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EPOCA CONTEMPORANĂ / ÉPOQUE CONTEMPORAINE / CONTEMPORARY PERIOD

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A NEW MEDIEVAL CEMETERY DISCOVERED AT TÂRGOVIȘTE (DÂMBOVIȚA COUNTY, ROMANIA). BIOARCHAEOLOGICAL CHARACTERISTICS

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Keywords: *Middle Ages, Greater Wallachia, Târgoviște, 16th–17th centuries, cemetery, bioarchaeology*
Abstract: *Recent preventive archaeological research in Târgoviște led to the discovery of a segment of a medieval cemetery (16th–17th centuries), previously unknown from archaeological and documentary sources. Eighteen inhumation pits containing at least 19 burials (36 individuals) were investigated. In what demography is concerned, there were 23 subadults (one* fœtus*, 11 infants, ten children, and one male adolescent) and 13 adults (two young adults, two middle adults and two old adults, of which one male, six females and six indeterminate). The increased mortality among the subadults was evidenced both by traumatic manifestations, resulting in a violent death in one case, but also by means of three skeletal and dental indicators of biological stress: linear hypoplasia of tooth enamel,* cribra orbitalia *and osteoperiostitis. Among the etiological agents of these pathological conditions were noted nutritional deficiencies or infectious diseases. The recording of the pathological manifestations observed in the analysed sample provides significant information regarding the socio-economic conditions and the way of life specific to the population of Wallachia in the Middle Ages.*

Cuvinte-cheie: *Ev Mediu, Muntenia, Târgoviște, secolele XVI–XVII, cimitir, bioarheologie*
Rezumat: *Cercetările arheologice preventive recente de la Târgoviște au condus la descoperirea unui segment dintr-un cimitir medieval (sec. XVI–XVII), inedit sub aspect arheologic și documentar. Au fost identificate 18 gropi de inhumație ce conțin cel puțin 19 morminte, în care am deosebit 36 de indivizi. Sub raport demografic am înregistrat 23 de subadulți (un* fœtus*, 11 infant, zece copii, un adolescent de sex masculin) și 13 adulți (câte doi adulți tineri, maturi și bătrâni, dintre care un individ de sex masculin, șase de sex feminin și șase indeterminabili). Mortalitatea crescută în rândurile subadulților a fost evidențiată atât prin manifestări traumatice, soldate într-un caz cu o moarte violentă, dar și prin intermediul a trei indicatori scheletici și dentari ai stresului biologic: hipoplazia liniară a smalțului dentar,* cribra orbitalia*, osteoperiostita. Printre agenții etiologici ai acestor condiții patologice se numără deficiențele nutriționale sau bolile infecțioase. Înregistrarea manifestărilor patologice observate în eșantionul analizat furnizează informații însemnate cu privire la condițiile socio-economice și modul de viață specific populației din Muntenia evului mediu.*

A. INTRODUCTION

In 2020, a team of archaeologists from the "Princely Court" National Museum Complex in Târgoviște, led by expert archaeologist Dr Florin Gabriel Petrică, undertook preventive archaeological research within an area in the *Vatra Orașului Medieval/Centre of the Medieval Town* archaeological site (192 Calea Domnească Street, Târgoviște, Dâmbovița County), right across the Princely Court in Târgoviște. On this occasion, several cultural levels corresponding stratigraphically to the 14th–20th centuries were discovered in the surveyed area: a series of waste pits which, through their content, were linked to a craft workshop; inhumation burial pits of a medieval cemetery; the remains of a wall belonging to a brick building and the stone paving around it; a level of modern and contemporary nature related to the building of the current house. The presence of cobblestones with compressed river stones, the collapsed walls (bell tower or place of worship) and the cemetery suggest the existence of an ecclesiastical complex in this location, during the 16th–17th centuries. Of interest to our analysis are the skeletal remains from the medieval cemetery, unknown until today, both in terms of archaeology and documentary sources, of which a part was investigated in the surveyed area. The deceased were oriented towards the West in a supine position (with one exception, an individual laid on the right side) and with poorly represented grave goods consisting of coins, rings, clothing accessories, fragments of fabric and veil pins[1].

B. SKELETAL MATERIAL AND METHODOLOGY

The analysed skeletal remains came from 18 inhumation pits, containing one or more graves, as follows: G.1 (M.1), G.2 (M.2), G.3 (M.3), G.4 (M.4–5), G.5 (M.6, M.7), G.6 (M.18), G.7 (M.11, M.12, M.13), G.8 (M.8), G.9 (M.9), G.10 (M.10), G.11 (M.14), G.12 (M.15), G.13 (M.17), G.14 (M.19), G.15 (M.21), G.16 (M.16), G.17 (M.20), G.18 (bones from disturbed graves). Noteworthy is the fact that the skeletal remains from M.16 (G.16) could not be examined, namely a skull that was left *in situ*. Additionally, according to the archaeological information, G.18 includes, apart from the skeletal remains mentioned above, pits G.9,

[1] For a detailed description of the archaeological situation at *Strada Calea Domnească nr. 192*, see Petrică *et alii* 2023, in this volume.

G.14, G.15 and G.17. The entire skeletal material is part of the collections of the "Princely Court" National Museum Complex in Târgoviște.

The anthropological analysis began with a preliminary stage that consisted of washing the sediment off the bones with water and separating them from other materials from the contents of the pit, such as faunal remains or pottery fragments. The actual analysis of the skeletal material followed. In the first phase, the bones and teeth were identified and their siding[2] was established. The skeletal material was then restored using a polyvinyl acetate-based adhesive. The reconstruction operation was carried out in order to determine the minimum number of individuals (MNI), take measurements, highlight certain taphonomic, morphological and pathological aspects, and evaluate some indicators of biomechanical stress.

The next step was to record the degree of representation and preservation of each individual. Depending on the osteological inventory preserved, the individuals were classified into three categories: approximately complete, incomplete, and poorly represented. In the case of teeth, the inventory took into account their presence (erupted or unerupted) or absence (antemortem, postmortem, congenital). In what the state of preservation of the skeletons is concerned, a model referring to the three degrees of general bone surface assessment was used: good, moderate and poorly preserved condition[3].

The determination of the anthropological sex of the individuals was performed only in the case of adults, and adolescent subjects who reached the age of 15.0 years. The basic differential characteristics between the two sexes were considered their morphological features observed mainly at the level of the pelvis and skull. In addition, the analysis also included the examination of the general aspect of the skeleton, especially focusing on discriminant characteristics such as general appearance, the robustness of the long bones of the upper and lower limbs, and the size of the epiphyses[4].

The estimation of the age-at-death of the individuals in the analysed sample was performed using several methods, depending on the age group. Thus, for subadults, with the exception of adolescents, age estimation was based on the sequence of formation and eruption of teeth[5] and with the help of the regression of the diaphyseal length of the long bones of the limbs[6]. Additionally, when the teeth and diaphyses of the long bones were not preserved, comparative material from the anthropology collection of the Bioarchaeology Department of the "Vasile Pârvan" Institute of Archaeology was used. In the case of adolescents (Ad: 12–20 years old), the estimation of age-at-death was made based on the fusion of the primary and secondary ossification centres (cranial and postcranial)[7].

Methods for estimating the biological age-at-death of individuals who reached skeletal maturity (> 20 years old) often generate very wide age ranges of this parameter within a developmental phase. Therefore, in order to obtain an age-at-death as close as possible to the chronological (real) one, the degree of skeletal ageing was assessed based on four methods. Thus, the following were observed and interpreted: the degenerative changes at the level of the pubic symphysis facets[8], the chronological metamorphosis of the auricular surfaces of the ilia[9], the degree of obliteration of the cranial vault sutures (in exocranial aspect)[10], the morphological evolution of the geometry of the articular facet and the surface texture of the costal tubercle of the first pair of ribs[11]. The age classes used were: *fœtus* (F: < 0 years old), infant (I: 0–3 years old), child (C: 3–12 years old), adolescent (Ad: 12–20 years old), young adult (YA: 20–35 years old), middle adult (MA: 35–49 years old), old adult (OA: > 50 years old)[12] and indeterminate adult (IA: > 21 years old).

Other demographic parameters calculated were the *sex ratio* value and life expectancy at birth. In addition to this, an attempt was made to establish a demographic profile curve, by which to categorise the analysed population into one of the two standard types of cemeteries: attritional or catastrophic[13].

For the biometric analysis of the medieval skeletal sample, we took a series of measurements bilaterally, both from the level of the skull (32 – arches and chords)[14] and the postcranial segment (29 – linear dimensions and perimeters)[15]. Our study did not include dental measurements.

Skeletal stature was calculated using regression equations, based on the maximum dimensions of the long bones of the limbs, both for children[16] (Martin's numbers H1, F1, T1a) and adults[17] (H1, R1, F1, T1a). At the latter, the values of the skeletal statures were categorised[18], taking into account the biological sex.

Another body parameter, skeletal weight, was also calculated using regression equations for both subadults (only children aged 3–12 years)[19] and adults[20]. In the case of children, the diameters at the midshaft of the humeral (H5), femoral (F7) and tibial (T8) diaphyses were used.

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2 White *et alii* 2012, p. 43–294.
3 Connell 2008, p. 9.
4 Buikstra, Ubelaker 1994, p. 16–21; Ferembach *et alii* 1980, p. 517–527; Acsádi, Nemeskéri 1970, p. 85–86.
5 Ubelaker 1978, p. 47, fig. 62.
6 Facchini, Veschi 2004, p. 93, tab. 2.
7 Nikita, Karligkioti 2019, p. 31–34, tab. 13, fig. 35–45.
8 Brooks, Suchey 1990.
9 Lovejoy *et alii* 1985.
10 Meindl, Lovejoy 1985.
11 DiGangi *et alii* 2009.
12 Buikstra, Ubelaker 1994, p. 9.
13 Margerison, Knüsel 2002.
14 Bräuer 1988, p. 160–192; Martin 1928b, p. 625–678.
15 Bräuer 1988, p. 193–232; Martin 1928b, p. 1005–1052.
16 Visser 1998, p. 415.
17 Ruff *et alii* 2012, p. 616, tab. 3.
18 Martin 1928a, p. 246.
19 Visser 1998, p. 417.
20 Auerbach, Ruff 2004, p. 336, tab. 3.

In adult individuals, skeletal weight was calculated based on the vertical diameter of the femoral head (F19).

Moreover, a set of non-metric traits, necessary for establishing biodistances between the analysed population and others from different chrono-cultural horizons, was recorded. The non-metric traits were observed macroscopically, bilaterally, at the cranial[21], infracranial[22] and dental[23] levels.

In the case of adults, in the postcranial segment, some of the indicators of muscle activity (degree of development of enthesophytes)[24] were also investigated.

A final aspect investigated was the identification of pathologies or traumas (osteological and dental)[25] based on the differential diagnosis of skeletal lesions.

C. RESULTS

C.1. MNI, skeletal representativeness, state of preservation (Tab. 1)

The 18 inhumation pits from *Strada Calea Domnească nr. 192* contain at least 19 burials, in which 36 individuals were identified (MNI = 36). Most anthropological analysed graves (12) contained skeletal remains of a single individual (63.2%). The next most common type of grave contains remains from two individuals (5: 26.3%) and, in two cases, there were burials containing skeletal fragments from three individuals (10.5%). At the same time, numerous skeletal remains from disturbed graves were identified in G.18 (MNI = 8).

According to the osteological inventory of the individuals, only over half of them are poorly represented (19: 52.8%), almost one-third are approximately complete (11: 30.6%), while incomplete skeletons were noted in the fewest cases (6: 16.7%).

The state of preservation of the skeletal material is good in more than half of the cases (20: 55.6%). Over a third of the analysed sample is represented by moderately preserved skeletons (14: 38.9%), while skeletons in a more advanced state of degradation were very rare (2: 5.6%).

C.2. Demographic analysis

C.2.1. Distribution by age and sex groups of individuals (Tab. 2)

In the medieval sample from Târgoviște, two male individuals (5.6%) and six female individuals (16.7%) were identified, and, in the most numerous cases (28: 77.8%), biological sex could not be established. In one case, the sex could also be assessed in the case of an adolescent. The *sex ratio* value is sub-unitary (0.3).

The ratio between adults and subadult individuals identified following the estimation of age-at-death is 13: 23 (0.6). Among subadults, the highest frequency of death was recorded in the infant group (11: 47.8%), closely followed by the child group (10: 43.5%). In the latter group, six deaths occurred during first childhood (*infans* I: 3.0–7.0 years), and four during second childhood (*infans* II: 7.0–12.0 years). In one case each (1: 4.3%), individuals in the *fœtus* and adolescent groups were recorded. In adults, two deaths were recorded in each of the age groups (46.2%). The rest of the adult individuals (7: 53.8%) could not be accurately assigned to any of the age groups.

C.2.2. Mortality profile. Life expectancy at birth

The mortality profile curve (Fig. 1) indicates, at least in the case of subadults, an attritional cemetery, whose expected trajectory is characterised by numerous deaths in the case of the infant and child groups and few deaths in the adolescent group. For the adult sector, the evolution of the profile curve could not be assessed, due to the small number of individuals.

Among the demographic indicators calculated in our analysis, a brief comment is worthy on what concerns life expectancy at birth. This has a value of 12.69 years (tab. 3) and was calculated, using the mortality table, for 27 individuals from the analysed sample. Life expectancy values increase up to the range of 10.0–15.0 years when this indicator reaches the average life expectancy of 28.21 years, and from there on gradually decreases until the age range of 50.0–55.0 years.

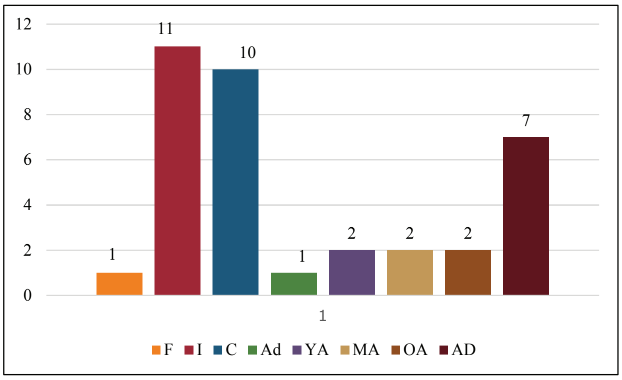

***Figure 1.** Mortality profile curve for Târgoviște* – Strada Calea Domnească nr. 192 *cemetery.*

C.3. Biometrics

Extremely useful in physical anthropology or forensic medicine, measurements provide a wide range of information, mainly related to an individual's sex, age, ancestry, height and weight. Due to the small number of adult individuals in the analysed sample, the

[21] Mann *et alii* 2016; Buikstra, Ubelaker 1994, p. 85–94; Hauser, De Stefano 1989.

[22] Finnegan 1978.

[23] Scott *et alii* 2018; Turner II *et alii* 1991.

[24] Mariotti *et alii* 2007.

[25] Barnes 2012; Waldron 2009; Hillson 2005; Roberts, Manchester 2005; Ortner 2003; Lovell 1997.

statistical information necessary for the morphometric characterization of the medieval population from Târgoviște is not relevant. Therefore, we have limited ourselves to listing (tab. 4–9), both the values and the related indices (the percentage ratio between two dimensions), without specifying the corresponding categories[26].

C.4. Estimation of skeletal stature and weight

Two other parameters investigated in our study are skeletal stature and weight. Stature could be calculated for nine subadults and seven adults (one male, four females, and two indeterminate individuals), while weight could be calculated for nine subadults and five adults (one male and four females) (tab. 10). The values of skeletal stature and weight in relation to age (children aged 3–12 years) suggest a similar evolution, without major fluctuations (Fig. 2).

C.5. Non-metric traits

For the entire medieval skeletal sample from Târgoviște – *Strada Calea Domnească nr. 192*, the non-metric traits were observed and recorded bilaterally. However, the number of bones and teeth that were suitable for observation was relatively small, which is why we did not differentiate between the left and the right side. The degree of bone fragmentation and the impossibility, in some cases, of precisely establishing the symmetry of a bone fragment, were also arguments in favour of this decision.

C.5.1. Cranial non-metric traits (Tab. 11)

a. *Anterior view*. The most common non-metric traits observed in this plane are the zygomatico-facial foramina (77.8%: 21/27), in a singular (11), double (10) or absent (6) variant. Among the supraorbital structures, the notch has a higher frequency (48.4%: 15/31) than the foramen (22.6%: 7/31), observed only in a singular variant. Other non-metric traits, recorded to a lesser extent, are the metopic suture (16.7%: 3/18) fully developed (Fig. 3) and the multiple infraorbital foramen (6.7%: 1/15).

b. *Supero-lateral view*. The parietal foramen is the best represented (78.3%: 18/23), mostly located on the parietal bone (17), but also on the suture (1). Among the wormian bones, the lambdoid (20.8%: 5/24) and the epipteric (18.9%: 2/11) have the highest frequencies. In only one case, an apical bone was recorded (9.1%: 1/11). The coronal, bregmatic, sagittal, asterionic ossicles, those from the occipito-mastoid suture and from the parietal notch are missing.

c. *Postero-inferior view*. The basal portion of the skulls from Târgoviște is most often destroyed. For this reason, we recorded very few phenotypes. We note the divided hypoglossal canal (25.0%: 5/20) and an incomplete oval foramen (9.1%: 1/1). We also note the predilection towards the right of the superior sagittal sulcus (75.0%: 6/8), in only two cases being oriented towards the left (25.0%: 2/8).

d. *Lateral view*. In the lateral portions of the skull, the most numerous traits are the mastoid foramina (53.8%: 7/13). They were usually expressed singularly (6) and located exclusively temporally. A bilateral perforation of the tympanic plate, known as tympanic dehiscence, was also recorded (9.5%: 2/21, Fig. 4).

e. *Mandible*. The only non-metric cranial trait present in the maximum percentage, expressed exclusively in the singular variant, is the mental foramen (100%: 29/29). Additionally, in one individual (8.0%: 2/25), the bilateral presence of a moderate mandibular torus (2–5 mm, in elevation), was noted.

C.5.2. Postcranial non-metric traits (Tab. 12)

a. *The vertebral column*. At the level of the atlas, the most frequent phenotype encountered in the population from Târgoviște is represented by the upper articular facets. Singular facets were mostly observed (88.9%: 16/18), but also double facets (11.1%: 2/18). Also in the cervical region, on the C_3–C_7 vertebrae, bipartite transverse foramina were recorded (33.3%: 6/16). Bridge structures (posterior and lateral) are missing.

b. *Scapula*. In most individuals, the scapulae have an acromial articular facet (75.0%: 6/8). In only one case, a circumflex sulcus was also encountered (4.2%: 1/24). The suprascapular foramina are missing.

c. *Humerus*. Two variants were observed at this level: the septal aperture (15.0%: 3/20, Fig. 5) and the supracondyloid process (2.9%: 1/34).

d. *Pelvis*. The only trait observed was the preauricular sulcus (42.9%: 9/21), either a sex-discriminating indicator or a feature related to childbirth. The acetabular crease and accessory sacral facets are missing.

e. *Femur*. On the femur, the anatomical variants observed in our study were only those in the upper third of the bone. Thus, the following were recorded, in descending order of frequency: Allen's fossa (83.3%: 25/30, Fig. 6), exostosis in trochanteric fossa (25.0%: 2/8), hypotrochanteric fossa (18.2%: 6/33) and the third trochanter (17.1%: 6/32). Poirier and Walmsley facets are absent.

f. *Patella*. No anatomical variant was identified.

g. *Tibia*. The non-metric tibial traits recorded were the lateral (27.5%: 3/8) and medial (14.3%: 1/7) squatting facets.

h. *Astragalus and calcaneus*. The variants most often recorded at this level are those of the facet type, which are in close interdependence with each other: double inferior talar articular facets (80.0%: 8/10) and double anterior calcaneal facets (88.9%: 8/9). Another phenotype encountered was the talar lateral extension (22.2%: 2/9).

[26] The values are represented in milimetres; legend: C = clavicle; S = scapula; H = humerus; R = radius; U = ulna; s = sacrum; F = femur; P = patella; T = tibia; f = fibula.

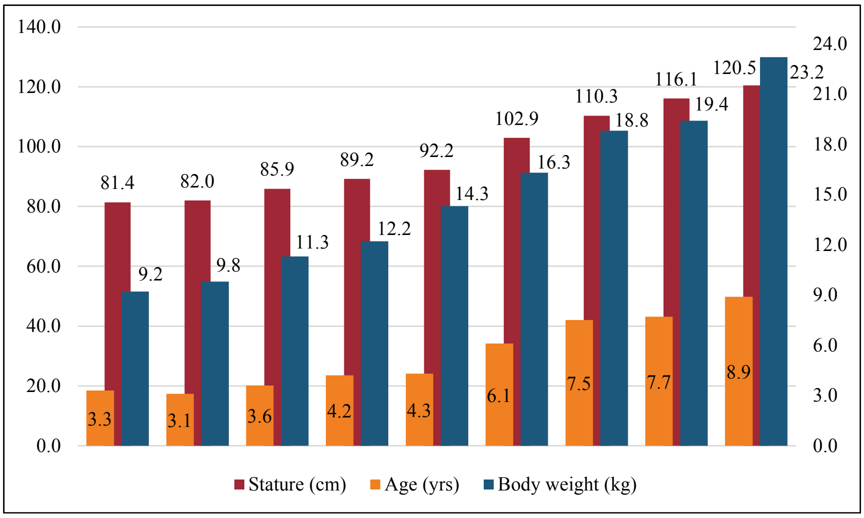

Figure 2. *Average stature (cm) and body weight in subadults (3–12 years).*

Figure 3. *Complete metopic suture (triangle) and slight misalignment of the metopic and sagittal suture (circle) [M.20: cranium, superior].*

Figure 5. *Large septal apertures (M.3: left – arrow; M.12: right – triangle) [humeri, anterior].*

Figure 4. *Bilateral tympanic dehiscence (circles) [M.11: temporal bones, exocranian].*

Figure 6. *Bilateral Allen's fossa (circles) [M.3: femora, anterior].*

C.5.3. Dental non-metric traits (Tab. 13)

The model used to record non-metric dental characters was the dental anthropology system proposed by the Arizona State University (ASUDAS – Arizona State University Dental Anthropology System). Only permanent dentition was observed. Dental morphology records were made according to their variation (from a minimum to a maximum expression) and *in extenso* (more than 40 characters were observed). However, for the present study, we chose to adjust the model, by introducing a dichotomous scale (character absent or present) and by reducing the number of characters presented (10 for upper teeth and 12 for mandibular ones)[27].

For the selected set of dental non-metric traits, we find a higher frequency of occurrence in the case of teeth on the upper arch. The highest frequency (over 90.0%) is for the hypocone (93.8%: 30/32) and the metacone (90.6%: 29/32). Shovel-shaped incisors are also well represented (30.8%: 8/26, Fig. 7). In just over a tenth of the cases, a canine distal accessory ridge was recorded (11.1%: 1/9), and in less than a tenth, the Carabelli cusp (9.4%: 3/32), double shoveling was recorded (5.0%: 2/40) and the metaconule (3.1%: 1/32).

Figure 7. *Shovel-shaped incisor (left I^1 – triangle) and carious lesions (right m^1-m^2 – circle) [M.14: maxillae, inferior].*

In the lower dental floor, we find several frequencies, in descending order, between a quarter and a third of the cases, of only four dental morphological characters: groove pattern (33.3%: 5/15), premolar lingual cusp number (28.6%: 2/7), cusp 7 (28.6%: 4/14) and cusp 5 (26.7%: 4/15).

C.6. The degree of development of the enthesophytes

In bioarchaeological literature, several models are described for evaluating the areas of muscle insertion on the bone of tendons and ligaments (entheses). This is not the time and place to list all of them now. We only mention that in our study we chose a scoring method that takes into account 23 entheses[28], which include the following joints, expressed bilaterally: shoulder, elbow, forearm, hip, knee and leg. Three levels of development were described for each surface, to avoid subjectivity as much as possible: a weak-moderate expression (grade 1), a strong degree of development (grade 2) and a very strong one (grade 3). The absence of observation was marked with 0. The simple statistical recording of entheseal changes is shown in the tab. 14. Six adult individuals (one male and five females) from Târgoviște – *Strada Calea Domnească nr. 192* could be evaluated.

C.7. Pathology

The skeletal material from Târgoviște exhibits a wide spectrum of pathological and traumatic bone and dental changes, both in the case of subadults and adults. Below, we briefly present the main categories of recorded diseases.

C.7.1. Oral pathologies

The frequencies of dental diseases found in the skeletal material from Târgoviște – *Strada Calea Domnească nr. 192* are presented in tab. 15. A total of 242 teeth were observed. Of these, 168 belong to subadults, and 74 to adult individuals (18 teeth of male individuals and 56 teeth of female individuals). Some of the subadults (5), in this case, those who are over 7 years old (*infans* II) and those who have a fully erupted permanent first molar, have a mixed dentition. Therefore, 59 of the 168 teeth belonging to subadults are permanent erupted teeth.

By observing the dental alveoli, it was possible to determine when tooth loss occurred: during life or after death. Thus, 59 antemortem tooth losses were identified (Fig. 8), exclusively in adults (5 in the case of males, 52 in females and 2 in an individual whose anthropological sex is indeterminate) and 105 postmortem tooth losses (25 in adults and 80 in subadults). The total number of teeth and dental alveoli observed in the entire skeletal group is therefore 406 (248 for subadults and 158 for adults – 29 for males and 129 for females).

Figure 8. *Antemortem tooth loss (arrows) [M.1: mandible, superior].*

[27] Pilloud *et alii* 2019, p. 956, tab. 10.

[28] Mariotti *et alii* 2007.

Another pathological dental condition observed in the skeletal sample analysed is dental calculus, present in 11 individuals (three subadults and eight adults). The deposits, mostly supragingival, affect 117 teeth: 58 teeth of subadults (9 deciduous and 47 permanent) and 59 teeth belonging to adults (18 for males and 41 for females).

Caries lesions also affect the medieval individuals from Târgoviște (two subadults and four adults). They were identified in 13 teeth: two deciduous (Fig. 7) and 11 permanent. The caries frequency for the entire skeletal group is 5.4% (13 teeth affected by caries out of 242 observed). For subadult individuals, it has a value of 1.2% (2/168), and for adults, it is 14.9% (11/74).

Sometimes caries attacks several dental surfaces, a process that over time is manifested by the appearance of radicular remains and, finally, results in the loss of teeth. Radicular remains were identified exclusively in females (4 individuals): 7/56 – 12.5%.

A dental condition identified in the analysed skeletal sample only in subadults (three individuals) is dental enamel hypoplasia. It affects 8 teeth (4.8%).

We also found the presence of three dental abscesses: one in a female individual and two in an adult whose sex could not be determined.

C.7.2. Congenital Diseases

Two manifestations were identified from this category: the sacralization of the last lumbar vertebra and *spina bifida occulta*. L_5 sacralization was identified in two female adults. In one case (M.3) we are dealing with a symmetrical, incomplete and bilateral fusion (Fig. 9), and in the other, also with an incomplete and bilateral fusion, only this time asymmetrical (M.1). *Spina bifida occulta* was observed in an adult female, near sacral segments S_3–S_5.

Figure 9. *Sacralised L_5 vertebra (arrows) and almost fused coccyx (triangle) [M.3: sacrum, anteroinferior].*

C.7.3. Traumatic injuries

In the skeletal sample from Târgoviște, we identified two types of traumas: healed and unhealed fractures. Healed fractures occur in three adult individuals, as follows:

– M.1 (female individual, 48.1–55.0 years): two fractures were found, one depressed fracture (at the level of the skull, on the right coronal suture, near the *coronion*, Fig. 10) and a Colles fracture (in the left radial distal extremity, Fig. 11);

Figure 10. *Healed blunt force trauma (ellipse) on right coronal suture [M.1: calvaria, lateral].*

Figure 11. *Healed Colles' fracture (arrow) on the distal shaft [M.1: left radius, anterior].*

– M.2/I.1 (male individual, 32.0–48.8 years): presents an avulsion fracture (at the level of the base of the right Mt_5 metatarsal);

– M.20 (female individual, 25.3–39.4 years): presents a parry fracture (at the level of the medial distal third of the right radius).

A male adolescent (M.9/I.1: 11.0–15.0 years) sustained multiple fatal blows to the skull and cervical spine as follows:

– on the two parietals, in the middle of the sagittal suture – a strong blow, which also pierced the internal lamina (L = 63.7 mm);

– on the left parietal – a blow executed with a lower intensity, which only partially penetrated the external lamina (L = 18.5 mm) and which intersects the first one (Fig. 12);

– on the right mandibular ramus, slightly above the gonion – the blow completely severed the ascending ramus, on a horizontal trajectory (Fig. 13);

– on cervical vertebrae C_3–C_5: on the right superior articular facet of C_3 (completely severed, Fig. 14) and C_5 (partially severed), and on the vertebral body of C_4 (two superficial lesions).

Figure 12. Unhealed sharp force trauma (arrows) on both parietals [M.9/I.1: skull, superior].

Figure 13. Penetrating trauma (arrows) on right mandibular ascendent ramus [M.9/I.1: mandible, lateral].

Figure 14. Unhealed fracture (circle) on an upper right vertebral articular facet [M.9/I.1: fourth cervical vertebra, superior].

C.7.4. Joint diseases

Among joint diseases, only the presence of osteoarthritis and intervertebral hernia were reported. Osteoarthritic manifestations were identified in two female individuals, both adults: M.1 (old adult: 48.1–55.0 years) and M.4–5/I.1 (middle adult: 42.0–51.5 years), while the intervertebral hernia occurs only in the individual from M.1. Osteoarthritis is expressed in each of the two individuals by osteophytes (M.1 and M.4–5/I.1: on the vertebral body of one lumbar vertebra) and by porous surfaces (M.1: on the vertebral bodies of two cervical vertebrae, on the superior articular facets of two other cervical vertebrae and on the medial clavicular extremities; M.4–5/I.1: on the vertebral bodies of four cervical vertebrae – Fig. 15, five thoracic and one lumbar vertebrae). The intervertebral hernia is expressed by Schmorl nodes on the vertebral bodies of seven thoracic and two lumbar vertebrae (M.4–5/I.1).

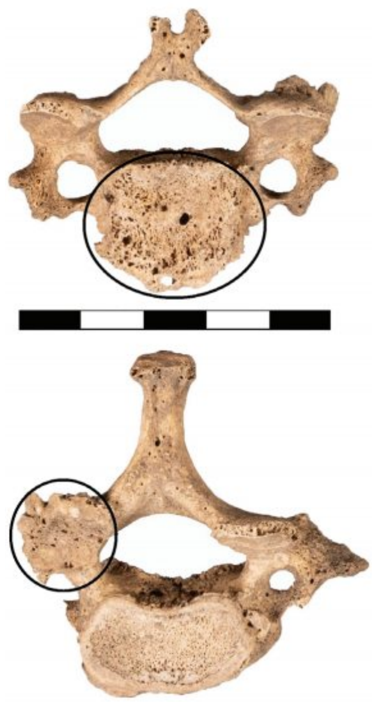

Figure 15. Osteoarthrosis on the spine: porous, irregular surfaces with osteophytic contour (circles) [M.1: cervical vertebrae, inferior].

C.7.5. Infectious diseases

In the skeletal material from Târgoviște – *Strada Calea Domnească nr. 192*, infectious diseases occur exclusively in subadult individuals. They were identified in 11 individuals, in all cases in the form of active periostitis manifestations at the time of death. The significantly affected skeletal segment is the skull, but periosteal lesions in the postcranial sector were also recorded (tab. 16). From the level of the skull, the most affected bone is the maxilla (in seven individuals), followed by the sphenoid (6), temporal (5), frontal & parietal (3 each), occipital & mandible (2) and zygomatic (1). In the postcranial segment, the scapula is most often affected by periostitis (in 4 cases), followed by the tibia (3), femur (2) and, in one case each, by the humerus, radius, ulna, coxal bone and fibula.

C.7.6. Metabolic diseases

Another category of pathological conditions identified in the skeletal material from Târgoviște – *Strada Calea Domnească nr. 192* is that of metabolic diseases. As in the case of infectious ones, these were recorded exclusively in subadult individuals. Among the metabolic diseases, the only observed pathological manifestation is *cribra orbitalia*, present in two individuals from the infant category and five from the child category. The bone lesions are located on the roof of the orbits and were, in all cases, active at the time of death. The manifestations are bilateral, with one exception, where *cribra orbitalia* was only observed on the right, the left orbit not being present for observation. In five cases, the expressions of *cribra orbitalia* accompany those of periostitis.

D. DISCUSSIONS AND CONCLUSIONS

The skeletal sample from the recently discovered medieval cemetery of the 16^{th}–17^{th} centuries, from Târgoviște – *Strada Calea Domnească nr. 192*, comes from 18 inhumation pits (G.1–G.18) in which 19 burials (M.1–M.21) were identified. The grave noted M.4–5 represents the only funerary structure within the cemetery, described as definitely being a double one. It contains the skeletal remains of a mature female individual of approx. 42.0–51.5 years and of a child of approx. 3.0–3.2 years. Additionally, the skeletal remains from M.16 could not be analysed, as they were not recovered (only the unrecovered skull was visible *in situ*).

After establishing the minimum number of individuals for each funerary complex, as well as reallocating some skeletal pieces within the graves, 36 individuals were identified. In the analysed sample, most of the graves (12) contained the skeletal remains of a single individual (M.1, M.3, M.6, M.7, M.10, M.11, M.12, M.13, M.14, M.18, M.20 and M.21). In five cases, skeletal remains from multiple individuals were identified in the contents of the pits. Thus, in M.2, M.4–5, M.8, M.9 and M.17 we identified skeletal remains from two individuals, while in M.15 and M.19, bones from three individuals were distinguished. An interesting situation is pit G.18, from which an MNI of 8 individuals resulted. In addition, G.18 includes four other burial pits (G.9, G.14, G.15 and G.17), corresponding, in order, to graves M.9, M.19, M.21 and M. 20.

The very high number of deceased individuals is not an unprecedented situation in medieval cemeteries. We believe that this situation is mainly due to the numerous natural or anthropic disturbances within the cemetery, which lead to situations where we are dealing with graves containing skeletal remains from several individuals. It is also the case of 15 individuals from the analysed sample, whose bones were disturbed and which were no longer in the original position in which they were deposited in the pit (M.6, M.7, M.8, M.10, M.17 and G.18). At the same time, four reburials were recorded (M.12, M.13, M.20 and M.21). Some skeletal remains, especially those of children, are very fragile and can easily be carried away by animals inside the graves. Another factor that can cause disturbances in the cemetery is the relatively small space in which the deceased were deposited: 19 tombs were identified in less than half of the surface investigated by archaeologists (approx. 70 square meters), the rest of the surface being made up of other complexes. Due to spatial reasons, circumstances can easily arise in which some graves can be disturbed by others or situations in which, in order to make room for the deceased, those previously buried had to be reburied.

From a taphonomic point of view, in more than half of the cases (20 individuals) the bones are very little affected by taphonomic agents (soil pH, activities of plant roots). In over a third of the analysed sample, we find moderately preserved skeletons, with bones whose periosteum is slightly exfoliated, and the epiphyses are slightly affected (14 individuals). Very rarely (in two individuals) the bones are in a more advanced state of degradation.

One of the defining characteristics of the skeletal sample from Târgoviște is the high number of deaths among subadults (23), in relation to the underrepresented adults (13). The sex could only be determined for eight of the individuals in the entire analysed sample. The results were two male individuals (including one adolescent) and six female individuals (*sex ratio* = 0.3).

The highest frequencies of deaths for the entire skeletal group occurred, in almost a third of cases, in infants (0–3 years: 11 deaths – 30.6%). Also, over a quarter of the deaths occurred in children (3–12 years: 10 deaths – 27.8%). The other age groups, subadults or adults, are poorly represented. All three categories of adults (young, middle and old) are equally represented – two deaths in each group (5.6%). A *fœtus* and an adolescent were also identified in one case each (2.8%). In about a fifth of the cases (19.4%) the degree of destruction or the absence of certain skeletal elements necessary to estimate the age-at-death for adult individuals prevented us from estimating this parameter in seven of them.

This fact generates a very low life expectancy at birth value for the medieval population of Târgoviște (12.69 years). Therefore, the value is exceeded in all age ranges, up to the early stage of the middle adult age group (35.0–40.0 years). After the age range of 0.0–4.9 years, individuals have an increasing life expectancy, up to 20.42 years (between 5.0 and 9.9 years). After this moment, the maximum of this indicator is reached (28.21 years), in the age range of 10.0–15.0 years. Then there are gradual declines until the age range 50.0–55.0 years. After

55.0 years we have no information on life expectancy. However, we do not exclude the possibility that some of the adult individuals analysed are older than 55.0 years. We specify the fact that starting with old adults (50.0+ years), the skeletal degenerative morphologies tend to vary somewhat insignificantly, an aspect that makes it difficult to assign a somewhat accurate age, close to the real one.

The mortality profile curve is similar in evolution to the expected standard trajectory characteristic of an attritional-type cemetery (many deaths in the infant and child groups and few deaths in the adolescent group). Next, the trajectory should show numerous deaths in the young adult age group, followed by progressive declines in the middle and old adult age groups. However, we do not know the trend of the profile curve for the adult population analysed, the situation being unclear due to the small number of individuals, as well as the impossibility of placing seven of them in specific age groups.

Biometric data obtained from measurements cannot be processed under a statistical report, due to the small number of individuals analysed. Nevertheless, they are extremely useful for comparing this population with others from different chrono-cultural horizons. At the same time, some measurements were used to calculate skeletal stature and weight.

Stature and body weight are two of the fundamental physical parameters used in osteological studies to assess an individual's nutrition and health status[29]. At the Târgoviște population, skeletal stature and weight were calculated for both subadults and adult individuals. In the case of subadults (children aged 3.0–12.0), the two variables are in a close interdependent relationship and describe a curve with a progressive increase, with small variations. Skeletal statures could also be calculated for seven of the adult individuals analysed: one male, four females, and two subjects whose sex was indeterminate. Even though we do not have a larger number of individuals, we notice that the values of the statures are quite low: 159.9 cm (small) in the case of the male individuals and an average of 153.1 cm (middle, at the lower limit of the range) for female individuals (the smallest stature is 148.9 cm and the largest 158.7 cm). Additionally, one of the two individuals with uncertain sex has a stature value of 139.5 cm, also falling in the small category, regardless of the anthropological sex.

In Romanian anthropological literature, information regarding the genetic divergence of a population obtained through observation and macroscopic recording of non-metric traits, often referred to as anatomical variants, discrete or discontinuous characters, is often missing or incomplete. The non-metric traits recorded for the medieval population from Târgoviște and summarized in the present study can form the basis of future studies regarding the degree of kinship between populations.

The few adult skeletons (one male and five females) for which we were able to observe and record entheseal changes, according to the standard we opted for, are also insufficient to be able to assess the specific lifestyle of the population analysed. We are even further away if we want to assign to the two sexes tasks related to daily physical activities, or tasks correlated with the age of the individuals. Nevertheless, the information obtained by scoring the degree of development of entheseal attachments can be useful in a broader context, where significant general differences by age and sex are pursued.

Another feature that defines the skeletal sample from Târgoviște is the presence, in high numbers, especially in the case of subadults, of pathological manifestations. Although most of the known dental or bone diseases do not induce changes in the skeleton, 22 individuals (61.1%) from the entire analysed sample present at least one pathological manifestation. Among them, subadults are over twice as affected (15: 68.2 %). If some categories of diseases are found in both subadults and adults (dental diseases and pathologies associated with the jaws), other pathological conditions are exclusive in the skeletal group from Târgoviște: infectious and metabolic diseases in the case of subadults, and congenital and neuromechanical abnormalities, traumas (with one exception, see below) and joint diseases in adults. Neoplastic diseases are absent in both age categories.

Dental diseases could be recorded by observing a number of 242 teeth (168 subadult teeth and 74 adult teeth) and 164 dental alveoli (59 antemortem tooth loss and 105 postmortem tooth loss).

On the surface of the teeth, we frequently observe deposits of mineralized bacterial plaque, known as dental calculus[30]. It was observed most of the time in the form of supragingival deposits and was recorded in almost half of the individuals (47.8%: 11 of 23 individuals who present dentition – 3 subadults and 8 adults). The presence of dental calculus can lead to the appearance of dental caries, which arise through the progressive demineralization of enamel, dentin and cementum under the action of organic acids[31]. Dental caries is the main cause of tooth loss. A surprising fact is that although female individuals from Târgoviște show a higher frequency of tooth loss (52 lost teeth out of 159 observed – 40.3% compared to males – 5/29: 17.2 %), caries frequency is lower (6/56: 10.7%) compared to male individuals (5/18: 27.8%). In rare cases, we encountered caries on the deciduous dentition as well (2/168: 1.2%). We also mention the fact that radicular remains, which undoubtedly lead to tooth loss, were identified exclusively in female adults (7/56: 12.5%).

Another dental pathological manifestation identified is dental abscess, present in three cases (in one female individual and two in an adult whose sex could not be determined). In the present study, we preferred to use the term "abscess" for situations where we observed cavities that perforate the bone (associated with a tooth), although

[29] Visser 1998, p. 413.

[30] Hillson 2005, p. 288–289.

[31] Hillson 2005, p. 290–291.

it is very difficult to differentiate between abscesses and granulomas or cysts in skeletal materials, the distinctive feature of an abscess being the presence of pus[32].

Last but not least, exclusively in subadults (3 individuals, 8 affected teeth), enamel defects known as linear enamel hypoplasia have been observed, as expressed morphologically by transverse lines on the surface of the dental crowns, varying in number, thickness, and depth. Dental enamel hypoplasia can be considered a marker of non-specific physiological stress that occurs during the period of dental enamel formation (amelogenesis)[33]. The lack of nutrients such as folic acid (vitamin B_9) and other B-complex vitamins, vitamins A (retinol), C (ascorbic acid) and D (D_2 and D_3), calcium, fluoride or certain proteins, can cause the appearance of not only dental enamel hypoplasia but also scurvy, cleft palate or caries[34].

Similarly, epigenetic metabolic dysfunction of folic acid, as well as maternal zinc and selenium deficiencies, appear to be etiological agents that affect neural tube morphogenesis and cause a congenital defect known as *spina bifida occulta* (spinal dysraphism)[35]. The manifestation was observed in an adult female, near the sacral segments S_3–S_5. Another congenital defect, observed in two female adults from Târgoviște, is the fusion of the last lumbar vertebra to the sacrum (L_5 sacralization).

In three adult individuals, we identified several healed traumas, resulting from blows with blunt objects or produced as a result of accidents. The observed fractures are of several types: compression fractures (one, depressed, on the skull), a Colles fracture (at the level of the left radius – M.1: female, 48.1–55.0 years), avulsion fracture (at the base of the right Mt_5 metatarsal – M.2/I.1: male, 32.0–48.8 years) and transverse and/or oblique fractures (a parry fracture at the level of the right radius – M. 20: female, 25.3–39.4 years). Two of these (depressed and parry) are fractures produced by direct blows and are most often attributed to interpersonal (domestic) violence. The Colles fracture (indirect trauma from an accidental fall on an outstretched arm) and the avulsion fracture (probably resulting from a fall) are indirect fractures, resulting from accidents.

An interesting situation is found in the case of a male adolescent (M.9/I.1: 11.0–15.0 years) who presents several perimortem blows causing death, executed with a sharp object. The blows were applied to the two parietals, the right mandibular ramus and the C_3–C_5 cervical vertebrae. Regarding the number of individuals presenting healed or unhealed cranial traumas (antemortem and perimortem), both categories indicating interpersonal violence, expectations are generally higher when considering the medieval period in South-Eastern Europe, often considered an era of hyperviolence[36]. It is difficult to make statistical assessments at this stage of the research, instead, the few healed fractures and, especially the unhealed ones, which led to the death of the individual, are evidence of the extreme violence encountered in the medieval population of Târgoviște.

Among the joint diseases, we found the presence of two often associated manifestations[37], visible in the analysed skeletal sample only on the spine: osteoarthrosis or osteoarthritis (in two female individuals – a middle adult, 42.0–51.5 years old and an old one, of 48.1–55.0 years) and intervertebral hernia (in the old adult with osteoarthritis). The pathological expressions are of low intensity, osteoarthrosis being manifested in the form of osteophytes and porous surfaces (eburnation is absent) and intervertebral hernia by Schmorl nodes. The causes of osteoarthritic manifestations are not known with certainty, but a number of factors are undoubtedly significant: age, genetic background, sex, obesity, trauma and, most importantly, movement/stress – undoubtedly the most significant of these, an aspect that also concerns the Schmorl nodes[38].

Another category of diseases found in the skeletal material from Târgoviște is represented by infectious diseases. The periosteal lesions affect all cases of subadult individuals (11) and have an active character. The abundance of porous lesions and the localization of skeletal changes, especially at the level of the skull, but also on the scapulae and, to a lesser extent, on the distal femur and proximal tibia, excludes the diagnosis of osteomyelitis, which is relatively common in children, and leads us to believe that in the analysed sample we are dealing with manifestations related to infantile scurvy (Fig. 16)[39]. The differential diagnosis for scurvy is difficult to make. Apart from osteomyelitis, similar periosteal reactions can also be found in frontal sinusitis, non-specific periostitis, tuberculosis, rickets, anaemia, etc[40]. In order to be able to exclude these aetiologies, a microscopic analysis was also recommended, an approach that could not be performed. In this context, another difficulty that arises is related to the number of individuals from Târgoviște affected by scurvy, some of them presenting periosteal lesions highlighted on a single bone (M.8/I.1, M.14, M.19/I.3), so we have no certainty in this regard. The periosteal lesions in the analysed sample are varied and affect different age groups: infant (4), child (6) and adolescent (1). Scurvy is the clinical manifestation of vitamin C deficiency, a nutrient found in fresh fruits and vegetables. Lack of vitamin C tends to lead to haemorrhages and minimal trauma, with sufferers likely to be apathetic, with muscle pain, a condition that becomes fatal if the adequate amount of vitamin C is not restored. The most common sign of scurvy

[32] Hillson 2005, p. 313–314.
[33] Hillson 2005, p. 169–176.
[34] Schroth *et alii* 2021; Swapna, Abdulsalam 2021; Pflipsen, Zenchenko 2017.
[35] Barnes 2012, p. 76.
[36] Baten, Steckel 2019.
[37] Abbas *et alii* 2018.
[38] Waldron 2009, p. 28, 45; Ortner 2003, p. 550.
[39] Brickley, Ives 2006, p. 170.
[40] Roberts, Manchester 2005, p. 234–235.

is bleeding and inflammation of the gums[41]. The vitamin is necessary to fight infections, intervening in the synthesis metabolism of collagen (essential for the formation and normal functioning of tissues) and is responsible for the absorption of iron[42]. Due to the fact that vitamin C is the guarantor of iron absorption, anaemia often accompanies infantile scurvy, and therefore the possibility that some of the members of the Târgoviște – *Strada Calea Domnească nr. 192* community suffered from several conditions (comorbidities) should be considered.

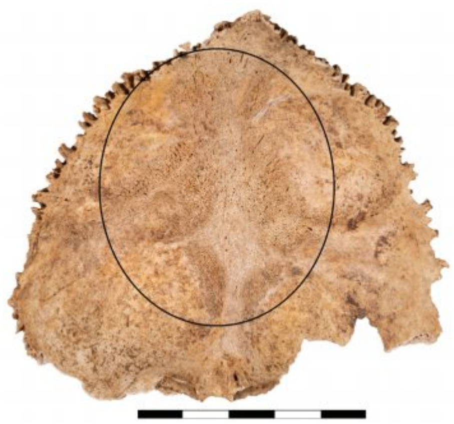

Figure 16. *Possible manifestations of infantile scurvy: new bone formation associated with abnormal blood vessel impressions (circle) [M.12: occipital, endocranial].*

We also mention that five of the analysed individuals, all subadults (two infant and five individuals from the child group), also present *cribra orbitalia*-type conditions. The lesions are in all cases active and are visible macroscopically in the form of a thickened bone with a porous surface, located on the roof of the orbits. In bioarchaeological contexts, *cribra orbitalia* lesions are usually associated with iron deficiency anaemia, genetic (thalassemia major or Cooley's anaemia and sickle cell anaemia or sickle cell disease) or acquired (due to the lack of vitamins A, B_6 – pyridoxine, B_9, B_{12} – cobalamin, nutrients necessary to maintain erythrocyte homeostasis)[43]. Some studies[44] have shown that iron deficiency anaemia is inconsistent with recent haematological research that has shown that iron deficiency alone cannot support the massive red blood cell production that causes the marrow expansion responsible for these lesions. Evidence suggests that the accelerated loss and compensatory overproduction of red blood cells seen in haemolytic and megaloblastic anaemias (folate and vitamin B_{12} deficiency) are the most likely causes of *cribra orbitalia* (and also of porotic hyperostosis, however absent in the present study).

A plausible alternative to iron-deficiency anaemia is also represented by the results recorded following the analysis of a contemporary skeletal sample, which includes 461 subadults aged between 0.5–15.0 years, who died between 2011–2019 in New Mexico[45]. These have shown that individuals with respiratory infections (especially pneumonia and bronchitis) are most likely to present *cribra orbitalia* lesions. Therefore, just as today these are the most common causes of morbidity and mortality worldwide, it must have also been the case in the pre-antibiotic era, where they should be considered as potential indicators of respiratory infections in the past.

The present work represents the first bioarchaeological study conducted on a skeletal sample from a medieval cemetery in the city of Târgoviște. The phenomenon of death in medieval Wallachia is a complex one, and in the absence of written records, osteological investigations prove to be extremely useful in terms of demographic aspects and evidence regarding the onset and prevalence of diseases in past human populations.

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SUPPLEMENTARY DATA

Grave	MNI	Inventory	Preservation
M.1	1	Complete	Good
M.2	2	I.1: Complete	I.1: Good
		I.2: Poor	I.2: Moderate
M.3	1	Incomplete	Good
M.4–5	2	I.1: Complete	I.1: Poor
		I.2: Complete	I.2: Moderate
M.6	1	Incomplete	Moderate
M.7	1	Poor	Good
M.8	2	I.1: Incomplete	I.1: Moderate
		I.2: Poor	I.2: Moderate
M.9	2	I.1: Complete	I.1: Good
		I.2: Poor	I.2: Good
M.10	1	Complete	Moderate
M.11	1	Complete	Good
M.12	1	Incomplete	Good
M.13	1	Poor	Good
M.14	1	Complete	Moderate
M.15	3	I.1: Complete	I.1: Moderate
		I.2: Poor	I.2: Moderate
		I.3: Poor	I.3: Good
M.17	2	I.1: Poor	I.1: Good
		I.2: Poor	I.2: Good
M.18	1	Poor	Moderate
M.19	3	I.1: Poor	I.1: Good
		I.2: Poor	I.2: Moderate
		I.3: Poor	I.3: Good
M.20	1	Complete	Good
M.21	1	Poor	Good
G.18	8	I.1: Poor	I.1: Good
		I.2: Poor	I.2: Moderate
		I.3: Incomplete	I.3: Good
		I.4: Complete	I.4: Moderate
		I.5: Poor	I.5: Good
		I.6: Poor	I.6: Poor
		I.7: Poor	I.7: Good
		I.8: Incomplete	I.8: Moderate

Table 1. *Minimum number of individuals, degree of representativeness and state of preservation.*

Grave	Biological sex	Age at death (years, category)
M.1	Female	48,1–55,0 (OA)
M.2	I.1: Male	I.1: 32,0–48,8 (MA)
	I.2: Indet.	I.2: -0,2–0,0 (F)
M.3	Female	19,4–34,7 (YA)
M.4–5	I.1: Female	I.1: 42,0–51,5 (MA)
	I.2: Indet.	I.2: 3,0–3,2 (C)
M.6	Indet.	0,3–0,4 (I)
M.7	Indet.	2,0–2,4 (I)
M.8	I.1: Indet.	I.1: 4,0–4,3 (C)
	I.2: Indet.	I.2: 1,7 (I)
M.9	I.1: Male	I.1: 11,0–15,0 (Ad)
	I.2: Female	I.2: > 51,5 (OA)
M.10	Indet.	0,3–0,5 (I)
M.11	Indet.	2,0–2,8 (I)
M.12	Indet.	7,5–7,8 (C)
M.13	Indet.	7,0–8,0 (C)
M.14	Indet.	7,0–8,0 (C)
M.15	I.1: Indet.	I.1: 8,7–9,0 (C)
	I.2: Indet.	I.2: – (I)
	I.3: Indet.	I.3: 0,1 (I)
M.17	I.1: Indet.	I.1: 0,2 (I)
	I.2: Indet.	I.2: – (AD)
M.18	Indet.	2,6–2,8 (I)
M.19	I.1: Indet.	I.1: – (AD)
	I.2: Indet.	I.2: – (I)
	I.3: Indet.	I.3: 2,0–3,0 (I)
M.20	Female	25,3–39,4 (YA)
M.21	Indet.	– (AD)
G.18	I.1: Indet.	I.1: – (AD)
	I.2: Female	I.2: – (AD)
	I.3: Indet.	I.3: 2,9–3,6 (C)
	I.4: Indet.	I.4: 4,0–4,5 (C)
	I.5: Indet.	I.5: – (AD)
	I.6: Indet.	I.6: 6,1–6,1 (C)
	I.7: Indet.	I.7: – (AD)
	I.8: Indet.	I.8: 3,5–3,6 (C)

Table 2. *Distribution of sample by sex and age groups.*

x	Dx	dx	lx	qx	Lx	Tx	e^0x
0,0–4,9	15	55.56	100.00	0.5556	361.111	1268.519	12.69
5,0–9,9	5	18.52	44.44	0.4167	175.926	907.407	20.42
10,0–14,9	0	0.00	25.93	0.0000	129.630	731.481	28.21
15,0–19,9	1	3.70	25.93	0.1429	120.370	601.852	23.21
20,0–24,9	0	0.00	22.22	0.0000	111.111	481.481	21.67
25,0–29,9	1	3.70	22.22	0.1667	101.852	370.370	16.67
30,0–34,9	1	3.70	18.52	0.2000	83.333	268.519	14.50
35,0–39,9	1	3.70	14.81	0.2500	64.815	185.185	12.50
40,0–44,9	0	0.00	11.11	0.0000	55.556	120.370	10.83
45,0–49,9	1	3.70	11.11	0.3333	46.296	64.815	5.83
50,0–54,9	2	7.41	7.41	1.0000	18.519	18.519	2.50
55,0–59,9	0	0.00	0.00	0.0000	0.000	0.000	0.00
60,0–64,9	0	0.00	0.00	0.0000	0.000	0.000	0.00
T	27	100.00					

Table 3. *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 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^0x = life expectancy: the average life expectancy of an individual or the average number of years of life left at a certain age.

Martin No.	M.1	M.2/I.1	M.3	M.4–5/I.1	M.4–5/I.2	M.8/I.1	M.9/I.1	M.9/I.2
1	183.7	191.4	171.7	181.6			181.0	178.1
8	139.6	154.9	138.7	134.3			141.7	135.7
I1	76.0	80.9	80.8	74.0			78.3	76.2
17	119.0		133.4				136.8	136.5
20		121.0						115.4
I2	64.8		77.7				75.6	76.6
I3	85.3		96.2				96.5	100.6
I4		63.2						64.8
I5		78.1						85.0
9		114.7	91.9	98.8		91.7	96.7	100.0
10	123.1	123.5	116.1	112.4			119.3	109.8
I12		92.9	79.2	87.9			81.1	91.1
I13		74.1	66.3	73.6			68.2	73.7
26	119.0	140.0	127.0	120.0			117.0	133.0
29	107.3	117.1	106.2	108.1			104.9	112.6
I22	90.2	83.7	83.6	90.1			89.7	84.7
27	130.0	132.0	122.0	120.0			136.0	122.0
30	115.7	117.6	110.4	111.5			116.4	105.6
I24	89.0	89.1	90.5	92.9			85.6	86.5
12	114.8	112.9	111.9				106.2	113.5
I14	82.3	72.9	80.7				74.9	83.6
7							38.6	35.6
16			31.7				33.8	30.2
I33							87.7	84.7
45			121.4					129.8
47			112.4					
48			71.0					66.2
I38			92.6					
I39			58.5					51.0
46			90.1				92.8	
I39(1)			78.8					
51			40.3/40.0					
52			33.2/33.3					
42			82.4/83.1					
54		28.1	22.0	21.3			22.2	
55			51.9					50.2
I48			42.4					
60			50.5					
61		63.6	56.5				63.0	53.3
I54			111.8					
62			42.8					
63		37.1	35.9				35.0	33.7
64		9.5/10.0	12.7/12.8				9.2/9.3	11.4
I58			83.8					
I59		25.7/27.0	35.3/35.5				26.4/26.7	33.7/–
5			99.6				98.2	100.5
40			94.0					84.9
I60			94.4					84.5
65	118.7		118.2		85.4			
66	95.7		91.9		71.0	72.3		
68	104.3		105.2		64.1			
I62	87.9		88.9		75.1			
80(2)		40.0/–	37.4/38.2				42.7/–	
I68			37.6/38.3				43.5/–	

Table 4. *Cranial measurements and indices (1).*

Martin No.	M.11	M.12	M.13	M.14	M.15/I.1	M.20	G.8/I.3	G.8/I.4
1						174.7	172.3	
8	139.9			120.0	152.9	140.5		129.8
I1						80.4		
17						135.8		
I2						77.7		
I3						96.6		
9	83.5		93.6	87.8		105.0		
10	101.4		112.6	103.3	122.6	130.3		119.1
I12	82.3		83.1	85.0		80.6		
I13	59.7			73.1		74.7		
26	98.0		120.0	115.0		116.0	117.0	117.0
29	85.6		103.6	96.5		102.0	100.1	101.4
I22	87.3		86.4	83.9		88.0	85.6	86.7
27	102.0	120.0		113.0	121.0	120.0	118.0	107.0
30	88.7	109.3		98.9	107.8	105.7	108.0	98.0
I24	86.9	91.1		87.5	89.1	88.1	91.6	91.5
12	88.9	99.3			116.0	110.0		
I14	63.5				75.9	78.3		
7		29.1				32.1		
16		25.7				30.3		
I33		88.5				94.3		
54	15.5		22.0	20.3				17.4
61	48.0		58.9	52.4	54.5	51.8		51.9
63	24.1		33.4	25.6	28.4	28.7		24.1
64			8.7/8.3	7.0/7.5	9.5/9.6	10.2/–		
I59			26.0/25.0	27.1/29.3	33.4/33.9	35.4/–		
65	83.1			94.5				91.8
66	63.5			71.0	87.2			76.9
68	61.1			77.7				70.9
I62	73.5			82.2				77.2

Table 5. *Cranial measurements and indices (2).*

Martin No.	M.1	M.2/I.1	M.3	M.4–5/I.1	M.4–5/I.2	M.7
C1	126.2/114.5	158.6/158.6	129.9/133.4	–/148.9		
C6	30.0/30.0	37.0/38.0	31.0/31.0	–/43.0		
C6:C1	23.8/26.2	23.3/23.9	23.9/23.2	–/28.9		
C1:H2	45.9/41.4		46.1/46.6			
S1					58.0/–	
S2					43.7/–	
S2:S1					75.3/–	
H1	278.8/281.4		284.7/289.4	307.9/–	119.8/–	
H2	274.7/276.5		281.7/286.0	305.2/–		
H5	20.2/20.4		21.4/21,5	21.3/–	10.8/–	
H6	16.0/16.2		14.6/14.8	17.8/–	8.8/–	
H6:H5	79.4/79.5		68.2/68.7	83.4/–	81.7/–	
R1	195.4/207.7	229.4/234.4	219.6/220.5		86.3/87.4	80.9/–
R1:H2	71.1/75.1		77.9/77.1			
U1	222.5/224.4	249.9/257.5	244.7/245.3			88.9/–
U13	18.6/18.6	22.8/23.4	16.5/17.1	22.8/21.8	11.1/10.8	10.6/–
U14	20.0/19.9	20.9/22.8	19.7/19.4	23.6/23.6	11.9/13.9	12.7/–
U13:U14	93.0/93.6	109.0/102.5	83.8/88.2	96.7/92.2	93.4/77.8	83.8/–
s2	81.4	113.0	97.6			
s5	106.2		116.3	115.1		
s5:s2	130.5	0.0	119.2			
F1	–/396.6	427.0/427.0	414.8/416.0		150.1/149.4	
F2	–/393.8	424.5/424.3	406.3/410.0			
F6	/–24.0	28.9/28.8	24.0/23.4		10.4/10.1	–/9.5
F7	–/22.4	27.2/25.9	24.9/24.9		12.0/11.8	–/10.6
F9	30.3/29.1	32.2/30.8	29.1/29.2	31.4/32.1	14.5/14.5	13.6/12.8
F10	26.4/25.1	29.5/28.9	32.5/32.6	25.5/25.6	16.0/15.6	11.8/11.9
F19	39.8/40.0	45.8/46.0	43.1/42.7	47.9/–		
F21	–/73.2	82.7/83.6	76.8/77.0	–/81.7	40.0/–	
F6:F7	–/107.3	106.4/111.1	96.2/94.2		86.6/85.4	–89.4
F10:F9	87.1/86.2	91.7/93.6	111.5/111.4	81.3/79.9	110.6/107.9	86.7/92.7
P2	–/42.9	–/47.1	38.0/37.6			
P2:F21	–/58.7	–/56.3	49.5/48.8			
T1a	–/320.6	353.0/354.7	335.6/334.3			105.4/–
T1b	–/312.3	344.1/345.6	328.2/335.8			
T8						9.5/–
T8a	–/29.4	32.7/32.6	27.2/27.3		12.0/–	11.3/11.5
T9a	–/21.8	25.7/26.2	20.7/19.9		11.3/–	9.8/10.3
T9a:T8a	–/74.2	78.5/80.4	76.1/72.8		93.8/–	87.2/89.3
T1b:F2	–/79.3	81.1/81.5	80.8/81.9			
f1	–/310.9	–/347.1	–/325.2			102.3/–

Table 6. *Postcranial measurements and indices (1).*

Martin No.	M.8/I.1	M.8/I.2	M.9/I.1	M.11	M.12	M.14
C1	75.2/72.7		128.3/127.2	63.9/64.0	98.4/98.7	87.7/–
C6	17.0/17.0		30.0/30.0	18.0/18.0	23.0/23.0	19.0/–
C6:C1	22.6/23.4		23.4/23.6	28.2/28.1	23.4/23.3	21.7/–
S1				57.1/56.4		
S2			96.2/95.1	46.0/46.3	66.5/66.0	
S2:S1				80.7/82.0		
H1	–/133.4			111.9/112.2	191.3/188.3	177.9/180.2
H5	–/11.5			10.5/10.4	12.8/13.3	11.4/11.1
H6	–/9.4			9.0/9.1	12.2/12.3	9.9/9.9
H6:H5	–81.7			85.3/87.7	95.8/92.2	86.3/89.4
R1	101.1/–		214.9/216.4	84.9/–	136.9/137.6	
U1		77.5/–	–/238.2	93.8/–	154.9/154.3	
U13	12.9/–	9.8/–	20.3/19.9	10.5/10.3	12.6/12.8	–/14.4
U14	14.0/–	8.6/–	24.2/24.5	12.1/12.6	13.9/15.2	–/15.4
U13:U14	92.4/–	113.5/–	83.8/81.4	86.8/81.8	90.4/84.6	–/93.4
s5			103.2		77.0	
F1			393.7/391.7	138.9/–		
F6			28.4/27.4	12.1/–		
F7			23.2/23.2	10.6/–		
F9			32.5/32.2	14.2/14.3	21.6/21.5	20.5/–
F10			28.9/28.5	14.2/14.0	17.9/18.0	18.8/–
F21			74.0/73.6	35.5/–		
F6:F7			122.7/118.0	113.3/–		
F10:F9			88.8/88.5	100.4/98.1	82.7/84.1	91.7/–
T1a	–/140.7		323.9/–	113.2/–		198.6/–
T8	–/12.3			9.8/–		17.0/–
T8a	–13.3		34.2/33.8	11.7/12.2		18.2/–
T9a	–/11.1		23.8/25.1	10.7/11.2		13.6/–
T9a:T8a	–/83.6		69.6/74.3	91.8/92.0		74.8–/
f1			–314.6	109.0/–		

Table 7. *Postcranial measurements and indices (2).*

Martin No.	M.15/I.1	M.15/I.2	M.17/I.2	M.18	M.19/I.1	M.20
C1	104.9/108.1					136.0/137.2
C6	25.0/25.0					30.0/30.0
C6:C1	23.8/23.1					22.1/21.9
C1:H2						49.0/–
S1		–/66.2				
S2		–/49.6				
S2:S1		–/74.9				
H1	–/208.0			112.5/–		281.4/–
H2						277.7/–
H5	–/14.1			10.3/–		18.9/–
H6	–/12.9			8.2/–		15.6/–
H6:H5	–/90.9			80.3/–		82.7/–
R1	–/148.9					207.5/215.5
R1:H2						74.7/–
U1						–/234.3
U13						–/17.1
U14						–/20.6
U13:U14						–/82.8
s2						93.1
s5						114.1
s5:s2						122.5
F1	287.1/285.7			–/140.7		
F6	17.9/17.7			–/11.0		
F7	17.4/17.2			–/10.5		
F9	21.2/23.1	–/12.1		15.2/15.1		36.0/34.9
F10	20.2/20.7	–/10.4		14.1/13.7		27.4/29.9
F19						42.3/43.3
F21	58.1/58.7				–/75.6	
F6:F7	102.6/103.3			–/104.8		
F10:F9	95.5/89.8	–/86.6		92.7/90.4		76.1/85.7
P2			–/40.5			
T1a	221.2/219.4					
T8	18.0/17.8					
T8a	20.1/20.3		–/29.4		–/35.4	
T9a	17.6/17.1		–/19.9		–/22.3	
T9a:T8a	87.6/84.4		–/67.9		–/63.2	

Table 8. *Postcranial measurements and indices (3).*

Martin No.	M.21	G.18/I.1	G.8/I.2	G.8/I.3	G.8/I.4	G.8/I.6	G.8/I.8
C1				–/65.4			
C6				–/15.0			
C6:C1				–/22,9			
S2				43.2/–			
H1				–/117.6	140.6/–		
H5				–/9.4			
H6				–/7.6			
H6:H5				–/80.5			
R1				89.8/–			
U1				98.2/–			
U13			16.3/–	8.6/–	12.3/–		
U14			19.8/–	10.7/–	13.7/–		
U13:U14			82.5/–	80.3/–	90.0/–		
F1				–/149.2	189.0/184.8	223.8/–	164.9/165.1
F6				–/10.0	14.1/13.1	12.2/–	11.9/11.5
F7				–/10.7	13.5/13.4	12.9/–	12.4/12.8
F9				–/16.0	17.1/17.3	17.9/–	16.0/15.7
F10				–/14.1	16.1/13.9	14.7/–	16.4/15.6
F21		64.4/–		–/36.2	43.1/43.5		42.2/44.1
F6:F7				–/93.7	104.697.2	94.7/–	95.5/89.9
F10:F9				–/88.3	94.4/80.2	82.0/–	102.4/99.3
T1a	–/351.2	–/291.9		–/119.7	148.0/–	180.8/–	132.3/134.3
T1b	–/343.2	–/284.0					
T8				–/9.9	15.0/–	14.0/–	11.6/12.0
T8a	–/32.3	26.7/25.9		10.2/10.6	15.4/–	16.0/–	12.7/12.7
T9a	–/24.0	15.8/14.8		9.8/9.8	12.9/–	13.6/–	10.8/10.8
T9a:T8a	–/74.4	59.2/57.2		96.5/92.5	83.4/–	84.8/–	84.9/85.2
T1b:F2							
f1		–/285.9		–/116.4	144.2/–		–/128.8

Table 9. *Postcranial measurements and indices (4).*

Grave	Biological sex	Stature	Category	Body weight
M.1	Female	148.9 [147.5–150.3]	Small ↑	55.5 [55.3–55.6]
M.2	I.1: Male	I.1: 159.9 [158.7–161.1]	Small ↑	I.1: 63.8 [63.5–64.1]
M.3	Female	153.3 [150.8–155.7]	Medium ↓	62.0 [61.6–62.5]
M.4–5	I.1: Female	I.1: 158.7	Tall-medium ↑	I.1: 73.0
	I.2: Indet.	I.2: 82.0 [80.6–83.4]	–	I.2: 9.8 [9.3–10.2]
M.8	I.1: Indet	I.1: 89.2 [87.7–89.7]	–	I.1: 12.2 [12.1–12.4]
M.12	Indet.	116.1 [115.4–116.8]	–	19.4
M.14	Indet.	110.3 [109.1–111.6]	–	18.8 [17.1–20.6]
M.15	I.1: Indet.	I.1: 120.5 [116.4–124.6]	–	I.1: 23.2 [22.1–24.2]
M.20	Female	151.6 [149.7–153.6]	Small-medium ↕	61.8 [60.7–63.0]
M.21	Indet.	157.4	Tall-medium ↕	–
G.18	I.1: Indet.	I.1: 139.5	Very small ↑	I.1: –
	I.3: Indet.	I.3: 81.4 [80.6–82.3]	–	I.3: 9.2 [9.2–9.3]
	I.4: Indet.	I.4: 92.2 [91.2–93.1]	–	I.4: 14.3 [13.9–14.7]
	I.6: Indet.	I.6: 102.9 [102.8–102.9]	–	I.6: 16.3 [15.7–16.8]
	I.8: Indet.	I.8: 85.9 [85.3–86.5]	–	I.8: 11.3 [11.2–11.4]

Table 10. *Stature (cm) and body weight (kg).*

Non-metric cranial trait	No. traits observed/ no. of bones	Frequency (%)
Anterior: 1. Metopic suture	3/18	16.7
2a. Supraorbital notch	15/31	48.4
2b. Supraorbital foramen	7/31	22.6
3. Infraorbital suture	0/13	0.0
4. Multiple infraorbital foramina	1/15	6.7
5. Zygomatico-facial foramina	21/27	77.8
Superior: 6. Parietal foramen	18/23	78.3
Sutural bones (superior & lateral): 7a. Epipteric bone	2/11	18.9
7b. Coronal ossicle	0/26	0.0
7c. Bregmatic bone	0/12	0.0
7d. Sagittal ossicle	0/12	0.0
7e. Apical bone	1/11	9.1
7f. Lambdoid ossicle	5/24	20.8
7g. Asterionic bone	0/13	0.0
7h. Ossicle in occipito-mastoid suture	0/13	0.0
7i. Parietal notch bone	0/14	0.0
Posterior: 8. Inca bone	0/12	0.0
Inferior: 9. Patent condylar canal	0/6	0.0
10. Divided hypoglossal canal	5/20	25.0
11. Right flexure of superior sagittal sulcus	6/8	75.0
12. Foramen ovale incomplete	1/11	9.1
13. Foramen spinosum incomplete	0/5	0.0
14. Pterygo-spinous bridge	0/3	0.0
15. Pterygo-alar bridge	0/3	0.0
Lateral: 16. Tympanic dehiscence	2/21	9.5
17. Auditory exostosis	0/26	0.0
18. Mastoid foramen	7/13	53.8
Mandible: 19. Mental foramen	29/29	100.0
20. Mandibular torus	2/25	8.0
21. Mylohyoid bridge	0/24	0.0

Table 11. *Incidence of the cranial non-metric skeletal variables in the Târgoviște population.*

Non-metric cranial trait	No. traits observed/ no. of bones	Frequency (%)
Atlas: 1. Facet double	2/18	11.1
2. Posterior bridge	0/16	0.0
3. Lateral bridge	0/16	0.0
C_7: 4. Transverse foramen bipartite	6/16	33.3
Scapula: 5. Acromial articular facet	6/8	75.0
6. Suprascapular foramen	0/6	0.0
7. Circumflex sulcus	1/24	4.2
Humerus: 8. Supracondyloid process	1/34	2.9
9. Septal aperture	3/20	15.0
Pelvis: 10. Acetabular crease	0/7	0.0
11. Pre-auricular sulcus	9/21	42.9
12. Accessory sacral facets	0/26	0.0
Femur: 13. Allen's fossa	25/30	83.3
14. Poirier's facet	0/8	0.0
15. Plaque	0/28	0.0
16. Hypotrochanteric fossa	6/33	18.2
17. Exostosis in trochanteric fossa	2/8	25.0
18. Third trochanter	6/32	17.1
Patella: 19. Vastus notch	0/5	0.0
20. Vastus fossa	0/5	0.0
21. Emarginate patella	0/5	0.5
Tibia: 22. Medial squatting facet	1/7	14.3
23. Lateral squatting facet	3/8	37.5
Talus: 24. Os trigonum	0/9	0.0
25. Medial facet	0/9	0.0
26. Lateral extension	2/9	22.2
27. Inferior talar articular surface double	8/10	80.0
Calcaneus: 28. Anterior facet double	8/9	88.9
29. Anterior facet absent	0/9	0.0
30. Peroneal tubercle	0/9	0.0

Table 12. *Incidence of the infracranial non-metric skeletal variables in the Târgoviște population.*

Dental trait/ Upper permanent dentition	Trait absent	Trait present	No. traits present/ No teeth observed	Frequency (%)
1. Winging (I^1)	1	2–4	0/9	0.0
2. Shoveling (I^1–$C^\#$)	0–2	3–7	8/26	30.8
3. Double shoveling (I^1–P^1)	0–1	2–6	2/40	5.0
4. Tuberculum dentale (I^1–$C^\#$)	0–1	2–6	0/32	0.0
5. Canine mesial ridge ($C^\#$)	0	1–3	0/10	0.0
6. Canine distal accesory ridge ($C^\#$)	0–1	2–5	1/9	11.1
7. Metacone (M^1–M^3)	0–3	4–6	29/32	90.6
8. Hypocone (M^1–M^3)	0–1	2–6	30/32	93.8
9. Metaconule (M^1–M^3)	0	1–5	1/32	3.1
10. Carabelli's trait (M^1–M^3)	0–4	5–7	3/32	9.4
Dental trait/ Lower permanent dentition	**Trait absent**	**Trait present**	**No teeth observed/ No. traits present**	**Frequency (%)**
1. Shoveling (I_1–I_2)	0–2	3–7	0/21	0.0
2. Double shoveling (I_1–I_2)	0–1	2–6	0/21	0.0
3. Canine distal accesory ridge ($C^\#$)	0–1	2–5	0/7	0.0
4. Premolar lingual cusp number (P_1–P_2)	0–1	2–9	2/7	28.6
5. Groove pattern (M_1–M_3)	X, +	Y	5/15	33.3
6. Deflecting wrinkle (M_1)	0–1	2–3	0/8	0.0
7. Distal trigonid crest (M_1–M_3)	0	1	0/15	0.0
8. Anterior foveea (M_1)	0–2	3–4	0/10	0.0
9. Protostylid (M_1–M_3)	0–1	2–7	0/18	0.0
10. Cusp 5 (M_1–M_3)	0	1–5	4/15	26.7
11. Cusp 6 (M_1–M_3)	0	1–5	0/15	0.0
12. Cusp 7 (M_1–M_3)	0	1–4	4/14	28.6

Table 13. *Dental non-metric trait frequencies within the Târgoviște medieval population.*

Enthesis (Bone)	M.1 (OA)	M.2/I.1 (MA)	M.3 (YA)	M.4–5/I.1 (MA)	M.20 (YA)	G.8/I.2 (AD)
1. L. costoclaviculare (C)	3/3	3/3	3/3	1/1	3/3	0/0
2. L. conoideum (C)	1/1	1/1	2/1	1/1	3/3	0/0
3. L. trapezoideum (C)	1/1	1/1	2/2	2/2	3/3	0/0
4. M. pectoralis major (C)	3/3	3/3	2/2	2/2	2/2	0/0
5. M. deltoideus (C)	2/2	1/1	1/1	1/1	2/3	0/0
6. M. triceps brachii (S)	1/1	0/1	1/1	0/0	0/0	0/0
7. M. pectoralis major (H)	3/3	2/2	1/1	2/3	3/0	0/0
8. M. latissimus dorsi & m. teres major (H)	2/2	2/2	1/1	2/2	1/0	0/0
9. M. deltoideus (H)	3/3	2/2	1/1	2/2	2/0	0/0
10. M. brachioradialis (H)	3/3	2/2	1/1	2/0	2/0	0/0
11. M. biceps brachii (R)	2/2	2/2	1/2	0/0	2/2	0/0
12. M. pronator teres (R)	2/2	2/2	1/2	1/0	2/2	0/0
13. Membrana interossea antebrachii (R)	2/2	2/2	2/2	2/0	1/1	0/0
14. M. triceps brachii (U)	2/3	1/1	1/0	1/1	0/1	1/0
15. M. brachialis (U)	1/1	1/1	1/2	1/1	0/1	1/0
16. M. supinator (U)	1/2	1/1	1/2	1/1	0/1	1/0
17. M. gluteus maximus (F)	1/1	2/2	1/1	2/0	2/2	0/0
18. M. iliopsoas (F)	2/2	2/2	2/2	2/2	3/3	0/0
19. M. vastus medialis (F)	2/2	1/1	2/2	1/1	2/2	0/0
20. T. quadriceps (P)	0/2	0/1	1/1	0/0	0/0	0/0
21. L. patellae (T)	0/1	1/1	1/1	0/0	0/0	0/0
22. M. soleus (T)	1/1	1/2	1/1	0/0	0/0	0/0
23. Calcaneal (Achile) tendon (c)	2/2	1/1	1/1	0/0	0/0	0/0

Table 14. *The degree of development of the enthesophytes.*

Dental pathologies	Subadults		Males		Females	
	n/N	%	n/N	%	n/N	%
Antemortem tooth loss	0/248	0.0	5/29	17.2	52/129	40.3
Dental calculus	58/168	34.5	18/18	100.0	41/56	73.2
Carious lesions	2/168	1.2	5/18	27.8	6/56	10.7
Radicular remains	0/168	0.0	0/18	0.0	7/56	12.5
Enamel hypoplasia	8/168	4.8	0/18	0.0	0/56	0.0
Dental abscess	0/248	0.0	0/29	0.0	1/129	0.8

Table 15*. The distribution of dental pathology, where:*

n = number of teeth/sockets with dental pathologies;

N = number of examined teeth/sockets.

Bone/ Grave	M.7	M.8 (I.1)	M.9 (I.1)	M.11	M.13	M.14	M.15 (I.1)	M.19 (I.2)	M.19 (I.3)	G.8 (I.4)	G.8 (I.8)	Total
Frontal				X	X			X				3
Temporal			X	X			X			X	X	5
Parietal				X				X			X	3
Occipital				X							X	2
Maxillae	X		X	X	X		X			X	X	7
Zygomatic					X							1
Sphenoid			X	X	X		X			X	X	6
Mandibula				X					X			2
Scapula	X		X	X				X				4
Humerus				X								1
Radius				X								1
Ulna				X								1
Os coxae			X									1
Femur			X	X								2
Tibia		X		X		X						3
Fibula				X								1
Total	2	1	6	14	4	1	3	3	1	3	5	**Total**

Table 16. *The distribution and location of the active periostitis.*

ABREVIERI / ABRÉVIATIONS / ABBREVIATIONS

Acta iuvenum: Sectio archaeologica – Acta Universitatis Szegediensis Acta Iuvenum Sectio Archaeologica (Szeged)
ActaMN – Acta Musei Napocensis, Cluj
ActaMP – Acta Musei Porolissensis, Zalău
ActaMT – Acta Musei Tutovensis
AH – Archaeologia Hungarica (Budapesta)
AIESSE – Annuaire de l'Institut des Études Sud-Est Européennes, Bucarest
AJA – American Journal of Archaeology, Boston
AJPA – American Journal of Physical Anthropology
AnB – Analele Banatului, Muzeul Banatului, Timișoara
Angustia – Angustia. Arheologie, Etnografie, Sfântu Gheorghe
Antaeus – Antaeus. Communicationes ex Instituto Archaeologico Academiae Scientiarum Hungaricae, Budapest
AnUA-SH – Annales Universitatis Apulensis, Series Historica, Alba Iulia
AnUVT – Annales d'Université «Valahia» Târgoviște, Section d'Archéologie et d'Histoire
Apulum – Acta Musei Apulensis. Muzeul Naţional al Unirii, Alba Iulia
ARA – Annuaire Roumain d'Anthropologie
ArchÉrt – Archaeológiai Értesítő, Budapest
ArhMold – Arheologia Moldovei, Iași
BAI – Bibliotheca Archaeologica Iassiensis, Iași
BARIntSer – British Archaeological Reports. International Series, Oxford
BCMI – Buletinul Comisiunii Monumentelor Istorice
BCSS - Buletinul Cercurilor Științifice Studențești. Arheologie – Istorie – Muzeologie, Alba-Iulia
BiblMemAnt - Bibliotheca Memoriae Antiquitatis, Piatra-Neamț
BiblMusAp – Bibliotheca Musei Apulensis, Alba-Iulia
BiblThrac – Bibliotheca Thracologica, București
BSNR – Buletinul Societăţii Numismatice Române, Bucureşti
Bull. Int. Assoc. Paleodont. – Bulletin of the International Association for Paleodontology, University of Zagreb
CAB – Cercetări arheologice în București
Caiete ARA - Caietele ARA, Revistă de Arhitectură, Restaurare și Arheologie, Asociația ARA, București
CCA – Cronica Cercetărilor Arheologice din România, București
CCDJ – Cultură şi Civilizaţie la Dunărea de Jos, Călăraşi
CercIst – Cercetări Istorice, Muzeul de Istorie a Moldovei, Iaşi
Dacia – Dacia (Nouvelle Série). Revue d'archéologie et d'histoire ancienne. Académie Roumaine. Institut d'archéologie « V. Pârvan », Bucarest
Danubius - Danubius, Revista Muzeului de Istorie Galați
Dolgozatok-Szeged – Dolgozatok a Magyar Királyi Ferencz József Tudományegyetem Archaeologiai Intézetéből (Szeged)
Frühmittelalterliche Studien – Frühmittelalterliche Studien (Münster)
Germania – Germania. Anzeiger der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts, Frankfurt
Histria Antiqua – Histria Antiqua. Journal of the International Research Centre for Archaeology Institute of Archaeology, Belgrade
HOMÉ – A Hermann Ottó Múzeum Évkönyve (Miskolc)
Homo – Homo. Journal of Comparative Human Biology, the Australasian Society for Human Biology, Elsevier
IJO – International Journal of Osteoarchaeology
Istros - Istros, Muzeul Brăilei, Brăila
Iuxta Danubium – Iuxta Danubium. Sprvodaj Podunajského Múzea V Komárne (Komárno)
IzvestijaVarna – Izvestija na Narodnija Muzej (Izvestija na Varnenskoto Arheologičesko Družestvo), Varna
JAnat – Journal of Anatomy
JAS – Journal of Archaeological Science
JHE – Journal of Human Evolution
JRA – Journal of Roman Archaeology, London
JRGZM – Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz, Mainz
KSIA (Moskva) – Kratkije Soobščenija Instituta Arheologij Akademij Nauk SSSR, Moskva
KSIA (Kiiv) – Kratkije Soobščenija Instituta Arheologij Akademij Nauk SSSR, Kiiv

MarNero – Il Mar Nero. Annali di archeologia e storia
MAZCA – Musei Archaeologici Zagrabiensis Collectanea archaeologica (Zagreb)
MCA – Materiale și Cercetări Arheologice, București
MemAnt – Memoria Antiquitatis, Piatra Neamţ
MFMÉ-SA – A Móra Ferenc Múzeum Évkönyve – Studia Archaeologica, Szeged
MHÁS – Magyarország honfoglalás kori és kora Árpád-kori sírleletei, Miskolc–Budapest–Szeged–Szombathely
MRGZ – Monographien des Römisch-Germanischen Zentralmuseums (Mainz)
Novensia – University of Warsaw, Center for Research on the Antiquity of Southeastern Europe
NAR – Norwegian Archaeological Review, Taylor & Francis
OJA – Oxford Journal of Archaeology
Peuce – Peuce, Studii şi cercetări de istorie şi arheologie, Institutul de Cercetări Eco-Muzeale, Tulcea
Pontica – Pontica. Studii și materiale de istorie, arheologie și muzeografie, Muzeul de Istorie Națională și Arheologie Constanța
RA – Revue Archéologique, Paris
RAASI – Revista de Arheologie, Antropologie și Studii Interdisciplinare, Institutul de Cercetări Bioarheologice și Etnoculturale, Republica Moldova
RACr – Rivista di Archeologia Cristiana, Pontificio Istituto di Archeologia Cristiana, Città del Vaticano
RazPr – Razkopki i Proučvanija, Sofia
RCAN – Revista de Cercetări Arheologice și Numismatice, Muzeul Municipiului București
RCRFActa – Rei Cretariae Romanae Fautorum Acta
RevMuz - Revista Muzeelor, Bucureşti
RMM.MIA – Revista Muzeelor și Monumentelor, seria Monumente Istorice și de Artă, București
SAA – Studia Antiqua et Archaeologica, Iași
SAP – Studia ad Archaeologiam Pazmaniensia (Budapesta)
SCIV(A) – Studii și Cercetări de Istorie Veche (și Arheologie), București
SMIM – Studii și Materiale de Istorie Medie, Institutul de Istorie „Nicolae Iorga”, București
SP – Studii de Preistorie, București
Starinar – Starinar. Scientific Journal of the Institute of Archaeology in Belgrade (Belgrad)
Tyragetia – Tyragetia. Anuarul Muzeului Național de Istorie a Moldovei, Chișinău
VAH – Varia Archaeologica Hungarica, Publicationes Instituti Archaeologici Academiae Scientiarum Hungaricae, Budapest