

MEDUN – ARHEOZOOLOŠKI IZVEŠTAJ

MEDUN – ARCHAEOZOOLOGICAL REPORT

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Apstrakt

U ovom radu predstavljeni su rezultati arheozoološke analize životinjskih ostataka sa nalazišta Medun. Na osnovu pisanih izvora i arheoloških istraživanja sprovedenih tokom 2020. i 2021. godine, na ovom prostoru identifikovani su tragovi naseljavanja sa prekidi- ma, počev od bronzanog doba i helinističkog perioda, preko ranovizantijskog, do kasnog srednjeg veka i turskog perioda koji se završava oslobođenjem tvrđave 1876. godine, ubrzo posle čega život na ovom prostoru i prestaje. Iako je faunalni uzorak sa nalazišta Medun relativno mali, dobijeni su podaci o njegovim

Abstract

This paper presents the results of the archaeozoological analysis from the Medun site. Based on written sources and archaeological excavations conducted in 2020 and 2021, in this area traces of settlement from different periods have been identified, starting from the Bronze Age and the Hellenistic period, through the Early Byzantine, until the Late Medieval and Turkish periods which ends with the liberation of the fortress in 1876, shortly after which life in this area ends. Although the faunal assemblage from the Medun site is relatively small, data were obtained on its taphonomic charac-

tafonomskim karakteristikama, kao i o zastupljenosti vrsta domaćih i divljih životinja tokom različitih perioda života na ovom prostoru. Od domaćih životinja, identifikovani su ostaci govčeta, svinje, ovce, koze, konja i kokoške, a od divljih – zeca i jelena.

Ključne reči: životinjski ostaci, arheozoologija, Medun, višeslojno nalazište, utvrđenje

teristics, as well as on the distribution of domestic and wild animal species during different past periods in this area. Remains of six domestic species were identified – cattle, pig, sheep, goat, and chicken, and two wild – hare and red deer.

Keywords: animal remains, archaeozoology, Medun, multi-layered site, fortification.



Sl. 1. Izgled utvrđenja sa južne strane

Fig. 1. View of the fortification on the south side

Uvod

Višeslojno arheološko nalazište Medun nalazi se u Kučima, na oko 9 km severoistočno od Podgorice. Ilirski grad Meteon na čijim je ostacima u srednjem veku sagrađeno utvrđenje Medun, najverovatnije je podignut u 4. veku pre nove ere. Sagrađen je na vrhu strmog sedlastog grebena koji se izdiže nad okolnim područjem (Sl. 1) i ima tipične karakteristike utvrđenih ilirskih gradova sa akropoljem i podgrađem (Живановић 2021:98). Obnavljanje i ponovno naseljavanje utvrđenja prema spisima Ravenskog geografa dešava se u 7. veku (Гарашанин, 1967:127), dok je u kasnom srednjem veku na ovom mestu osnovano važno vojno uporište o čemu svedoče i brojni istorijski izvori iz 15. veka (Петровић 2012:13-14). U petoj deceniji 15. veka utvrđenje su zauzeli Turci, i od tada pa sve do 1860. godine Medun se spominje u

Introduction

The multi-layered archaeological site of Medun is in Kuči, about 9 km northeast of Podgorica. The fortress of Medun was constructed during the Medieval Period on the remains of the Illyrian city of Meteon which dates to the 4th century BC. The fortress is located on the top of a steep saddle ridge that rises above the surrounding area (Fig. 1). It has the typical characteristics of fortified Illyrian cities – an acropolis and suburb (Живановић 2021:98). According to the writings of the Ravenna geographer, the fortification was renewed and resettled in the 7th century (Гарашанин 1967:127). Medun was an important military stronghold during the Late Medieval Period, as evidenced by numerous historical sources from the 15th century (Петровић 2012:13-14). The fortress was occupied by the Turks from the fifth de-



Sl. 2. Situacioni plan Gornje tvrđave sa označenim arhitektonskim celinama
Fig. 2. Situational plan of the Upper Fortress with marked architectural units

pisanim izvorima kao mesto u sukobima Kuća i Brđana sa Turcima. Najbrojniji pisani izvori u kojima se spominje Medun potiču iz perioda poslednjeg turskog upravljanja tvrđavom (1860-1876. godine) kada su zabeležni i brojni sukobi pred njegovo oslobođenje 1876. godine (Петровић 2012:15). По ослобођењу, ово utvrđenje biva porušeno i napušteno.

Tokom 20. veka u nekoliko navrata sprovedena su istraživanja Medunskog grada (Praschniker, Schober 1919; Здравковић 1953; Мијовић, Ковачевић 1975; Петровић 2012); međutim, prva arheološka istraživanja, savremenim metodama, u kompleksu tvrđave Medun obavljena su 2020. i 2021. godine (Живановић 2021). Arheološkim istraživanjima bila je obuhvaćena samo gornja Medunska tvrđava, koja je bedemskim zidovima uokvirena u jednu celinu izduženog i nepravilnog oblika dužine oko 80 m (Живановић 2021:98). Том приликом, гornји Medunski grad podeljen je na tri sektora u skla-

cade of the 15th century until 1860. During this period, Medun is mentioned in written sources as a place of conflicts between the Kući and Brda tribal people and the Turks. Numerous conflicts took place in the fortress before its liberation in 1876. Consequently, the majority of records that refer to Medun were written during the very end of the Turkish occupation (1860-1876) (Петровић 2012:15). Later, the fortification was demolished and abandoned.

During the 20th century, research on the city of Medun was carried out on several occasions (Praschniker, Schober 1919; Здравковић 1953; Мијовић, Ковачевић 1975; Петровић 2012); however, the first archaeological excavations, using the modern methodology, were carried out in 2020 and 2021 (Живановић 2021). Archaeological excavation covered only the upper fortress of Medun, which was fortified by ramparts into one unit of elongated and irregular shape, about 80 m long (Живановић



Sl. 3. Fragmentovane ljuske jajeta in situ u kuli 1 (SJ 8) sa nalazišta Medun

Fig. 3. Fragmented eggshells in situ in the tower 1 (SU 8) from the site of Medun

du sa visinkim razlikama grebena na kojem je tvrđava podignuta (Sl. 2). Sektor I obuhvatao je najviši gornji deo tvrđave, takozvani akropolj – mali i suženi prostor na istočnom delu utvrđenja kojim dominira kružna kula (kula 1) do koje vode strme stepenice. Zapadno od kule 1 nalaze se ostaci objekta 1, a odmah pored nje ga i crkva posvećena Sv. arhiđakonu Stefanu. Sektor II predstavlja središnji prostor tvrđave koji je polukružnim stepenicama spajao najviši i najniži plato grada. U ovom sektoru, istražene su dve građevine iz perioda poslednjeg turskog naseljavanja – objekat 2 koji je imao cisternu u donjem delu, i objekat 3 koji je služio kao glavna upravna zgrada utvrđenja (komandatura) (Живановић 2021:100). Sektor III obuhvatao je najniži i najprostraniji prostor tvrđave, gde je tokom 2020. godine bila istražena samo zapadna kula (kula 2). Sledeće 2021. godine, nastavljena su sondažna iskopavanja u južnom delu sektora III, koji se nalazi ispod objekta 3. Na osnovu visinskih razlika, južni deo je izdel-

2021:98). On that occasion, the upper town of Medun was divided into three sectors in accordance with the height differences of the ridge on which the fortress was built (Fig. 2). Sector I included the highest upper part of the fortress, the so-called Acropolis – a small and narrow area on the eastern part of the fortification dominated by a circular tower (Tower 1) to which steep steps lead. To the west of Tower 1 are the remains of Building 1, and right next to it is the church dedicated to St. Archdeacon Stefan. Sector II represents the central area of the fortress, which connected the highest and lowest plateaus of the city with semicircular steps. In this sector, two buildings from the period of the last Turkish settlement were investigated – Building 2, which had a cistern in the lower part, and Building 3, which served as the main administrative building of the fortification (commander's office) (Живановић 2021:100). Sector III included the lowest and most spacious area of the fortress, where only

jen na tri prostora koji se kaskadno nižu od istoka ka zapadu. Prostor I (sonda 3 (Sl. 2)) predstavljao je neku vrstu prilaznog platoa česmi koja je izlazila iz zapadnog zida objekta 3. Prostor II (sonda 2 (Sl. 2)) je ravan pravougaoni plato najverovatnije otvoreni hodnik kojim se moglo doći do kule 3, dok je uskim stepenicama bio povezan i sa gornjim platoom. Prostor III (sonda 1 (Sl. 2)) je bio najnižeg nivoa, imao je prilaze na uglovima i po sredini zid koji ga je razdvajao od prostora II. Prilikom istraživanja prostora III u najnižim škrapama žive stene, otkriven je najstariji sloj u kome je pronađena bronzanodobna keramika koja je ukazala na to da prvi tragovi naseljavanja i života na naližištu Medun potiču još iz bronzanog doba.

U ovom radu predstavljeni su rezultati analize ostataka životinja koji su po prvi put sakupljeni tokom najnovijih arheoloških istraživanja Meduna tokom 2020. i 2021. godine. Životinjski ostaci grupisani su i analizirani su po hronološkim periodima u koje su opredeljenje arheološke celine iz kojih potiču – bronzano doba, helenizam (4-2. vek pre nove ere), rana Vizantija (6-7. vek), kasni srednji vek (12-13. i ?14. vek¹) i turski period (16-17. i 19. vek). Pored opštih karakteristika faunalnog uzorka i njegove prostorne analize, u radu su prikazane i njegove tafonomske karakteristike, kao i zastupljenost različitih vrsta domaćih i divljih životinja tokom spomenutih perioda naseljavanja na prostoru Meduna.

Materijal i metode

Tokom najnovijih istraživanja Meduna vršeno je ručno sakupljanje ostataka životinja koji su pronađeni u jasno definisanim i istraženim arheološkim celinama iz različitih perioda naseljavanja ovog prostora (Tabela 1). Faunalni uzorak se sastoji se od ukupno 19032 ostataka.

¹ SJ 6, prostor 3, sonda 1 nesigurno je datovan u 14. vek na osnovu fragmenata stakla, s obzirom na to je najveći broj fragmenata keramike poticao od hronološki neosetljivog kuhinjskog posuđa čije preciznije hronološko opredeljenje nije bilo moguće; međutim nekoliko fragmenata keramike ukazuje na mogućnost datovanja ovog konteksta u rani srednji vek.

² U SJ 4, prostor 3, sonda 1, pronađeno je ukupno 19 ostataka životinja; međutim, ovi ostaci su izostavljeni iz analize jer nije bilo moguće hronološki opredeliti kontekst iz koga potiču.

the western tower (Tower 2) was excavated in 2020. In the following year, 2021, the trench excavations continued in the southern part of sector III, which is located below Building 3. Based on the height differences, the southern part is divided into three spaces that cascade down from east to west. Area I (trench 3 (Figure 2)) represented a kind of pathway to the drinking fountain that came out of the western wall of Building 3. Area II (trench 2 (Fig. 2)) is a flat rectangular plateau, most likely a passageway that could be used to reach Tower 3, while it was also connected to the upper plateau by narrow stairs. Area III (trench 1 (Fig. 2)) was at the lowest level, it was accessible from each corner, and in the middle, it had a wall that separated it from Area II. During the excavation of Area III, the oldest layer of the settlement was discovered in the lowest scraps of bedrock. Namely, this is where fragments of the Bronze Age ceramics were found indicating that the first traces of the settlement at the Medun site date back to the Bronze Age.

This paper presents the results of the analysis of animal remains collected for the first time during the latest archaeological excavations in Medun in 2020 and 2021. The animal remains were grouped and analyzed according to the chronological periods based on the archaeological units from which they originate – Bronze Age, Hellenism (4th-2nd century BC), Early Byzantium (6th-7th century), Late Medieval (12th-13th and ?14th century¹) and Turkish period (16th-17th and 19th century). In addition to the general characteristics of the faunal assemblage and its spatial distribution, the paper also presents its taphonomic characteristics, as well as the distribution of different species of domestic and wild animals during different periods at Medun.

¹ SJ 6, Area III, trench 1 is uncertainly dated to the 14th century based on glass fragments, considering that the largest number of ceramic fragments came from chronologically insensitive kitchenware whose more precise chronological determination was not possible; however, few ceramic fragments indicate the possibility of dating this context to the Early Medieval Period.



Sl. 4. Tragovi kasapljenja na humerusu ovce (a) i svinje (b) sa nalazišta Medun

Fig. 4. Butchery marks on sheep (a) and pig (b) humerus from the site of Medun

Na početku arheozoološke analize materijal je razdvojen na dijagnostičke i nedijagnostičke primerke prema unapred jasno definisanim kriterijumima (Russell, Martin 2005). Nedijagnostički fragmenti koje nije bilo moguće odrediti do nivoa roda ili vrste zbog njihove fragmentacije grupisani su prema veličini životinje od koje potiču (krupni, sisari srednje veličine i sitni sisari). Na njima su takođe zabeleženi podaci o tragovima tafonomskih procesa (gorenja, glodanja i raspadanja).

Analiza dijagnostičkih primeraka podrazumevala je određivanje vrste, skeletnog elementa, njegove simetrije i stepena fragmentacije (dijagnostičke zone) (Dobney, Rielly 1988), pola, stepena srastanja epifiza (Silver 1969; Schmid 1972; Reitz, Wing 2008), stepena nicanja i trošenju zuba u donjim vilicama (Payne 1973; Grant 1982; Halstead 1985; Hambleton 1999). Beleženi su podaci o tragovima tafonomskih procesa na dijagnostičkim primercima, kao i prisustvo patoloških promena ukoliko ih je bilo. Detaljno su opisani tragovi kasapljenja, odnosno zabeležena je pozicija i vrsta traga (urez, zasek, odsecanje).



Sl. 5. Fragmenti rebara sa različitim tragovima kasapljenja sa nalazišta Medun

Fig. 5. Various butchery marks on the ribs from the site of Medun

Material and methods

During the most recent excavations in Medun, the remains of animals were hand-collected in well-defined and excavated archaeological units from different periods of the settlement (Table 1). The faunal assemblage consists of a total of 19032 remains.

At the beginning of the archaeozoological analysis, the material was separated into diagnostic and non-diagnostic specimens according to previously defined criteria (following Russell, Martin 2005). Non-diagnostic fragments that could not be determined to a genus or species level due to their fragmentation were grouped according to the size of the animal from which they originated (large-, medium- and small-sized mammals). Traces of taphonomic processes on animal remains were also recorded (burning, gnawing, and weathering). The analysis of the diagnostic specimens included the determination of the species, skeletal element, its symmetry and state of fragmentation (diagnostic zone)

2 In SJ 4, Area III, trench 1, a total of 19 animal remains were found; however, these remains were not included in the analysis because it was not possible to determine chronologically the context from which they originated.

Kosti su merene prema standardizovanom sistemu A. Driš (Driesch 1976) (Dodatak 1). Na osnovu najveće dužine dugih kostiju izračunate su visine grebena za ovcu (Teichert 1975) i kozu (Schramm 1967). Taksonomska odredba vršena je pomoću osteoloških atlasa i priručnika (Schmid 1972; Prummel, Frisch 1986; Prummel 1988; Halstead et al. 2002; France 2009; Zeder, Lapham 2010; Zeder, Pilaar 2010). Kvantifikacija ostataka životinja vršena je na osnovu ukupnog broja određenih primeraka – BOP (eng. NISP – Number of Identified Specimens).

Opšte karakteristike faunalnog uzorka i prostorna analiza

Faunalni uzorak sa nalazišta Medun je relativno mali. Od ukupnog broja ostataka životinja (1903) do roda ili vrste određeno je 847 primeraka, odnosno 44.5% (Tabela 1). Više od polovine ukupnog uzorka (53.7%) pronađeno je u arheološkim celinama opredeljenim u period srednjeg veka, s tim da je na prostoru III u SJ 6 iz ?14. veka pronađeno 81.2% srednjovekovnog uzorka, a ostatak unutar kule 1 u SJ 10 i 11 iz 12-13. veka (Tabela 1). Drugi po veličini je faunalni uzorak iz turskog perioda koji čini 38.6% ukupnog uzorka. U celinama opredeljenim u period 16-17. veka – objekat 3, prostor I, prostor II i prostor III, ukupno je pronađeno 477 ostataka životinja, što je 64.9% uzorka iz turskog perioda, dok je preostalih 35.1% sakupljeno u SJ spomenutih celina, kao i u SJ kule 1 iz 19. veka (Tabela 1). Preostalih 7.7% ukupnog faunalnog uzorka, pronađeno je u arheoloških celinama iz ostalih perioda naseljavanja Meduna, i to iz helenizma (4-2. vek pre nove ere) – 6.1%, bronzanog doba – 1.3% i ranovizantijskog (6-7. veka) – 0.3% (Tabela 1).

Ostaci sisara čine većinu faunalnog uzorka sa Meduna (98%). Pored sisara, u znatno manjem broju, prisutni su ostaci ptica i puževa. Identifikovano je ukupno šest domaćih vrsta životinja: goveče (*Bos taurus*), svinja (*Sus domesticus*), ovca (*Ovis aries*), koza (*Capra hircus*), konj (*Equus caballus*) i kokoška (*Gallus domesticus*), kao i dve divlje – zec (*Lepus europaeus*) i jelen (*Cervus elaphus*) (Tabela 2 i Tabela 3).

(Dobney, Rielly 1988), sex, state of epiphyseal fusion (Silver 1969; Schmid 1972; Reitz, Wing 2008), state of tooth eruption and wear in the lower jaws (Payne 1973; Grant 1982; Halstead 1985; Hambleton 1999). Traces of taphonomic processes on the diagnostic specimens were also recorded, as well as the presence of pathological changes. Butchering marks were described in detail, and their position and type of trace (e.g., cuts, chop marks, etc.) were recorded.

Specimens were measured according to the standardized system (Driesch 1976) (Appendix 1). Based on the maximum length of the long bones (GL), the withers heights were calculated for sheep (following Teichert 1975) and goats (following Schramm 1967). Taxonomic determination was made using osteological atlases and manuals (Schmid 1972; Prummel, Frisch 1986; Prummel 1988; Halstead et al. 2002; France 2009; Zeder, Lapham 2010; Zeder, Pilaar 2010). Number of identified specimens – NISP was used as a quantification parameter.

General characteristics of the faunal assemblage and spatial analysis

The faunal assemblage from the Medun site is relatively small. From the total number of animal remains (1903), 847 specimens, i.e., 44.5% were identified to a genus or species level (Table 1). More than half of the total sample (53.7%) was found in archaeological units from the Medieval Period. In Area III (SJ 6 from ?14th century) 81.2% of the Medieval sample was found, while the rest was found inside Tower 1 (in SJ 10 and 11 dated to the 12th-13th century) (Table 1). The second largest is the faunal sample from the Turkish period which comprises 38.6% of the total assemblage. In units dated to the period of the 16th-17th century – Building 3, Area I, Area II and Area III, a total of 477 animal remains were found which is 64.9% of the Turkish period sample, while the remaining 35.1% was collected in the SJ of the mentioned units, as well as in the SJ of Tower 1 from the 19th century (Table 1). The

Od ukupnog broja određenih primeraka (847) ostaci ovikaprina (ovca i koza zajedno) čine 62.3%. Ostaci ovaca su skoro duplo zastupljeniji od ostataka koza u ukupnom uzorku (81 ovca, 45 koza). Posmatrano po periodima, ovce su nešto više od dva puta zastupljenije od koza u srednjovekovnim uzorcima, dok je njihov odnos u uzorcima iz turskog perioda gotovo ujednačen (Tabela 2). U svim periodima naseljavanja Meduna, ostaci ovikaprina su najbrojniji, i njihova zastupljenost varira između 56.2% u 14. veku do 70.6% u 16-17. veku (Tabela 2). Na osnovu najveće dužine (GL) dva cela radijusa iz 12-13. veka (Dodatak 1, Tabela 2), izračunata je visina grebena ovaca (prema formuli Teichert 1975), koja je iznosila 55.5 cm (za obe kosti). Kada je u pitanju koza, očuvane su tri cele kosti – metakarpalna kost iz 12-13. veka na osnovu čije je najveće dužine (GL) izračunata visina grebena (prema formuli Schramm 1967) od 63.8 cm, kao i po jedna metakarpalna i metatarzalna kost iz 19. veka, na osnovu kojih je visina grebena koza procenjena na 62.4 i 66.7 cm (Dodatak 1, Tabela 2).

Na drugom mestu po brojnosti ostataka u ukupnom uzorku nalazi se domaće goveče sa 30.2%. Posmatrano po periodima, zastupljenost domaćeg govečeta u srednjovekovnim uzorcima se kreće između 21.6% u 12-13. veku do 34.9% u 14. veku, dok u uzorcima iz turskog perioda njegova zastupljenost iznosi 24.4% u 16-17. veku, odnosno 27% u 19. veku (Tabela 2).

Ostaci domaće svinje na Medunu su malobrojni i čine svega 6% ukupnog uzorka, s tim da većina ostataka (83%) potiče iz srednjovekovnog perioda (Tabela 2). U uzorku iz 12-13. veka, ostaci domaće svinje čine 9.3%, a iz 14. veka – 8.1%. U uzorcima iz turskog perioda, zastupljenost domaće svinje iznosi 3.9% u 16-17., odnosno 0.7% u 19. veku (Tabela 2). Svega par kostiju domaće svinje pronađeno je i u veoma malim uzorcima iz perioda helenizma i bronzanog doba (Tabela 3).

Mali broj ostataka domaće kokoške prisutan je u uzorcima iz srednjeg veka i turskog perioda, dok je samo jedna fragmentovana donja vilica

remaining 7.7% of the total faunal assemblage was found in archaeological units from other periods at Medun, namely from the Hellenism (4th-2nd century BC) – 6.1%, Bronze Age – 1.3%, and Early Byzantine (6th-7th century) – 0.3% (Table 1).

Mammal remains represent most of the faunal assemblage from Medun (98%). In addition to mammals, remains of birds and snails are present in much smaller numbers. A total of six domestic animal species were identified: cattle (*Bos taurus*), pig (*Sus domesticus*), sheep (*Ovis aries*), goat (*Capra hircus*), horse (*Equus caballus*) and chicken (*Gallus domesticus*), as well as two wild ones – hare (*Lepus europaeus*) and red deer (*Cervus elaphus*) (Table 2 and Table 3). Out of the total number of identified specimens (847), the remains of caprines (sheep and goat taken together) comprise 62.3%. Sheep remains are almost twice as common as goat remains in the total assemblage (81 sheep, 45 goats). Observed by periods, sheep are more than twice as common as goats in Medieval samples, while their ratio in samples from the Turkish period is almost even (Table 2). In all periods caprine remains are the most numerous, and their representation varies between 56.2% in the 14th century to 70.6% in the 16th-17th century (Table 2). Based on the greatest length (GL) of two complete radii from the 12th-13th century (Appendix 1, Table 2) the sheep withers heights were calculated (according to Teichert 1975) – 55.5 cm (for both bones). Three whole goat bones were preserved – a metacarpal bone from the 12th-13th century; based on its greatest length (GL) (according to Schramm 1967) the withers height was estimated – 63.8 cm, as well as a metacarpal and metatarsal bone each from the 19th century, with withers heights – 62.4 and 66.7 cm respectively (Appendix 1, Table 2).

On the second place in terms of the number of identified remains in the total assemblage is domestic cattle with 30.2%. The abundance of domestic cattle in Medieval samples ranges between 21.6% in the 12th-13th century to 34.9% in the 14th century, while in the sam-

konja pronađena u SJ 6 prostora III koji je hronološki opredeljen u ?14. vek (Tabela 2). U kuli 1 u SJ 8 iz 19. veka kod ognjišta bilo je i ostataka ljuski jajeta, najverovatnije od domaće kokoške (Sl. 3).

Ostaci divljih životinja su malobrojni i čine svega 1.3% ukupnog uzorka sa Meduna. Ostaci zeca potiču iz turskog perioda (19. vek) i iz srednjeg veka, dok su malobrojni ostaci jelena prisutni u uzorcima iz 16-17. veka i iz perioda helenizma (4-2. vek pre nove ere) (Tabela 2 i Tabela 3).

Tafonomske karakteristike faunalnog uzorka

Životinjski ostaci sa Meduna većinom su fragmentovani, i samo 43 primeraka očuvano je u celosti, što čini 2.3% od ukupnog uzorka. Većinom su u pitanju kratke kosti – karpalne, tarzalne i falange. Ove kosti su veoma kompaktne zbog čega se češće očuvaju cele u odnosu na druge skeletne elemente. Takođe, pošto na njima nema mesa, prve se odbace tokom procesuiranja tela životinje, čime se smanjuje mogućnost njihovog daljeg lomljenja. Kada su u pitanju duge kosti, kompletno je očuvano samo sedam, i to: tri metapodijalne kosti koze, dva radijusa i ulna ovce, kao i jedna ulna domaće kokoške.

Na 0.8% od ukupnog broja fragmenata uočeni su tragovi uglavnom slabog raspadanja njihove površine u vidu pukotina i ljuspanja usled izloženosti atmosferskim uslovima (npr. kiša, vetar, mraz, itd.) pre pokopavanja. Pre pohranjivanja u sediment, neko vreme određeni skeletni elementi su bili dostupni i psima, o čemu svedoče i tragovima glodanja na njima. Oglodani primerci su najbrojniji u uzorku iz ?14. veka gde čine 3.4%, dok su najmanje zastupljeni u uzorku iz 19. veka, svega 0.8% (Tabela 4). Tragovi glodanja najčešće se javljaju na dugim kostima (npr. humerusima, radiusima, ulnama, metapodijalnim kostima, femurima i tibijama) domaćeg govečeta i ovikaprina, u manjem broju i domaće svinje. Primećeni su, takođe, i na fragmentima skapula, pelvisa, kalkaneusa, na rebru i falangi. Takođe, jedan femur domaće kokoške iz 12-13. veka je imao tragove glodanja na okrajcima.

ples from the Turkish period its frequency is 24.4% in the 16th-17th century, and 27% in the 19th century (Table 2).

Remains of domestic pigs are few and comprise only 6% of the total assemblage, with the majority of remains (83%) coming from the Medieval Period (Table 2). In the sample from the 12th-13th century, the remains of domestic pigs comprise 9.3%, and from the ?14th century – 8.1%. In the samples from the Turkish period, the abundance of the domestic pig is 3.9% in the 16th-17th and 0.7% in the 19th century (Table 2). Only a few bones of a domestic pig were found in very small samples from the Hellenistic and Bronze Age periods (Table 3).

A small number of domestic chicken remains are present in samples from the Medieval and the Turkish periods, while only one fragmented horse lower jaw was found in SJ 6 of Area III dated to the ?14th century (Table 2). Eggshell fragments, most likely from domestic chickens, were found in Tower 1 in SJ 8, near the hearth, dated to the 19th century (Fig. 3).

The remains of wild animals are few and comprise only 1.3% of the total assemblage. Hare remains come from the Turkish (19th century) and Medieval Periods, while a couple of red deer remains were present in the samples from the 16th-17th century and the Hellenistic period (4th- 2nd century BC) (Table 2 and Table 3).

Taphonomic characteristics of the faunal sample

Animal remains from Medun were mostly fragmented, and only 43 specimens were preserved completely – 2.3% of the total assemblage. Most of them are short bones – carpals, tarsals, and phalanges. These bones are very compact, which is why they are more often preserved whole than other skeletal elements. Also, since there is no meat on them, they are usually discarded at the very beginning of the butchering process which reduces the possibility of their further breakage. Only seven long bones have been preserved completely, namely: three goat metapodials, two sheep radii and ulna, as well as one domestic chicken ulna.

Tragovi gorenja uočeni su na ukupno 1.6% ostataka životinja. Relativna zastupljenost karbonizovanih i kalciniranih primeraka je najveća u uzorcima iz 4-2. veka pre nove ere i iz 12-13. veka, i iznosi 6.9%, odnosno 6.7%, dok u ostalim uzorcima broj gorelih primeraka je manji od 1% (Tabela 4). Tragovi gorenja najučestaliji su na ostacima ovikaprina, i to na elementima koji ne nose dosta mesa, npr. kalakneusima, falangama i metapodijalnim kostima.

Od svih tragova tafonomskih procesa, oni nastali prilikom kasapljenja, odnosno prilikom različitih faza procesuiranja tela životinja su najučestaliji (Tabela 4). Skeletni elementi sa tragovima kasapljenja su najučestaliji u 12-13. i 19. veku, i čine oko 21% uzoraka, dok je njihova relativna zastupljenost najmanja u uzorku iz 16-17. veka i iznosi 7.3% (Tabela 4).

U najvećem broju tragovi kasapljenja uočeni su na ostacima najznačajnijih domaćih vrsta – ovikaprina, govečeta i svinje. Takođe su prisutni na ostacima zečeva i ptica (koje nije bilo moguće odrediti do nivoa vrste usled njihove fragmentovanosti). Na osnovu vrste i lokacije tragova kasapljenja na različitim skeletnim elementima (Rixson 1989), može se zaključiti da su nastali tokom različitih faza kasapljenja – primarnog i sekundarnog tranžiranja.

Tokom primarnog tranžiranja tela životinja, odvajaju se skeletni elementi koji ne nose dosta mesa, npr. lobanja i donji delovi prednjih i zadnjih udova. Nekoliko tragova kasapljenja na različitim skeletnim elementima s Meduna nastali su tokom primarnog tranžiranja. Tragovi odsecanja rogova ukazuju na proces dranja kože. Ovakvi tragovi zabeleženi su na fragmentima rogova ovaca i koza iz srednjeg veka i turskog perioda. Na kratkim kostima zadnjih udova (astragalus i kalkaneus) domaćeg govečeta prisutni su poprečni tragovi odsecanja nastali tokom odbacivanja nemesnatih, donjih delova zadnjih udova. Poprečni tragovi odsecanja na vratnim pršljenovima nastali su u procesu odvajanja lobanje od tela. Ovakvi tragovi prisutni su na nekoliko vratnih pršljenova ovikaprina, kao i na jednom primerku domaćeg govečeta.

Traces of mostly slight weathering of their surface in the form of cracks and flaking were observed on 0.8% of the total fragments. These kinds of weathering traces were formed due to their exposure to atmospheric conditions (e.g., rain, wind, frost, etc.) before burial. Before being deposited in the sediment, certain skeletal elements were accessible to dogs for a while, as evidenced by the gnawing marks on them. The gnawed specimens are the most numerous in the sample from the 14th century comprising 3.4%, while they are the least represented in the sample from the 19th century, only 0.8% (Table 4). Gnawing marks are the most often found on long bones (e.g., humeri, radii, ulnae, metapodials, femora, and tibiae) of domestic cattle and caprines, and to a lesser extent domestic pigs. They were also observed on the fragments of the scapulae, pelvis, calcanei, ribs, and phalanges. Also, one domestic chicken femur dated to the 12th-13th century had the gnawing traces on its edges.

Burning marks were noticed on a total of 1.6% of animal remains. The relative distribution of carbonized and calcined specimens is the highest in the samples from the 4th-2nd century BC and the 12th-13th century, 6.9% and 6.7%, while in other samples, the number of burned specimens is less than 1% (Table 4). Burning marks are most common in the caprine remains, and in elements that do not carry a lot of meat (e.g., calcanei, phalanges, and metapodials).

Taphonomic traces created during butchering, that is during the various stages of processing animal bodies, are the most numerous in the assemblage (Table 4). Skeletal elements with butchery marks are the most frequent in the 12th-13th and 19th century samples, and comprise about 21%, while their relative distribution is the lowest in the sample from the 16th-17th century – 7.3% (Table 4). Most of the butchery marks were on the remains of the most important domestic species – caprines, cattle, and pigs. They are also present on the remains of hares and birds (which could not be determined to the species level due to their fragmentation). Based on the type and location of the butchery marks on different skeletal ele-

Znatno veći broj tragova kasapljenja na skeletnim elementima životinja sa Meduna nastao je tokom podele tela na manje delove, odnosno tokom sekundarnog tranžiranja. Uzdužni tragovi odsecanja duž kičmenog stuba javljaju se na ostacima domaćeg govečeta i ovikaprina iz srednjeg veka (?14. vek) i turskog perioda (19. vek). Ovakav tip traga verovatno je nastao tokom podele tela životinje na desnu i levu polovinu. Tragovi odsecanja na krajevima dugih kostiju (SL. 4) skapulama i pelvisima nastali su takođe u procesu sekundarnog tranžiranja. Veći broj ureza, zaseka i tragova odsecanja na fragmentima rebara krupnih sisara i sisara srednje veličine nastao je prilikom njihove dalje podele na manje komade pogodnije za pripremu, odnosno kvanje/prženje (Sl. 5). Na nekoliko fragmenata metapodijalnih kostiju domaćeg govečeta prisutni su duboki urezi i tragovi odsecanja po sredini dijafize. Prema poziciji i vrsti traga može se pretpostaviti da su nastali tokom ekstrakcije koštane srži.

(Rixson 1989), it can be concluded that they were created during different stages of butchery – primary and secondary.

During the primary stage, skeletal elements that do not carry much meat are separated, e.g., the skull and the lower parts of the front and hind limbs. Several traces of butchery on various skeletal elements from Medun were created during this stage. Traces of cutting off the horns indicate the process of skinning. Such traces were noted on the fragments of sheep and goat horncores from the Medieval and Turkish Periods. Transverse cutting marks were noticed on the short bones of the hind limbs (astragali and calcanei) of domestic cattle, and they were created during the separation of the non-meaty, lower parts of the hind limbs. Likewise, transverse cutting marks on the cervical vertebrae were created in the process of separating the skull from the body. Such traces are present on several cervical vertebrae of caprines, as well as on one specimen of domestic cattle from Medun.

A significantly greater number of the butchery marks on the skeletal elements of animals from Medun were created during the division of the body into smaller parts, i.e., during the secondary stage. Longitudinal traces of cutting along the spinal column appear on the remains of domestic cattle and caprines from the Medieval (?14th century) and Turkish periods (19th century). This type of a cut mark was probably created during the division of the animal's body into the right and left halves. Traces of cutting at the ends of the long bones (Fig. 4), scapulae, and pelvis were also created in the process of the secondary stage. A greater number of cuts and chop marks on the rib fragments of the large- and medium-sized mammals occurred during their further division into smaller pieces more suitable for preparation (i.e., cooking) (Fig. 5). Several fragments of domestic cattle metapodials from Medun have deep cuts and chop marks in the middle of the diaphysis. According to the position and type of the traces, it can be assumed that they were created during the bone marrow extraction.

Tabela 1. Broj ostataka životinja po periodima na nalazištu Medun (UBF – ukupan broj fragmenata, BOP – broj određenih primeraka)

Table 1. Number of animal remains by period at the site of Medun (UBF – total number of fragments, BOP (*eng.* NISP) – Number of Identified Specimens)

PERIOD	KONTEKSTI SA OSTACIMA	UBF	BOP
19. vek	Kula 1 (SJ 1, SJ 6, SJ 7); Objekat 3 (SJ 2), Prostor I (SJ 3), Prostor II (SJ 1), Prostor III (SJ 1, SJ 2)	258	148
16-17. vek	Objekat 3 (SJ 3, SJ 4), Prostor I (SJ 4), Prostor II (SJ 3), Prostor III (SJ 3)	477	180
?14. vek	Prostor III (SJ 6)	814	370
12-13. vek	Kula 1 (SJ 10, SJ 11)	208	97
6-7. vek	Kula 2 (SJ 2)	5	2
4-2. vek p.n.e.	Prostor III (SJ 7, SJ 8), Kula 2 (SJ 3)	116	42
bronzano doba	Prostor III (SJ 9)	25	8
	UKUPNO	1903	847

Tabela 2. Zastupljenost različitih taksona iz perioda srednjeg veka (12-13. i ?14. vek) i turskog perioda (16-17. i 19. vek) na nalazištu Medun (BOP = broj određenih primeraka)

Table 2. Distribution of various animal taxa from the medieval period (12-13 and ?14 century) and Turkish period (16-17 and 19 century) at the site of Medun (BOP (*eng.* NISP) = Number of Identified Specimens)

Takson	12-13. vek		?14. vek		16-17. vek		19. vek	
	BOP	%	BOP	%	BOP	%	BOP	%
Domaće goveče (<i>Bos taurus</i>)	21	21.6	129	34.9	44	24.4	40	27
Domaća svinja (<i>Sus domesticus</i>)	9	9.3	30	8.1	7	3.9	1	0.7
Ovca (<i>Ovis aries</i>)	16	16.5	34	9.2	10	5.6	19	12.8
Koza (<i>Capra hircus</i>)	7	7.2	16	4.3	9	5	12	8.1
Ovca/koza (<i>Ovis/Capra</i>)	42	43.3	158	42.7	108	60	72	48.6
Konj (<i>Equus caballus</i>)	/	/	1	0.3	/	/	/	/
Zec (<i>Lepus europaeus</i>)	2	2.1	2	0.5	/	/	4	2.7
Jelen (<i>Cervus elaphus</i>)	/	/	/	/	2	1.1	/	/
Sisari – određeno	97	100	370	100	180	100	148	100
Krupni sisari	18	/	329	/	73	/	45	/
Sisari srednje veličine	89	/	110	/	199	/	58	/
Sitni sisari	/	/	/	/	1	/	6	/
Domaća kokoška (<i>Gallus domesticus</i>)	3	/	2	/	3	/	/	/
Ptice (<i>Aves</i>)	1	/	3	/	7	/	1	/
Puževi (<i>Gastropoda</i>)	/	/	/	/	14	/	/	/
UKUPNO	208	/	814	/	477	/	258	/

Tabela 3. Zastupljenost različitih taksona iz ostalih perioda na nalazištu Medun (BOP = broj određenih primeraka)

Table 3. Distribution of various animal taxa from other periods at the site of Medun (BOP (eng. NISP) = Number of Identified Specimens)

	6-7. vek	4-2. vek p.n.e.	bronzano doba
Takson	BOP	BOP	BOP
Domaće goveče (<i>Bos taurus</i>)	1	18	3
Domaća svinja (<i>Sus domesticus</i>)	/	3	1
Ovca (<i>Ovis aries</i>)	/	2	1
Koza (<i>Capra hircus</i>)	/	1	/
Ovca/koza (<i>Ovis/Capra</i>)	1	17	3
Jelen (<i>Cervus elephus</i>)	/	1	/
Sisari – određeno	2	42	8
Krupni sisari	/	32	9
Sisari srednje veličine	3	42	8
UKUPNO	5	116	25

Tabela 4. Zastupljenost ostataka životinja sa tragovima tafonomskih procesa po periodima na nalazištu Medun (UBF – ukupan broj fragmenata)

Table 4. Distribution of animal remains with taphonomic traces by period at the site of Medun (UBF – total number of fragments)

PERIOD	UBF	GORENJE	%	GLODANJE	%	KASAPLJENJE	%
19. vek	258	2	0.8	2	0.8	55	21.3
16-17. vek	463	3	0.6	11	2.4	34	7.3
?14. vek	814	4	0.5	28	3.4	141	17.3
12-13. vek	208	14	6.7	5	2.4	45	21.6
6-7. vek	5	/	/	/	/	/	/
4-2. vek p.n.e.	116	8	6.9	3	2.6	12	10.3
bronzano doba	25	/	/	/	/	/	/

DODATAK 1 – Dimenzije različitih skeletnih elemenata domaćih životinja sa Meduna
APPENDIX 1 – Dimensions of various skeletal elements of domesticates from Medun

Tabela 1. Dimenzije različitih delova skeleta domaćeg govečeta (*Bos taurus*) (M – mera)

Table 1. Domestic cattle (*Bos taurus*) bone measurements (M – measurement)

Period	Inv.broj	Takson	Element	M 1	M 2	M 3	M 4
			SCAPULA	GLP	SLC	LG	BG
?14. vek	ME 21/14/181	<i>Bos taurus</i>		52.6	40.6	48.1	38.8
?14. vek	ME 21/14/184	<i>Bos taurus</i>		60.7		50.7	41.4
?14. vek	ME 21/14/185	<i>Bos taurus</i>					40.7
12-13. vek	ME 20/5/11	<i>Bos taurus</i>		51.6	38.1	46.1	33.6
12-13. vek	ME 20/10/14	<i>Bos taurus</i>		51.7	42.1	43.8	35.6
			RADIUS	Bp	Dp	Bd	Dd
19. vek	ME 21/3/5	<i>Bos taurus</i>			26.9		
19. vek	ME 21/13/18	<i>Bos taurus</i>		63.3	32.4		
?14. vek	ME 21/14/153	<i>Bos taurus</i>		71.3			
?14. vek	ME 21/14/154	<i>Bos taurus</i>		64.1	32		
?14. vek	ME 21/14/157	<i>Bos taurus</i>				59.2	35.7
?14. vek			ULNA	BPC			
?14. vek	ME 21/10/4	<i>Bos taurus</i>		37.7			
?14. vek	ME 21/14/119	<i>Bos taurus</i>		36.6			
?14. vek			METACARPAL	Bp	Dp	Bd	Dd
?14. vek	ME 21/14/111	<i>Bos taurus</i>		50.1	31.2		
?14. vek	ME 21/14/115	<i>Bos taurus</i>		48.7	28.8		
?14. vek	ME 21/14/116	<i>Bos taurus</i>		48.5	29.7		
?14. vek	ME 21/14/112	<i>Bos taurus</i>				51.4	28.1
			PELVIS	LA	LAR		
19. vek	ME 21/1/4	<i>Bos taurus</i>		61.7	50.3		
19. vek	ME 21/3/43	<i>Bos taurus</i>		61.4	51.1		
			FEMUR	DC			
19. vek	ME 21/8/9	<i>Bos taurus</i>		36.7			
4-2. vek p.n.e.	ME 21/12/17	<i>Bos taurus</i>		36.1			
			TIBIA	Bp	Bd	Dd	
?14. vek	ME 21/14/235	<i>Bos taurus</i>		77.7			

?14. vek	ME 21/14/228	<i>Bos taurus</i>			54.1	38.6	
?14. vek	ME 21/14/231	<i>Bos taurus</i>			54.3	41.5	
?14. vek	ME 21/14/236	<i>Bos taurus</i>			55.1	41.7	
			ASTRAGALUS	GLI	GLm	Bd	
16-17. vek	ME 21/2/78	<i>Bos taurus</i>		59.4	53.8	36.3	
16-17. vek	ME 21/5/3	<i>Bos taurus</i>			47.6		
?14. vek	ME 21/14/3	<i>Bos taurus</i>				38.6	
?14. vek	ME 21/14/4	<i>Bos taurus</i>				36.8	
?14. vek	ME 21/14/5	<i>Bos taurus</i>				31.3	
			CALCANEUS	GB			
19. vek	ME 21/13/4	<i>Bos taurus</i>		36.8			
?14. vek	ME 21/14/6	<i>Bos taurus</i>		35.6			
?14. vek	ME 21/14/7	<i>Bos taurus</i>		34.7			
			METATARSAL	Bp	Dp		
19. vek	ME 21/3/11	<i>Bos taurus</i>		36.4	35.5		
?14. vek	ME 21/14/90	<i>Bos taurus</i>		42.9	39.7		
?14. vek	ME 21/14/113	<i>Bos taurus</i>		46.5	44.5		
4-2. vek p.n.e.	ME 20/8/15	<i>Bos taurus</i>		41.2			
			PHALANX 1	GL	Bp	Dp	Bd
19. vek	ME 21/3/18	<i>Bos taurus</i>		46.7	23.2	23.8	21.7
?14. vek	ME 21/14/12	<i>Bos taurus</i>		47.9	24.7	26.6	24
?14. vek	ME 21/14/14	<i>Bos taurus</i>		50.5	28.6	29.1	25
?14. vek	ME 21/14/13	<i>Bos taurus</i>		53.1	24.7	28.1	
?14. vek	ME 21/14/11	<i>Bos taurus</i>		50.4	27.8	28.2	
?14. vek	ME 21/14/15	<i>Bos taurus</i>			26.4	27.1	25.3
?14. vek	ME 21/14/16	<i>Bos taurus</i>					22.2
			PHALANX 2	GL	Bp	Dp	Bd
19. vek	ME 21/13/6	<i>Bos taurus</i>		29.9	23.6	21.8	19.9
16-17. vek	ME 21/6/4	<i>Bos taurus</i>		31.4	25.9	26.3	21.8
16-17. vek	ME 20/9/45	<i>Bos taurus</i>			22.3		17.8
?14. vek	ME 21/14/19	<i>Bos taurus</i>		33.9	29.6	28.7	24.4
?14. vek	ME 21/14/20	<i>Bos taurus</i>		31.2	22.1	22.7	18.3
?14. vek	ME 21/14/21	<i>Bos taurus</i>		34	24.1	24.2	21.1

Tabela 2. Dimenzije različitih delova skeleta ovce (*Ovis aries*), koze (*Capra hircus*) i ovce/koze (*Ovis/Capra*) (M – mera)Table 2. Sheep (*Ovis aries*), goat (*Capra hircus*) and sheep/goat (*Ovis/Capra*) bone measurements (M – measurement)

Period	Inv.broj	Takson	Element	M 1	M 2	M 3	M 4	M 5
			SCAPULA	GLP	SLC	LG	BG	
19. vek	ME 21/3/26	<i>Ovis aries</i>			17.5	24.3	18.5	
19. vek	ME 21/8/5	<i>Ovis aries</i>			20.9			
19. vek	ME 21/13/8	<i>Capra hircus</i>		29.4	24.3	21.4	18	
19. vek	ME 20/6/7	<i>Ovis/Capra</i>			19.7			
16-17. vek	ME 20/9/12	<i>Ovis/Capra</i>			20.5		22.1	
12-13. vek	ME 20/10/16	<i>Ovis/Capra</i>			19.5	27.2	21.6	
12-13. vek	ME 20/10/15	<i>Ovis/Capra</i>			18.3			
			HUMERUS	Bd	Dd	BT		
19. vek	ME 21/13/13	<i>Ovis aries</i>		29.1	24.8	28.4		
19. vek	ME 20/1/4	<i>Ovis/Capra</i>		30		29.2		
19. vek	ME 2/6/11	<i>Ovis/Capra</i>		29.7		28.8		
16-17. vek	ME 21/2/36	<i>Ovis aries</i>		30.9	25.4	28.8		
16-17. vek	ME 21/2/37	<i>Ovis aries</i>		30.1	25	26.9		
16-17. vek	ME 21/2/38	<i>Ovis aries</i>		29.3	23	26.7		
?14. vek	ME 21/14/252	<i>Ovis aries</i>		28.1	23.3	26.5		
?14. vek	ME 21/14/249	<i>Capra hircus</i>		32.6	27.8	31.8		
?14. vek	ME 21/14/251	<i>Capra hircus</i>		33.5	26.1	32.2		
12-13. vek	ME 20/10/18	<i>Ovis aries</i>		27.8	24.7	27.7		
12-13. vek	ME 20/5/18	<i>Capra hircus</i>		23.8	21	24.1		
4-2. vek p.n.e.	ME 20/8/9	<i>Ovis/Capra</i>		24.1		20.4		
			RADIUS	GL	Bp	Dp	Bd	Dd
16-17. vek	ME 21/11/11	<i>Ovis aries</i>			27.7			
16-17. vek	ME 21/5/6	<i>Capra hircus</i>					28.6	18.4
?14. vek	ME 21/14/126	<i>Ovis aries</i>			29.1	15.3		
?14. vek	ME 21/14/128	<i>Ovis aries</i>			26.8	14.8		
?14. vek	ME 21/14/130	<i>Ovis aries</i>			23.2	13.1		
?14. vek	ME 21/14/131	<i>Ovis aries</i>			26.8	15.4		
?14. vek	ME 21/14/151	<i>Ovis aries</i>			33.5	17.9		
?14. vek	ME 21/14/152	<i>Ovis aries</i>			30.2	16.1		
?14. vek	ME 21/14/136	<i>Ovis aries</i>					30.1	22.1
?14. vek	ME 21/14/147	<i>Ovis aries</i>					29.1	18.1
?14. vek	ME 21/14/149	<i>Ovis aries</i>					26.7	17.7
?14. vek	ME 21/14/148	<i>Capra hircus</i>					29.1	19.5
?14. vek	ME 21/14/139	<i>Capra hircus</i>			29.8	15.7		

12-13. vek	ME 20/10/23	<i>Ovis aries</i>		138.1	30.8	15.6	27	
12-13. vek	ME 20/10/17	<i>Ovis aries</i>		138.2	31.1		27.1	
12-13. vek	ME 20/10/22	<i>Ovis aries</i>			28.2	15		
12-13. vek	ME 20/10/25	<i>Ovis aries</i>			29.3	19.5		
				ULNA	BPC	DPA	SDO	
19. vek	ME 21/8/12	<i>Ovis/Capra</i>		18.9		25		
16-17. vek	ME 20/9/19	<i>Ovis/Capra</i>		16.8				
16-17. vek	ME 21/2/55	<i>Ovis/Capra</i>		19.1				
?14. vek	ME 21/14/12	<i>Ovis/Capra</i>		23.5	26.2			
12-13. vek	ME 20/10/30	<i>Ovis/Capra</i>		18.7	25.8	21.3		
12-13. vek	ME 20/10/31	<i>Ovis/Capra</i>				21.9		
				METACARPAL	GL	Bp	Dp	Bd Dd
19. vek	ME 21/3/14	<i>Capra hircus</i>		116	25.8	16.8	28.6	16.4
19. vek	ME 21/3/13	<i>Capra hircus</i>			25.6	16.8		
16-17. vek	ME 20/9/36	<i>Capra hircus</i>					28.3	
16-17. vek	ME 21/2/4	<i>Ovis/Capra</i>			21.3	15.1		
?14. vek	ME 21/14/106	<i>Ovis aries</i>			22.1	16.2		
?14. vek	ME 21/10/15	<i>Capra hircus</i>			25.5	18.3		
?14. vek	ME 21/14/103	<i>Capra hircus</i>			23.1	16.2		
?14. vek	ME 21/14/104	<i>Capra hircus</i>			23.4	16.4		
?14. vek	ME 21/14/105	<i>Capra hircus</i>			21.8	16		
?14. vek	ME 21/14/100	<i>Ovis/Capra</i>			23.9	15.7		
?14. vek	ME 21/14/101	<i>Ovis/Capra</i>			23.6	16.8		
12-13. vek	ME 20/10/58	<i>Ovis aries</i>			22.9	16.3		
12-13. vek	ME 20/10/56	<i>Capra hircus</i>		111	26.1			30.1
				PELVIS	LA	LAR		
?14. vek	ME 21/14/69	<i>Ovis aries</i>		27.4	24.2			
?14. vek	ME 21/14/70	<i>Ovis aries</i>		28.7	26.5			
?14. vek	ME 21/14/71	<i>Ovis aries</i>		29.8	27.7			
12-13. vek	ME 20/10/36	<i>Ovis/Capra</i>		29.7	27.2			
				FEMUR	Bp	Bd		
?14. vek	ME 21/14/270	<i>Ovis aries</i>		42.8				
12-13. vek	ME 20/10/42	<i>Ovis aries</i>			36.8			
12-13. vek	ME 20/10/44	<i>Ovis aries</i>			38.1			
12-13. vek	ME 20/5/20	<i>Ovis/Capra</i>			21.6			
				TIBIA	Bd	Dd		
19. vek	ME 20/6/14	<i>Capra hircus</i>		27.2	21.4			
19. vek	ME 20/6/15	<i>Capra hircus</i>		24.5	18.5			
19. vek	ME 21/8/17	<i>Capra hircus</i>		23.1	17.4			
19. vek	ME 20/6/15	<i>Ovis/Capra</i>		23.1	18.6			
16-17. vek	ME 21/2/27	<i>Ovis aries</i>		26.8	22.5			
16-17. vek	ME 21/11/4	<i>Ovis aries</i>		25.7	19.5			
16-17. vek	ME 21/6/3	<i>Ovis aries</i>		26.5				

16-17. vek	ME 20/9/32	<i>Capra hircus</i>		24.7				
?14. vek	ME 21/14/214	<i>Ovis aries</i>		24.6	18.3			
?14. vek	ME 21/14/215	<i>Ovis aries</i>		24.3	19.3			
?14. vek	ME 21/14/216	<i>Ovis aries</i>		24.5	18.4			
?14. vek	ME 21/14/222	<i>Ovis aries</i>		24.4	19.1			
?14. vek	ME 21/14/223	<i>Ovis aries</i>		26.5	19.2			
?14. vek	ME 21/14/217	<i>Capra hircus</i>		25.2	18.1			
?14. vek	ME 21/14/218	<i>Capra hircus</i>		25.7	19.9			
?14. vek	ME 21/14/219	<i>Ovis/Capra</i>		24.4	19.6			
			ASTRAGALUS	GLI	GLm	Bd		
19. vek	ME 20/6/21	<i>Ovis aries</i>		26.2	23.7	17.6		
16-17. vek	ME 20/9/41	<i>Capra hircus</i>		26.2	24.6			
			CALCANEUS	GL	GB			
19. vek	ME 20/6/20	<i>Ovis aries</i>		58	20			
19. vek	ME 21/8/7	<i>Ovis aries</i>		57.1	19.7			
?14. vek	ME 21/14/9	<i>Ovis aries</i>		53.2	16.7			
12-13. vek	ME 20/10/53	<i>Ovis aries</i>		50	17.1			
			METATARSAL	GL	Bp	Dp	Bd	Dd
19. vek	ME 21/3/12	<i>Capra hircus</i>		117	18.5	17.5	22.9	15.6
19. vek	ME 21/13/30	<i>Capra hircus</i>			20.1			
?14. vek	ME 21/14/95	<i>Ovis aries</i>			22.4	14.8		
12-13. vek	ME 20/5/24	<i>Ovis aries</i>			19.4	17.8		
12-13. vek	ME 20/5/23	<i>Capra hircus</i>			20.2	18.7		
			PHALANX 1	GL	Bp	Dp	Bd	
19. vek	ME 21/4/3	<i>Ovis aries</i>		36.9	13.6	15.6	12.5	
19. vek	ME 21/8/11	<i>Ovis aries</i>		36.3	13.2	14.2	12.2	
19. vek	ME 21/13/7	<i>Ovis aries</i>		31.4	11.1	12.9	11.8	
16-17. vek	ME 20/9/44	<i>Ovis aries</i>		32.4	12.2	14.2	11.3	
16-17. vek	ME 21/11/17	<i>Ovis aries</i>		33	11.8	14.1	11.1	
16-17. vek	ME 21/11/16	<i>Capra hircus</i>					13.2	
16-17. vek	ME 20/9/46	<i>Ovis/Capra</i>					10	
16-17. vek	ME 21/5/7	<i>Ovis/Capra</i>					11.4	
?14. vek	ME 21/14/17	<i>Ovis aries</i>		34.7		14.2	10.7	
?14. vek	ME 21/14/18	<i>Ovis aries</i>		36.6	12.6	14.1	12.5	
?14. vek	ME 21/10/16	<i>Ovis/Capra</i>					12.9	
			PHALANX 2	GL	Bp	Dp	Bd	
16-17. vek	ME 20/9/43	<i>Ovis/Capra</i>			11.1	12.1	8.4	
?14. vek	ME 21/14/22	<i>Ovis/Capra</i>		21.6	12.9	12.9	10.7	

Tabela 3. Dimenzije različitih delova skeleta domaće svinje (*Sus domesticus*) (M – mera)Table 3. Domestic pig (*Sus domesticus*) bone measurements (M – measurement)

Period	Inv.broj	Takson	Element	M 1	M 2	M 3	M 4	M 5	M 6
			MAXILLA	LM1	BM1	LM2	BM2	LM3	BM3
?14. vek	ME 21/10/19	<i>S. domesticus</i>		14.7	12.9				
?14. vek	ME 21/10/20	<i>S. domesticus</i>						26.7	17.1
12-13. vek	ME 20/10/12	<i>S. domesticus</i>						26.7	17.7
4-2. vek p.n.e.	ME 21/12/6	<i>S. domesticus</i>		13.2	12.5	17.7	15.5		
			MANDIBULA	LM1	BdP4	LM2	BM2		
?14. vek	ME 21/14/412	<i>S. domesticus</i>		14.3	9.5				
12-13. v.	ME 20/10/11	<i>S. domesticus</i>		13.1	9.8	17.9	12.6		
			SCAPULA	GLP	SLC	LG	BG		
?14. vek	ME 21/14/175	<i>S. domesticus</i>			19.9		24.7		
12-13. vek	ME 20/5/13	<i>S. domesticus</i>		31.6	21.1	26.3	20.4		
			HUMERUS	Bd	Dd	BT			
19. vek	ME 21/3/17	<i>S. domesticus</i>		33.4		26.2			
16-17. vek	ME 21/2/34	<i>S. domesticus</i>		36.5	35.1	29.2			
			RADIUS	Bp	Dp				
16-17. vek	ME 21/2/53	<i>S. domesticus</i>		27.9	19				
12-13. vek	ME 20/10/26	<i>S. domesticus</i>		26.4	18.8				
			ULNA	BPC	DPA				
?14. vek	ME 21/14/118	<i>S. domesticus</i>		19.6	40.4				
			PELVIS	LA	LAR				
?14. vek	ME 21/14/65	<i>S. domesticus</i>		33.5	29.8				
12-13. vek	ME 20/10/35	<i>S. domesticus</i>		30.8	27.7				

Tabela 4. Dimenzije različitih delova skeleta domaće kokoške (*Gallus domesticus*) (M – mera)Table 4. Domestic chicken (*Gallus domesticus*) bone measurements (M – measurement)

Period	Inv.broj	Takson	Element	M 1	M 2	M 3
			HUMERUS	GL	Bd	
12-13. vek	ME 20/10/78	<i>Gallus domesticus</i>		65.2	14.1	
			ULNA	GL	Bp	Dp
12-13. vek	ME 20/5/32	<i>Gallus domesticus</i>		69.2	9.7	8.6
			TIBIOTARSUS	GL	Bp	Dp
?14. vek	ME 21/14/414	<i>Gallus domesticus</i>		112.7	15.3	19.9

Zaključak

Tokom arheoloških iskopavanja višeslojnog nalazišta Medun sakupljen je manji broj ostataka životinja koji potiču iz turskog perioda (19. vek, 16-17. vek), srednjeg veka (12-?14. vek), rane Vizantije (6-7. vek), helenizma (4-2. vek p.n.e.) i bronzanog doba. Najveći deo čine uzorci iz srednjeg veka (53.7%) i turskog perioda (38.6%), dok su uzorci iz ostalih perioda veoma mali, i u nekima od njih ima svega nekoliko ostataka životinja.

Glavne domaće vrste (goveče, ovikaprini i svinja) bile su zastupljene tokom svih perioda, dok su ostaci domaće kokoške pronađeni samo u uzorcima iz srednjeg veka i turskog perioda. Jedna kost konja prisutna je samo u uzorku iz ?14. veka. Zec i jelen su jedine divlje životinje čiji su ostaci pronađeni na Medunu. Ostaci ovikaprina su najzastupljeniji, a zatim od domaćeg govečeta, dok su od domaće svinje malobrojni. Brojni tragovi kasapljenja uočeni su uglavnom na ostacima ovikaprina, domaćeg govečeta i domaće svinje. Ima ih par i na skeletnim elementima zeca i domaće kokoške. Ovi tragovi kasapljenja ukazuju na to kako su se tela životinja pripremala za konzumaciju. Tokom primarnog tranžiranja odstranjivani su skeletni elementi koji nose malo mesa, kao i rogovi radi lakšeg dranja. Zatim je telo životinje deljeno na manje celine koje su pogodnije za pripremanje, dok je poslednji korak uključivao i ekspanziju koštane srži. Mali broj skeletnih elemenata sa tragovima glodanja i sa slabim tragovima raspadanja površine, ukazuje na to da su ostaci životinja na Medunu brzo pohranjivani nakon pripreme, odnosno konzumacije.

Conclusion

During the archaeological excavations of the multi-layered site of Medun, a small number of animal remains were collected from the Turkish period (19th century, and 16th-17th century), Medieval Period (12th-13th and ?14th century), Early Byzantium (6th-7th century), Hellenism (4th-2nd century BC) and the Bronze Age. The largest part consists of the samples from the Medieval (53.7%) and Turkish periods (38.6%), while samples from other periods are very small, and in some of them, there are only a few animal remains.

The main domestic species (cattle, caprines, and pigs) were represented during all periods, while the remains of the domestic chicken were found only in the samples from the Medieval and Turkish periods. One horse bone is present only in the sample from the ?14th century. Hare and red deer are the only wild animals whose remains were found at Medun. Caprine remains are the most common, followed by domestic cattle, while they are few from the domestic pig. Numerous traces of butchery were observed mainly on the remains of caprines, domestic cattle, and domestic pigs. There are a couple of them on the skeletal elements of the hare and domestic chicken. These butchery marks indicate how the bodies of the animals were prepared for consumption. During the primary stage of butchery, the skeletal elements that carry a little meat were removed, as well as the horns for easier skinning. Then, the animal's body was divided into smaller portions that are more suitable for preparation, while the last step included the extraction of the bone marrow. The small number of skeletal elements with traces of gnawing and weathering indicates that the animal remains at Medun were quickly buried after preparation (i.e., after consumption).

- Dobney, Rielly 1988** - K. Dobney, K. Rielly, A method for recording archaeological animal bones: the use of diagnostic zones. *Circaea* 5: 79–96.
- France 2009** - D. France, Human and nonhuman bone identification: a color atlas. Boca Raton: CRC Press, Taylor and Francis Group.
- Гарашанин 1967** - М. Гарашанин, Црна Гора у освит писане историје, у: Историја Црне Горе I. Титоград: Редакција за историју Црне Горе, стр. 127–133.
- Grant 1982** - A. Grant, The use of tooth wear as a guide to the age of domestic ungulates, in Wilson, B., Grigson, C., Payne, S. (eds.) *Ageing and Sexing Animal Bones from Archaeological Sites*, British Archeological Reports British Series 109. Oxford: BAR, pp. 91–108.
- Halstead 1985** - P. Halstead, A study of mandibular teeth from Romano-British contexts at Maxey, in: Pryor, F., French, C. (eds.), *Archaeology and Environment in the Lower Welland Valley*, 1. East Anglian Archaeology 27: 219–224.
- Halstead, Collins, Isaakidou 2002** - P. Halstead, P. Collins, V. Isaakidou, Sorting Sheep from Goats: Morphological Distinctions between the Mandibles and Mandibular Teeth of Adult Ovis and Capra. *Journal of Archaeological Science* 29: 545–553.
- Hambleton 1999** - E. Hambleton, Animal Husbandry Regimes in Iron Age Britain. *British Archaeological Reports British Series* 282, Oxford: Archaeopress
- Мијовић, Ковачевић 1975** - П. Мијовић, М. Ковачевић, Градови и утврђења у Црној Гори, Београд-Улцињ: Археолошки институт.
- Payne 1973** - S. Payne, Kill-off Patterns in sheep and goats: the mandibles from Aşvan Kale. *Anatolian Studies* 23: 281–303.
- Praschniker, Schober 1919** - C. Praschniker, A. Schober, *Archäologische Forschungen in Albanien und Montenegro*, Schriften der Balkankommission. Antiquarische Abteilung 8, Wien: Akademie der Wissenschaften.
- Петровић 2012** - П. Петровић, Медунски град, историјско-кастелолошка студија, Подгорица: Црногорска академија науке и уметности.
- Prummel 1988** - W. Prummel, Distinguishing features of postcranial skeletal elements of cattle, *Bos primigenius* f. *taurus*, and red deer, *Cervus elaphus*. *Schriften aus der Archäologisch- Zoologischen Arbeitsgruppe Schleswig-Kiel* 12: 1–52.
- Prummel, Frisch 1986** - W. Prummel, H. Frisch, A guide for the distinction of species, sex and body side in bones of sheep and goats. *Journal of Archaeological Science* 13: 567–577.
- Reitz, Wing 2008** - E. Reitz, E. Wing, *Zooarchaeology*. New York: Cambridge University Press.
- Rixson 1989** - D. Rixson, Butchery evidence on animal bones. *Circaea* 6 (1): 49–61.
- Russell, Martin 2005** - N. Russell, L. Martin, The Çatalhöyük Mammal Remains, in Hodder, I. (ed.), *Inhabiting Çatalhöyük: Reports from the 1995-1999 seasons*. Cambridge: McDonald Institute for Archaeological Research, pp. 33–98.
- Schmid 1972** - E. Schmid, *Atlas of Animals Bones*. Amsterdam: Elsevier Publishing Company.

Schramm 1967 - Z. Schramm, Long bones and heights in withers of goat. Roczniki Wyzszej Szkoly Rolniczej w Poznaniu 36: 89–105.

Silver 1969 - I. Silver, The ageing of domestic animals, in: Brothwell, D., Higgs, E. (eds.), Science in Archaeology: a survey of progress and research, London: Thames and Hudson, pp. 283–302.

Teichert 1975 - M. Teichert, Osteometrische Untersuchungen zur berechnung der Widerristhöhe bei Schafen, in: Clason, A., (ed.), Archeozoological studies, Amsterdam: North-Holland Publishing Company/Elsevier, pp. 51–69.

Здравковић 1953 - И. Здравковић, Град Медун крај Титограда, Зборник заштите споменика културе III: 127–132.

Zeder, Lapham 2010 - M. Zeder, H. Lapham, Assessing the reliability of criteria used to identify post-cranial bones in sheep, Ovis, and goats, Capra. Journal of Archaeological Science 37: 2887–2905.

Zeder, Pilaar 2010 - M. Zeder, S. Pilaar, Assessing the reliability of criteria used to identify mandibles and mandibular teeth in sheep, Ovis, and goats, Capra. International Journal of Archaeological Science 37: 225–242.

Живановић 2021 - М. Живановић, Археолошке биљешке из Медуна. Nova antička Duklja XII: 95-104.