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**TIME EVOLUTION OF THE  
ANTHROPOLOGICAL STRUCTURE  
OF THE POPULATION FROM  
SĂBĂOANI VILLAGE, COUNTY OF  
NEAMŢ**

**- PhD THESIS SUMMARY –**

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## **INTRODUCTION**

The archeological diggings conducted in Săbăoani village from the county of Neamt have brought to light two funeral complexes: a necropolis which belongs to the cultural site from Sântana de Mureş - Cerneahov (4<sup>th</sup> century A.D.) and a medieval necropolis chronologically included in the late medieval period (14<sup>th</sup> – 17<sup>th</sup> centuries). These sites have been studied as regards the population as well as the individual traits (only in some cases), both being the topic of the PhD thesis.

### **CHAPTER 1. GEOGRAPHIC AND HISTORICAL LANDMARKS OF SĂBĂOANI VILLAGE**

#### **1.1. Geographic description**

Săbăoani village and its area which includes the necropolises studied in this paper is situated in the Central Moldavian Plateau, in the north-east of Neamt county, on the upper terrace of the inter-flow between Siret and Moldova rivers, approximately 8 kms in the north of Roman town.

The climate is transitional continental. The altitude and the neighbourhood to Siret and Moldova river include the highland level.

The soil in the inter-flow area of Moldova and Siret rivers and those from the high terraces of Siret river are fertile and known as Chernozem soils.

#### **1.2. Historical characterisation**

On the territory of Săbăoani village there were found two necropolises.

The first belongs to the Sântana de Mureş culture from the 4<sup>th</sup> century A.D.

The second necropolis belongs to the late medieval period, chronologically included in the period between the 14<sup>th</sup> and the 17<sup>th</sup> century.

The first necropolis was considered as part of Sântana de Mureş (Cerneahov) culture and it belongs to a period of profound trouble around the whole geographical area of Romania.

As for the medieval osteological material which was found around Săbăoani village, we have included in our study the necropolis from Săbăoani – Berindesti, from the first half of the 14<sup>th</sup> century and the beginning of the 17<sup>th</sup> century as well as the necropolis from Săbăoani, included in the late Middle Ages, between the second half of the 14<sup>th</sup> century and the first half of the 17<sup>th</sup> century.

## **CHAPTER 2.**

### **ANTHROPOLOGICAL DATA ON SÂNTANA DE MUREȘ CULTURE FROM THE TERRITORY BETWEEN THE CARPATHIANS AND PRUT RIVER**

As widespread area, the villages in the same category as Sântana de Mureș cover large areas, which lead to archeological remains that are spread around the cultivated layer, scattered among the dwellings. As for the funerary rite, the keepers of the Sântana de Mureș culture practiced inhumation as well as incineration, the deceased being buried along the area of the same necropolis.

## **CHAPTER 3.**

### **ANTHROPOLOGICAL DATA ON THE LATE MIDDLE AGE PERIOD ON THE TERRITORY OF THE MOLDAVIAN STATE AND THE NEIGHBOURHOOD AREAS**

The European history places the Middle Ages (also called the post-classical era) between the antiquity and the modern era, dividing it into the early, middle and late Middle Ages. It is generally considered that the Middle Ages start sometime between years 200-600 and end between 1500-1700. Obviously, there are chronological variations, depending on the continent and the region. Most historians date the beginning as year 476, once the fall of the Western Roman Empire occurred. The end of the Middle Ages is dated around year 1500, as Pirenne says (2010).

## **CHAPTER 4.**

### **MATERIAL AND STUDY METHODS**

#### **4.1. Study material**

In the biritual necropolis from the 4<sup>th</sup> century A.D. from Săbăoani there were discovered 102 tombs, out of which 88 of inhumation and 14 of incineration. The anthropological analysis was made on a number of 57 inhumated skeletons (16 male, 19 female and 22 of undetermined gender).

In the medieval necropolis from Săbăoani (14<sup>th</sup> -17<sup>th</sup> centuries) there were discovered a total of 1455 inhumation tombs, out of which the analysis was made on 937 skeletons: 399 skeletons from the necropolis in Săbăoani-Berindești (158 male, 130 female and 111 of undetermined gender) and 538 skeletons from the necropolis in Săbăoani (247 male, 160 female and 131 of undetermined gender).

## **4.2. Study methods**

For the estimation of the age at death for the people who did not turn 20 we have considered the following traits: evolution of dentition and the degrees of fusion of the epiphyses in the respective long bones diaphyses.

For the subjects who surpassed the growing period, namely they were older than 20, the characteristics we used as hints to establish the age at death were the following: the changes of the pubic symphysis and the sacroiliac joint, changes in the spongy tissue in the humerus and femoral epiphyses, the degree of attrition of the masticatory surface.

In order to decide on the gender, we have analysed the following traits: characteristics of the sacroiliac bones, robustness of the skeleton, insertion of the muscles.

The anthropometric study and conformation assessment of each skeleton was made using the absolute and relative values of the direct measurements and using the conformation index as well.

The anthropological type was decided upon only in case the skeleton was well-preserved and the noticeable traits could lead to those particular conclusions.

For the demographic study, we have considered the following parameters: mortality in different age stages, life expectancy at birth, life expectancy at twenty years old, sex ratio and population dimension.

## **CHAPTER 5. PALEOANTHROPOLOGICAL STUDY OF SKELETONS DISCOVERED IN THE NECROPOLISES FROM SĂBĂOANI**

### **5.1. Skeletal material on the necropolis from the 4<sup>th</sup> century A.D. belonging to Sântana de Mureş culture**

#### **5.1.1. The paleodemographic structure**

The sex ratio index is subunitary, the number of women being slightly bigger than that of men.

For the period 0-X years old (for the total population) we have estimated an average death age of 22.76 years. For the period 20-X years old, the average age of death is 41.59 years old for male and 37.61 for female.

The life expectancy at birth is 22.92 years old. The life expectancy for the period 15-19 years old is longer than for the period of 10-14 years old, due to the great number of deaths registered among 10 to 14 year-olds.

The dimension of the population from Săbăoani in the 4<sup>th</sup> century A.D. was estimated to 59 individuals.

### **5.1.2. The paleoanthropological structure**

The length of the neurocranium is medium in male and longer in female.

The widths of the neurocranium ranks in the medium category for both genders.

The cephalic index belongs to the category of mesocranic for both genders.

The minimum frontal diameter belongs to the middle category.

The maximum forehead widths is medium in male and wider in female.

The transversal frontoparietal index is eurymetop in both genders.

The maximum widths of the occipital is medium in male and wider in female.

The parietooccipital index in both genders falls into the middle category.

The shape of the neurocranium is mostly ovoidal and home-like.

The glabellar lines are medium developed.

The total facial index falls into the mesoprosope category.

The orbital index is of mesoconch type.

The nasal index is mesorine in male and chamérine in female.

The index of mandibular strength in both genders is small.

The dental wear is generally medium.

### **5.1.3. Typology picture**

We can notice the predominance of the Mediterranean type features, in a combination of a rather low percentage of Nordic, Protoeuropean and Dinaric elements. As regards the Easteuropean and Alpinoid features, they appear in a very small proportion. The Mongoloid traits are missing.

## **5.2. The skeletal material from the necropolis since the 14<sup>th</sup>-17<sup>th</sup> centuries, belonging to the developed Middle Ages.**

### **5.2.1. The paleodemographic structure**

In the necropolis from Berindești-Săbăoani the sex ratio highlights the slightly bigger number of men in comparison to that of the women. The sex ratio index is supraunitary in both necropolises.

Estimated for the total population, the average age of death is 29.34 years old in the necropolis from Berindești-Săbăoani and 29.98 years in the necropolis from Săbăoani. After 20 years old, the average age of death for the necropolis from Berindești-Săbăoani is 44.38 years for male and 39.86 for female. For the necropolis from Săbăoani, this parameter marks 45.63 years for male and 40.35 years for female.

For the series coming from the necropolis from Berindești-Săbăoani the life expectancy at birth is 29.23 years and for that coming from Săbăoani it is 30.01 years.

The dimension of the population for the necropolis from Berindești-Săbăoani is 133 individuals. In case of Săbăoani necropolis, this parameter notes 232 individuals. Making a sum, we obtain a total of 365 individuals for the medieval population in Săbăoani, a number which is really close to the records of the time.

### **5.2.2. The paleoanthropological structure**

The length of the neurocranium is medium in men and long in women.

The widths of the neurocranium is average in both genders.

The cephalic index is slightly brachycephalic in male and strongly mesocranic in female.

The shape of the neurocranium is ovoidal and home-like.

The glabellar lines are averagely developed in both genders.

The total facial index shows the mesoprosop facial type for male and euryprosop for female.

The orbital index is mesoconch in both genders.

The nasal index is of mesorine type for both genders.

The distribution of average statures on categories shows us that most individuals, either male or female belong to the tall category.

### **5.2.3. Typology picture**

The overwhelming frequencies are held by the Mediterranean elements. The Dinaric and Nordic features are next in line, but at considerable distance. The third place is held by the Protoeuropean, Easteuropean and Alpinoid. We have also identified a few scattered Mongoloid traits.

## **5.3. Analysis of the anomalies and pathologies in the skeletal series in the necropolis from the 4<sup>th</sup> century A.D. (Sântana de Mureș culture) and from the medieval necropolis in the 14<sup>th</sup> – 17<sup>th</sup> centuries from Săbăoani**

### **5.3.1. Dental pathologies**

Dental carries. Male are affected more by the cariogenic agents than female. The development degrees of the carries vary from 1 to 5. The most affected teeth are molars I and II.

Tooth loss *in vivo* is registered with a frequency of 25% in the series from the 4<sup>th</sup> century A.D. and approximately 40% in the medieval series.

Partial or total edentation is more frequent in the sample from the medieval necropolis in comparison to that from the necropolis from the 4<sup>th</sup> century A.D.

The apical granuloma is more frequent in the skeletal series from the medieval necropolis, registering a presence of approximately 2%.

Dental calculus meets 5% in the necropolis from the 4<sup>th</sup> century A.D. and approximately 9% in the medieval one.

### **5.3.2. Non-metrical traits (discrete features)**

The Wormian bones appear with a frequency of 20% in the necropolis from the 4<sup>th</sup> century A.D. and 30% in the medieval necropolis.

Metopism registers 3% in the series from the 4<sup>th</sup> century A.D. and 2% in the medieval one.

The supplementary facets on the tibiotalar joint appear more frequently in the necropolis from the 4<sup>th</sup> century A.D., especially on female skeletons and the reverse is seen for the medieval necropolis.

The supratrochlear foramen of the humerus in the 4<sup>th</sup> century A.D. is more frequent among female. In the medieval necropolis from Săbăoani, the humeral septal aperture registers almost equal frequencies for both genders.

The sacralisation of the L<sub>5</sub> vertebra was noticed in only five cases, all of them from the medieval necropolis from Săbăoani.

### **5.3.3. Osteoarthritis conditions**

Osteoarthritis is a frequently met condition, especially in people older than 45. There are noticed osteophytes in the vertebrae, spinal disc herniation, porosities, enthesophytes, ankylosing spondylitis and other joint degenerative diseases.

### **5.3.4. Traumas**

Cranial traumas are met with a significant frequency, especially in male from the medieval necropolis from Săbăoani. The cranial traumas at the level of the parietal bones are predominant, followed by those in the frontal bones. Postcranial traumas have been identified in both skeletal series under study, especially in male. Almost all the fractures are healed (even if deficient), in both female and male.

### **5.3.5. Neoplasia**

Osteomas were noticed in the medieval skeletal series, on the skull of a male who died when he was 25-30 years old.

## **CHAPTER 6. COMPARATIVE DATA**

### **6.1. Paleodemographic comparative data**

For the 0-X age group, the average age of death increases from one historical age to another, except the first decade of the 20<sup>th</sup> century when the value of the parameter under study decreases.

## **6.2. Paleoanthropological comparative data**

### **6.2.1. Population of Sântana de Mureș type**

The Mediterranean as well as the Protoeuropean elements forms the predominant characteristics of the population in this culture and they can be assigned to the local features. There is also noticed the presence of certain Nordic traits.

### **6.2.2. Medieval population**

From the typological point of view, the medieval population differed from one area to another, depending on the distance between the population groups and the geographical, religious or cultural barriers. The Mediterranean features are predominant (in 9 out of 16 necropolises), mostly for the female. These traits appear in a combination with the Dinaric and Nordic ones.

### **6.2.3. Diachronic typology evolution**

We can notice the stability of the Mediterranean anthropological features in the community from Săbăoani. The Mediterranean elements registered a slight increase during the medieval period and a regression in the contemporary population. We highlight the fact that the Dinaric elements have been growing constantly in number, together with the Nordic features and they are dominant in the population nowadays. We also notice the appearance of the Mongoloid features during the Middle Ages. We suppose they appeared at the same time with the Mongol invasions. Although greatly diminished, the Mongoloid features can be found in the population nowadays, but in insignificant proportions.

## **CONCLUSIONS**

The two necropolises discovered on the area of Săbăoani village belong to an important period in history. The first one is from the 4<sup>th</sup> century and it belongs to Sântana de Mureș culture whereas the second necropolis is part of the late medieval period, known during the 14<sup>th</sup> to the 17<sup>th</sup> century.

The osteological material is represented by 57 skeletons from the inhumation tombs, out of a total of 102 tombs (88 inhumation tombs and 14 incineration tombs) which belonged to the necropolis from Săbăoani since the 4<sup>th</sup> century A.D. and 937 skeletons from 1455 inhumation tombs discovered in the medieval necropolis from Săbăoani.

For the necropolis from the 4<sup>th</sup> century in Săbăoani, the average age at death for the 0-X year's old group (the total population) is 22.76 years. For the medieval

skeletal series, the average age at death (0-X years old) is 29.34 years for the necropolis from Berindești-Săbăoani and 29.98 from that in Săbăoani.

The life expectancy at birth for the necropolis from the 4th century A.D. is 22.92 years.

The dimension of the population is 59 individuals for the necropolis from the 4<sup>th</sup> century A.D. For the medieval necropolises we have estimated, in Berindești-Săbăoani, a population of 133 individuals and in Săbăoani, a population of 232 individuals.

In the Săbăoani village, diachronically, we notice the stability of the Mediterranean anthropological traits. The Mediterranean features register a slight increase during the Middle Ages and a regression in the contemporary population. The ratio of the Protoeuropean features decreases in time so that they are no longer noticed in the population nowadays.

As regards the presence of pathologies, anomalies and non-metric (epigenetic) traits in the skeletal series from Săbăoani, we can say that it is moderate.

Related to dentition, apart from the physiological dental deterioration, there were also noticed the dental carries, tooth loss *in vivo*, partial or total edentation, granuloma, and dental supragingival calculus.

We have noticed in the category of the non-metric features the Wormian bones, metopism, suture mendosa, supplementary facets on the tibiotalar joint, the supratrochlear foramen of the humerus, sacralisation of the L<sub>5</sub> vertebra.

Osteoarthritis could be found in many cases, in both necropolises. The most frequent osteopathy's are met in the spine.

The traumas were discovered in the cranial bones but also in the long bones, more widely spread in the medieval skeletal series in comparison to that from the 4<sup>th</sup> century and preferably in male.

The anthropological study undertaken on the skeletal series from the two necropolises from Săbăoani contribute to a better knowledge of the paleoecology of the populations who lived on the territory of Săbăoani village nowadays and it reflects part of the life conditions of these communities.

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