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Rekonstrukcija „riječi i glazbe iz davnina“

Mario Šlaus, *Bioarheologija: demografija, zdravlje, traume i prehrana starohrvatskih populacija*, Školska knjiga, Zagreb, 2006., 254 str., 100 slika u boji i 41 tablica

A Reconstruction of “words and music from ancient times”

Mario Šlaus, Bioarchaeology: Demography, Health, Traumas and Diet of Early Croatian Populations, Školska knjiga, Zagreb, 2006, 254 p., 100 illustrations in colour and 41 tables.

Antropolog dr. sc. Mario Šlaus drugu je svoju knjigu, pod nazivom *Bioarheologija*, namijenio širem čitateljstvu. Prva knjiga, *The Bioarchaeology of Continental Croatia. An Analysis of Human Skeletal Remains from the Prehistoric to Post-medieval Period*, objavljena 2002. godine, u odnosu na knjigu koju ovdje predstavljamo, obuhvaća istraživanjem uže područje Hrvatske (kontinentalna Hrvatska), ali daje prikaz osteološke građe u znatno dužem razdoblju (od prapovijesti do rano-modernog doba). Šlaus u *Predgovoru* (7-9), pojašnjava prirodu svog posla, pokazujući kako taj posao ponekad izaziva neodobravanje proizašlo iz nerazumijevanja svrhe ove djelatnosti. Metaforički i s puno topline autor objašnjava svoj posao kao rekonstrukciju “riječi i glazbe iz davnina”¹, koja je često jedini način suprotstavljanja sveprožimajućem i strašnom zaboravu. Zahvaljujući autorovu dobrom poznavanju povijesti, dobivene znanstvene spoznaje smještaju se u konkretni vremenski kontekst uz dodatak povijesnih objašnjenja, što u cjelini pridonosi vrijednosti djela.

Knjiga je podijeljena na sedam glavnih poglavlja. Prvo poglavlje nosi naziv *Uvod* (11-46), a pruža osnovne obavijesti o bioarheologiji. U potpoglavlju pod nazivom *Što je bioarheologija* (11-14), autor definira predmet bavljenja bioarheologije, ukazujući na relativnu mladost ove znanstvene discipline koja se tek unazad nekoliko desetljeća primjenjuje u arheološkim istraživanjima. Ovdje su objašnjeni čimbenici koji su utjecali na razvoj anatomske-osteološke istraživanja kroz pragmatičnu i dvovrsnu primjenu u patologiji i forenzici, zatim analizira raznovrsne i interdisciplinarnе čimbenike koji su, zahvaljujući istodobnosti svog pojavljivanja i zajedničkoj primjeni, omogućili razvoj moderne bioarheologije. U potpoglavlju *Povijest bioarheologije u svijetu i u nas* (15-20) dan je prikaz povijesti razvoja te mlade znanstvene discipline, pri čemu je prisutna diferencijacija između prvotne, narativno-deskriptivne, etape u razvoju bioarheologije, koja je trajala sve do sredine 20. st., i druge etape, kada se naglo povećala i usavršila primjena kvantitativnog pristupa. Razvoj antropologije opsežno je prikazan navođenjem najznačajnijih radova u Europi i SAD-u, koji su dali temeljni doprinos njezinom razvoju. Usto analiziran je prinos hrvatskih znanstvenika razvoju bioarheologije koja je, prema mišljenju autora, u rangu s razvojem te znanstvene discipline u razvijenim dijelovima svijeta, premda, ako ćemo suditi prema prilika-
ma u hrvatskim znanstvenim institucijama, počev od meni poznate sveučilišne razine, teško da Hrvatska može konkuri-

The anthropologist Mario Šlaus, PhD, wrote his second book, entitled *Bioarchaeology*, for a wider circle of readers. While in his first book, *The Bioarchaeology of Continental Croatia. An Analysis of Human Skeletal Remains from the Prehistoric to Post-medieval Period*, published in 2002, the area under study had been narrower than in the book we present here (continental Croatia only), it on the other hand provided overview of osteological material over a much larger time span (from prehistory to the early Modern Age). In the *Foreword* (pages 7-9) Šlaus clarified the nature of his work, showing that it sometimes causes disapproval arising from the incomprehension of the purpose of this activity. With warmhearted words, the author metaphorically portrays his work as a reconstruction of “words and music from ancient times”¹, which often becomes the only way to oppose the all-pervading and frightful oblivion. Due to the author’s excellent knowledge of history, the obtained scientific results are placed within a specific time context, with added historical details, which altogether contributes to the value of the work.

The book is divided into seven basic chapters. The first chapter is entitled *Introduction* (11-46) and offers basic information about bioarchaeology. In the subchapter entitled *What is Bioarchaeology* (11-14), the author defines the subject matter of bioarchaeology, pointing to the relative recentness of this scientific discipline, which has found its application in archaeological investigations only over the past couple of decades. The author sheds light here on the factors that influenced the development of anatomical-osteological research through pragmatic and dual application in pathology and forensics; he then analyzes various and interdisciplinary factors that made possible the development of modern bioarchaeology, due to their simultaneous appearance and joint application. The subchapter *History of Bioarchaeology in the World and in Croatia* (15-20) offers an overview of the historical development of that recent scientific discipline, making a distinction between the initial, narrative-descriptive phase in the development of bioarchaeology, which lasted until the mid-20th cent., and the second phase, characterized by the rapid growth and sophistication of quantitative approach. A comprehensive overview of the development of anthropology includes mention of seminal studies in Europe and the United States, which provided the basis for its development. At the same time the author analyzed the contribution of Croatian scientists to the development of bioarchaeology, which, in his opinion, is at the level of the development of that scientific discipline in the developed parts of the world, even though, if one is to take the circumstances in the Croa-

¹ Vidjeti str. 7.

¹ See p. 7.

rati razvijenim zemljama, i to nikako ne u smislu intelektualnih kapaciteta već tehnološkog razvoja koji podrazumijeva znatna sredstva za praćenje suvremenih komercijalno zahtjevnih trendova. U trećem potpoglavlju, pod nazivom *Iskopavanje, pakiranje i prijenos osteološke građe* (21-28), dan je prikaz svih kostiju ljudskog tijela i načinjena je podjela kostura prema starosnoj dobi na kosture odraslih jedinki i djece, uza što su dane konkretne upute za transportiranje osteološkog materijala. U potpoglavlju *Razlikovanje ljudskih ostataka od životinjskih te arheoloških nalaza od forenzičnih* (29-33), autor ukazuje na morfološku i radiološku razliku u građi životinjskih i ljudskih kostiju te ujedno navodi načine razlikovanja arheoloških i forenzičnih nalaza koji su uvjetovani samim kontekstom nalaza, količinom organskog materijala na građi, te zubnim pokazateljima (stomatološki zahvati). Iduće potpoglavlje naslovljeno je *Razlikovanje perimortalnih ozljeda od antemortalnih i postmortalnih* (33-40), i u njemu je umješno pojednostavljena ova vrlo složena građa te je na temelju vremenskog odnosa između nastanka ozljede i smrti, kao i s time povezanoga zacjeljivanja, napravljena raščlamba ozljeda osteološke građe na antemortalne (nastupaju prije smrti uz zacjeljivanje rana), periomortalne (nastaju u trenutku smrti bez zacjeljivanja) i postmortalne (koje nastaju nakon smrti pa ni tada, također, ne može biti govora o zacjeljivanju), s danim najkarakterističnijim obilježjima za prepoznavanje pripadnosti građe svakoj od navedenih skupini ozljeda. Ti stručni podaci su nadopunjeni zanimljivim običajima prisutnima na hrvatskom prostoru, poput ranosrednjovjekovnog povezivanja dječjih glava, posvjedočenoga na Kordunu, zbog čega je lubanja dobivala karakterističnu duguljastu deformaciju, što je bilo prisutno i u nekih drugih naroda u prošlosti. Uz spomenuto, autor navodi i druge običaje poput dekapitacije svojstvene, npr. za Kelte, te neke druge primjere. Potpoglavlje pod nazivom *Bioarheološke analize starohrvatskih nalazišta s istočne obale Jadrana* (41-46), donosi pregled rezultata provedenih istraživanja na četiri ranosrednjovjekovna lokaliteta, ukazujući na način ukopa, stupanj očuvanosti građe starohrvatske populacije kao i na njezinu važnost. Zbog boljeg uvida u uvjete života tijekom dugog razdoblja, autor prikupljenu osteološku građu uspoređuje s građom prikupljenom na kasnoantičkim lokalitetima i lokalitetima iz razdoblja između 11. i 13. stoljeća.² Cilj je tog uspoređivanja stvaranje predodžbe kontinuiteta življenja populacija na određenom području. Sama ideja proučavanja uvjeta života kroz duga razdoblja trajanja je pohvalna jer može dati sliku promjena i oscilacija, u smislu uspona i padova u načinu i kvaliteti življenja. Međutim, kod komparativnog materijala autor poseže za građom vezanom većinom uz kontinentalne lokalitete koji po značajkama podneblja imaju bitno drukčija obilježja te je tako ova komparacija tek djelomično korisna. Od pet kasnoantičkih nalazišta samo se jedno nalazi na istočnoj obali Jadrana (Vid kod Metkovića), dok su ostala četiri smještena na kontinentu. U ranosrednjovjekov-

2 U radu autor koristi za razdoblje između 11. i 13. st. termin kasni srednji vijek, a budući da suvremena historiografija obično razdoblje od 11. do uključujući s 13. stoljećem naziva razvijenim srednjim vijekom, u ovom je prikazu umjesto Šlausova termina „kasni srednji vijek“ korišten prikladniji termin razdoblje između 11. i 13. st. koji onemogućuje potencijalne nejasnoće u vremenskom smještaju.

tian scientific institutions as a marker, starting with the university level that I myself am familiar with, Croatia can hardly compete with the developed countries, not in the sense of intellectual capacities but with regard to the technological development, which implies substantial means for following contemporary – commercially demanding – trends. The third subchapter, entitled *Excavation, Packing and Transport of Osteological Material* (21-28), contains a review of all the bones of the human body. It also shows a division of the skeletons by age, into adult and children skeletons, as well as specific instructions for transporting osteological material. In the subchapter *Differentiation Between Human and Animal Remains and Between Archaeological and Forensic Finds* (29-33) the author points to the morphological and radiological differences in the structure of animal and human bones and at the same time specifies the methods for distinguishing the archaeological finds from the forensic ones, conditioned by the context of finds, the amount of organic matter on the objects, as well as dental indicators (stomatological interventions). The title of the next subchapter is *Distinguishing Perimortal Wounds from the Antemortal and Postmortal ones* (33-40), and it contains an ingenious simplification of this highly complex body of material. Based on the chronological relationship between the infliction of a wound and death, as well as on the healing connected with this, the wounds on the osteological material have been divided into antemortal (appearing before death with healing of wounds), perimortal (appearing at the moment of death, without healing) and postmortal (which appear after death, meaning that in this case also healing is out of question). The characteristic features for recognition of affiliation of the material to each of the mentioned groups of wounds has likewise been provided. This specialist body of information has been complemented by interesting customs present in the territory of Croatia, such as early mediaeval binding of children's heads, testified in the Kordun region, which gave the skull a characteristic elongated shape, a feature also documented in the case of certain other peoples in the past. In addition to this, the author cites other customs, such as decapitation, characteristic e.g. for the Celts, as well as certain other examples. The subchapter entitled *Bioarchaeological Analyses of Early Croatian Sites on the Eastern Adriatic Coast* (41-46) brings up an overview of the results of investigations carried out on four early mediaeval sites, pointing to the method of burial, the level of preservation of the material of early Croatian population as well as its importance. In order to shed better light on the living conditions over a longer period, the author compares the collected archaeological material with the material gathered on the sites from late antiquity and on those from the period between the 11th and 13th centuries.² The objective of this comparison is to provide an image of the continuity of living of the populations in certain area. One should praise the idea itself of studying the living conditions over longer periods, as it can give a picture of changes and oscillations in terms of ups and downs in the way and quality of life. However, as the material selected by the author for the comparisons is by and large connected with continental sites, characterized by fundamentally different climatic conditions,

2 The author uses in this work the term "late Middle Ages" for the period between the 11th and 13th cent. However, considering that contemporary historiography usually refers to the period from the 11th up to and including the 13th cent. as "high Middle Ages", we used in this review, instead of Šlaus' term "late Middle Ages", a more appropriate term "period between the 11th and 13th cent.", which prevents potential lack of clarity with regard to the chronological position.

nom razdoblju situacija je potpuno drukčija i svi su lokaliteti na istočnoj obali Jadrana. Za razdoblje između 11. i 13. st. samo su dva nalazišta smještena u istočnoj Slavoniji, dok su ostala u sjeverozapadnoj Hrvatskoj.

Drugo poglavlje, pod nazivom *Tafonomija arheoloških nalazišta* (47-60), započinje malo jezovitim dijalogom iz Shakespeara Hamleta kojim autor na zgodan način ukazuje na tematiku ovog dijela knjige, vezanu uz raspadanje ljudskog tijela. U potpoglavlju *Kosturi i mumije* (48-49), autor ukazuje na povezanost različitih vanjskih (klimatski čimbenici, utjecaj kiselosti tla i sl.) i unutarnjih (stanje organizma) čimbenika koji utječu na vrijeme raspadanja mekog tkiva. U potpoglavlju, pod nazivom *Spaljivanje i ostali uzroci promjena boje kosti* (50-56), Šlaus predočava daljnju sudbinu ljudskog tijela nakon smrti baveći se, kako sam naziv potpoglavlja kaže, promjenom boje osteološke građe podvrgnute inhumaciji i incineraciji. Zadržavši se više na drugome pogrebnom ritusu, ukazuje, osim na procese u ljudskom tijelu izloženom djelovanju vatre, i na smjer njezina kretanja, što omogućuje da zavirimo u često zamagljeno područje pogrebnih običaja starih populacija. Iduće potpoglavlje, pod nazivom *Paljevinski nalazi na analiziranim starohrvatskim grobljima* (56-60), donosi analizu spaljenih kostiju sa starohrvatskih paljevinskih grobova, u kojoj autor ukazuje na uniformnost veličine lomača, bez obzira na dob ili spol pokojnika.

Treća poglavlje nosi naziv *Demografska obilježja starohrvatskih nalazišta* (61-108). Ovdje autor objašnjava proces individualizacije osteološke građe, određujući kao temeljne zadaće tog procesa određivanje spola i starosti kostura. U potpoglavlju *Određivanje spola* (62-64), predstavlja dva modela određivanja spola, ukazujući na poteškoće u određivanju spolne pripadnosti vezane uz dob kostura i očuvanost građe. Prvi model temelji se na vizualnom pregledu morfologije kostura, a drugi na mjerenju dijelova kostura i statističkoj analizi izračuna, pri čemu postoji razlika u pristupu određivanja spola kod odraslih osoba i djece, o čemu podrobnije piše u podnaslovima: *Određivanje spola na kosturu djeteta* (64-65) i *Određivanje spola na kosturu odrasle osobe* (65-78). Šlaus, potom, u potpoglavlju *Određivanje životne dobi* (78-79), prelazi na složenu analizu određivanja starosne dobi kostura koja sama po sebi odražava kvalitetu življenja pojedine osobe. Podnaslovi *Određivanje životne dobi djece i adolescenata* (80-90) i *Određivanje životne dobi osoba koje su završile rast* (90-98) ukazuju na različite načine određivanja starosti osoba koje su još u razvoju, u odnosu na one osobe koje su završile rast. Kod prvih se, najčešće i najpouzdanije, starost određuje prema zubima, dok se u kasnijim životnim razdobljima primjenjuju drugi kriteriji poput analize promjena na pubičnoj simfizi (no zbog njezine krhkosti i stoga lošije očuvanosti, primjenjuje se i analiza aurikularne ploštine crijevne kosti, uz koju autor spominje i neka druga pomoćna mjerila znatno nepouzdanije od prvih navedenih zbog svoje varijabilnosti, povezane s raznolikim čimbenicima koji ih uvjetuju). U potpoglavlju *Demografska obilježja starohrvatskih nalazišta* (98-108), analizirana su demografske značajke starohrvatskih populacija, pri čemu je utvrđena visoka smrtnost djece u dobi mlađoj od petnaest

this comparison has proven useful only to a certain extent. Only one out of five sites from late antiquity lies on the eastern Adriatic coast (Vid near Metković), while the other four are located in the continent. The situation profoundly changes in the early mediaeval period, and all the sites lie on the eastern coast of the Adriatic. For the period between the 11th and 13th cent. only two sites are located in eastern Slavonia, while the remaining ones are in northwestern Croatia.

The second chapter, entitled *The Taphonomy of Archaeological Sites* (47-60), begins with a slightly eerie dialogue from Shakespeare's *Hamlet*, used by the author to ingeniously introduce the topic of this part of the book, connected with the decomposition of human body. In the subchapter *Skeletons and Mummies* (48-49) the author draws attention to the connection of various external (climatic factors, soil acidity factor etc.) and internal (condition of the organism) factors influencing the rate of disintegration of soft tissue. In the subchapter entitled *Burning and other Causes for Changes in Bone Colour* (50-56), Šlaus explains the subsequent fate of human body after death. Here he deals, as obvious from the very title of the subchapter, with the colour change of osteological material subjected to inhumation and incineration. Concentrating longer on the latter burial rite, he points, in addition to the processes taking place in human body subjected to fire, also to the direction of its course, which makes it possible for us to glimpse into the frequently obscure area of burial customs of ancient populations. The following subchapter, entitled *Cinerary Finds on the Analyzed Early Croatian Cemeteries* (56-60) gives an analysis of burned bones from early Croatian cinerary graves, in which the author points to the uniformity of most pyres, regardless of the age or sex of the deceased.

The name of the third chapter is *Demographic Characteristics of Early Croatian Sites* (61-108). Here the author explained the process of the individualization of osteological material, setting as the basic tasks of this process the determination of sex and age of a skeleton. In the subchapter *Determining Sex* (62-64), he presents two models of sex determination, pointing to difficulties in determining sex affiliation connected with the age of the skeleton and the preservation of the material. The first model is based on the visual inspection of the morphology of the skeleton, while the second one is based on the measurement of skeletal parts and the statistical analysis of the count, in which there is a distinction in the approach to sex determination for the adults and children, which he discusses in more detail in the subheadings: *Determining Sex on a Child's Skeleton* (64-65) and *Determining Sex on the Skeleton of an Adult* (65-78). After this, in the subchapter *Determining Age* (78-79), Šlaus moves on to a complex analysis of determining the age of a skeleton, which by itself reflects the quality of life of an individual. The subchapters *Determining Age of Children and Adolescents* (80-90) and *Determining Age of Grown-up Individuals* (90-98) indicate different methods of age determination of developing persons with respect to the full-grown individuals. In the former case, the most frequently used and most reliable method is age determination by teeth, while in the later phases of life other criteria are applied, such as the analysis of changes in the pubic symphysis (however, due to its fragility and consequent poor preservation, the analysis of auricular surface of the ilium is applied as well; together with this, the author mentions other auxiliary measurements, much less reliable than the ones that were mentioned first due to their variability, connected with various factors on which they depend).

godina. Ovdje je prisutan zanimljiv i raširen fenomen podzastupljenosti najmlađe dobne skupine u analiziranim uzorcima, pa dobiveni rezultati ne odgovaraju stvarnom stanju, što autor pokušava objasniti posebnim stajalištem zajednica prema mrtvorodenoj djeci kao i onoj umrloj neposredno nakon poroda.³ Pri procjeni životne dobi muškaraca i žena na analiziranim nalazištima uočava se približno podjednaka životna dob (nešto viša kod muškaraca), uz veću smrtnost žena u određenim godinama života. Može se pretpostaviti da su uzrokom mogle biti komplikacije u trudnoći koje često ne ostavljaju traga u osteološkoj građi, no to je jedna od mogućnosti koja je rijetko dokaziva.⁴ Usporedna analiza pokazuje pogoršanje životnih uvjeta u razdoblju između 11. i 13. st. na kontinentalnom dijelu Hrvatske u odnosu na ranije razdoblje, što se očituje u većem broju traumi i oštećenjima uzrokovanim teškim fizičkim radom. Mario Šlaus uspoređivao je kvalitetu življenja u pojedinim razdobljima, međutim, radeći komparacije u obzir je uzeo krajeve koji pripadaju potpuno različitim prostornim podnebljima. Postavlja se pitanje mogućnosti usporedbe različitih područja, budući da klimatsko-geografski čimbenici znatnim dijelom utječu na način života stanovništva, a različitost ovih područja ukazuje na raznolikost životnih uvjeta istodobnih populacija. Konkretnije, težak život kasnosrednjovjekovne populacije na sjeverozapadnom dijelu Hrvatske ne mora biti istovjetan životu istodobne populacije na području istočne obale Jadrana. Također, kvaliteta života se razlikuje ovisno o tomu je li u pitanju gradska ili ruralna populacija, pa se čini da metodologija nije najsretnije odabrana.

Četvrto poglavlje, pod nazivom *Bolesti zubi i alveola* (109-128), počinje ulomkom iz pisma lorda Byrona svom nakladniku, u kojem književnik izražava svoje čuđenje nad dugotrajnošću zuba u osteološkoj građi. U potpoglavlju pod nazivom *Zubni karijes* (110-114), autor nas uvodi u zanimljivu i nimalo dosadnu priču o zubima kao najtvrdem dijelu ljudskog tijela, paralelno uspoređujući identifikacije uz pomoć DNA i zuba, utvrđujući zašto zubna identifikacija može imati važniju ulogu od prethodno navedene i češće primjenjivane metode. Autor nabrta promjene koje se mogu uočiti na zubima, a koje sugeriraju uvjete života u kojima je njihov vlasnik živio. Posebno se bavi karijesom (lat. *caries*, trulost), ukazujući na njegovu veću učestalost u poljodjelskih kultura koje konzumiraju veće količine ugljikohidrata, pri čemu provodi distribuciju karijesa prema spolnoj zastupljenosti, objašnjavajući češću prisutnost karijesa u žena, ne biološkim čimbenicima već čimbenicima vezanima uz način života i prehranu koja pokazuje da su muškarci konzumirali više bjelanjčevina, a žene više ugljikohidrata. U podnaslovu *Učestalost i distribucija zubnog karijesa u starohrvatskoj populaciji* (114-117), Šlaus dolazi do idućih zaključaka: učestalost karijesa u dječjoj dobnoj skupini je niska u starohrvatskoj populaciji, jednako kao i u ostalim promatranim razdobljima: postotci karijesa u odraslih osoba su približno slični, osim što kasnoantička i starohrvatska populacija ukazuje

3 Šlaus navodi da je u razdoblju antike novorođenčad obično bila pokapana izvan uobičajenih grobalja u amforama, ispod zidova i drugim mjestima te da su dječji ukopi i vanjskim obilježjima bili drukčiji (str. 100).

4 Objašnjenja, u konkretnom slučaju, treba tražiti u etnološkim analizama i pristupima.

The subchapter *Demographic Characteristics of Early Croatian Sites* (98-108) presents an analysis of demographic properties of early Croatian populations, which reveal high death rate in children under fifteen. An interesting and widespread phenomenon is present here, consisting in under-representation of the youngest age group among analyzed samples, with the result that the obtained findings do not match the real situation. The author tries to explain this with a specific attitude of the communities towards still-born babies as well as those that passed away immediately upon birth.³ In the assessment of age of men and women on analyzed sites it is possible to notice an approximately even age (somewhat higher in men), with a higher mortality rate of women of a certain age. A possible reason for this are pregnancy complications, which seldom leave a mark in the osteological material, but this is only one possibility, itself rarely demonstrable.⁴ A comparative analysis reveals deterioration of living conditions in the period between the 11th and 13th cent. in continental Croatia with regard to the preceding period, as reflected in the increased number of traumas and impairments caused by hard physical labour. Mario Šlaus compared the quality of life in distinct periods; however, in the process he considered areas that belong to entirely different climatic environments. The question arises as to the validity of drawing parallels between different areas, considering that climatic-geographic factors have a considerable effect on the way of living of the residents, and that the differences between these areas point to different living conditions of contemporaneous populations. More to the point, the hard life of late mediaeval population in the northwestern part of Croatia was not necessarily equal to that of the population that inhabited the eastern Adriatic coast at that time. Likewise, the quality of life differs depending on the studied – urban or rural – population, so it appears that the choice of methodology was not the most fortunate.

The fourth chapter, entitled *Diseases of Teeth and Alveoli* (109-128), begins with an excerpt from Lord Byron's letter to his publisher, in which the writer marvels at the durability of teeth in the osteological material. In the subchapter entitled *Dental caries* (110-114), the author introduces us to an interesting and not at all boring story about the teeth as the hardest part of the human body, comparing at the same time the DNA identifications and those by teeth, explaining why dental identification can play a more important role than the former – more frequently applied – method. The author enumerates the changes observable on teeth, which can point to the living conditions in which their owner lived. He deals with tooth decay in particular (Lat. *caries*), drawing attention to its more frequent presence in farming cultures characterized by considerable consumption of carbohydrates. In this, he presents the caries distribution by sex, explaining the higher frequency of caries in women not by biological factors but by factors connected with the way of life and with diet, which reveals that the male diet was richer in protein, while that of women was richer in carbohydrates. In the subheading *Frequency and Distribution of Dental Caries in the Early Croatian Population* (114-117), Šlaus reached following conclusions: the frequency of caries among children

3 Šlaus states that during antiquity the newborns were usually buried outside common cemeteries in amphorae, beneath walls and in other sites, and that children's burials were distinguished by external features as well (p. 100).

4 The explanations, in a specific case, should be looked for in ethnological analyses and approaches.

na veću razliku u karijesu po spolu, a kod razdoblja između 11. i 13. st. primjetna je manja razlika, budući da muška populacija pokazuje povećanje karijesa u odnosu na žensku. Ovakva veća prisutnost karijesa u muškaraca ne može se sa sigurnošću objasniti. U potpoglavlju pod nazivom *Alveolarne bolesti i zaživotni gubitak zuba* (118-120), predstavlja se proširenje karijesa na zubnu alveolu, što dovodi do odumiranja zuba. U arheološkim populacijama najčešće se javljaju granulom ili alveolarni apsces, i paradentoz. Kao i kod karijesa, ove se bolesti povezuju s načinom prehrane (povećanim unosom ugljikohidrata), odnosno ljudskim aktivnostima, pa je u populacija s naglašenom poljodjelskom aktivnošću prisutnost alveolarnih bolesti češća, pri čemu i mehanička opterećenja zuba dovode do njihova prijevremenog gubitka (uporaba zuba kao oruđa ili konzumiranja izrazito tvrde hrane). U podnaslovu *Učestalost i distribucija alveolarnih bolesti i zaživotnoga gubitka zubi u starohrvatskoj populaciji* (120-123), ukazuje se na pogoršanje prilika u ranoj srednjem vijeku, barem na području srednje Dalmacije, što autor objašnjava procesima izolacionizma i krize koja je nastupila propašću antičke civilizacije. U potpoglavlju *Hipoplastični defekti na zubnoj caklini* (124-125), autor se bavi poremećajima zubne cakline, koji se povezuju najčešće s prisutnošću fiziološkoga i psihološkog stresa, uzrokovanog različitim čimbenicima (glad, zarazne bolesti, poremećaji u metabolizmu), a koji imaju za posljedicu kraći životni vijek. Veća smrtnost ove populacije objašnjava se na dva načina: prvim se povezuje pripadnost takvih osoba s nižim socijalnim statusom, pri čemu su pothranjenost i bolesti iz djetinjstva nastavljeni u razdoblju odrastanja, što dovodi do prijevremene smrti; drugim se navodi oslabljenost imunološkog sustava u djetinjstvu, koji u odrasloj dobi dovodi do neotpornosti organizma spram raznih infekcija. Učestalost ovog defekta predočena je u podnaslovu *Učestalost hipoplastičnih defekata na zubnoj caklini* (125-128), pri čemu je uočena veća prisutnost hipoplazije u kasnoantičkoj populaciji i populaciji srednjovjekovnog razdoblja između 11. i 13. st. negoli u starohrvatskoj populaciji.

Patološke promjene na kostima (129-172) naziv je petog poglavlja u kojem autor analizira različite skupine bolesti ukazujući na veću opasnost i ubojitost virusa za ljudsku populaciju u odnosu na sve do sada povijesno zabilježene osvajačke pohode. U posebnim potpoglavljima obrađene su *Nespecifične zarazne bolesti* (periostitis, osteomijelitis; 130-140), *Specifične zarazne bolesti* (tuberkuloza, lepra⁵; 140-159), *Metaboličke bolesti i anemija* (anemija, rahitis, skorbut, 159-169), i *Reumatske bolesti* (169-172), odnosno, najčešće bolesti spomenutih grupacija u smislu njihove prisutnosti u arheološkim istraživanjima osteološke građe. Uspoređivanjem endemijskih i epidemijских bolesti autor ukazuje na često zanemaren utjecaj bolesti na svakodnevicu određene populacije, navodeći da su bolesna stanja poput sifilisa imala utjecaja, između ostaloga, i na modna kretanja poput uvođenja perika i rukavica s ciljem prikrivanja simptoma uznapredovanog sifilisa.

5 Autor prikazuje razvoj bolesti (u konkretnom primjeru lepre), dajući uvid u načine njezina širenja ukazujući istodobno na paradoksalnost društvenog stigmatiziranja teško prenosive bolesti s niskim mortalitetom (str. 148-159).

in the early Croatian population is low, same as in the other periods under study: the percentages of caries among adults are approximately similar, except that the late-antiquity and early Croatian populations show greater difference in caries by sex, while in the period between the 11th and 13th cent. the difference decreases, as the male population shows an increase in caries with respect to the female population. Such higher frequency of caries among men cannot be explained with certainty. The subchapter entitled *Alveolar Diseases and Tooth Loss During Life* (118-120) deals with cases when caries extends to dental alveoli, which leads to dental atrophy. Archaeological populations are most often characterized by tooth-root abscess or alveolar abscess, as well as periodontosis. Same as caries, these diseases are associated with the diet (increased input of carbohydrates), as well as with human actions: predominantly agricultural populations are characterized by a higher presence of alveolar diseases. This is coupled with mechanic pressure on teeth, likewise leading to their premature loss (the use of teeth as tools or for consumption of particularly hard food). In the subchapter *Frequency and Distribution of Alveolar Diseases and Tooth Loss During Life in the Early Croatian Population* (120-123) the author points to the deterioration of conditions in the early Middle Ages, at least in the case of central Dalmatia, which he explains by isolationist processes and the crises that set in following the collapse of the ancient civilization. In the subchapter *Hypoplastic Defects on Tooth Enamel* (124-125) the author deals with the defects of tooth enamel, mostly linked to the presence of physiological and psychological stress, caused by various factors (famine, infectious diseases, metabolism defects), resulting in shorter duration of life. Higher mortality rate of this population is explained in two ways: the first one looks at the correspondence of such individuals with a lower social status, in which undernourishment and childhood diseases continue into the adulthood, which leads to premature death; the second considers the enfeeblement of the immunological system in childhood, which during adulthood renders the organism incapable to resist various infections. The frequency of this defect is portrayed in the subchapter *Frequency of Hypoplastic Defects on Tooth Enamel* (125-128), showing that hypoplasia is more frequent in the late-antiquity population and mediaeval population from the period between the 11th and 13th cent., than in the early Croatian population.

The title of the fifth chapter is *Pathological Changes on Bones* (129-172). The author analyzes here various disease groups, pointing to the fact that viruses are more dangerous and lethal for humanity than all the historically documented conquests so far. Separate subchapters are reserved for *Nonspecific infectious diseases* (periostitis, osteomyelitis; 130-140), *Specific Infectious Diseases* (tuberculosis, leprosy⁵; 140-159), *Metabolic Diseases and Anemia* (anemia, rickets, scurvy, 159-169), and *Rheumatic Diseases* (169-172), that is, the most frequent diseases within the mentioned groups with regard to their presence in the archaeological investigation of the osteological material. By comparing the endemic and epidemic diseases the author draws attention to the frequently neglected influence of the diseases on the everyday life of a given population, stating that the pathological states such as syphilis had an impact on, among other things, fashion

5 The author depicts the development of a disease (in this particular case, leprosy), introducing the ways that it spreads, and drawing attention at the same time to the paradox of the social stigmatization of a not-easily transmissible disease with low mortality (p. 148-159).

Pretposljednje poglavlje nosi naziv *Traume* (173-198) i započinje zanimljivom pričom o autorovu sudjelovanju u istrazi vezanoj uz serijskog ubojicu na temelju čijega karaktera je stvoren filmski lik Hannibala Lectora. U potpoglavljima *Slučajne traume* (174-180) i *Namjerne ozljede* (180-189), uz ozljede koje su posljedice nesreća, predstavljene su i ozljede koje su posljedica namjernog nasilja i koje su klasificirane, s obzirom na njihovu težinu, na antemortalne i perimortalne ozljede. Pri tomu su dani, povjesničarima posebno zanimljivi, primjeri sačuvane osteološke građe koja je pripadala, pretpostavlja se, žrtvama Krbavske bitke. Učestalost ozljeda u starohrvatskoj populaciji analizirana je u potpoglavlju *Učestalost i distribucija trauma u starohrvatskom uzorku* (189-198), te je ukazala na veću učestalost traumi u starohrvatskoj populaciji u odnosu na ostala promatrana razdoblja. Prema rezultatima analize, velika količina nasilja u starohrvatskoj populaciji broičano se može usporediti s količinom ozljeda u neandertalaca i znatnim je dijelom posljedica namjernog nasilja.

Posljednje poglavlje nosi naziv *Svakidašnje aktivnosti i teški fizički rad* (199-222), a počinje odlomkom iz knjige Lewisa Carrolla *Alisa u zemlji čudesa*, u kojem na prikladan način ukazuje na utjecaj habitualnih djelatnosti na morfologiju kosti i zuba. U potpoglavlju *Osteoarthritis* (200-208), autor se bavi patološkim promjenama na kostima i zubima koje služe za procjenu habitualne aktivnosti određene arheološke populacije. Analiza osteoartritisa u starohrvatskoj populaciji pokazala je prisutnost podjele fizičkih aktivnosti prema spolu, pri čemu su muškarci odrađivali većinu fizički zahtjevnih poslova. U sljedećem potpoglavlju, *Osteoarthritis na kralježnici* (208-212), bavi se promjenama na kralježnici koje pokazuju u starohrvatskoj populaciji najčešću prisutnost na slabinskom dijelu kralježnice u oba spola, što ukazuje na značajnu ulogu fizičkog rada u životu ove populacije. Iduće potpoglavlje, pod nazivom *Schmorlovi defekti* (213-217), donosi specifične defekte kralježnice, da bi se analizom prisutnosti ovog defekta na starohrvatskoj populaciji potvrdila njegova veća učestalost u muškog spola, što je naznaka podjele aktivnosti po spolu. U potpoglavlju pod nazivom *Promjene na zubima koje su posljedica habitualnih aktivnosti* (218-222), dane su morfološke promjene zuba vezane uz njihovo korištenje u određene svrhe, a to je često obrada organskog materijala (trljanja, žvakanja i sl.). Povećana učestalost osteoartritisa u starohrvatskoj populaciji ukazuje, prema mišljenju autora, na nazadak u načinu života koji je nastupio na prijelazu iz kasne antike u srednji vijek.⁶

Slijedi kratki *Pogovor* (223-224) u kojem autor navodi kao svoje prvobitne ciljeve: težnju za prikazom razvoja bioarheologije i njezine metodologije kao i davanje uvida u kvalitetu života na području Hrvatske od kasne antike do razdoblja koje obuhvaća razdoblje između 11. i 13. stoljeća. Prvi je cilj ostvario u potpunosti, dok je drugi ostvaren samo djelomično zbog pristupa kad su se uspoređivale populacije s različitih prostora, umjesto da se za željeni prikaz koriste bliska područja. O kvaliteti života na nekom području

6 Veća prisutnost osteoartritisa u muškog spola tumači se promjenom životnih okolnosti u kojim je naglasak stavljen na fizičke aktivnosti (mačevanje, bacanje koplja, obaranje drveća), (str. 207).

trends such as introduction of wigs and gloves, aimed at disguising the symptoms of advanced syphilis.

The penultimate chapter is entitled *Traumas* (173-198) and it begins with an interesting story of the author's participation in the investigation connected with a serial killer that served as a model for the movie character Hannibal Lector. In the subchapters *Accidental Traumas* (174-180) and *Intentional Lesions* (180-189), the author presents lesions sustained in accidents, as well as those brought about by intentional violence, which were classified with respect to their seriousness into antemortal and perimortal lesions. At the same time, as a feature of special interest for historians, the examples were given of preserved osteological material, supposed to have belonged to the victims of the battle of Krbava. The rate of injuries in the Early Croatian population was analyzed in the subchapter *Rate and Distribution of Traumas in the Early Croatian Sample* (189-198), and it pointed to a higher rate of traumas in the early Croatian population with regard to the remaining periods under study. The results of analysis reveal that the high incidence of violence in the early Croatian population is numerically comparable with the number of lesions among the Neanderthals, and it is to a large degree a result of deliberate violence.

The last chapter bears the title *Everyday Activities and Hard Physical Labour* (199-222), and it starts with a paragraph from Lewis Carroll's book *Alice in Wonderland*, which points in an appropriate way to the impact of habitual actions on the morphology of bones and teeth. In the subchapter *Osteoarthritis* (200-208) the author deals with pathological changes on bones and teeth, which serve for an assessment of habitual actions of an archaeological population. The analysis of osteoarthritis in the early Croatian population showed the presence of sex-related division of physical activities, in which most of physically demanding tasks fell to men. In the next subchapter, *Osteoarthritis of the Spine* (208-212), the author tackles the changes on the spine, present in the early Croatian population with highest frequency on the lumbar part of the spine in both sexes, which points to the important role of physical labour in life of this population. The following subchapter, entitled *Schmor's Nodes* (213-217), presents specific defects of the spine. The analysis of the presence of this defect in the early Croatian population confirmed its higher rate among men, indicating a sex-related division of labour. The subchapter entitled *Changes on Teeth brought about by Habitual Activities* (218-222) presents morphological changes in teeth, connected with their use for certain purposes, often the processing of organic material (rubbing, chewing etc.). An increase in the rate of osteoarthritis in the early Croatian population points, in the author's opinion, to a deterioration in the way of life that started at the transition from late antiquity to the Middle Ages.⁶

This is followed by the short *Afterword* (223-224), in which the author lists his original objectives: the desire to review the development of bioarchaeology and its methodology as well as to provide an insight into the quality of life in Croatia from late antiquity to the period between the 11th and 13th centuries. He accomplished the first objective entirely, whereas he only partly succeeded in doing so in the case of the second one, due to the approach he had chosen for comparing the populations from different areas, when the proper method would involve a look at nearby areas for the

6 A higher presence of osteoarthritis in men is explained by changes in living conditions, in which stress was put on physical activities (sword use, spear throwing, timber felling), (p. 207).

i njezinoj promjenjivosti ne možemo govoriti analizirajući vrlo različita područja i „ekološke sustave“. Stoga mislim da autorove rezultate možemo promatrati sa stajališta zasebnosti, bez međusobne usporedbe te su jedino u tom smislu podaci relevantni. Ono što u tom smislu možemo izdvojiti kao bitno, jest to da starohrvatska populacija na odabranom teritoriju živi u teškim uvjetima života, u smislu prisutnosti teškog fizičkog rada koja bilježi, također, podjelu prema kojoj su muškarci u odnosu na žene više koristili snagu svojih udova, o čemu osteološka građa „rječito“ govori. Izuzmemo li navedene propuste, pred sobom imamo djelo koje čitatelju približava složenu znanstvenu građu na što je moguće jednostavniji i zanimljiviji način, što je književno umijeće koje uspijeva rijetkim autorima. Užtku čitanja pridonosi i autorova dobra potkovanost u različitim znanstvenim disciplinama, pa će nas često u vrlo tešku temu uvesti na izuzetno zanimljiv način, evocirajući likove iz prošlosti, književnosti te stvarajući značajno djelo u kojem stručne medicinske podatke povezuje s povijesnim okolnostima. Djelo je obogaćeno slikovnim i grafičkim prilozima te će poslužiti, stručnoj kao i laičkoj javnosti.

desired presentation. We cannot discuss the quality of life in a certain area and its changeability by analyzing markedly different areas and “ecological systems”. Therefore, in my opinion, we can look at the author’s results from the standpoint of individuality, without making comparisons between the two, because they are relevant only in that respect. The issue that we can single out as important in that respect is that the living conditions of the early Croatian population in the chosen territory were difficult, in the sense of the presence of hard physical labour, documenting also the division in which men used the strength of their limbs more than women, as “eloquently” testified by the osteological material. If we except the mentioned omissions, we have before us a work that brings a complex scientific body of material closer to the readers in the simplest and most interesting way possible, which is a literary art in which few authors succeed. The pleasure of reading is enhanced by the author’s familiarity with various scientific disciplines, which allows him to introduce us to a fairly difficult subject in an exceptionally interesting way, evoking figures from the past or literature and creating a valuable work in which he associates specialist medical information with historical circumstances. The work is enhanced by illustrations and graphic charts and it will be useful for specialists and non-specialists alike.

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