocato le ultime, quasi esplosive, manifestazioni del diritto classico, rappresentate da una serie di rescritti che esprimevano quel diritto, ma non con il vigore di una giurisprudenza specializzata e consapevole di sé, quanto con la violenza di un ‘neo-classicismo, precoce, che non possedeva il “distacco” della vera rinascenza. Anche ad un esame retrospettivo, le rare modificazioni sostanziali dei testi documentati in questo periodo e l’attivismo di Ermogeniano e dell’anonimo autore delle *Pauli Sententiae* ci dicono che il 240 d.C. non fu una ‘frattura’, ma che ci si attenne all’ordine giuridico severiano. Se proprio una cesura vi fu, essa è collocabile tra gli Antonini e i Severi, epoca quest’ultima in cui si modifica sostanzialmente la tipologia della letteratura preesistente e nelle opere giuridiche è più presente la normativa imperiale. Riguardo invece al periodo successivo al 240 d.C., il fenomeno più impressionante non è tanto la fine di una produzione letteraria, quanto il fatto che tutto ciò che viene pubblicato è prevalentemente anonimo³. La domanda fondamentale da porsi è perché dopo Modestino i giuristi cessano di pubblicare sotto il loro nome o pubblicano sotto pseudonimi. La risposta più semplice, continua Wieacker, è che lo farebbero per modestia, non ritenendo degno di attribuire il carattere di opera originale a note o a semplici rimaneggiamenti di opere altrui. Una seconda spiegazione sarebbe nella mancanza nei giuristi di una consapevolezza di sé, del loro valore, soggiogati dalla superiorità intellettuale e dall’autorevolezza canonica dei loro

² Così WIEACKER 1961, 201–202.

³ MASSEI 1961, 15 ss.; GUALANDI 1963, 107 ss.

predecessori. Questa seconda interpretazione implica una canonizzazione della scienza giuridica, databile nel IV secolo d.C.

Secondo Fritz Schulz il cambiamento della scienza giuridica romana dipese dalla tendenza di ogni burocrazia a convertire lo sviluppo del diritto nel monopolio centralizzato in un ufficio, quindi “lo spirito della giurisprudenza non morì, ma migrò in un altro corpo”⁴.

Potrebbe esservi, invece, una spiegazione oggettiva, relativa alla constatazione che l'applicazione e la continuazione del diritto era dovuta al loro lavoro di funzionari della cancelleria imperiale, il che faceva scattare un sentimento di orgoglio connesso all'appartenenza ad organi della pubblica amministrazione.

Tutta la rimanente parte del contributo di Wieacker è dedicata all'analisi dei rescritti imperiali, soprattutto di quelli della cancelleria di Gordiano⁵.

Il Maestro tedesco chiude il suo contributo denominando il periodo storico di cui si è occupato “epiclassico”. Un termine breve, eufonico, e nei fatti in grado di esprimere l'idea che esso è ancora l'ultimo periodo classico, implicante una sfumatura particolare nella relazione temporale, l'essere un'appendice, un epilogo, dopo il quale niente può verificarsi se non del tutto nuovo.

Il grande merito di questo saggio è nell'aver evidenziato, dimostrato e in certi versi confutato, in linea con la History di Schulz⁶, una concezione catastrofistica del diritto e della scienza giuridica dopo Modestino. Alcuni rilievi, tuttavia, appaiono necessari. Innanzitutto, colmare con Valerio Marotta⁷ una piccola lacuna: se è vero che non si registrano più nomi di grandi giuristi, ma l'esistenza di eccellenti funzionari di cancelleria che non avrebbero sfigurato nel confronto con i giuristi loro predecessori, ciò è dovuto alla preparazione di questi ultimi, che non sarebbe stata possibile senza la continuità di strutture educative di alto livello, di scuole di diritto, a Roma come a Berito. In secondo luogo, la diversità tra l'anonimato dei giuristi dal dopo Modestino a Diocleziano e quella, di cui, peraltro, Wieacker non si occupa, che si verifica dopo i primi anni del regno di Costantino. E' probabile che il primo sia dovuto a fattori estrinseci alla volontà dei giuristi: la violenza dei tempi e l'esempio che essi conservavano nella memoria della morte di Ulpiano. Ma senza arrivare a questo, se avevano nel loro bagaglio culturale ‘buone letture’, non potevano dimenticare l'esilio imposto ai giuristi da Claudio e il loro ritorno esitante dopo la morte dell'imperatore, descritto splendidamente da Seneca nell'*Apocolocyntosis*: e si versava sempre in un periodo di torbidi politici⁸.

⁴ SCHULZ 1968, 476 ss., 514 ss.; LOVATO 2014, 175.

⁵ Su questo punto, prezioso il contributo di NICOLETTI 1981 ricco di spunti interessanti.

⁶ SCHULZ, 101 ss.

⁷ MAROTTA 2013.

⁸ Sen., *Apocolocyntosis* 12,2.

D’altra parte, nello stesso periodo di tempo, anche la letteratura latina non giuridica attraversa una fase di anonimato, se si eccettua il nome del poeta Aurelio Olimpio Nemesiano, autore di quattro ecloghe e dei *Cynegetica*, opera dedicata agli imperatori Numeriano e Carino.

Parimenti l’imperatore Costantino propende per l’anonimato, sostanzialmente per tre motivi: per la probabile diffidenza nei confronti di un’attività diretta ad orientare nel particolare del caso concreto, antitetica alla volontà dell’imperatore a utilizzare *leges generales*; in secondo luogo, per la più che probabile contrarietà ad un’attività di interpretazione delle norme che generava *ius controversum*⁹ — si spiega in questo modo la sanzione di invalidità delle note di Paolo e di Ulpiano a Papiniano. Infine, ed è il motivo più importante, per la tendenza alla centralizzazione della produzione di norme giuridiche di carattere generale e dall’interrelazione troppo stretta, ed equivoca, tra scienza giuridica e diritto. Probabilmente s’ingenera nel lettore la convinzione, errata, più che dell’identificazione tra *ius* di creazione imperiale e *scientia iuris*, della paradigmaticità della seconda rispetto al primo. C’è un’espressione che sembra quasi incutere timore ed è l’autonomia del diritto dalla giurisprudenza. E’ ben vero che, a partire dal IV secolo a.C., come afferma Bretone¹⁰, il diritto tende a rappresentarsi come letteratura, ma è altrettanto vero che la letteratura può essere considerata in sé, nella sua tipologia letteraria, nelle sue movenze stilistiche, oppure come ‘fonte di cognizione’ di una norma di differente provenienza e della sua interpretazione, quando esiste (il che accade quasi sempre). Ora la circostanza che una letteratura non propone nomi altisonanti, sia pure per un intervallo di tempo limitato — dal 240 al 284 d.C. — non significa affatto che la progressione evolutiva del diritto sia di minore qualità formale.

Pur con queste osservazioni la categoria di epiclassico è felice, perché sposta in avanti, al periodo costantiniano, il momento di cesura con l’età precedente e l’inizio di una nuova e diversa esperienza giuridica. Ciò è avvenuto soprattutto nell’ambito della storiografia politica: ne è un esempio il titolo di un saggio ricco di spunti di riflessione e di meditati giudizi di Andrea Giardina, pubblicato nella rivista di Studi Storici del 1999¹¹, che riprese una relazione tenuta al convegno di Pavia nel 1997 sul tema ‘Prospettive sul tardoantico’. Il termine tardoantico, come ricorda Giardina, fu adottato dallo storico dell’arte Alois Riegl nel 1901 in un saggio intitolato *Spätrömische Kunstdustrie*¹² per dissolvere il “concetto di decadenza in quello altrettanto ampio di *Kunstwollen*, con la conseguente valutazione dell’arte tardoantica come fase autonoma nella storia dell’arte universale”¹³ proprio mentre esplodeva, mediante

⁹ BRETONE 2008; LOVATO 2007, 540; MAROTTA 2013 , 357 ss.

¹⁰ BRETONE 2013, 184.

¹¹ GIARDINA 1999, 157-180.

¹² RIEGL 1901, 97 ss.

¹³ Così GIARDINA 1999, 157.

l'impiego di una tecnica della dissolvenza incrociata, ‘una retorica della modernità’¹⁴. Se dal piano artistico si passa a quello delle strutture politiche, ci si rende conto della differenza di peso attribuita a queste ultime nella ricerca storiografica, quasi ad enfatizzare una sorta di analogia “con i mutamenti attuali della percezione politica”. Nel mondo antico, insomma, secondo i sostenitori della “concezione dilatata” del periodo, si rintraccerebbero elementi, strutturali e non, che, insieme ad altri, hanno costituito le basi di “irremovibili istituzioni” nella storia europea.

Il concetto di tardoantico, osserva ancora Giardina, si è fondato su basi prevalentemente culturali e si è costruito su presupposti di modernità per una sorta di ragionamento analogico. Ma a differenza da altre ‘riscoperte’ dell’antico, quella che si esprime nella storiografia più recente “finisce quasi per annullare la rottura degli oscuri secoli di mezzo e si pone su un piano di filiazione diretta, mettendo in primo piano l’idea di radice”¹⁵. Dopo aver descritto l’orientamento attuale, quasi ‘codificato’ in opere importanti di Peter Brown¹⁶ che collocavano nell’età antonina l’inizio del tardoantico per diverse ragioni, soprattutto di ordine sociale e spirituale¹⁷, quasi a scompaginare, in una sorta di ‘guerilla’ concezioni consolidate, Giardina sposta l’analisi sul piano di una critica meditata degli orientamenti pressoché contemporanei negli studi storici in tema di periodizzazione, ponendo giustamente l’accento sull’elefantiasi che si produrrebbe nella ricerca in conseguenza di una dilatazione esagerata dei confini temporali del tardoantico, e che condurrebbe inevitabilmente, se non alla dissoluzione, alla perdita di valore significante ed euristico della periodizzazione stessa e del carattere ‘irripetibile’ che l’accompagna.

‘L’elefantiasi del tardoantico’, scrive Andrea Giardina¹⁸, “si è manifestata entro la crisi del concetto di Medioevo; il tardoantico è venuto infatti ad occupare lo spazio riservato all’alto Medioevo...per un’acuta percezione delle articolazioni interne all’età medievale.... L’insistenza sulla modernità del tardoantico e la sua dilatazione cronologica da un lato, la de-medievizzazione di molti secoli del Medioevo dall’altra, finiscono quasi per connettere direttamente il tardoantico alla modernità”.

L’opposta tendenza, di dilatare il più possibile il Medioevo¹⁹, più che una reazione all’espansione del tardoantico rappresenta un ‘coerente svolgimento’ di essa²⁰. Ha ragione

¹⁴ Questa splendida espressione che riassume il passaggio di considerazione tra secoli di storia, come il sintagma successivo sono di GIARDINA 1999, 159.

¹⁵ GIARDINA 1999, 162; in questa pagina Giardina critica il concetto di radice da più punti di vista, primo fra tutti quello di stabilire una gerarchia degli oggetti storiografici.

¹⁶ BROWN 1978.

¹⁷ Si pensi soprattutto alla fine dell’autonomia cittadina (per utilizzare il titolo di un libro fondamentale di GRELLA 1972 codificata da Adriano nell’*Oratio de italicensibus* e all’influenza del cristianesimo.

¹⁸ GIARDINA 1999, 168.

¹⁹ Il passaggio al Medioevo è un processo storico-sociale, e in quanto tale continuo e con caratteristiche non sempre individuabili in dettaglio, pertanto i pareri sull’inizio e sulla fine del Medioevo sono discordanti: la data

Giardina a ritenere che tratteggiata in tal modo la storia tardoantica non si avvale di strumenti di periodizzazione contenenti un minimo di arbitrarietà, ma è l'espressione di una ideale torre di Babele, che finisce per annullare le peculiarità di determinati segmenti storici.

In seguito a queste ed ad altre riflessioni Andrea Giardina, ragionevolmente, stabilisce per il tardoantico un periodo di tempo compreso all'incirca fra il 284 e 455 d.C., con una espansione significativa, e finale, forse verso il VI secolo d.C.²¹.

I contributi di cui abbiamo dato brevemente conto su questo dibattito sono volutamente limitati, nella misura in cui mancano ‘voci’ molto importanti, non solo sul ‘versante’ italiano — si pensi soprattutto ad Arnaldo Momigliano su Ammiano Marcellino e Cassiodoro²² —, ma anche su quello francese ed anglo americano. Come ha osservato Glen Bowersock²³, ciò implica una concezione generale dello sviluppo storico, per la maggior parte dei casi lineare, che registra ai limiti estremi di una periodizzazione, ma forse anche al suo interno, momenti di cesura e di continuità, e per il valore euristico e non significante di una delimitazione per periodi. Pur nella sua arbitrarietà, una scansione per periodi costituisce pur sempre, come suggerisce Bowersock citando Burckhardt²⁴, ‘una necessità per offrire utili indicazioni’.

convenzionalmente più usata è il 476, con la deposizione dell'ultimo imperatore romano Romolo Augustolo e la conseguente fine dell'Impero romano d'occidente; è altresì utilizzata la data del 410, anno del Sacco di Roma o, più genericamente, si fa riferimento alla fine della tarda antichità (seconda metà del VI secolo). Alcuni storici indicano come inizio del Medioevo la fine dell'unità cristiana d'Europa, cioè l'arrivo degli Arabi e la loro conquista (VII secolo); altri la calata dei Longobardi e l'effettiva fine dei domini imperiali in occidente nel 568; altri propendono per l'inizio del medioevo dalla morte dell'imperatore d'Oriente Eraclio nel 641; altri ancora indicano la data dell'incoronazione di Carlo Magno, avvenuta nell'800; alcuni studiosi inglesi fissano l'inizio del Medioevo nell'anno mille, visto che intorno a tale data la società europea cominciò a dare segni di rinascita in tutti i campi ed etichettano l'epoca che va dalla fine dell'impero romano d'occidente all'anno mille come “secoli bui”. La conclusione dell'età medievale ha date diverse da paese a paese, corrispondenti alla nascita delle rispettive monarchie nazionali e al periodo rinascimentale: le più comunemente utilizzate sono il 1396, coincidente all'incirca con l'avvento della lingua fiorentina come lingua nazionale, grazie alle opere letterarie di Dante, Petrarca e Boccaccio; il 1453, anno che segna la fine della guerra dei cent'anni tra Inghilterra e Francia, la presa di Costantinopoli da parte dei Turchi Ottomani e la comparsa del primo libro a stampa, cioè la Bibbia di Gutenberg; la caduta di Costantinopoli avrebbe portato la società europea a cercare nuove vie per l'oriente, visto che il Bosforo e il levante erano sotto dominio turco; il 1492, coincidente con la conquista del Sultanato di Granada, ultimo baluardo islamico in Spagna e la scoperta delle Americhe da parte del genovese Cristoforo Colombo; il 1517, anno in cui Martin Lutero diede avvio alla Riforma protestante. Secondo l'impostazione della storiografia marxista il Medioevo si concluderebbe con la fine del feudalesimo e l'avvento dell'industrializzazione nel XVIII secolo.

²⁰ Sia pure in modo limitato, la tarda antichità, considerata come sottoperiodo del Medioevo, andrebbe dal III al X secolo d.C.; LE GOFF 1991, 12.

²¹ GIARDINA 1999, 180.

²² Di specifico interesse l'articolo di MARCONE 2002, 291 ss.

²³ BOWERSOCK 2004, 7.

²⁴ BURCKHARDT 1982, 97.

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“Classicism for all”: another way of disseminating antiquity — the artistic movie

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Abstract. *For centuries, the role of the humanistic studies and of the classical heritage has been regarded as central and irreplaceable. Over the past decades, however, changes have occurred in various sectors, including science and education, which is why classics are facing many difficulties. This paper aims to present a new initiative which attempts to overcome the classical education crisis and capture the interest for classical Antiquity, opportunity offered by cinematic depictions.*

Rezumat. *Timp de secole, rolul studiilor umaniste și al patrimoniului clasic a fost considerat fundamental și de neînlocuit. În ultimele decenii însă au avut loc modificări în diferite sectoare, inclusiv știință și educație, motiv pentru care clasicii se confruntă cu numeroase dificultăți. Lucrarea de față își propune să prezinte o inițiativă nouă prin care se încearcă depășirea crizei educației clasice și captarea interesului pentru Antichitatea clasică, oportunitatea oferită de reprezentările cinematografice.*

Keywords: classical world, popular culture, cinematography, receiving Antiquity, film.

Motion pictures are so much a part of our lives that it's hard to imagine a world without them. For more than 100 years, people have been trying to understand why this medium has so captivated us. Movies communicate information and ideas, and they show us places and ways of life we might not otherwise know. They offer us new ways of seeing and feeling, engaging our minds and emotions², despite the beliefs of Louis Lumière, that the cinema is an invention without a future³.

Film is a young medium, at least compared to most other media. Painting, literature, dance, and theatre have existed for thousands of years, but film came into existence only a little more than a century ago. There is a widespread assumption that the longer something has been studied, the less there is to discover or say about it. This vision is understandable, but misconceived. New knowledge becomes available to us all the time, new texts, artefacts, buildings, and sometimes entire ancient cities are brought to light by increasingly sophisticated archaeological techniques; and, most importantly of all, our own modern

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² BORDWELL, THOMPSON 1979, 2.

³ MONACO 2000, 38.

concerns shed light on areas forgotten or differently understood by previous generations, such as sexuality, ethnicity and religion⁴.

The purpose of this paper is to show a new way of perceiving Antiquity, namely the artistic movie. By their very success, these films managed to arise several questions: can films set in antiquity help classicists in their teaching? Can they expand the knowledge of the ancient world? Can they help resolve the opposition between scholarly research and popular culture? Most importantly, can films about the past elucidate our own society's present desires, concerns, and fears?⁵

Today more than ever, popular images and stories projected onto movie, television, and computer screens invite us to experience, understand, and connect to the ancient world. Films about antiquity bridge the gap between that past and the present by offering spectacular and compelling interpretations of history, literature, and mythology that are relevant and educational for contemporary viewers⁶.

Cinematography represents a new form of receiving antiquity, significantly better than theatre in creating “the experience of spectatorship”⁷ and in responding to the demands of a “post-literary world”, captivated by digital technology and by electronic means⁸. It is the art that possess the greatest capacity to transmit, to simultaneously explore what areas such as music, painting or sculpture can provide. This is accomplished independently from their models, from what is mandatory and what is allowed. Proof of its visual power is the tendency to create mirror images, *topos* or archetypes⁹ in the collective consciousness¹⁰, which involves some risks in the terms of cultural channel used. It creates profound characters with a deep substrate. They are marked by features that dominate them entirely, and which may be final with a simple adjective: villains, heroes, liars, comrades, traitors etc.

Awareness of the importance of popular culture, both ancient and modern, for all of culture, society, and the arts help us bridge the gap between antiquity and today. Moreover, approaching common cultural history in this way, we may throw new light on both the past and the present. It can illumine the present by revealing the influence of the past even where it may not have been suspected to exist, just as we may illumine the past by examining it from our modern vantage point. Martin M. Winkler, professor at George Mason University in Washington consider that in order to do this sensibly and successfully, both sides must be approached fairly and equally¹¹.

⁴ LOWE, SHAHABUDIN 2009, 7.

⁵ CYRINO 2005, 2.

⁶ CYRINO 2005,1.

⁷ POTTER 2012.

⁸ JUNKELMANN 2004.

⁹ MARCHENA, 29/ 2, 2007, 173–187.

¹⁰ IGOR 2006, 1, 99–102.

¹¹ WINKLER 2001, 4.

Classical studies represent a versatile academic discipline, capable of combining methods established long ago with modern epistemological approaches to ancient cultures and their traditions. Recently, this direction has benefited from an increased interest. In colleges and universities, mythology, classic civilization or literature courses include film projections more and more often. In a period when humanities in general and classical antiquity in particular no longer represent the foundation of Western education, the use of films within a traditional and mainly non-visual curriculum can provide an excellent means of keeping Greece and Rome in the centre of interest¹². Hence, among such courses and seminars, we mention the course initiated in 2005 at the University of Heidelberg and materialized in the volume *Hellas on Screen: Cinematic Receptions of Ancient History, Literature and Myth* emerged in 2008 at Stuttgart; the seminar *Cinema and the Ancient World* held for several years at the Department of Classics within The University of North Carolina at Chapel Hill; the course *Big Screen Rome* held in 2000 at The New Mexico University by Monica Cyrino and concretized in 2005 in the volume with the same title, or most recent courses such as the one from Western Ontario University, Canada, entitled *Ancient Greece in Film*, or *Cine y Mundo Antiguo* from Universidad de Granada, the course held by Prof. Krešimir Matijević of the University of Trier, *Alte Geschichte im Film*, etc.

The films that reconstitute the Antiquity period can be extremely useful in demonstrating the difference between how life really was in those times and how it could have been or we wish it had been. Of course, we are the ones required to have the ability of pinpointing and neutralizing the stereotypes and anachronisms present on the small screen, in order to take advantage of this opportunity. In this sense, we find representative the words of Anthony Man, the director of two extremely well done and historically accurate films (*El Cid*, 1961; *The Fall of the Roman Empire*, 1964): *if everything is historical, then you don't have liberty... inaccuracies from a historical point of view... are not important*¹³. He considered that film could create an emotional closeness to historical reality, a certain affinity, the so-called “feeling of history”, but also another manner of receiving history.

The past thirty years have seen a growing scholarly interest in examining films with a classical focus, movement initiated by Jon Solomon's 1978 study *The Ancient World in Cinema*, followed by that of Marianne McDonald, *Euripides in Cinema: The Heart Made Visible* (1983) and that of Kenneth McKinnon, *Greek Tragedy into Film* (Rutherford, 1986). This trend gained momentum in the 1990s with the publication of Martin Winkler's *Classics and Cinema* (1991) and Maria Wyke's *Projecting the Past* (1997). Since then, a steady stream of books and articles on classics in the cinema has appeared¹⁴, along with an increasing number of panels on this

¹² WINKLER 2001, 5.

¹³ ROSENSTONE 1995.

¹⁴ Encyclopaedias – see DiMARE 2011, authored books (see, for example, PAUL 2013), collections of studies (see, for example, RAW, TUTAN 2013; KNIPPSCHILD, MORCILLO 2013). We note, also in this context, several magazines

topic at academic conferences¹⁵. Also, were conducted thematic issues of journals¹⁶, as well as numerous private contributions¹⁷ and electronic journals: *Roda da Fortuna – Electronic Journal about Antiquity and Middle Ages*.

Classical themes have enjoyed a corresponding revival of popularity at the box office, touched off by the success of Ridley Scott's *Gladiator* in 2000. On the small screen followed a series of films like *Quo Vadis* (Jerzy Kawalerowicz, 2001), *Asterix and Obelix Meet Cleopatra* (Alain Chabat, 2002), *Helen of Troy* (John Kent Harison, 2003), *Imperium: Augustus* (Roger Young, 2003). The success of *Gladiator* and his influence on big and small screen productions have energized the critical study of classical antiquity and visual media, while providing classicists with new material for analysis. However, only starting with 2004 can be found movies with famous titles, dealing a variety of themes, with a great budget and who enjoyed a tremendous audience: *Troy* (Wolfgang Peterson, 2004), *The Passion of the Christ* (Mel Gibson, 2004), *King Arthur* (Antoine Fuqua, 2004), *Alexander* (Oliver Stone, 2005), *300* (Zack Snyder, 2006), serial dramas such as HBO's *Rome* (2005–07), *Spartacus: War of the Damned* (Steven S. DeKnight, 2010–2013) etc.

These movie titles include items that redefined antique world in the new century cinema, strengthening it and leading it towards new ways¹⁸:

- New IT technologies used in order to recreate large parts of the ancient world (places, battles), which act as incentives in the context of the recurrence of a certain fascination for the ancient world: *The Gladiator*, *Troy*, *Alexander the Great*, *Agora*;
- The spectacular genre called “Blood and Sand”, a new phenomenon linked mainly to Frank Miller's comics adaptation, in 2006, in the movie *300*, specifically his vision on the Battle

dedicated to ancient culture receptions, among which those initiated by Lorna Hardwick from The Open University, Milton Keynes, where is professor and director of the project *Classical Receptions in Late Twentieth-Century Drama and Poetry in English: New Voices in Classical Reception Studies*, whose first issue appeared in 2006, *Practitioners' Voices in Classical Reception Studies*, whose debut took place in November 2007, and *Classical Receptions Journal*, initiated in May 2009, that aims to “cover all aspects of reception the texts and materials from the ancient Greek and Rome culture from antiquity until nowadays.”

¹⁵ Debates regarding classics and film have taken place regularly since 2000. For example The Classical Association of the Middle West and South held in 2000 the conference „Classical Tradition in Film”, „Gladiator as Visual Text and Intertext” (2002), “Classical Tradition in Stage and Film” (2003), “New Perspectives on Classics and Cinema” (2006). Other colloquiums and conferences: Pepa Castillo, Silke Knippschild, Marta García Morcillo, Carmen Herreros (eds.), „Congreso Internacional: Imagines: La Antigüedad en las Artes Escénicas y Visuales” / “International Conference: Imagines: the reception of antiquity in performing and visual arts”. Logroño 22-24 de octubre de 2007, Universidad de La Rioja, Logroño, 2008.

¹⁶ For example, *Arethusa*, 41/1, 2008: Celluloid Classics: New Perspectives on Classical Antiquity in Modern Cinema, electronic journals, *Historias del Orbis Terrarum. Estudios Classics, Medievales, Arabes y Byzantine*. 08, Santiago, 2012, *Auctores Nostri*, Foggia, 10, 2012: Cristianesimo e Cinema.

¹⁷ See, for example, Óscar Lapeña Marchena, *La imagen del mundo en el antiguo y en el opera y en el cine. Continuidad y Divergencia* in *Veleia: Revista de prehistoria, historia antigua, arqueología y filología clásicas*, 21/2004, p. 201–215.

¹⁸ LAZANO 2012, 43.

of Thermopylae. The warrior striking facet that overlaps other historical issues is a format that has been proliferated, especially, in recent years. As an example we have the series *Spartacus: Blood and Sand* (2010-2011) and *The Clash of the Titans* (2010), in which the antique context is a simple background or rather a mere excuse for an intense portrayal of violent or erotic events.

– The new *peplum* genre orientation towards the French American co-productions: *The Last Legion* (2007), *Centurion* (2010), *The Eagle* (2011) in which the view of ancient world is centred towards the Roman presence in Britain and it focuses on addressing issues who were considered until recently marginal for the *peplum* genre: language differences, acculturation, lower social classes.

This new orientation comes with a more complete vision of the ancient world which is influenced by academic studies when making a film production but, keeps in touch with “the warriors” (old characters of the *peplum* genre), and re-analyses them in the light of a different optic which deepens the complexity of different facets of the film’s subject, the cultural context of the time etc.

Presently, the study of classical antiquity representations in popular culture has become a powerful sub-domain of classicism and it has been increasingly acknowledged as a legitimate means of exploring our past in relation with the present. For many classicists, the manner of corrupting classical material in order to use it in a new, modern fashion is a sensitive topic: adapting old stories, myths, presenting an imprecise history – modern classicists watch with terror these liberties taken by popular culture concerning ancient materials¹⁹. The renaissance of the epic genre in the contemporary era, a period marked by growing ethnic and religious conflicts is a subject of critical analysis particularly convincing, inviting to reconsideration and comprehensive review of this kind of films from a variety of perspectives.

Filmmakers modify ancient myths, by adapting them to the new ideologies and political contexts. Therefore, the antiquity-inspired film is a historical source for the contemporary period; however, it is primarily an artistic creation seeking to transmit a message— more or less explicitly—specific to the era in question. Such an example is provided by films included in the categories of *sandaloni* or *sandal-and-sword epic* and *peplum* (this term is a synonym of great spectacle). This type of film was very popular in the 50s and 60s, because it evoked “the great depression” of 1932–1935²⁰ and it proposed a model of character opposed to the one of American films, which praised the superhero, the American buffed, powerful, athletic playboy, such as the ’60 *Spartacus* in the film by Stanley Kubrick or the Spartans in *The 300 Spartans* (1962; director: Rudolph Maté).²¹

¹⁹ DAY 2008, 3.

²⁰ MALAMUD 2008, 157–183.

²¹ NEALE 1996, 9–20. However, the phenomenon is present today in cinematography. See COMBE, BOYLE 2013, 73–120.

The *peplum* has often been criticized for focusing on the spectacle to the detriment of historical reality. In the history of Antiquity, filmmakers have found an entire series of perfect screenplays for cinema. The texts of Greek and Latin historians, the mythology and, most of all, the Bible provide—in the words of Ricardo Freda—*numerous possibilities and passion-filled scripts*²². Furthermore, numerous situations can be dramatized, such as wars, gladiators’ fights, triumphal entries, etc. To this end, costumes, settings, landscapes, academic painting, ruins and expert advice are used; all of them provide to filmmakers the image of antiquity that they are bound to reconstitute.

Irrespective of the filmmaker’s intention and of the cinematographic quality of a film, screenwriters are always influenced by the ancient authors’ view of the period and by their own representations, as the latter are the product of the society to which the screenwriters pertain.

Therefore, like all so-called historical films, *peplum* reveals certain preoccupations that go way beyond the temporal interval represented on screen. In this sense, it is worth mentioning novels adapted to cinematography, such as the 1951 *Quo Vadis?*, directed by Mervyn Le Roy, after a novel by Henryk Sienkiewicz; this film shows a glimpse of the cruelty of a Roman emperor and its plot suggests the last conflict of the Americans with the European dictators, as well as the social and political preoccupations entailed by the anti-communist crusade of the USA. It is also worth mentioning the 1959 *Ben-Hur* (inspired from the novel with the same name and including the subtitle *A Story of Christ*, by Lew Wallace, directed by William Wyler). In this film, the cinematographic view of the Romans is marked by the historical context of the 50s: there is a clear reference to the conflict between the defenders of freedom and the Soviet totalitarian system; there are also hints to German occupation. Another novel included in the same context is *Spartacus* by Howard Fast, adapted to cinematography in 1960, directed by Stanley Kubrick; it evokes, among others, the fight against racial discrimination of black people²³. There are such subtle messages in cinematographic productions of a more recent date. The first is *Alexander* (1956, directed by Robert Rossen; 2004, directed by Oliver Stone), where the Macedonian king is depicted as a liberal heroic model, disseminator of Occidental culture, but also an admirer of Oriental civilization²⁴. The second is *Gladiator* (2000, directed by Ridley Scott), which suggests a leader with irreproachable conduct and republican views²⁵, and a successful provincial, endowed with exceptional virtues²⁶; the spectacle is used as an instrument of power²⁷. The third is *Troy* (2004, directed by Wolfgang Peterson) and the fourth

²² AZIZA 1998, 56–62.

²³ WINKLER 2007, 154–188.

²⁴ WIEBER 2008, 21–38; POMERY 2008, 95–111.

²⁵ ALBU 2008, 185–204.

²⁶ ARENAS 2001, 1–13.

²⁷ *Colosseum* in the context of Rome is seen as a political metaphor for America.

is 300 (2007 dramatization by Zack Snyder) — all provide a new view of Roman and Greek heroes and of their world, a view which meets to a larger extent the expectations of contemporary public, open to creating connections between ancient examples and present realities (e.g., the war between the West and the Eastern, Muslim world²⁸; the war of the West against the arbitrariness of one person, against Eastern monstrosity, obscurantism and fanaticism²⁹, against disguised American hegemony and the rapport between democracy and war³⁰). *Agora* (2009, directed by Alejandro Amenabar) refers to the brutal and arbitrary way in which Christianity was imposed in Alexandria.

Cinematography is the one that puts you in front of historical events, almost without mediation. No other art has been able to equally record the major and minor seizures and conversions that mankind has suffered throughout the time, or for that matter the people in a century of history. *Taking any film from the past — from yesterday, the day before yesterday or from the very beginning of cinema — it will provide beyond the story, the cinematographic current, the genre and the genius of the man who signed the screenplay, the micro-history of a gesture, of a way, of a trend, as well as different ways in which those people wanted to be seen. Movies are not only fiction, although they can be seen only so; they are, in a sense somewhat absurd, living mirrors of their passage through life, preserved on celluloid*³¹.

In *Tropics of Discourse*, Hayden White argues that history in itself “is a kind of art”, where “the historian is not only an intermediary between the past and the present, he also has the special task of bringing together two ways of understanding the world, who would normally be separated”³².

White’s observations also apply to film directors who rely on events or historical figures, such as Cecil B. DeMille with his *Sign of the Cross* (1932), *Cleopatra* from 1934 (as well as Joseph Mankiewicz’s version from 1963 with the same name), *Spartacus* or, more recently, *300* (Zack Snyder, 2007). The representations of ancient Rome are often presented in terms of Christianity beliefs or through outdated frameworks that focus on modern notions of romance and therefore giving an inauthentic view of what the ancient world was truly like³³.

As Sandra Joseph, Margaret Malamud and Maria Wyke argue in the introduction of *Imperial Projections*, “the films that are based on classical antiquity should not be judged by the ways in which they are successful in portraying a real text or past events; rather, they must be seen as complex and rich dialogues with the past and their value lies precisely in how the past is reformulated in light of the present”³⁴. By drawing attention to the way in which

²⁸ See PAGDEN 2009, cap. 1. *Una inimicizia perenne*.

²⁹ See LEVENE 2007, 383–404; PORMANN 2009, 197–233.

³⁰ STRAUS 2001, 57–84.

³¹ ȘERBAN 2012, 76.

³² WHITE 1978, 27–28.

³³ DAY 2008, 4.

³⁴ JOSHEL, MALAMUD, MCGUYRE Jr. 2001, 2.

contemporary films change, adapt or distort traditional materials, scholars can help the public in becoming better informed about the antiquity and at the same time, the analysis of ideological impulses that lead to distortions of antiquity in the film can help in reaching a better understanding of both our society and of the way in which both men and women in antiquity had to face their own ideological context.

Besides, whether we like it or not, representations of classical antiquity on television and in movies are often the primary mean by which the public becomes acquainted with the ancient world and the main instrument through which we learn about Greek and Roman civilization.

Experts and scholars believe that is both in our interest and in that of our field to address how these modern representations relate to ancient material. Cinematic depictions may tell more about the present than they do about antiquity, their engagement with the past is very important, these productions tell us much about how and why modern audiences connect with the ancient world. As Joshel, Malamud, and Wyke note: *by displacing contemporary concerns into a recognizable and familiar past... popular representations allow audiences simultaneously to distance themselves from the past and to identify with it*³⁵.

Through an understanding of why the past continues to inform twenty-first-century popular culture, teachers and specialists can make the ancient world more immediate and relevant to today's student. Conversely, the critique of popular representations of antiquity compels the classicists to engage more with contemporary historical, political, and social concerns and to explore the ways in which the classical past continues to be culturally significant.

Thus, the subject of classics in popular culture has a special significance in this time of history. The abundance of recent publications attests scientific interest in this topic, and the popularity that classics film courses enjoy among students suggests that they have their well-earned place in education. The continuous analysis of classical antiquity has extended the films considered relevant for this type of examination, and suggested connections between cinematographic representations and other fields, such as architecture, historical novels and fashion.

It also expanded the methodological tools used by scientists in these investigations. Initially, the classics' considerations focused on explicit representations of history and Greco-Roman mythology, making the transition from low-budget films such as Italian sword and sandal ones from the late '50s and early '60s, like *Hercules* and its sequels, to the big-budget historical fiction or fantasy films such as *Quo Vadis*, *Ben Hur* and *Clash of the Titans* (1981). Gradually, their focus has expanded also on films that have fewer connections with the ancient world. As the field of classical antiquity gained a foothold in popular culture, the field

³⁵ DAY 2008, 4.

of these investigations and approaches made by scientists became more varied and sophisticated, incorporating film and gender theory, psychoanalytic and feminist approaches in addition to the historical and literary analysis used in previous studies.

Until recently, the main focus in the field of film classics was directed towards Rome; apart from the recently published work of Gideon Nisbet, *Ancient Greece in Film and Popular Culture* (2006) most of the volumes focus solely on Roman history: Joshel, Malamud and McGuire (2001), Maria Wyke (1997), Martin M. Winkler (2004), Monica Cyrino (2005) and Martin Winkler (2007).

This tendency towards Rome comes, in part, from the fact that the ancient Roman amphitheatre is a version of the American cinema—the games and shows presented in the amphitheatre function as a metaphor for watching movies in the theatre—while Greece does not provide such parallelism. At the same time, the inclination to Roman history in particular, comes from the analogy between the ideals of young citizens of America with those of the Roman republic and provides a useful parallel between the atrocities and excesses of the Roman Empire and the view that American culture is facing a high growth of corruption³⁶.

The film comes and strengthens popular ideas about the ancient world. Repeatedly Rome was chosen over Greece or Greek stories were often modified, disguised as Roman novels. At first glance, it would seem that Hollywood has a problem with Greece. Gideon Nisbet suggests in his book that Hollywood's problem is part of a set of anxieties regarding reception; it reflects an uncertainty over how the Greek ideas should be implemented³⁷.

The production of films that depict historical events from Greece, as stated above, is considered to be lower than the number of movies about Rome, but both share a number of characteristics. As in the case of Rome's history, we are able to see only small parts of Greece's past in cinema. The films that have as an inspiration source Greek history tend to draw from a limited series of events and stories, Alexander the Great and the Persian wars are those found in the greatest extent.

The historical reading of the film, doubled by a cinematographic reading of history, incidentally invites you to assess—often in a corrective and stimulating manner—its main protagonists. I refer here to the “great people” (Alexander, Cesar, Augustus), the less loved historical characters (Xerxes, Nero, Attila), the bearers of ideological flags (Moses, Leonidas, Spartacus, Vercingetorix, Arminius), the Sunday school view (Bible as seen by Hollywood), the sexist manners (Cleopatra, Messalina, Theodora), the victimization (Hypatia), etc.

Therefore, the representation of antiquity through cinematography offers a triple history lesson³⁸. We can decipher the past—at least partially—from the following perspectives: the past told by ancient people, the past as it is known in the present and the present reflected in

³⁶ DAY 2008, 4.

³⁷ NISBET 2005, XIV.

³⁸ DUMONT 2013, XV.

this representation of the past. In parallel, the juxtaposition of cinematographic productions since 1895 to present highlights the history of the century through the eyes of the seventh art, through its technological evolution, through the dangers associated to its productions, through its behind-the-scenes policies and to its aesthetic nuances.

In conclusion, we can posit that artistic film plays an important role within the studies of classic antiquity reception. For this reason, specialists believe that more attention should be paid to this branch and that more debates should be organized to explore the relation between cinematography and antiquity.

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AUGUSTO, *Res gestae. I miei atti*,
a cura di Patrizia Arena, Edipuglia, Bari, 2014, 187 p.
(*Documenti e studi* 58), ISBN 978-88-7228-737-8

I duemila anni dalla morte di Augusto celebrati nel 2014 hanno portato a una proliferazione di studi dedicati al principe, in parallelo con la riedizione in molti spazi storiografici della nota epigrafe *Res gestae divi Augusti*. Tra queste ultime c'è anche quella ad opera di Patrizia Arena, pubblicata in *Documenti e studi*, collana del Dipartimento di Scienze dell'Antichità e del Tardoantico dell'Università di Bari Aldo Moro – sezione storica. L'edizione comprende i seguenti capitoli: *Introduzione*, p. 5–6; I. *Le iscrizioni* (p. 9–17), con gli sottocapitoli: 1. *Roma* (p. 9–11), 2. *Ankara* (p. 11–12), 3. *Antiochia* (p. 12–13), 4. *Apollonia* (p. 13), 4. *Sardi* (p. 14), 6. *La trasmisione del testo* (p. 14–15), 7. *Le edizioni recenti* (p. 15–17); II. *Res gestae*, p. 19–117; III. *L'opera* (p. 119–139), con i sottocapitoli 1. *L'autore* (p. 119), 2. *Il titolo* (p. 120), 3. *La data di composizione* (p. 120–122), 4. *L'autobiografia di Augusto e le Res gestae* (p. 122–126), 5. *La struttura del testo* (p. 126–132), 6. *Significato e destinazione del testo* (p. 132–137), 7. *La rappresentazione dei poteri del princeps* (p. 137–139); *Bibliografia* (p. 141–154); *Tavole cronologiche* (p. 155–161); *Tavole iconografiche* (p. 163–186).

La realizzazione di un'edizione di questa famosa iscrizione, sulla quale si sono pronunciati grandi epigrafisti e storici dell'Antichità e che suscita ancora numerose interpretazioni, non è proprio facile. La curatrice dell'edizione ha fatto fronte onorevolmente a questa sfida. La studiosa conosce molto bene il contenuto del testo augusteo, che commenta, come è normale, attingendo alle informazioni estratte da altre fonti contemporanee o più tarde di stampo letterario, epigrafico, numismatico (si veda soprattutto p. 106, commento a **34.1**), monumentale, iconografico ecc. Allo stesso tempo, è al corrente delle più recenti scoperte di frammenti in latino (*Antiochia Pisidiae*) oppure in greco (*Sardi dell'Asia*) di questa epigrafe, che hanno migliorato alcune lezioni controversi (si vedano soprattutto le pp. 106–108, commento a **34.1**). Il suo commento è molto denso, ma chiaro, oggettivo, ricco di spunti sui quali sono state formulate opinioni diverse, a volte divergenti. Le idee espresse sia nelle pagine dedicate all'analisi condotta paragrafo per paragrafo delle *Res gestae*, ma anche nel capitolo *L'opera* (p. 119–139) concordano con quelle di altri specialisti. La bibliografia comprende, insieme a lavori più antichi ma indispensabili, contributi molto recenti, a riprova del fatto che la studiosa segue da vicino il progresso delle ricerche dell'iscrizione edita, ma anche dell'epoca di Augusto e del primo impero in generale¹. Ne risulta un'edizione riuscita, che risponde

¹ Per il commento di **31.1**, forse le sarebbe stato utile l'articolo di Nicola Biffi, *L'ambascieria indiana ad Augusto del 20 a.C.*, in *InvLuc*, 26, 2004, pp. 33–55.

all'obiettivo che si è prefissata — “la migliore fruibilità di un'opera fondamentale per lo studio del Principato” (p. 5).

Ciò nonostante, non ci possiamo esimere dal fare alcune osservazioni. Mancano infatti le precisazioni riguardanti i principi che hanno guidato la realizzazione dell'edizione, in primo luogo il trattamento del testo latino e di quello greco. A p. 5 si legge che “il testo latino e quello greco sono stati *ricostruiti* sulla base delle recenti edizioni di J. Scheid (2007), di A. Cooley (2009), di A. Mitchell-D. French (2012)” (sott. n.). Si intende dunque che il testo dell'epigrafe nella forma della presente edizione è in realtà una *creazione* di Patrizia Arena. Come si potrebbe verificare quanto esso debba alle edizioni di partenza? Di conseguenza, ci voleva il *lemma* che esplicitasse questo aspetto. La curatrice ha scelto una formula di edizione originale: il testo latino, la traduzione italiana, il testo greco affiancati in quest'ordine. Così il lettore può facilmente paragonare i testi nelle tre lingue. Eppure, la variante greca presenta numerose sfumature, perifrasi, adattamenti, calchi, interpretazioni, differenze notevoli ecc., con implicazioni particolari su molteplici aspetti — lo statuto culturale e politico del traduttore, i messaggi, il pubblico, la maniera di intendere le istituzioni romane e il vocabolario specifico nell'ambiente ellenofono ecc. Non sarebbe stata più opportuna una traduzione separata del testo greco, come ha fatto A. Cooley? Ma anche in mancanza di questa, il commento avrebbe dovuto offrire spiegazioni laddove proprio gli aspetti in questione lo imponevano; invece, queste sono assai scarse — si vedano le pp. 43 (commento a 9.1), 45 (commento a 10.1), 64 (commento a 18), 76 (commento a 22.2), 106–107 (commento a 34.1).

Per quanto riguarda il titolo, Patrizia Arena ha cercato di convincerci del perché abbia scelto la traduzione *I miei atti* (si vedano le pp. 6–8). È una scelta che rispettiamo ma che non possiamo condividere. Come gli esegeti hanno dimostrato, e l'editrice è completamente d'accordo con loro (si veda p. 120), è poco probabile che il testo augusteo abbia mai avuto un titolo e gran parte degli editori ne ha creato uno in base alle indicazioni di Svet., Aug., 101, 4 e alla *praescriptio* realizzata sotto Tiberio (si veda p. 19), rispettivamente all'espressione “neutra” *Res gestae*. D'altra parte, è vero che il principe utilizza per ben due volte in maniera esplicita la formula menzionata — *ob res... prospere gestas* (4.2) e *rebus... prospere gestis* (12.2) (si vedano le pp. 28 e 30), com'è altrettanto vero che, eccetto per l'Appendix, dove le forme verbali sono in terza persona, in tutti gli altri capitoli i verbi sono adoperati in prima persona (si veda anche p. 117). Eppure non riteniamo che questi aspetti permettano la scelta di un titolo così categoricamente “autobiografico” (si veda p. 137: *Res gestae* — “resoconto autobiografico”). In primo luogo, bisogna tenere presente che l'espressione *res gestae* ha origine nel linguaggio politico repubblicano, utilizzata per disegnare le gesta durante i periodi di pace e di guerra dei politici romani, come si legge, per esempio, in Cicerone, *Rep.*, I, 8, 13: *cum superiores ali fuissent in disputationibus perpoliti, quorum res gestae nullae inuenirentur*; II, 32, 56: *sed tamen omnia summa cum auctoritate a principibus cedente populo tenebantur, magnaenque res*

temporibus illis a fortissimis uiris summo imperio praeditis, dictatoribus atque consulibus, belli geregabantur; di conseguenza, era un'espressione nota. In secondo luogo, con lo stesso sintagma vengono caratterizzate le azioni di Augusto nella letteratura a lui contemporanea, per esempio in Orazio: Ep. I, 3, 7–8: *Quis sibi res gestas Augusti scribere sumit?/ Bella quis et paces longum diffundit in aeuum?*; II, 1, 250–256: *Nec sermones ego mallem/ repentes per humum quam res componere gestas...* ecc. In fine, se Tiberio ha voluto incorporare il contenuto del documento lasciato dal *princeps* servendosi di una formula “identitaria”, cioè *Rerum gestarum divi Augusti...*, perché forzare l'aspetto originario del testo epigrafico per fabbricarne un titolo? Noi riteniamo molto più corrette le traduzioni in varie lingue moderne che, per il titolo, riprendono l'idea della *praescriptio* (si vedano le pp. 6–8; da aggiungere, rom. *Faptele* divinului *Augustus*).

Troppa debitrice nei confronti dei suoi predecessori, l'autrice dell'edizione dà prova di scarsissime idee originali. In molte pagine si limita a produrre un semplice elenco di nomi e opinioni, mentre manca totalmente il dialogo critico con la storiografia (si vedano, per esempio, le pp. 120–122, 132–137); orbene, questa esagerata acquiescenza ne blocca la creatività. Si faccia un solo esempio: sostenere oggi che le *Res gestae* abbiano una struttura tripartita, come la immaginava più di un secolo fa Theodor Mommsen (si veda p. 5: “la sua sostanziale tripartizione”, 6, 19, 126–132), ci sembra più che obsoleto. Sarebbe stato interessante conoscere anche l'opinione della curatrice circa l'interpretazione data da Gregory Rowe al riferimento di 34.3 dell'*auctoritas*, che riconsidera tutta la storiografia dedicata ai fondamenti ideologici del potere imperiale così come risultano dalle *Res gestae* (*Reconsidering the Auctoritas of Augustus*, JRS, 103, 2013, pp. 1–15, menzionato da Patrizia Arena a p. 151); e invece niente: l'autrice si limita a riportare un'opinione in mezzo a molte altre (p. 113). Anche le pagine che, in mancanza di conclusioni reali, possono essere ritenute conclusive (pp. 137–139), non hanno elementi interpretativi nuovi: l'idea che *Res gestae* sia “un documento politico, una costituzione generale del Principato in forma di resoconto autobiografico” (p. 137) che stipula i poteri e gli onori detenuti da Ottaviano/Augusto in virtù della sua eccezionale *auctoritas* è stata già formulata molto chiaramente da John Scheid: „Les *Res Gestae* ne glorifient pas seulement les hauts faits et les libéralités du prince qui sentait la mort approcher ou venait de décéder. Elles présentent également comme une constitution générale du principat, donnée sous forme de récit autobiographique, dans lequel Auguste essayait, en s'appuyant sur son *auctoritas* suprême, d'imposer à ses successeurs et aux Romains un modèle de régime politique capable de survivre à sa mort sans retomber dans les conflits politiques qui avaient déchiré Rome depuis un siècle”².

² John Scheid, *Res Gestae Divi Augusti. Hauts faits du divin Auguste*, texte établi et traduit par John Scheid, Les Belles Lettres, Paris, 2007, p. LIII–LXII (la citazione a p. LXI); si vedano anche *ibidem*, p. VIII (“exposé autobiographique”), XLIII–LXII (“une autobiographie politique”); inoltre, John Scheid, *La mise en scène autobiographique du principat augustéen: les Res Gestae diu Augusti*, in *L'expression du pouvoir au début de l'Empire. Autour de la Maison Carrée à Nîmes*.

Per finire, per quanto riguarda le edizioni di *Res gestae* registrate da Patrizia Arena (si vedano le pp. 15–16, 141–142), saremmo nel torto, probabilmente, se la sospettassimo sia di arroganza, sia di ignoranza, sia di entrambe. Con il dovuto rispetto a una collega, osiamo però richiamare la sua attenzione sull'esistenza non soltanto in Italia, Francia, Germania, Gran Bretagna o Stati Uniti d'America, ma anche in altri paesi, compresi quelli dell'Europa dell'Est, di uno spiccato interesse storiografico per questo eccezionale documento epigrafico, che include anche la sua edizione secondo i più alti criteri scientifici. In questo senso, ci saremmo sentiti onorati se la curatrice avesse consultato o almeno menzionato a beneficio d'inventario l'edizione *Res gestae divi Augusti. Faptele divinului Augustus. Πράξεις Σεβαστού θεού*, a cura di Marius Alexianu, Roxana Curcă e Nelu Zugravu, Editura Universității „Alexandru Ioan Cuza” Iași, 2004, che si trova sin dall'anno della sua pubblicazione nelle biblioteche delle Università italiane. In essa avrebbe trovato sufficienti aspetti con i quali, molto probabilmente, non sarebbe stata d'accordo, ma per questo avrebbe dovuto studiarla; se la lingua rumena le fosse sembrata difficilmente accessibile — per un ricercatore serio tale motivo è inammissibile —, le ricordiamo che anche il rumeno è una lingua neolatina ed europea; ad altri studiosi ciò non è parso un ostacolo insormontabile.

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Actes du colloque organisé à l'initiative de la ville de Nîmes et du Musée archéologique (Nîmes, Carrée d'Art, 20–22 octobre 2005), sous la direction de Michel Christol, Dominique Darde, Errance, Paris, 2009, pp. 19–22. Per quanto riguarda l'autore (p. 119), è curioso che Patrizia Arena non menzioni l'opinione interamente simile alla sua espressa sempre da John Scheid, e cioè che non è stato Augusto a scrivere il testo, ma i suoi segretari (John Scheid, *Res Gestae...*, pp. XXVI–XXVII).

Dan Dana, *Onomasticon Thracicum. Répertoire des noms indigènes de Thrace, Macédoine Orientale, Mésies, Dacie et Bithynie*, De Boccard, Athènes, 2014, 624 p.
(MELETHMATA 70), ISBN 978-960-9538-24-4

Not long ago, the reputable Indo-Europeanist Don Ringe tackled the problem of linguistic diversity in prehistoric Europe in a guest post on *Language Log*. He argued convincingly, expanding on Johanna Nichols' revolutionary findings, that linguistic diversity in pre-state societies depends on the scale of the economy and thus correlates with geography.¹ The evidence consists of what we know of the pre-state societies of today, but also of the ancient Mediterranean in the second and the first millennium BC, where dozens of different and often unrelated languages were spoken and sometimes also written along the indented coasts, on islands, or in the mountainous interior. Many of these languages were demonstrably not Indo-European.² However, when it comes to the ancient barbarians of the north, a contrasting view has been widely held among classicists, one that outlines communities speaking relatively uniform Indo-European languages stretching over vast, contiguous territories, a view shared by ancient ethnography and 19th century worldviews alike. This is still the dominant trend in Thracian studies (Thracology), and the present book is the latest contribution to the field.

Dan Dana has maintained a resolute presence over the past decade, exploring the epigraphic record with diligence and putting forward a number of theories and views on the "indigenous" population of Southeastern Europe in antiquity. The present book is wrapped as an onomasticon, but nevertheless the author pays substantial attention to the mysterious language(s) of the Thracians, supposedly preserved by an abundant corpus of names scattered between the Atlantic and the Central Asia, from the age of Homer to late antiquity. As the small introduction puts it, "l'onomastique est le seul domaine qui permet d'améliorer nos connaissances sur la langue des Thraces" (p. xi). Dana's declared ambition is to supersede Dimiter Detschew's notorious and outdated *Die thrakischen Sprachreste*, and to redeem the ill-famed Thracian studies (p. cxix).

It is a monumental book, the fruit of years of sedulous work. At its very heart, it incorporates a prodigious catalogue of names (more than 1500!), drawn mainly but not solely from epigraphic sources. The volume is part of a homonymous project, still running at the

¹ NICHOLS 1990; RINGE 2009.

² CLACKSON 2015, 28. For another recent re-assessment see ANTHONY, RINGE 2015, 210: "If inscriptions were available from northern Europe at this time, say 700–200 BCE, we might find additional regions of surviving non-IE speech there, given the variety of non-IE languages in the well-documented Mediterranean. [...] IE languages must have spread [...] in a patchy, incident-inspired, opportunistic manner, leaving many 'islands' of non-IE languages."

time of this review as an online supplement.³ The catalogue is preceded by four chapters, functioning both as introduction and conclusion, and accompanied by various distribution maps, hypothetical Thracian lexemes and morphemes, and other comments on the entries.

The first chapter unfolds the history of research, presenting the previous attempts to catalogue and study the personal names and other linguistic relics linked to the Thracians. The narrative sets out in the 19th century, with the works of Wilhelm Tomaschek and Paul Kretschmer, and continues to examine the achievements of scholars and amateurs alike. The section devoted to Louis Robert is arguably the highlight of this chapter, though the high density of quotations may put off some readers. While undoubtedly informative, the exposition is uneven and overall unconvincing. Dana offers a sketchy portrait of each author, occasionally tainted with exaggerations and inconsistent appreciations. He scolds the Eastern European scholars for alleged nationalistic accents in their writings and separates them from the rest of the world (the “Occident”). The disparaging remarks target the linguists, found guilty of excessive use of etymologies. To give an example, Dana criticizes both Vladimir Georgiev (p. xxiv) and Ion Iosif Russu (p. xxviii) for their fanciful etymologies, and praises all the same Edgar Polomé for “une étude équilibrée” (p. xxxix)⁴. However, the Belgian-American linguist gives a summary of earlier findings, reproducing many of the etymologies and interpretations of Russu and Georgiev! At last, the presentation does not include notable linguists and philologists, despite their notable contributions. I have in mind Gustav Weigand, Norbert Jokl, Henrik Barić, Veselin Beševliev, Günter Reichenkron, Grigore Brâncuș, Vladimir Orel and Fred Woudhuizen.

The second chapter is an overview of the sources. It is clear that the author prefers the traditional, essentialist approach, depicting the Thracians as an ethnocultural group divided into numerous branches, displaying some cultural and dialectal variation (p. xliv).⁵ However, it was often argued that such ethnonyms are geographical terms, which do not identify single ethnic groups or languages.⁶

The first group of sources consists of inscriptions written in an unknown language claimed to be Thracian. Except for those from Zone and Samothrace, found in geographical proximity and dated to the same time frame,⁷ no text can be safely related to another or to the remaining of the reconstructed *Sprachreste*. To be sure, the text of the Kjolmen inscription

³ DANA 2014–2015.

⁴ POLOMÉ 1982, 876–888.

⁵ See CLACKSON 2015, 2–11 for a general criticism.

⁶ GRANINGER 2015, 28. For a similar perspective see MAYOR, COLARUSSO, SAUNDERS 2014, especially 450–451: “the Greeks thought of all the diverse tribes of the northern Black Sea, Caucasus and steppes as ‘Scythians’, much as Europeans used the term ‘Indians’ for New World tribes and employed ‘Africans’ as a collective noun”. The dichotomy between “Celts” and “natives” in the Balkans was questioned by DŽINO 2008.

⁷ BRIXHE 2006.

was also read in a variety of Phrygian⁸. Dana claims the Thracians had alphabets of their own, though he admits that “les lettres sont celles de l’alphabet grec.” (p. xlviii)

The literary and numismatic sources receive little attention. In contrast, a detailed survey of the epigraphic visibility of Thracians in space and time prompts a useful discussion about mobility and recruitment in the Hellenistic and Roman armies (pp. l-lvi). The section on Thracians in late antiquity is less consistent: compare, for instance, conflicting remarks such as “l’onomastique thrace est encore vivace” and “les noms féminins attestés sont rarissimes à cette époque” (p. lvii). The question of Albanian is tackled briefly and the author maintains a sound scepticism about the attempts to relate it to either Thracian or Illyrian. A final highlight of this chapter is the section dedicated to recent projects in progress, valuable for the study of onomastics and of the Aegean and Eastern Mediterranean ancient history, as well.

The discussion of the third chapter is best postponed until we assess the actual evidence. Under the heading “Principles”, the fourth and the last chapter focuses on perceived difficulties and various minor issues, such as choosing between *Onomasticon Thracum* and *Thracicum* and finding a proper acronym for the book (p. cxv). Previous scholarly reflections are unfortunately ignored.⁹ What is in a Thracian name and how can it be distinguished from other names are, in my opinion, questions of crucial importance, considering the author collects data from the entire oikumene.

The catalogue of names

Most of the book is concerned with the presentation of data. The enormous list of names is structured alphabetically following the modern Latin alphabet (including W!), a questionable option considering that many names are written in the richer Greek alphabet. Transliterations render the sorting inconsistent at times and difficult to follow. Some names are introduced in unattested forms, including phonetic transcriptions, a decision that may seem arbitrary and unnecessary: see, for example, *βαστοζις (p. 27), Οαστοζις (p. 263), Vastozis (p. 383), *Wastozis (p. 384) for the *hapax* Οαστοζεις.

The main entry of each name is presented in a condensed manner, which is very convenient once the reader gets used with the quirks and sporadic errors such as *Seleucia ad Tigrum* (sic!) (p. 380). It contains all the known forms: thus, under *Brizenus* we find *Brizanus*, *Brisenus*, *Brisanus*, *Βριζένις* etc. Different inflection paradigms may occasionally generate several such entries: *Suris*, *Surius* are listed separately from *Surus*, *Susas* from Σουσος, etc. The desinences are sometimes mistaken for derivational suffixes: *Buraido* is not a “variante de *Buraides*, avec un autre suffixe”(!) (p. 72). Many uncertain names, tagged with question marks, should have been included in a supplement instead. As a consequence, the quantitative

⁸ OREL 1995–1997.

⁹ For a remarkable study with solid methodology see STERN 2008. For the study of indigenous names see ZGUSTA 1965 with positive reception and further comments by ROBERT, ROBERT 1966, 350–351.

surveys come up with overestimated numbers, such as Annex I counting 1547 names. Few entries have distribution maps, visually elegant but of limited utility. There are only 51 maps in the entire volume and most of them have a regional focus. For instance, around half of the recorded occurrences of the name *Mucianus* are not shown in Figure 34 (p. 248). Moreover, the chronology is seldom considered, and some distributions may be therefore misleading.

The reading of inscriptions, ostraca, graffiti and coins is commendable and the emendations are quite convincing, the result of author's careful examination and also of his collaboration with other scholars. Still, I spotted a few minor lapses. On *I. Byz.* 370A = *ISM* II 165, the name is undoubtedly Αυλοζανις, with the same reverse Z as in ζῆ, and thus the *hapax* Αυλοσανις can be safely discarded (p. 19).¹⁰ The reading Ποιμεζεγεος on *IGB* III.1 1293 (p. 296) is dubious as there's not enough space between the two epsilon and a ligature is impossible due to their round shape. Detschew opted for Ποιμεζευεος,¹¹ but I believe the most probable reading is Ποιμεζερεος (*cf. zer-* on p. 391).

By contrast, the reading of literary sources is more problematic. Citing a famous passage on the Getae (Hdt. 4.94), Dana follows the unreliable and much-criticized edition of Haiim B. Rosén¹² and chooses Βελεζίς (p. 406) instead of Γεβελεζίζ(ε)ης, the variant indicated by textual criticism and preferred by most other editors.¹³ In another comment, taking the *hapax* Ζουρόβαρα (Ptol. *Geog.* 3.8.9) as a reference, Dana emends Ἀρκοβαράδη to *Ἀρκόβαρα (p. 410). It is not at all clear why the two toponyms must be related and the suggested solution seems implausible.¹⁴

The names are written down in nominative case whenever the author feels safe to reconstruct it and his judgement is generally sound. However, the genitives *Titi* on *AÉ* 2007, 1770 and *RMD* V 411 (p. 365), and *Deri* on *RMD* IV 317 (p. 130) should be restored to *Tit(i)us* and *Der(i)us* respectively. Having in mind inflections such as Νεσβαις, Νεσβαι and Καις, Και, documented in several inscriptions from Cilicia,¹⁵ I also suggest the nominatives Δαρδιολαις on *O. Claud.* II 402 and 403 (p. 112), Διτουλαις on *O. Claud.* II 402, if the separation is indeed correct (p. 142), and Ναισουλαις on *O. Claud.* II 404 and inv. 8362 (p. 258, *cf. Ναισουλης* on *O. Claud.* inv. 6361).

Most of the names are assigned to four onomastic stocks, to which I will return later: Thracian, Dacian or Daco-Moesian, Western Thracian, and Bithynian. A separate, but not

¹⁰ OLTEANU 2012.

¹¹ DETSCHEW 1957, 400.

¹² FEHLING 1989; RENEHAN 1991; WILSON 2015a, XII.

¹³ POGHIRC 1974, 358; DIMITROVA 2002, 224; WILSON 2015b, 83.

¹⁴ DANA, NEMETI 2012, 435: “enrichie par l'un des copistes avec une particule finale (δα)”(!)

¹⁵ TOMASCHITZ 1998, see the inscriptions nr. 7, 34, 36, 40, and 41. For this type of inflection which was inherited in modern Greek see BRIXHE 2002, 729; 2010, 237–238; HORROCKS 2010, 179–180.

always well-defined group are the pan-Thracian names, that is, names belonging to more onomastic stocks. The assignments and commentaries are, in many cases, disputable.

A most egregious example is *Mucianus*, listed here (together with *Muciana* and *Mucianilla*) as “nom d’assonance” (p. 246 *sqq*) and derived at the same time from a Thracian *muca*-(!) (p. 227). It is, first and foremost, a Latin name, notwithstanding its popularity among the inhabitants of Thrace. The selection of data is quite odd: we find a considerable number of non-Thracian *Muciani*, including, for example, *Mutianus*, a scholar and friend to Cassiodorus in Gothic Italy (*Cassiod. Inst.* 1.8 and 2.5), but not a whisper about the famous figures of *gens Mucia* such as *Publius Licinius Crassus Mucianus* and *Gaius Licinius Mucianus*.

Δρομιχαίτης (p. 165) is undoubtedly Greek, despite considerable efforts from modern exegetes to explain it otherwise. This epithet is documented and analysed in the commentaries of Eustathius of Thessalonica (Eust. *Il.* 1.222, *Il.* 2.796, *Od.* 1.363).¹⁶ It referred probably to a heroic hairstyle (cf. κάρη κομώντας Ἀχαιούς in Hom. *Il.* 2.11, 28, 51, etc.), less popular among later Greeks, a fact that may also explain why its rare attestations. To be sure, there’s no reason to suspect the Athenian mercenary recorded in *IG II²* 1956, the general sent by Mithridates Eupator to assist Archelaus (App. *Mith.* 32 and 41) or Marcus Valerius Dromocheta(es) *sive* Calliparthenus (*CIL VI* 27991) were Thracians, let alone Dacians. The hypothesis of Detschew¹⁷ and Dana that Δρομιχαίτης translates a barbarian name is therefore unnecessary.

Thiadices (p. 363) is not a Dacian name, but the Greek Θεαδίκης (cf. Θεάφιλος on *I. Kalchedon* 7). Rustius Barbarus, the author of the Egyptian letter mentioning this cavalryman, writes regularly *i* for *e* in hiatus: *debio*, *habio*, *casium*, *lintiolo* (*O. Faw.* 2 = *CEL I* 74), *betacium*, *oliarium* (*O. Faw.* 3 = *CEL I* 75). Such spellings are more frequent in the first and second centuries AD and affect Greek names as well, cf. *Thiophilus*, *Thiophanes*, *Thiodotus* etc. in various contemporary Latin inscriptions.¹⁸

Most of the non-Thracian names fall into several categories. The theophoric Greek names Βενδιδώρα (pp. 30–31), Βενδιφάνης (p. 31) and Δηλόπτιχος (pp. 119–120)¹⁹ are no more Thracian than Ἰσίδωρος is Egyptian. *Lallnamen* such as Νάνα(ζ) (p. 259), Πάπας (pp. 267–268), etc. are more popular in the Greek-speaking world outside Thrace, particularly in Asia Minor. Another group is that of ethnic names. Louis Robert made a compelling argument that “pour un homme libre, un anthroponyme tiré d’un ethnique ne manifeste point l’origine, mais une relation quelconque avec la ville ou le pays désigné par cet ethnique, voyage, commerce,

¹⁶ The word is included in a number of lexicons from Renaissance onwards such as SCAPULA 1579, col. 1789: *setas inter currendum agitans apud eundem*. On the semantics of this epithet see ZUCKER 2014. For χάιτη compounds referring to gods and men see, for example, *Anacreont.* 43.8. ἀβροχαίτας δά̄μα κοῦρος and 43.12: ὁ δῆρως ὁ χρυσοχαίτας.

¹⁷ DETSCHEW 1957, 159.

¹⁸ CUGUSI 1981, 743; 1996, 60; ADAMS 2013, 103–104. Cugusi also suggests an analogy with Θεάδητος (*P. Oxy.* XII 1536), which, in my opinion, is just a version of the more popular Θεάτητος/Θεαίδητος.

¹⁹ On the cult of Bendis in the Greek world see JANOUCHOVÁ 2013.

etc.”²⁰ Dana cites this study (p. 380) but ignores its conclusion and implications. Other notable situations come from late antiquity, when the popularity of Thracian names waned. Κουτίλας, Γουδίλας and *Gudila* (pp. 100–101, 191) are variants of the same Gothic name.²¹ New names such as *Buraides*, attested no earlier than mid-late 4th century AD, are unlikely to be Thracian, in my opinion. Mobility, assimilation, but also epidemics and wars caused drastic changes in the ethnic and linguistic composition of the Balkans. Goths, Alans and Huns were the new Thracians alongside Roman provincials.

The Thracian origin is also doubtful for many *hapax legomena*: *Blicitys* (p. 63), *Bulper* (p. 71), Σκεβλύας (p. 306), etc. Ταρουχινας Χηπτουλη Γέτης, mentioned on a Thessalian epitaph (pp. 85, 349), does not have a unique Dacian name. Instead it must be connected to a name popular in northern Greece: Ταρουθινας, Ταρουσινας, Ταρουτινας, etc. (pp. 351–353). The names ending in -ζενις are also interesting. The component is rather Thracian than pan-Thracian, since the vast majority of occurrences come from Hebrus valley (it’s a pity they were not placed on a map). Furthermore, they are all masculine names. Therefore *Muccasenia Fortunata ex Germania Superiore* (p. 234), commemorated in *CIL XIII* 1874, should not be listed as part of this group. As some scholars pointed out already, this name has a probable Celtic etymology²² and there are several analogies in the onomastics of Central Europe (cf. *Mocco*, *Mocca* in numerous inscriptions from Northern Italy and Noricum), but also in *deo Mercur(io) Mocco*, in a dedication from Germania Superior (*CIL XIII* 5676).

Blegissa/Blecissa is another name traditionally held to be Celtic²³ that becomes Dacian in this book, even though it is never attested in Dacia or Moesia (p. 63). A Βλαικισα mentioned in *O. Claud. inv. 29* may or may not be related to it. Three generations are recorded in an epitaph from Solva in Noricum, not far from the border with Pannonia (*RIU Suppl. 118*): *Blecissa*, *Couco* and *Prosostus*. The latter two names occur in other Pannonian inscriptions, suggesting a local onomastic tradition. On another epitaph, near Savaria in Pannonia Superior (*RIU I* 141), the family of another *Blegissa* displays intriguing connections. His father’s name, *Buri(u)s* is common in Thrace (p. 72, and see also *AÉ* 2012, 1051, a funerary inscription from Augusta Vindelicorum set by Burius *civis Tracus* to his daughter Burilla and his son Burinianus), in Dalmatia and in the African provinces, but is conspicuously absent from the Daco-Moesian onomastics. His mother’s name, *Suna[m]is*, is a *hapax*. The claim that it is “sans doute, un nom de la serie feminine dace Zu-“ (p. 337) lacks evidence. *Damanaeus* is indeed frequent among Dacians (p. 110) and raises some questions about Daco-Pannonian cultural interferences. His other brother’s name, *Disdosis*, (p. 154) has been already explained as a Dalmato-Pannonic

²⁰ ROBERT 1968, 419–420; TRACY, HABICHT 1991, 216.

²¹ See the prosopographic index in AMORY 1997, 379–380. For Goths referred as Thracians in the 6th century see also Procop. *Pers.* 2.30, *Goth.* 5.16, 6.13.

²² For **mokku-* in Proto-Celtic see MATASOVIĆ 2009, s.v.

²³ MEID 2005, 256.

name,²⁴ being attested as *Disdozi* in Egypt and Dalmatia and *Disdosi* in Moesia Inferior. Indeed, another Moesian inscription mentions Δεισδαζίς, the father of Βάτος (*IGB* V 5328). The latter is a *hapax* in Dana's corpus, but *Bato* is a quite popular name in Pannonia and Dalmatia.

In spite of all the aforementioned issues, a sizeable part of the inventory remains extremely valuable for the study of onomastics in these regions.

Transcriptions

Finally, the third chapter, “L'onomastique thrace”, dealing mainly with names and languages, is, in many ways, the conclusion of the book. Its structure follows no apparent order: for example, the desinences are surprisingly listed among the “flottements graphiques” (p. xcvi). Many of the philological and linguistic commentaries are regrettably unreliable.

An important preliminary step in the analysis of the names is to understand how they were rendered into the languages of the inscriptions. There are splendid works on the transcription of Persian names into Greek,²⁵ or of Greek words into Latin,²⁶ which could have been put to good use. Moreover, the particularities of the Thracian names highlighted in this chapter are, for the most part, commonplace occurrences in Greek and Latin. Some examples will illustrate this point. The Greek voicing of σ before β, γ, δ and μ, as well as the reverse, hypercorrect process (pp. xcv, xcvi) are well-known²⁷ and copiously documented in epigraphic and literary sources (πρ[ε]ζβεύσαντα in *ISM* III 122, Λεζβία in *I. Kyme* 37, etc.) Furthermore, σδ and ζδ are sometimes spellings for ζ (δικαζδέτου instead of δικαζέτω in *SEG* 37 494). The so-called *di* > *z* evolution (p. xcv) is common in Latin (*oze* for *hodie* in *CIL* 8 8424, *azutoribus* in *CIL* 8 18224, etc.),²⁸ and also a source of hyperurbanisms (*Sabadio* in *CIL* 6 31164).²⁹ At the same time, δ and ζ alternate before ι in Greek papyri, as the former became a dental fricative (Σαράπιζι in *SB* 5 7992 = *PSI* 13 1332, τραπεδίται in *P. Oxy.* 20 2271).³⁰ There is no ο > *i* evolution(!) in *Σπαρτοκός* and *Sparticus* (pp. xcv, xcvi). The latter is better explained from *Spartacus*, through back-formation and derivation with the Latin suffix *-icus*. The stress on specific letters and sequences (pp. xcvi–xcviii) is also odd. *Qu* is simply the hypercorrect spelling of *cu* in *Doqui* and *Quelsea* (*cf. nationis Daqus* in the inscription of *Dida Damanai* on p. 110). The ξ in Δάπυξ is the trivial result of morphology, while *x* in *Itaxa* is most likely a spelling for *z* (*cf. Ithazis* on p. 199).³¹

²⁴ MEID 2005, 267.

²⁵ SCHMITT 1976.

²⁶ BIVILLE 1990; 1995.

²⁷ SCHWYZER 1939, 217–218; BRIXHE 2010, 236.

²⁸ BIVILLE 1990, 129–135; ADAMS 2013, 118–123. See also the correct explanation for Dacian *Dierna/Tsierna* in ARDEVAN 1996, 245–246.

²⁹ HĂLMAGI 2014.

³⁰ GIGNAC 1976, 75–76; HORROCKS 2010, 170.

³¹ BIVILLE 1990, 129–130.

Etymologies

When the criteria explored above do not yield satisfactory results, the etymology is employed as a decisive tool to decide whether a name is Thracian and to assign it to one of the onomastic stocks. Despite his bitter scepticism, Dana is heavily indebted to other scholars, as he often follows Detschew, Georgiev, Russu or Duridanov to the letter. Their etymologies failed to gain wide acceptance, and their methods were often criticized and justly so:³² the investigation is restricted, for the most part, to inspectional similarities between names, an enterprise fraught with uncertainty.³³ In his notable study, Ladislav Zgusta remarked the striking resemblance between the Cilician Μονγωμερις and the British *Montgomery*,³⁴ which, of course, does not prove any relation between British onomastics and ancient Anatolia.

The first step in the etymological analysis is to separate the name into constitutive elements. According to Dana, these names are made up from one to three main elements (pp. lxxxv-lxxxvii) and a suffix may occasionally be added. The separation and identification of the components is often arbitrary, depending on what the scholar tries to prove. In a previous article,³⁵ Dana commented the name *Decinsada* (*O. Ka. La. inv. 37*), suggesting a Thracian *-sada*. The reading is now emended to *Decinsa Dax* (p. 118). The improvement is meritorious, but the tendency to find Thracian elements at all costs raises a serious question mark. These being said, the evidence for many onomastic elements is fragile. The Daco-Moesian *-gissa*, for example, can easily be read *-issa* (cf. Βαστίζα, *Dentubrisa*, etc.) and may also have a different origin.³⁶

The identification of components is accompanied by analogies. In many cases, the matches seem reasonable but the number of occurrences is low. Thus, a name attested on two non-contemporary inscriptions impels the author to find a “concentration”(!) (p. 275). Obviously, the shorter elements are prone to provide false positives: *goa-* (p. 190), *-la* (p. 200), *-nis* (p. 261), *thia-* (p. 362), *-zis* (p. 406), *zu-* (p. 408) etc. A more serious shortcoming is the inconsistency resulting from such analogies. Dana connects on one hand the Thracian *-πυρις* with the Dacian *-pier* (pp. lxxii, 271, 280), and on the other the Thracian *-para* with the Dacian *-bara* (p. 410).³⁷ Undoubtedly, some words have a more tumultuous history, but it's up to the

³² MASSON 1960; PISANI 1961; MESSING 1972; GAERTNER 2001; PANAYOTOU 2007, 743.

³³ Historical linguists have often leveled criticism at lexical approaches such as lexicostatistics and Joseph Greenberg's multilateral comparison. See, for example, CAMPBELL 1999, 314–315: “This approach stops where others begin, at the assembling of lexical similarities. These inspectional resemblances must be investigated to determine why they are similar, whether the similarity is due to inheritance from a common ancestor (the result of a distant genetic relationship) or to borrowing, accident, onomatopoeia, sound symbolism, nursery formations and the various things which we will consider in this chapter.”

³⁴ ZGUSTA 1965, 94–95 For chance resemblance and its impact on word by word comparisons see RINGE, ESKA 2013, 266–275.

³⁵ DANA 2003, 175.

³⁶ FLEURIOT 1991, 19–26; DE GOEDE 2014, 24–25, 52–53.

³⁷ Cf. DANA, NEMETI, 2012, 436: “avec un traitement différent de la labiale (sourde en thrace, sonore en dace)”.

author to explain how all the details fit into the bigger picture. In other cases, other explanations are more likely: for example, names such as *Bendina* and *Diurpina* contain the Latin *-inus* and not an otherwise undocumented Thracian suffix, inherited from PIE (p. lxxxix).

As it is customary in this field of work, the attribution of meanings is an exercise in imagination. Using a gloss mentioned by Hesychius and Photius, σκάρκη = ἀργύρια, Dana explains the feminine names Σκάρκη and Σκάρκεζαις through “tréSOR, cherie”(!) (pp. lxxxix, cx, 306). Much is made of the corrupted Dacian plant names extracted from the herbals of antiquity, but the analogies usually fall outside the reach of Daco-Moesian onomastics. The Dacian **dila* (reconstructed from plant names ending in *-διλα*, *-zila*) is connected to Bithynian and Thracian feminine names (pp. 138, 396–397).

Names and languages

Dana posits four onomastic stocks, Thracian, Dacian or Daco-Moesian, Western Thracian and Bithynian, with correlated languages and territories.³⁸ Since the Daco-Moesian onomastics benefits from the most detailed description, I will use it as a case study. The map in Figure 1 (p. lxvi) depicts the four territories and, in particular, the Daco-Moesian area stretching deep into *barbaricum*, in regions for which there are no names, but also no inscriptions or literary sources. The suggested territory bears an uncanny resemblance to that of the infamous Geto-Dacians and it’s just too vast to be true: we are to imagine that pre-Roman Southeastern Europe was more homogenous culturally and linguistically than it has ever been since! The author follows the traditional view that Getae and Dacians had the same native language, and cites uncritically various ancient authors such as Pliny and Strabo.³⁹ He takes at face value Georgiev’s controversial theory about languages and toponyms.⁴⁰ Be that as it may, turning to Figure 2 (p. lxviii), some other discrepancies become apparent. The Daco-Moesian names are located primarily in Moesia Inferior and only scarcely in Dacia and Moesia Superior. A comparison between Figures 2 and 3 (p. lxix) indicates that Thracian names outnumber the Daco-Moesian ones in Dacia, as well as in many parts of Moesia Superior and Inferior. Surely, such inconsistencies may be explained away, however, the linguistic and onomastic picture could have been more complex than assumed in this book.

Many scholars denounced the practice of deriving languages from names,⁴¹ which, in my opinion, is one of the main reasons Thracology fails to convince. Dana moves one step further and constructs a phylogenetic tree of the Thracian languages (p. lxxxii) The data consists of

³⁸ DANA 2004, 433.

³⁹ Using the same word (όμογλωττοι), Strabo also claims the Armenians, the Medes, the Caucasian Iberians and the Syrians spoke the same language! (Str. 11.14.5) See also HÄLMAGI 2015, 39–40.

⁴⁰ CLACKSON 2015, 5 on Ligurian toponymy: “The best single conclusion to draw from this is probably that place-names are always fertile ground for unverifiable speculation, but do not provide a secure basis for assigning language identity.” For a case study of place-name construction and its relation to ethnicity see also HALSALL 1995, 10–12.

⁴¹ PISANI 1961, 253; CLACKSON 2015, 3–6, 9. On lexicostatistics and similar approaches see *infra*, nn. 33, 34.

12 names(!) claimed to be shared among the four languages. The methodology is at variance with traditional historical linguistics. On one hand, vocabulary alone doesn't prove much:⁴² for example, there are numerous words of French origin in English and English is not a Romance language. There's no evidence the names selected here are cognates, and not borrowed, if not similar by coincidence.⁴³ A second major complication is that the author counts shared retentions, whereas the linguists know that shared innovations matter. Dana should have shown what separates Dacian and Thracian from the rest of the Indo-European languages, or what separates Western Thracian and Bithynian from the rest of the Thracian languages. Otherwise, such groupings make no sense.

The general impression left by this chapter is that Thracian is eventually treated as a single language. Its internal differentiation is meagre and inconsistent. Superficial similarities in names prove too little, forming an unstable ground to discuss the barbarian languages from these regions. Cultural interactions between Bithynians and Phrygians, or between Dacians and Scordisci, are not explored and not questioned at all. They may have had much more in common than Bithynians and Dacians.

Dana must be praised for what is the best survey of epigraphic evidence in Thracian studies up to the present moment. All the same, his interpretations are moot. Being a book of contrasts, it is a dangerous book. It supplants Detschew's work in various ways, including some that were not intended.

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⁴² MEILLET 1908, 126: “Les coïncidences de vocabulaire n'ont en général qu'une très petite valeur probante”.

⁴³ See the cautious approaches by ZGUSTA 1965, 92–93, 99.

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