ANTHROPOLOGICAL DATA REGARDING THE SKELETONS IN THE COLLECTIVE BURIAL FROM COPĂCENI (CLUJ COUNTY), OF THE EARLY BRONZE AGE (COPĂCENI GROUP)

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Abstract: The present paper refers to the anthropological study of a collective burial that comprised the skeleton of a woman in a gynaecological position and of four little children. The woman had the age of 25-26 years. Two of the children were sucklings, with the age of 0-6 months (one of them of male sex), the third one, a *foetus*, had 36-38 gestational weeks (8-9 months) being considered as a prematurely born, or even an aborted child. The last child (the fourth one) had the male sex and the age of 0-1 month. Together with the first individual it was also found a tibia belonging to another individual of 0-6 months. The dimensions of the respective bone had shown that it didn't belong to any of the studied children.

Cuvinte-cheie: mormânt colectiv, ritual neobişnuit, Bronz Timpuriu.

Rezumat: Lucrarea de faţă se referă la studiul antropologic al unui mormânt colectiv, care cuprindea scheletul unei femei aflate în poziţie ginecologică şi a patru copii foarte mici. Femeia avea vârsta de 25-26 ani. Doi dintre copii erau sugari, cu vârsta de 0-6 luni (unul fiind de sex masculin), al treilea, un *foetus* de 36-38 săptămâni gestaţionale (8-9 luni) fiind considerat fie născut prematur, fie avortat. Ultimul copil (al patrulea) avea sexul masculin şi vârsta de 0-1 lună. Împreună cu oasele primului copil s-a găsit şi o tibie, aparţinând unui copil de 0-6 luni. Dimensiunile acestui os indicau faptul că el nu aparţinea niciunuia dintre copiii studiaţi.

I. Introduction

In 1990, in the Copăceni village (Cluj County), on the „*La Moară*" spot (Fig. 1), the archaeologist Gheorghe Lazarovici identified the presence of a platform which was assigned to the Early Bronze Age[1]. About 40 cm east from it, several human bones were found during the sectioning of an earthen wall, which was performed for making a road. In 1991, excavations had been undertaken on that spot, thus, two cassettes (C. I and C. II) being created[2]. In the first of them it was discovered a collective burial, containing the skeleton of a woman, as well as others, of three sucklings and a *foetus* (Fig. 2-3)[3]. The adult skeleton had a N-S orientation and was incomplete, missing its skull and partly the right arm and the left leg[4]. Upon its coxal bones were deliberately placed three limestone boulders. The skeleton had been arranged in a gynaecological position, with spread legs and heels underneath the pelvis and with the children skeletons around it. The possible interpretations of this situation, as provided by Mihai Rotea and Mihai Wittenberger, the archaeolo-

[1] Rotea, Wittenberger 1998, 17.

[2] *Ibidem,* 17-18, pl. II.

[3] At the beginning of the anthropological study, the initial number of skeletons had been considered to be much bigger, due to the fact that the human bones had been separately packed and noted by different persons, in various ways, thus bearing distinct notations, some of the packages with Copăceni-*La Rusu* (*Roşu*?), others with Tureni-*La Moară*. The number of packages was larger than that of the individuals mentioned by the archaeologists. In order to prepare this paper for publication, the authors of the archaeological study had provided me further information about the exact location of the find, as well as those about the initial marks which had been used, thus being clarified all the aspects about the skeletons notation.

[4] As we will see further, during the anthropological study, some other missing bones of this skeleton could be observed.

Fig. 1 – Copăceni-*La Moară*. The position of the site.

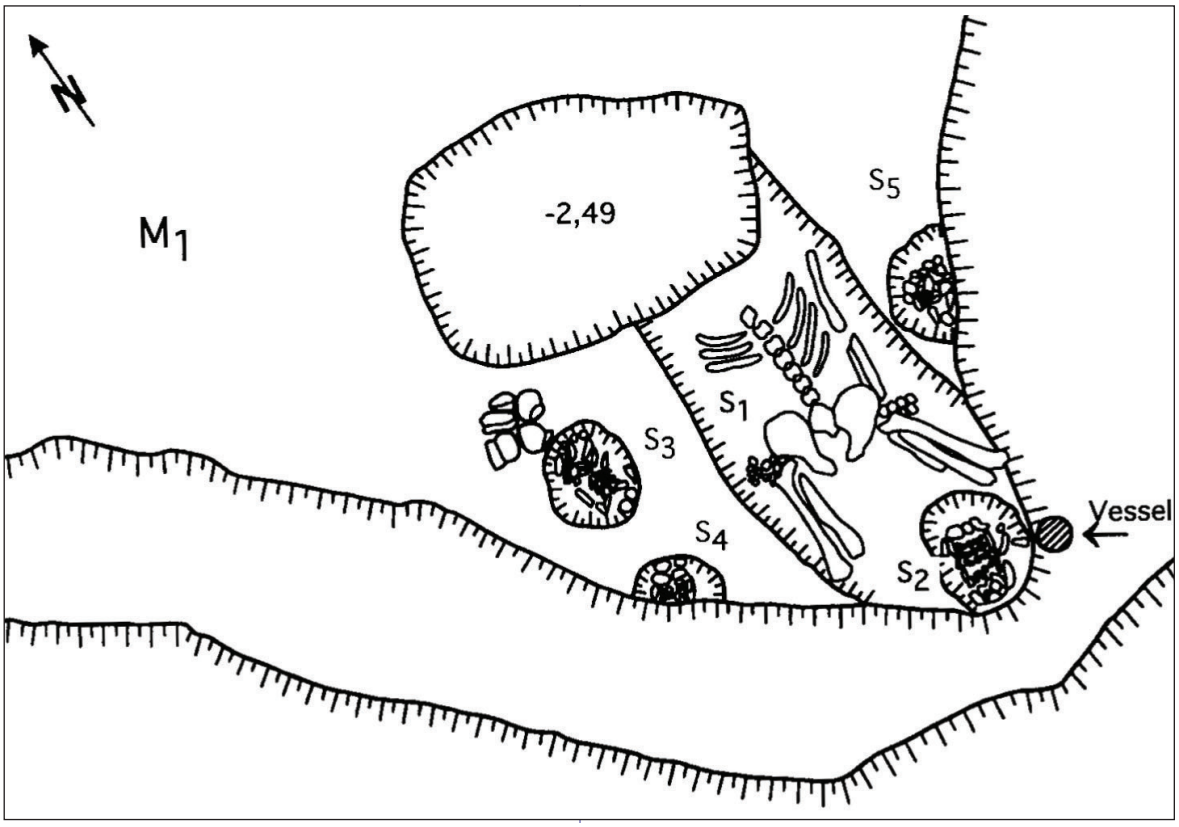

Fig. 2 – Copăceni-*La Moară*. The ritual complex.

gists who had carried out the excavations, were the following ones:

- A gestational accident, resulting in the abortion of the children;
- Practicing of a religious sacrifice;
- Natural death.

They considered the second hypothesis as being the most plausible, given the location of a dwelling in the proximity of the complex, thus the respective burial being possibly explained as a foundation rite.

Concerning the grave goods, it was found just a single vessel, with large dimensions. It bore

traces of burnt cellulose type materials and was situated in the eastern extremity of the complex. The entire assembly had been partly deteriorated before the intervention of the archaeologists, so that the vessel was broken, while the woman and children skeletons had missing parts[5]. The complex has been assigned to the Early Bronze Age Copăceni Group[6].

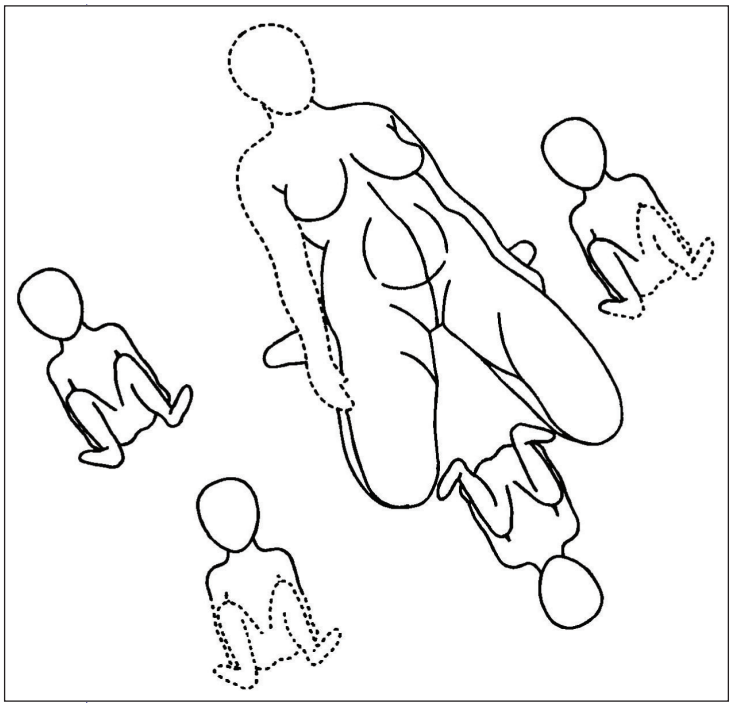

Fig. 3 – Copăceni-*La Moară*. Hypothetical representation of the complex (after Rotea, Wittenberger 1998).

II. Preservation condition of the skeletons

The woman skeleton was in a better state, due to the larger dimensions of its bones and given that the taphonomic factors didn't intervene too much upon it. On the other hand, the children skeletons were poorly preserved, especially when we refer to the bones of the skulls. These were very brittle and thin and this was maybe the reason why they were found in a very fragmentary condition. Some parts of those skulls were reconstructed, but they were not too helpful for the anthropological study. Yet, we were lucky enough to have some significant elements which helped us during the study, for having more relevant conclusions. The long bones of the children were in a better condition and this is why some of them could be reconstructed and allowed the specific measurements to be carried out upon them.

III. Anthropological analysis

1. *Material and methods*

1.1. *Materials*

The materials to be studied here are represented by the woman and children skeletons.

1.2. *Methods*

For each individual the anthropological study was based upon the methods and techniques recommended after the working sessions of the anthropologists in Prague (1972) and Sarospáták (1978)[7].

1.3. *Age estimation*

Of course, we have used distinct criteria, given the obvious differences between the adult individual and the children skeletons.

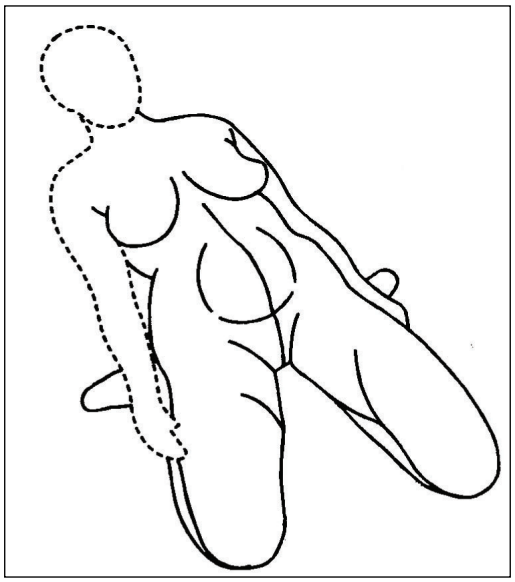

Fig. 4 – Copăceni-*La Moară*. Subject 1: the position of the female skeleton.

1.3.1. *Adult*

For this individual we have used the following criteria:

- changes of the symphiseal facies of the pubis;
- the closure of the sacral vertebrae;
- occurence and evolution of some pathological processes, more or less connected with the age, or with the activity of the individual[8].

[5] An interesting paper that also included the find from Copăceni was published by Palincaş 2014.

[6] Rotea, Wittenberger 1998, 19. About this group, see Rotea 2003, with lit.

[7] Ferembach *et alii* 1980, 517-549.

[8] Ortner, Putschar 1985; Brothwell 1981, 109-174; Hošovski, Mikić 1995.

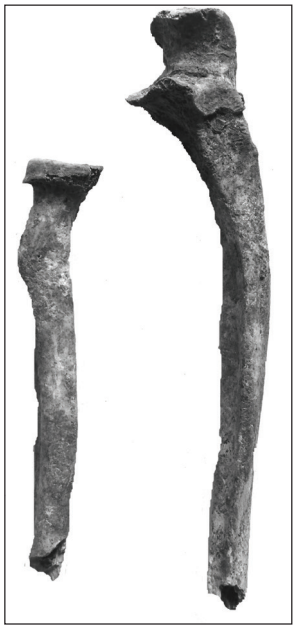

Fig. 5 – Copăceni-*La Moară*. Bones of the upper limbs of the Subject 1.

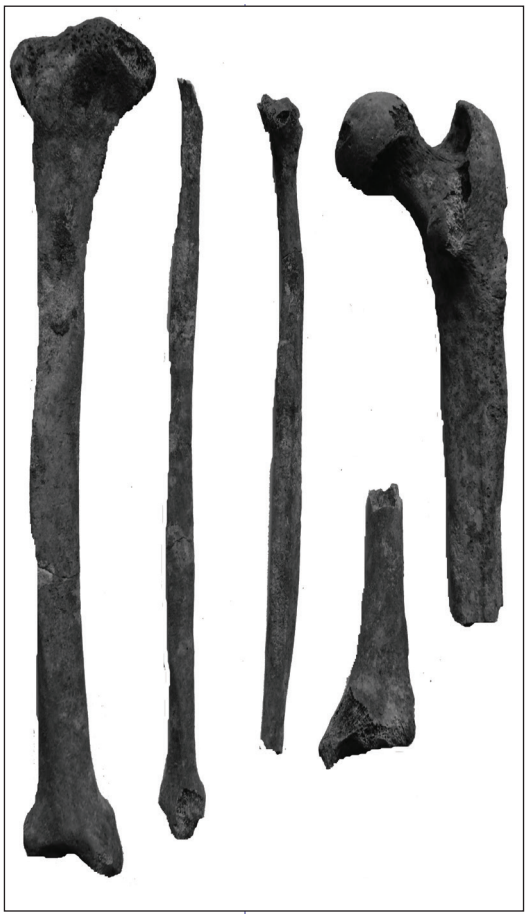

Fig. 6 – Copăceni-*La Moară*. Bones of the lower limbs of the Subject 1.

1.3.2. *Sucklings and foetus*

For establishing the age of those children it was used the dental scheme of development and eruption of the decidouos teeth conceived by Ubelaker[9], as well as the tables regarding the correlation existing betweent the length of the long bones and the age of the inividuals up to 14 years conceived by Stloukal şi Hanáková[10]. Moreover, it was also used the method of age determination based on the measurements of the *pars basilaris*[11].

1.4. *Estimating the sex*

In the mentioned purpose, for the adult individual, the same like for the age assessment, a complex of characters have been used, which we could identify and will be rendered in the following lines:

- the general shape of the coxal bones, with the changes specific to each sex;
- the degree of opening of the great sciatic notch;
- the massiveness degree of the long bones and especially the dimensions of the epiphyses and development of the muscle marks.

The anthropometric study for the woman skeleton has been done according to the classical techniques established by R. Martin and improved by de K. Saller[12]. For the evaluation of the dimensions has been used the dimorphic scale of V. P. Alexeev and G. F. Debetz[13], while for the indices, the unitary classical ones, as used in the current practice.

In the present paper, we didn't use the method for establishing the number of births as provided by some transformations appeared on the coxal bones and especially on the pelvis. This decision was taken as such determinations are very controversial. The elements used in this purpose are situated in the region of the sacro-iliac suture (*pre-auricular sulcus*) and in the proximity of the pubic symphysis (on the postero-superior part of the pubis). To these, the pubic tubecle could be also added. By the studies carried out upon recent cases, with well known parity, it resulted a small correlation between the number of births and the mentioned formations. Indeed, they seldom appeared at the nulipar women, but could be also identified at the male individuals. At the same time, other multiparous women could exhibit no modifications appearing on the coxal bones.

Seemingly, these changes, that for some time have been interpreted as being the result of birthing, in fact, reflected the influence of some biomechanical factors, or of those from other categories[14].

Regarding the sucklings, in order to assess their sex we have relied upon the characteristics of the iliac bones, as established by Schutkovski[15].

1.5. *Stature estimation*

We have used three most usual methods, conceived by Manouvrier, Trotter and Gleser and

[9] Ubelaker 1978, 46-47; Schumacher, Schmidt 1976, 102, 128.

[10] Ferembach *et alii.* 1980, 532.

[11] Scheuer, MacLauchlin-Black 1994, 177-180; Tocheri, Molto 2002, 356-363.

[12] Martin, Saller 1957-1966, 429-597; Ubelaker, 1978.

[13] Alexeev, Debetz 1964.

[14] Houghton 1975, 655-661; Holt 1995, 94; Snødgrass, Galloway 2003, 1-5; Chamberlain 2006, 96.

[15] Schutkovski 1993, 199-205.

Bach[16]. Some decades ago, Olga Necrasov considered that it is better to use several methods to estimate the stature, in order to compensate the errors of each of them[17].

2. Anthropological data

2.1. *The adult skeleton – Subject 1* (Fig. 2, 3, 4)

2.1.1. *Skull*

The individual, as provided for the anthropological study, had no skull and part of the post-cranial skeleton, from the upper part of the body. As a general feature of the bones, we could notice their well outlined muscle marks.

2.1.2. *Post-cranial skeleton*

Out of the post-cranial skeleton, from the upper limbs, fragments of the left ulna with the missing distal end and a small part of the diaphysis, as well as the fragmentary left radius (Fig. 5) have been recovered. From the lower limbs, the upper half of the right femur, with its proximal end, the complete right tibia and part of the left one with its distal metaphysis, both fibulae (the right one without the distal end and the left without the proximal one) (Fig. 6) had been found. Both coxal bones existed as well, broken at places (Fig. 7).

There were also ribs, vertebrae, the left patella, calcanei, taluses, metatarsal bones, phalanges. The first sacral vertebra was also recovered and it was unfused with the second one.

Dimensions of the right tibia, the only bone that was entirely preserved will be present below (Table 1).

2.1.3. *Sex and age diagnosis*

After analysing the characteristics of the mentioned individual, it was concluded that the respective skeleton had belonged to the female sex. Based upon the facies of the pubic symphysis, which belonged to the stage IV by Todd, it resulted that the age of the studied woman was of 25-26 years. Another element that shows the age of the individual is the unfused first vertebra of the sacral bone.

2.1.4. *Non-metric traits*

On the right tibia there are obviously outlined the "squatting facets", especially the lateral one. On the left bone, the surface of that area is damaged and, therefore, the respective traits could not be detect-

Fig. 7 – Coxal bones, Subject 1.

ed.

Fig. 8 – *Hiatus sacralis,* Subject 1.

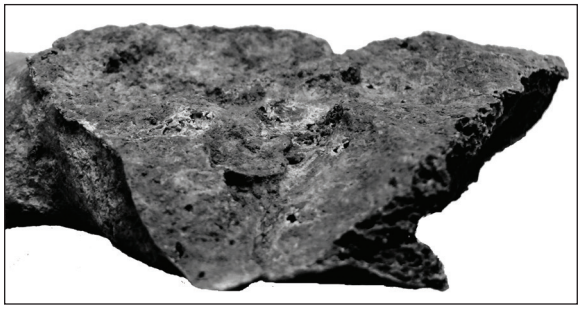

Fig. 9 – Copăceni-*La Moară.* Bony crest of the coxal bones, Subject 1.

For the sacral bone it could be observed the presence of the *hiatus sacralis* belonging to the 2nd category by Franz-Markus (Fig. 8)[18].

2.1.5. *Skeletal markers of individual activity*

The ulna, femur and fibulae had emphasized stronger muscle insertions. On the ulna, the *linea interosea* is well developed. Also, the marks of the *triceps* are structured in an osseous crest, those of the *supinator* and *anconeus* are also well emphasized, the same like those of the *brachialis* and

[16] H. Bach, 1965, 20, 12-21; Manouvrier 1893, 4, 433-449; Trotter, Gleser 1952, 10, 463-514.

[17] Necrasov 1982, 241-245.

[18] The scheme of U. Franz-Markus regarding the *hiatus sacralis* is to be found in Grimm 1961, 349, fig. 1.

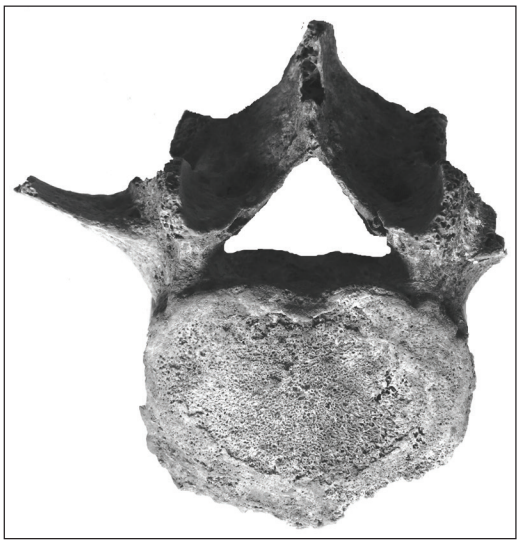

Fig. 10 – Copăceni-*La Moară.* Osteoarthritys on a dorsal vertebral body, Subject 1.

Fig. 11 – Copăceni-*La Moară.* Schmorl node on a lumbar vertebra, Subject 1.

Fig. 12 – Copăceni-*La Moară.* Tibial metaphysis with porosities, Subject 1.

flexor digitorum profundus muscles.

On the radius, the *linea interosea* is also well defined, as well as the *biceps*, *adductor policis longus* and *flexor policis longus* insertions. All these data show us that the respective individual had intensely used his upper limbs. On the coxal bones, especially around the *facies auricularis*, a bony crest could be observed (Fig. 9).

On the femur there are well outlined the marks of the *gluteus maximus,* while on the fibulae all the muscle marks are very evident.

2.1.6. *Pathological aspects*

Upon the dorsal vertebrae, especially on L. 5, there were exostoses of smaller, or medium size (Fig. 10). On a lumbar vertebra, the presence of a Schmorl node could be observed (Fig. 11).

On the proximal end of the right tibia (Fig. 12) there are porosities that indicate the presence of an inflammatory process. The same observation could be done upon the femoral head and its neighbouring area (Fig. 13).

2.1.7. *Stature*

The height of the individual, established by using the right tibia had reached 1,536 cm by Manouvrier, 1,580 cm by Trotter and Gleser and 1540 cm by Bach. The most probable height of the individual was of 1,552 cm, belonging to the medium category, for the sex that we are referring to, based upon the dimorphic scale of Alexeev and Debetz.

2.1.8. *Typology*

Considering the stature of the individual, as well as the robustness of the long bones and the gracility of the other parts of the skeleton, we have assigned this individual to the Protomediterranean type.

2.1.9. *Other depositions*

Together with the human individuals there were two animal bones and a vessel of large dimensions.

2.2. *Children*

2.2.1. *Subject 2* (Fig. 2, 3, 14)

This skeleton was almost complete. It was placed right between the legs of the adult individual, in a flexed position, on its back, with the legs raised towards its chest. The orientation of this skeleton was almost the same like that of the adult, namely SW-NE, but its head was towards SE[19].

[19] Rotea, Wittenberger 1998, 18.

2.2.1.1. *Skull* (Fig. 15)

From this part of the skeleton frontal fragments (two of them with the upper margins of the orbits), parietals, the petrous portion of the temporal bones, malars, fragments of the cranial base, as well as some smaller parts of the occipital could be recovered. One fragment of the mandible has been also found, coming from the right horizontal ramus (Fig. 16), as well as the bud of a central deciduous incisor. Separately, it was found a fragment of the right ascending ramus, but that zone of the mandible could not be reconstructed, due to missing connective portions.

2.2.1.2. *Post-cranial skeleton*

From this part of the body, neural arches, 13 rib fragments, epiphyseal disks, phalanges, the right scapula in a fragmentary condition, the right ischion, ilion (Fig. 17) and pubis, as well as metatarsal bones could be recovered. From the long bones, just the right humerus, the right radius and the right tibia could be reconstructed (Fig. 18, 19). Their dimensions are rendered below (Table 2).

2.2.1.3. *Sex and age diagnosis*

Based upon the method established by H. Schutkovski, we could consider that the skeleton had belonged to the male sex. Considering the dimensions of its right humerus and tibia, we can estimate its age at 0-6 months, most probably, towards the end of the interval.

2.2.1.4. *Other depositions*

Together with the *Subject 2* it was found a right tibia (60 mm) (Fig. 20), coming from an individual with the age of 0-6 months.

2.2.2. *Subject 3* (Fig. 1, 2, 21)

This individual was placed about 40 cm on the right (western) side of the adult skeleton, in a flexed position, on its back, with its legs raised towards its chest. The orientation of the skeleton was NW-SE, almost the same like that of the adult, but with a slight deviation to the west. In the proximity of the skull, six river stones had been placed[20].

2.2.2.1. *Skull* (Fig. 22)

This part of the skeleton was discovered in an excessive fragmentary state, with brittle bones. Some small portions of the frontal (with the upper part of the orbits), parietal, petrous portions of the temporal bones and occipital have been reconstructed, with great difficulty. There were also parts of the cranial base, as well as part of the mandible (just the left horizontal ramus, without traces of fu-

[20] *Ibidem.*

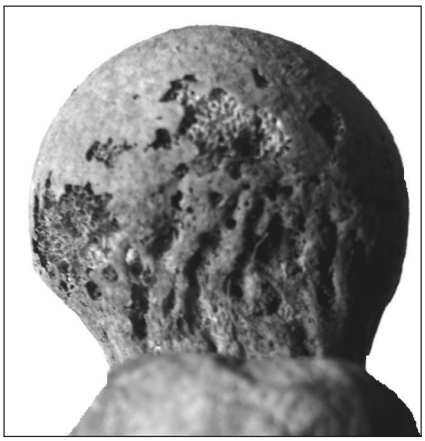

Fig. 13 – Copăceni-*La Moară.* Femural head with porosities, Subject 1.

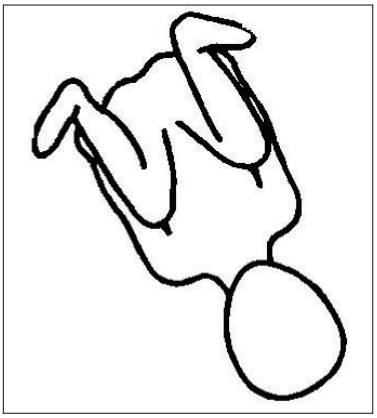

Fig. 14 – Copăceni-*La Moară. Subject 2*: the position of the skeleton (after Rotea, Wittenberger 1998).

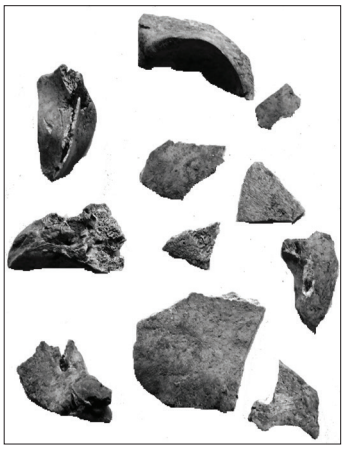

Fig. 15 – Copăceni-*La Moară. Skull fragments,* Subject 2.

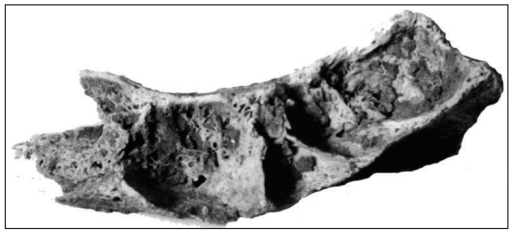

Fig. 16 – Copăceni-*La Moară*. Mandible fragment, Subject 2.

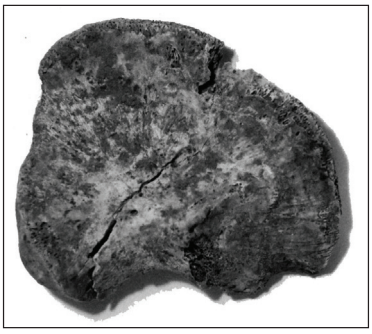

Fig. 17 – Copăceni-*La Moară*. Right iliac bone, Subject 2.

Fig. 18 – Copăceni-*La Moară*. Long bones of the upper limbs, Subject 2.

Fig. 19 – Copăceni-*La Moară*. Long bones of the lower limbs, Subject 2.

sion with the right one) (Fig. 23). As buds, the following teeth have been found: 2 m.1, 2 m.2, 2 upper central incisors.

As the complete *pars basilaris* has been also recovered (Fig. 24), the measurements on this bone could be performed without difficulty (Table 3).

2.2.2.2. *Post-Cranial skeleton*

The long bones were represented by the right ulna, which was complete. The left ulna has been recon-

Fig. 20 – Copăceni-*La Moară*. Isolated tibia found with Subject 2.

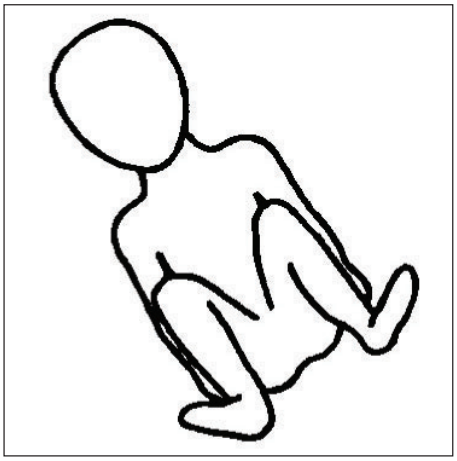

Fig. 21 – Copăceni-*La Moară*. Subject 3: position of the skeleton (after Rotea, Wittenberger 1998).

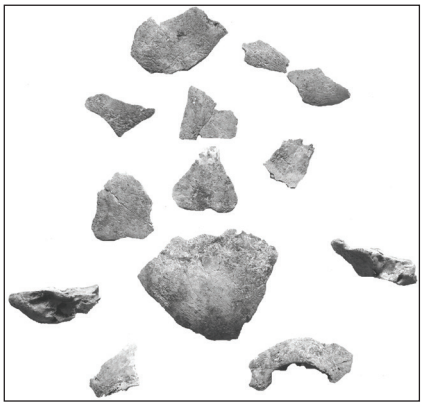

Fig. 22 – Copăceni-*La Moară. Skull fragments,* Subject 3.

structed, as well as the right humerus and radius.

From the mentioned individual, other bones were also recovered, such as: scapulae, clavicles (of which the right one had the broken ends and the left one the missing distal end), neural arches, 14 rib fragments, a pubic fragment, 1 metatarsal bone.

On the long bones (Fig. 25), the measurements could be performed and they are rendered in the table below (Table 4).

2.2.2.3. *Sex and age diagnosis*

Based upon the measurements undertaken upon the long bones, it resulted that the individual had the age below 6 months, but using those on *pars basilaris* it could be found that its age was of 0-6 months, but a little bit younger than the previous skeleton.

2.2.3. *Subject 4* (Fig. 1, 2, 26)

This individual was found 0.34 cm west from the adult skeleton, in the area of its lower limbs. It was just partly preserved (part of the skull and chest), the rest of the skeleton being destroyed by landslides[21].

2.2.3.1. *Skull*

There are fragments coming from both malar bones, with the lower outline of the orbits, as well as the *pars* basilaris (Fig. 27). The measurements of the last mentioned bone are rendered in the table below (Table 5).

2.2.3.2. *Post-cranial skeleton*

This part of the skeleton is represented by the right radius (Fig. 28), three rib fragments, the right scapula in a fragmentary condition, 1 neural arch, 1 metatarsal bone (Table. no 6).

2.2.3.3. *Sex and age diagnosis*

The sex of this individual could not be established, due to the lack of relevant elements.

Considering the measurements undertaken on *pars basilaris*, we could estimate that the respective individual had the age of 36-38 fetal weeks (8-9 gestational months)[22]. He could be either aborted, or prematurely born.

2.2.4. *Subject 5* (Fig. 1, 2, 29)

This was discovered 0.20 cm away from the left arm of the adult individual. It was just partly preserved, being destroyed by landslides. Seemingly, the orientation of this skeleton was north–south, but with a slight rotation to the west[23].

2.2.4.1. *Skull*

Few bony fragments have been recovered from this part of the skeleton (Fig. 30). There were portions of the parietal, the area of the zygomatic apophysis on the left side and both petrous por-

[21] *Ibidem.*

[22] Tocheri, Molto 360, Table 3.

[23] Rotea, Wittenberger 1998, 18.

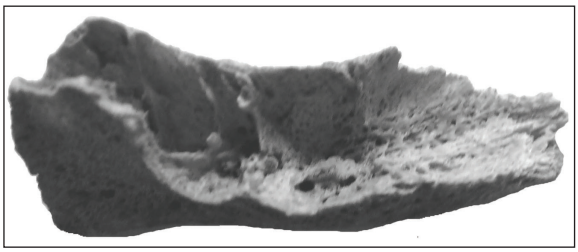

Fig. 23 – Copăceni-*La Moară. Mandible fragment,* Subject 3.

Fig. 24 – Copăceni-*La Moară. Pars basilaris,* Subject 3.

Fig. 25 – Copăceni-*La Moară. Long bones of the upper limbs,* Subject 3.

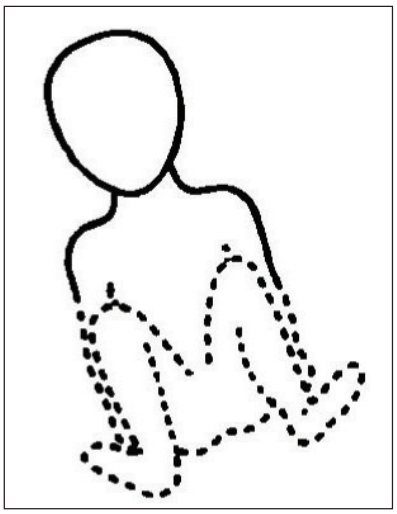

Fig. 26 – Copăceni-*La Moară. Subject 4: position of the skeleton (after Rotea, Wittenberger 1998).*

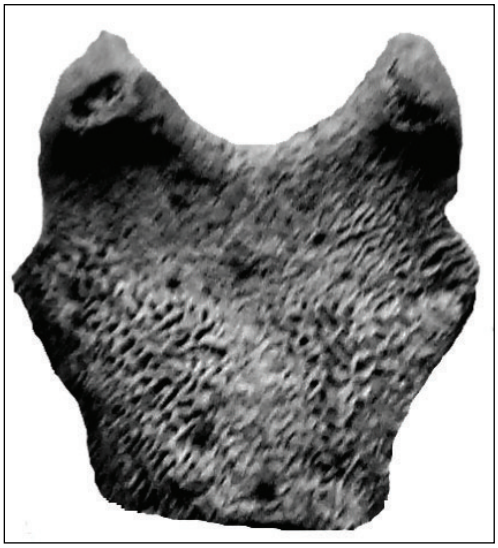

Fig. 27 – Copăceni-*La Moară*. *Pars basilaris,* Subject 4.

Fig. 28 – Copăceni-*La Moară*. Right radius.

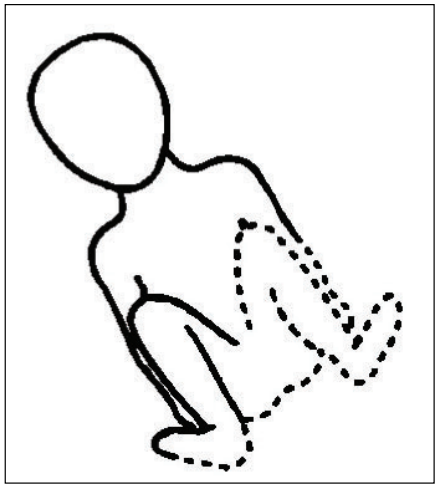

Fig. 29 – Copăceni-*La Moară*. *Subject 5*: position of the skeleton (after Rotea, Wittenberger 1998).

Fig. 30 – Copăceni-*La Moară*. Cranial fragments, Subject 5.

tions of the temporal bones, two fragments of the horizontal ramus of the mandible (Fig. 31), without traces of their fusion. There were also buds of the right central upper incisor and buds of decidous molars I.

2.2.4.2. *Post-cranial skeleton*

Rib fragments have been identified, as well as the right scapula (represented just by the area of the glenoid cavity), neural arches, epiphyseal disks (complete and fragmentary), phalanges. It was also found the right clavicle (Fig. 32)[24]. Both iliac bones, in an almost complete state have been also recovered (Fig. 33).

From the long bones, both humeri (the right one with the proximal end slightly deteriorated, at places, thus being not used for the measurements), both ulnae, the right radius (Fig. 34), the right femur, both tibiae, the right patella and a fragment from the left one (Fig. 35) have been recovered.

The measurements undertaken on the long bones of this individual are rendered below (Table 7).

2.2.4.3. *Sex and age diagnosis*

The sex of the individual, by using the method established by Schutkovski[25], was the male one. The age of the individual, using the long bones, the clavicle (39 mm)[26] and dentition (according to the dental scheme of Ubelaker[27]) was of 0-1 month.

IV. Some conclusions

We are facing a very interesting situation, of a collective burial, which comprised very young children, as well as a woman arranged in a gynaecological position. At first sight, the display of the individuals shows a birth process. This might be also suggested by the presence of the *foetus* that was found on the right side of the woman, near her legs. The respective child, as anthropologically established, was 36-38 fetal weeks (8-9 gestational months), which might have been either aborted, prematurely delivered alive, or still born. The other children, of various ages, but sucklings, had been buried together with the dead mother and her *foetus*, initially providing the image of a quadruple birth. Yet, the data obtained after the anthropological study had suggested that they could not be born during one and the same such process.

[24] Black, Scheuer 1996, 427, Table 3.

[25] Schutkovski 1993, 199-205; Scheuer, MacLaughlin-Black 1994, 177-180.

[26] Black, Scheuer 1996, 425-434.

[27] Ubelaker 1978.

We ought to mention here also the obvious physical effort exerted by the woman during her life, whose skeleton displayed not only emphasized muscle marks, but also, pathological aspects that normally seem to be connected with a more advanced age. Yet, if we refer to the osteoarthritis of the spine, we can imagine that the respective individual performed many activities involving that part of the skeleton, like loads lifting, or carrying.

As the burial is located in the proximity of a dwelling, we may also consider the idea of a sacrifice dedicated to its foundation, being meant to provide fecundity and prosperity to the family who inhabited that construction.

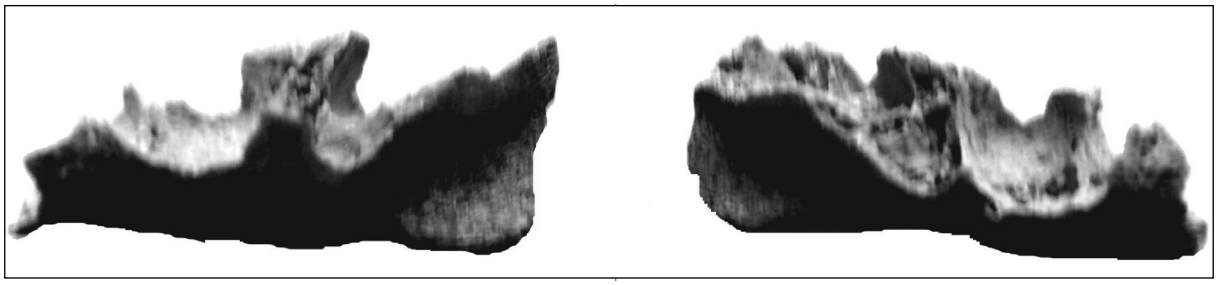

Fig. 31 – Copăceni-*La Moară*. Mandible fragments, Subject 5.

Fig. 32 – Copăceni-*La Moară*. Right clavicle, Subject 5.

Fig. 33 – Copăceni-*La Moară*. Iliac bones, Subject 5.

Fig. 34 – Copăceni-*La Moară*. Long bones from the upper limbs, Subject 5.

Fig. 35 – Copăceni-*La Moară*. Long bones from the lower limbs, Subject 5.

Table 1 – Measurements and indices of the right tibia of the woman skeleton.

No. Martin	Measurements	Dimensions and indices (mm)
1.	Maximal length	334
8.	Middle shaft antero-posterior diameter	24
9.	Middle shaft transversal diameter	18
8a.	Upper shaft antero-posterior diameter	33
9a.	Upper shaft transveral diameter	22
10b.	Minimal perimeter	76
	Robustness index	76.00
	Cross-section index	76.00
	Platicnemic index	66.66

Table 2 – Dimensions of the long bones of Subject 2.

Maximal length of the long bones	Dimensions (mm)
Right humerus	68
Right radius	57
Right tibia	67

Table 3 – Measurements carried out upon the *pars basilaris* of Subject 3.

***Pars basilaris* - measurements**	**Dimensions (mm)**
Maximal length	16.46
Sagittal length	13.23
Maximal width	15.07

Table 4 – Dimensions of the long bones of Subject 3.

Maximal length of the long bones	Dimensions (mm)
Right humerus	65
Left humerus	65
Right radius	52
Right ulna	59

Table 5 – Measurements on the pars basilaris of Subject 4.

Pars basilaris- measurements	Dimensions (mm)
Maximal length	14.66
Sagital length	11.41
Maximal width	13.47

Table 6 – Dimensions of the right radius of Subject 4.

Maximal length of the long bones	(mm)
Right radius	50

Table 7 – Dimensions of the right radius of Subject 5.

Maximal length of the long bones	(mm)
Left humerus	61
Right ulna	57
Left ulna	56
Right radius	52
Right femur	67
Right fibula	59
Right tibia	61
Left tibia	61

BIBLIOGRAPHY

Alexeev, Debetz 1964 — V. P. Alexeev, G.F. Debetz, *Kraniometrija*, Nauka, Moskva 1964.

Bach 1965 — H. Bach, *Zur Berechnung der Körperhöhe aus den Langen Gliedmassenknochen weiblicher Skelette*, Anthropologische Anzeige 1965, 20, 12-21.

Black, Scheuer 1996 — Sue Black, Louise Scheuer, *Age Changes in the Clavicle from the Early Neonatal Period to Skeletal Maturity*, International Journal of Osteoarchaeology, 6, 1996, 425-434.

Brothwell 1981 — D. R. Brothwell, *Digging up bones*, Cornell University Press, Ithaca, New York, 1981.

Chamberlain 2006 — A. Chamberlain, *Demography in Archaeology*, Cambridge Manuals in Archaeology, Cambridge University Press, Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore, São Paolo 2006.

Ferembach *et alii* 1980 — D. Ferembach, Ilse Schwidetzky, M. Stloukal, *Recommendations for Age and Sex Diagnoses of Skeletons,* Journ.Hum.Ev. 9, 1980, 517-549.

Grimm 1961 — H. Grimm, *Krankhafte Veränderungen der Wirbelsäule in vor- und frühgeschichtlichen Material*, in G. Bersu (ed.), *Bericht über den V. Internationalen Kongress für Vor- und Frühgeschichte, Hamburg vom. 24. bis 30. August 1958*, Berlin 1961, 347-354.

Holt 1978 — A. Holt, *A Re-examination of Parturition Scars on the Human Female Pelvis*, American Journal of Physical Anthropology 49, 1, 1978, 91-94.

Hošovski, Mikić 1995 — E. Hošovski, Ž. Mikić, *Paleopatologija Čoveka*, Užice 1995.

Houghton 1975 — P. Houghton, *The Bony Imprint of Pregnanacy*, Bulletin of the New York Academy of Medicine vol. 51, 5, nr. 5, 1975, 655-661.

Manouvrier 1893	L. Manouvrier, *La détermination de la stature d'après les grands os des membres*, Bulletin et Mémoires de la Societé d'Anthropologie de Paris 1893, 4, 433-449.
Martin Saller 1957-1966	R. Martin, K. Saller, *Lehrbuch der Anthropologie in systematischer Darstellung,* Stuttgart, (1957-1966), 429-597.
Necrasov 1982	Olga Necrasov, *Sur le calcul de la stature au moyen des os longs*, Bulletin et Mémoires de la Societé d'Anthropologie de Paris, t. 9, série XIII, 1982, 241-245.
Ortner, Putschar 1985	D. J. Ortner, W. G. J. Putschar, *Identification of Pathological Conditions in Human Skeletal Remains*, Smithsonian Contributions to Anthropology 28, 1985.
Palincaş 2014	Nona Palincaş, *Body and Social Order in Middle Bronze Age Transylvania (Central Romania) c. 1900-1450*, European Journal of Archaeology 17 (2), 2014, 301-328 (together with the *Types of treatment of inhumed bodies and body parts, and their associated items, Supplementary Data 1-2*, 1-9).
Rotea 2003	M. Rotea, *Grupul Copăceni I*, Cluj-Napoca 2003.
Rotea, Wittenberger 1998	M. Rotea, M. Wittenberger, *The Ritual Complex of Inhumation Belonging to the Early Bronze Age from Copăceni-La Moară (Cluj County)*, Acta Musei Napocensis 35/I, 1998, 17-23.
Scheuer, MacLaughlin-Black 1994	Louise Scheuer, Sue MacLaughlin-Black, *Age estimation from the Pars basilaris of the Fetal and Juvenile Occipital Bone*, International Journal of Osteoarchaeology 4, 1994, 177-180.
Schumacher, Schmidt 1976	G. H. Schumacher, H. Schmidt, *Anatomie und Biochemie der Zähne*, Gustav Fischer Verlag, Stuttgart, New York 1976.
Schutkovski 1993	H. Schutkovski, *Sex Determination of Infant and Juvenile Skeletons: I. Morphognostic Features*, American Journal of Physical Anthropology 90, 1993, 199-205.
Snødgrass, Galloway 2003	J. Josh Snødgrass and Allison Galloway, *Utility of Dorsal Pits and Pubic Tubercle Height in Parity Assessment*, Journal of Forensic Sciences, vol. 48, no. 6, 2003, 1-5.
Stloukal, Hanákova 1978	M. Stloukal, H. Hanákova, *Die Lange der Langsknochen altslawischer Bevölkerungen unter besonder Berücksichtigung von Wachstum Fragen*, Homo 29, 1978, 53-69.
Tocheri, Molto 2000	M. W. Tocheri, J. El. Molto, *Aging Fetal and Juvenile Seletons From Roman Period Egypt Using Basiocciput Osteometrics*, International Journal of Osteoarchaeology 12, 2000, 356-363.
Trotter, Gleser 1952	M. Trotter, G. C. Gleser, *Estimation of stature from long bones of American Whites and Negroes*, American Journal of Physical Anthropology 1952, 10, 463-514.
Ubelaker 1978	D. H. Ubelaker, *Human Skeletal Remains. Excavation, Analysis, Interpretation*, Chicago 1978.