# THE MEDIEVAL CEMETERY FROM DRIDU – *LA METEREZE* (IALOMIȚA COUNTY, ROMANIA). BIOARCHEOLOGICAL CHARACTERISTICS

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**Abstract:** The anthropological analysis of a skeletal sample (34 individuals from 29 burial graves) from the medieval cemetery at Dridu – La Metereze ( $12^{th}-13^{th}$  or  $13^{th}-14^{th}$  centuries) determined the presence of 18 males, four females, and 12 whose sex is indeterminate (mostly children and adolescents). By age class, the highest mortality in subadults is found in children (57.1%), and in adults, in the group of young adults (50.0%). The demographic profile is comparable to the attrition mortality profile. Life expectancy at birth for the entire population is 23.67 years. The stature of the adults, despite the small sample, indicates a pronounced sexual dimorphism, the average values of males (160.3 cm) being 8.3 cm higher than those of females (152.0 cm). The high number of deaths among subadults has been attributed to diseases (dental, infectious and metabolic) that lead to a deficiency of vitamins (A,  $B_{g'}, B_{g'}, B_{12'}, C, and D$ ) and essential minerals (Fe) during the period of growth and development of the body. A series of enthesopathies, the presence of nonmetric dental and postcranial traits, as well as some traumatic manifestations, suggest that in the medieval population of Dridu we are dealing, in the case of certain individuals, with horsemen. Part of the funerary inventory also supports this statement, but we remain reserved about the Turanian origin (Pechenegs or Cumans) and the integration of these nomadic populations into the nucleus of sedentary, Christian populations (Romanians and Slavs) until we have molecular genetics results.

#### Cuvinte-cheie: Muntenia, Dridu – La Metereze, secolele XII–XIII/XIII–XIV, cimitir, bioarheologie

**Rezumat:** Analiza antropologică a unui eșantion scheletic (34 de indivizi proveniți din 29 de morminte de inhumație) din cimitirul medieval de la Dridu – La Metereze (secole XII–XIII ori XIII–XIV) a relevat 18 indivizi de sex masculin, patru de sex feminin și 12 al căror sex este indeterminabil (majoritatea copii și adolescenți). Pe clase de vârstă mortalitatea cea mai ridicată la subadulți o întâlnim la copii (57,1%), iar în lotul adulților, la grupa adulților tineri (50,0%). Profilul demografic se înscrie într-o traiectorie apropiată de modelul atrițional. Speranța de viață la naștere pentru întreaga populație este de 23,67 ani. Staturile adulților, în pofida eșantionului redus, ne indică un pronunțat dimorfism sexual, valorile medii ale bărbaților (160,3 cm) fiind cu 8,3 cm mai mari față de cele ale femeilor (152,0 cm). Numărul ridicat al deceselor în rândul subadulților a fost pus pe seama unor boli (dentare, infecțioase, metabolice) care conduc la un deficit de vitamine (A, B<sub>g</sub>, B<sub>g</sub>, B<sub>1,2</sub>, C, D) și minerale (Fe) esențiale în anii de creștere și dezvoltare a organismului. O serie de modificări entezopatice, prezența unor caractere non-metrice dentare și postcraniene, precum și unele manifestări traumatice ne fac să credem că în populația medievală de la Dridu avem de a face, în cazul anumitor indivizi, cu călăreți. O parte a inventarului funerar vine și el în sprijinul acestei afirmații, însă rămânem rezervați în legătură cu sorgintea turanică (pecenegi sau cumani) și integrarea acestor populații nomade în nucleul populațiilor sedentare, creștine (români, slavi) până la data la care vom beneficia și de rezultatele geneticii moleculare.

#### A. INTRODUCTION

In this section, we will try to briefly present some archaeological information, based on the few relevant documentary information, which refers to the medieval settlement and the related cemetery from Dridu – *La Metereze*<sup>1</sup>. Dridu is located in the centre of the Romanian Plain, in the northwest of Ialomiţa County, on the banks of the Ialomiţa River, close to its confluence with the Prahova River. The construction of an accumulation lake on the course of the Ialomiţa, in the Dridu-Fierbinţi Târg area, required the execution of archaeological investigations. Starting in 1979 and having a rescue character, the research continued at the beginning of the '80s of the last century, directed by archaeologist Viorica (Enăchiuc) Mihai from the Ilfov County Museum. Two large sites were researched, conventionally marked with the numbers XXVI and XXXI, the last notation being related to the area known by the locals as *La Metereze*. It is located on a terrace riser, on the right bank of the river Prahova, right at the confluence with the lalomița, bordered in its eastern and northeastern part by steep slopes, with depths of 12–25 m. Today, most of the site is overlapped by a monastery whose construction began in the 1990s. This edifice, together with the nearby accumulation dam, fundamentally altered the original landscape. At the *La Metereze* site, in Viorica Mihai's opinion<sup>2</sup>, seven successive levels of habitation were highlighted, ranging from the Neolithic to the Middle Ages, as follows: I. Early Neolithic; II. Early Hallstatt (Babadag culture, phases I–II); III. La Tène (5<sup>th</sup>–4<sup>th</sup> centuries BC);

<sup>&</sup>lt;sup>1</sup> Enăchiuc-Mihai 1981; Mihai 1983; Ioniță 1998; Ioniță 2005, p. 127–128, 199–212, 220, 222, 223, 224, 227; Ioniță 2013, p. 211–212, 214, 216–217, which amends some of the opinions expressed by Viorica Mihai.

<sup>&</sup>lt;sup>2</sup> We chose to quote the chronology proposed by Viorica Mihai because this is how they entered the specialised literature. Although some involve chronological discussions and nuances, already expressed by archaeologists on various occasions, the purpose of our study is to bring a bioarchaeological perspective on medieval funerary discoveries from Dridu – La Metereze.

IV. La Tène (4<sup>th</sup>-3<sup>rd</sup> centuries BC); V. La Tène (1<sup>st</sup> century BC-1<sup>st</sup> century AD); VI. Middle Ages (11<sup>th</sup>-13<sup>th</sup> centuries);
VII. Middle Ages (14<sup>th</sup>-18<sup>th</sup> centuries).

Therefore, to the medieval period were assigned the last two levels, of which the sixth (11<sup>th</sup>-13<sup>th</sup> centuries) is the subject of this study. This level comprises two phases, characterized by: rectangular surface houses (11<sup>th</sup>-12<sup>th</sup> centuries) and pit houses (12<sup>th</sup>-13<sup>th</sup> centuries). From these, but mainly from a so-called defence ditch, which did not encircle the settlement, but an approximately circular perimeter located nearby, comes an impressive amount of clay cauldrons<sup>3</sup>, that were associated with a population of Pechenegs (or Cumans) that were sedentary or in the process of sedentarization. From the middle of the 12<sup>th</sup> century, with the end of the first phase of habitation, a plane burial cemetery began to function.

Unfortunately, we do not know the exact number of skeletons uncovered at *La Metereze*. From the little archaeological information, we note that the skeletons were oriented West-East, in dorsal decubitus, with their arms positioned on their chest, abdomen, or lying along their bodies and with their legs outstretched. There is a large variety of funerary grave goods: earrings, buttons, knives, rings, buckles, knucklebones, sickles or arrowheads, which from a typological point of view allowed the dating of the cemetery until the 14<sup>th</sup> century<sup>4</sup>. The second funerary horizon<sup>5</sup> was assigned, based on monetary discoveries, within the limits of the 16<sup>th</sup>/17<sup>th</sup>–18<sup>th</sup> centuries or, more narrowly, taking into account the association of coins and the period they circulated, only to the 18<sup>th</sup> century<sup>6</sup>.

## **B. MATERIALS AND METHODS**

The analysed sample consists of skeletal remains from 29 graves. The skeletal material is curated at the "Francisc I. Rainer" Institute of Anthropology, Romanian Academy, Bucharest. The absence of important archaeological information, and the unclear data regarding the grave goods of the individuals from Dridu – *La Metereze* (orientation, position of the limbs, depth at which they were discovered), made us group the few information recovered from the notes made by Viorica Mihai in a catalogue listing the location where the research took place; some excavation coordinates; the date of the funerary features; the period of the investigation (day, month, year of research); the number of the bone package; the associated grave goods).

In addition to the anthropological characteristics, this catalogue is a useful working tool, easing the identification of the Dridu individuals. The anthropological catalogue contains information on the minimum number of individuals (hereinafter MNI), general state of preservation, degree of representativeness of bones, sex, age at death, and stature of individuals. The osteological inventory is also briefly mentioned, alongside the main cranial and postcranial (bio)morphometrical characteristics, with the afferent categories. Other aspects included in the catalogue are related to the way of life of medieval individuals (bone and dental pathologies, nonmetric traits, or the degree of development of musculoskeletal markers).

Prior to the actual anthropological analysis, the skeletal material was restored, not *in extenso*, but only those bones that showed indications of some pathology or in order to take cranial and postcranial measurements.

To identify and establish the symmetry/laterality of skeletal elements and the MNI and to assess the degree of skeletal representation of each individual, we used descriptive characters (dental, cranial, and postcranial) from atlases of human osteology<sup>7</sup> or consulted comparative material from the collection of anthropology of the Bioarchaeology Sector of the "Vasile Pârvan" Institute of Archaeology.

The assessment of the preservation status was specified for the whole skeleton, not for each element/ sector separately, based on the degree of erosion and/ or abrasion produced by the taphonomic agents in the sediment<sup>8</sup>. Taphonomic markers<sup>9</sup> such as bone staining were also recorded.

To differentiate the sex of the individuals<sup>10</sup>, we most often investigated discriminant morphological differences in the pelvis (ventral arch, subpubic concavity, ischiopubic ramus ridge, greater sciatic notch and preauricular sulcus) and skull (nuchal crest, mastoid process, supraorbital margin, prominence of glabella and mental eminence)<sup>11</sup>, elements that have high precision in the diagnosis of this parameter.

When the pelvis and skull were not preserved, along with the low degree of representativeness of the skeletal material, the sex was determined based on other skeletal elements, although their accuracy is not as high: humerus<sup>12,</sup> femur<sup>13</sup>, talus and calcaneus<sup>14</sup>. We mention that in all cases we have considered the general morphometric characteristics of the bones, such as the size of the epiphyses or the surface features of the bone<sup>15</sup>.

<sup>&</sup>lt;sup>3</sup> Ioniță 1998, p. 306–311.

<sup>&</sup>lt;sup>4</sup> Ioniţă 2013, p. 217. It is possible that the cemetery dates to the 13<sup>th</sup>-14<sup>th</sup> centuries rather than the 12<sup>th</sup>-13<sup>th</sup> centuries, and radiocarbon analyses may clarify this. For the later use of the cemetery, argue the few 14<sup>th</sup>-century coins found in the adjacent settlement, if indeed the cemetery was connected to the settlement (Nicolae, Popescu 1998, p. 291–293).

<sup>&</sup>lt;sup>5</sup> The results of the anthropological study of the skeletons from the 16<sup>th</sup>/17<sup>th</sup>-18<sup>th</sup> centuries cemetery from Dridu – *La Metereze* will be the subject of a separate study.

<sup>&</sup>lt;sup>6</sup> Nicolae, Popescu 1998.

<sup>&</sup>lt;sup>7</sup> Schaefer *et alii* 2009; White *et alii* 2012; Papilian 2003.

<sup>&</sup>lt;sup>8</sup> Brickley, McKinley 2004, p. 15–17.

<sup>&</sup>lt;sup>9</sup> Fernández-Jalvo, Andrews 2016, p. 155–166.

<sup>&</sup>lt;sup>10</sup> The parameter was determined exclusively for adults, whose bones have reached maturity.

<sup>&</sup>lt;sup>11</sup> Buikstra, Ubelaker 1994, p. 16–21.

<sup>&</sup>lt;sup>12</sup> Vance *et alii* 2011, p. 711.

<sup>&</sup>lt;sup>13</sup> Acsádi, Nemeskéri 1970, p. 85–86.

<sup>14</sup> Gualdi-Russo 2007, p. 152.

<sup>&</sup>lt;sup>15</sup> Ferembach *et alii* 1980, p. 517–527; Acsádi, Nemeskéri 1970, p. 75–87.

Numerous methods have been applied to estimate the age at death of individuals, depending on the assessed age group – subadult or adult. Thus, for subadult subjects in the categories fætal (< birth), infants (I: birth – 3.0 yrs.), and children (C: 3.0-12.0 yrs.), tooth formation and eruption sequence<sup>16</sup> or regression equations<sup>17</sup> based on the maximum diaphyseal dimensions of all long bones were used. In the case of adolescents (AO: 12.0-20.0 yrs.), we used the degree of fusion of the epiphyses to the diaphysis to estimate the age at death<sup>18</sup>. There were also situations in which the age at death in subadults could not be estimated by any of these methods, in which case we resorted to comparative skeletal material from our laboratory collection.

In the case of adult individuals (young adults = YAd: 20.0–35.0 yrs.; middle adults = MAd: 35.0–50.0 yrs.; old adults = OAd: 50.0+ yrs.), age at death has been estimated using several methods available in the literature, the calculated average values being used mainly to obtain an approximation as close as possible to the actual age. Thus, a series of degenerative morphological changes were observed that occur with age: morphology of the pubic symphyseal face<sup>19</sup> and the auricular surfaces of the coxal bones<sup>20</sup>, degree of obliteration of cranial sutures (changes in sutural skull vault segments, ectocranial)<sup>21</sup>, morphological evolution of the geometry of the articular facet and the surface texture of the costal tubercle of the first rib<sup>22</sup>, degree of fusion of the medial clavicular extremity<sup>23</sup> and that of the first two sacral vertebrae, in the anterior part<sup>24</sup>. The last two methods of estimating age were applied only to individuals in the YAd category and were very useful in differentiating them from the other two age classes: MAd and OAd.

There were also situations in which all these indicators were missing, in which case we included the individual in one of the two major age groups, subadult or adult, using as a discriminating element the general degree of fusion of the epiphyses to the diaphyses.

Several cranial<sup>25</sup> and postcranial<sup>26</sup> measurements were also taken. Using regression equations based on the maximum lengths of long bones, the skeletal stature could be calculated for both subadult (3.0–12.0 yrs.)<sup>27</sup> and

<sup>19</sup> Brooks, Suchey 1990, p. 230–233.

<sup>23</sup> Shirley, Jantz, 2010, p. 573–574, 578.

<sup>25</sup> Bräuer 1988, p. 160–192; Martin 1928, p. 625–678.

adult individuals (> 20.0 yrs.)<sup>28</sup>. Another anthropometric characteristic also calculated using regression equations, but based on several diameters of long bones, is the skeletal weight, estimated both in subadults  $(3.0-12.0 \text{ yrs.})^{29}$  and adults (> 20.0 yrs.)<sup>30</sup>.

Based on the visual evaluation of some cranial, dental, and postcranial morphological characteristics, we aimed to establish the intra- and interpopulation genetic distances by recording nonmetric characters<sup>31</sup>.

Based on some observations on the markers in the category of biomechanical stress (functional and occupational) we investigated the way of life of the analysed individuals. The first category was that of the musculoskeletal markers or entheses (insertion areas for ligaments, tendons, or joint capsules). For this, we used three standard recording models<sup>32</sup>, summing up the areas of origin and insertion of the muscles (m.), tendons (t.), and ligaments (l.) of the most relevant skeletal elements proposed by the authors. Thus, 27 surfaces from the postcranial skeleton<sup>33</sup> were evaluated, located on the following elements:

- clavicle [C]: *L. costoclaviculare* (C.I), *l. conoideum* (C.II), *l. trapezoideum* (C.III), *m. pectoralis major* (C.IV), *m. deltoideus* (C.V);

- scapula [S]: *m. teres minor* (S.I), *m. triceps brachii* (S.II);

- humerus [H]: *m. pectoralis major* (H.I), *m. latissimus dorsi* & *m. teres major* (H.II), *m. deltoideus* (H.III), *m. brachioradialis* (H.IV);

– radius [R]: *m. biceps brachii* (R.I), *m. pronator teres* (R.II), *membrana interossea antebrachii* (R.III);

– ulna [U]: m. triceps brachii (U.I), m. brachialis (U.II); m. supinator (U.III);

– femur [F]: trochanter major (F.I), m. iliopsoas (F.II), m. gluteus maximus (F.III), m. vastus medialis (F.IV), linea aspera (F.V);

- patella [P]: t. quadriceps (P.I);

- tibia [T]: *I. patellae* (T.I), *m. soleus* (T.II);

- calcaneus [c]: *calcaneal tendon* (c.I), *t. abductor hallucis* & *t. flexor digitorum brevis* (c.II).

To avoid subjectivism as much as possible, the entheses were recorded according to their degree of development (L = left, R = right, B = bilateral) and these fall into three categories (1 = weak, 2 = moderate, 3 = strong).

Physical activity, the so-called "daily activity", was also examined through bone asymmetry<sup>34</sup>.

Information on the state of health of the medieval community from Dridu – *La Metereze* was obtained through the observation of dental and bone pathologies,

<sup>&</sup>lt;sup>16</sup> Ubelaker 1980, p. 47.

<sup>17</sup> Facchini, Veschi 2004, p. 93.

<sup>&</sup>lt;sup>18</sup> Ubelaker 1980, p. 53.

<sup>&</sup>lt;sup>20</sup> Lovejoy *et alii* 1985, p. 21–27.

<sup>&</sup>lt;sup>21</sup> Meindl, Lovejoy 1985, p. 63.

<sup>&</sup>lt;sup>22</sup> DiGangi *et alii* 2009, 170–175.

<sup>&</sup>lt;sup>24</sup> Ríos *et alii* 2008, p 111.e3–111.e4.

<sup>&</sup>lt;sup>26</sup> Bräuer 1988, p. 193–232; Martin 1928, p. 1005–1052. Please note that no measurements were taken when a long bone had only one fused epiphysis.

<sup>&</sup>lt;sup>27</sup> Visser 1998, p. 415; when the tibial shafts were present, the skeletal stature was calculated exclusively on their basis, the accuracy being higher compared to the values obtained on the basis of the humeral and femoral shafts.

<sup>&</sup>lt;sup>28</sup> Pearson 1899, p. 196 *apud* Rösing 1988, p. 597.

<sup>&</sup>lt;sup>29</sup> Visser 1998, p. 417.

<sup>&</sup>lt;sup>30</sup> Auerbach, Ruff 2004, p. 336.

<sup>&</sup>lt;sup>31</sup> Mann et alii 2016; Buikstra, Ubelaker 1994, p. 85–94; Turner II et alii 1991; Hauser, De Stefano 1989; Finnegan 1978.

<sup>&</sup>lt;sup>32</sup> Myszka, Piontek, 2012; Mariotti et alii 2007; al-Oumaoui et alii 2004.

<sup>&</sup>lt;sup>33</sup> They were followed only in adolescents (the age at which enthesophytic manifestations begin to appear) and in adults.

<sup>&</sup>lt;sup>34</sup> Auerbach, Ruff 2006.

and several specialised treatises were used to identify and establish the differential diagnosis<sup>35</sup>.

# C. DESCRIPTION OF THE SKELETAL MATERIAL. ANTHROPOLOGICAL CHARACTERISTICS

**M.2.** Point: XXXI; dating: 12<sup>th</sup> century; MNI: 1; representation: partial; preservation: good (grade 2); restored; sex: female (pelvis); age at death: 20.5 yrs. [17.9–23.7 yrs.]; age category: YAd (pubic symphysis; auricular surfaces; medial clavicle; sacral fusion); stature: 158.5 cm [156.8–160.7 cm]; category: medium-tall; body weight: 65.8 kg.

Skeletal inventory & morphometry. Vertebrae (6 cervical, 6 thoracic, 4 lumbar); sacrum (dolichohieric); coccyx (1); ribs; R clavicle (medium length and robustness); ilia; ischia; pubes; L humerus (eurybrachic); R humerus (platybrachic); radii (medium lengths); ulnae (eurolenic); femora (hyperplatymeric, null pilaster); patellae (broad); tibiae (eurycnemic, dolichocnemic); fibulae; carpals; hand phalanges; tarsals; metatarsals; foot phalanges.

Nonmetric traits. a) postcranial – atlas facet form (single, B), pre-auricular sulcus (B), femoral plaque (R), exostosis in trochanteric fossa (R), lateral tibial squatting facet (R), inferior talar articular surface (single, B).

Entheses. L. costoclaviculare (2R), l. conoideum (2R), l. trapezoideum (2R), m. pectoralis major, C.IV (2R), m. deltoideus, C.V (1R), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (2B), m. brachioradialis (3B), m. biceps brachii (2B), m. pronator teres (2B), membrana interossea antebrachii (2B), m. triceps brachii (1B), m. brachialis (2B), m. supinator (1B), trochanter major (2B), m. iliopsoas (2B), m. gluteus maximus (3B), m. vastus medialis (2B), linea aspera (1B), t. quadriceps (1L/2R), l. patellae (B, m. soleus (1B), calcaneal tendon (2B), t. abductor hallucis & t. flexor digitorum brevis (1B).

Pathology. Periostitis (proliferative manifestations and new bone formation expressed on the: ilia, anterior; ischia; pubes; distal radii, anterior; femoral, tibial and peroneal diaphysis; R patella, anterior; calcanei; LMt<sub>1</sub>, RMt<sub>2</sub>; RMt<sub>2</sub>, RMt<sub>5</sub>.

**M.5.** Dating: 12<sup>th</sup> century; MNI: 2; <u>M.5 (I.1)</u> – representation: partial; preservation: very good (grade 1); sex: female (skull); age at death: 45.2 yrs.; age category: MAd (cranial sutures); stature: 152.4 cm [149.3–155.5 cm]; category: small-medium; body weight: 56.1 kg [55.1–57.1 kg].

Skeletal inventory & morphometry. Skull (phenozyg, medium-long, narrow, mesocran, medium-high/high, orthocran, hypsicran, metriocran); frontal (medium-broad according to the minimum width, narrow according to the maximum width, intermediate, eurymetop, orthometop);

parietal (flattened); temporal; occipital (medium width, megosemic); sphenoid; ethmoid; face (broad); R orbit (broad, medium-high, mesoconch); lacrimals; nasals; zygomatics; hyoid; maxillae; mandible (medium according to the intercondylar and intergonial widths, weak gonia, dolichostenomandibular); vertebrae (1 cervical); ribs; L clavicle (gracile, long); R clavicle (gracile, short); humeri (eurybrachic); radii (short); ulnae (eurolenic); L femur (platymeric, null pilaster); R femur (eurymeric, null pilaster); L tibia (eurycnemic, brachycnemic); R tibia (mesocnemic, dolichocnemic); fibulae; carpals; hand phalanges. The dentition is megadont. 26 permanent teeth (LM<sup>1</sup>-LM<sup>3</sup>; RI<sup>1</sup>-RP<sup>2</sup>, RM<sup>2</sup>-RM<sup>3</sup>; LI<sub>1</sub>-LM<sub>3</sub>; RI<sub>1</sub>-RM<sub>3</sub>) were recovered. One (RM<sup>1</sup>) was ante-mortem loss and two teeth (LP<sup>1</sup>-LP<sup>2</sup>) were post-mortem loss.

Nonmetric traits. a) cranial – metopic suture (partial), supraorbital foramen (one, B), zygomatico-facial foramen (two large, L; one large, R), parietal foramen (on parietal, B), bregmatic bone, sagittal ossicle, apical bone, lambdoid ossicle (B), direction of flexure for superior sagittal sulcus (bifurcate), mastoid foramen (one on temporal, L), petrosquamous suture (B), mental foramen (one, B), mylohyoid bridge (near mandibular foramen, complete, L); b) dental – hypoconulid (small:  $LM_1$ ,  $RM_1$ ); c) postcranial – rhomboid fossa (B), Allen's fossa (L), hypotrochanteric fossa (L), third trochanter (R).

Entheses. L. costoclaviculare (3B), l. conoideum (1B), l. trapezoideum (1B), m. pectoralis major, C.IV (2L/3R), m. deltoideus, C.V (2B), m. pectoralis major, H.I (2B), m. latissimus dorsi & m. teres major (1L/2R), m. deltoideus, H.III (1B), m. brachioradialis (3B), m. biceps brachii (2B), m. pronator teres (1B), membrana interossea antebrachii (1B), m. triceps brachii (1B), m. brachialis (2B), m. supinator (1B), trochanter major (1B), m. iliopsoas (2B), m. gluteus maximus (2B), m. vastus medialis (1B), linea aspera (1B), l. patellae (1B), m. soleus (1B).

Pathology. Dental calculus (labial:  $RI^{1}-RC^{#}$ ; whole surface:  $LI_{1}-LP_{2}$ ;  $RI_{1}-RP_{2}$ ); ante-mortem tooth loss ( $RM^{1}$ ); healed fractures (on the left parietal, at  $S_{III}$  sutural sagittal sector).

<u>M.5 (I.2)</u> – representation: weak; preservation: very good (grade 1); sex: male (talus and calcaneus measurements; general characteristics); age category: AD (general characteristics); stature: 155.0 cm; category: small.

Skeletal inventory & morphometry. Vertebrae (7 cervical, 6 thoracic, 5 lumbar); ribs; R clavicle (medium robustness); scapulae; L radius; R patella; tarsals; metatarsals; foot phalanges.

Nonmetric traits. a) postcranial – atlas facet form (single, B), acromial articular facet (R), vastus notch (R), inferior talar articular surface (double, R), anterior calcaneal facet double (R).

Entheses. L. costoclaviculare (2R), l. conoideum (1R), l. trapezoideum (1R), m. pectoralis major, C.IV (2R), m. deltoideus, C.V (2R), m. teres minor (2B), m. triceps brachii, S.II (1B), m. biceps brachii (2L), m. pronator teres

<sup>&</sup>lt;sup>35</sup> Barnes 2012; Waldron 2009; Hillson 2005; Roberts, Manchester 2005; Roberts, Buikstra 2003; Brandt *et alii* 2003; Ortner 2003.

(1L), membrana interossea antebrachii (2L), t. quadriceps (3R), calcaneal tendon (3R), t. abductor hallucis & t. flexor digitorum brevis (2R).

Pathology. Spinal disc herniation (Schmorl's nodes: on four thoracic vertebral bodies and four lumbar ones); *cribra orbitalia* (healed lesions on the orbital roofs).

**M.6.** Point: XXXI; dating:  $12^{th}-13^{th}$  centuries; excavation: 1980; funerary inventory: grave with knucklebones, iron knife; MNI: 1; representation: almost complete; preservation: very good (grade 1); restored; age at death: 10.6 yrs. [9.0–12.2 yrs.]; age category: *C*, *infans* II (dentition; diaphyseal long bone lengths); stature: 134.9 cm; body weight: 34.1 kg [31.8–36.4 kg]; taphonomy: purple staining on the frontal and parietal region (endocranial, including the inner lamina), as well as in the spongy bone of the ilia and all the long bones of the limbs.

Skeletal inventory & morphometry. Skull (mesocran); frontal (divergent, metriometop, orthometop); parietals (curved); temporals; occipital (broad); R zygomatic; maxillae; mandible (dolichostenomandibular); vertebrae (7 cervical, 8 thoracic, 5 lumbar); sacrum; ribs; sternum; clavicles (robust); scapulae; ilia; ischia; pubes; humeri (eurybrachic); radii; L ulna (hypereurolenic); R ulna (eurolenic); L femur (eurymeric, weak pilaster); R femur (eurymeric, medium pilaster); patellae (narrow); tibiae (eurycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. Two temporary (Lm<sub>2</sub>; Rm<sub>2</sub>) and 28 permanent teeth (Ll<sup>1</sup>-LM<sup>2</sup>; Rl<sup>1</sup>-RM<sup>2</sup>; Ll<sub>1</sub>, LC<sub>#</sub>-LM<sub>3</sub>; Rl<sub>1</sub>-Rl<sub>2</sub>, RP<sub>1</sub>-RM<sub>3</sub>) were recovered. Two teeth (Ll<sub>1</sub>; RC<sub>#</sub>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), zygomatico-facial foramen (one large, R), parietal foramen (on parietal, R), lambdoid ossicle (R), divided hypoglossal canal (partial within canal, R), tympanic dehiscence (full defect, B), mental foramen (one, B); b) dental – interruption groove (cingulum, medial: Ll<sup>2</sup>; Rl<sup>2</sup>), lingual cusp number (two: LP<sub>1</sub>; RP<sub>1</sub>), anterior fovea (grade 2: LM<sub>1</sub>-LM<sub>2</sub>, RM<sub>1</sub>-RM<sub>2</sub>); c) postcranial – atlas facet form (single, B), Allen's fossa (B), hypotrochanteric fossa (B), third trochanter (L), inferior talar articular surface (double, R).

Pathology. Enamel hypoplasia ( $LC_{#}$ ); *cribra cranii externa* (active lesions on the parietals); *cribra orbitalia* (active lesions on the orbital roofs).

**M.7**. Point: XXXI; coordinates: S6, B surface; MNI: 1; representation: almost complete; preservation: very good (grade 1); restored; age at death: 3.7 yrs. [3.0–4.3 yrs.]; age category: C, *infans* I (dentition; diaphyseal long bone lengths); stature: 88.8 cm; body weight: 12.1 kg.

Skeletal inventory & morphometry. Skull (brachycran); frontal (divergent, stenometop, orthometop); parietals (curved); temporals; occipital (narrow); sphenoid; zygomatics; maxillae; mandible; vertebrae; sacrum; ribs; clavicles; scapulae; ilia; ischia; pubes; L humerus (eurybrachic); R humerus; R radius; L ulna (eurolenic); femora (eurymer, null pilaster); tibiae (eurycnemic); fibulae; metacarpals; hand phalanges; metatarsals; foot phalanges. 18 temporary (Ri<sup>1</sup>-Rm<sup>2</sup>; Rc<sup>#</sup>-Rm<sup>2</sup>; Li<sub>1</sub>-Lm<sub>2</sub>; Li<sub>1</sub>-Lm<sub>2</sub>) and four permanent teeth (one I; LM<sup>1</sup>, LM<sub>1</sub>; RM<sub>1</sub>) were recovered.

Nonmetric traits. a) cranial – supraorbital notch (one, B), zygomatico-facial foramen (two large, L; two large plus one smaller, R), mastoid foramen (one on temporal, B), mental foramen (one, R); b) postcranial – Allen's fossa (B).

Pathology. *Cribra orbitalia* (active lesions on the orbital roofs).

**M.8.** Point: XXXI; dating: 12<sup>th</sup>-13<sup>th</sup> centuries; excavation: 1980; MNI: 1; representation: partial; preservation: very good (grade 1); sex: male (pelvis; skull); age at death: 42.0 yrs. [31.6–48.8 yrs.]; age category: MAd (pubic symphysis; cranial sutures; first rib); taphonomy: greenish staining on the left hemimandible.

Skeletal inventory & morphometry. Skull (phenozyg, short, narrow, brachycran, medium-high, hypsicran, metriocran); frontal (narrow according to the minimum width, very narrow according to the maximum width, intermediate, stenometop, orthometop); parietals (curved); temporals; occipital (medium width); sphenoid; ethmoid; face (medium-broad); facial height (high, leptoprosop); upper facial height (medium-high, mesen); middle facial height (chaemoprosop); L orbit (medium width, low, mesoconch); R orbit (medium width, medium-high, mesoconch); palatines; vomer; inferior nasal conchae; lacrimals; nasals (medium width and height, mesorrhin); zygomatics; maxillae; upper alveolar arch (dolichouranisch); hard palate (leptostaphylin, orthostaphylin); mandible (medium according to the intercondylar width, broad according to the intergonial width, moderate gonia, dolichostenomandibular); vertebrae (7 cervical, 12 thoracic, 4 lumbar); sacrum; ribs; sternum; clavicles (robust); L scapula (high, dolichomorphic); R scapula; R ilium; R ischium; R pubis; patellae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. 29 permanent teeth (LI<sup>1</sup>-LM<sup>2</sup>; RI<sup>1</sup>-RM<sup>3</sup>; LI<sub>1</sub>-LM<sub>2</sub>; RI<sub>1</sub>-RI<sub>2</sub>, RP<sub>2</sub>-RM<sub>3</sub>) were recovered. Three teeth (LM<sup>3</sup>; RC<sub>#</sub>-PR<sub>1</sub>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital notch (one, B), supraorbital foramen (one, R), zygomatico-facial foramen (one large, L; two large, R), parietal foramen (on parietal, B), coronal ossicle (B), lambdoid ossicle (B), petrosquamous suture (B), styloid process (B), mental foramen (one, B), b) dental – interruption groove (cingulum, medial: Ll<sup>2</sup>), lingual cusp number (two: LP<sub>1</sub>), hypoconulid (very small: LM<sub>1</sub>, RM<sub>1</sub>); c) postcranial – atlas facet form (single, B), double transverse foramen C<sub>7</sub> (B), rhomboid fossa (B), circumflex sulcus (B), *os acromiale* (L), vastus notch (B), vastus fossa (B), medial talar facet (B), inferior talar articular surface (single, B), anterior calcaneal facet double (R).

Entheses. L. costoclaviculare (3B), l. conoideum (2B), l. trapezoideum (3B), m. pectoralis major, C.IV (2B), m. deltoideus, C.V (3B), m. teres minor (3B), m. triceps brachii, S.II (3B), t. quadriceps (1B), calcaneal tendon (2B), t. abductor hallucis & t. flexor digitorum brevis (1B).

Pathology. L<sub>5</sub> sacralisation (bilateral, complete, symmetric); dental caries (distal: LM<sup>2</sup>; RM<sup>2</sup>); dental calculus (whole surface: LI<sup>1</sup>-LM<sup>2</sup>; RI<sup>1</sup>-RM<sup>3</sup>; LI<sub>1</sub>-LM<sub>3</sub>; RI<sub>1</sub>-RI<sub>2</sub>, RP<sub>2</sub>-RM<sub>3</sub>); spinal disc herniation (Schmorl's nodes: on six thoracic vertebral bodies and three lumbar ones); *cribra orbitalia* (healed lesions on the orbital roofs).

**M.9.** Point: XXXI; dating:  $12^{th}-13^{th}$  centuries; excavation: 1980; MNI: 2; <u>M.9 (I.1)</u> – representation: weak; preservation: very good (grade 1); restored; age category: C, *infans* II (dimensional comparison).

Skeletal inventory & morphometry. Skull (brachycran); frontal (intermediate, metriometop, orthometop); parietals (curved); occipital.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), accessory frontal grooves, apical bone.

Pathology. Cribra cranii externa (active lesions on the parietals and occipital, within the perimeter of the lambda point); cribra orbitalia (active lesions on the orbital roofs).

<u>M.9 (I.2)</u> – representation: weak; preservation: very good (grade 1); age category: AD (general characteristics). Skeletal inventory. Sternum; carpals; hand phalanges.

**M.10**. Point: XXXI; coordinates: S6, A–B surfaces; dating: 12<sup>th</sup>–13<sup>th</sup> centuries; excavation: 1980; funerary inventory: grave with iron belt parts; MNI: 1; representation: almost complete; preservation: very good (grade 1); sex: male (pelvis; skull); age at death: 26.6 yrs. [23.7–30.5 yrs.]; age category: YAd (pubic symphysis; auricular surfaces; cranial sutures; first rib; medial clavicle; sacral fusion); stature: 163.8 cm [158.5–167.1 cm]; category: small-medium; body weight: 67.2 kg [64.6–69.8 kg]; taphonomy: greenish staining on the frontal and occipital region (exocranial).

Skeletal inventory & morphometry. Skull (cryptozyg, short, narrow, brachycran, low, orthocran, tapeinocran); frontal (medium-broad according to the minimum width, broad according to the maximum width, divergent, metriometop, orthometop); parietals (flattened); temporals; occipital (medium width); sphenoid; face (broad); facial height (high, mesoprosop); upper facial height (very high, mesen); middle facial height (leptoprosop); L orbit (narrow, high, hypsiconch); R orbit (narrow); nasals (medium width and height, mesorrhin); zygomatics; hyoid; maxillae; hard palate (orthostaphylin); facial profile (orthognath); mandible (medium according to the intercondylar and intergonial widths, moderate gonia, dolichostenomandibular); vertebrae (6 cervical, 12 thoracic, 5 lumbar); sacrum (platyhieric); ribs; sternum; clavicles (robust, short); L scapula; R scapula (high, dolichomorhic); ilia; ischia; pubes; humeri (eurybrachic); L radius (medium length); R radius (long); ulnae (eurolenic); L femur (eurymeric, strong pilaster); R femur (eurymeric, medium pilaster); patellae (medium widths); tibiae (eurycnemic, dolichocnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. The dentition is megadont. 31 permanent teeth (Ll<sup>1</sup>-LC<sup>#</sup>, LP<sup>2</sup>-LM<sup>3</sup>; Rl<sup>1</sup>-RM<sup>3</sup>; Ll<sub>1</sub>-LM<sub>3</sub>; Rl<sub>1</sub>-RM<sub>3</sub>) were recovered. One tooth (LP<sup>1</sup>) was post-mortem loss.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), zygomatico-facial foramen (two large, L; two large plus one smaller, R), parietal foramen (on parietal, B), lambdoid ossicle (R), direction of flexure for superior sagittal sulcus (R), styloid process (L), mental foramen (one, B); b) dental – hypoconulid (medium-sized:  $LM_1$ ,  $RM_1$ ); c) postcranial – rhomboid fossa (B), acromial articular facet (B), circumflex sulcus (R), acetabular crease (L), Poirier's facet (L), third trochanter (B), lateral tibial squatting facet (R), inferior talar articular surface (single, B).

Entheses. L. costoclaviculare (2B), l. conoideum (2B), l. trapezoideum (1B), m. pectoralis major, C.IV (2B), m. deltoideus, C.V (1B), m. teres minor (2B), m. triceps brachii, S.II (2B), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (2B), m. deltoideus, H.III (2B), m. brachioradialis (3B), m. biceps brachii (3B), m. pronator teres (2B), membrana interossea antebrachii (1B), m. triceps brachii (1B), m. brachialis (2B), m. supinator (1L/2R), trochanter major (2B), m. iliopsoas (2B), m. gluteus maximus (3B), m. vastus medialis (1B), linea aspera (1B), t. quadriceps (1B), l. patellae (1B), m. soleus (2L/1R), calcaneal tendon (1B), t. abductor hallucis & t. flexor digitorum brevis (1B).

Pathology. Dental calculus (whole surface:  $LI_1-LM_3$ ;  $RI_1-RM_3$ ); enamel hypoplasia ( $LI^1$ ;  $RI_1$ ); spinal disc herniation (Schmorl's nodes: on two thoracic vertebral bodies and two lumbar ones).

**M.11**. Point: XXXI; dating:  $12^{th}-13^{th}$  centuries; excavation: 1980; funerary inventory: grave with animal offerings under the pelvis; MNI: 1; representation: almost complete; preservation: good (grade 2); restored; age at death: 14.0 yrs. [13.0–15.0 yrs.]; age category: AO (dentition; epiphyseal fusion); taphonomy: adherent calcareous crust on clavicles, radii, ulnae and metacarpals.

Skeletal inventory & morphometry. Skull (hyperbrachycran, hypsicran, tapeinocran); frontal (divergent, stenometop, orthometop); parietals (curved); temporals; occipital (medium width, megosemic); sphenoid; L palatin; vomer; zygomatics; maxillae; L hard palate (leptostaphylin, orthostaphylin); mandible (dolichostenomandibular); vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (dolichohieric); coccyx (1); ribs; sternum; L clavicle (long, robust); R clavicle (medium length, robust); scapulae; ilia; ischia; pubes; humeri (eurybrachic); L radius (long); R radius (medium length); ulnae (eurolenic); L femur (platymeric, null pilaster); R femur (hyperplatymeric, null pilaster); patellae (narrow); L tibia (mesocnemic, dolichocnemic); R tibia (eurycnemic, dolichocnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges.

31 permanent teeth ( $LI^{1}-LM^{3}$ ;  $RI^{1}-RM^{3}$ ;  $LI_{1}-LM_{3}$ ;  $RI_{2}-RM_{3}$ ) were recovered. One tooth ( $RI_{1}$ ) was post-mortem loss.

Nonmetric traits. a) cranial – supraorbital notch (one, B), zygomatico-facial foramen (two large plus one smaller, L; one large plus one smaller, R), lambdoid ossicle (B), mastoid foramen (one on temporal, B), mental foramen (one, B); b) dental – shoveling (shovel: LI<sup>1</sup>-LI<sup>2</sup>; RI<sup>1</sup>-RI<sup>2</sup>), mesial and distal cusps (LP<sup>2</sup>), lingual cusp number (two: LP<sub>1</sub>; RP<sub>1</sub>), metaconulid (medium-sized: LM<sub>1</sub>; RM<sub>1</sub>); c) postcranial – atlas facet form (double, B), double transverse foramen C<sub>7</sub> (L), rhomboid fossa (B), Allen's fossa (B), hypotrochanteric fossa (B), third trochanter (R), lateral tibial squatting facet (B), inferior talar articular surface (single, B).

Entheses. L. costoclaviculare (3B), l. conoideum (2B), l. trapezoideum (1B), m. pectoralis major, C.IV (2B), m. deltoideus, C.V (1B), m. teres minor (1B), m. triceps brachii, S.II (1B), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (3L/2R), m. deltoideus, H.III (1B), m. brachioradialis (2B), m. biceps brachii (2B), m. pronator teres (1B), membrana interossea antebrachii (2B), m. triceps brachii (1B), m. brachialis (1B), m. supinator (1B), trochanter major (1B), m. iliopsoas (1B), m. gluteus maximus (1B), m. vastus medialis (1B), linea aspera (1B), t. quadriceps (1B), l. patellae (1B), m. soleus (1B), calcaneal tendon (1B), t. abductor hallucis & t. flexor digitorum brevis (1B).

Pathology. Dental calculus (lingual & buccal: LI<sup>1</sup>-LM<sup>3</sup>; RI<sup>1</sup>-RM<sup>3</sup>; whole surface: LI<sub>1</sub>-LM<sub>3</sub>; RI<sub>2</sub>-RM<sub>3</sub>); possible tuberculosis (a. proliferative manifestations and active new bone formation expressed on the: external surface of the R vertical mandibular ramus; vertebral bodies of T<sub>5</sub>-S<sub>1</sub>, ventral; external surfaces of approx. 2/3 of the ribs; sternal manubrium, anterior; clavicles, around the rhomboid fossae and at the insertion areas of the deltoid muscles; scapular spines and acromial processes; humeri, lateral, on the trajectory of the brachioradialis insertion areas; acetabular cavities; dorsal sacrum, at S<sub>1</sub>; anterior on femoral necks and femoral diaphyseal extremities; L patella, anterior; proximal tibial extremities, anterior); b. hypervascularization and resorptive lesions on the: vertebral bodies of T<sub>1</sub>-L<sub>5</sub>, ventral and lateral).

**M.12.** Point: XXXI; coordinates: A–B surfaces; dating: 12<sup>th</sup>–13<sup>th</sup> centuries; funerary inventory: grave with iron arrowhead; MNI: 1; representation: almost complete; preservation: very good (grade 1); sex: male (pelvis; skull); age at death: 31.0 yrs. [27.0–30.5 yrs.]; age category: YAd (pubic symphysis; auricular surfaces; cranial sutures); stature: 162.4 cm [158.9–161.9 cm]; category: small-medium; body weight: 69.9 kg [68.7–71.1 kg].

Skeletal inventory and morphometry. Skull (cryptozyg, medium-long, very narrow, dolichocran); frontal (medium-broad according to the minimum width, narrow according to the maximum width, intermediate, eurymetop, orthometop); parietals (flattened); L temporal; occipital (narrow); sphenoid; face (narrow); facial height (low, mezoprosop); upper facial height (low, mesen); middle facial height (chaemoprosop); orbits (broad, medium-high, mesoconch); palatines; nasals (medium width, low, mesorrhin); L zygomatic; maxillae; upper alveolar arch (mesouranisch); hard palate (leptostaphylin, hypsistaphylin); mandible; vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (dolichohieric); coccyx (1); ribs; sternum; L clavicle (medium length and robustness); R clavicle (short, medium robustness); scapulae; ilia; ischia; pubes; humeri (eurybrachic); L radius (medium length); R radius; ulnae (eurolenic); femora (platymeric, null pilaster); patellae (medium widths); tibiae (eurycnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges<sup>36</sup>. 16 permanent teeth (LP<sup>1</sup>-LM<sup>3</sup>; Rl<sup>2</sup>, RP<sup>1</sup>-RM<sup>3</sup>; RP<sub>1</sub>-RM<sub>3</sub>) were recovered. Eleven teeth (Ll<sup>1</sup>-LC<sup>#</sup>; Rl<sup>1</sup>, RC<sup>#</sup>; Ll<sup>1</sup>-LC<sup>#</sup>; Rl<sup>1</sup>-RC<sup>#</sup>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital foramen (one, B); zygomatico-facial foramen (one large, B), parietal foramen (on parietal, B), lambdoid ossicle (R), direction of flexure for superior sagittal sulcus (L), mental foramen (one, R); b) postcranial – atlas facet form (single, B), double transverse foramen  $C_7$  (R), rhomboid fossa (L), acromial articular facet (L), femoral plaque (B), inferior talar articular surface (double, R), anterior calcaneal facet double (R).

Entheses. L. costoclaviculare (3L/1R), l. conoideum (2B), l. trapezoideum (1B), m. pectoralis major, C.IV (1B), m. deltoideus, C.V (2L/1R), m. teres minor (2B), m. triceps brachii, S.II (2B), m. pectoralis major, H.I (2B), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (2B), m. brachioradialis (1B), m. biceps brachii (2L), m. pronator teres (2L/1R), membrana interossea antebrachii (1B), m. triceps brachii (1B), m. brachialis (2B), m. supinator (1L/2R), trochanter major (1B), m. iliopsoas (1B), m. gluteus maximus (2B), m. vastus medialis (1B), linea aspera (1B), t. quadriceps (2L/1R), l. patellae (2B), m. soleus (2B), calcaneal tendon (2B), t. abductor hallucis & t. flexor digitorum brevis (2B).

**M.13**. Point: XXXI; coordinates: A–B surfaces; dating: 12<sup>th</sup>–13<sup>th</sup> centuries; MNI: 2; <u>M.13 (I.1)</u> – representation: partial; preservation: very good (grade 1); sex: female (pelvis); age at death: 31.4 yrs. [30.7–32.0 yrs.]; age category: YAd (pubic symphysis; auricular surfaces); stature: 153.0 cm [150.4–155.1 cm]; category: middle; body weight: 59.3 kg.

Skeletal inventory and morphometry. Mandible; vertebrae (7 cervical, 12 thoracic, 2 lumbar); sacrum (platyhieric); coccyx (1); ribs; sternum; clavicles (short, medium robustness); scapulae; ilia; L ischium; L pubis; humeri (platybrachic); L radius (short); R radius (medium length); ulnae (eurolenic); femora (platymeric, null pilaster); patellae (medium widths); tibiae (mesocnemic, dolichocnemic); fibulae; carpals; metacarpals; hand

<sup>&</sup>lt;sup>36</sup> It is noteworthy that the skeletal remains from M.12 and M.13 were mixed, which is why some bone remains could not be assigned with certainty to the respective individuals. This is the case for the ribs, vertebrae and some of the bones in the hands and feet, at which the skeletal morphometry is relatively similar.

phalanges; tarsals; metatarsals; foot phalanges. Seven permanent teeth  $(LC_{\mu}-LM_{3}; RC_{\mu})$  were recovered.

Nonmetric traits. a) cranial – mental foramen (one, L); b) postcranial – atlas facet form (double, B), acromial articular facet (R), septal aperture (R), acetabular crease (B), pre-auricular sulcus (B), femoral plaque (B), third trochanter (B), lateral tibial squatting facet (B), inferior talar articular surface (single, B).

Entheses. L. costoclaviculare (2B), l. conoideum (3B), l. trapezoideum (3B), m. pectoralis major, C.IV (2B), m. deltoideus, C.V (3B), m. teres minor (2B), m. triceps brachii, S.II (2B), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (2B), m. brachioradialis (3B), m. biceps brachii (2B), m. pronator teres (2B), membrana interossea antebrachii (2B), m. triceps brachii (2L/1R), m. brachialis (3B), m. supinator (3B), trochanter major (1B), m. iliopsoas (3B), m. gluteus maximus (3B), m. vastus medialis (2B), linea aspera (2B), t. quadriceps (1B), l. patellae (2B), m. soleus (3B), calcaneal tendon (2B), t. abductor hallucis & t. flexor digitorum brevis (1B).

<u>M.13 (I.2)</u> – representation: weak; preservation: good (grade 2); age at death: 8.5 yrs. [8.0–9.0 yrs.]; age category: *C*, *infans* II (dentition).

Skeletal inventory. R temporal; hyoid; mandible; vertebrae (1 cervical); sternum. Seven temporary (one  $m^1$ ,  $Lm^2$ ;  $Rm^2$ ;  $Lm_1$ - $Lm_2$ ;  $Rm_1$ - $Rm_2$ ) and 14 permanent teeth (one  $l^1$ , one  $l^2$ , two C, four P,  $LM^1$ ;  $RM^1$ ; one  $l_1$ , one  $l_2$ ;  $LM_1$ ;  $RM_1$ ) were recovered.

Nonmetric traits. a) cranial – mental foramen (one, R); b) dental – hypoconulid (medium-sized: LM<sub>1</sub>, RM<sub>1</sub>).

**M.14**. Point: XXXI; coordinates: B surface; dating: 12<sup>th</sup> century; funerary inventory: grave with sickle; MNI: 1; representation: almost complete; preservation: very good (grade 1); restored; sex: male (pelvis; skull); age at death: 38.9 yrs. [32.1–51.5 yrs.]; age category: MAd (pubic symphysis; auricular surfaces; cranial sutures; first rib); stature: 160.5 cm [159.3–162.3 cm]; category: small-medium; body weight: 72.7 kg [72.5–72.9 kg].

Skeletal inventory and morphometry. Skull (medium-long); frontal; parietals (flattened); temporals; occipital; face (narrow); palatines; nasals (medium width); R zygomatic; maxillae; palatines (mesostaphylin, orthostaphylin); mandible (broad according to the intercondylar and intergonial widths, moderate gonia, dolichostenomandibular); vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (dolichohieric); ribs; sternum; clavicles (medium lengths, robust); scapulae; ilia; ischia; pubes; L humerus (eurybrachic); R humerus (platybrachic); radii (short); ulnae (eurolenic); L femur (platymeric, null pilaster); R femur (hyperplatymeric, null pilaster); L patella (medium width); R patella (broad); tibiae (eurycnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; food phalanges. 30 permanent teeth (LI<sup>1</sup>-LM<sup>3</sup>; RI<sup>1</sup>-RI<sup>2</sup>, RP<sup>1</sup>-RM<sup>3</sup>; LI<sub>1</sub>-LM<sub>2</sub>; RI<sub>2</sub>-RM<sub>2</sub>) were recovered. Two teeth (RC<sup>#</sup>; RI<sub>1</sub>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), zygomatico-facial foramen (one large plus one smaller, R), parietal foramen (on parietal, R), lambdoid ossicle (R), asterionic bone (L), divided hypoglossal canal (complete, within canal, L), direction of flexure for superior sagittal sulcus (L), mental foramen (one, B), mandibular torus (moderate, L; trace, R); b) dental – interruption groove (cingulum, medial: Ll<sup>2</sup>; Rl<sup>2</sup>), anterior fovea (grade 2: RM<sub>2</sub>); c) postcranial – atlas facet form (single, B), acromial articular facet (B), sternal foramen, accessory sacral facets (R), lateral tibial squatting facet (B), vastus notch (B), inferior talar articular surface (single, B).

Entheses. L. costoclaviculare (3B), l. conoideum (3B), l. trapezoideum (2B), m. pectoralis major, C.IV (3B), m. deltoideus, C.V (3B), m. teres minor (2B), m. triceps brachii, S.II (2B), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (3B), m. deltoideus, H.III (3B), m. brachioradialis (2L/1R), m. biceps brachii (3B), m. pronator teres (1B), membrana interossea antebrachii (3B), m. triceps brachii (3B), m. brachialis (3B), m. supinator (3B), trochanter major (2B), m. iliopsoas (2B), m. gluteus maximus (3B), m. vastus medialis (2B), linea aspera (1L/2R), t. quadriceps (1B), l. patellae (1B), m. soleus (1B), calcaneal tendon (2B), t. abductor hallucis & t. flexor digitorum brevis (2B).

Pathology. L<sub>5</sub> sacralisation (bilateral, incomplete, asymmetric – with facets of sacralisation); dental caries (radicular remains:  $LM_1$ ;  $RM_1$ ); dental calculus (labial & buccal:  $LI^{1}-LM^{3}$ ;  $RI^{1}-RI^{2}$ ,  $RP^{1}-RM^{3}$ ); osteoarthrosis (osteophyte: on a lumbar vertebral body).

**M.15.** MNI: 1; representation: partial; preservation: very good (grade 0); restored; sex: male (pelvis); age at death: 29.0 yrs. [23.7–35.2 yrs.]; age category: YAd (pubic symphysis; auricular surfaces; first rib; medial clavicle; sacral fusion); stature: 155.7 cm [154.6–157.3 cm]; category: small; body weight: 64.9 kg [64.6–65.2 kg]; taphonomy: green staining on a rib fragment, on the distal femoral extremities, and on the anterior tibial ridges.

Skeletal inventory and morphometry. Hyoid; vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (dolichohieric); coccyx (1); ribs; sternum; clavicles (long, robust); scapulae (high, dolichomorphic); ilia; ischia; pubes; humeri (eurybrachic); radii (medium lengths); L ulna (hypereurolenic); R ulna (eurolenic); femora (eurymeric, null pilaster); L patella (broad); R patella; tibiae (eurycnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges.

Nonmetric traits. a) postcranial – atlas facet form (single, B), double transverse foramen  $C_7$  (L), rhomboid fossa (B), acromial articular facet (B), *os acromiale* (R), femoral plaque (B), lateral tibial squatting facet (B), inferior talar articular surface (single, B), peroneal tubercle (B).

Entheses. L. costoclaviculare (3B), l. conoideum (2B), l. trapezoideum (2L/1R), m. pectoralis major, C.IV (2B), m. deltoideus, C.V (2B), m. teres minor (2B), m. triceps brachii, S.II (2B), m. pectoralis major, H.I (2B), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (2B), m. brachioradialis (1B), m. biceps brachii (2B), m. pronator teres (2B), membrana interossea antebrachii (1L/2R), m. triceps brachii (1B), m. brachialis (3B), m. supinator (1B), trochanter major (2B), m. iliopsoas (2B), m. gluteus maximus (2B), m. vastus medialis (2B), linea aspera (1B), t. quadriceps (1L), l. patellae (2B), m. soleus (2B), calcaneal tendon (2B), t. abductor hallucis & t. flexor digitorum brevis (2B).

**M.17**. Package nr: 09; MNI: 1; representation: almost complete; preservation: very good (grade 1); sex: male (pelvis; skull); age at death: 18.3 yrs. [16.3–22.0 yrs.]; age category: AO (pubic symphysis; auricular surfaces; first rib; sacral fusion); stature: 154.2 cm [154.3–159.6 cm]; category: small; body weight: 60.4 kg [59.7–61.2 kg].

Skeletal inventory & morphometry. Skull (narrow); frontal (broad according to the minimum and maximum widths, intermediate, eurymetop); parietals (curved); temporals; occipital (broad, microsemic); sphenoid; nasals (very broad); zygomatics; maxillae; hard palate (orthostaphylin); mandible (very broad according to the intercondylar and intergonial widths, moderate gonia, dolichostenomandibular); vertebrae (5 cervical, 8 thoracic, 5 lumbar); sacrum; ribs; sternum; L scapula; R scapula (low, brachimorphic); ilia; ischia; pubes; humeri (eurybrachic); radii (medium lengths); ulnae (eurolenic); L femur (platymeric, null pilaster); R femur (hyperplatymeric, medium pilaster<sup>37</sup>); R patella (medium width); L tibia (eurycnemic, dolichocnemic); R tibia (eurycnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. 29 permanent teeth (LI<sup>1</sup>, LP<sup>2</sup>-LM<sup>3</sup>; RI<sup>1</sup>-RM<sup>3</sup>; LI<sub>1</sub>-LM<sub>2</sub>; RI<sub>1</sub>-RM<sub>2</sub>) were recovered. Three teeth (LI<sup>2</sup>-LP<sup>1</sup>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital foramen (multiple, B), accessory frontal grooves, zygomatico-facial foramen (one large, B), sagittal ossicle, lambdoid ossicle (R), direction of flexure for superior sagittal sulcus (L), mastoid foramen (one on temporal, B), petrosquamous suture (B), mental foramen (one, B), mandibular torus (moderate, B); b) dental – mesial and distal cusps (RP<sup>2</sup>), lingual cusp number (two: LP<sub>1</sub>-LP<sub>2</sub>; RP<sub>1</sub>-RP<sub>2</sub>), hypoconulid (very small: LM<sub>1</sub>, RM<sub>1</sub>); c) postcranial – atlas facet form (single, B), double transverse foramen C<sub>7</sub> (B), acromial articular facet (B), hypotrochanteric fossa (L), third trochanter (B), lateral tibial squatting facet (B), inferior talar articular surface (single, B).

Entheses. *M. teres minor* (1B), *m. triceps brachii*, S.II (1b), *m. pectoralis major*, H.I (1B), *m. latissimus dorsi* & *m. teres major* (1B), *m. deltoideus*, H.III (2B), *m. brachioradialis* (1B), *m. biceps brachii* (1B), *m. pronator teres* (1B), *membrana interossea antebrachii* (1B), *m. triceps brachii* (1B), *m. triceps brachii* (1B), *m. triceps brachii* (1B), *m. triceps brachii* (1B), *m. supinator* (1B), *trochanter major* (1B), *m. iliopsoas* (1B), *m. gluteus maximus* (2B), *m. vastus medialis* (1B), *linea aspera* (1L/3R), *t. quadriceps* (1R), *l. patellae* (1B), *m. soleus* (1B), *calcaneal tendon* (1B), *t. abductor hallucis* & *t. flexor digitorum brevis* (1B).

Pathology. Dental caries (buccal: LM<sup>3</sup>); dental calculus (whole surface: LI<sup>1</sup>, LP<sup>2</sup>-LM<sup>3</sup>; RI<sup>1</sup>-RM<sup>3</sup>; LI<sub>1</sub>-LM<sub>3</sub>; RI<sub>1</sub>-RM<sub>3</sub>); healed fractures (on two left ribs fragments); *myositis ossificans traumatica* (on the middle R femur, posterior, at the *linea aspera*); spinal disc herniation (Schmorl's nodes: on a thoracic vertebral body).

**M.18**. MNI: 1; representation: almost complete; preservation: very good (grade 1); restored; age at death: 10.6 yrs. [9.1–12.0 yrs.]; age category: C, *infans* II (dentition; diaphyseal long bone lengths); stature: 127.7 cm; body weight: 27.2 kg [24.3–30.1 kg].

Skeletal inventory and morphometry. Skull (hyperbrachycran, pseudoplagiocephaly – deformed in the occipital region); frontal (divergent, stenometop, orthometop); parietals (medium-flattened); L temporal; occipital (narrow); middle facial height (hyperchaemoprosop); orbits (hypsiconch); lacrimals; nasals (chamaerrhin); zygomatics; maxillae; mandible (dolichostenomandibular); vertebrae (6 cervical, 10 thoracic, 5 lumbar); sacrum; ribs; sternum; clavicles (gracile); scapulae; ilia; ischia; humeri (eurybrachic); radii; ulnae (hypereurolenic); L femur (eurymeric, weak pilaster); R femur (eurymeric, null pilaster); tibiae (eurycnemic); fibulae; hand phalanges; tarsals; metatarsals; foot phalanges. One temporary (m) and 29 permanent teeth (LI<sup>1</sup>-LI<sup>2</sup>, LP<sup>1</sup>-LM<sup>3</sup>; RI<sup>1</sup>-RI<sup>2</sup>, RP<sup>1</sup>-RM<sup>3</sup>; LI<sub>1</sub>-LM<sub>3</sub>; RI<sub>1</sub>-RM<sub>2</sub>) were recovered. Three teeth (LC<sup>#</sup>; RC<sup>#</sup>; RM<sub>2</sub>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), zygomatico-facial foramen (one large, B), direction of flexure for superior sagittal sulcus (R), mastoid foramen (one on temporal, L), mental foramen (one, B); b) dental – anterior fovea (grade 2:  $LM_2$ ;  $RM_2$ ), hypoconulid (large:  $LM_1$ ,  $RM_1$ ); c) postcranial – Allen's fossa (B), third trochanter (L), inferior talar articular surface (single, L).

Pathology. *Cribra orbitalia* (active lesions on the orbital roofs).

**M.19.** Funerary inventory: grave with bronze earring; MNI: 1; representation: almost complete; preservation: very good (grade 0); restored; age at death: 10.4 yrs. [8.7–12.0 yrs.]; age category: C, *infans* II (dentition; diaphyseal long bone lengths); stature: 126.0 cm [125.7–126.2 cm]; body weight: 25.0 kg [24.1–25.9 kg]. taphonomy: greenish staining on the humeral diaphysis and the anterior surface of the femoral and tibial diaphysis.

Skeletal inventory & morphometry. Skull (brachycran, orthocran, hypsicran, tapeinocran); frontal (divergent, stenometop, orthometop); parietals (medium-flattened); temporals; occipital (narrow, megasemic); sphenoid; zygomatics; maxillae; mandible (dolichostenomandibular); vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum; ribs; sternum; clavicles (medium robustness); L scapula (brachimorphic); R scapula; ilia; ischia; pubes; humeri (eurybrachic); radii; ulnae (eurolenic); L femur (eurymeric,

<sup>&</sup>lt;sup>37</sup> The pilastric index is influenced by bone hypertrophy caused by *myositis ossificans traumatica*.

weak pilaster); R femur; L patella; tibiae (eurycnemic); fibulae; hand phalanges; tarsals; metatarsals; foot phalanges. Three temporary ( $Lm_2$ ;  $Rm_2$ ; one M3) and 26 permanent teeth ( $LI^1-LM^2$ ;  $RI^1-RM^2$ ;  $LI_2-LM_2$ ;  $RI_1-RI_2$ ,  $RP_1-RM_2$ ) were recovered. Two teeth ( $LI_1$ ;  $RC_{\#}$ ) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), accessory frontal grooves, zygomatico-facial foramen (one large plus one smaller, L; one large, R), lambdoid ossicle (B), asterionic bone (L), mastoid foramen (one sutural, B), mental foramen (two L; one R); b) dental – premolar root number (two: LP<sup>2</sup>; RP<sup>2</sup>), parastyle (medium-sized cusp: LM<sup>1</sup>; RM<sup>1</sup>), double canine root number (LC<sub>#</sub>), Tome's root (deep groove, more than a third of the root: RP<sub>1</sub>), hypoconulid (small: LM<sub>1</sub>); c) postcranial – atlas facet form (single, B), Allen's fossa (B), inferior talar articular surface (double, B), anterior calcaneal facet double (B).

Pathology. Enamel hypoplasia (Ll<sup>1</sup>; Rl<sup>1</sup>); dental caries (mesial:  $Rm_2$ ); dental calculus (labial & lingual:  $Ll_1$ ,  $LC_{\#}$ ;  $Rl_1$ - $Rl_2$ ; lingual & buccal:  $RP_1$ ); *cribra orbitalia* (active lesions on the orbital roofs).

**M.20**. MNI: 1; representation: almost complete; preservation: good (grade 2); age at death: -0.1 yrs. [-0.2–0,0 yrs.]; age category: F/I (dentition; diaphyseal long bone lengths).

Skeletal inventory. Frontal; parietals; temporals; occipital; sphenoid; L zygomatic; maxillae; mandible; vertebrae; ribs; clavicles; L scapula; humeri; radii; femora; tibiae; fibulae. Six temporary teeth (four i, two m) were recovered.

Nonmetric traits. a) cranial – zygomatico-facial foramen (two large, L).

**M.21**. Point: XXXI; dating: 12<sup>th</sup> century; MNI: 1; representation: almost complete; preservation: very good (grade 1); restored; age at death: 3.5 yrs. [3.0–4.0 yrs.]; age category: *C*, *infans* I (dentition; diaphyseal long bone lengths); stature: 82.0 cm [81.8–82.3 cm]; body weight: 12.5 kg [10.7–14.3 kg].

Skeletal inventory & morphometry. Skull (ultrabrachycran); frontal (divergent, metriometop, orthometop); parietals (flattened); temporals; occipital (medium width); sphenoid; R zygomatic; maxillae; mandible (dolichostenomandibular); vertebrae; ribs; clavicles; scapulae (brachimorphic); ilia; ischia; pubes; humeri (eurybrachic); radii; ulnae (eurolenic); L femur (stenomer, null pilaster); R femur (stenomeric, weak pilaster); tibiae (eurycnemic); fibulae; hand phalanges; tarsals; metatarsalTorary (Lm<sup>1</sup>-Lm<sup>2</sup>; Rc<sup>#</sup>-Rm<sup>2</sup>; Li<sub>1</sub>-Lc<sub>#</sub>, Lm<sub>2</sub>; Ri<sub>1</sub>-Rc<sub>#</sub>, Rm<sub>2</sub>) and five permanent teeth (Ll<sup>1</sup>; Rl<sup>1</sup>, RM<sup>1</sup>; LM<sub>1</sub>; RM<sub>1</sub>) were recovered. Seven teeth (Li<sup>1</sup>-Lc<sup>#</sup>; Ri<sup>1</sup>-Ri<sup>2</sup>; Lm<sub>1</sub>; Rm<sub>1</sub>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital notch (one, B), supraorbital foramen (one, R), zygomatico-facial foramen (two large, R), parietal foramen (on parietal, B), lambdoid ossicle (B), divided hypoglossal canal (partial, within canal, R), direction of flexure for superior sagittal sulcuseveralal foramen (one, B); b) postcranial – hypotrochanteric fossa (B).

Pathology. Infantile scurvy (severe exocranial hyperostotic reactions in the frontal and parietal bosses and moderate expressions in the temporal, occipital, hard palate and horizontal mandibular rami).

**M.22**. Coordinates: S4; dating: 12<sup>th</sup>-13<sup>th</sup> centuries; MNI: 1; representation: partial; preservation: very good (grade 1); sex: male (pelvis); age at death: 24.7 yrs. [23.4-27.0 yrs.]; age category: YAd (pubic symphysis; auricular surfaces; first rib; medial clavicle; sacral fusion); stature: 168.6 cm [166.9-170.8 cm]; category: medium-tall; body weight: 72.6 kg [72.2-73.1 kg].

Skeletal inventory & morphometry. Mandible; vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (platyhieric); coccyx (1); ribs; sternum; L clavicle (long, robust); R clavicle (medium length, robust); scapulae; ilia; ischia; pubes; humeri (eurybrachic); radii (medium lengths); ulnae (eurolenic); L femur (platymeric, null pilaster); R femur (eurymeric, null pilaster); R patella (medium width); tibiae (eurycnemic, dolichocnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges.

Nonmetric traits. a) postcranial – atlas facet form (single, B), rhomboid fossa (B), acromial articular facet (L), circumflex sulcus (B), os acromiale (R), femoral plaque (B), lateral tibial squatting facet (B), vastus notch (R), inferior talar articular surface (single, B), peroneal tubercle (B).

Entheses. L. costoclaviculare (2B), l. conoideum (2B), l. trapezoideum (1B), m. pectoralis major, C.IV (1L/2R), m. deltoideus, C.V (1B), m. teres minor (2B), m. triceps brachii, S.II (2B), m. pectoralis major, H.I (2B), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (2B), m. brachioradialis (2B), m. biceps brachii (1B), m. pronator teres (1B), membrana interossea antebrachii (1B), m. triceps brachii (1B), m. brachialis (2B), m. supinator (2B), trochanter major (1B), m. iliopsoas (1B), m. gluteus maximus (1B), m. vastus medialis (1B), linea aspera (1B), t. quadriceps (1R), l. patellae (2B), m. soleus (1B), calcaneal tendon (1B), t. abductor hallucis & t. flexor digitorum brevis (3B).

Pathology.  $Ccg_1$  sacralisation (bilateral, complete, symmetric); spinal disc herniation (Schmorl's nodes: on two thoracic vertebral bodies and one lumbar one).

**M.23.** Point: XXXI; dating: 12<sup>th</sup> century; MNI: 1; representation: almost complete; preservation: very good (grade 1); reconstructed; sex: male (pelvis; skull); age at death: 20.3 yrs. [18.5–22.0 yrs.]; age category: YAd (pubic symphysis; auricular surfaces; medial clavicle); stature: 160.8 cm [158.7–163.8 cm]; category: small-medium; body weight: 65.4 kg; taphonomy; violet staining in the frontal and parietal region (endocranial, on the inner lamina), as well as in the spongy bone of some tarsals.

Skeletal inventory and morphometry. Skull (medium-long, narrow, brachycran); frontal (broad

according to the minimum width, medium-broad according to the maximum width, intermediate, eurymetop, orthometop); parietals (medium-flattened); temporals; occipital; sphenoid; ethmoid; palatines; face (broad); facial height (medium-high, mesoprosop); upper facial height (medium-high, euryen); middle facial height (chaemoprosop); orbits (medium widths, medium-high, mesoconch); vomer; lacrimals; nasals (medium width, low, chamaerrhin); zygomatics; maxillae; upper alveolar arch (brachyuranisch); hard palate (leptostaphylin, chamestaphylin); mandible (very broad according to the intercondylar width, medium according to the intergonial width, moderate gonia, dolichostenomandibular); vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (dolichohieric); coccyx (1); ribs; sternum; clavicles (medium lengths, robust); scapulae; ilia; ischia; pubes; humeri (eurybrachic); radii (medium lengths); ulnae (eurolenic); L femur (platymeric, weak pilaster); R femur (platymeric, null pilaster); patellae (medium widths); tibiae (eurycnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. 32 permanent teeth (LI<sup>1</sup>-LM<sup>3</sup>; RI<sup>1</sup>-RM<sup>3</sup>; LI<sup>1</sup>-LM<sup>3</sup>; RI<sub>1</sub>-RM<sub>2</sub>) were recovered.

Nonmetric traits. a) cranial – supraorbital notch (one, B), supraorbital foramen (one, R), zygomatico-facial foramen (multiple small, B), parietal foramen (on parietal, L), sagittal ossicle, mental foramen (one, B); b) dental – lingual cusp number (two:  $LP_2$ ;  $RP_2$ ), hypoconulid (medium-sized:  $LM_1$ ,  $RM_1$ ); c) postcranial – atlas facet form (single, L), rhomboid fossa (B), acromial articular facet (B), circumflex sulcus (B), femoral plaque (B), hypotrochanteric fossa (B), third trochanter (L), inferior talar articular surface (double, B), anterior calcaneal facet double (B).

Entheses. L. costoclaviculare (3B), l. conoideum (2B), l. trapezoideum (2L/3R), m. pectoralis major, C.IV (2B), m. deltoideus, C.V (3B), m. teres minor (1L/2R), m. triceps brachii, S.II (1L/2R), m. pectoralis major, H.I (1L/2R), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (2B), m. brachioradialis (3B), m. biceps brachii (2B), m. pronator teres (1B), membrana interossea antebrachii (1B), m. triceps brachii (1B), m. brachialis (3B), m. supinator (1B), trochanter major (1B), m. iliopsoas (1L), m. gluteus maximus (3B), m. vastus medialis (2B), linea aspera (1B), t. quadriceps (1B), m. soleus (2B), calcaneal tendon (1B), t. abductor hallucis & t. flexor digitorum brevis (1B).

Pathology.  $L_s$  sacralisation (bilateral, incomplete, symmetric); dental calculus (whole surface:  $LI^1-LM^3$ ;  $RI^1-RM^3$ ;  $LI_1-LM_3$ ;  $RI_1-RM_3$ ).

**M.24**. Point: XXXI; coordinates: ditch nr. 3A; dating: 12<sup>th</sup>-13<sup>th</sup> centuries; MNI: 1; representation: partial; preservation: poor (grade 4); reconstructed; age at death: 8.5 yrs. [8.0–9.0 yrs.]; age category: *C, infans* II (dentition).

Skeletal inventory and morphometry. Skull (hyperbrachycran); frontal (divergent, stenometop, ortomethop); parietals (curved); temporals; occipital; mandible; vertebrae; ribs; L clavicle; ischia; humeri; R radius; L ulna; femora; tibiae; fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. Five temporary (one c, four m) and six permanent teeth (one  $I^2$ , one C, one M<sup>1</sup>, one M2; Ll<sup>1</sup>; Rl<sup>1</sup>) were recovered.

Nonmetric traits. a) cranial – parietal foramen (on parietal, R), lambdoid ossicle (L).

Pathology. Dental caries (occlusal: one M<sup>1</sup>).

**M.25.** MNI: 1; representation: almost complete; preservation: moderate (grade 3); reconstructed; sex: female (pelvis; skull); age at death: 38.2 yrs. [37.0–39.4 yrs.]; age category: MAd (pubic symphysis; auricular surfaces; cranial sutures); stature: 144.2 cm [142.0–147.8 cm]; category: small; body weight: 49.8 kg.

Skeletal inventory and morphometry. Skull (short, narrow, brachycran); frontal (broad according to the minimum width, narrow according to the maximum width, intermediate, eurymetop, orthometop); parietals (flattened); temporals; occipital (broad); sphenoid; zygomatics; maxillae; mandible (narrow according to the intercondylar width, very narrow according to the intergonial width, weak gonia, mesomandibular); vertebrae; sacrum; ribs; sternum; R clavicle (short, medium robustness); scapulae; ilia; ischia; pubes; L humerus (platybrachic); R humerus (eurybrachic); radii (medium lengths); ulnae (eurolenic); L femur (platymeric); R femur (platymeric, weak pilaster); L patella; tibiae (eurycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. Three permanent teeth (LI<sup>1</sup>-LC<sup>#</sup>) were recovered. 21 teeth (RI<sup>1</sup>-RM<sup>2</sup>; LI<sub>1</sub>-LM<sub>2</sub>;  $RI_1$ - $RM_2$ ) were ante-mortem loss.

Non metric traits. a) cranial – supraorbital notch (one, B), supraorbital foramen (one, R), parietal foramen (on parietal, R), lambdoid ossicle (L), mental foramen (one, L); b) postcranial – acromial articular facet (R), circumflex sulcus (B), acetabular crease (B), pre-auricular sulcus (B), Allen's fossa (R), femoral plaque (L).

Entheses. L. costoclaviculare (2R), l. conoideum (2R), l. trapezoideum (2R), m. pectoralis major, C.IV (1R), m. deltoideus, C.V (2R), m. teres minor (2L/3R), m. triceps brachii, S.II (1L/2R), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (3B), m. deltoideus, H.III (3B), m. brachioradialis (3B), m. biceps brachii (3B), m. pronator teres (3B), membrana interossea antebrachii (3B), m. triceps brachii (1B), m. brachialis (2B), m. supinator (1B), m. iliopsoas (2B), m. gluteus maximus (3B), m. vastus medialis (2B), linea aspera (1B), t. quadriceps (1L), l. patellae (1B), m. soleus (1B), calcaneal tendon (1L).

Pathology. Dental calculus (whole surface: 1I, 1C#); ante-mortem tooth loss (RM<sup>2</sup>; LI<sub>1</sub>-LM<sub>2</sub>; RI<sub>1</sub>-RM<sub>2</sub>); healed fractures (right shoulder dislocation, secondary joint formation); *cribra orbitalia* (healed lesions on the R orbital roof).

**M.28**. Package nr: 22; MNI: 1; representation: partial; preservation: very good (grade 1); reconstructed; sex: male (skull); age at death: 30.0 yrs. [25.3–34.7 yrs.]; age category:

YAd (cranial sutures; first rib); stature: 161.9 cm [160.6– 165.4 cm]; category: small-medium; body weight: 64.9 kg; taphonomy: greenish staining on the right petrous part.

Skeletal inventory and morphometry. Skull (cryptozyg, medium-long, medium-broad, brachycran, low/medium-high, orthocran, hypsicran, tapeinocran); frontal (medium-broad according to the minimum and maximum lengths, divergent, metriometop, camemetop); parietals (medium-flattened); temporals; occipital (medium width, microsemic); sphenoid; face (very broad); orbits (medium widths, medium-high, mesoconch); palatines; nazals; zygomatics; maxillae; upper alveolar arch (brachyuranisch); L hard palate (mesostaphylin, orthostaphylin); mandible (medium according to the intercondylar width, broad according to the intergonial width, moderate gonia, dolichostenomandibular); vertebrae (1 cervical, 2 thoracic); ribs; L clavicle (medium length, robust); R clavicle (short, robust); R scapula; humeri (eurybrachic); radii (medium lengths); ulnae (eurolenic); femora (platymeric, medium pilaster); L patella (broad); R rotula; tibiae (mesocnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. 21 permanent teeth (LP1-LM2; RP2-RM1, RM3; LI<sub>1</sub>-LM<sub>2</sub>; RI<sub>1</sub>-RM<sub>2</sub>) were recovered. Nine (LI<sup>1</sup>-LC<sup>#</sup>, LM<sup>3</sup>; RI<sup>1</sup>-RP<sup>1</sup>, RM<sup>2</sup>) were post-mortem loss, and two teeth (LM<sub>2</sub>; RM<sub>2</sub>) were congenital absent.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), zygomatico-facial foramen (one large, R), lambdoid ossicle (B), direction of flexure for superior sagittal sulcus (R), foramen spinosum incomplete (partial formation, L), pterygo-spinous bridge (complete, L; partial, R), mastoid foramen (one on temporal, B), styloid process (B), mental foramen (one, B); b) dental – hypoconulid (medium-sized:  $LM_1$ ,  $RM_1$ ); c) postcranial – rhomboid fossa (B), acromial articular facet (L), hypotrochanteric fossa (B).

Entheses. L. costoclaviculare (3B), l. conoideum (1B), l. trapezoideum (1L/3R), m. pectoralis major, C.IV (3B), m. deltoideus, C.V (1B), m. pectoralis major, H.I (2B), m. latissimus dorsi & m. teres major (1L/2R), m. deltoideus, H.III (1L/2R), m. brachioradialis (2B), m. biceps brachii (2B), m. pronator teres (1B), membrana interossea antebrachii (1B), m. triceps brachii (1B), m. brachialis (3B), m. supinator (2B), trochanter major (1L/2R), m. iliopsoas (1L/2R), m. gluteus maximus (2B), m. vastus medialis (2B), linea aspera (1B), t. quadriceps (1B), l. patellae (1B), m. soleus (2B).

Pathology. Dental calculus (whole surface:  $LP^1-LM^2$ ;  $RP^2-RM^1$ ,  $RM^3$ ;  $LI_1-LM_2$ ;  $RI_1-RM_2$ ); healed fractures (on a rib fragment); spinal disc herniation (Schmorl's nodes: on two thoracic vertebral bodies).

**M.29**. Point: XXXI; dating: 12<sup>th</sup> century; excavation: 8 September; MNI: 1; representation: partial; preservation: very good (grade 1); sex: male (pelvis); age at death: 34.8 yrs. [32.1–37.0 yrs.]; age category: YAd (pubic symphysis; auricular surfaces; first rib); stature: 158.6 cm [155.0–160.1 cm]; category: small; body weight: 74.7 kg [73.4–75.9 kg].

Skeletal inventory & morphometry. Coccyx (1); ribs; sternum; L clavicle (medium length, robust); R clavicle

(long, robust); L scapula (high, mesomorph); R scapula; ilia; ischia; pubes; humeri (eurybrachic); radii (short); L ulna (eurolenic); R ulna (platolenic); femora (platymeric, null pilaster); L tibia (eurycnemic, brachycnemic); R tibia (mesocnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges.

Nonmetric traits. a) postcranial – rhomboid fossa (B), acromial articular facet (B), circumflex sulcus (B), hypotrochanteric fossa (B), lateral tibial squatting facet (B), inferior talar articular surface (single, B).

Entheses. L. costoclaviculare (3B), I. conoideum (3B), I. trapezoideum (2B), m. pectoralis major, C.IV (3B), m. deltoideus, C.V (3B), m. teres minor (2L/3R), m. triceps brachii, S.II (3B), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (2B), m. deltoideus, H.III (3B), m. brachioradialis (3B), m. biceps brachii (2B), m. pronator teres (2B), membrana interossea antebrachii (2B), m. triceps brachii (1B), m. brachialis (3B), m. supinator (3B), trochanter major (2B), m. iliopsoas (2B), m. gluteus maximus (2B), m. vastus medialis (2B), linea aspera (2B), I. patellae (2B), m. soleus (2B), calcaneal tendon (3R), t. abductor hallucis & t. flexor digitorum brevis (2R).

Pathology. Osteoarthrosis (pitting and irregular surfaces: on the R lateral clavicular extremity and the R acromial articular facet).

**M.30**. Point: XXXI; dating: 12<sup>th</sup> century; excavation: 8 October; MNI: 2; <u>M.30 (I.1)</u> – representation: partial; preservation: very good (grade 1); sex: male (pelvis); age at death: 26.7 yrs. [25.2–28.7 yrs.]; age category: YAd (pubic symphysis; first rib; medial clavicle); stature: 164.5 cm [160.8–167.3 cm]; category: medium; body weight: 79.8 kg [77.5–82.0 kg].

Skeletal inventory and morphometry. Ribs; R clavicle (short, robust); L scapula; L pubis; humeri (eurybrachic); L radius; R radius (short); L ulna (eurolenic); R ulna (platolenic); femora (eurymeric, null pilaster); tibiae (eurycnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals.

Nonmetric traits. a) postcranial – rhomboid fossa (R), acromial articular facet (L), circumflex sulcus (L), lateral tibial squatting facet (B), inferior talar articular surface (double, R), anterior calcaneal facet double (R).

Entheses. L. costoclaviculare (2R), I. conoideum (2R), I. trapezoideum (1R), m. pectoralis major, C.IV (2R), m. deltoideus, C.V (2R), m. teres minor (2L), m. triceps brachii, S.II (1L), m. pectoralis major, H.I (2B), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (2B), m. brachioradialis (3L/2R), m. biceps brachii (3B), m. pronator teres (1B), membrana interossea antebrachii (2R), m. triceps brachii (1B), m. brachialis (3B), m. supinator (1L/2R), trochanter major (1B), m. iliopsoas (1L/2R), m. gluteus maximus (2B), m. vastus medialis (2B), linea aspera (1B), l. patellae (1B), m. soleus (1B), calcaneal tendon (2R), t. abductor hallucis & t. flexor digitorum brevis (1R).

Pathology. Healed fractures (on the left tibial distal third).

<u>M.30 (I.2)</u> – representation: weak; preservation: very good (grade 1); age at death: 12.0 yrs.; age category: AO (dentition).

Skeletal inventory and morphometry. Skull (cryptozyg, ultrabrachycran, hypsicran, tapeinocran); frontal (divergent, stenometop, orthometop); parietals (curved); temporals; occipital; sphenoid; facial height (leptoprosop); upper facial height (mesen); middle facial height (chaemoprosop); orbits (hypsiconch); palatines; lacrimals; nasals (leptorin); zygomatics; maxillae; upper alveolar arch (brachyuranisch); hard palate (brachystaphylin, chamestaphylin); mandible (dolichostenomandibular). 27 permanent teeth (LC<sub>#</sub>-LM<sub>3</sub>; RC<sub>#</sub>-RP<sub>1</sub>, RM<sub>1</sub>-RM<sub>3</sub>; LI<sub>1</sub>-LM<sub>3</sub>; RI<sub>1</sub>-RM<sub>3</sub>) were recovered. Five teeth (LI<sup>1</sup>-LI<sup>2</sup>; RI<sup>1</sup>-RI<sup>2</sup>, RP<sup>2</sup>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital notch (one, B), supraorbital foramen (one, L), zygomatico-facial foramen (one large, B), parietal foramen (on parietal, B), apical bone, mental foramen (one, B); b) dental – metaconule (small cuspule: LM<sup>1</sup>; small cusp: RM<sup>1</sup>), Carabelli cusp (small cusp: LM<sup>1</sup>; RM<sup>1</sup>), lingual cusp number (two: LP<sub>1</sub>-LP<sub>2</sub>; RP<sub>1</sub>-RP<sub>2</sub>), anterior fovea (grade 3: LM<sub>2</sub>; RM<sub>2</sub>), hypoconulid (large: RM<sub>2</sub>).

Pathology. Dental calculus (labial: LI<sub>1</sub>-LI<sub>2</sub>; RI<sub>1</sub>-RI<sub>2</sub>).

**M.32**. Package nr: 16; MNI: 1; representation: almost complete; preservation: good (grade 2); sex: male (pelvis); age at death: 14.0 yrs.; age category: AO (epiphyseal fusion).

Skeletal inventory and morphometry. Frontal; L parietal; temporals; occipital; maxillae; mandible; vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum; ribs; sternum; clavicles (medium robustness); scapulae; ilia; ischia; pubes; humeri; radii; L ulna (eurolenic); R ulna (platolenic); L femur (platymeric); R femur (hyperplatymeric); patellae; tibiae (eurycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals. 23 permanent teeth (L1<sup>1</sup>-L1<sup>2</sup>, LP<sup>1</sup>, LM<sup>1</sup>-LM<sup>2</sup>; RM<sup>1</sup>-RM<sup>2</sup>; LI<sub>1</sub>-LM<sub>3</sub>; RI<sub>1</sub>-RM<sub>3</sub>) were recovered. Seven teeth (LC<sup>#</sup>, LP<sup>2</sup>; RI<sup>1</sup>-RP<sup>2</sup>) were post-mortem loss.

Nonmetric traits. a) cranial – direction of flexure for superior sagittal sulcus (R), petrosquamous suture (B), mastoid foramen (one on temporal, R), mental foramen (one, B); b) dental – shoveling (shovel: Ll<sup>1</sup>-Ll<sup>2</sup>), interruption groove (cingulum, medial: Ll<sup>1</sup>-Ll<sup>2</sup>), premolar root number (two: LP<sup>1</sup>), metaconule (small cuspule: LM<sup>1</sup>; RM<sup>1</sup>), parastyle (small cusp: LM<sup>1</sup>; RM<sup>1</sup>), lingual cusp number (two: LP<sub>1</sub>-LP<sub>2</sub>; RP<sub>1</sub>-RP<sub>2</sub>), hypoconulid (medium-sized: LM<sub>1</sub>, LM<sub>3</sub>; RM<sub>1</sub>, RM<sub>3</sub>); c) postcranial – atlas facet form (single, B), suprascapular foramen (large, B), Allen's fossa (B), hypotrochanteric fossa (B), vastus notch (B), inferior talar articular surface (single, R).

Entheses. L. costoclaviculare (1B), l. conoideum (1B), l. trapezoideum (1B), m. pectoralis major, C.IV (1B), m. deltoideus, C.V (1B), m. teres minor (1B), m. triceps brachii, S.II (1B), m. pectoralis major, H.I (1B), m. latissimus dorsi & m. teres major (1B), m. deltoideus, H.III (1B), m. brachioradialis (1B), m. biceps brachii (3B), m. pronator teres (1B), membrana interossea antebrachii (2B), m. triceps brachii (1B), m. brachialis (1B), m. supinator (1B), trochanter major (1L), m. gluteus maximus (1B), m. vastus medialis (1B), linea aspera (1B), t. quadriceps (1B), l. patellae (1B), m. soleus (1B).

Pathology. Enamel hypoplasia (LC<sub>#</sub>, RC<sub>#</sub>); dental calculus (labial: Ll<sub>1</sub>-Ll<sub>2</sub>; Rl<sub>1</sub>-Rl<sub>2</sub>).

**M.33**. Point: XXXI; dating: 13<sup>th</sup> century; excavation: 9 October; MNI: 1; representation: almost complete; preservation: good (grade 2); restored; sex: male (pelvis); age at death: 48.0 yrs. [45.6–51.5 yrs.]; age category: MAd (pubic symphysis; auricular surfaces; cranial sutures).

Skeletal inventory and morphometry. Skull (medium-broad); frontal (medium-broad according to the maximum length); parietals (medium-flattened); temporals; occipital (broad); sphenoid; palatines; maxillae; upper alveolar arch (dolichouranisch); hard palate (leptostaphylin, chamestaphylin); mandible (broad according to the intercondylar width, narrow according to the intergonial width, weak gonia, dolichostenomandibular); vertebrae (4 cervical, 10 thoracic, 3 lumbar); sacrum (platyhieric); ribs; sternum; clavicles; scapulae; ilia; R ischium; pubes; R humerus; radii; L ulna (platolenic); L patella; carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges. Seven permanent teeth (LM1-LM2; RC#, RM<sup>1</sup>; LP<sub>2</sub>-LM<sub>2</sub>) were recovered. 10 (LI<sup>1</sup>-LI<sup>2</sup>; RI<sup>1</sup>-RI<sup>2</sup>; LI<sub>1</sub>-LI<sub>2</sub>; RI<sub>1</sub>-RI<sub>2</sub>, RM<sub>1</sub>-RM<sub>2</sub>) were ante-mortem loss and 13 teeth (LC<sup>#</sup>-LP<sup>2</sup>, LM<sup>3</sup>; RP<sup>1</sup>-RP<sup>2</sup>; LC<sub>#</sub>-LP<sub>1</sub>, LM<sub>3</sub>; RC<sub>#</sub>-RP<sub>2</sub>, RM<sub>3</sub>) were post-mortem loss.

Nonmetric traits. a) cranial – supraorbital notch (one, R), parietal foramen (on parietal, L), lambdoid ossicle (B), direction of flexure for superior sagittal sulcus (R), petrosquamous suture (B), mastoid foramen (two on temporal, L), mental foramen (one, B); b) postcranial – atlas facet form (single, B), rhomboid fossa (R), acromial articular facet (R), circumflex sulcus (B), vastus notch (L), vastus fossa (L), inferior talar articular surface (double, B).

Entheses. L. costoclaviculare (3R), l. conoideum (2L/3R), l. trapezoideum (1B), m. pectoralis major, C.IV (2R), m. deltoideus, C.V (2L/1R), m. teres minor (3B), m. triceps brachii, S.II (2B), m. deltoideus, H.III (3R), m. brachioradialis (3R), m. biceps brachii (2L), m. pronator teres (2B), membrana interossea antebrachii (2L), m. triceps brachii (1L), m. brachialis (3L), m. supinator (2L), t. quadriceps (1L), calcaneal tendon (2B).

Pathology. Spina bifida occulta  $(L_1-L_5)$ ; ante-mortem tooth loss  $(LI^1-LI^2; RI^1-RI^2; LI_1-LI_2; RI_1-RI_2, RM_1-RM_2)$ ; spinal disc herniation (Schmorl's nodes: on three thoracic vertebral bodies).

**M.34**. Point: XXXI; dating: 13<sup>th</sup> century; excavation: 9 October 1981; MNI: 2; <u>M.34 (I.1)</u> – representation: partial; preservation: very good (grade 1); sex: male (pelvis); age at death: 43.9 yrs. [42.0–45.6 yrs.]; age category: MAd (pubic symphysis; auricular surfaces; first rib); stature: 163.7 cm [162.1–165.3 cm]; category: small-medium; body weight: 76.5 kg. Skeletal inventory and morphometry. Vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (dolichohieric); coccyx (1); ribs; sternum; L clavicle (robust); R clavicle (long, robust); scapulae; ilia; ischia; pubes; R humerus (eurybrachic); R humerus; L radius; R radius (medium length); ulnae (eurolenic); femora (eurymeric, weak pilaster); carpals; metacarpals; hand phalanges; tarsals; metatarsals; foot phalanges.

Nonmetric traits. a) postcranial – atlas facet form (single, B), acromial articular facet (B), *os acromiale* (R), acetabular crease (L), accessory sacral facets (R), femoral plaque (B), inferior talar articular surface (single, L; double, R), anterior calcaneal facet double (B), peroneal tubercle (B).

Entheses. L. costoclaviculare (3B), I. conoideum (2B), I. trapezoideum (3B), m. pectoralis major, C.IV (3B), m. deltoideus, C.V (3B), m. teres minor (3B), m. triceps brachii, S.II (3B), m. pectoralis major, H.I (3B), m. latissimus dorsi & m. teres major (3B), m. deltoideus, H.III (2B), m. brachioradialis (3B), m. biceps brachii (3B), m. pronator teres (3B), membrana interossea antebrachii (3B), m. triceps brachii (2B), m. brachialis (3B), m. supinator (3B), trochanter major (2B), m. iliopsoas (2B), m. gluteus maximus (3B), m. vastus medialis (2B), linea aspera (2B).

Pathology. Ccg<sub>1</sub> sacralisation (bilateral, complete, symmetric); osteoarthrosis (osteophyte: on three lumbar vertebral bodies; pitting and irregular surfaces: on three cervical bodies; in the lateral clavicular extremities; on the acromial articular facets); spinal disc herniation (Schmorl's nodes: on five thoracic vertebral bodies and three lumbar one).

<u>M.34 (I.2)</u> – representation: weak; preservation: good (grade 2); sex: male (general characteristics); age category: AD (general characteristics); stature: 161.9 cm [160.9–162.9 cm]; category: small-medium; body weight: 74.4 kg [74.1–74.7 kg].

Skeletal inventory and morphometry. Femora (eurymeric, null pilaster); R patella; tibiae (platycnemic); fibulae.

Nonmetric traits. a) postcranial – exostosis in trochanteric fossa (B), third trochanter (B), vastus fossa (R).

Entheses. Trochanter major (2B), m. iliopsoas (2B), m. gluteus maximus (3B), m. vastus medialis (2B), linea aspera (2B), t. quadriceps (2R), l. patellae (1B), m. soleus (1B).

**M.35**. Point: XXXI; dating: 13<sup>th</sup> century; excavation: 9 October 1981; MNI: 1; representation: almost complete; preservation: good (grade 2); sex: male (pelvis; skull); age at death: 19.5 yrs. [17.1–22.0 yrs.]; age category: AO (pubic symphysis; auricular surfaces; medial clavicle; sacral fusion); stature: 154.8 cm [148.4–159.4 cm]; category: small; body weight: 66.9 kg.

Skeletal inventory and morphometry. Skull (medium-long); frontal (camemetop); parietals (curved); temporals; occipital; palatines; nasals (broad); L zygomatic; maxillae; hard palates (chamestaphylin); mandible (medium according to the intercondylar and intergonial widths, moderate gonia, dolichostenomandibular); vertebrae (7 cervical, 12 thoracic, 5 lumbar); sacrum (dolichohieric); ribs; sternum; L clavicle (long, robust); R clavicle; scapulae; ilia; ischia; L pubis; humeri (eurybrachic); radii (long); ulnae (eurolenic); L femur (platymeric, null pilaster); R femur (hyperplatymeric, weak pilaster); L tibia (platycnemic, brachycnemic); R tibia (mesocnemic, brachycnemic); fibulae; carpals; metacarpals; hand phalanges; tarsals; metatarsals. 25 permanent teeth (LC<sup>#</sup>-LM<sup>3</sup>; RI<sup>2</sup>-RM<sup>3</sup>; Ll<sub>2</sub>-LM<sub>2</sub>; RC<sub>#</sub>-RM<sub>3</sub>) were recovered. Six (Ll<sub>1</sub>-Ll<sub>2</sub>; Rl<sub>1</sub>; Ll<sup>1</sup>; Rl<sup>1</sup>-Rl<sup>2</sup>) were post-mortem loss, and one tooth (LM<sub>3</sub>) was congenital absent.

Nonmetric traits. a) cranial – supraorbital foramen (one, B), parietal foramen (on parietal, L), lambdoid ossicle (B), direction of flexure for superior sagittal sulcus (R), mastoid foramen (one on temporal, R), mental foramen (one, B), mandibular torus (trace, B); b) dental – premolar root number (two: LP<sup>1</sup>; RP<sup>1</sup>), metaconule (small cuspule: LM<sup>3</sup>), lingual cusp number (two: LP<sub>1</sub>-LP<sub>2</sub>; RP<sub>1</sub>-RP<sub>2</sub>); c) postcranial – atlas facet form (single, B), double transverse foramen C<sub>7</sub> (B), Poirier's facet (R), acromial articular facet (B), hypotrochanteric fossa (B), third trochanter (B), inferior talar articular surface (double, B), anterior calcaneal facet double (B).

Entheses. L. costoclaviculare (2B), l. conoideum (1L), l. trapezoideum (1L), m. pectoralis major, C.IV (1B), m. deltoideus, C.V (2B), m. teres minor (2B), m. triceps brachii, S.II (1B), m. pectoralis major, H.I (2B), m. latissimus dorsi & m. teres major (3B), m. deltoideus, H.III (2B), m. brachioradialis (2B), m. biceps brachii (1B), m. pronator teres (1B), membrana interossea antebrachii (2L/1R), m. triceps brachii (1B), m. brachialis (2B), m. supinator (1B), trochanter major (1B), m. iliopsoas (1L/2R), m. gluteus maximus (2B), m. vastus medialis (1B), linea aspera (1B), l. patellae (1B), m. soleus (1B).

Pathology. Dental calculus (labial: LC<sup>#</sup>; RI<sup>2</sup>-RC<sup>#</sup>; buccal: LP<sup>1</sup>-LM<sup>1</sup>; RP<sup>1</sup>-RM<sup>1</sup>; whole surface: RI<sup>2</sup>-RM<sup>3</sup>; LI<sub>2</sub>-LM<sub>2</sub>; RC<sub>#</sub>-RM<sub>3</sub>).

**M.II**. Point: XXXI; dating: 13<sup>th</sup> century; excavation: 9 October 1981; MNI: 1; representation: weak; preservation: moderate (grade 3); sex: male (pelvis); age at death: 42.0 yrs.; age category: MAd (auricular surfaces); stature: 158.3 cm [156.6–158.9 cm]; category: small.

Skeletal inventory and morphometry. Vertebrae (1 cervical, 4 thoracic, 2 lumbar); ribs; L ilion; L ischion; L humerus (eurybrachic); R ulna (platolenic); tibiae (mesocnemic); fibulae; carpals.

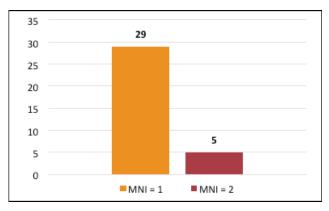
Nonmetric traits. a) postcranial – lateral tibial squatting facet (B).

Entheses. *M. pectoralis major*, H.I (2L), *m. latissimus dorsi* & *m. teres major* (2L), *m. deltoideus*, H.III (2L), *m. brachioradialis* (2L), *m. brachialis* (2R), *m. supinator* (2R), *m. soleus* (1L/2R).

#### D. ANTHROPOLOGICAL ANALYSIS

# D.1. Minimum number of individuals, skeletal representativity, taphonomic aspects

In the 29 graves analysed, there were 34 individuals. Five of the graves (14.7%) contained skeletal remains from two individuals each (Fig. 1). According to the osteological inventory of individuals, almost half (47.1%) of them are almost complete, about a third (32.4%) are





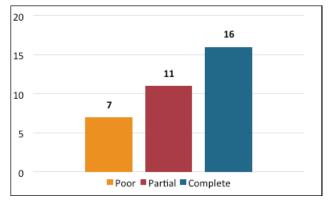


Figure 2. The representativeness of the skeletal material.

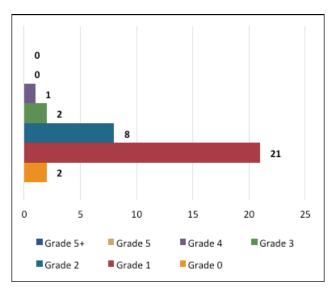


Figure 3. The preservation state of the skeletal material.

partially represented, and about a fifth (20.6%) are poorly represented (Fig. 2). The preservation status of the skeletal material is very good (erosion/abrasion stages 0 and 1) in just over two-thirds of the total individuals (67.6%).

Skeletons with well-preserved bones (stage 2) represent about a quarter of the analysed sample (23.5%), and those with moderately (stage 3: 5.9%) or precarious (stage 4: 2.9%) preserved bones are less common (Fig. 3).

#### D.2. Demographic analysis

# D.2.1. Distribution by age and sex of individuals

Biological sex was identified mainly for adults: 22 individuals (64.7% of the analysed group). In three cases, we also determined the sex in the case of adolescent individuals. For 12 subjects (35.3%), under the age of 14.0, the sex could not be estimated. 18 males (81.8%) and four females (18.2%) were identified. (Fig. 4). The *sex ratio* (the ratio of males to females in a population) is 4.5.

The estimated age at death produced an adult/ subadult ratio of 20:14 (58.8%) (Fig. 5).

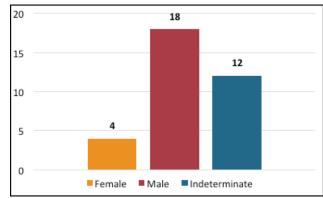


Figure 4. Distribution of sample by sex.

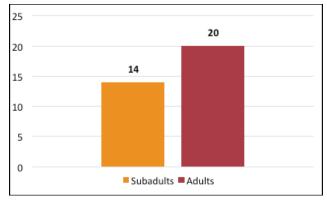


Figure 5. Distribution of sample by age group.

Of the 14 subadults, children had the highest frequency of death (8: 57.1%). Among them, two deaths occurred in *early childhood (infans* I: 3.0–7.0 yrs.), and six during the *second childhood (infans* II: 7.0–12.0 yrs.).

The class of children is followed by that of adolescents (5: 35.7%), and in only one case (7.1%) was an individual of the fœtal/infant class recorded (Fig. 6).

The highest number of deaths in the adult class is found in the young adult group (10: 50.0%). It is followed by the group of mature adults (7: 35.0%) and individuals who could not be accurately classified in one of the three age groups (3: 15.0%) (Fig. 7). Old adults are missing.

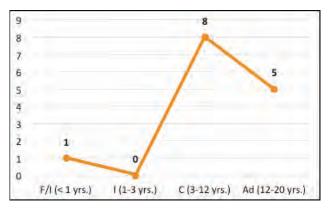


Figure 6. Distribution of subadults by age classes.

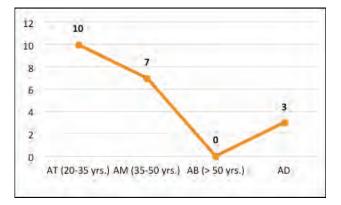
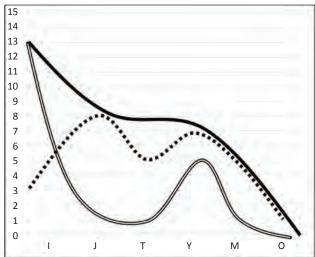


Figure 7. Distribution of adults by age classes.

#### D.2.2. Demographic profile

The mortality profile of the individuals from Dridu follows a trajectory that falls, in broad outline, in the standard pattern specific to an attritional cemetery<sup>38</sup> (Fig. 8). This type of cemetery is characterized by many deaths in the child age class, less among adolescents, followed by a gradual increase in the number of deaths in the adult and young adult age classes and a decrease in the old adult age class. In the graph below we see a curve in which there is only one mismatch with the standard representation – there are fewer deaths among mature adults compared to the group of young adults.

In order to be in line with the models proposed by the two authors, we used other names and classifications for the individuals' ages of death, as follows: infants



**Figure 9.** Dridu – La Metereze mortality profile curve (dotted line), compared to the expected standard curves for a catastrophe type cemetery (thickened line) and an attritional one (double line).

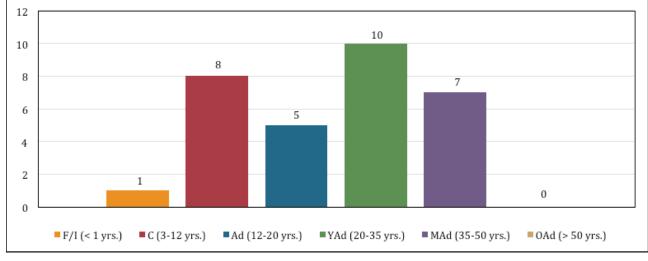


Figure 8. Attritional mortality profile at Dridu – La Metereze.

<sup>&</sup>lt;sup>38</sup> Margerison, Knüsel 2002.

(I: 0.0-5.0 yrs.); juveniles (J: 5.0-15.0 yrs.); teens (T: 15.0-25.0 yrs.); young adults (Y: 25.0-35.0 yrs.); middle adults (M: 35.0-45.0 yrs.); old adults (O: 45.0+ yrs.). In this case, the only discrepancy with the attritional profile would be the relatively few deaths in the infant category (Fig. 9).

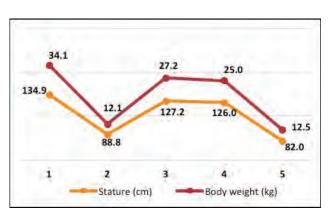
The medieval sample from Dridu – La Metereze, although not very numerous, also allowed us to calculate, with the help of mortality tables, some demographic indicators, the most important of which is life expectancy at birth. For the entire skeletal series, it has a value of 23.67 years (Tab. 1).

The life expectancy of the adult population was calculated only in the case of males (13.65 years, Tab. 2), the sample of females from Dridu being very low (four individuals).

# D.3. Dimensional and conformational study

The shape and size of the bones were represented by taking measurements (dimensions) and by calculating the related indices. The morphometric aspects were not assessed in individuals younger than one year; also, the bone sizes of the subadults were not included in the categories, as only the indices are suitable for this approach. In the case of adults, for the cranial skeleton, the values and categories were summarized in Tab. 3–6, and for the postcranial segment in Tab. 7–10.

#### D.4. Estimation of skeletal stature and weight



#### D.4.1. The subadult group

Skeletal stature and weight could be calculated in children aged 3.0–12.0 yrs. in only five cases (Fig. 10).

Figure. 10. The correlation between skeletal height and body weight in the subadult sample.

# D.4.2. The adult group

The skeletal stature of the adult individuals (including two adolescents with fully fused long bone epiphyses) from Dridu – *La Metereze* was calculated in 19 cases (five males and four females).

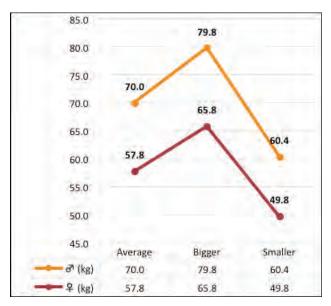
The average stature of male individuals (160.3 cm) falls into the small-medium category; the smallest value is 154.2 cm, and the highest is 168.6 cm. The average height

of female individuals (152.0 cm) is in the small-medium category. The profile of the two sexes describes a quasi-identical pattern (Fig. 11).



*Figure 11. Minimum, average and maximum values of the adult individuals' statures by sexes.* 

The skeletal weights of the adult individuals (including two adolescents with fully fused long bone epiphyses) from Dridu – *La Metereze* were calculated in 17 cases (13 males and four females). The average weight of males is 70.0 kg. The lowest weight is 60.4 kg and the highest is 79.8 kg. The average weight of females is 57.8 kg. The lowest weight is 49.8 kg and the highest is 65.8 kg. The profile of weight in both sexes, as well as that of skeletal statures, describe quasi-identical patterns (Fig. 12).



*Figure 12. Minimum, average and maximum values of the adult individuals' body weights by sexes.* 

# **D.5. Nonmetric traits**

For the entire skeletal group from Dridu -La *Metereze*, the nonmetric cranial, dental (only in the case of permanent erupted teeth) and postcranial characters were observed and recorded bilaterally.

# D.5.1. Cranial nonmetric traits (Tab. 11)

a. Anterior view. On the frontal bone was identified in only one case, in a female individual (MAd, 45.2 yrs.), a metopic suture, partially expressed (Fig. 13).



**Figure 13.** Incompletely persistent metopic suture (arrow) and sagittal ossicles (stars) [skull, superior:  $\bigcirc$ ; 42.5 yrs].

Some of the supraorbital structures (Fig. 14) have different frequencies in the skeletal series from Dridu – *La Metereze*: the supraorbital groove (38.5%: 15 variants from 39 observed orbits) and the supraorbital foramen (71.1%: 27 phenotypes from 38 observed orbits). In only one case, bilaterally (in a male), multiple supraorbital foramina were observed.

In the infraorbital aspect, we did not register the presence of any nonmetric character (infraorbital suture or multiple infraorbital foramina).



**Figure 14.** Bilateral supraorbital groove (arrows) and unilateral (right) supraorbital foramen (circle) [skull, anterior: ♂; 42.0 yrs.].

The zygomaticofacial foramen is present in 87.1% of cases (27 variants out of 31 zygomatic bones observed). Both the simple and the multiple phenotypes vary in number, being present in approximately equal proportions (13, respectively 14 structures). In four cases the foramen was missing.

b. Superior view. The parietal foramen (Fig. 15) is well represented (50.0%: 19 structures out of 38 observed parietals). In skeletal samples, it varies in position, size or number. In the analysed material, it is expressed singular, bilateral in most cases and located exclusively on the parietal, not sutural.

Among the wormian bones, the lambdoid ones (Fig. 15) have the highest frequency (62.2%: 23 out of 37 observed lambdoid sutures, slightly more numerous on the right – 13, compared to 10 on the left). Some of the sutural bones have a low presence: sagittal ossicles (Fig. 13) and apical bone (15.8%: 3 out of 19 skulls observed, Fig. 15), asterionic bone (10.5%: 2/9), bregmatic bone (5.6%: 1/18, Fig. 13), coronary ossicles (5.4%: 2/37, Fig. 16). Several variants were not recorded at all in the Dridu group: epipteric bone, occipito-mastoid ossicles, parietal notch bone, and inca bone.



**Figure 15.** Bilateral parietal foramen (ellipse), apical bone (arrow) and bilateral lambdoid ossicles (stars) [skull, posterior: ♂; 42.0 yrs.].

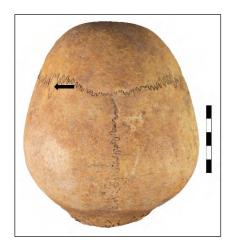


Figure 16. Left coronary ossicles [skull, superior: ♂; 42.0 yrs.].

c. Posterior view. Endocranial, we notice the predilection to the right of the superior sagittal sulcus, in 63.6% of cases.

d. Lateral view. At this level, the most numerous anatomical variants are the mastoid foramina, usually singularly expressed and located on the temporal bone (50.0%: 15 variants out of 30 mastoids observed). In a subadult (C: 10.6 yrs.), a bilateral perforation of the tympanic plate was observed, known as tympanic dehiscence.

e. Inferior view. The basal part of the skulls from Dridu is most often destroyed. For this reason, we recorded relatively few phenotypes, such as canals, foramina and bridges. We mention the presence in only three cases of a divided hypoglossal canal (16.7%).

f. Mandible. The most numerous variants on the mandible are represented by the mental foramina, usually expressed singularly, bilaterally. In just one case (C: 10.4 yrs.) two mental foramina were observed on the left side. In three individuals we also noticed the presence of the mandibular torus, but its expression is weak (palpable) or moderate (2–5 mm in elevation). Last but not least, a fully developed mylohyoid bridge was observed.

In addition to these features, although they were not part of the working protocol, the following were also observed: petrosquamous sutures, bilaterally expressed (in three males, one female and one subadult); styloid processes (in three males – three on the left and two on the right); accessory frontal grooves (in three subadults).

## D.5.2. Dental nonmetric traits

The model used to record nonmetric dental characters was the dental anthropology system of Arizona State University (ASU)<sup>39</sup>. Much more complex than the classic dichotomous system (absent or present character), the ASU system allows the scoring of a certain dental character depending on its variation, from a minimum to a maximum expression. Although our analysis included the evaluation of several dental features, we chose to highlight only those features present exclusively in the permanent dentition. The registration of dental epigenetic features has proved incomplete in some situations because the teeth are often fixed in the alveoli. For the medieval population of Dridu, the frequencies can be viewed in Tab. 12.

#### D.5.3. Postcranial nonmetric traits (Tab. 13)

a. Vertebral column. In the cervical sector, on the atlas, singular variants of the superior articular facets were mainly observed (29 phenotypes out of 33 observed atlases: 87.9). In two cases, double articular facets were bilaterally registered (12.1%). Bridge-type structures (posterior and lateral) are missing. On the C<sub>7</sub> vertebra, in nine cases (five on the left and two on the right), the presence of bipartite transverse foramina was attested (31.0% of the 29 vertebrae observed).

b. Scapula. The most common variant is the acromial articular facet (77.4%: 12 facets on both sides, out of 31 observed acromial processes). The presence of the circumflex sulcus was also recorded (27.9%: 12 variants – five on the left and seven on the right from 43 observed axillary edges). In one individual, a suprascapular foramen was observed (bilaterally) (14.3% of 14 suprascapular regions).

c. Humerus. Only one phenotype was recorded, a right septal aperture (2.6% of the 38 distal humeri observed). Supracondylar processes are missing.

d. Pelvis. The recorded variants, in descending order of frequency, are acetabular crease (23.1%: six morphologies from 26 observed acetabulums, Fig. 17), preauricular sulcus (16.2%: six variants from 37 anteroinferior margins of observed auricular surfaces) and two accessory sacral facets (4.7% of 43 observed iliac tuberosities).



**Figure 17.** Acetabular crease on the anterosuperior quadrant of the acetabular surface [right coxal, lateral:  $\bigcirc$ ; 31.4 yrs.].

e. Femur. In the upper femoral third, discrete characters best express the relationship between genetic determinism and environmental factors. The highest frequency is the femoral plaque (38.9%: 14 phenotypes in 36 proximal femora observed), followed by the hypotrochanteric fossa (36.0%: 18/50), the presence of a third trochanter (30.0%: 15/50) and Allen's fossa (28.0%: 14/50, Fig. 18). Exostoses from the trochanteric fossa (8.8%: 3/34) and Poirier's facet (5.9%: 2/34) are less common.



Figure 18. Cribriform morphology of the Allen fossa, bilateral [femur, anterior: child; 10.6 yrs.].

f. Patella. The activities in which the vastus lateralis muscle is required generate on the patella two phenotypes: the notch (Fig. 19) and the fossa of the vastus lateralis. The notch is more common in the medieval group from Dridu

<sup>&</sup>lt;sup>39</sup> Turner II et alii 1991.

(31.0%: 9 structures out of 29 patellae observed), compared to the fossa (13.8%: 4/29). The bipartite patella is missing.



Figure 19. Bilateral vastus notch [patellae, posterior: ♂; 42.0 yrs.].

g. Tibia. The only discrete tibial features recorded were the lateral articular facets (60.6%: 20 facets out of 33 observed distal tibiae). The medial articular facets are missing.

h. Astragalus. The predominant shape of the inferior articular surfaces is the double shape (63.9%: 23 surfaces out of 36 observed astragali); single inferior articular surfaces are rarer (36.1%: 13/36). Other characters are very rarely present (two medial talar facets – 6.3%: 2/32), or absent (the os trigonum and the lateral talar extensions).

i. Calcaneus. As with the talus, with which it articulates, the calcaneus also develops two anterior articular facet morphologies, present exclusively, in one form or another: simple (64.7%: 22 variants out of 34 observed calcanei) and double (35, 3%: 12/34). Another feature, the peroneal tubercle, was observed in six cases (17.1%), out of 35 observed calcanei.

In addition to these phenotypes, other discrete postcranial variants also attracted our attention: clavicular rhomboid fossa (10 left/11 rights, Fig. 20), acromial bone or bipartite acromion (12.9%: four variants out of 31 observed acromial processes, Fig. 21) and a sternal foramen (Fig. 22).



**Figure 20.** Depressed rhomboid fossa, bilateral (strong expression of the clavicular enthesis of I. costoclaviculare) [clavicles, inferior: 3; 34.8 yrs.].

# D.6. The degree of development of enthesophytes (Tab. 14)

Musculoskeletal markers are directly influenced by the type and intensity of daily physical activity performed by an individual throughout life. The execution mechanisms



Figure 21. Solitary right os acromiale [♂; 43.9 yrs.].

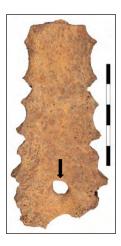


Figure 22. Big sternal foramen [sternum, anterior: ♂; 38.9 yrs.].

require physical effort and involve different muscle groups. That is why the assessment of muscle insertion areas is done only for adult individuals. Because the adults at Dridu – *La Metereze* are divided into 15 males and four females (the sex of an adult could not be determined), the simple statistical evaluation of enthesophytes (Fig. 20, 23) was performed only for the male subjects.



**Figure 23.** Osteolytic enthesophytes ("fossa-shaped" enthesopathy) – strong expression of the insertions of m. latissimus dorsi & m. teres major [left humerus, proximal half, anterior: 3; 19.5 yrs.].

In addition to the morphological assessment of the degree of development of enthesophytes, bone asymmetry was also calculated (Tab. 15), again, only for males. For this approach, 25 postcranial skeletal dimensions were selected. We obtained positive values of skeletal asymmetry in the case of 16 dimensions, which is explained by the fact that individuals from Dridu had a predilection for using the right side in terms of these elements. The asymmetry calculation also revealed negative values (in nine cases), which shows that those individuals had a preference for using the left side of these segments.

# D.7. Pathology

#### D.7.1. Dental pathologies

Some of the most common diseases found in human skeletal materials are dental diseases and pathologies associated with the jaws. In the no. 16 table, we summarized the main diseases encountered in the population of Dridu and the frequency of these manifestations.

Dental calculus is the most common condition encountered in dentition. Almost half (222 teeth: 49.1%) of the permanent teeth have exclusively supragingival calculus, on smaller or larger surfaces. In general, the entire surface of the dental crown is affected at the junction with the root (165: 74.3%). Other areas of the crown affected by dental calculus were less common: lingual and buccal areas (16: 7.2%), labial and buccal (15: 6.8%), labial (14: 6.3%), buccal (6: 2.7%) or the labial and lingual ones (4: 1.8%). The dental calculus appears mainly on the mandibular teeth and less on the maxillary ones (127 vs. 93 teeth – two of them could not be accurately attributed: superior or inferior arch).

Ante-mortem tooth loss affects only three individuals; they appear in a percentage of 7.1% (32 teeth lost out of 452 observed). The incisors are most often lost (12: 37.5%), followed by molars (8: 25.0%), premolars (4: 12.5%) and canines (2: 6.3%).

Dental enamel hypoplasia was identified each time by transverse lines (linear enamel hypoplasia) on the dental crown of the incisors and canines (7 teeth out of 145 observed: 4.5%).

Dental caries were identified on six permanent teeth out of 452 observed (1.3%). In one case, we found a carious lesion on a deciduous molar.

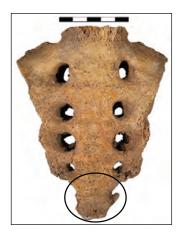
# D.7.2. Skeletal pathologies

# D.7.2.a. Congenital diseases

From this category, in the medieval population of Dridu, we identified two types of manifestations that affect the spine: sacralisations and occult spina bifida. Sacralisations occur in five individuals and have two locations: lumbosacral (thex last lumbar vertebra is assimilated by the sacrum, Fig. 24) and sacrococcygeal (the first coccygeal vertebra fuses with the last sacral, Fig. 25). These cranial "displacements" can have various morphologies: complete or incomplete, uni- or bilateral, symmetrical or asymmetrical<sup>40</sup>.



**Figure 24.** Partial, unilateral and asymmetrical sacralisation of the  $L_s$  vertebra [sacrum, anterior:  $\Im$ ; 38.9 yrs.].



**Figure 25.** Partial, bilateral and symmetrical sacralisation of the  $Ccg_1$  vertebra [sacrum, anterior:  $\Im$ ; 43.9 yrs.].

Another anomaly, singular in the skeletal group, is represented by spina bifida or spinal dysraphism, in the occult variant (Fig. 26), a congenital disorder of the vertebral arches whose main characteristic is their dehiscence<sup>41</sup>.



**Figure 26.** Spina bifida occulta – completely separated, irregular sacral neural arches [sacrum, posterior:  $\vec{c}$ ; 48.0 yrs.].

<sup>&</sup>lt;sup>40</sup> Barnes 2012, p. 65–68.

<sup>&</sup>lt;sup>41</sup> Barnes 2012, p. 71–74.

# D.7.2.b. Trauma

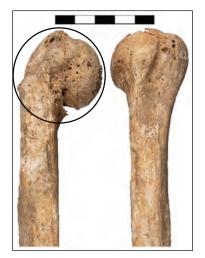
In the skeletal group from Dridu, we identified only traumas such as healed fractures. Their morphological characteristic is the formation of the wound callus resulting from the processes of repair and remodelling of the bone matrix<sup>42</sup>. Five individuals are affected: three males and two females. The affected areas are: the skull, where a depressed fracture was highlighted (Fig. 27); the ribs (Fig. 28); the shoulder, its dislocation is visible, especially on the humerus (Fig. 29), and the tibia (Fig. 30).



**Figure 27.** Depressed fracture on the left parietal [skull, superior:  $\bigcirc$ ; 42.5 yrs.].



*Figure 28.* Healed fractures [ribs, external surface: ♂; 18.3 yrs.].



**Figure 29.** The Hill-Sachs compression fracture on the right humeral head, comparative with the left normal one [humeri, proximal halves, anterior:  $\varphi$ ; 38.2 yrs.].

42 Waldron 2009, p. 146–148.



Figure 30. Healed fracture [left tibia, distal half: ♂; 26.7 yrs.].

In only one case, in a male adolescent, on the femoral *linea aspera*, a heterotopic ossification (an irregular bone mass) was recorded, often known as *myositis ossificans traumatica* (Fig. 31), resulting from a trauma of the soft tissues at this level.



**Figure 31.** Heterotopic ossification [right femur, posterior: ♂; 18.3 yrs.].

## D.7.2.c. Joint diseases

In the medieval population of Dridu, the most common joint disease is the intravertebral hernia, certified by the presence of the Schmorl nodes – vertical herniations of the intervertebral disc on the adjacent vertebral edges<sup>43</sup>. These nodes were identified exclusively in the thoracolumbar spine, in male individuals, all adults (with one exception – a teenager). Schmorl nodes have a higher frequency of occurrence in the lumbar sector (21.9%: 14 lumbar vertebral bodies affected out of 150 vertebrae observed), compared to the thoracic one (16.7%: 25/150).

Manifestations of osteoarthrosis or osteoarthritis are also common in medieval populations. Osteoarthrosis, although it has a broad definition including clinical, pathophysiological, biochemical, and biomechanical aspects<sup>44</sup>, can be broadly described as a disorder of unknown aetiology that primarily affects articular cartilage and subchondral bone. Some changes in bone morphology can be considered markers of osteoarthrosis: osteophytes (the mildest and earliest, considered an indicator related to the age of the individual, rather than a sign of osteoarthrosis), followed in advanced stages by changes such as porous surfaces, irregular bone contour and eburnation<sup>45</sup>. In the population of Dridu, markers of osteoarthrosis were observed in three individuals, all males (a young adult and two adults). There are no eburnations, the bone changes being early-moderate: osteophytes, porosity, irregular bone margins.

## D.7.2.d. Infectious diseases

In one individual (AO, 14.0 yrs.) were observed possible osteological evidence of the presence of tuberculosis:

<sup>44</sup> Brandt *et alii* 2003, p. 1.

<sup>43</sup> Üstündağ 2009, p. 696.

<sup>&</sup>lt;sup>45</sup> Brandt *et alii* 2003, p. 60–61.

periosteal manifestations (Fig. 32), hypervascularization and resorptive lesions (Fig. 33). Periostitis, evidenced by newly formed bone tissue, is almost generalized in the skeleton, both at the cranial (mandible) and postcranial level. In addition to the vertebrae, periosteal lesions were also observed on: ribs, sternal manubrium (Fig. 34), clavicles, scapulae, humeri, coxae, sacrum, femora, left patella, and tibiae.



*Figure 32.* Active new bone formation [lumbar vertebrae, anterior surface: Ad; 14.3 yrs.].



**Figure 33.** Hypervascularisation and lytic lesions  $[T_1, T_6]$  vertebrae, lateral surface: Ad; 14.3 yrs.].



*Figure 34.* Porosity and cortical erosions on the sternal manubrium [stern, anterior: Ad; 14.3 yrs.].

In another individual (female, 20.5 yrs.) only periosteal expressions were found. In the absence of other evidence,

it is very difficult to specify the etiological agent that caused the infection, periostitis being a good indicator of non-specific stress.

# D.7.2.e. Metabolic diseases

In the analysed skeletal group, the most numerous manifestations are represented by the cribra orbitalia (Fig. 35) and the cribra cranii externa (porotic hyperostosis, Fig. 36), which are macroscopically visible (thickened bone and porous surfaces) and are located (on the orbital roof or the outer surface of the skull). Cribra orbitalia has been identified in eight individuals: five subadults with active lesions and three adults with orbital morphology indicating complete healing. The manifestations are bilateral with one exception, where cribra orbitalia was observed only on the right side. Also, the five subadults are all children: one in the infans I category and four in the infans II. Hyperostotic pathological processes have also been identified in the exocranial surface of the skull, in two individuals: one on the parietal bones and the other on the parietal bones and the occipital. We also mention the fact that cribra cranii externa always accompanies cribra orbitalia.



**Figure 35.** Bilateral healed lesions of cribra orbitalia [skull, anteroinferior: ♂; 42.0 yrs.].



*Figure 36.* Bilateral active lesions of cribra cranii externa [skull, posterior: C; 10.6 yrs.].

In one individual (C, 3.5 yrs.) severe porous hypertrophic lesions were identified on the frontal and parietal bosses and less intense on the temporals, occipital, hard palate and bilateral on the mandibular ascending ramus. These characteristics have been attributed to infantile scurvy (Fig. 37).



*Figure 37.* Scorbutic changes on the cranial vault [skull, posterior: C; 3.5 yrs.].

# E. DISCUSSIONS AND CONCLUSIONS

A characteristic of the funerary discoveries from the  $11^{th}-14^{th}$  centuries in Wallachia (Great Wallachia) is that the inhumation become quasi-general compared to the previous period, that of biritual cemeteries. In the area of interest, cemeteries were initially used alongside burial mounds (Fig. 38). It was later, starting with the  $13^{th}$  century, after the retreat of the last wave of migrants (the Mongols), when the Turanian horsemen practically disappeared, that most of the cemeteries began to function. Regarding the "early" medieval cemetery from Dridu – *La Metereze*, burials were carried out in flat cemeteries, similar to some other funerary discoveries from other four localities in Wallachia:

– an isolated 13<sup>th</sup>-century tomb discovered at Zimnicele (comm. Năsturelu, Teleorman County)<sup>46</sup>;

 – a group of five tombs (with six individuals) dated to the 11<sup>th</sup>–12<sup>th</sup> centuries from Independenţa *Borosu* (comm. Gherghiţa, Prahova County)<sup>47</sup>;

 - 52 graves dated to the 13<sup>th</sup>-14<sup>th</sup> centuries cemetery in Brăila *Str. Cetății 70* (Brăila county)<sup>48</sup>;

– an unknown number of medieval tombs (of the order of tens for each of the two points) dated to the 13<sup>th</sup>–14<sup>th</sup> centuries coming from the cemeteries from Cetățeni (comm. Cetățeni, Argeş County) – *Poiana Târgului* ("cimitirul feudal/the feudal cemetery") and *Monumente* ("necropola voievodală/princely necropolis")<sup>49</sup>.

We would like to point out that the isolated graves or groups of graves certainly belong to cemeteries, but insufficient research has so far not been able to put them in a clear context. Unfortunately, so far, only the individuals investigated at Independența *Borosu* have been anthropologically analysed.

The skeletal sample analysed in the present study consists of 29 graves. Following the MNI calculation, we found that skeletal remains from two individuals are present in five graves. Thus, in total, the skeletal sample from Dridu consists of 34 individuals. We do not have any information from the archaeological data regarding the existence of double burials. This ritual would not be unusual for this period if we consider that such a funeral was documented at Independenta. In the case of the five tombs with two individuals from Dridu, we considered as "principal" the individual better represented as skeletal completeness. The other five individuals, more poorly represented, have one thing in common: the skeletal remains are more or less in anatomical connection. We thus arrive at two possibilities: either we are dealing with reburials, or the skeletal remains are the result of post-depositional disturbances/destruction of neighbouring graves. We must also take into account the fact that at Dridu there are two funerary horizons (12<sup>th</sup>-13<sup>th</sup> or  $13^{th}$ – $14^{th}$  and  $16^{th}$ / $17^{th}$ – $18^{th}$  centuries).

The osteological inventory of the individuals shows that almost half (47.1%) is approximately complete, and at least two-thirds of the total (67.6%) have very well-preserved bones.

The sex of the individuals from Dridu could be determined in 22 cases, mainly for adults (19), but also for three adolescents. 18 males (81.8%) and four females (18.2%) were identified. The sex ratio (4.5) is uneven, very high in favour of males. These proportions find no equivalent to other discoveries of the time (or later) for attritional cemeteries; the unusualness of the situation may have explanations that we do not currently understand. We mention that in modern human populations the sex ratio, at birth, is on average about 1.05, i.e., about 105 males are born for every 100 females. One explanation would be that the slightly higher ratio of males at birth tends to balance over the lifetime of individuals and become 1:1, due to higher mortality rates in all age groups for males<sup>50</sup>. Unfortunately, the numerically reduced female sample from Dridu cannot help us to prove this assertion.

Regarding the age at death, the ratio of adults vs. subadults is favourable to the first category (20:14). The highest value of mortality among subadults is found in children (8: 57.1%), followed by adolescents (5: 35.7%), and only one case (7.1%) in the fætal/infant class. In the group of adults, the most numerous deaths are found in the group of young adults (10: 50.0%), followed by mature adults (7: 35.0%). In three cases, the age category could not be specified. We notice the total lack of elderly adults (50.0+ yrs.), which would mean that death occurred relatively early in the community of Dridu. However, at

<sup>46</sup> Ioniță 2013.

<sup>&</sup>lt;sup>47</sup> Frînculeasa *et alii* 2014; according to another opinion, the tombs date to the 12th–13th centuries (Ioniţă 2013, p. 217).

<sup>&</sup>lt;sup>48</sup> Cândea 1995, p. 75–88.

<sup>49</sup> Ioniță 2013.

<sup>&</sup>lt;sup>50</sup> Chamberlain 2006, p. 18–19.

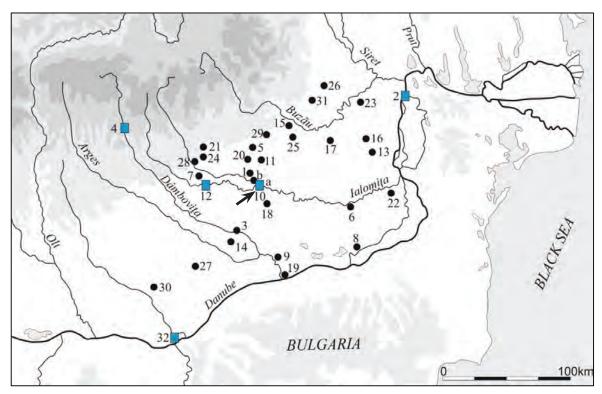


Figure 38. Funerary discoveries in Muntenia (10<sup>th</sup>−14<sup>th</sup> centuries): tumular tomb(s) – circle, flat cemetery or tomb(s) – square → 1. Adâncata (7 tombs); 2. Brăila (cemetery: 52 tombs); 3. București – Lacul Tei ?; 4. Cetățeni (2 cemeteries: unknown no. of tombs); 5. Cireșanu; 6. Ciulnița (2 tombs); 7. Coada Izvorului; 8. Coslogeni (2 tombs) ?; 9. Curcani; 10a. Dridu – La Metereze (cemetery: unknown no. of tombs); 10b. Snagov ?; 11. Fulga de Jos ?; 12. Independența (cemetery: 5 tombs); 13. Însurăței ?; 14. Jilava; 15. Lipia ?; 16. Lișcoteanca (3 tombs); 17. Lunca; 18. Movilița; 19. Oltenița (2 tombs); 20. Parepa; 21. Păulești; 22. Ploiești – Triaj (2 tombs) ?; 23. Râmnicelu; 24. Strejnicu; 25. Sudiți (2 tombs); 26. Știubei; 27. Tangâru; 28. Târgșoru Nou; 29. Ulmeni (2 tombs); 30. Vitănești (2 tombs); 31. Ziduri; 32. Zimnicele.

least two of the adults in the mature adult class (M.14, M.33) may be older.

The curve of the demographic profile of mortality is in the standard pattern, specific to an attritional-type cemetery, characterized by numerous deaths accumulated over long periods. Two major discrepancies emerge from the analysis of the profile curve: a) relatively few deaths among infants (3: 0.0-5.0 yrs.) and more numerous in the juvenile group (8: 5.0-15.0 yrs.); b) relatively few deaths in the young adult group (7: 15.0–25.0 yrs.) compared to mature adults. Among the potential explanations<sup>51</sup> for this distribution, there are several taphonomic or social factors that reduce the number of recovered infants compared to the real one. In addition, given the small percentage of females in the analysed population, the small number of infants is justified as well. The few extra deaths among juveniles may be associated with a number of diseases; it is known that this category is very susceptible to have contact with various infections, as will be seen below. The presence of a smaller number of young adults in the population of Dridu may be caused by pathological or migratory phenomena.

Life expectancy at birth for the entire skeletal series, calculated using the mortality tables, has a value of 23.67

years. There is a gradual decline in life expectancy as individuals get older. The evolution of the life expectancy of the adult population was calculated only for males. The highest value (13.65 years) is between 20.0 and 25.0 years.

Biometry is useful for describing individuals or comparing groups/populations from different areas or chronological horizons. In this sense, but also taking into account the fact that the female sample from Dridu is quite small (four individuals), we tried to establish a morphometric pattern only for male individuals, although they are not very well represented either – 15 adults and two adolescents whose long bones have completely fused epiphyses, indicating ages closer to young adults. Thus, the skull in the male series has the following general characteristics:

a. The neural segment is cryptozyg, has medium lengths, is narrow and brachyranic (rounded). It is also short/medium, ortho-/hypsicranic (medium/ high) according to the vertico-longitudinal indices and tapeinocranic (small) according to the vertico-transversal indices. The forehead has medium widths (minimum and maximum), oval edges (intermediate), is eurymethopic (broad) and orthometopic (curved, convex). The parietals have a phenotypic heterogeneity (curved, moderate, flattened) and the occipitals have medium width and a microsemic (narrow) foramen magnum.

<sup>&</sup>lt;sup>51</sup> Margerison, Knüsel 2002, p. 139–140.

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b. The visceral skull is narrow/broad, with a high and mesoprosopic (medium height) total facial segment, of moderate height and mesenic in the upper facial segment, and chaemoprosopic (broad, low) in the middle facial layer. The orbits have medium lengths and heights, mesoconchies. The nose has medium widths, short/medium heights, mesorrhinic. The upper alveolar arch has an accentuated polymorphism: dolichouranic (narrow), mesouranic (medium width), and brachyuranic (broad). The hard palate is leptostaphylinic (narrow) and orthostaphylinic (medium width).

c. The mandible is medium according to the intercondylar width, medium/broad according to the intergonial width, has moderate gonia and dolichostenomandibular (narrow, elongated) indices.

Also, in the male series, we note the preponderance of the following postcranial characteristics:

i. robust clavicles; medium on the left; short on the right;

ii. eurybrachic (rounded in the middle section) humeri;

iii. medium length radii;

iv. eurolenic (medium flattened) ulnae;

v. dolichohieric (narrow) sacra;

vi. null pillaster femora; platymeric (flattened anteroposteriorly) on the left subtrochanteric region; eurymeric (rounded) on the right subtrochanteric region;

vii. medium width patellae;

viii. eurycnemic (null flattened) and brachycnemic (short) tibiae.

Height and skeletal weight are two parameters calculated to assess the state of health or sexual dimorphism in ancient populations. The sample of subadults from Dridu - La Metereze allowed us to calculate skeletal statures and weights (by the Visser method) in five cases, only in children (3.0–12.0 yrs.). Although there are few analysed individuals, there is a directly proportional relationship between the two parameters. The statures calculated in adults by the Pearson method for 15 males and four females indicate a pronounced sexual dimorphism, the average values of males (160.3 cm) being 8.3 cm higher than those of females (152.0 cm). The mean values for the two sexes fall into the small-medium category. Skeletal weights, calculated by the Auerbach & Ruff method for 13 males and four females, also indicate a pronounced sexual dimorphism: the average weight of males (70.0 kg) is 12.2 kg higher than that of females (57.8 kg).

Our analysis also considered the observation and recording of nonmetric traits that can establish the genetic distance between individuals or between populations. In the field of physical anthropology, there are often many debates about these anatomical variants, especially in terms of their determinism: are they genetically controlled, are they the result of environmental factors acting on the body, or are they expressed due to normal, daily physical activity? In the following, we present some of the most interesting phenotypes observed in the skull and postcranial bones.

In a female individual (MAd, 45.2 yrs.) a partially expressed metopic suture was observed. At birth, the frontal bone is made up of two parts separated by an interfrontal suture, which usually closes by the end of the third year of life or by the eighth year at the most; may persist into adulthood (metopism), with obliteration occurring between 30–40 years in males, and in females sometimes even later<sup>52</sup>.

The type and frequency of nonmetric characters, such as a series of supraorbital structures, can also be influenced by the climatic conditions in which those individuals lived. Analysing 1978 orbits belonging to skulls collected from three climatic regions (warm, temperate and cold), it was suggested<sup>53</sup> that the highest frequency of the notch was in the warm climate sample (54.5%), and the lowest was observed in skulls from cold climates (44.0%). In the case of the supraorbital foramen, the ratio is reversed: the highest frequency is found in individuals from cold climates (35.4%), and the lowest (16.4%) in populations from warm regions. At Dridu - La Metereze, for the entire skeletal series<sup>54</sup>, we find a frequency of 38.5% of the supraorbital notch and a frequency of 71.1% of the supraorbital foramen. In accordance with the above theory, we conclude that the population of Dridu comes rather from temperate/cold climates.

Another well-represented structure is the parietal foramen, present in 50.0% of cases. This phenotype is responsible for transmitting an emissary vessel (Santorini vein) that connects the veins of the scalp to the superior sagittal sinus<sup>55</sup>.

Among the wormian bones, the lambdoid ones have the highest frequency (62.2%), and the coronary ossicles are the rarest (5.4%).

In a subadult (C, 10.6 yrs.) A bilateral perforation of the tympanic plate was observed, known as tympanic dehiscence. The tympanic foramen usually closes around the age of 5.0; its persistence in adulthood is called Huschke's foramen<sup>56</sup>.

The divided hypoglossal canal (present in 16.7% of cases) is also particularly useful in determining the genetic distances between populations, if it is correlated, for example, with the frequency of the supraorbital foramen<sup>57</sup>.

An interesting feature observed in the mandible is a mylohyoid bridge, fully developed, observed on the left side, in the same individual who also has a metopic suture. This enigmatic phenotype, very useful for comparing human

<sup>&</sup>lt;sup>52</sup> Hauser, De Stefano 1989, p. 41–42.

<sup>&</sup>lt;sup>53</sup> Tomaszewska *et alii* 2013.

<sup>&</sup>lt;sup>54</sup> Although adult individuals are better suited to be considered when discussing climate adaptation, some studies (Londhe *et alii* 2011) show that certain supraorbital epigenetic traits are sometimes only visible in individuals of fætal age.

<sup>55</sup> Mann *et alii* 2016, p. XI.

<sup>&</sup>lt;sup>56</sup> Mann *et alii* 2016, p. 165.

<sup>57</sup> Eroğlu 2016.

populations, seems to derive from Meckel's cartilage<sup>58</sup>, a structure from which the vertebrate mandible developed.

Of the dental nonmetric characters, it should be noted that the most significant frequencies of the morphology of the dental crown are represented by: hypoconulid (33.8%), interruption groove (17.5%), shoveling (9.5%) and metaconule (8.5%).

The relationship between genetic determinism and the environment is best highlighted by the nonmetric characters observed in the postcranial skeleton.

Without going into details, we would like to mention a few aspects. First of all, the low frequency of septal openings is surprising – only one variant of the 38 distal humeri observed was recorded. The subtrochlear or intercondylar foramen, as it is also called, still has a controversial aetiology (the influence of genes, the size and shape of ulna processes, joint laxity, bone robusticity, osteoarthritis, osteoporosis<sup>59</sup>). Its incidence in adults varies from 6.9% in American whites to almost 60.0% in some Northern African and West African groups<sup>60</sup>.

Another interesting character, unilaterally present in four individuals from the Dridu group, is the acromial bone or the bipartite acromion. This anomaly also has a controversial aetiology, with two hypotheses regarding its occurrence: "separate epiphysis theory" or "fracture hypothesis of the fully ossified acromial bone"?<sup>61</sup>.

The pelvis and lower limbs have anatomical features that are mainly the result of femoroacetabular impingement. This mechanism is responsible for variations in the proximal third of the femur: femoral plaque or Walmsley's facet (38.9%), hypotrochanteric fossa (36.0%), third trochanter (30.0%), Allen's fossa (28.0%) and Poirier's facet (5.9%). On the sacrum, we identified accessory sacral facets (4.7%), and on the tibia, in 60.6% of cases, lateral squatting facets. The medial facets are missing. These nonmetric characters are associated in the anthropological literature with horse riding<sup>62</sup>.

Some entheseal changes are also attributed to riding; instead, the results show that in the population of Dridu we find predominantly, bilaterally, a moderate degree (category 2) of development of musculoskeletal markers: 10 on the left and 14 on the right. The following are the poorly expressed morphologies of enthesophytes (category 1 – eight on each side). Four of the entheses on the left (C.I, C.V, H.IV, U.II) and three on the right (C.I, H.IV, U.II) show a high degree of development (category 3), while none of these is found in the lower limbs, and therefore cannot be associated with riding<sup>63</sup>. The four strongly developed insertion zones corresponding to *I. costoclaviculare, m.* 

*deltoideus, m. brachioradialis,* and *m. brachialis,* are compatible with activities (strong and repetitive) that involve the propulsion of boats, such as paddling<sup>64</sup>.

Other changes caused by riding are the joint pathologies observed in the vertebral column, exclusively in males: the Schmorl herniations on the thoracolumbar spine (in eight individuals) or the presence of osteoarthrosis markers such as osteophytes, bone porosity or irregular bone edges (in three individuals).

Extraspinal articular pathological changes are also potential indicators of riding, but they are completely absent from the Dridu group.

Traumatic injuries are the last category that can be attributed to the rider's type. In Dridu, only injuries such as healed fractures were recorded (in five individuals: three male and two female). Surprisingly, markers such as fatal injuries are missing. The skull, ribs, shoulder or tibia are affected. Traumatic injuries located in different regions of the skeleton may be related to the practice of riding, especially to falling from a horse. In one case (male adolescent), a traumatic ossifying myositis in the adductor muscle, also known as the rider's bone, was identified on the femoral line<sup>65</sup>.

In conclusion, following the analysis of some of the indicators associated with the "Horse Riding Syndrome", we are inclined to believe that in the population of Dridu we are dealing (also) with (turanic?) riders.

Features typical of the funerary standard of the Turanics (deposition of horse offerings associated with weapons and/or objects of military equipment and harness) were not found, on the other hand, in some tombs, the grave goods suggest a certain resemblance to their burial customs<sup>66</sup>). We mention, in this sense, five funeral features: M.6 (child) containing knucklebones and an iron knife; M.11 (adolescent) with offerings consisting of animal bones found under the pelvis of the deceased (we do not know if they were a horse or other animal bones) and M.12 (adult) having as funerary inventory an iron arrowhead. We can also add M.10 (adult) in which several iron objects were identified (a buckle and two chains), which could have come from a belt, but also from the harness<sup>67</sup>. M.14 (adult), which contains a sickle, cannot be considered to belong to the Turanians, as this type of inventory is not found in their graves. However, compared to the other tombs, it is a special inventory, reminiscent of certain pre-Christian practices.

Among the tombs mentioned above, all have some skeletal features attributable to Asian nomadic populations (dental and postcranial anatomical variants, spinal and extraspinal pathologies, enthesic modifications). They add to a number of at least seven individuals (M.2, M.5 –

<sup>&</sup>lt;sup>58</sup> Ossenberg 1974.

<sup>&</sup>lt;sup>59</sup> Myszka 2015, p. 219.

<sup>&</sup>lt;sup>60</sup> Paraskevas *et alii* 2012, p. 135–136.

<sup>&</sup>lt;sup>61</sup> Yammine 2014, p. 611–612.

<sup>62</sup> Berthon 2019, p. 36.

<sup>&</sup>lt;sup>63</sup> An exception is the femoral gluteal tuberosity (F.III), 10 out of 22 entheses (45.5%) being strongly developed and representing the predominant type in the population of Dridu, along with medium developed morphologies.

<sup>&</sup>lt;sup>64</sup> Lieverse *et alii* 2009, p. 471.

<sup>65</sup> Berthon 2019, p. 27, 35.

<sup>66</sup> Ioniță 2019, p. 132.

<sup>&</sup>lt;sup>67</sup> If their association in the same feature is exact, in the inventory of the Giurgiu County Museum, the respective buckle appears as being from M.14 (Ionită 2005, p. 127).

I.1, M.13, M.17, M.23, M.25, and M.35 – I.1) with no grave goods, and on whose bones at least three similar features could be observed. We noted that in the analysed group (34 individuals), 12 (representing 35.3%) may represent nomadic populations, from an anthropological point of view.

Despite these results, however, it is difficult to determine from an anthropological perspective whether the populations of Turanian horsemen were assimilated into communities that practised burials in plane cemeteries. We hope to further investigate this aspect in future studies that will try to combine the results of anthropological research with those of molecular genetics.

The skeletal series from Dridu is also notable for pathological changes other than those mentioned above. Thus, one category is represented by dental and/or jaw-associated diseases. Of these, dental calculus, the result of bacterial plaque mineralization, whose main component is calcium phosphate<sup>68</sup>, is the most common. About a third of the analysed individuals and almost half of the observed teeth have supragingival dental calculus. Other manifestations, visible in a smaller number of individuals, are represented by:

a) ante-mortem tooth loss (in three individuals);

b) dental linear enamel hypoplasia (in four individuals), a defect that occurs during amelogenesis (the process of tooth enamel formation) and which can be attributed to the deficiency of vitamins A and D<sup>69</sup>;

c) surprisingly low frequency of dental caries (1.3%), found on permanent teeth, in six individuals, including a subadult with a cavity on a decidual molar.

Other pathological manifestations identified in Dridu are congenital diseases. Sacralisations have been identified in five individuals: cranial shift of  $L_{s}$ , and caudal shift of  $Ccg_1$ . We have identified the *spina bifida occulta* in a mature male adult. The disease is caused by congenital metabolic dysfunction of the folic acid. Neural tube development also appears to be affected by maternal zinc and selenium deficiency<sup>70</sup>.

Infectious diseases also affect the population of Dridu. In an adolescent (14.0 yrs.), almost generalized periosteal manifestations (cranial and postcranial), hypervascularization and resorptive lesions were observed, which seem to be related to the *Mycobacterium tuberculosis* bacillus infection. Tuberculosis also called the "White Plague", is a contagious disease that is transmitted to humans mainly through the respiratory tract (cough, sneezing, speech, etc.)<sup>71</sup>. It can affect the lungs (pulmonary tuberculosis), lymph nodes (tuberculous adenitis), skin (scrofula), intestines (gastrointestinal tuberculosis) and in fewer cases, the bones and joints<sup>72</sup>.

Only periosteal expressions were found in a female individual (20.5 yrs.). Several pathologies can lead to the formation of new bone tissue: physiological in infants, Caffey's disease, infections (osteomyelitis, syphilis), trauma, venous stasis (varicose veins), haemorrhage (scurvy), rickets, burns, tumours (primary – osteosarcoma, secondary – metastases), leukaemia, hypertrophic pulmonary osteoarthropathy, fluorosis, hypervitaminosis A, neurofibromatosis, thyroid acropachy, some congenital conditions, Menkes' syndrome, Camaruti-Engelmann disease, overlying soft tissue lesions<sup>73</sup>.

A final category of diseases identified in Dridu individuals are the metabolic disorders, which can be described as "stress indicators"; skeletal abnormalities are the result of adaptive responses to stress factors that act on the body during the years of growth and development, with nutrition playing a very important role<sup>74</sup>. In the analysed skeletal group, the most numerous manifestations are represented by the cribra orbitalia (in eight individuals: five children with active lesions and three adults with healed disease morphologies) and the cribra cranii externa (in two children, who also present cribra orbitalia). The two diseases were considered to be the result of anaemia, in its two forms: less frequently of genetic origin (thalassemia and sickle cell disease), and, more frequently, acquired (iron deficiency), a category caused by loss of blood and nutrients. In addition to iron, the major constituent of haemoglobin, other substances needed to maintain erythrocyte homeostasis includes essential amino acids and vitamins (A,  $B_{e}$  – pyridoxine,  $B_{o}$  – folic acid,  $B_{12}$  – cobalamin)<sup>75</sup>. The results of more recent research have concluded that porotic hyperostosis and cribra orbitalia do not have the characteristics of specific diseases, but they are rather symptoms of several diseases: inflammatory processes, haemorrhages, tumours, dietary deficiencies, genetic causes and intestinal worms<sup>76</sup>.

In one individual (C, 3.5 yrs.), severe porous hypertrophic lesions have been identified in the skull, generally associated with Möller-Barlow disease or infantile scurvy, a disease that occurs due to insufficient vitamin C intake. Fresh fruits and vegetables are primary sources of vitamin C, but the nutrient is also found in smaller amounts in meat, fish or dairy products. Vitamin C plays an essential role in the metabolism of collagen, the main protein component of connective tissues (skin, cartilage and bone)<sup>77</sup>.

The human skeletal remains from the 29 tombs from Dridu – *La Metereze*, together with those discovered at Independența, are so far the only "early" medieval cemeteries in Muntenia anthropologically analysed. We hope that future archaeological excavations, especially those imposed by infrastructure works, will reveal other cemeteries whose analysis will be added to the current database.

<sup>68</sup> Hillson 2005, p. 288–290.

<sup>&</sup>lt;sup>69</sup> Hillson 2005, p. 169–175.

<sup>&</sup>lt;sup>70</sup> Barnes 2012, p. 76.

<sup>&</sup>lt;sup>71</sup> Roberts, Buikstra 2003, p. 4–10.

<sup>&</sup>lt;sup>72</sup> Lewis 2011, p. 12.

<sup>73</sup> Waldron 2009, p. 116.

<sup>&</sup>lt;sup>74</sup> Roberts, Manchester 2005, p. 222–223.

<sup>&</sup>lt;sup>75</sup> Walker *et alii* 2009, p. 111.

<sup>&</sup>lt;sup>76</sup> Ortner 2003, p. 89.

<sup>&</sup>lt;sup>77</sup> Mays 2014, p. 55.

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### SUPPLEMENTARY DATA

х	Dx	dx	lx	qx	Lx	Тх	eºx
0.0-4.9	3	10.00	100.00	0.1000	475.000	2366.667	23.67
5.0-9.9	2	6.67	90.00	0.0741	433.333	1891.667	21.02
10.0-14.9	6	20.00	83.33	0.2400	366.667	1458.333	17.50
15.0-19.9	2	6.67	63.33	0.1053	300.000	1091.667	17.24
20.0-24.9	3	10.00	56.67	0.1765	258.333	791.667	13.97
25.0-29.9	3	10.00	46.67	0.2143	208.333	533.333	11.43
30.0-34.9	4	13.33	36.67	0.3636	150.000	325.000	8.86
35.0-39.9	2	6.67	23.33	0.2857	100.000	175.000	7.50
40.0-44.9	3	10.00	16.67	0.6000	58.333	75.000	4.50
45.0-49.9	2	6.67	6.67	1.0000	16.667	16.667	2.50
50.0-54.9	0	0.00	0.00	0.00	0.000	0.000	0.00
55.0-59.9	0	0.00	0.00	0.00	0.000	0.000	0.00
60.0-64.9	0	0.00	0.00	0.00	0.000	0.000	0.00
Т	30	100.00					

Table 1. Mortality table for the whole skeletal group, where:

x = the chosen age range, in this case, 5 years;

N (Dx) and % (Dx) = the number and percentage of deaths corresponding to each age range x: how many x-year-old survivors die before the age of x + 5;

*lx* = the number of survivors of age *x*: how many people in a generation are still alive at the exact age of *x* years;

qx = probability of death between two consecutive ages (x and x + 5 years): the risk of a person who has turned x years old to dying before turning x + 5 years;

Lx = the total number of years of individuals in the range from x to x + 5;

*Tx* = the total number of years lived by age group x until all members of the group died;

 $e^{o}x$  = life expectancy: the average life expectancy of an individual or the average number of years of life left at a certain age.

х	Dx	dx	lx	qx	Lx	Тх	e⁰x
20.0-24.9	2	15.38	100.00	0.1538	461.538	1365.385	13.65
25.0-29.9	3	23.08	84.62	0.2727	365.385	903.846	10.68
30.0-34.9	3	23.08	61.54	0.3750	250.000	538.462	8.75
35.0-39.9	1	7.69	38.46	0.2000	173.077	288.462	7.50
40.0-44.9	3	23.08	30.77	0.7500	96.154	115.385	3.75
45.0-49.9	1	7.69	7.69	1.0000	19.231	19.231	2.50
50.0-54.9	0	0.00	0.00	0.0000	0.000	0.000	15.00
55.0-59.9	0	0.00	0.00	0.0000	0.000	0.000	10.00
60.0-64.9	0	0.00	0.00	0.0000	0.000	0.000	0.00
Т	13	100.00					

Table 2. Mortality table for the adult male population.

			් (mm)					<b>♀ (mm</b>	i)	
Martin No.	N	Med.	Min.	Max.	δ	N	Med.	Min.	Max.	δ
1. G–Op	7	181.2	176.5	187.2	4.0	2	169.3	165.5	173.2	5.4
5. N–Ba	2	97.5	95.8	99.1	2.3	1	98.2	98.2	98.2	-
7. Ва-О	3	40.8	37.0	44.2	3.6	1	37.3	37.3	37.3	-
8. Eu–Eu	7	144.9	132.2	150.0	6.3	2	138.9	138.0	139.9	1.4
9. Ft–Ft	6	100.0	92.0	105.4	4.6	2	98.7	98.2	99.2	0.7
10. Co–Co	7	121.8	110.9	128.4	6.7	2	115.0	114.7	115.4	0.5
12. Ast–Ast	7	111.0	93.4	118.4	8.5	2	110.8	107.2	114.4	5.0
16. Ba–O (⊥)	2	30.0	28.7	31.4	1.9	1	31.7	31.7	31.7	-
17. Ва-В	2	130.2	130.0	130.4	0.3	1	127.4	127.4	127.4	-
20. Ро-В	3	112.9	109.0	116.5	3.7	1	115.3	115.3	115.3	-
26. N–B (arch)	6	123.0	120.0	125.0	1.9	2	119.5	118.0	121.0	2.1
27. B–L (arch)	9	124.2	113.0	130.0	6.1	2	113.0	110.0	116.0	4.2
29. N–B (chord)	6	109.6	106.9	112.2	2.1	2	103.2	101.9	104.5	1.8
30. B–L (chord)	9	109.6	94.9	115.4	6.3	2	102.5	100.0	105.0	3.5
40. Ba-Pr	1	83.8	83.8	83.8	-	-	-	-	-	-
45. Zy–Zy	6	134.0	123.5	144.4	7.9	1	133.6	133.6	133.6	-
46. Zm–Zm	5	95.9	90.0	100.0	3.7	-	-	-	-	-
47. N–Gn	4	117.8	108.7	122.2	6.3	-	-	-	-	-
48. N–Pr	4	68.3	63.8	74.2	4.7	-	-	-	-	-
51(s). Mf–Ek(L)	5	40.2	37.0	42.0	2.0	-	-	-	-	-
51(d). Mf–Ek(R)	5	40.3	37.6	42.3	1.8	1	42.5	42.5	42.5	-
52(s). 51(L) (⊥)	5	33.9	32.2	37.1	1.9	-	-	-	-	-
52(d). 51(R) (⊥)	4	33.3	33.2	33.6	0.2	1	33.5	33.5	33.5	-
54. Al-Al	7	26.0	24.1	31.2	2.4	-	-	-	-	-
55. N–Ns	4	49.5	47.4	51.4	2.1	-	-	-	-	-
60. Pr–Alv	5	55.5	52.3	58.4	2.2	-	-	-	-	-
61. Ekm–Ekm	9	63.8	56.4	68.7	4.3	-	-	-	-	-
62. Ol–Sta	6	50.4	45.1	56.2	4.4	-	-	-	-	-
63. Enm–Enm	9	36.9	28.7	44.8	4.8	-	-	-	-	-
64(s). Palate(L) 🗘	9	12.0	7.5	16.8	3.3	1	11.9	11.9	11.9	-
64(d). Palate(R) 🗘	8	11.9	7.6	16.2	2.8	-	_	-	_	-
65. Kdl–Kdl	8	125.8	118.8	135.6	6.4	2	114.2	111.2	117.2	4.3
66. Go–Go	8	102.6	93.1	113.6	6.2	2	90.8	81.0	100.7	13.9
68. Po–Go (projection)	8	105.6	94.0	109.6	5.2	2	105.6	102.1	109.1	4.9
80(2)(L). L: P <sub>1</sub> -M <sub>3</sub> (L)	7	44.5	40.9	47.5	2.5	2	42.2	40.7	43.7	2.1
80(2)(R). L: P <sub>1</sub> -M <sub>3</sub> (R)	6	44.7	42.6	47.8	2.1	1	44.9	44.9	44.9	-

**Table 3.** The mean, minimum, maximum values and the standard deviation of the main cranial dimensions in both sexes.

			3					Ŷ		
Martin No.	Ν	Med.	Min.	Max.	δ	N	Med.	Min.	Max.	δ
I1. 8:1	5	79.3	70.6	83.7	5.0	2	82.1	79.7	84.5	3.4
12. 17:1	2	72.1	70.4	73.9	2.5	1	73.6	73.6	73.6	-
13. 17:8	2	87.5	86.6	88.3	1.2	1	92.3	92.3	92.3	-
14. 20:1	3	63.0	61.8	64.0	1.1	1	66.6	66.6	66.6	-
15. 20:8	3	77.2	73.8	80.1	3.2	1	83.6	83.6	83.6	-
I12. 9:10	6	82.2	78.5	86.7	3.2	2	85.8	85.6	86.0	0.3
113. 9:8	6	69.5	65.1	75.2	3.8	2	71.0	70.2	71.9	1.2
114. 12:8	6	76.9	70.7	80.6	3.5	2	79.7	77.7	81.8	2.9
122. 29:26	6	89.1	86.5	90.8	1.7	2	86.4	84.2	88.6	3.1
124. 30:27	9	88.2	83.4	90.9	2.8	2	90.7	90.5	90.9	0.3
133. 16:7	2	76.9	76.1	77.6	1.1	1	85.0	85.0	85.0	-
138. 47:45	4	88.5	86.4	91.8	2.3	-	-	-	-	-
139. 48:45	4	51.3	47.8	53.2	2.4	-	-	-	-	-
139(1). 48:46	4	71.7	65.5	77.5	5.0	-	-	-	-	-
I42(L). 52(L):51(L)	5	84.6	78.8	100.4	9.1	-	-	-	-	-
I42(R). 52(R):51(R)	4	81.2	78.4	84.9	2.7	1	78.8	78.8	78.8	-
148. 54:55	4	50.4	48.9	52.5	1.5	-	-	-	-	-
154. 61:60	5	115.1	106.2	127.0	9.4	-	-	-	-	-
158. 63:62	6	76.1	67.4	83.9	6.8	-	-	-	-	-
159(L). 64(L):63(L)	9	32.3	21.3	42.9	7.2	-	-	-	-	-
159(R). 64(R):63(R)	8	32.6	21.5	43.5	6.8	-	-	-	-	-
160. 40:5	1	87.5	87.5	87.5	-	-	_	-	-	-
162. 68:65	8	84.1	73.9	91.0	5.9	2	92.6	92.6	92.6	7.8
I68(L). 80(2)(L):5	1	44.6	44.6	44.6	-	1	44.5	44.5	44.5	-
I68(R). 80(2)(R):5	1	44.6	44.6	44.6	-	1	45.7	45.7	45.7	-

Table 4. Mean, minimum, maximum values and standard deviation of the main cranial indices in both sexes.

# Gabriel VASILE

Martin No.	Categories	් (mm)	♀ (mm)	Nr.	Nr.	%	%
		1000	.4.64.0	8	Ŷ	3	Ŷ
	very short	<169.9	<161.9	0	0	0.0	0.0
1.0.0	short	170.0-177.9	162.0-169.9	2	1	28.6	50.0
1. G–Op	medium-long	178.0-185.9	170.0–176.9	5	1	71.4	50.0
	long	186.0–193.9	177.0-184.9	0	0	0.0	0.0
	very long	>194.0	>185.0	0	0	0.0	0.0
	Total	.120.0	.124.0	7	2	100.0	100.0
	very narrow	<139.9	<134.9	1	0	14.3	0.0
	narrow	140.0–147.9	135.0-141.9	4	2	57.1	100.0
8. Eu–Eu	medium-broad broad	148.0-155.9	142.0-149.9	2	0	28.6	0.0
	very broad	156.0–163.9	150.0–157.9	0	0	0.0	0.0
		>164.0	>158.0	0	0	0.0	0.0
	Total	01.0	07.0	7	2	100.0	100.0
	very narrow	<91.9	<87.9	0	0	0.0	0.0
	narrow	92.0–96.9	88.0-92.9	1	0	16.7	0.0
9. Ft–Ft	medium-broad	97.0–101.9	93.0–97.9	3	1	50.0	50.0
	broad	102.0-106.9	98.0–102.9	2	1	33.3	50.0
	very broad	>107.0	>103.0	0	0	0.0	0.0
	Total	1		6	2	100.0	100.0
	very narrow	<113.9	<108.9	1	0	14.3	0.0
	narrow	114.0-120.9	109.0–115.9	1	2	14.3	100.0
10. Co-Co	medium-broad	121.0-127.9	116.0–122.9	3	0	42.9	0.0
	broad	128.0-134.9	123.0-129.9	2	0	28.5	0.0
	very broad	>135.0	>130.0	0	0	0.0	0.0
	Total			7	2	100.0	100.0
	very low	<125.9	<120.9	0	0	0.0	0.0
	low	126.0-130.9	121.0-125.9	2	0	100.0	0.0
17. Ba–B	medium-high	131.0–137.9	126.0-132.9	0	1	0.0	100.0
	high	138.0–142.9	133.0–137.9	0	0	0.0	0.0
	very high	>143.0	>138.0	0	0	0.0	0.0
	Total			2	1	100.0	100.0
	very low	<106.9	<102.9	0	0	0.0	0.0
	low	107.0-112.9	103.0-108.9	1	0	33.3	0.0
20. Ро-В	medium-high	113.0-118.9	109.0-114.9	2	0	66.7	0.0
	high	119.0–124.9	115.0–121.9	0	1	0.0	100.0
	very high	>125.0	>122.0	0	0	0.0	0.0
	Total			3	1	100.0	100.0
	very narrow	<121.9	<116.9	0	0	0.0	0.0
	narrow	122.0-127.9	117.0–122.9	2	0	30.0	0.0
45. Zy–Zy	medium-broad	128.0-133.9	123.0-128.9	1	0	20.0	0.0
	broad	134.0–139.9	129.0-134.9	2	1	30.0	100.0
	very broad	>140.0	>135.0	1	0	20.0	0.0
	Total			6	1	100.0	100.0
	very low	<103.9	<95.9	0	0	0.0	0.0
		104.0-111.9	96.0–103.9	1	0	25.0	0.0
47. N–Gn	low	112.0-120.9	104.0-112.9	1	0	25.0	0.0
	medium-high high	121.0-128.9	113.0–120.9	2	0	50.0	0.0
	very high	>129.0	>121.0	0	0	0.0	0.0
	Total			4	0	100.0	0.0
		<60.9	<56.9	0	0	0.0	0.0
	very low	61.0-63.9	57.0-60.9	1	0	25.0	0.0
48. N–Pr	low	64.0-69.9	61.0–66.9	2	0	50.0	0.0
	medium-high high	70.0-72.9	67.0-70.9	0	0	0.0	0.0
	very high	>73.0	>71.0	1	0	25.0	0.0

Martin No.	Categories	(mm)	Nr.	Nr.	%	%
			8	Ŷ	3	Ŷ
	very narrow	<35.9	0	0	0.0	0.0
	narrow	36.0-38.9	1	0	20.0	0.0
51(L). Mf–Ek(L)	medium	39.0-41.9	3	0	60.0	0.0
	broad	42.0-44.9	1	0	20.0	0.0
	very broad	>45.0	0	0	0.0	0.0
	Total		5	0	100.0	0.0
	very narrow	<35.9	0	0	0.0	0.0
	narrow	36.0-38.9	1	0	20.0	0.0
51(R). Mf–Ek(R)	medium	39.0-41.9	3	0	60.0	0.0
	broad	42.0-44.9	1	1	20.0	100
	very broad	>45.0	0	0	0.0	0.0
	Total		5	1	100.0	100
	very low	<28.9	0	0	0.0	0.0
	low	29.0-31.9	1	0	20.0	0.0
52(L). 51(L) (⊥)	medium-high high	32.0-34.9	3	0	60.0	0.0
	very high	35.0-37.9	1	0	20.0	0.0
		>38.0	0	0	0.0	0.0
	Total		5	0	100.0	100
	very low	<28.9	0	0	0.0	0.0
	low	29.0-31.9	0	0	0.0	0.0
52(R). 51(R) (⊥)	medium-high high	32.0-34.9	4	1	100.0	0.0
	very high	35.0-37.9	0	0	0.0	100
	Verynigh	>38.0	0	0	0.0	0.0
	Total		4	1	100.0	100
	very narrow	<19.9	0	0	0.0	0.0
	narrow	20.0-22.9	0	0	0.0	0.0
54. AI–AI	medium	23.0-25.9	5	0	71.4	0.0
	broad	26.0-28.9	1	0	14.3	0.0
	very broad	>29.0	1	0	14.3	0.0
	Total		7	0	100.0	0.0
	very low	<45.9	0	0	0.0	0.0
	low	46.0-48.9	2	0	50.0	0.0
55. N–Ns	medium	49.0-51.9	2	0	50.0	0.0
	high	52.0-54.9	0	0	0.0	0.0
	very high	>55.0	0	0	0.0	0.0
	Total		4	0	100.0	0.0
		101.0-110.9	0	0	0.0	0.0
	very narrow	111.0-116.9	0	1	0.0	50.
	narrow	117.0-122.9	4	1	50.0	50.
65. Kdl–Kdl	medium	123.0-128.9	2	0	25.0	0.0
	broad	129.0-138.9	2	0	25.0	0.0
	very broad ultrabroad	>139.0	0	0	0.0	0.0
	Total		8	2	100.0	100
		79.0-90.9	0	1	0.0	50.
	very narrow	91.0-96.9	1	0	12.5	0.0
	narrow	97.0-103.9	3	1	37.5	50.
66. Go–Go	medium	104.0-109.9	3	0	37.5	0.5
	broad	110.0-121.9	1	0	12.5	0.0
	very broad ultrabroad	>122.0	0	0	0.0	0.0
	Total	- 122.0		<u> </u>	0.0	100.

 Table 5. Frequency by categories of the main cranial dimensions in both sexes.

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Martin No.	Categories	ð P	Nr. 🖒	<b>Nr.</b> ♀	<b>%</b> ♂	<b>%</b> ♀
	ultradolichocran	<64.9	0	0	0.0	0.0
Martin No. 11. 8:1 12. 17:1 12. 17:1 13. 17:8 14. 20:1 14. 20:1 15. 20:8 112. 9:10 112. 9:10 112. 9:10 112. 9:10 112. 9:26 124. 30:27	hyperdolichocran	65.0–69.9	0	0	0.0	0.0
	dolichocran	70.0-74.9	1	0	ී 0.0	0.0
11.8:1	mesocran	75.0–79.9	0	1		50.0
	brachycran	80.0-84.9	4	1	80.0	50.0
	hyperbrachycran	85.0-89.9	0	0		0.0
	ultrabrachycran	>90.0	0	0		0.0
	Total		5	2		100.0
	chamaecran	<69.9	0	0		0.0
12, 17:1	orthocran	70.0–74.9	2	1		100.0
	hypsicran	>75.0	0	0		00.0
	Total	273.0	2	1		100.0
	tapeinocran	<91.9	2	0		0.0
12 17.9	metriocran	92.0-97.9	0	1		100.0
15. 17.0			-			
	Total	>98.0	0	0		0.0
		-57.0				
14. 20.4	chamaecran	<57.9	0	0		0.0
14. 20:1	orthocran	58.0-62.9	1	0		0.0
	hypsicran	>63.0	2	1		100.
	Total		3	1		100.
	tapeinocran	<79.9	2	0		0.0
15. 20:8	metriocran	80.0-85.9	1	0		100.
	acrocran	>86.0	0	0		0.0
	Total		3	1	100.0	100.
	divergent	<79.9	2	0	33.3	0.0
112. 9:10	intermediate	80.0–99.9	4	2	66.7	100.
	parallel	>100.0	0	0	0.0	0.0
	Total		6	2	100.0	100.
	stenometop	<65.9	1	0	16.7	0.0
113.9:8	metriometop	66.0–68.9	2	0	33.3	0.0
	eurymetop	>69.0	3	2	50.0	100.
	Total		6	2	100.0	100.
	narrow	<71.9	1	0	16.7	0.0
114 12.0	medium	72.0–78.9	3	1	50.0	50.0
114. 12.8	broad	79.0-85.9	2	1	33.3	50.0
	very broad	>86.0	0	0	0.0	0.0
	Total		6	2	100.0	100.
	orthometop	<90.0	4	2	66.7	100.
122. 29:26	camemetop	>90.1	2	0	33.3	0.0
	Total		6	2	100.0	100.
	curved	<87.9	3	0	33.3	0.0
124. 30:27	medium-flattened	88.0-90.4	3	0		0.0
	flattened	>90.5	3	2		100.
	Total	<u> </u>	9	2		100.
	microsemic	<81.9	2	0	1	0.0
133. 16:7	megosemic	82.0-85.9	0	1	1	100.0
	megasemic	>86.0	0	0		0.0
	перазение	200.0			0.0	0.0

 Table 6. Frequency by categories of the main cranial indices in both sexes.

Martin No.	Categories	ð f	Nr. 👌	Nr. ♀	<b>%</b> ∂	<b>%</b> ♀
	hypereuryprosop	<79.9	0	0	0.0	0.0
-	euryprosop	80.0-84.9	0	0	0.0	0.0
138. 47:45	mesoprosop	85.0-89.9	3	0	75.0	0.0
-	leptoprosop	90.0–94.5	1	0	25.0	0.0
-	hyperleptoprosop	>95.0	0	0	0.0	0.0
	Total	· ·	4	0	100.0	0.0
	hypereurien	<44.9	0	0	0.0	0.0
-	euryen	45.0-49.9	1	0	25.0	0.0
139. 48:45	mesen	50.0-54.9	3	0	75.0	0.0
-	lepten	55.0-59.5	0	0	0.0	0.0
-	hyperlepten	>60.0	0	0	0.0	0.0
1	Total	ł	4	0	100.0	0.0
	hyperchaemoprosop	55.0-65.0	0	0	0.0	0.0
	chaemoprosop	65.1-75.0	3	0	75.0	0.0
139(1). 48:46	leptoprosop	75.1-85.0	1	0	25.0	0.0
-	hyperleptoprosop	85.1-95.0	0	0	0.0	0.0
I	Total	l	4	0	100.0	0.0
	chamaeconch	<75.9	0	0	0.0	0.0
- 142(L). 52(L):51(L)	mesoconch	76.0-84.9	4	0	80.0	0.0
	hypsiconch	>85.0	1	0	20.0	0.0
1	Total		5	0	100.0	0.0
	chamaeconch	<75.9	0	0	0.0	0.0
I42(R). 52(R):51(R)	mesoconch	76.0-84.9	4	1	100.0	100.
	hypsiconch	>85.0	0	0	0.0	0.0
I	Total		4	1	100.0	100.
	hyperleptorrhin	<42.9	0	0	0.0	0.0
-	leptorrhin	43.0-46.9	0	0	0.0	0.0
148. 54:55	mesorrhin	47.0-50.9	3	0	75.0	0.0
-	chamaerrhin	51.0-57.9	1	0	25.0	0.0
-	hyperchamaerrhin	>58.0	0	0	0.0	0.0
I	Total		4	0	100.0	0.0
	dolichouranisch	<109.9	2	0	40.0	0.0
154. 61:60	mesouranisch	110.0–114.9	1	0	20.0	0.0
	brachyuranisch	>115.0	2	0	40.0	0.0
	Total		5	0	100.0	0.0
	leptostaphylin	<79.9	4	0	66.7	0.0
158. 63:62	mesostaphylin	80.0-84.9	2	0	33.3	0.0
	brachystaphylin	>85.0	0	0	0.0	0.0
	Total		6	0	100.0	0.0
	chamestaphylin	<27.9	3	0	33.3	0.0
- 159(L). 64(L):63(L)	orthostaphylin	28.0-39.9	5	0	55.6	0.0
	hypsistaphyline	>40.0	1	0	11.1	0.0
	Total	1 10.0	9	0	100.0	0.0
	chamestaphylin	<27.9	3	0	37.5	0.0
159(R). 64(R):63(R)	orthostaphylin	28.0–39.9	4	0	50.00	0.0
	hypsistaphyline	>40.0	1	0	12.5	0.0
	Total	/ /40.0	8	0	100.0	0.0
		<97.9				
	orthognath	<97.9	1	0	100.0	0.0
160. 40:5	mesognath	98.0-102.9	0	0	0.0	0.0

Table 6. Frequency by categories of the main cranial indices in both sexes (continued).

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Martin No.	Categories	ð	Ŷ	Nr. 👌	<b>Nr.</b> ♀	<b>%</b> ੇ	<b>%</b> ♀
	Total			1	0	100.0	+ 0.0
	dolichostenomandibular	<97.9		8	1	100.0	50.0
162. 68:65	mesomandibular	98.0-10	04.9	0	1	0.0	50.0
	brachyeurymandibular	>105	.0	0	0	0.0	0.0
	Total			8	2	100.0	100.0
	microdont	<41.	9	0	0	0.0	0.0
	mesodontă	42.0-4	3.9	0	0	0.0	0.0
168(L). 80(2)(L):5	megadont	44.0-4	5.9	1	1	100.0	100.0
	hypermegadont	>46.	0	0	0	0.0	0.0
	Total			1	1	100.0	100.0
	microdont	<41.	9	0	0	0.0	0.0
	mesodontă	42.0-4	3.9	0	0	0.0	0.0
168(R). 80(2)(R):5	megadont	44.0-4	5.9	1	1	100.0	100.0
	hypermegadont	>46.	0	0	0	0.0	0.0
	Total			1	1	100.0	100.0

Table 6. Frequency by categories of the main cranial indices in both sexes (continued).

			් (mm)	)				<b>♀ (mm</b>	i)	
Martin No.	N	Med.	Min.	Max.	δ	N	Med.	Min.	Max.	δ
C1(L)	11	147.9	134.2	164.5	8.7	2	138.8	131.4	146.3	10.6
C1(R)	12	146.4	134.7	155.9	6.7	4	133.0	117.2	145.4	11.7
C6(L)	11	39.9	35.0	47.0	3.7	2	33.0	33.0	33.0	0.0
C6(R)	12	41.1	35.0	48.0	3.9	4	31.5	28.0	35.0	3.1
S1(L)	3	159.9	154.3	162.9	4.9	_	-	-	-	_
S1(R)	3	154.2	135.5	164.3	16.2	-	_	-	-	-
S2(L)	3	97.9	96.9	99.5	1.4	1	91.4	91.4	91.4	_
S2(R)	5	103.1	99.1	112.7	5.5	_	-	_	-	_
H1(L)	12	312.3	274.7	339.0	16.7	4	293.5	266.2	306.9	18.4
H1(R)	12	314.7	278.5	340.2	16.5	4	294.1	260.8	311.3	23.0
H2(L)	12	308.0	271.2	331.8	16.0	4	290.5	263.6	303.2	18.3
H2(R)	12	310.5	273.5	333.5	16.5	4	291.4	258.9	309.1	22.5
H5(L)	12	22.6	20.3	25.5	1.3	4	20.5	19.1	21.5	1.0
H5(R)	12	23.2	20.7	25.6	1.5	4	20.5	18.6	22.0	1.6
H6(L)	12	19.6	17.4	21.2	1.2	4	16.0	14.5	17.4	1.3
	12	19.0		21.2	1.2	4	15.8	14.9	17.4	1.0
H6(R)			17.4				218.1		1	
R1(L)	12	237.0	217.9	264.3	13.9	4		199.1	232.0	13.9
R1(R)	11	240.4	224.0	264.0	12.5	4	221.1	203.1	235.6	13.5
U1(L)	7	255.4	236.0	266.9	11.3	4	235.3	220.7	246.5	10.8
U1(R)	11	258.9	239.5	283.3	11.5	3	237.0	222.2	248.2	13.3
U13(L)	13	23.1	20.4	26.3	1.8	4	19.0	17.1	21.0	2.0
U13(R)	13	22.8	20.0	25.6	1.6	4	19.4	17.5	22.7	2.3
U14(L)	13	26.2	23.1	31.7	2.3	4	22.2	18.7	24.7	2.8
U14(R)	13	26.5	24.4	29.6	1.9	4	22.2	18.3	25.0	2.9
s2	9	114.1	100.3	139.0	12.7	2	117.0	106.4	127.6	15.0
s5	10	111.7	95.4	119.3	7.9	2	115.8	113.4	117.9	3.0
F1(L)	13	435.1	399.1	463.9	18.7	3	411.3	404.3	416.4	6.3
F1(R)	12	433.1	400.8	464.7	17.6	4	401.3	374.3	417.3	19.9
F2(L)	12	431.7	393.6	462.8	20.4	3	407.4	401.6	410.4	5.0
F2(R)	12	430.6	397.7	462.8	18.3	4	386.4	355.0	409.1	27.0
F6(L)	13	28.1	24.3	32.1	2.8	3	23.4	22.8	24.1	0.6
F6(R)	13	28.5	23.3	31.7	2.4	4	24.6	23.5	25.6	1.1
F7(L)	13	28.6	23.3	34.2	2.7	3	27.3	26.6	25.0	1.2
F7(R)	13	28.7	24.0	34.2	2.5	4	26.4	28.7	27.3	1.1
F9(L)	13	34.5	29.9	42.7	2.9	4	32.1	28.2	36.3	3.6
F9(R)	13	34.9	30.9	39.2	2.2	4	33.3	29.6	36.5	2.8
F10(L)	13	28.7	25.2	32.8	2.2	4	24.5	22.6	27.1	2.1
F10(R)	13	28.7	25.2	33.8	2.4	4	25.8	22.7	29.0	2.8
F19(L)	13	48.3	44.2	51.5	2.2	2	40.7	39.7	41.6	1.3
F19(R)	10	48.6	44.9	53.3	2.6	4	40.9	39.6	44.6	3.2
F21(L)	12	81.0	77.0	86.0	2.6	3	73.6	71.9	74.9	1.6
F21(E)	12	81.7	78.5	86.9	2.5	3	74.6	72.1	76.5	2.2
P2(L)	7	45.3	43.7	46.7	1.0	3	39.5	37.2	42.3	2.6
P2(R)	8	46.1	44.7	48.2	1.5	2	41.1	39.8	42.3	1.8
T1a(L)	12	351.8	329.8	396.2	1.5	3	340.6	328.6	347.3	1.8
	12			396.2	19.1	3	340.6		347.3	4.5
T1a(R)	13	351.3 342.3	329.6			3		338.7	1	4.5 9.3
T1b(L)			318.2	387.2	19.9		331.9	321.2	338.0	
T1b(R)	13	341.7	321.0	386.4	18.2	3	334.5	329.4	337.2	4.5
T8a(L)	13	35.0	32.2	39.2	2.1	4	29.1	27.6	32.6	2.4
T8a(R)	13	35.5	33.0	38.8	2.0	4	30.3	27.9	32.7	2.4
T9a(L)	13	25.2	21.1	29.7	2.6	4	20.3	19.8	21.7	0.9
T9a(R)	13	25.6	21.7	31.6	2.9	4	20.6	19.6	22.3	1.2
f1(L)	9	337.8	317.4	360.6	13.2	3	331.4	324.5	335.6	6.1
f1(R)	7	345.1	325.2	374.5	15.9	2	333.8	333.5	334.1	0.5

**Table 7.** The mean, minimum, maximum values and the standard deviation of the main postcranial dimensions in both sexes.

Gabriel VASILE

			3					Ŷ		
Martin No.	N	Med.	Min.	Max.	δ	N	Med.	Min.	Max.	δ
C6(L):C1(L)	11	27.0	24.3	29.6	1.6	2	23.8	22.6	25.1	1.8
C6(R):C1(R)	12	28.1	24.2	31.8	2.4	4	23.7	22.0	24.8	1.2
C1(L):H2(L)	9	44.7	45.8	49.6	1.5	2	46.6	44.6	48.7	2.9
C1(R):H2(R)	10	46.7	44.1	49.9	1.8	4	45.6	44.8	47.0	1.0
S2(L):S1(L)	3	61.3	59.5	64.5	2.8	-	-	-	-	-
S2(R):S1(R)	3	66.1	60.8	75.3	8.0	-	-	-	-	-
H6(L):H5(L)	12	86.7	80.4	91.0	3.5	4	77.8	74.3	83.7	4.1
H6(R):H5(R)	12	83.5	71.8	91.8	5.0	4	77.6	70.7	86.3	7.0
R1(L):H2(L)	10	77.6	73.0	84.8	3.5	4	75.1	74.1	76.5	1.1
R1(R):H2(R)	11	77.7	72.5	84.7	3.5	4	75.9	73.8	78.4	1.9
U13(L):U14(L)	13	88.6	78.6	104.6	7.5	4	85.5	80.4	93.5	5.6
U13(R):U14(R)	13	86.3	77.1	98.2	6.8	4	87.7	81.9	95.4	6.5
s5:s2	9	99.6	81.9	119.0	13.3	2	99.6	92.4	106.9	10.3
F6(L):F7(L)	13	98.9	85.6	120.6	11.0	3	85.8	79.4	90.0	5.6
F6(R):F7(R)	13	99.8	91.1	114.6	8.5	4	93.5	86.1	101.6	6.4
F10(L):F9(L)	13	83.3	76.0	89.7	4.6	4	76.6	69.9	81.2	5.2
F10(R):F9(R)	13	82.5	72.7	91.7	6.6	4	77.7	66.8	86.9	8.4
P2(L):F21(L)	6	56.0	54.3	58.0	1.3	2	54.6	52.6	56.5	2.8
P2(R):F21(R)	6	55.4	54.7	56.6	0.7	2	55.7	55.2	56.3	0.8
T9a(L):T8a(L)	13	71.9	61.1	85.5	6.9	4	70.0	66.5	72.0	2.5
T9a(R):T8a(R)	13	72.0	61.8	87.4	6.6	4	68.2	63.9	70.5	3.0
T1b(L):F2(L)	11	79.6	75.1	83.7	2.7	3	81.5	80.0	82.4	1.3
T1b(R):F2(R)	11	79.7	75.7	83.5	2.3	3	85.9	82.4	92.8	6.0

**Table 8.** Mean, minimum, maximum values and standard deviation of the main postcranial indices in both sexes.

Martin No.	Categories	് (mm)	♀ (mm)	Nr. 👌	<b>Nr.</b> ♀	<b>%</b> ð	<b>%</b> ♀
	low	<13	9.9	0	0	0.0	0.0
S1(L)	medium	140.0-	-149.9	0	0	0.0	0.0
	high	>15	1.0	3	0	0         0.0           0         0.0           0         100.0           0         100.0           0         33.3           0         66.7           0         0.0	0.0
	Total			3	0	100.0	0.0
	low	<13	9.9	1	0	33.3	0.0
S1(R)	medium	140.0-	-149.9	2	0	66.7	0.0
	high	>15	1.0	0	0	0.0	0.0
	Total			3	0	0 33.3 ( 0 66.7 ( 0 0.0 (	

Martin No.	Categories	8 9	Nr. 👌	<b>Nr.</b> ♀	<b>%</b> ð	<b>%</b> ♀
	gracile	<23.4	0	1	0.0	50.0
C6(L):C1(L)	medium	23.5-25.4	1	1	9.1	50.0
	robust	>25.5	10	0	90.9	0.0
	Total		11	2	100.0	100.0
	gracilă	<23.4	0	1	0.0	25.0
C6(R):C1(R)	medium	23.5-25.4	2	3	16.7	75.0
	robust	>25.5	10	0	83.3	0.0
	Total		12	4	100.0	100.0
	short	<45.9	1	1	11.1	50.0
C1(L): H2(L)	medium	46.0-47.9	5	0	55.6	0.0
	long	>48.0	3	1	33.3	50.0
	Total		9	2	100.0	100.0
	short	<45.9	4	3	40.0	75.0
C1(R):H2(R)	medium	46.0-47.9	3	1	30.0	25.0
	long	>48.0	3	0	30.0	00.0
	Total		10	4	100.0	100.0
	dolichomorphic	<63.9	2	0	66.7	0.0
S2(L):S1(L)	mesomorphic	64.0–66.9	1	0	0.0	0.0
	brachimorphic	>67.0	0	0	33.3	0.0
	Total		3	0	100.0	0.0
	dolichomorphic	<63.9	2	0	66.7	0.0
S2(R):S1(R)	mesomorphic	64.0-66.9	0	0	0.0	0.0
	brachimorphic	>67.0	1	0	33.3	0.0
	Total		3	0	100.0	0.0
H6(L):H5(L)	platybrachic	<76.4	0	2	0.0	50.0
110(L).113(L)	eurybrachic	>76.5	12	2	100.0	50.0
	Total		12	4	100.0	100.0
H6(R):H5(R)	platybrachic	<99.9	1	2	8.3	50.0
110(11).113(11)	eurybrachic	>100.0	11	2	91.7	50.0
	Total		12	4	100.0	100.0
	short	<74.9	2	2	20.0	50.0
R1(L):H2(L)	medium	75.0–79.9	7	2	70.0	50.50
	long	>80.0	1	0	10.0	0.0
	Total		10	4	100.0	100.0
	short	<74.9	3	1	27.3	25.0
R1(R):H2(R)	medium	75.0–79.9	6	3	54.5	75.0
	long	>80.0	2	0	18.2	0.0
	Total		11	4	100.0	100.0
U13(L):U14(L)	platolenic	<79.9	1	0	7.7	0.0
	eurolenic	80.0–99.9	11	4	84.6	100.0
	hypereurolenic	>100.0	1	0	7.7	0.0
	Total		13	4	100.0	100.0
	platolenic	<79.9	3	0	23.1	0.0
U13(R):U14(R)	eurolenic	80.0–99.9	10	4	76.9	100.0
	hypereurolenic	>100.0	0	0	0.0	0.0
	Total		13	4	100.0	100.0

 Table 9. Frequency by categories of the postcranial dimensions in both sexes.

 Table 10. Frequency by categories of the main postcranial indices in both sexes.

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-52	dolichohieric	<99.9	6	1	66.7	50.0
s5:s2	platyhieric	>100.0	3	1	33.3	50.0
	Total		9	2	100.0	100.0
	null	<99.9	9	3	69.2	100.0
F6(L):F7(L)	weak	100.0-109.9	2	0	15.4	0.0
	medium	110.0-119.9	1	0	7.7	0.0
	strong	>120.0	1	0	7.7	0.0
	Total		13	3	100.0	100.0
	null	<99.9	8	3	61.5	75.0
F6(R):F7(R)	weak	100.0–109.9	2	1	15.4	25.0
FO(K).F7(K)	medium	110.0–119.9	3	0	23.1	0.0
	strong	>120.0	0	0	0.0	0.0
	Total		13	4	100.0	100.0
	hyperplatymeric	<74.9	0	1	0.0	25.0
F10(L).F0(L)	platymeric	75.0-84.9	8	3	61.5	75.0
F10(L):F9(L)	eurymeric	85.0-99.9	5	0	38.5	0.0
	stenomeric	>100.0	0	0	0.0	0.0
	Total		13	4	100.0	100.0
	hyperplatymeric	<74.9	3	1	23.1	25.0
F10(D).F0(D)	platymeric	75.0-84.9	4	2	30.8	50.0
F10(R):F9(R)	eurymeric	85.0-99.9	6	1	46.1	25.0
	stenomeric	>100.0	0	0	0.0	0.0
	Total		13	4	100.0	100.0
P2(L):F21(L)	narrow	<50.9	0	0	0.0	0.0
	medium	51.0-55.9	4	1	66.7	50.0
	broad	>56.0	2	1	33.3	50.0
	Total		6	2	100.0	100.0
	narrow	<50.9	0	0	0.0	0.0
P2(R):F21(R)	medium	51.0-55.9	5	1	83.3	50.0
	broad	>56.0	1	1	16.67	50.0
	Total		6	2	100.0	100.0
	hyperplatycnemic	<54.9	0	0	0.0	0.0
$TO_{2}(I)$ , $TO_{2}(I)$	platycnemic	55.0-62.9	2	0	15.4	0.0
T9a(L):T8a(L)	mesocnemic	63.0-69.9	2	1	15.4	25.0
	eurycnemic	>70.0	9	3	69.2	75.0
	Total		13	4	100.0	100.0
	hyperplatycnemic	<54.9	0	0	0.0	0.0
T9a(R):T8a(R)	platycnemic	55.0-62.9	1	0	7.7	0.0
	mesocnemic	63.0-69.9	4	2	30.8	50.0
	eurycnemic	>70.0	8	2	61.5	50.0
	Total		13	4	100.0	100.0
T1b(1):52(1)	brachycnemic	<81.9	8	1	72.7	33.3
T1b(L):F2(L)	dolichocnemic	>82.0	3	2	27.3	66.7
	Total		11	3	100.0	100.0
T16(D) 52(D)	brachycnemic	<81.9	9	0	81.9	0.0
T1b(R):F2(R)	dolichocnemic	>82.0	2	3	18.2	100.0
	Total		11	3	100.0	100.0

Table 10. Frequency by categories of the main postcranial indices in both sexes (continued).

Nonmetric cranial trait	Present		Absent		Unobservable	
Nonmetric tranai trait	(L/R)		(L/R)		(L/R)	
Anterior: 1. Metopic suture	1		1	8		15
2a. Supraorbital notch	7/8		12/	/12		15/14
2b. Supraorbital foramen	12/15		6/	′5		16/14
3. Infraorbital suture	0/0		11/	/11		23/23
4. Multiple infraorbital foramina	0/0		11/	/12		23/22
5. Zygomatico-facial foramen	12/15		3/	′1		19/18
Superior: 6. Parietal foramen	9/10		11	/8		14/16
Sutural bones (superior & lateral): 7a. Epipteric bone	0/0		14/	/15		20/19
7b. Coronal ossicle	1/1		17/	/18		16/15
7c. Bregmatic bone	1		1	7		16
7d. Sagittal ossicle	3		1	6		15
7e. Apical bone	3		1	6		15
7f. Lambdoid ossicle	10/13		8/6 16/15		16/15	
7g. Asterionic bone	2/0		8/	/9 24/25		24/25
7h. Ossicle in occipito-mastoid suture	0/0		12/12 22/22		22/22	
7i. Parietal notch bone	0/0		13/13 21/21		21/21	
Posterior: 8. Inca bone	0		1	17 17		17
Inferior: 9. Patent condylar canal	0/0		6/6			28/28
10. Divided hypoglossal canal	1/2		9/	<b>′</b> 6		24/26
11. Direction of flexure for superior sagittal sulcus <sup>78</sup>	7		3	1		23
12. Foramen ovale incomplete	0/0		2/	′1		32/33
13. Foramen spinosum incomplete	1/0		1/	/2		32/32
14. Pterygo-spinous bridge	1/1		1/	′1		32/32
15. Pterygo-alar bridge	0/0		2/2 32/32		32/32	
Lateral: 16. Tympanic dehiscence	1/1		17/17			16/16
17. Auditory exostosis	0/0		19/18			15/16
18a. Mastoid foramen: location <sup>79</sup>	7/6		1/1	7/8		19/19
18b. Mastoid foramen: number <sup>80</sup>	7/7		1/0	7/8		19/19
19. Mental foramen: number <sup>81</sup>	17/19		1/	/0		16/15
Mandible: 20. Mandibular torus	3/3		16,	/17		15/14
21a. Mylohyoid bridge: location	1/0		15/	/17		18/17
21b. Mylohyoid bridge: degree <sup>82</sup>	0/0	1	1/0	15/17		18/17

 Table 11. Number of nonmetric cranial traits in the entire skeletal group.

<sup>&</sup>lt;sup>78</sup> The values represent the direction of flexure for superior sagittal sulcus, in order: to the right; to the left; bifurcated; unobservable.

<sup>&</sup>lt;sup>79</sup> The values represent the location of the mastoidal foramen, as follows: on temporal; sutural; absent; unobservable.

<sup>&</sup>lt;sup>80</sup> The values represent the number of mastoidal foramina, in order: one; two; absent; unobservable.

<sup>&</sup>lt;sup>81</sup> The values represent the number of mental foramina, in order: one; two; unobservable.

<sup>&</sup>lt;sup>82</sup> The values represent the degree of development of the mylohyoid bridge, in order: partial; complete absent; unobservable.

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Trait	Teeth	Teeth observed (no.)	Total teeth with traits present (no.)	Frequency (%)				
	Upper permanent dentition							
Shoveling	I1C#	63	6	9.5				
Interruption groove	<sup>1</sup> -  <sup>2</sup>	40	7	17.5				
Mesial and distal cusps	P <sup>1</sup> -P <sup>2</sup>	48	2	4.2				
Premolar root number	P <sup>1</sup> -P <sup>2</sup>	30	5	16.7				
Metaconule	M <sup>1</sup> -M <sup>3</sup>	62	5	8.1				
Carabelli cusp	M <sup>1</sup> -M <sup>3</sup>	75	2	2.7				
Parastyle	M <sup>1</sup> –M <sup>3</sup>	81	4	4.9				
	Lower	r permanent dentition						
Double canine root number	C <sub>#</sub>	15	1	6.7				
Tome's root	P <sub>1</sub>	15	1	6.7				
Lingual cusp number	P <sub>1</sub> -P <sub>2</sub>	53	23	43.4				
Anterior fovea	M <sub>1</sub> -M <sub>2</sub>	57	9	15.8				
Hypoconulid	M <sub>1</sub> -M <sub>3</sub>	65	22	33.8				
Metaconulid	M <sub>1</sub> -M <sub>3</sub>	65	3	4.6				

 Table 12. Nonmetric trait frequencies within the Dridu – La Metereze medieval population.

	Present	Absent	Unobservable
Nonmetric postcranial trait	(L/R)	(L/R)	(L/R)
Atlas: 1. Facet form <sup>83</sup>	15/14	2/2	17/18
2. Posterior bridge	0/0	15/15	19/19
3. Lateral bridge	0/0	15/15	19/19
$\underline{C}_{\tau}$ : 4. Double transverse foramen	5/4	9/11	20/19
Scapula: 5. Acromial articular facet	12/12	5/2	17/20
6. Suprascapular foramen	1/1	7/5	27/29
7. Circumflex sulcus	5/7	18/13	11/14
Humerus: 8. Supracondyloid process	0/0	25/25	9/9
9. Septal aperture	0/1	19/18	15/15
Pelvis: 10. Acetabular crease	4/2	9/11	21/21
11. Pre-auricular sulcus	3/3	16/15	15/14
12. Accessory sacral facets	0/2	22/19	12/13
Femur: 13. Allen's fossa	7/7	18/18	9/9
14. Poirier's facet	1/1	16/16	17/17
15. Plaque	7/7	11/11	16/16
16. Hypotrochanteric fossa	10/8	15/17	9/9
17. Exostosis in trochanteric fossa	1/2	16/15	17/17
18. Third trochanter	8/7	17/18	9/9
Patella: 19. Vastus notch	4/5	10/10	20/19
20. Vastus fossa	2/2	12/13	20/19
21. Emarginate patella	0/0	13/15	21/19
Tibia: 22. Medial squatting facet	0/0	17/17	17/17
23. Lateral squatting facet	9/11	7/6	18/17
Talus: 24. Os trigonum	0/0	16/19	18/15
25. Medial facet	1/1	15/15	18/18
26. Lateral extension	0/0	16/19	18/15
27. Inferior articular surface <sup>84</sup>	12/11	4/9	18/14
Calcaneus: 28. Anterior facet double	4/8	12/10	18/16
29. Anterior facet	16/18	0/0	18/16
30. Peroneal tubercle	3/3	14/15	17/16

Table 13. Number of nonmetric postcranial traits in the entire skeletal group (L/R).

<sup>&</sup>lt;sup>83</sup> The values represent the superior articular atlas facet form, in order: single; double; unobservable.

<sup>&</sup>lt;sup>84</sup> The values represent, in order: simple articular surface; double articular surface; unobservable.

TraitCategoryIINN%N%100.017.7C.I220.0430.83880.0861.53218.2361.57.12872.7861.53218.2323.12.1218.2323.13218.2323.13218.2430.87.11240.0861.53218.2430.87.11220.017.77.122440.0861.53440.0861.53440.0861.543327.3325.043327.3336.152866.7763.65325.0436.443325.0327.353325.0327.353325.0320.053325.0327.353325.0440.053325.0330.063325.0330.0654.5550.0330.073			Males			
N         %         N         %           1         0         0.0         1         7.7           C.I         2         20.0         4         30.8           3         8         80.0         8         61.5           1         1         9.1         2         15.4           C.II         2         8         72.7         8         61.5           3         2         18.2         3         23.1           A         36.4         2         15.4           3         2         18.2         3         23.1           A         36.4         2         15.4         3           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.IV         2         4         40.0         8         61.5           3         2         1.5         4         30.8           C.IV         2         4         40.0         4         30.8           A         40.0         3         25.0         4         33.3           S.I         2 <t< td=""><td>Troit</td><td>Catagory</td><td colspan="2">L R</td><td>R</td></t<>	Troit	Catagory	L R		R	
C.I         2         2         20.0         4         30.8           3         8         80.0         8         61.5           1         9.1         2         15.4           2.1         2         8         72.7         8         61.5           3         2         18.2         3         23.1           2         8         72.7         8         61.5           3         2         18.2         3         23.1           4         36.4         2         15.4         30.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.IV         2         4         40.0         8         61.5           3         4         40.0         4         30.8           C.IV         2         3         27.3         5         41.7           C.IV         2         3         27.3         3         25.0         3           S.I         2         8         66.7         7         63.6           3         3         25.0         1	Irait	Category	Ν	%	Ν	%
3         8         80.0         8         61.5           1         9.1         2         15.4           2         8         72.7         8         61.5           3         2         18.2         3         23.1           1         5         45.5         7         53.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.IV         2         4         40.0         8         61.5           3         4         40.0         4         30.8           C.IV         2         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0         1           3         5         45.5         4         36.4         36.4         36.4           S.I         2         6         50.0         7         63.6         3         27.3         3         27.3 <td></td> <td>1</td> <td>0</td> <td>0.0</td> <td>1</td> <td>7.7</td>		1	0	0.0	1	7.7
1         1         9.1         2         15.4           2         8         72.7         8         61.5           3         2         18.2         3         23.1           1         5         45.5         7         53.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.IIV         2         4         40.0         8         61.5           3         4         40.0         4         30.8           C.IV         2         4         40.0         4         30.8           C.IV         2         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         3         25.0         1         9.1         36.4           S.II         2         6         50.0         7         63.6           3         3         25.0	C.I	2	2	20.0	4	30.8
C.II         2         8         72.7         8         61.5           3         2         18.2         3         23.1           1         5         45.5         7         53.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.IV         2         4         40.0         8         61.5           3         4         40.0         8         61.5           3         4         40.0         4         30.8           C.IV         2         4         40.0         4         30.8           6.1         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         3         25.0         1         9.1         3.4           S.II         2         6         50.0         7         63.6           3         25.0         3 <td></td> <td>3</td> <td>8</td> <td>80.0</td> <td>8</td> <td>61.5</td>		3	8	80.0	8	61.5
3         2         18.2         3         23.1           1         5         45.5         7         53.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           C.III         2         20.0         1         7.7           C.IV         2         4         40.0         8         61.5           3         4         40.0         8         61.5           3         4         40.0         8         61.5           3         4         40.0         8         61.5           3         4         40.0         8         50.8           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           4         1         8.3         0         0.0           S.I         2         6         50.0         7         63.6           3         25.0         1         9.1         9.1         9.1           S.II         2         6         50.0         7         63.6		1	1	9.1	2	15.4
1         5         45.5         7         53.8           C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           1         2         20.0         1         7.7           C.IV         2         4         40.0         8         61.5           3         4         40.0         4         30.8           C.IV         2         4         40.0         4         30.8           1         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           5         45.5         4         33.3           6         57.7         63.6         3         25.0         1         9.1           S.II         2         6         50.0         7         63.6           3         3         25.0         1         9.1         5.1           S.II         2         6         50.0         7         63.6           3         3         25.0	C.II	2	8	72.7	8	61.5
C.III         2         4         36.4         2         15.4           3         2         18.2         4         30.8           1         2         20.0         1         7.7           C.IV         2         4         40.0         8         61.5           3         4         40.0         4         30.8           1         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           5         45.5         4         36.4           3         25.0         4         36.4           5         50.0         7         63.6           3         3         25.0         1         9.1           5.II         2         6         50.0         7         63.6           3         3         25.0         3         27.3         3         20.0           H.I		3	2	18.2	3	23.1
3         2         18.2         4         30.8           1         2         20.0         1         7.7           2         4         40.0         8         61.5           3         4         40.0         4         30.8           1         3         27.3         5         41.7           2         3         27.3         3         25.0           3         5         45.5         4         33.3           5         45.5         4         33.3           5         45.5         4         36.6           3         5         45.5         4         36.4           5         45.5         4         36.4         36.4           6         51.7         7         63.6         3         25.0         1         9.1           5.11         2         6         50.0         7         63.6         3         27.3         3         27.3           5.11         2         6         50.0         7         63.6         3         27.3         3         27.3           6         54.5         5         50.0         3         30.0 <td></td> <td>1</td> <td>5</td> <td>45.5</td> <td>7</td> <td>53.8</td>		1	5	45.5	7	53.8
1         2         20.0         1         7.7           C.IV         2         4         40.0         8         61.5           3         4         40.0         4         30.8           1         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           A         1         8.3         0         0.0           S.I         2         8         66.7         7         63.6           3         3         25.0         4         36.4           S.II         2         6         50.0         7         63.6           3         3         25.0         1         9.1         0         0.0           S.II         2         6         50.0         7         63.6         3         27.3         3         27.3           M.I         1         9.1         0         0.0         0         0         0           H.I         2         6         54.5         5         50.0         3         30.0         3 <t< td=""><td>C.III</td><td>2</td><td>4</td><td>36.4</td><td>2</td><td>15.4</td></t<>	C.III	2	4	36.4	2	15.4
C.IV         2         4         40.0         8         61.5           3         4         40.0         4         30.8           1         3         27.3         5         41.7           C.V         2         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           5         45.5         4         33.3           5         45.5         4         36.6           3         5         66.7         7         63.6           3         25.0         1         9.1         6           3         25.0         1         9.1         6           5.II         2         6         50.0         7         63.6           3         3         25.0         1         9.1         0         0.0           H.I         2         6         54.5         5         50.0           H.I         2         3         27.3         3         30.0           3         2         3         27.3         3 <t< td=""><td></td><td>3</td><td>2</td><td>18.2</td><td>4</td><td>30.8</td></t<>		3	2	18.2	4	30.8
3         4         40.0         4         30.8           1         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           5         45.5         4         33.3           6         5         45.5         4         33.3           7.1         1         8.3         0         0.0           5.1         2         8         66.7         7         63.6           3         3         25.0         4         36.4           5.1         2         6         50.0         7         63.6           3         25.0         3         27.3         3         27.3           5.11         2         6         50.0         7         63.6           3         3         25.0         3         27.3         3         27.3           6         54.5         6         60.0         3         4         30.0         3         30.0           1         6         54.5         5         50.0         3         30.0		1	2	20.0	1	7.7
1         3         27.3         5         41.7           C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           1         1         8.3         0         0.0           S.I         2         8         66.7         7         63.6           3         25.0         4         36.4         36.4           S.II         2         6         50.0         7         63.6           3         25.0         1         9.1         5.1         9.1         5.1           S.II         2         6         50.0         7         63.6         3         27.3           M.I         2         6         50.0         7         63.6         60.0         3         27.3         3         27.3           H.I         2         6         54.5         6         60.0         3         4         36.4         4         40.0           H.II         2         3         27.3         3         30.0         3         30.0         3         30.0         3         30.0         3         30.0 <t< td=""><td>C.IV</td><td>2</td><td>4</td><td>40.0</td><td>8</td><td>61.5</td></t<>	C.IV	2	4	40.0	8	61.5
C.V         2         3         27.3         3         25.0           3         5         45.5         4         33.3           1         1         8.3         0         0.0           5.1         2         8         66.7         7         63.6           3         25.0         4         36.4         36.4           3         25.0         4         36.4           5         45.5         4         36.4           3         25.0         4         36.4           5.11         2         6         50.0         7         63.6           3         25.0         3         27.3         3         27.3           5.11         2         6         50.0         7         63.6           3         25.0         3         27.3         3         27.3           1         1         9.1         0         0.0         0.0           H.1         2         6         54.5         5         50.0           3         2         3         27.3         3         30.0           3         2         3         27.3         3		3	4	40.0	4	30.8
3         5         45.5         4         33.3           1         1         8.3         0         0.0           2         8         66.7         7         63.6           3         25.0         4         36.4           3         25.0         4         36.4           5.11         2         6         50.0         7         63.6           3         25.0         1         9.1         5.1           2         6         50.0         7         63.6           3         25.0         3         27.3           4         9.1         9.1         0         0.0           4         9.1         9.1         0         0.0           4         9.1         9.1         0         0.0           4         9.1         1         9.1         0         0.0           4         36.4         36.4         4         40.0           4         36         2         36.0         3         30.0           5         2         3         27.3         3         30.0           4         36         4         36.1 <t< td=""><td></td><td>1</td><td>3</td><td>27.3</td><td>5</td><td>41.7</td></t<>		1	3	27.3	5	41.7
1         1         8.3         0         0.0           S.I         2         8         66.7         7         63.6           3         3         25.0         4         36.4           1         3         25.0         1         9.1           S.II         2         6         50.0         7         63.6           3         3         25.0         1         9.1           S.II         2         6         50.0         7         63.6           3         3         25.0         3         27.3           1         1         9.1         0         0.0           H.I         2         6         54.5         6         60.0           3         4         36.4         4         40.0           H.II         2         3         27.3         3         30.0           3         4         36.4         4         40.0           4         36.4         36.4         30.0         30.0           3         2         18.2         2         20.0           4         9.1         0         0.0         0           <	C.V	2	3	27.3	3	25.0
S.I       2       8       66.7       7       63.6         3       25.0       4       36.4         1       3       25.0       1       9.1         S.II       2       6       50.0       7       63.6         3       25.0       3       27.3         1       3       25.0       3       27.3         1       1       9.1       0       0.0         H.I       2       6       54.5       6       60.0         3       4       36.4       4       40.0         H.II       6       54.5       5       50.0         H.II       2       3       27.3       3       30.0         3       2       18.2       2       20.0         H.II       1       9.1       0       0.0         H.III       2       8       72.7       8       72.7		3	5	45.5	4	33.3
3         3         25.0         4         36.4           1         3         25.0         1         9.1           2         6         50.0         7         63.6           3         25.0         3         27.3           1         1         9.1         0         0.0           1         1         9.1         0         0.0           1         1         9.1         0         0.0           1         1         9.1         0         0.0           1         1         9.1         0         0.0           1         1         9.1         0         0.0           1         6         54.5         5         50.0           1         6         54.5         5         50.0           1         2         3         27.3         3         30.0           3         2         18.2         2         20.0           1         1         9.1         0         0.0           1         2         8         72.7         8         72.7		1	1	8.3	0	0.0
1         3         25.0         1         9.1           S.II         2         6         50.0         7         63.6           3         25.0         3         27.3           1         1         9.1         0         0.0           H.I         2         6         54.5         6         60.0           3         4         36.4         4         40.0           H.II         2         3         27.3         3         30.0           A         36.4         4         40.0         30.0         3         2         18.2         2         20.0           H.II         2         3         27.3         3         30.0         3         2         18.2         2         20.0           H.III         2         8         72.7         8         72.7         7	S.I	2	8	66.7	7	63.6
S.II         2         6         50.0         7         63.6           3         25.0         3         27.3           1         1         9.1         0         0.0           1         9.1         0         60.0         6           4         54.5         6         60.0           3         4         36.4         4         40.0           4         36.4         3         50.0         50.0           4         36.4         36.4         40.0         30.0           4         36.4         36.4         40.0         30.0           4         36.4         36.4         30.0         30.0           4         36.2         38         27.3         30.0           3         2         18.2         2         20.0           1         1         9.1         0         0.0           4.11         2         8         72.7         8         72.7		3	3	25.0	4	36.4
3         3         25.0         3         27.3           1         1         9.1         0         0.0           1         2         6         54.5         6         60.0           3         4         36.4         4         40.0           4         36.4         4         40.0           4         36.4         54.5         5         50.0           4         2         3         27.3         3         30.0           4         3         2         18.2         2         20.0           1         1         9.1         0         0.0           1         2         8         72.7         8         72.7		1	3	25.0	1	9.1
1         1         9.1         0         0.0           H.I         2         6         54.5         6         60.0           3         4         36.4         4         40.0           1         6         54.5         5         50.0           1         6         54.5         5         50.0           4         36.4         4         20.0         3         27.3         3         30.0           3         2         18.2         2         20.0         1         1         9.1         0         0.0           H.III         2         8         72.7         8         72.7         7         8         72.7	S.II	2	6	50.0	7	63.6
H.I     2     6     54.5     6     60.0       3     4     36.4     4     40.0       1     6     54.5     5     50.0       1.II     2     3     27.3     3     30.0       3     2     18.2     2     20.0       1     1     9.1     0     0.0       H.III     2     8     72.7     8     72.7		3	3	25.0	3	27.3
3         4         36.4         4         40.0           1         6         54.5         5         50.0           H.II         2         3         27.3         3         30.0           3         2         18.2         2         20.0           1         1         9.1         0         0.0           H.III         2         8         72.7         8         72.7		1	1	9.1	0	0.0
1         6         54.5         5         50.0           H.II         2         3         27.3         3         30.0           3         2         18.2         2         20.0           1         1         9.1         0         0.0           H.III         2         8         72.7         8         72.7	Н.І	2	6	54.5	6	60.0
H.II         2         3         27.3         3         30.0           3         2         18.2         2         20.0           1         1         9.1         0         0.0           H.III         2         8         72.7         8         72.7		3	4	36.4	4	40.0
3         2         18.2         2         20.0           1         1         9.1         0         0.0           H.III         2         8         72.7         8         72.7		1	6	54.5	5	50.0
1         1         9.1         0         0.0           H.III         2         8         72.7         8         72.7	H.II	2	3	27.3	3	30.0
H.III 2 8 72.7 8 72.7		3	2	18.2	2	20.0
		1	1	9.1	0	0.0
	H.III	2	8	72.7	8	72.7
3 2 18.2 3 27.3		3	2	18.2	3	27.3
1 2 18.2 3 27.3		1	2	18.2	3	27.3
H.IV 2 4 36.4 3 27.3	H.IV	2	4	36.4	3	27.3
3 5 45.5 5 45.5		3	5	45.5	5	45.5
1 1 9.1 1 11.1		1	1	9.1	1	11.1
R.I 2 7 63.6 4 44.4	R.I	2	7	63.6	4	44.4
3 4 36.4 4 44.4		3	4	36.4	4	44.4
1 6 50.0 6 54.5		1	6	50.0	6	54.5
R.II 2 5 41.7 4 36.4	R.II	2	5	41.7	4	36.4
3 1 8.3 1 9.1		3	1	8.3	1	9.1

1         6         54.5         5         50.0           R.III         2         3         27.3         3         30.0           3         2         18.2         2         20.0           1         9         81.8         8         80.0           U.I         2         1         9.1         1         10.0           3         1         9.1         1         10.0           3         1         9.1         1         10.0           0         0.0         0         0.0         0.0           1         0         0.0         0         0.0           1         5         45.5         2         18.2           U.III         2         3         27.3         3         27.3           3         3         27.3         3         27.3         3         27.3           1         5         45.5         2         20.0         4         36.4           5         45.5         5         45.5         5         45.5         3         3         27.3           1         1         9.1         1         9.1         1 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th></td<>						
3         2         18.2         2         20.0           1         9         81.8         8         80.0           U.I         2         1         9.1         1         10.0           3         1         9.1         1         10.0           3         1         9.1         1         10.0           4         3         8         72.7         7         63.6           1         5         45.5         2         18.2           U.III         2         3         27.3         6         54.5           3         3         27.3         3         27.3           1         5         45.5         4         36.4           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0         0         0           1         5         45.5         2         20.0         1         1         9.1         1         9.1           1         1         9.1         1         9.1         1         9.1         1           1         5         45.5         5		1	6	54.5	5	50.0
1         9         81.8         8         80.0           U.I         2         1         9.1         1         10.0           3         1         9.1         1         10.0           3         1         9.1         1         10.0           4         3         27.3         4         36.4           3         8         72.7         7         63.6           1         5         45.5         2         18.2           U.III         2         3         27.3         3         27.3           1         5         45.5         4         36.4           5         3         27.3         3         27.3           1         5         45.5         4         36.4           6         54.5         7         63.6           3         0         0.0         0         0.0           1         5         45.5         2         20.0           1         1         9.1         1         9.1           1         1         9.1         1         9.1           1         3         27.3         3         27.3 <td>R.III</td> <td>2</td> <td>3</td> <td>27.3</td> <td>3</td> <td>30.0</td>	R.III	2	3	27.3	3	30.0
U.I         2         1         9.1         1         10.0           3         1         9.1         1         10.0           3         1         9.1         1         10.0           4         3         27.3         4         36.4           3         8         72.7         7         63.6           1         5         45.5         2         18.2           U.III         2         3         27.3         6         54.5           3         3         27.3         3         27.3           1         5         45.5         2         18.2           U.III         2         3         27.3         3         27.3           1         5         45.5         2         20.0         6           5         45.5         2         20.0         1         9.1         9.1           1         5         45.5         5         45.5         5         45.5           3         0         0.0         0         0.0         1         9.1           1         3         27.3         3         27.3         3         27.3		3	2	18.2	2	20.0
3         1         9.1         1         10.0           1         0         0.0         0         0.0           U.II         2         3         27.3         4         36.4           3         8         72.7         7         63.6           1         5         45.5         2         18.2           U.III         2         3         27.3         6         54.5           3         3         27.3         3         27.3           1         5         45.5         2         18.2           U.III         2         6         54.5         3         27.3           3         0         0.0         0         0.0         1           3         0         0.0         0         0.0         0           1         5         45.5         5         45.5         5         45.5           3         5         45.5         5         45.5         5         45.5           1         1         9.1         1         9.1         9.1         9.1           5         45.5         5         45.5         5         45.5		1	9	81.8	8	80.0
1         0         0.0         0         0.0           U.II         2         3         27.3         4         36.4           3         8         72.7         7         63.6           1         5         45.5         2         18.2           U.III         2         3         27.3         6         54.5           3         3         27.3         3         27.3           1         5         45.5         4         36.4           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0         1           1         5         45.5         2         20.0         1           1         1         9.1         1         9.1         1           2         6         54.5         8         80.0         3         27.3         3         27.3           3         0         0.0         0         0.0         1         1         9.1         1         9.1         1         9.1         1         9.1         1         1         3         27.3         3         27.3 <td>U.I</td> <td>2</td> <td>1</td> <td>9.1</td> <td>1</td> <td>10.0</td>	U.I	2	1	9.1	1	10.0
U.II         2         3         27.3         4         36.4           3         8         72.7         7         63.6           1         5         45.5         2         18.2           U.III         2         3         27.3         6         54.5           3         3         27.3         3         27.3           1         5         45.5         4         36.4           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0         1.0           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0         1.0           F.II         2         6         54.5         8         80.0           3         0         0.0         0         0.0         1.1         9.1           F.IIV         2         8         72.7         8         72.7           3         0         0.0         0         0.0         1.1           1         3         27.3         3         27.3		3	1	9.1	1	10.0
3         8         72.7         7         63.6           1         5         45.5         2         18.2           U.III         2         3         27.3         6         54.5           3         3         27.3         3         27.3           1         5         45.5         4         36.4           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0         0           F.II         2         6         54.5         8         80.0           3         0         0.0         0         0.0         0           1         1         9.1         1         9.1         1           2         5         45.5         5         45.5           3         5         45.5         5         45.5           7         3         0         0.0         0.0           1         8         80.0         7         63.6		1	0	0.0	0	0.0
1         5         45.5         2         18.2           U.III         2         3         27.3         6         54.5           3         3         27.3         3         27.3           1         5         45.5         4         36.4           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0           F.II         2         6         54.5         2         20.0           F.II         2         6         54.5         8         80.0           3         0         0.0         0         0.0         0           F.II         2         5         45.5         5         45.5           3         5         45.5         5         45.5           3         5         45.5         5         45.5           3         0         0.0         0         0.0           1         3         27.3         3         27.3           3         0         0.0         0         0.0           1         3         27.7         8         72.7	U.II	2	3	27.3	4	36.4
U.III       2       3       27.3       6       54.5         3       3       27.3       3       27.3         1       5       45.5       4       36.4         F.I       2       6       54.5       7       63.6         3       0       0.0       0       0.0         1       5       45.5       2       20.0         F.II       2       6       54.5       8       80.0         3       0       0.0       0       0.0         F.II       2       6       54.5       5       45.5         3       0       0.0       0       0.0       0.0         F.III       2       5       45.5       5       45.5         3       5       45.5       5       45.5         3       5       45.5       5       45.5         7       3       0       0.0       0       0.0         1       3       27.3       3       27.3       3       27.3         3       0       0.0       0       0.0       0       0.0         1       8       80.0		3	8	72.7	7	63.6
3         3         27.3         3         27.3           1         5         45.5         4         36.4           F.I         2         6         54.5         7         63.6           3         0         0.0         0         0.0           1         5         45.5         2         20.0           F.II         2         6         54.5         8         80.0           3         0         0.0         0         0.0           F.II         2         6         54.5         8         80.0           3         0         0.0         0         0.0         0.0           F.III         2         5         45.5         5         45.5           3         5         45.5         5         45.5           3         5         45.5         5         45.5           6         50.0         0         0.0         0.0           1         3         27.3         3         27.3           6         0.0         0         0.0         0.0           1         8         80.0         7         63.6 <td< td=""><td></td><td>1</td><td>5</td><td>45.5</td><td>2</td><td>18.2</td></td<>		1	5	45.5	2	18.2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	U.III	2	3	27.3	6	54.5
F.I2654.5763.6300.000.01545.5220.0F.II2654.5880.0300.000.0119.119.1F.III2545.5545.53545.5545.53545.5545.53545.5545.54327.3327.3F.IV2872.7872.7300.000.01880.0763.6F.IV2220.0436.4300.000.01787.5777.8P.I2112.5111.1300.0111.1300.0111.1300.000.01555.6545.5T.I2444.46300.000.01545.5545.5T.II2654.56300.000.01337.5327.3c.I2562.5654.5300.0218.23		3	3	27.3	3	27.3
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		1	5	45.5	4	36.4
I545.5220.0F.II2654.5880.0300.000.0119.119.1F.III2545.5545.53545.5545.53545.5545.53545.5545.53545.5545.51327.3327.3F.IV2872.7872.7300.000.01880.0763.6F.V2220.0436.4300.000.01787.5777.8P.I2112.5111.1300.0111.1300.0111.1300.000.01555.6545.5T.I2444.46300.000.01545.5545.5T.II2654.56300.000.01337.5327.3c.I2562.5654.5300.0218.21342.9440.0c.II2 <t< td=""><td>F.I</td><td>2</td><td>6</td><td>54.5</td><td>7</td><td>63.6</td></t<>	F.I	2	6	54.5	7	63.6
F.II       2       6       54.5       8       80.0         3       0       0.0       0       0.0         1       1       9.1       1       9.1         F.III       2       5       45.5       5       45.5         3       5       45.5       5       45.5         3       5       45.5       5       45.5         1       3       27.3       3       27.3         F.IV       2       8       72.7       8       72.7         3       0       0.0       0       0.0         1       8       80.0       7       63.6         F.V       2       2       20.0       4       36.4         3       0       0.0       0       0.0         1       7       87.5       7       77.8         P.I       2       1       12.5       1       11.1         3       0       0.0       1       11.1         3       0       0.0       1       11.1         3       0       0.0       0       0.0         1       5       55.6       5 </td <td></td> <td>3</td> <td>0</td> <td>0.0</td> <td>0</td> <td>0.0</td>		3	0	0.0	0	0.0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		1	5	45.5	2	20.0
1         1         9.1         1         9.1           F.III         2         5         45.5         5         45.5           3         5         45.5         5         45.5           1         3         27.3         3         27.3           F.IV         2         8         72.7         8         72.7           3         0         0.0         0         0.0           1         8         80.0         7         63.6           F.V         2         2         20.0         4         36.4           3         0         0.0         0         0.0         1           1         7         87.5         7         77.8           P.I         2         1         12.5         1         11.1           3         0         0.0         1         11.1           3         0         0.0         1         11.1           3         0         0.0         0         0.0           1         5         55.6         5         45.5           T.I         2         4         44.4         6         54.5 <tr< td=""><td>F.II</td><td>2</td><td>6</td><td>54.5</td><td>8</td><td>80.0</td></tr<>	F.II	2	6	54.5	8	80.0
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		3	0	0.0	0	0.0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		1	1	9.1	1	9.1
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	F.III	2	5	45.5	5	45.5
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		3	5	45.5	5	45.5
3         0         0.0         0         0.0           1         8         80.0         7         63.6           F.V         2         2         20.0         4         36.4           3         0         0.0         0         0.0           1         7         87.5         7         77.8           P.I         2         1         12.5         1         11.1           3         0         0.0         1         11.1           3         0         0.0         1         11.1           3         0         0.0         1         11.1           3         0         0.0         1         11.1           3         0         0.0         0         0.0           1         5         55.6         5         45.5           T.I         2         4         44.4         6         54.5           3         0         0.0         0         0.0           1         5         45.5         5         45.5           T.II         2         6         54.5         6         54.5           3         0		1	3	27.3	3	27.3
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	F.IV	2	8	72.7	8	72.7
F.V2220.0436.4300.000.01787.5777.8P.I2112.5111.1300.0111.13055.6545.5T.I2444.4654.5300.000.01545.5545.5T.I2654.5654.5300.000.01337.5327.3c.I2562.5654.5300.0218.21342.9440.0c.II2342.9550.0		3	0	0.0	0	0.0
3         0         0.0         0         0.0           1         7         87.5         7         77.8           P.I         2         1         12.5         1         11.1           3         0         0.0         1         11.1           3         0         0.0         1         11.1           3         0         0.0         1         11.1           1         5         55.6         5         45.5           T.I         2         4         44.4         6         54.5           3         0         0.0         0         0.0           1         5         45.5         5         45.5           T.II         2         6         54.5         6         54.5           3         0         0.0         0         0.0         0.0           1         3         37.5         3         27.3         2.1           2         5         62.5         6         54.5           3         0         0.0         2         18.2           3         0         0.0         2         18.2           1		1	8	80.0	7	63.6
1         7         87.5         7         77.8           P.I         2         1         12.5         1         11.1           3         0         0.0         1         11.1           1         5         55.6         5         45.5           T.I         2         4         44.4         6         54.5           3         0         0.0         0         0.0           1         5         45.5         5         45.5           T.I         2         6         54.5         5         45.5           T.II         2         6         54.5         6         54.5           3         0         0.0         0         0.0           1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0	F.V	2	2	20.0	4	36.4
P.I       2       1       12.5       1       11.1         3       0       0.0       1       11.1         1       5       55.6       5       45.5         T.I       2       4       44.4       6       54.5         3       0       0.0       0       0.0         1       5       45.5       5       45.5         T.II       2       6       54.5       5       45.5         T.II       2       6       54.5       6       54.5         3       0       0.0       0       0.0         1       3       37.5       3       27.3         c.I       2       5       62.5       6       54.5         3       0       0.0       2       18.2         1       3       42.9       4       40.0         c.II       2       3       42.9       5       50.0		3	0	0.0	0	0.0
3         0         0.0         1         11.1           1         5         55.6         5         45.5           T.I         2         4         44.4         6         54.5           3         0         0.0         0         0.0           1         5         45.5         5         45.5           T.I         2         6         54.5         5         45.5           T.II         2         6         54.5         6         54.5           3         0         0.0         0         0.0         0           1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0		1	7	87.5	7	77.8
1         5         55.6         5         45.5           T.I         2         4         44.4         6         54.5           3         0         0.0         0         0.0           1         5         45.5         5         45.5           T.II         2         6         54.5         5         45.5           T.II         2         6         54.5         6         54.5           3         0         0.0         0         0.0           1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0	P.I	2	1	12.5	1	11.1
T.I         2         4         44.4         6         54.5           3         0         0.0         0         0.0           1         5         45.5         5         45.5           T.II         2         6         54.5         6         54.5           3         0         0.0         0         0.0         0           1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0		3	0	0.0	1	11.1
3         0         0.0         0         0.0           1         5         45.5         5         45.5           T.II         2         6         54.5         6         54.5           3         0         0.0         0         0.0           1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0		1	5	55.6	5	45.5
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Т.І	2	4	44.4	6	54.5
T.II         2         6         54.5         6         54.5           3         0         0.0         0         0.0           1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0		3	0	0.0	0	0.0
3         0         0.0         0         0.0           1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0		1	5	45.5	5	45.5
1         3         37.5         3         27.3           c.I         2         5         62.5         6         54.5           3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0	T.II	2	6	54.5	6	54.5
c.I     2     5     62.5     6     54.5       3     0     0.0     2     18.2       1     3     42.9     4     40.0       c.II     2     3     42.9     5     50.0		3	0	0.0	0	0.0
3         0         0.0         2         18.2           1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0		1	3	37.5	3	27.3
1         3         42.9         4         40.0           c.II         2         3         42.9         5         50.0	c.I	2	5	62.5	6	54.5
c.II 2 3 42.9 5 50.0		3	0	0.0	2	18.2
		1	3	42.9	4	40.0
3 1 14.3 1 10.0	c.ll	2	3	42.9	5	50.0
		3	1	14.3	1	10.0

 Table 14. Frequencies of categories of musculoskeletal stress markers.

Dimensions	Asymmetry
C1	-2.5
C6	1.9
\$1	0.0
S2	1.2
H1	0.2
H2	0.3
H5	3.0
H6	-0.6
R1	0.7
U1	0.7
U13	-1.7
U14	1.1
F1	-0.3
F2	-0.3
F6	0.6
F7	0.5
F9	1.1
F10	-0.1
F19	0.5
F21	0.9
P2	-0.2
T1a	-0.2
T1b	-0.2
Т8а	0.4
Т9а	0.6
f1	0.6

 Table 15.
 Percentage directional asymmetry at the main postcranial dimensions in males.

Maladies	No. teeth affected	No. permanent teeth observed	Frequency (%)
Dental caries	7	452	1.5
Dental calculus	222	452	49.1
Enamel hypoplasia	7	157	4.5
Ante-mortem tooth loss	32	452	7.1

 Table 16. The distribution of dental pathology.