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Arheološki projekt *Varvaria / Breberium / Bribir* u 2016. godini *Varvaria / Breberium / Bribir* Archaeological Project. The 2016 excavation season

U tekstu se donose preliminarni rezultati treće sezone arheoloških istraživanja rotunde i pripadajućeg arhitektonskog sklopa na Bribirskoj glavici. Radovi su se odvijali u sklopu međunarodnog projekta Varvaria / Breberium / Bribir. U ovoj su kampanji preciznije definirane pojedine strukture otkrivene u ranijim iskopavanjima, a otkriveni su i novi elementi istraživanog sklopa. Konsolidacijom i konzervacijom istraženih objekata prišlo se djelomičnoj interpretaciji i prezentaciji, a obrađeni materijal pronađen tijekom istraživanja i kemijske analize omogućili su dataciju pojedinih struktura unutar sklopa.

Ključne riječi: *Dalmacija, Bribir, rotunda, mauzolej, crkva sv. Joakima i Ane*

The present paper contains the preliminary report on the third season of the archaeological investigation of the rotunda and the architectural structures surrounding it that was carried out within the project Varvaria/Breberium /Bribir. This campaign resulted in a more detailed definition of certain structures that were uncovered in previous excavations, as well as the discovery of new elements within the investigated complex. The consolidation and conservation of the excavated architectural structures, has led to its partial interpretation and presentation. The processing and chemical analysis of material has further enabled the dating of certain elements of the complex.

Key words: *Dalmatia, Bribir, rotunda, mausoleum, church of sts. Joachim and Ann*

The *Varvaria / Breberium / Bribir* Archaeological Project¹ continued its work in 2016 with the following in- and off-field activities²:

¹ The present report rests on results reached thanks to the collective effort of the whole excavation team. The text was written by V. Ghica. A. Milošević, N. Uroda and D. Džino proofread it, making suggestions and comments, while D. Džino authored the Croatian translation.

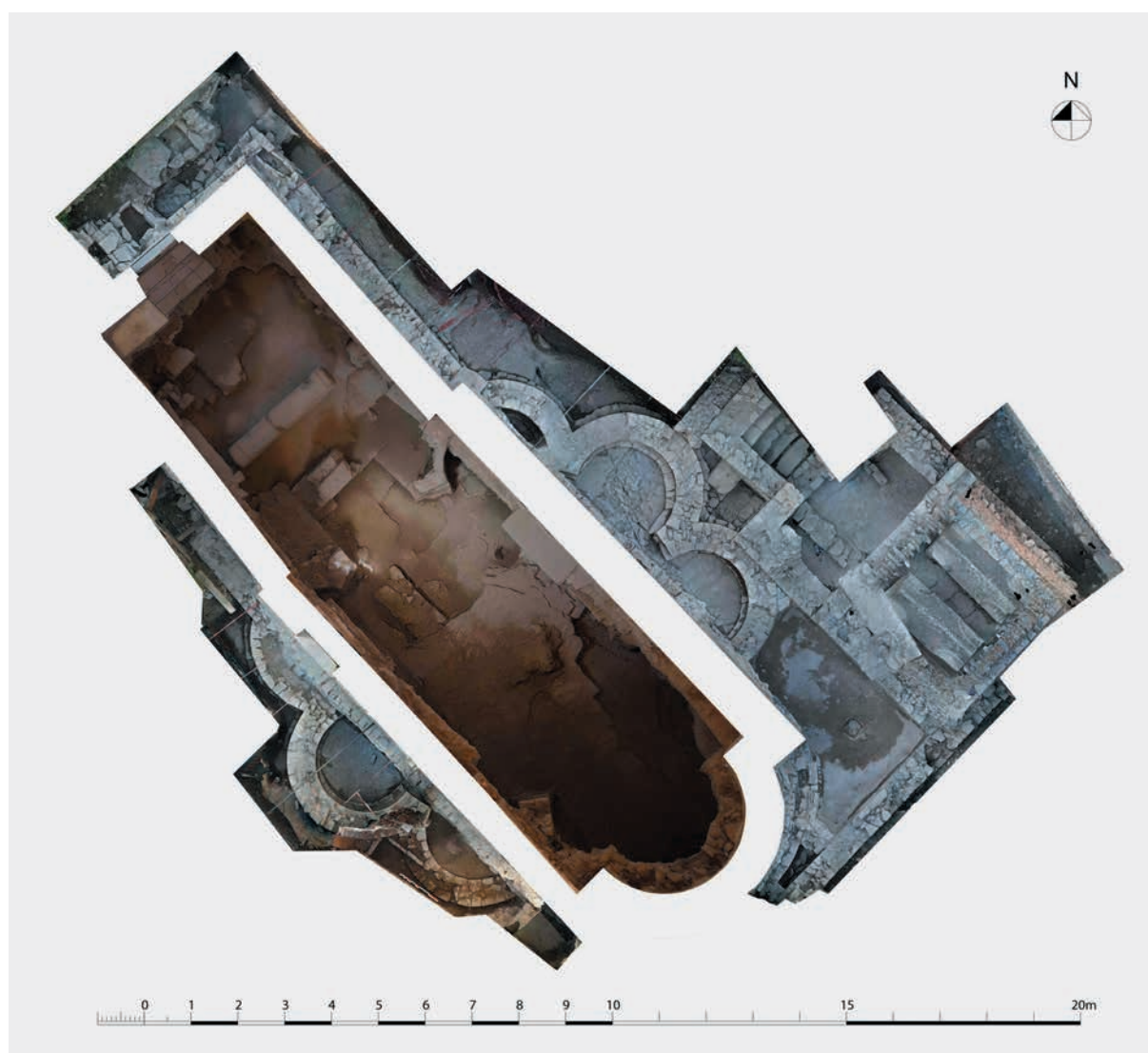
² The fieldwork season took place between 11 April and 2 May 2016. Staff members were: Prof. Dr Ante Milošević (project director), Prof. Dr Victor Ghica (field director, project co-director), Dr Danijel Džino (project co-director), Nikolina Uroda (MHAS, assistant field director), Dr Andrea Di Miceli (ArcheoRes / UDSP, Perugia, assistant field director and topographer), Dr Ivana Ožanić Roguljić (IARH, ceramicist), Željko Krnčević (Šibenik City Museum, archaeologist), Per Rathsman (Rathsman ArkitektKontor AB, Karlstad, architect), Dr Kelly Reed (University of Warwick, archaeobotanist), Dr Željka Bedić (Anthropological Centre of the Croatian Academy of Sciences and Arts, physical anthropologist), Dr Bartul Šiljeg (IARH, glass specialist). Labour was supplied by nine students from Macquarie University (Caro Derkenne, Karen Fallico, Hannah Flood, Luke Griffiths, Rebecca Hibberd, Caitlin Lawler, Joel Mason, Robert Tuliatu and Nicola Wesseling), two from the MF Norwegian School of Theology (Brooke and Jesse Ophoff), one from the University of Zagreb (Katarina Franušić), one from the University of Evora (Merita Dreshaj) as well as by local workers. The archaeological material processing and cataloguing was coordinated by Nikolina Uroda, while Nicola Wesseling supervised the team in charge of populating the ARK database. From 6 to 28 May, the excavation was continued by a Croatian team led by A. Milošević, who also supervised the restoration and conservation of the mausoleum and of the rotunda's walls situated outside the church of Sts Joachim and Ann between July and December 2016. Between 14 and 30 September a team led by Nikolina Uroda finalised the excavation of trench T15. Danijel Džino carried out the archival work on the diaries of the excavations undertaken in the 1960s and 1970s. Miljenko Žabčić (Geographica d.o.o., Split) carried out a terrestrial laser scanner survey of the trenches excavated in 2016, while the numismatic identifications were provided by Dr Tomislav Šeparović (MHAS). The anthropological analysis of skeletal remains was conducted in the laboratory of the Anthropological Centre of the Croatian Academy of Sciences and Arts by a team directed by Prof. Dr Mario Šlaus, composed of Dr Željka Bedić and Dr Vlasta Vyroubal. Merita Dreshaj commenced a palaeodietary study at the HERCULES laboratory of the University of Evora, as part of an MA degree dissertation in archaeological materials science. Irena Majić assisted with logistics. The fieldwork was funded by the Museum of Croatian Archaeological Monuments, Macquarie University and, to a lesser extent, the MF Norwegian School of

Terenskim istraživanjima u sklopu projekta *Varvaria / Breberium / Bribir*¹ nastavilo se s radovima u sljedećim pravcima²:

- iskopavanja novootvorenih sondi u memoriji i oko crkve sv. Joakima i Ane (sl. 1);

¹ Ovo izvješće rezultat je zajedničkog rada svih sudionika iskopavanja. Tekst je napisao V. Ghica, a komentare, prijedloge i primjedbe napravili su A. Milošević, N. Uroda i D. Džino koji je i preveo tekst na hrvatski jezik.

² Prva faza radova započela je 11. travnja, a završila 2. svibnja 2016. Sudjelovali su: prof. dr. sc. Ante Milošević (voditelj projekta), prof. dr. sc. Victor Ghica (voditelj iskopavanja, suvoditelj projekta), dr. sc. Danijel Džino (suvoditelj projekta), Nikolina Uroda (zamjenica voditelja iskopavanja), dr. sc. Andrea Di Miceli (ArcheoRes / UDSP, Perugia, zamjenik voditelja iskopavanja i dokumentarist), dr. sc. Ivana Ožanić Roguljić (IARH, ekspertiza keramike), Željko Krnčević (Muzej grada Šibenika, arheolog), Per Rathsman (Rathsman ArkitektKontor AB, Karlstad, arhitekt), dr. sc. Kelly Reed (University of Warwick, ekspertiza arheobotanike), dr. sc. Željka Bedić (Antropološki centar HAZU, ekspertiza fizičke antropologije), dr. sc. Bartul Šiljeg (IARH, ekspertiza stakla). Uz nekoliko lokalnih radnika, iskopavanja u sondama obavljalo je devet studenata Sveučilišta Macquarie (Caro Derkenne, Karen Fallico, Hannah Flood, Luke Griffiths, Rebecca Hibberd, Caitlin Lawler, Joel Mason, Robert Tuliatu i Nicola Wesseling), dva studenta MF Norwegian School of Theology (Brooke i Jesse Ophoff), studentica Sveučilišta u Zagrebu (Katarina Franušić) i studentica Sveučilišta Evora (Merita Dreshaj). Obradu i katalogizaciju arheološkog materijala koordinirala je Nikolina Uroda, dok je Nicola Wesseling predvodila dizajniranje ARK databaze. Od 6. do 28. svibnja, iskopavanja je nastavio MHAS pod vodstvom A. Miloševića, koji je također nadgledao restauraciju i konzervaciju memorije i zidova rotunde izvan crkve sv. Joakima i Ane između srpnja i prosinca 2016. godine. Posljednju fazu iskopavanja obavio je tim MHAS-a pod vodstvom Nikoline Uroda, koji je između 14. i 30. rujna završio radove u sondi T15. Miljenko Žabčić (Geographica d.o.o., Split) obavio je prostorno skeniranje sondi iskopanih 2016., dok je numismatičku ekspertizu obavio dr. sc. Tomislav Šeparović (MHAS). Danijel Džino je analizirao arhivski materijal iz dnevnika prijašnjih iskopavanja iz 1960-tih i 1970-tih. Antropološka analiza kosturnih ostataka obavljena je u laboratoriju Antropološkog centra HAZU od strane tima predvođenoga prof. dr. sc. Mariom Šlausom. Tim su sačinjavali dr. sc. Željka Bedić i dr. sc. Vlasta Vyroubal. Merita Dreshaj je započela paleodietarnu studiju u HERCULES laboratoriju Sveučilišta Evora, kao dio magistarske radnje. Irena Majić je pomagala pri logističkim zadacima. Iskopavanja su financirali Muzej HAS i Sveučilište Macquarie. Financijski je sudjelovala i Zaklada hrvatskih studija iz Sydneyja, a sve konzervatorske radove i troškove prezentacije financiralo je Ministarstvo kulture Republike Hrvatske.



sl. 1. TLS ortofoto područja iskapanih između 2014. i 2016. (M. Žabčić, V. Ghica).
Fig. 1 TLS-based orthophoto of the areas excavated between 2014 and 2016 (M. Žabčić, V. Ghica)

- restauracija i konzervacija zidova rotunde i krova memorije;
- analiza keramičkog materijala iskopanog tijekom ovogodišnje kampanje;
- antropološka analiza kosturnih ostataka pronađenih tijekom 2016. godine;
- arheobotanička analiza uzoraka prikupljenih tijekom 2016. godine;
- prostorno skeniranje sondi i procesiranje podataka;
- fotogrametrijsko modeliranje odabranih struktura;
- 3D modeliranje istraženih dijelova lokaliteta;
- uspostavljanje i popunjavanje ARK inter-netske baze podataka projekta;
- excavation of newly opened trenches around the church of Sts Joachim and Ann (fig. 1) and in the *stomion* and *dromos* of the mausoleum;
- restoration and conservation of the walls of the rotunda church and the roof of the mausoleum;
- study of the ceramic material unearthed during the season;
- anthropological study of selected human remains found during the season;
- archaeobotanical study of samples collected

Theology and the Croatian Studies Foundation from Sydney. The Ministry of Culture of the Republic of Croatia financed all the works related to the conservation and presentation of the finds.



sl. 2. Plan sonde iskopanih između 2014. i 2016. (V. Ghica).
Fig. 2 Plan of the trenches excavated between 2014 and 2016 (V. Ghica)

- during the season;
- terrestrial laser scanner data acquisition and processing;
- photogrammetric modelling of selected excavated structures;
- 3D modelling of excavated areas of the site;
- ARK database management;
- study of the diaries of previous excavations;
- sampling of representative material for ^{14}C dating.

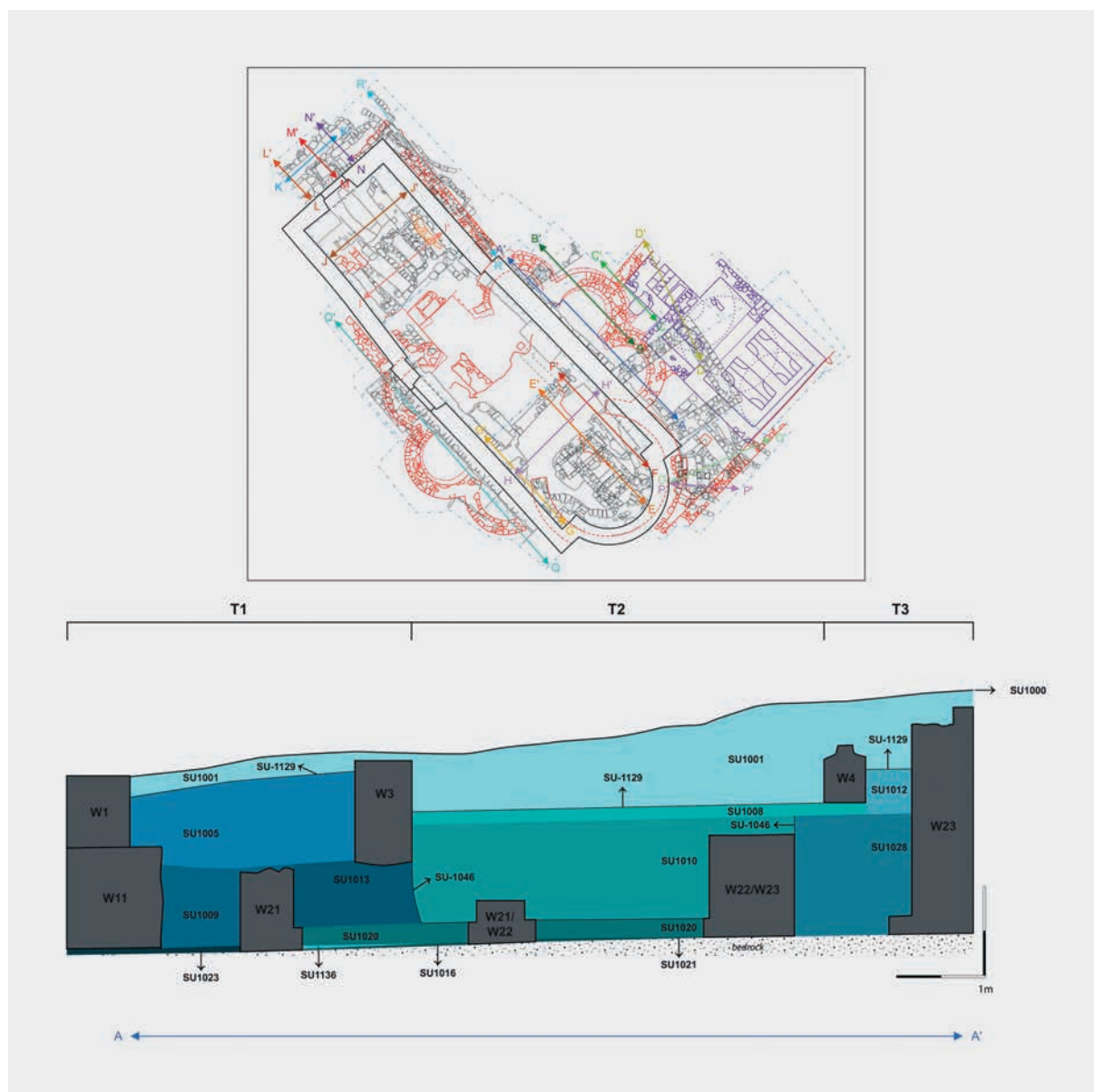
1. Excavation

This season's excavations expanded the areas excavated in 2014 and 2015 around the church of Sts Joachim and Ann. Eight trenches were thus examined – T1/T2, T7, T8, T9, T12, T14, T15 and T16 (fig. 2) –, some of which had

- prikupljanje i analiza postojeće dokumentacije s prethodnih iskopavanja;
- izdvajanje i analiza uzoraka tla i organskog materijala prikladnoga za datiranje putem ^{14}C metode.

1. Iskopavanja

Ovogodišnjim iskopavanjima prošireno je područje istraženo 2014. i 2015. oko crkve sv. Joakima i Ane. Ukupno je istraženo osam sonde – T1/T2, T7, T8, T9, T12, T14, T15 i T16 (sl. 2) – od kojih su neke već bile istraživane tijekom proteklih dviju godina. Iskopavanja u 2016. godini omogućila su precizniju kronologiju tih struktura, ali su otkrila i neke nove strukture povezane s rotundom.



sl. 3. Stratigrafski presjek A-A' u sondama T1, T2 i T3 (V. Ghica).
 Fig. 3 Stratigraphic cross-section A-A' in trenches T1, T2 and T3 (V. Ghica)

T1/T2

Uklanjanje zida koji je razdvajao dvije manje pomoćne prostorije sjeverno od postojeće crkve (W3) omogućio je pristup nedirnutim donjim slojevima povezanim s pretpostavljenom podnicom rotunde unutar apside W21 (sl. 3). SU1020 je možda pripremni sloj za izgradnju podnice jer je sadržavao brojne manje ulomke žbuke. SU1136 je tanak sloj podne žbuke, a ispod njega je pronađen SU1016 koji je također vrlo tanak i koji je slične strukture, odmah iznad živca. Sloj kompaktne vapnene žbuke, debljine do 1,5 cm, zamijećen je na unutarnjoj

been already studied in the past two years. The dig allowed for further refining the chronology of the structures cleared during the first two seasons, but also for uncovering new ones, associated with the rotunda church.

T1/T2

The dismantling of the wall separating the two ancillary rooms to the north of the modern church (W3) made accessible undisturbed low strata associated to the assumed floor of the rotunda inside the apse W21 (fig. 3): SU1020, a floor preparation layer including numerous



sl. 4. Unutrašnjost apside W21 poslije iskopavanja, s tragovima žbuke vidljivih na temeljnoj stopi (A. di Miceli).

Fig. 4 Inside of apse W21 after excavation, with traces of mortar visible on the ledge (A. di Miceli)

lumps of mortar coming from the lost mortared floor; SU1136, a very thin layer of concreted mortar; SU1016, last, very thin layer of mortar atop the bedrock. A layer of compact lime mortar up to 15 mm of thickness was identified on the inner ledge of the apse W21, which constitutes the clearest trace identified so far of the rotunda's floor (fig. 4).

T7

The cluster of graves and tombs partly excavated in 2015 in this trench was almost entirely cleared this year and partly dismantled. Built against the foundation of the façade wall of the *pronaos*, the tomb Gr23 (fig. 5) stands out as one of the two slightly monumentalised funerary structures in this group. The reuse of this structure is reflected in its stratigraphy, which denotes several burials and secondary depositions of skeletal remains (fig. 6), one of

strani temeljne stope apside W21, što predstavlja, do sada, najjasniji mogući trag podnice rotunde (sl. 4).

T7

Grobovi u ovoj sondi djelomično su iskopani 2015. godine, a ove su godine gotovo u potpunosti istraženi i djelomično uklonjeni. Grob 23 (sl. 5) napravljen je uz temelje pročelnog zida pretprostora (*pronaos*) današnje crkve te se izdvaja kao jedna od dviju monumentalnih grobnih struktura u ovoj skupini. Kasnija upotreba ove strukture ogleda se u njezinoj stratigrafiji koja pokazuje slijed od nekoliko ukopa, kao i sekundarni ukop kosturnih ostataka (sl. 6). Jedan od ovih ukopa (HRU1164) sadrži ostatke najmanje sedam osoba. Prva ovdje ukopana osoba (HRU1177) datirana je ¹⁴C metodom u razdoblje 1290. – 1405. godine³. Ovo datiranje predstavlja *terminus ante quem* izgradnje pretprostora današnje crkve, uz koji je ovaj grob napravljen. Sudeći po fragmentu vrča iz 15. stoljeća – pronađenoga u najmlađoj ispuni Gr23 (SU1034) – korištenje ovoga groba prestaje u tome razdoblju.

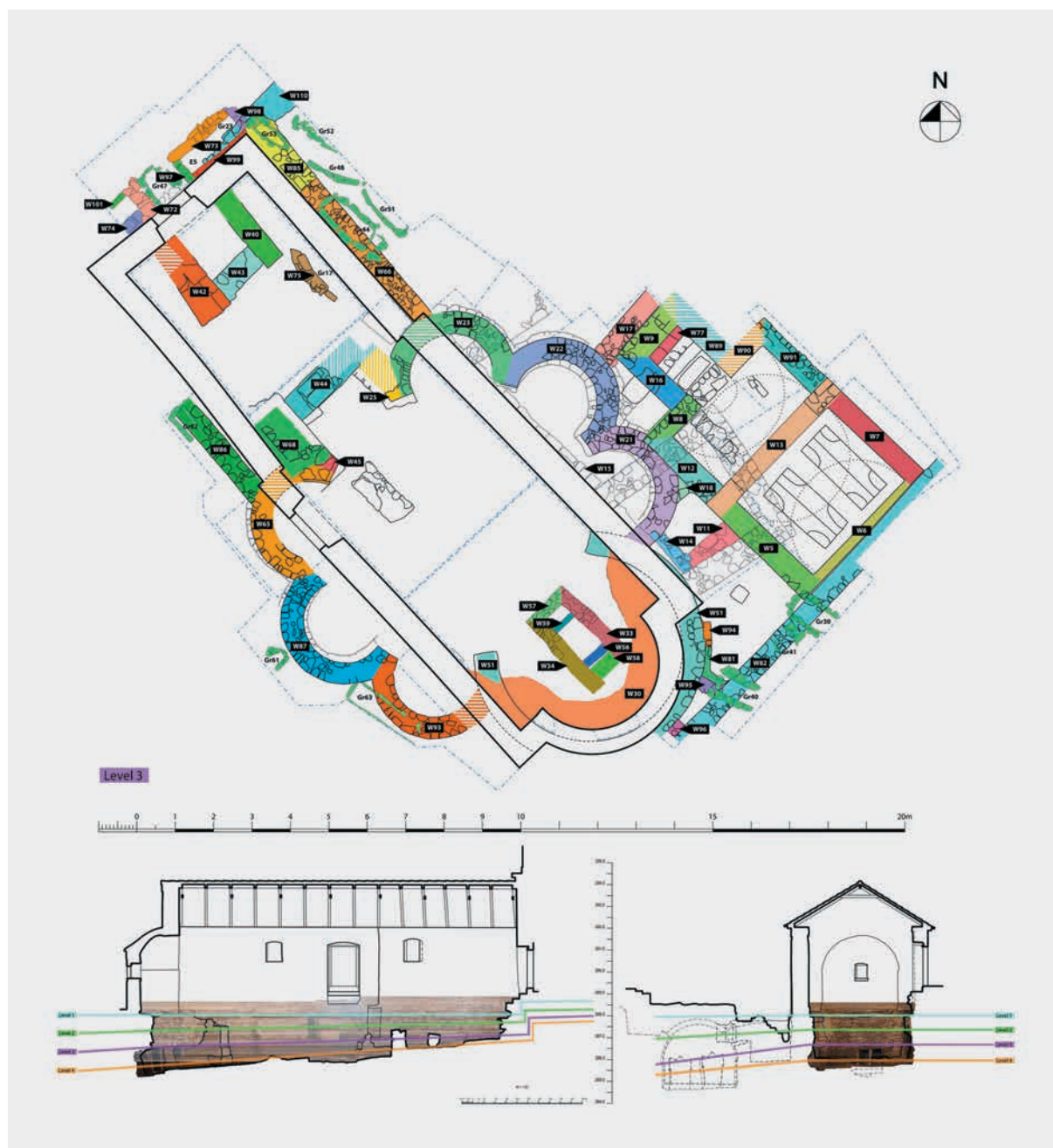
Orijentacija i pozicioniranje svih grobova iz ove sonde, koji su do sada istraženi, ukazuju da su napravljeni nakon konstrukcije pretprostora današnje crkve. Možemo pretpostaviti sljedeću kronologiju:

- Faza 1: Gr47 (sl. 7) s ostacima dviju osoba. Pronađen je ispod praga crkve te se može datirati u razdoblje prije izgradnje pretprostora crkve.
- Faza 2: Gr23 (sl. 5). Najraniji ukop u ovom grobu (HRU1177; sl. 6) datiran je u razdoblje 1290. – 1405. godine⁴. U približno isto razdoblje mogu se datirati i grobovi Gr7, Gr8, Gr12, Gr16 te Gr55 koji su svi dvokatni s ležištima ili rupama u koje su bile uglavljene grede za potporu srednjeg reda kamenih ploča.
- Faza 3: Gr32 (sl. 7). Srebrni *denarius*⁵ (sl. 8)

³ Beta-437578 – 620 ± 30 BP (δ13C –18.4 ‰vs PDB), Cal AD 1290-1405 (Cal BP 660-545) (95%, 2σ), Cal AD 1295-1325 (Cal BP 655-625), Cal AD 1345-1370 (Cal BP 605-580), Cal AD 1380-1395 (Cal BP 570-555) (68%, 1σ).

⁴ Vidi gore, bilj. 3.

⁵ BR2016141.



sl. 5. Zidovi, nivo 3 (V. Ghica).
Fig. 5 Walls level 3 (V. Ghica)

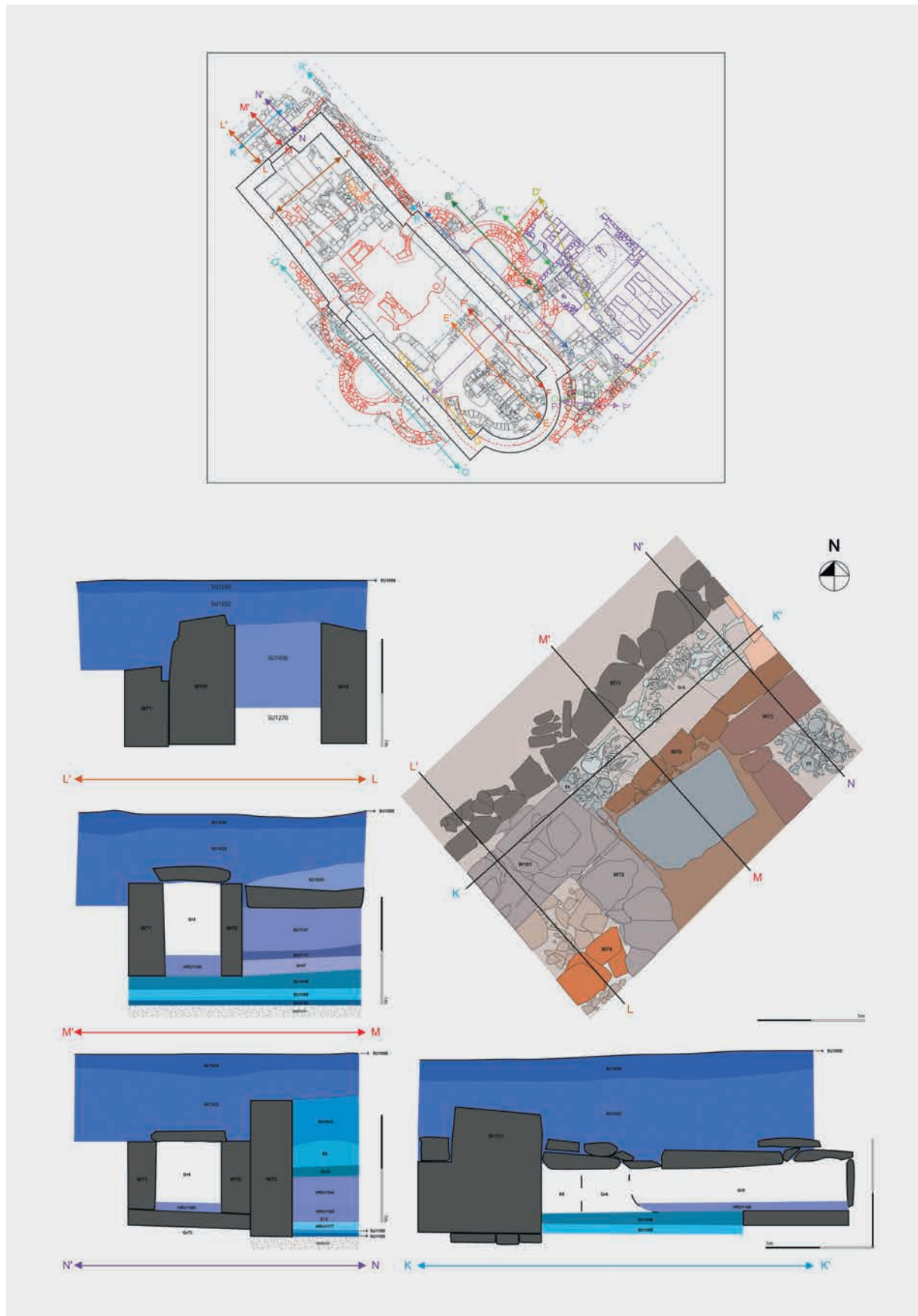
kovan u Akvileji pod Antonijem II. Pancijerom (1402. – 1411.)⁶, pronađen je u sloju SU1158 koji prekriva ukopni sloj HRU1200 (sl. 9) i datira ukop u Gr32 prije početka 15. stoljeća. Stoga se faze 2 i 3 vjerojatno preklapaju.

- Faza 4: Ukopni prostori između W70 i W71 (Gr5, Gr6, E6; sl. 10), koji su orijentirani ju-

which (HRU1164) contains a minimum of 7 individuals. The first individual buried therein (HRU1177), on the bottom of Gr23, was carbon dated to 1290-1405³. This age range provides a *terminus ante quem* for the building of the *pronaos* of the modern church, against

⁶ Usp. G. BERNARDI, *Monetazione del Patriarcato di Aquileia*. Trieste, 1975, str. 156.

³ Beta-437578 – 620 ± 30 BP (δ13C –18.4 ‰vs PDB), Cal AD 1290-1405 (Cal BP 660-545) (95%, 2σ), Cal AD 1295-1325 (Cal BP 655-625), Cal AD 1345-1370 (Cal BP 605-580), Cal AD 1380-1395 (Cal BP 570-555) (68%, 1σ).



sl. 6. Stratigrafski presjeci K-K', L-L', M-M' i N-N' u sondi T7 (V. Ghica, Y. Béliez).
 Fig. 6 Stratigraphic cross-sections K-K', L-L', M-M' and N-N' in trench T7 (V. Ghica, Y. Béliez)

gozapad-sjeveroistok i slijede pravac Gr23, Gr5 (HRU1166). Primjerkom austrijskog novca od 2 *hellera*, iskovanim 1905. godine⁷, datirani su u početak 20. stoljeća.

Dva paralelna zida unutar pretprostora crkve – koji su iskopani 2015. godine (W40, W42; sl. 7)⁸ i koji su djelomično pokriveni pragom današnje crkve – vjerojatno su formirala ulaz u prostor, koji izgleda kao „narteks”, dodan rotundi sa zapadne strane, a nisu pronađeni u T7. Ovi zidovi najvjerojatnije završavaju ispod praga današnje crkve.

T8

Gornje dvije trećine slojeva u T8 pripadaju isključivo ukopima. Ovdje je pronađeno 15 grobova, na dvije glavne razine, koji su se često preklapali ili su ulazili jedni u druge, pri čemu su zidovi starijih grobova bili rastavljani za potrebe gradnje mlađih. Takva je generalna slika u cijelom T8. Sloj ispod površine, debljine 80 – 100 cm (SU1031; sl. 11), pokriva je većinu grobova i u njemu je nađeno najviše ulomaka keramike iz 15. stoljeća⁹, što je moguća datacija ovih grobova. Primjerak srednjoeuropskog novca iz 15. – 16. stoljeća¹⁰ (sl. 12), pronađen u sloju ispod prethodnoga (SU1130), potvrđuje dataciju ovog horizonta, a posebno Gr22 i Gr29 iznad kojih se nalazio (sl. 11). Bez obzira na stratigrafsku nejasnoću, nekoliko ukopa identificirano je kao SU1031 i SU1130, dok su osobine ili materijal drugih grobova omogućavali identifikaciju ostalih. Čini se da je SU1031 presječen ukopom od najmanje šest recentnih grobova¹¹ čija dubina varira.

Osim Gr45, kosturni ostatci pronađeni u ovih petnaest grobova još nisu analizirani. Gr45 (sl. 10) izdvaja se svojim položajem pre-

which this tomb is constructed. Judging from the fragment of 15th century jug recovered in the last fill of Gr23 (SU1034), the reuse of the tomb ceases in this period.

As indicated by their position and orientation, all the graves cleared so far in this trench postdate the construction of the *pronaos*. The following sequence emerges:

- Phase 1: Gr47 (fig. 7). Containing the remains of two individuals and located beneath the threshold of the church, this grave predates the construction of the *pronaos*.
- Phase 2: Gr23 (fig. 5). The earliest inhumation in this grave (HRU1177; fig. 6) is carbon-dated to 1290-1405⁴. To the same period might tentatively be related also the graves Gr7, Gr8, Gr12, Gr16 and Gr55, all of which belong to a similar type, two-storied, provided with either ledges or holes that receive beams supporting the intermediate level slabs.
- Phase 3: Gr32 (fig. 7). A silver *denarius*⁵ (fig. 8) minted in Aquileia under Antonio II Panciera (1402-1411)⁶ recovered in the fill SU1158 that covers the burial layer HRU1200 (fig. 9) situate the inhumation in Gr32 prior to the beginning of the 15th century. Phases 2 and 3 might be interchanged.
- Phase 4: burial spaces located between W70 and W71 (Gr5, Gr6, E6; fig. 10), oriented SW-NE, following the direction imposed by Gr23. Gr5 (HRU1166) is dated to the beginning of the 20th century by an Austrian coin of 2 *hellers* minted in 1905⁷.

The two parallel walls identified in 2015 inside the *pronaos* (W40, W42; fig. 7)⁸ running under the threshold of the standing church, which possibly formed the gateway of the ‘narthex’ were not found in T7. In all likelihood, these walls end below the threshold of the church.

⁷ BR2016167.

⁸ V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015. godini / *Varvaria / Breberium / Bribir* Archaeological Project. The 2015 Excavation Season, *Starohrvatska prosvjeta*, ser. 3, sv. 43, Split, 2016, str. 24-25.

⁹ BR201665, BR201675, BR201676, BR201677.

¹⁰ BR2016149.

¹¹ Gr18, Gr30, Gr38, Gr39, Gr40 i Gr46. Ovima treba pribrojati Gr4 istražen 2015. (usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 13).

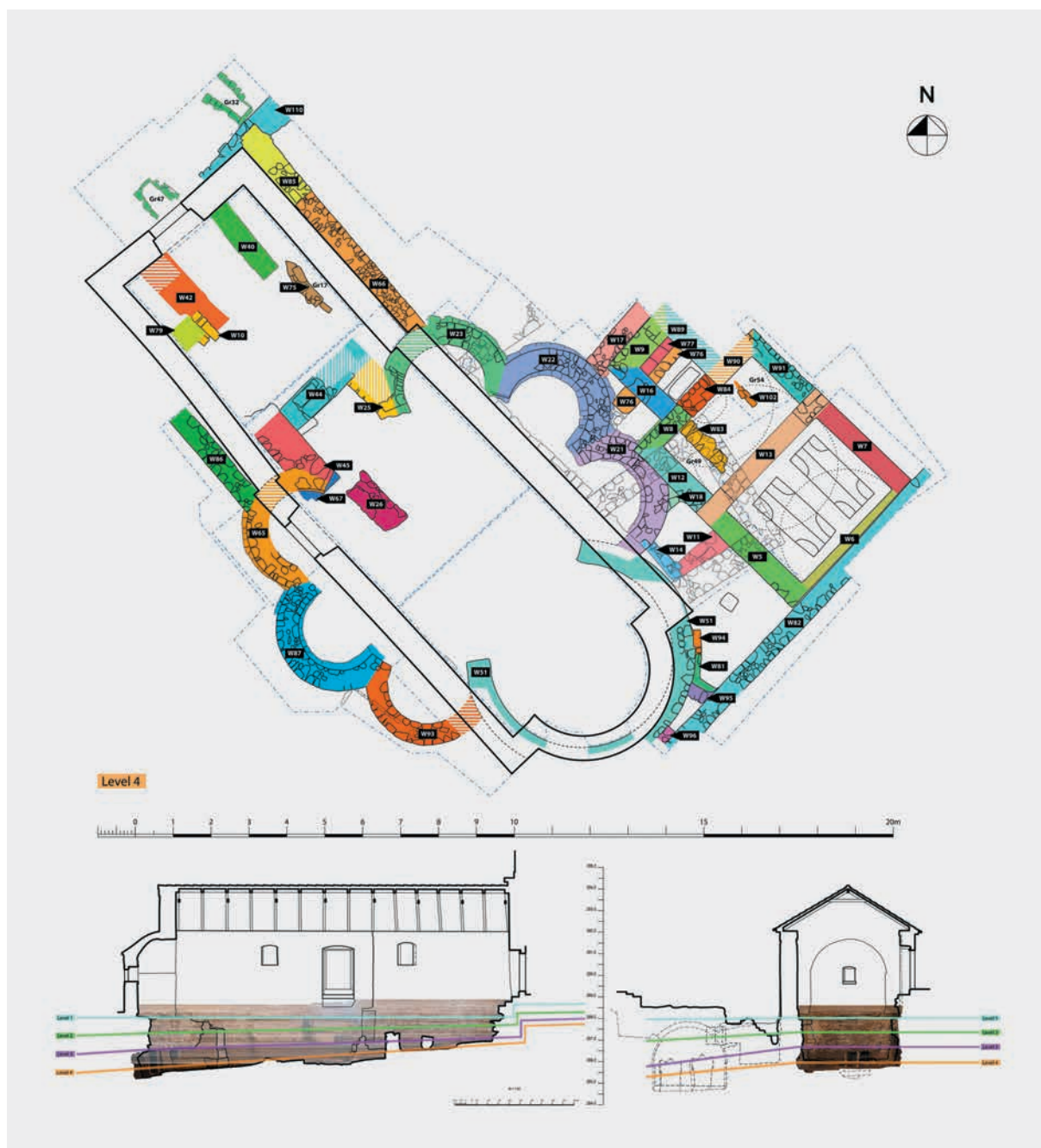
⁴ See above, n. 3.

⁵ BR2016141.

⁶ Cf. G. BERNARDI, *Monetazione del Patriarcato di Aquileia*, Trieste 1975, p. 156.

⁷ BR2016167.

⁸ V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015. godini / *Varvaria / Breberium / Bribir* Archaeological Project. The 2015 Excavation Season, *Starohrvatska prosvjeta* s. 3, 43, Split 2016, p. 24-25.



sl. 7. Zidovi, nivo 4 (V. Ghica).

Fig. 7 Walls level 4 (V. Ghica)

T8

The upper two-thirds of the stratigraphy of T8 are exclusively funerary. They yielded 15 graves, disposed on roughly two main levels, but often overlapping, squeezed into one another, biting into and further dismantling pre-existing walls or graves, and scattered throughout all the excavated area. An 80-100 cm thick sub-surface layer (SU1031; fig. 11) covering most of the graves and containing, amongst the rec-

ma apsidi današnje crkve i nakitom koji je u njemu pronađen. Grob je izgrađen uz vanjsko lice temeljnoga zida apsida (W30), gotovo po njenoj sredini. Sadržavao je ostatke minimalno 10 osoba, među kojima je 8 djece starosti 0 – 0,5 i 9 – 11 godina te ostatke ženske osobe 35 – 45 godina. Skeletni ostaci ove ženske osobe, kao i druge ženske osoba od koje je pronađena samo gornja čeljust, trebalo bi povezati s četirima srebrnim trojagodnim naušnicama i aplikama pronađenim u tome grobu. Sve naušnice



sl. 8. Srebrni *denarius* iskovan u Akvileji u vrijeme Antonija II. Panciera (BR2016141) (A. Z. Alajbeg).

Fig. 8 Silver *denarius* minted in Aquileia under Antonio II Panciera (BR2016141) (A. Z. Alajbeg)

pripadaju vrlo čestom tipu kasnosrednjovjekovnih naušnica kakve su do sada u Dalmaciji pronađene na velikom broju nalazišta i koje je moguće datirati između druge polovine 13. i polovine 15. stoljeća¹². Tri naušnice imaju jagode sa stožastim filigranskim ispupčenjima¹³, od kojih neke nedostaju, dok četvrta¹⁴ ima okrugle jagode (sl. 13). Za 11 ulomaka aplikacija¹⁵ (sl. 14), ne postoji sigurna paralela koja bi mogla ukazati na njihovu izvornu funkciju¹⁶. Bez obzira na njeno datiranje, nalazi naušnica predstavljaju *terminus ante quem* za konstrukciju Gr45 i gradnju apside današnje crkve.

Koherentna skupina od triju slojeva (SU1157, SU1181, SU1215; sl. 11) formira donju trećinu stratigrafije u ovoj sondi. Nakon uklanjanja grobova u gornjem dijelu sonde i

ognisable ceramic fragments, mostly 15th century shards⁹ suggests that the majority of these burials are medieval. A 15th-16th century central European coin¹⁰ (fig. 12) found in the layer located beneath it (SU1130) confirms this horizon, securing thereby the dating of the graves Gr22 and Gr29 that it tops (fig. 11). However, despite the particularly reduced visibility of the cuts, several negative interfaces were identified within SU1031 and SU1130, while features or material of certain graves allowed for identifying others. It appears thus that SU1031 was cut or truncated by at least six modern graves¹¹, the depth of which varies.

Except for Gr45, the skeletal remains retrieved in these 15 graves have not yet been analysed. Indeed, Gr45 (fig. 10) stands out as a relevant case in regards to its position to the apse of the standing church, the jewellery assemblage it contained as well as the reburial activity that it illustrates. Built against the outer face of the foundation wall (W30) of the apse, almost in its middle, Gr45 contained the remains of a minimum of 10 individuals, among which eight subadults ranging from 0-0.5 to 9-11 years of age and a 35-45 years old woman. It is to the skeletal remnants of this woman and to those of another female, of which only the maxilla was found, that should be associated the four silver earrings and the appliqués unearthed in this grave. The earrings belong all to a type of late medieval earrings frequent in Dalmatia and dated between the second half of 13th and the mid-15th century¹². Three of them feature beads with conical filigree bulges¹³, some of which are lost, while the fourth¹⁴ has spherical beads (fig. 13). As for the 11 pieces of

¹² Usp. N. JAKŠIĆ, Naušnice s tri jagode u Muzeju hrvatskih arheoloških spomenika u Splitu, *Prilozi povijesti umjetnosti u Dalmaciji* 23, Split, 1983, str. 49-74. – N. JAKŠIĆ, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici. Analiza, *Starohrvatska prosvjeta*, ser. 3, sv. 23, Split, 1996, str. 139-172.

¹³ BR2016325, BR2016307, BR2016308.

¹⁴ BR2016309.

¹⁵ BR2016313, BR2016314, BR2016315, BR2016316, BR2016317, BR2016318, BR2016319, BR2016320, BR2016322, BR2016323, BR2016324.

¹⁶ Za moguće paralele vidi: N. JAKŠIĆ, Nakit 14. stoljeća u Hrvatskoj i Bosni, *Radovi Filozofskoga fakulteta u Zadru* 23/10, Zadar, 1983, str. 334-336. – Š. BEŠLAGIĆ - Đ. BASLER, *Grborezi, srednjovjekovna nekropola*. Sarajevo, 1984, str. 19, 66-67, pl. XIII/1. – N. JAKŠIĆ, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa, str. 161-165. – M. PETRINEC, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici. Katalog, *Starohrvatska prosvjeta*, ser. 3, sv. 23, Split, 1996, str. 38-39, 53, 85, 87, 104-106.

⁹ BR201665, BR201675, BR201676, BR201677.

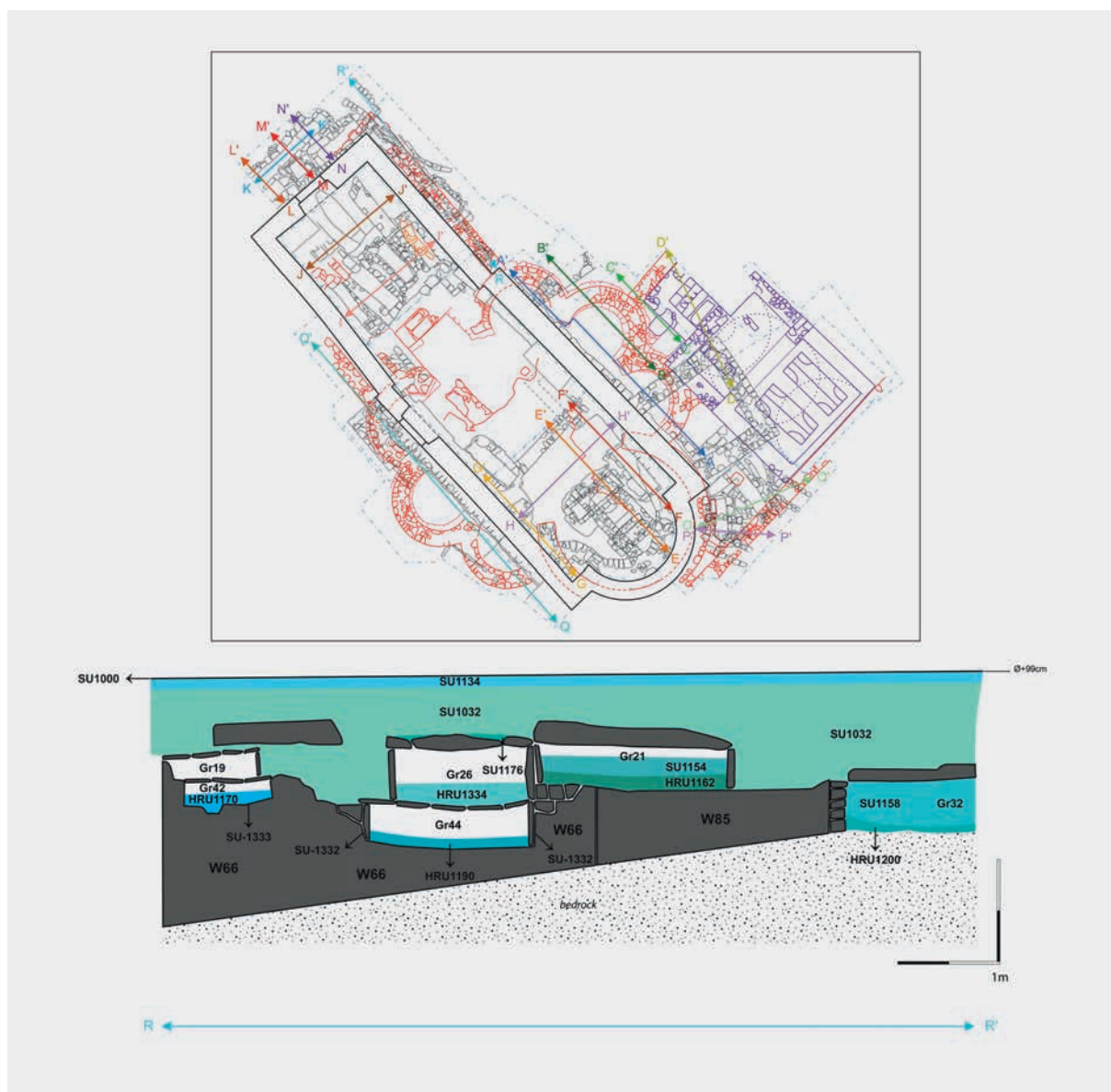
¹⁰ BR2016149.

¹¹ Gr18, Gr30, Gr38, Gr39, Gr40 and Gr46. To these should be added Gr4 excavated in 2015 (cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 13).

¹² Cf. N. JAKŠIĆ, Naušnice s tri jagode u Muzeju hrvatskih arheoloških spomenika u Splitu, *Prilozi povijesti umjetnosti u Dalmaciji* 23, Split 1983, p. 49-74 - N. JAKŠIĆ, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici. Analiza, *Starohrvatska prosvjeta* s. 3, 23, Split 1996, p. 139-172.

¹³ BR2016325, BR2016307, BR2016308.

¹⁴ BR2016309.



sl. 9. Stratigrafski presjek R-R' u sondi T14 (J. Mason, V. Ghica).

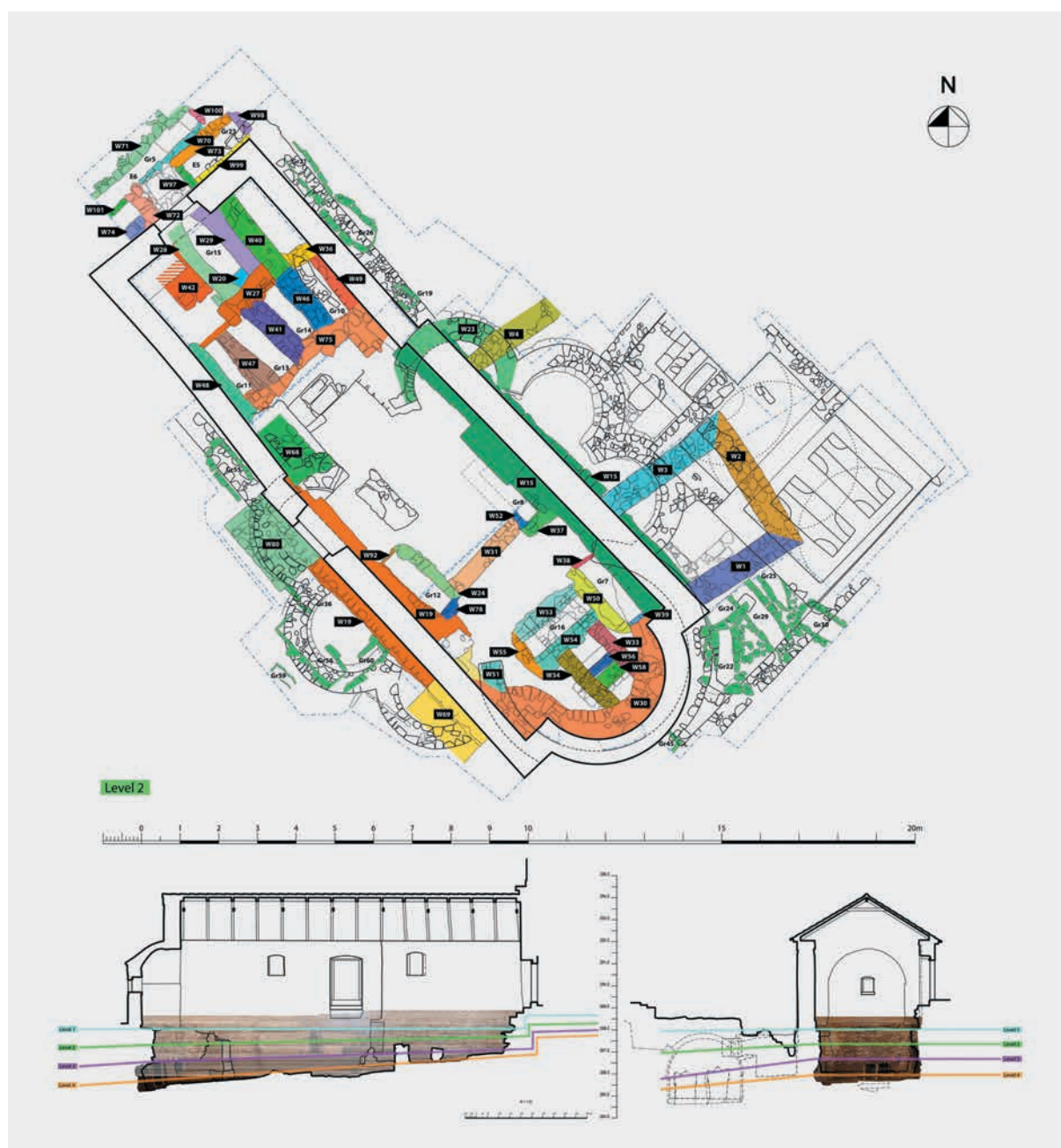
Fig. 9 Stratigraphic cross-section R-R' in trench T14 (J. Mason, V. Ghica)

appliqué¹⁵ (fig. 14), no convincing parallel has been identified so far that could shed light on their function¹⁶. Whatever the date of the latter,

¹⁵ BR2016313, BR2016314, BR2016315, BR2016316, BR2016317, BR2016318, BR2016319, BR2016320, BR2016322, BR2016323, BR2016324.

¹⁶ For possible parallels, see: N. JAKŠIĆ, *Nakit 14. stoljeća u Hrvatskoj i Bosni, Radovi Filozofskoga fakulteta u Zadru* 23 (10), Zadar 1983, p. 334-336; Š. BEŠLAGIĆ, Đ. BASLER, *Grborezi, srednjovjekovna nekropola*, Sarajevo 1984, p. 19, 66-67, pl. XIII.1; N. JAKŠIĆ, *Kasnosrednjovjekovno groblje kod crkve Sv. Spasa*, p. 161-165; M. PETRINEC, *Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici. Katalog, Starohrvatska prosvjeta* s. 3, 23, Split 1996, p. 38-39, 53, 85, 87, 104-106.

uklanjanja zida W1, omogućen je pogled na vertikalnu stratigrafiju ovih ispuna iz istočne polovine sonde T1 koja je iskopavana 2014. godine. Najdonji slojevi T8 i većina T1 čine prostoriju (najvjerojatnije cisternu) zatvorenu velikom apsidom rotunde (W51), apsidom W21, zidovima memorije W5 i W12 te zidom koji se nastavlja na područje sjeverno od današnjeg seoskoga groblja gdje su pronađene zgrade iz rimskoga doba (W82). SU1181 je posljedica urušenja pokrova i sadrži veliku količinu keramičkih krovnih crjepova (tegule i imbreksi) proizvedenih u širem jadranskome području i lokalnim radionicama 1. i 2. stolje-



sl. 10. Zidovi, nivo 2 (V. Ghica).

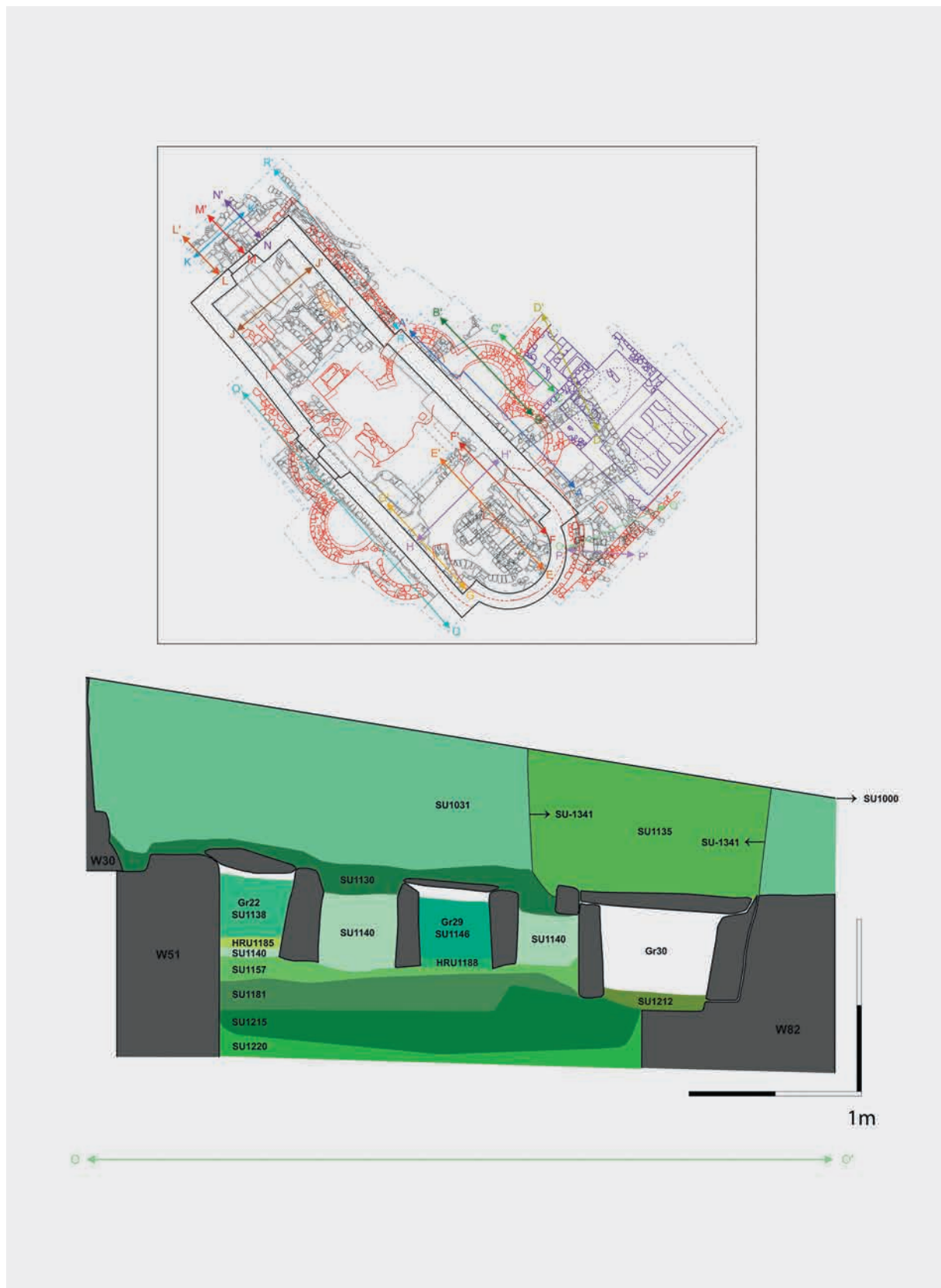
Fig. 10 Walls level 2 (V. Ghica)

ća. Na nekim crjepovima pronađeni su i žigovi¹⁷ (sl. 15). Uz crjepove su pronađeni kameni

¹⁷ Među tegulama sa žigovima mogu se prepoznati sljedeće radionice: PANSIANA (6 fragmenata, od kojih 5 u SU1181 i 1 u SU1215, BR2016113, BR2016114, BR2016115, BR2016117, BR2016205); LEGXICPF (= *Leg(ionis) XI C(laudiae) P(iae) F(idelis)*; BR2016138, SU1157); TIPANSIANA (= *Ti(beri) Pansiana*; BR2016112, SU1181); NERON(IS) (BR2016116, SU1181). Ovima treba dodati Q CLOD(I AMBROSI) fragmentarnu tegulu pronađenu 2015. u sloju ekvivalentnome SU1181 (BR2015570).

the earrings assemblage furnishes a *terminus ante quem* for the construction of Gr45 and, at the same time, for the erection of the apse of the cemeterial church.

A coherent cluster of three stratigraphic units (SU1157, SU1181, SU1215; fig. 11) forms the low sequence. Following the removal of the graves in the upper sequence, the dismantling of the medieval wall W1 permitted a clear vertical assessment of the superposition of these deposits from the eastern half of the trench T1,



sl. 11. Stratigrafski presjek O-O' u sondi T8 (M. Dreshaj, V. Ghica).
 Fig. 11 Stratigraphic cross-section O-O' in trench T8 (M. Dreshaj, V. Ghica)



sl. 12. Srednjoeuropski novčić iz 15. - 16. stoljeća (BR2016149) (A. Z. Alajbeg).

Fig. 12 15th-16th century central European coin (BR2016149) (A. Z. Alajbeg)

blokovi, vrlo slični blokovima korištenim pri izgradnji rotunde (sl. 16). Ova povezanost građevinskog materijala možda ukazuje na urušavanje svoda s pokrovom ili jednoga od zidova na koji se pokrov oslanjao (W82). Iznad ovoga sloja je SU1157 koji je prirodna ispuna zemlje nakupljene nakon uništenja krova. SU1157 kao i stratigrafski sloj smješten ispod SU1181 koji je u kontaktu s podnicom (SU1215), možemo vidjeti kao sloj nastao nakon rušenja cisterne¹⁸.

Dva predmeta pronađena u SU1215 i SU1181 na podnici te datiraju posljednje razdoblje korištenja cisterne i njeno urušavanje između sredine 6. i sredine 7. stoljeća. Prvi je fragment roga crvenoga jelena (*Cervus elaphus* L.)¹⁹ pronađen na podu cisterne u SU1181, naslonjen na zid W81 (sl. 17). ¹⁴C metodom da-

O ovim radionicama vidi: I. PEDIŠIĆ - E. PODRUG, Antički opekarski pečati iz fundusa Muzeja grada Šibenika, *Opuscula archaeologica* 31, Zagreb, 2007, *passim*. – M. VUKOV, Tegulae with Stamps from the Pansiana Workshop from Archaeological Museum in Split, u: *Zbornik III. međunarodnog arheološkog kolokvija. Rimske keramičarske i staklarske radionice. Proizvodnja i trgovina na jadranskom prostoru. 4. - 5. studenoga 2014.*, (ur. G. Lipovac Vrkljan, B. Šiljeg, I. Ožanić Roguljić, A. Konestra), Zagreb, 2017, str. 433-450. Neke opaske o tegulama s Bribirske glavice iz proteklih iskopavanja mogu se naći u: Z. GUNJAČA, Bribir - Glavica, antičko i srednjovjekovno naselje, *Arheološki pregled* 26, Ljubljana, 1985, str. 87. – R. MATIJAŠIĆ, *Instrumentum Varvarinum*. Izbor iz poharanog depoa, u: *Studia Varvarina* 1, (ur. M. Jurković), Zagreb - Motovun, 2009, str. 91-102.

¹⁸ Treba spomenuti da je SU1215 jedini kontekst u kojem nisu pronađeni karbonizirani biljni ostatci.

¹⁹ BR2016449 (SU1181).



sl. 13. Trojagodne naušnice pronađene u grobu Gr45 (A. Z. Alajbeg).

Fig. 13 Earrings with three equally sized beads found in grave Gr45 (A. Z. Alajbeg)



sl. 14. Dijelovi applike iz groba Gr45 (A. Z. Alajbeg).

Fig. 14 Pieces of appliqué found in grave Gr45 (A. Z. Alajbeg)

excavated in 2014. Indeed, at their lowest level T8 and much of T1 comprise a built space enclosed between the large apse of the rotunda (W51), the apse W21, the walls W5 and W12 of the mausoleum and a wall that continues into the area of Roman period buildings north of the graveyard (W82). SU1181 results from the collapse of a roof and contained a large amount of roofing ceramic material (*tegulae* and *imbrices*) produced in both peri-Adriatic and local workshops in the 1st and early 2nd century CE – some of which stamped¹⁷ (fig. 15) – as well as construction stone blocks of medium and small volume, identical to those employed in the masonry of the rotunda (fig. 16). This association of building materials indicates a demolition event, which involved not only the roof but also one of the walls that supported it (W82). Situated above this layer, SU1157 is a natural deposit of soil accumulated after the destruction of the roof. As for the stratigraphic unit located beneath SU1181 and in contact with the floor (SU1215), it represents a proper abandonment level¹⁸.

¹⁷ Among the stamped *tegulae*, the following workshops have been recognised: PANSIANA (6 fragments, 5 in SU1181 and 1 in SU1215, among which BR2016113, BR2016114, BR2016115, BR2016117, BR2016205); LEGXICPF (= *Leg(ionis) XI C(laudiae) P(iae) F(idelis)*); BR2016138, SU1157); TIPANSIANA (= *Ti(beri) Pansiana*; BR2016112, SU1181); NERON(IS) (BR2016116, SU1181). To these should be added a Q CLOD(I AMBROSI) fragmentary tile found in 2015 in a layer equivalent to SU1181 (BR2015570). On these workshops, see: I. PEDIŠIĆ, E. PODRUG, Antički opekarski pečati iz fundusa Muzeja grada Šibenika, *Opuscula archaeologica* 31, Zagreb 2007, *passim*; M. VUKOV, Tegulae with Stamps from the Pansiana Workshop from Archaeological Museum in Split, in: *Zbornik III. međunarodnog arheološkog kolokvija. Rimske keramičarske i staklarske radionice. Proizvodnja i trgovina na jadranskom prostoru. 4. - 5. studenoga 2014* (eds. G. Lipovac Vrkljan, B. Šiljeg, I. Ožanić Roguljić, A. Konestra), Zagreb 2017, p. 433-450. In addition, some notes on *tegulae* recovered at Bribir during past excavations can be found in Z. GUNJAČA, Bribir-Glavica, antičko i srednjovjekovno naselje, *Arheološki pregled* 26 (1985), Ljubljana, p. 87 – R. MATIJAŠIĆ, *Instrumentum Varvarinum*. Izbor iz poharanog depoa, in: *Studia Varvarina* 1, (ed. M. Jurković), Zagreb - Motovun, 2009, p. 91-102.

¹⁸ It is noteworthy that SU1215 is, among those analysed, the only context that did not yield carbonised plant remains.



sl. 15. Tegule sa žigovima (A. Z. Alajbeg).
Fig. 15 Stamped *tegulae* (A. Z. Alajbeg)

tiran je u razdoblje 545. – 600. godine²⁰. Drugi predmet je amfora *Spatheion 3C/Keay 26*²¹ (sl. 18), datirana od druge polovine 6. do kraja 7. stoljeća, koja je proizvedena u mjestu Neapolis/Nābil u *Africa Zeugitana* i vjerojatno je korištena za transport vina²². Amfora je također pronađena na podu cisterne, uz zid W82.

²⁰ Beta-437581 – 1500 ± 30 BP (δ13C –20 ‰vs PDB), Cal AD 475-485 (Cal BP 1475-1465), 535-620 (Cal BP 1415-1330) (95%, 2σ), Cal AD 545-600 (Cal BP 1405-1350) (68%, 1σ).

²¹ BR2016139 (SU1215).

²² Usp. M. BONIFAY, *Études sur la céramique romaine tardive d'Afrique*. Oxford, 2004, str. 127-129, 474. U Hrvatskoj su samo dva primjerka pronađena u Pastoralnom centru u Postirama na Braču (usp. K. JELINIĆ - LJ. PERINIĆ MURATOVIĆ, Novi arheološki nalazi iz Postira na otoku Braču, *Prilozi Instituta za arheologiju u Zagrebu* 27/1, Zagreb, 2011, str. 190-194 i pl. 4.).

Pod cisterne u T8 sastoji se od nekoliko slojeva tvrde narančaste ili ružičaste žbuke, vjerojatno hidraulične. Posljednji sloj prekrivao je pod i unutrašnje lice zidova W21, W18, W12 i W5 koje je sačuvano u visini od oko 0,40 m. Neki od zidova prostorije (W18, W5) pokazuju tragove finije ružičaste vapnene žbuke koja je pri dnu zidova pokrivala gornji sloj podne žbuke. Nekoliko tankih ploča ugrađenih u posljednji sloj žbuke, koja je prekrivala podnicu, pronađene su pri dnu zida W81. U sredini poda cisterne je mala četvrtasta udubina (*impluvium*) za prikupljanje nečistoća pri povremenom čišćenju cisterne (sl. 1). Iz toga razloga je pod cisterne lagano nagnut prema ovoj udubini.

U stratigrafskom kontekstu gradnje, dugi zid W82 prethodi izgradnji rotunde i memorije. Ovo je, naravno, radna pretpostavka koju je potrebno potkrijepiti budućim istraživanjima. U T8, argument za ovakvu kronologiju bila bi lezna W96 koja se naslonila na W82 (sl. 7). Ta je deblja od W94 iz razloga što je trebala ispuniti prostor između velike apside rotunde i starijega zida W82. Kako ukazuje njihova gradnja, obje su lezene izgrađene istodobno kada i W51. Nakon toga slijede dvije građevinske intervencije u prostoru koji omeđuju W82, apsida W51 i zidovi mauzoleja W5 i W18. Prva intervencija su male konstrukcije zidova W18 i W95 koji povezuju ranije spomenute zidove cisterne. Druga intervencija je W81, koja je ispunila prostor između zidova W51 i W82. Naslonila se na ožbukano lezenu i ožbukano vanjsko lice zida velike apside, vjerojatno zbog toga jer je cisterna na tome mjestu propuštala vodu. Zadnji sloj žbuke koji pokriva podnicu i penje se na zidove cisterne predstavlja posljednju vidnu intervenciju u ovom dijelu kompleksa. Veća količina krovnooga crijepa u SU1181 dozvoljava pretpostavku da je završni pokrov na vjerojatnom svodu cisterne bio upravo od tegula (sl. 16).

Ova cisterna je, po svemu sudeći, kasniji dodatak građevinskom kompleksu s rotundom. Više je primjera u starokršćanskoj arhitekturi istočnojadranske obale i zaleđa koji ukazuju na slične situacije²³. Ovdje posebno upozora-

Two objects recovered in SU1215 and SU1181, in contact with the floor, date the usage of this room and its demolition between mid-6th and mid-7th century. The first is a fragmentary red deer (*Cervus elaphus* L.) antler¹⁹ found on the floor of the *cisterna* (although belonging to SU1181), leaning against the wall W81 (fig. 17), which was carbon-dated to 545-600²⁰. The second object is a broken Spatheion 3C/Keay 26 small amphora²¹ (fig. 18), dated from the second half of the 6th to the end of the 7th century, produced at Neapolis/Nābil, in *Africa Zeugitana* and probably used for wine transportation²². It was also found on the floor of the *cisterna*, along the wall W82.

The floor of the *cisterna* uncovered in T8 is composed of several layers of orange or pink hard mortar, possibly hydraulic. The very last one coated both the floor and the inner face of the walls W21, W18, W12 and W5 up to c. 40 cm, which keep remnants of it. Some of the walls of the room (W18, W5) display traces of a much finer pink lime plaster, which covered, at the foot of these walls, the upper layer of floor mortar. Several thin slabs embedded in the last layer of the mortar that covers the floor were found at the foot of the wall W81. In the centre of the floor lies a small sub-rectangular collector hole (*impluvium*) the function of which was likely to collect impurities during the occasional cleaning of the *cisterna* (fig. 1). For that reason, the floor slopes radially towards this collecting device.

Regarding building stratigraphy, the long wall W82 predates the rotunda-mausoleum complex, although this remains a working hypothesis that necessitates further evidence. In T8, an argument for this sequence would be the blind-arch pier W96, which leans on W82

¹⁹ BR2016449 (SU1181).

²⁰ Beta-437581 – 1500 ± 30 BP (δ13C –20 ‰vs PDB), Cal AD 475-485 (Cal BP 1475-1465), 535-620 (Cal BP 1415-1330) (95%, 2σ), Cal AD 545-600 (Cal BP 1405-1350) (68%, 1σ).

²¹ BR2016139 (SU1215).

²² Cf. M. BONIFAY, *Études sur la céramique romaine tardive d'Afrique*, Oxford 2004, p. 127-129, 474. In Croatia, only two examples are attested, discovered at Postira Pastoralni centar (cf. K. JELINČIĆ, Lj. PERINIĆ MURATOVIĆ, Novi arheološki nalazi iz Postira na otoku Braču, *Prilozi Instituta za arheologiju u Zagrebu* 27/1, Zagreb 2011, p. 190-194 and pl. 4.

²³ Skoro kompletan popis cisterni u Dalmaciji može se naći u: P. CHEVALIER, *Salona II. Recherches archéologiques franco-croates à Salone. Ecclesiae dal-*



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sl. 16. SU1181 (V. Ghica).
Fig. 16 SU1181 (V. Ghica)

(fig. 7). W96 is indeed more protruding than W94 – another arch pier connected to the former by the missing arch – because it needed to fill the gap between W82 and the apse W51. As their masonry indicates, these piers were built at the same time as W51, but, differently from W51, they were built from the outside of the rotunda. Follow afterwards two rehabilitations of the space delimited by W82, the apse W51 and the walls W5 and W18 of the mausoleum. The first one is represented by the construction of W18 and W95, two rounded joints that connect the above-mentioned delimiting walls of the *cisterna*. To the second rehabilitation should be attributed the infill W81, which filled the space between the walls W51 and W82. It leaned on the mortared blind-arch pier W94 and the mortared wall of the large eastern apse (W51) probably because the *cisterna* was leaking water in that place. The uppermost layer of mortar that covers the floor and climbs upon the foot of the walls of this room constitutes the last visible intervention in the *cisterna*. The high concentration, in SU1181, of reused *tegulae* allows for hypothesising that the last roof of the *cisterna* was made of *tegulae*.

This *cisterna* is thus a later addition to the rotunda complex. Numerous such *cisternae* are known in the early Christian architecture of the Eastern Adriatic coast and its hinterland²³.

²³ A case in point and an almost complete list of such wa-



sl. 17. Rog crvenoga jelena pronađen u SU1181 (V. Ghica).

Fig. 17 Red deer antler found in SU1181 (V. Ghica)

vamo na primjere iz Srime kod Šibenika i na kompleks Eufrazijane u Poreču, gdje su velike cisterne interpolirane između dviju kasnoantičkih crkava²⁴.

T9

Stratigrafske sekvence otkrivene u ovoj sondi se uglavnom odnose na građevinski razvoj memorije te, kao posljedica toga, na rotundu s kojom je memorija funkcionirala zajedno kao jedinstveni građevinski kompleks. Iako su najviši slojevi u ovoj sondi nedavno poremećeni, T9 predstavlja, za sada, najpouzdaniju stratifikaciju srednjovjekovnih slojeva u ovom kompleksu.

Najviši stratigrafski slojevi sastoje se od dviju modernih skupina slojeva razdvojenih usje-

matiae. L'architecture paléochrétienne de la province romaine de Dalmatie (IVe-VIIe s.) [En dehors de la capitale, Salona], Rome - Split, 1995, vol. 2, str. 95.

²⁴ Za Srimu vidi u: Z. GUNJAČA, Ostaci arhitekture i analiza građevinskih faza, u: *Srima - Prižba. Starokršćanske dvojne crkve*, Šibenik, 2005, str. 39-44, a za Eufrazijanu u: I. MATEJČIĆ - P. CHEVALIER, Nouvelle interprétation du complexe épiscopal "Pre-éuphrasien" de Poreč, *Antiquité Tardive* 6, 1998, str. 361-362. Na fenomen česme u crkvama s osvrtom i reprodukcijom Eufrazijane osvrće se: H. R. SENHAUSER, Formen und tendenzen, Fusswaschbecken, u: *Frühe Kirchen im östlichen Alpengebiet*, Band 2, München, 2003, str. 368-369.

kom SU1243 (sl. 20) – velikom kosturnicom E1 koja zauzima veći dio južnog dijela stomiona na dubini od oko 150 cm (vjerojatno rezultat Gunjačinih iskopavanja 1967. i 1969.)²⁵, dok su SU1019 i SU1035 povezani s ukopom iz 20. stoljeća. Podrijetlo skeletnoga materijala iz E1 nije sigurno i o njemu se može samo spekulirati uz pomoć podataka iz dnevnika iskopavanja iz 1967. i 1969. godine. Za sada je relativno pouzdano moguće povezati ovaj kosturni materijal sa sondama smještenim u grobnoj komori memorije i oko nje. Iako je originalni kontekst izgubljen, ovaj materijal i dalje ima značaj kao zasebna skupina. Radi se o deset osoba (od minimalno 40) čiji su ostatci ponovno sahranjeni u E1 – ali također i jedan koji je ponovno sahranjen u južni sarkofag u grobnoj komori²⁶ – na kojemu se nalaze leprozni tragovi²⁷. Ovi su

²⁵ Iako dnevnicima iz 1967. i 1969. nisu eksplicitni glede ovoga pitanja, neki naputci se ipak mogu pronaći. Ulaz u grobnu komoru – područje odmah do T9 – iskopan je u potpunosti u rujnu 1969. godine, a ponovni ukop ljudskih ostataka, pronađenih tijekom ovih iskopavanja, napravljen je u sondi iz 1967. i 1969. te oko nje. Također, luk koji se nalazi iznad prostora koji razdvaja stomion i grobnu komoru je rekonstruiran sredinom lipnja 1970. godine, što je iziskivalo čišćenje velikog dijela stomiona (o čemu svjedoči djelomično uništenje zidova W83 i W102; sl. 7). Naša iskopavanja su potvrdila ovaj slijed događaja, s vrlo urednim usjekom u najviše stratigrafske slojeve T9 (SU1243), što ukazuje da je njegova ispuna (E1) kasnija od dvaju stratigrafskih slojeva (SU1019, SU1035), u vezi s grobom iz 20. stoljeća. Nije u potpunosti isključeno ni da E1 predstavlja stariji ukop, jer se u Gunjačinu dnevniku iskopavanja za 1969. godine spominju lubanje u zidu memorije, što bi se moglo odnositi na zid W2, srednjovjekovni zid sagrađen iznad memorije (Gunjačin dnevnik, 9. 9. 1969.: „Nalazi se dosta lubanja koje su usute u sjeverozapadnom zidu cele.”). Ovo bi se moglo odnositi na veći broj lubanja iz E1, koje su pronađene ispod srednjovjekovnoga zida W2 i unutar južne polovine stomiona.

²⁶ Otvorena 21. i 22. kolovoza 1969., dva sarkofaga su sadržavala kosturne ostatke nekoliko osoba, pokopanih sukcesivno. Ovi su skeletni ostatci kasnije uklonjeni (najvjerojatnije 1969. godine) potpuno iz sjevernoga i djelomično iz južnoga sarkofaga. Podrijetlo kostiju pronađenih 2014. godine u južnom sarkofagu, ne može se sa sigurnošću ustanoviti; usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 45-46.

²⁷ Vidi niže, str. 52 i V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 45-46.



sl. 18. Rekonstruirana *Spatheion 3C/Keay 26* amfora (BR2016139) pronađena u SU1215 (A. Z. Alajbeg).

Fig. 18 Restored *Spatheion 3C/Keay 26* amphora (BR2016139) found in SU1215 (A. Z. Alajbeg)

Srima near Šibenik and the complex of Euphrasius' basilica in Poreč provide particularly significant parallels, where large *cisternae* were interpolated between two late antique churches²⁴.

ters tanks in P. CHEVALIER, *Salona II. Recherches archéologiques franco-croates à Salone. Ecclesiae dalmatiae. L'architecture paléochrétienne de la province romaine de Dalmatie (IVe-VIIe s.)* [En dehors de la capitale, Salone], Rome-Split 1995, vol. 2, p. 95.

²⁴ See: with Cf. Z. GUNJAČA, Ostaci arhitekture i analiza građevinskih faza, in: *Srima - Prižba. Staro-*

The sequences exposed in this trench concentrate a good part of the evolution of the mausoleum and, as a consequence, of the rotunda church, with which it functioned as one unit. Although recently disturbed in its highest part, the trench constitutes the most readable stratification of medieval horizons available so far for the rotunda-mausoleum complex.

The high stratigraphy is composed of two modern groups separated by the cut SU-1243 (fig. 20): the large ossuary E1, which occupies much of the southern half of the *stomion* on a depth of up to 150 cm, is a bones repository resulting likely from the digs carried out in 1967 and 1969²⁵, while SU1019 and SU1035 are related to a 20th-century burial. The provenance of the osteological remains that form E1 is uncertain and can only be speculatively deduced from the diaries of the 1967 and 1969 digs. It

kršćanske dvojne crkve, Šibenik, 2005, p. 39-44 (Srima), and I. MATEJČIĆ - P. CHEVALIER, Nouvelle interprétation du complexe épiscopal episcopal "Pré-éphrasien" de Poreč, *Antiquité Tardive* 6, 1998, p. 361-362 (episcopal complex in Poreč). Cf. H. R. SENHAUSER, Formen und tendenzen, Fusswaschbecken, in: *Frühe Kirchen im östlichen Alpengebiet*, Band 2, München, 2003, p. 368-369 on faucets in early Christian churches with emphasis on the complex of Euphrasius' basilica.

²⁵ Although not explicit in this regard, the excavation diaries of the seasons 1967 and 1969 contain hints in this direction: the entrance of the *cella* – an area immediately adjacent to the one discussed here – was entirely excavated in September 1969 and reburial of human remains unearthed during the digs was extensively undertaken in and around the trenches cleared in 1967 and 1969. In addition, the arch overhanging the bay separating the *cella* and the *stomion* was reconstructed in mid-June 1970, involving the clearing of a good part of the *stomion* (bearing witness to this is the partial destruction of walls W83 and W102; fig. 7). Our excavation confirmed this succession of events, with a very neat cut revealed in the high stratigraphy of T9 (SU-1243), which indicates that its filling (E1) is posterior to two stratigraphic units (SU1019, SU1035) associated with a 20th century grave. It is however not entirely excluded that E1 represents an earlier event, as the 1969 diary might suggest when mentioning skulls observed in a wall of the mausoleum, which could be W2, a medieval wall built atop the mausoleum (09/09/1969: "Nalazi se dosta lubanja koje su usute u sjeverozapadnom zidu cele."). These could indeed correspond to the pile of skulls placed in E1 under the medieval wall W2 and inside the southern half of the *stomion*.



sl. 19. 3D rekonstrukcija rotunde i susjednih rimskih građevina (P. Rathsmann).

Fig. 19 3D reconstruction of the rotunda church and the adjacent *domus* (P. Rathsmann)

skeletni ostatci ukopani najvjerojatnije u blizini ili čak u zajedničkom grobu. Jesu li oni istovremeni ili ne, i odnose li se na epidemiju lepre, još je potrebno istražiti. Jedini siguran podatak je radiokarbonsko datiranje jedne od lubanja iz E1, koje pada u razdoblje kada je lepra u Europi bila znatno raširena²⁸.

U srednjem dijelu *stomiona* i *dromosa* sačuvana su četiri sloja (SU1047, SU1037, SU1048, SU1049), iskopana 2015. godine, u kojima je nađen heterogen materijal.

Najniži stratigrafski slojevi u T9 povezani su s korištenjem memorije. Najniži sloj *stomiona* sadrži dva groba (Gr49 i Gr54) koji su postavljeni uz bočne zidove (W12, W91; sl. 7), izravno na živcu. Ovi grobovi nisu *loculi*, već obični suhozidni grobovi, što se vidi po ostacima njihovih zidova (W83 i W102; sl. 7). Oba su korištena za kontinuirane ukope, pri čemu Gr49 sadrži ostatke od najmanje pet osoba (HRU1217), a Gr54 tri osobe (HRU1231, SU1232). Ove inhumacije i ponovni ukopi su, izgleda, dio dugotrajnog korištenja memorije kao ukopnoga mjesta. Kronološka oznaka za mlađe korištenje dobivena je ¹⁴C datiranjem osobe pronađene u Gr49 (HRU1217), koje je rezultiralo vremenskim intervalom 885. – 995. godine²⁹. Naknadno korištenje memorije pove-

²⁸ UBA-33714 – 912 ± 31 BP, Cal AD 1032-1190, 1198-1203 (95%, 2σ), Cal AD 1045-1097, 1119-1142, 1146-1162 (68%, 1σ).

²⁹ Beta-437580 – 1110 ± 30 BP (δ13C –17.1 ‰vs PDB), Cal AD 885-995 (Cal BP 1065-955) (95%, 2σ), Cal AD 895-980 (Cal BP 1055-970) (68%, 1σ).

zано je sa zidom W84 koji je zatvorio stomion i odvojio ga od dromosa (sl. 7). Ovaj je zid indirektno datiran ¹⁴C analizom karboniziranog materijala iz SU1208. Riječ je o sloju koji je kasniji od W84 (sl. 20)³⁰, datiran u 770. – 945. godinu³¹. Relativna kronologija, koja je rezultat stratigrafije zida W84 i ranije spomenutih datiranja ¹⁴C, sugerira da je u 9. stoljeću stomion bio pokriven slojem zemlje debljine najmanje 68 cm (sačuvana visina zida W84), koji je prekrivao Gr49 i Gr54 (ova visina bi odgovarala visini vrhova sarkofaga). Funkcija W84 bila je sprječavanje erozije zemljanog nasipa iz stomiona u dromos u kojemu nije bilo zemlje. Time memorija nije bila potpuno zanemarena te možemo pretpostaviti da je kao ukopište bila u upotrebi barem do 10. stoljeća³².

is however possible to associate this skeletal material to trenches located in and around the mausoleum's *cella*. Even though its original context is lost, this material retains its relevance as a group. The 10 individuals (out of a minimum of 40) whose remains were reburied in E1 – but also one (re-deposited) in the south sarcophagus of the *cella*²⁶ – and who display signs of leprosy²⁷ were likely buried nearby each other or even in a mass grave. Whether or not they are contemporaneous and whether they are to be related to an epidemic of leprosy remains to be determined. The only certain element available is the radiocarbon date of the skull of one of the individuals reburied in E1, which falls within the period that witnessed the highest peak of leprosy in Europe²⁸.

From the intermediate sequence of the *stomion* and *dromos* survive four layers (SU1047, SU1037, SU1048, SU1049), excavated in 2015, which contain chronologically heterogeneous material.

It is the low stratigraphy of T9 that is associated with the use of the mausoleum. The lowest section of the *stomion* features two graves (Gr49 and Gr54) built along the sidewalls (W12, W91; fig. 7), in direct contact with the bedrock. Contrary to appearances, these are not recess *loculi*, but standard buried drywall graves, as witnessed by the remnants of their walls (W83 and W102; fig. 7). Both were used for successive burials, with Gr49 containing a minimum of 5 individuals (HRU1217) and Gr54, 3 individuals (HRU1231, SU1232). These inhumations and reburials are part of what appears to be long-lasting funerary reuse of the mauso-

³⁰ SU1208 je sadržavao karbonizirani organski materijal i sjemenke sljeza (*Malva* sp.). Trebalo bi odrediti postoji li veza između ovih ostataka i ukopnih običaja.

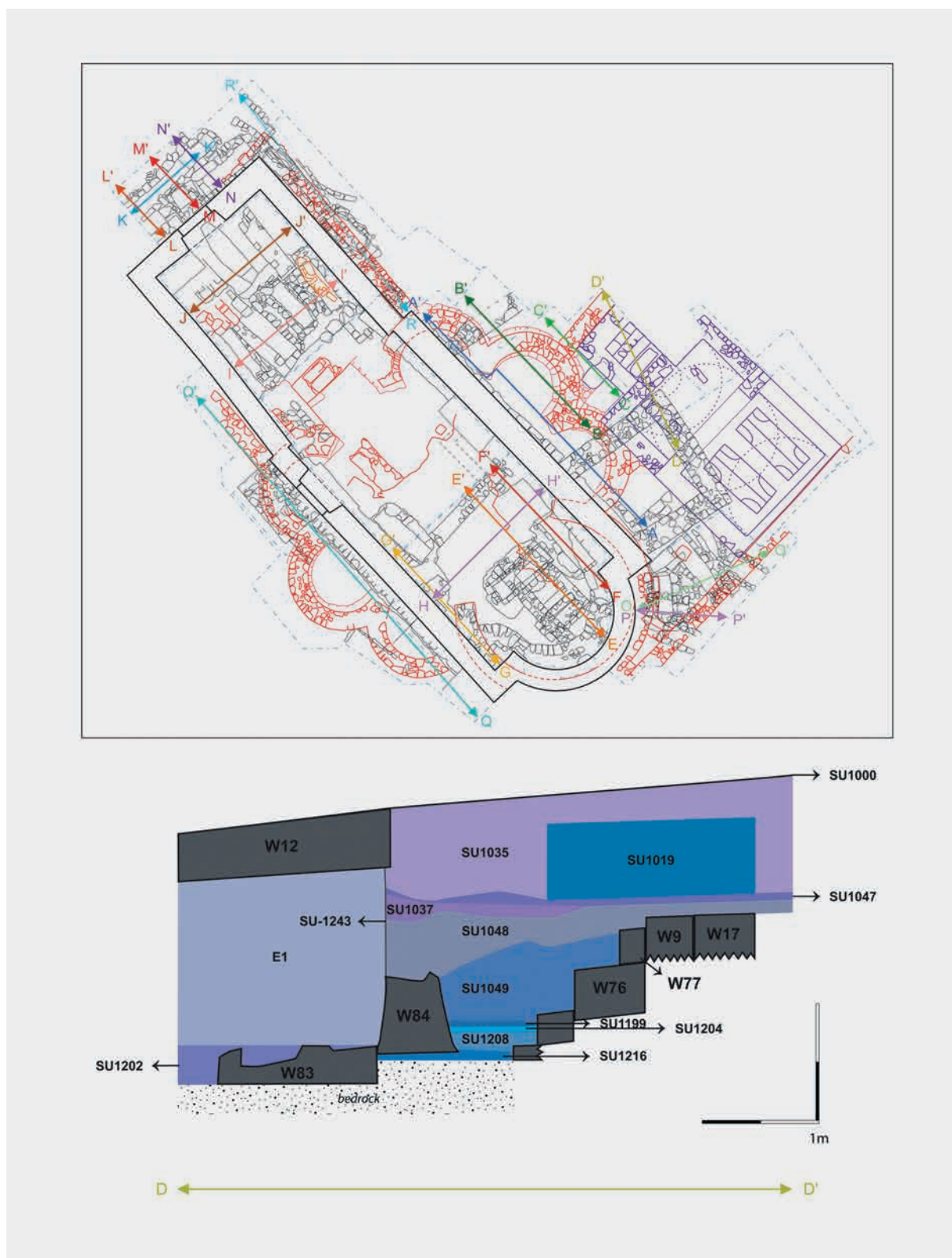
³¹ Beta-437579 – 1180 ± 30 BP (δ¹³C –23.8 ‰ vs PDB), Cal AD 770-900 (Cal BP 1180-1050), 925-945 (Cal BP 1025-1005) (95%, 2σ), Cal AD 775-890 (Cal BP 1175-1060) (68%, 1σ).

³² Posljednji ukopi u stomion mogli bi se prepoznati iz šireg konteksta ukopa pronađenih u našem T9 1969. godine. Iako je teško napraviti pouzdaniju rekonstrukciju prema podacima iz dnevnika te u nedostatku druge dokumentacije, nekoliko činjenica se ipak može pretpostaviti. Osim tijela koja su nekoliko puta polagana u oba sarkofaga (Gunjačin dnevnik, 21. – 22. 8. 1969.), razni kosturni ostatci također su pronađeni u ovom zatvorenom prostoru, primjerice između južnoga sarkofaga i zida W5 (Gunjačin dnevnik, 9. 9. 1969.) ili u prostoru oko sarkofaga na dubini manjoj od 0,80 m od živca (Gunjačin dnevnik, 10. 9. 1969.). Zvezdolika naušnica tipa *Golubić* pronađena je zapadno od južnoga sarkofaga (Gunjačin dnevnik, 9. 9. 1969.) na nepoznatoj dubini, ali manje od 0,80 m od živca. Druga, djelomično sačuvana naušnica istog tipa pronađena je u blizini u nepoznatom kontekstu (Gunjačin dnevnik, 10. 9. 1969.). Bez obzira na skromnu dokumentaciju o ovim nalazima, ove naušnice ukazuju na ukopavanje u T9 između kasnog 6. i 8. stoljeća. Našim iskopavanjima taj je ukopni horizont, do sada, evidentiran samo u Gr17 (usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 33-34) koji je između ostaloga sadržavao i karičicu zlatne naušnice (usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 26).

²⁶ Opened on 21 and 22 August 1969, the two sarcophagi contained skeletons of several individuals, deposited therein successively. These skeletal remains were then removed (likely in 1969), completely from the N sarcophagus and partly from the S sarcophagus (although the provenance of the bones retrieved in 2014 in the S sarcophagus cannot be ascertained); cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 45-46.

²⁷ See below, p. 52 and V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 45-46.

²⁸ UBA-33714 – 912 ± 31 BP, Cal AD 1032-1190, 1198-1203 (95%, 2σ), Cal AD 1045-1097, 1119-1142, 1146-1162 (68%, 1σ).



sl. 20. Stratigrafski presjek D-D' u sondi T9 (V. Ghica).
 Fig. 20 Stratigraphic cross-section D-D' in trench T9 (V. Ghica)

T12

Površinski slojevi ove male sonde (sl. 2) iz SU1053 do SU1059, uključujući i potonju, nastali su nakon srednjega vijeka i kasniji su od konstrukcije velike dodane prostorije na sjevernoj strani broda današnje crkve (15. stoljeće ili kasnije) koju zid W4 omeđuje na zapadu. Ispod njih su stratigrafski slojevi SU1133 i SU1149 koje je teže kronološki odrediti. SU1133 je sastavljen isključivo od pred-srednjovjekovne keramike, dok SU1149 sadrži fragment vrča od majolike skupa s brojnim ulomcima rimske keramike iz 1. – 3. stoljeća. SU1149 predstavlja ispunu usjeka (SU1159) napravljenoga u nižem sloju SU1160. Skupa sa SU1169 i SU1173, SU1160 formira skupinu najvjerojatnije intaktnih slojeva koji sadrže većinom rimsku keramiku iz 2. i 3. stoljeća³³. Njegova veza s apsidom W22 datira slojeve SU1160 – SU1169 – SU1173 nakon kraja 5. stoljeća³⁴. Ova sekvencija ima sve stratigrafske karakteristike niza sukcesivnih slojeva izvan rotunde. Ispod ove skupine je ožbukani sloj (SU1183) koji se nalazi na istoj visini kao i temeljna stopa vanjskoga lica W22, na kojemu je pronađena vapnena žbuka (sl. 21), što predstavlja originalnu razinu poda, suvremenu rotundi. Dva stratigrafska sloja u T12 (SU1191 i SU1194) formiraju neku vrstu osnove na koju je postavljen sloj sa žbukom po kojemu se hodalo – SU1183.

T14

Kao i u T8, najviši stratigrafski slojevi T14 sastoje se od dvaju slojeva koji prekrivaju grupu od trinaest grobova pronađenih na različitim dubinama. Jedan od ovih slojeva, SU1032 (sl. 9), sadrži ulomke plave majolike³⁵ i nema oštećenja, što datira grobove u razdoblje prije 15. stoljeća. Jedan od mogućih pokazatelja za takvu dataciju je i tanka srebrna karičica s

leum. A chronological landmark for this later re-employing is provided by the ¹⁴C age of the individual found in burial position in Gr49 (HRU1217): 885-995²⁹. To this secondary utilisation of the mausoleum is also associated the wall W84 that was blocking the *stomion*, separating it from the *dromos* (fig. 7). This wall is dated indirectly by the ¹⁴C age of charcoal sampled in SU1208, a layer that postdates W84 (fig. 20)³⁰: 770-945³¹. The relative chronology emerging from both the stratigraphic situation of W84 and the above-mentioned absolute ages suggests that: in the 9th century, the *stomion* was filled with a layer of earth at least 68 cm deep (the preserved height of W84), which was covering Gr49 and Gr54 (if assumed horizontal, this level would have reached exactly the tip of the lids of the sarcophagi); the function of W84 was to prevent this earth fill from moving from the *stomion* into the *dromos*, which was free of soil, and not to completely seal the mausoleum; the mausoleum as a whole was in use until at least the 10th century.³²

²⁹ Beta-437580 – 1110 ± 30 BP (δ13C –17.1 ‰vs PDB), Cal AD 885-995 (Cal BP 1065-955) (95%, 2σ), Cal AD 895-980 (Cal BP 1055-970) (68%, 1σ).

³⁰ SU1208 contained both charcoal and seeds of mallow (*Malva* sp.). Whether this association can be related to funerary rites remains to be established.

³¹ Beta-437579 – 1180 ± 30 BP (δ13C –23.8 ‰vs PDB), Cal AD 770-900 (Cal BP 1180-1050), 925-945 (Cal BP 1025-1005) (95%, 2σ), Cal AD 775-890 (Cal BP 1175-1060) (68%, 1σ).

³² The last burials in the *stomion* should however be considered in the larger context of those unearthed next to our trench T9 in 1969. Although difficult to reconstruct on the sole basis of the excavation diary and in the absence of other documentation, the following facts could be gleaned. Apart from the bodies deposited several times in the two sarcophagi (1969 diary, 21-22/08/1969), various human remains were also found in this confined space, for example between the southern sarcophagus and the wall W5 (1969 diary, 9/9/1969) or in the passageway of the *cella* at less than 80 cm from the bedrock (1969 diary, 10/9/1969). A star-shaped earring of Golubić type was unearthed to the west of the southern sarcophagus (1969 diary, 9/9/1969) at an unknown depth, but less than 80 cm from the bedrock surface. A second, albeit fragmentary, star-like earring of Golubić type was retrieved close by in an unspecified context (1969 diary, 10/9/1969). Notwithstanding the modest documentation relating to them, these earrings indicate late 6th to 8th century burials in the *cella*. Our excavations uncovered this funerary horizon only in Gr17 (Cf. V. GHI-

³³ Između ostalih, treba spomenuti crijep sa žigom (SOL) ONAS (BR201687) iz 1. stoljeća i VOLV(MNIN) (?) (BR2016136). O ovim specifičnim tegulama, usp. I. PEDIŠIĆ - E. PODRUG, *Antički opekarski pečati iz fundusa Muzeja grada Šibenika*, str. 95-96, 101, 105, 115-117, 133 (pl. 2.52).

³⁴ Vidi niže, str. 39.

³⁵ Npr. BR201674, BR201682.

T12

The first subsurface layers of this small trench (fig. 2) – from SU1053 to and including SU1059 – are post-medieval and postdate the construction (in the 15th century or later) of the larger annexe appended on the northern side of the *naos*, which the wall W4 limits to the west. Located beneath this series, the stratigraphic units SU1133 and SU1149 are more difficult to situate chronologically: while the former is consistently composed solely of pre-medieval ceramic, the latter contains, along with numerous 1st-3rd century CE Roman pottery, a fragment of what could be a majolica jug. SU1149 represents the fill of a cut (SU-1159) made in the underlying layer SU1160. Together with SU1169 and SU1173, SU1160 forms a group of likely undisturbed strata comprising in majority shards of 2nd-3rd century CE Roman ceramic³³. Its relationship with the apse W22 dates the sequence SU1160-SU1169-SU1173 after the end of the 5th century³⁴. This same sequence has all the characteristics of a series of successive circulation levels outside the rotunda building. Underneath this group is a mortared stratum (SU1183) situated at the same height as the ledge of the outer face of W22 (on which lime mortar coating was found; fig. 21), which constitutes the original circulation level contemporaneous with the erection of the rotunda building. The two last stratigraphic units in T12 (SU1191 and SU1194) form a sort of *nucleus* on which was set the mortared circulation level SU1183.

T14

As in T8, the high stratigraphy of T14 is composed of two strata covering a series of 13

CA, A. MILOŠEVIĆ, N. URODA, D. DZINO, Arheološki project Varvaria / Breberium / Bribir u 2015., p. 33-34), a grave that contained, among others, a golden earring (cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DZINO, Arheološki project Varvaria / Breberium / Bribir u 2015., p. 26).

³³ Amongst the notable exceptions, we note a (SOL) ONAS stamped tile (BR201687) of the 1st century CE and a VOLV(MNIN) (?) (BR2016136). On these specific *tegulae*, cf. I. PEDIŠIĆ, E. PODRUG, Antički opekarski pečati iz fundusa Muzeja grada Šibenika, p. 95-96, 101, 105, 115-117, 133 (pl. 2.52).

³⁴ See below, p. 39



sl. 21. SU1183 i apsida W22, s ožbukanjem sačuvanim na vanjskom ležištu, u sondi T12 (V. Ghica).

Fig. 21 SU1183 and the apse W22, with coating mortar preserved on its external ledge, in trench T12 (V. Ghica)

otvorenim krajevima³⁶, koju je moguće datirati u šire razdoblje srednjega i kasnoga srednjeg vijeka. S izuzetkom Gr51 – groba koji leži na živcu (sl. 5) i u kojemu je pronađena obična karičica³⁷ koja traje kroz više stoljeća srednjega vijeka – grobovi nisu sadržavali ništa osim kostiju.

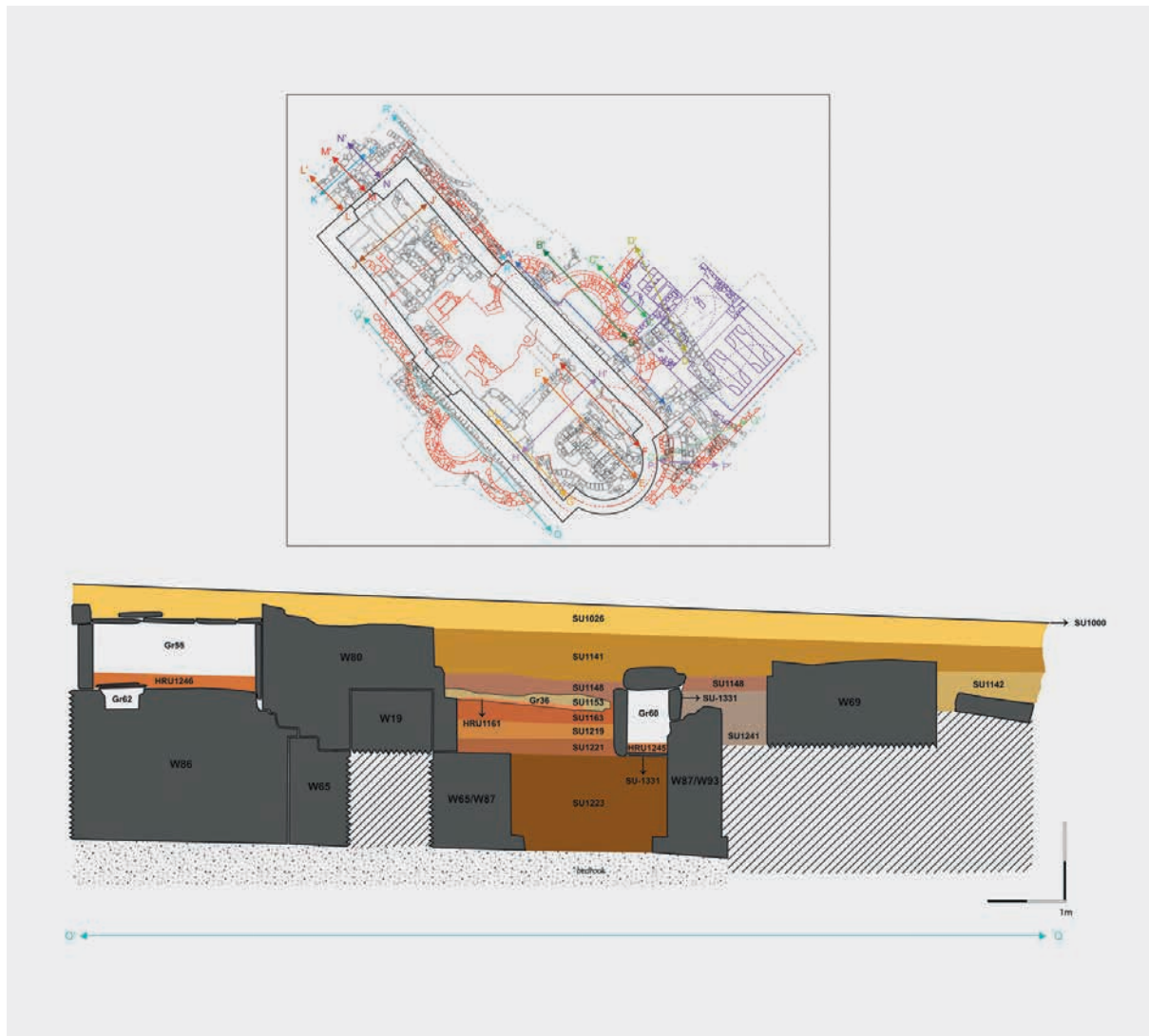
Nekoliko grobova napravljeno je iznad ili su usječeni u dvama zidovima koji se nalaze ispod njih (W66 i W85; sl. 9), napravljeni su na živcu i protežu se gotovo paralelno sa sjevernim zidom pretprostora crkve. Mali fragment vanjskoga lica W66 otkriven je 2015. godine³⁸. Povezan je s apsidom W23 (sl. 7), a datiran je analizom komadića vapna u žbuci s AMS ¹⁴C i sekvencijalnom disolucijom u 399. – 537. godinu³⁹. Na zapadnom kraju na W66 se prislonio zid W85, koji završava u uglu pretprostora današnje crkve. Unutar W85, nakon djelomičnoga rastavljanja i ravnanja ovoga zida izgrađen

³⁶ BR2016151.

³⁷ BR2016378 (SU1238).

³⁸ Usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt Varvaria / Breberium / Bribir u 2015., str. 26.

³⁹ ETH-83814 – 1604 ± 28 BP (δ13C –26.7 ‰vs PDB), Cal AD 399-537 (95%, 2σ). Svi kalibrirani ¹⁴C datumi ovdje su dobiveni zahvaljujući analizi dr. sc. Alfa Lindroosa s odjela za geologiju i mineralogiju sveučilišta Åbo Akademi iz Turku i AMS laboratoriju Institut für Teilchenphysik ETH u Cirihu.



sl. 22. Stratigrafski presjek Q-Q' u sondi T15 (V. Ghica, B. Milošević).
 Fig. 22 Stratigraphic cross-section Q-Q' in trench T15 (V. Ghica, B. Milošević)

je grob (Gr53; sl. 5) koji sadrži ostatke djeteta staroga 2 – 3 godine, a datirani su s ¹⁴C metodom u 992. – 1040. godinu⁴⁰. U uglu preprostora današnje crkve, W85 je vjerojatno raniji zid (W110) koji se proteže SI-JZ ispod groba Gr23 (sl. 5) i vjerojatno je ulazio ispod sjevernoga ugla preprostora današnje crkve, što se iskopavanjima nije moglo dokazati. Ograničeni slijed ovih struktura je: W110 > W85 > preprostor > Gr53 (992. – 1040.) > Gr23 (1290.

graves situated at varying depth. One of these layers, SU1032 (fig. 9), which contains shards of blue majolica³⁵ and displays no cuts, places the underlying graves prior to the 15th century. Another piece of evidence for such dating is a plain and thin silver earring with straight open ends³⁶, recovered in this layer and datable to the wider periods of high and late middle ages. With one exception (Gr51, a grave in contact with the bedrock surface [fig. 5], which contained a plain link with straight open ends in usage throughout much of the middle ages³⁷), the graves did not yield datable material other than osteological.

⁴⁰ Beta-475067 – 1000 ± 30 BP (δ13C –18.3 ‰vs PDB), Cal AD 983-1051 (Cal BP 967-899, 71%), Cal AD 1082-1128 (Cal BP 868-822, 19.2%), Cal AD 1135-1152 (Cal BP 815-798, 5.2%) (95%, 2σ), Cal AD 992-1040 (Cal BP 958-910, 63.9%), Cal AD 1110-1116 (Cal BP 840-834, 4.3%) (68%, 1σ).

³⁵ E.g. BR201674, BR201682.

³⁶ BR2016151.

³⁷ BR2016378 (SU1238).

Several of the graves are built atop or cut into two underlying walls (W66 and W85; fig. 9) constructed on the bedrock and running almost parallel to the northern wall of the *pronaos*. A small fragment of the inner face of W66 had been revealed during the 2015 season³⁸. This wall is connected to the apse W23 (fig. 7), and lime lumps contained in its mortar were dated by AMS ¹⁴C and sequential dissolution to 399-537³⁹. To the west end of W66 was adjoined the wall W85, which stops at the corner of the *pronaos*. Inside the masonry of W85 and after the partial dismantling and levelling of this wall, was built a grave (Gr53; fig. 5) containing the remains of a 2-3 years old child, which were carbon-dated to 992-1040⁴⁰. In the area of the corner of the *pronaos*, W85 straddles a pre-existing wall (W110) that runs NE-SW under the tomb Gr23 (fig. 5) and possibly also under the northern corner of the *pronaos*. The sequence of these structures is: W110 > W85 > *pronaos* > Gr53 (992-1040 CE) > Gr23 (1290-1405 CE)⁴¹. The function of the walls W85 and W110 remains to be established.

– 1405.)⁴¹. Funkciju zidova W85 i W110 još treba razjasniti.

T15

Dva masivna kontrafora (W80, W69; sl. 22) – čiji su gornji dijelovi otkriveni 2014. godine u sondama T5 i T6 – dominirala su u najvišim slojevima ove sonde. Kontrafori, osobito W80, veličinom i oblikom vrlo su slični kontraforima koji su naknadno dodani na crkvu sv. Marije u Dolu, čija datacija ostaje nepoznata⁴². Vezivni materijal korišten pri gradnji ovih dvaju kontrafora je osobito tvrd i vapnenast te pokazuje tragove prirodnoga petrificiranja. Identičan je onome korištenome u zidu W4 koji pripada velikoj prostoriji dograđenoj na „sjeveru“ broda današnje crkve (T2). Može se s oprezom pretpostaviti da su zidovi W80 i W69 približno suvremeni velikoj dograđenoj prostoriji sjeverno od današnje crkve. Među blokovima korištenima u zidu W80, u kojemu je bilo više spolija, pronađen je i oštećeni rimski mramorni portret mlađega muškarca (BR2016360; sl. 23), kojega se može preliminarno datirati u posljednje desetljeće 3. ili početak 4. stoljeća⁴³.

Oba su kontrafora sagrađena uz temelje južnoga zida broda današnje crkve (W19) i nalaze se iznad apsida rotunde (sl. 22). Najzapadnija apsida ispod jugozapadnoga ugla broda današnje crkve (W65), čije je iskopavanje započelo 2015. godine, ispunjena je tijekom gradnje broda kalcificiranim kamenim blokovima koji

³⁸ Cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DZINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 26.

³⁹ ETH-83814 – 1604 ± 28 BP (δ13C –26.7 ‰vs PDB), Cal AD 399-537 (95%, 2σ). All calibrated ¹⁴C ages published here were provided by Dr Alf Lindroos from the Department of Geology and Mineralogy of the Åbo Akademi University in Turku and the AMS facility of the Institut für Teilchenphysik of the ETH in Zurich.

⁴⁰ Beta-475067 – 1000 ± 30 BP (δ13C –18.3 ‰vs PDB), Cal AD 983-1051 (Cal BP 967-899, 71%), Cal AD 1082-1128 (Cal BP 868-822, 19.2%), Cal AD 1135-1152 (Cal BP 815-798, 5.2%) (95%, 2σ), Cal AD 992-1040 (Cal BP 958-910, 63.9%), Cal AD 1110-1116 (Cal BP 840-834, 4.3%) (68%, 1σ).

⁴¹ W85 is placed on top of W110. As shown by the masonry, both faces of W85 were exposed, which indicates that they predate the foundation of the northern wall of the *pronaos*. The position of Gr53 along the wall of the *pronaos* suggests that the former postdates the latter. This sequence is confirmed by the situation of this grave in W85. This wall was dismantled and levelled to the same height as most of the remains of the rotunda, a process carried out prior and likely in view of the construction of the standing cemeterial church. It is after – or during (?) – this levelling that Gr53 is built.

⁴¹ W85 se nalazi povrh zida W110. Kako pokazuje građevna struktura, oba lica zida W85 su bila otkrivena, što ukazuje na to da su raniji od temelja sjevernoga zida pretprostora današnje crkve. Položaj Gr53 duž zida pretprostora sugerira da je grob stariji od zida. Ovakva kronološka sekvenca potvrđena je položajem groba u zidu W85. Ovaj zid je uklonjen i poravnat na istu visinu kao i ostatci rotunde, što se dogodilo prije ili vjerojatno u kontekstu konstrukcije današnje crkve. Gr53 napravljen je nakon ili tijekom (?) ovoga poravnanja.

⁴² Jedina hipoteza o namjeni i datiranju ovih kontrafora uz crkvu sv. Marije odnosi se na razdoblje osmanske vladavine nad Bribirom: S. GUNJAČA, Nalaz srednjovjekovnih arhitektura na Bribiru, *Starohrvatska prosvjeta*, ser. 3, sv. 10, Split, 1968, str. 237.

⁴³ Assoc. prof. Marina Prusac Lindhagen (*Kulturhistorisk museum*, Oslo), kojoj želimo zahvaliti ovom prigodom, bila je ljubazna te je napravila preliminarno datiranje nalaza prema fotografijama (e-mail V. Ghici, od 20. veljače 2018.).



sl. 23. Glava rimskoga kipa pronađena u zidu W80, T15 (A. Z. Alajbeg).
Fig. 23 Roman statue head found in the wall W80, T15 (A. Z. Alajbeg)

sada formiraju dio temelja južnoga zida broda (W19; sl. 1, 10). Prema tome, zid W80 sjedi na apsidi W65 i spomenutoj kasnijoj ispuni. Kako su oba kontrafora pronađena na oko 15 – 50 cm ispod površine te su nepravilnog oblika, njihova originalna visina je nepoznata. Pretpostavljamo da su iskopani samo njihovi ostatci – uglavnom temelji. Kao i u slučaju crkve sv. Marije, namjena ovih kontrafora se, za sada, ne može odrediti.

Uz dva ispremiješana sloja ispod površine (SU1026 i SU1141⁴⁴), najviši stratigrafski slo-

T15

Two massive buttresses (W80, W69; fig. 22), the upper parts of which had been already uncovered in 2014 in the sondages T5 and T6, dominate the high sequence in this trench. These, and particularly W80, are very similar in both size and shape to the ones that were later adjoined to the church of St Mary, at Dol, the date of which remains unknown⁴². The binding material employed in these two

⁴⁴ SU1141 je uključivao uglavnom uništeni grob (Gr34), u kojemu je pronađen impost dekoriran pleterom (BR2016352).

⁴² The only proposal made so far in this regard relates the buttresses of the church of St Mary to the Ottoman occupation of Bribir: S. GUNJAČA, Nalaz srednjovjekovnih arhitektura na Bribiru, *Starohrvatska prošjeta* s. 3, 10, Split 1968, p. 237.



sl. 24. Ostruge pronađene u grobu Gr60 (A. Z. Alajbeg).
Fig. 24 Spurs found in the grave Gr60 (A. Z. Alajbeg)

buttresses, particularly hard and limy and displaying traces of natural concretion, is identical to the one used in the wall W4 belonging to the large annexe room located to the “north” of the *naos* (trench T2). It can, therefore, be tentatively inferred that W80 and W69 are approximately contemporaneous with the larger northern annexe. Among the blocks used in W80, a number of which are *spolia*, the eroded head of a Roman statue (BR2016360; fig. 23) was found, which can be dated to the last decade of the 3rd or the beginning of the 4th century CE⁴³.

Both buttresses are constructed against the foundation of the southern wall of the *naos* of the standing church (W19) and atop apses of the rotunda building (fig. 22). The western-most apse (W65), the beginning of which had been excavated in 2015 below the SW corner of the *naos*, was filled by the builders of the *naos* with cemented stone blocks that now form part of the foundation of the southern wall of the *naos* (W19; fig. 1, 10). Therefore, W80 sits on both the apse W65 and this later filling. As the two buttresses were found 15-50 cm below the topsoil, irregularly levelled, their original height is unknown. It is however certain that the excavated sections are only remnants – mainly the foundations – of higher structures. No less than in the church of St Mary, the purposes of this counterforting of the south wall of the *naos* escape us.

⁴³ Assoc. Prof. Marina Prusac Lindhagen (Kulturhistorisk museum, Oslo), whom we wish to thank here, was kind enough to make a first assessment on photos of this piece (email to V. Ghica of 20 February 2018).

jevi u T15 uključuju i grob Gr60 koji je orijentiran sjeveroistok-jugozapad i koji je pronađen između dvaju kontrafora na sličnoj dubini (sl. 10, 22). Ovaj grob sadrži ostatke najmanje osam odraslih osoba i djelomično je uništen tijekom konstrukcije mlađega groba, poslije iskorištenoga za recentni ukop (Gr56; sl. 10), Gr60 možemo datirati parom ostruga s dvanaestokračnom zvjezdicom u 14. – 15. stoljeće (sl. 24)⁴⁵. Između jednoga od zidova Gr60, kontrafora W80 i zida broda današnje crkve W19, nalazio se još jedan grob, Gr36 (sl. 22), koji je posljednji iz ovog sloja grobova. Ulomak natpisa s utjecajem *rotunda tipa gotice*⁴⁶ (sl. 25) te ulomci bijele i plave majolike koji su pronađeni u ovom grobu⁴⁷, pretpostavljaju njegovu dataciju u 15. stoljeće. Posljednji grob na ovoj razini, Gr55 (sl. 10, 22), je pravokutni suhozidni grob. Pronađen je uz južni zid preprostora današnje crkve i za sada se ne može datirati. Zidovi su mu sastavljeni od različitih spolija među kojima je dobro sačuvan kameni prag za jednostruka vrata iz rimskoga razdo-

⁴⁵ BR2016370, BR2016372. Za datiranje ovoga tipa ostruga, vidi D. VRSALOVIĆ, Kasnosrednjovjekovne ostruge u Muzeju hrvatskih arheoloških spomenika u Splitu, *Starohrvatska prosvjeta*, ser. 3, sv. 8-9, Split, 1963, str. 151-169, i osobito 167-168. – N. JAKŠIĆ, Nakit 14. stoljeća u Hrvatskoj i Bosni, str. 335 (115)-336 (116). – N. JAKŠIĆ, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici, str. 165. – M. PETRINEC, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici, str. 100-101.

⁴⁶ BR2016353 (SU1153 – ispuna Gr36).

⁴⁷ BR201679 (HRU1161).



sl. 25. Fragment natpisa na gotici (BR2016353)
(A. Z. Alajbeg).

Fig. 25 Fragment of monumental inscription
(BR2016353) (A. Z. Alajbeg)

blja (sl. 27)⁴⁸. Materijal pronađen u grobovima Gr60 i Gr36, kao i pretpostavljena datacija kontrafora W80 i W69 te gradnja velike prostorije koja je bila dodana današnjoj crkvi sa sjeverne strane⁴⁹, ove najviše stratigrafske slojeve datiraju približno u 15. stoljeće.

Ispod njih se nalazi nekoliko dublje ukopanih grobova, više ili manje oštećenih tijekom kompleksnog preuređenja ukopnog prostora u T15 (Gr58, Gr59, Gr61, Gr62, Gr63). U nekim slučajevima grobovi sadrže i po nekoliko osoba (najmanje 10 u Gr63). Ovi grobovi predstavljaju drugu srednjovjekovnu fazu. Iako kronologija ne može biti preciznija bez ¹⁴C datacije, za ovu skupinu možemo reći da prethodi 15. stoljeću⁵⁰. Neki od ovih grobova su napravljeni

⁴⁸ BR2016361.

⁴⁹ Za reviziju kronologije vidi V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 32.

⁵⁰ SU1148 predstavlja, po svemu sudeći, površinski nivo iz 15. stoljeća.



sl. 26. Dječje ostruge pronađene u SU1098 i SU1099
(A. Z. Alajbeg).

Fig. 26 Child spurs discovered in SU1098 and 1099
(A. Z. Alajbeg).

Along with two polluted subsurface layers (SU1026 and SU1141⁴⁴), the high sequence of T15 also comprises Gr60, an NE-SW oriented grave situated between the two buttresses at a similar depth (fig. 10, 22). Containing the remains of at least eight adult individuals and partly destroyed during the construction of a later grave, which was reused for a modern burial (Gr56; fig. 10), Gr60 is dated by a pair of spurs with 12-points rowels to 14th-15th century (fig. 24)⁴⁵. Enclosed between one of the

⁴⁴ SU1141 included a mostly destroyed grave (Gr34), in which was retrieved an impost block decorated with *pleter* (BR2016352).

⁴⁵ BR2016370, BR2016372. For the dating of this type of spurs, see D. VRSALOVIĆ, Kasnosrednjovjekovne ostruge u Muzeju hrvatskih arheoloških spomenika u Splitu, *Starohrvatska prosvjeta* s. 3, 8-9, Split 1963, p. 151-169 and particularly 167-168; N. JAKŠIĆ, Nakit 14. stoljeća u Hrvatskoj i Bosni, *Radovi Filozofskoga fakulteta u Zadru* 23 (10), Zadar 1983, p. 335(115)-336(116); N. JAKŠIĆ, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici. Analiza, *Starohrvat-*



sl. 27. Prag pronaden u zidovima groba Gr55 (A. Z. Alajbeg).
Fig. 27 Threshold found in the walling of grave Gr55 (A. Z. Alajbeg)

walls of Gr60, the buttress W80 and the wall W19 of the *naos*, another grave, Gr36 (fig. 22), completes this sequence. A fragment of monumental inscription in Gothic script with rotunda influences⁴⁶ (fig. 25) and a shard of white and blue majolica found therein⁴⁷ suggest a 15th century date for this burial. The last grave on this level, Gr55 (fig. 10, 22), is a rectangular drywall cist located along the southern wall of the *pronaos* and currently undated. The various *spolia* composing its walling included a well preserved Roman-period stone threshold of a one-leaf door⁴⁸ (fig. 27), the dimensions of which correspond with those assumed for the doorway of the rotunda in wall W44. The material retrieved in graves Gr60 and Gr36 as well as the presumed contemporaneity of the buttresses W80 and W69 with the northern larger annexe⁴⁹ situate this high sequence in the 15th century.

Below it, a series of deeper graves, more or less damaged during the complex reconfiguring of the funerary space in T15 (Gr58, Gr59, Gr61, Gr62, Gr63) and containing in certain cases several individuals (minimum 10 in Gr63), constitutes a second medieval sequence. Although its chronology cannot be specified without radiocarbon dating, this group can be considered

ska prosvjeta s. 3, 23, Split 1996, p. 165; M. PETRINEC, Kasnosrednjovjekovno groblje kod crkve Sv. Spasa u Vrh Rici. Katalog, *Starohrvatska prosvjeta* s. 3, 23, Split 1996, p. 100-101.

⁴⁶ BR2016353 (SU1153 – fill of Gr36).

⁴⁷ BR201679 (HRU1161).

⁴⁸ BR2016361.

⁴⁹ For its revised chronology, see V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DZINO, Arheološki project *Varvaria / Breberium / Bribir* u 2015., p. 32.

na zidovima rotunde, što je iziskivalo njihovu daljnju razgradnju.

U donjim slojevima T15 nalaze se ostatci triju apsida rotunde (W65, W87, W93), simetrične onima, iskopanim 2014. i 2015. godine, sa sjeverne strane današnje crkve. Uz apside, pronaden je zid koji se proteže u pravcu sjeverozapad-jugoistok (W86), povezan s apsidom W65 i paralelan s W66. Homogena zapuna zemlje (SU1223) pronadena je u apsidu W87, od najnižeg sačuvanog nivoa do živca (sl. 22). Neki su od ovih zidova sačuvani do visine 190 cm (W93), dok su ostali uništeni gradnjom prije spomenutih grobova ili kontraforima W80 i W69⁵¹. Temeljna stopa pronadena je uz dno svih apsidalnih zidova u potpunosti iskopanih ove godine: vanjsko lice W65 te oba lica W87. Zid W93 ove godine nije mogao biti istražen u potpunosti. Tragovi žbuke nisu pronadeni na temeljnoj stopi.

Ove je godine otkriveno početnih 3,25 m zida W86. Paralelan je s W66 i naslanja se na apsidu W65. W66 i W86 su uglavnom paralelni s odstupanjem od 5,3° od osi rotunde. Nekoliko konstrukcijskih detalja ukazuje da su ova dva zida dodana apsidama rotunde. Zidu nedostaje temeljna stopa.

Sloj SU1223 je sloj ispune unutar apsida W87, koji se razlikuje od sloja u apsidama W21 i W22. Ove dvije apsida zadržale su slojeve koji vjerojatno pripadaju ostacima podnice rotunde, no SU1223 unutar apsida W87 ne sadržava takve tragove. Jednostavna brončana karičica s otvorenim krajevima pronadena je u

⁵¹ Na primjer, zid W69 ulazi u apsidu W93, ali je isto djelomično oštetiо grob Gr63.

najvišem sloju SU1223⁵² i datira ovaj sloj pred kraj ranoga srednjeg vijeka.

T16

U ovoj sondi istraživan je sjeverni dio stomiona memorije i sjeverna polovina vanjskog lica grobne komore sa sarkofazima. Polovina stomiona koja pripada ovoj sondi sadržavala je grob sa suhozidnom oblogom (Gr54) koji graniči sa zidom W91 i simetričan je s Gr49 (sl. 7). U grobu su se nalazili ostatci triju odraslih osoba, od kojih je samo jedna zatečena *in situ*. Dio sonde koji se proteže između sjevernog zida grobne komore i zida seoskoga groblja ispunjen je suvremenim slojem (SU1131), ostacima iskopa iz 1960-tih (odbačeni kosturni ostatci i građevinski materijal koji uključuje i spolije)⁵³ i tamnosmeđom zemljom. Ovaj sloj pokriva cijelu dubinu sonde, vjerojatno sve do živca.

Razvojne faze i namjena korištenja prostora

Rezultati iskopavanja 2016. godine donijeli su dokaze koji omogućuju daljnje definiranje apsolutne i relativne kronologije ovog mikrolokaliteta, no to se odnosi samo na faze rotunde i memorije. Zbog lakšeg praćenja, faze namjene i korištenja prostora donosimo zajedno.

Faza 1

Ova faza uvjetno uključuje zid W82 (sl. 7). Nekoliko argumenata u prilog definiranju ovoga zida kao ranijega od mauzoleja i rotunde, ranije su prezentirani.

Faza 2

U ovoj fazi izgrađena je memorija koja se sastoji od postojeće grobne komore i stomiona. Žbuka sa zida W13 (sl. 7) koji razdvaja grobnu komoru i stomion datirana je AMS ¹⁴C metodom i sekvencijalnom disolucijom u 537. – 646. godinu⁵⁴. Ovaj sloj najvjerojatnije označava kasnije preuređenje ovih prostorija.

Faza 3

U ovoj fazi izgrađena je rotunda sa šest manjih polukružnih apsida na sjeveru i jugu,

as predating the 15th century⁵⁰. Some of these graves were built on or in the walls of the underlying rotunda complex, which involved the further dismantling of these walls.

The lower stratigraphy of T15 is composed of: three apses of the rotunda (W65, W87, W93), symmetrical to the ones excavated in 2014 and 2015; a NW-SE wall (W86) connected to the apse W65 and parallel to W66; and a homogenous soil deposit (SU1223) filling the apse W87 from the lowest level of this apse to the bedrock (fig. 22). Some of these walls are preserved up to 190 cm of height (W93), while other wall sections were dislocated by some of the graves mentioned above or the buttresses W80 and W69⁵¹. Ledges were found at the base of all wall faces excavated completely this year: the outer face of W65, and both faces of W87 (W93 could not be cleared entirely this year). However, no traces of mortar were identified on these ledges.

Only 325 cm of the length of W86 were cleared this season. Correlative of W66, this wall abuts the apse W65. W66 and W86 are parallel, but deviate by 5.3° from the axis of the rotunda. Several construction details indicate that these two walls were added to the rotunda building: joints; deviation from the axis of the rotunda; lack of ledges at their base.

The fill SU1223 denotes a dynamic of deposition inside the apse W87 that is in contrast with the one observed in the apses W21 and W22. While these latter kept layers belonging to and containing elements of the flooring of the rotunda, SU1223 displays no trace of it inside the apse W87. A plain bronze earring with straight open ends found in the highest section of SU1223⁵² dates this filling layer at the end of the early medieval period.

T16

This trench permitted to examine the northern half of the mausoleum's *stomion* as well as the outer face of the *cella*'s north wall. The half of the *stomion* that belongs to this trench re-

⁵² BR2016303.

⁵³ Kao, primjerice, fragment urne od krečnjaka (BR2016365).

⁵⁴ ETH-83818 – 1481 ± 30 BP (δ13C –27.1 ‰vs PDB), Cal AD 537-646 (95%, 2σ).

⁵⁰ SU1148 represents in all likelihood the 15th century ground level.

⁵¹ For instance, W69 bites into the apse W93, but also partly damaged the grave Gr63.

⁵² BR2016303.

vealed a drywall grave (Gr54) bordered by the wall W91 and corresponding symmetrically to Gr49 (fig. 7). The grave contained remains of three adult individuals, of which only one was found in burial position. The part of the trench extending between the north wall of mausoleum's *cella* and the wall of the cemetery was filled by a modern layer (SU1131), a dump of the digs run in the mausoleum in the 1960s, composed of discarded human remains, building stones – among which *spolia*⁵³ – and dark brown soil. This layer covers the whole depth of the trench in this area, up to the bedrock.

Building and occupation phasing

The following phasing updates and completes the versions proposed in the previous reports, but covers only the phases relating to the complex of the rotunda building. For the sake of readability, building and occupation sequences are merged.

Phase 1

This phase includes tentatively the wall W82 (fig. 7). Several of the arguments in favour of the precedence of this wall in relation to the mausoleum-rotunda complex were presented previously.

Phase 2

Mausoleum composed of the standing *cella* and *stomion*. The plaster coating the wall W13 (fig. 7) that separates the two was dated by AMS ¹⁴C and sequential dissolution to 537-646⁵⁴. This coating corresponds in all likelihood to a later intervention postdating the construction of the two rooms.

Phase 3

Rotunda building composed of six small and one large round apse to the east and a rectangular one to the west, with doorway in the wall W44 of the latter (fig. 7). Lime lumps extracted from mortar coating the apses W23 and W51 and originating most likely from the same radiocarbon reservoir at the same time were carbon-dated by sequential dissolution and through the R_Combine function of Ox-Cal to 536-607⁵⁵. This age profile, obtained

jednom velikom kružnom na istoku i jednom pravokutnom na zapadu. Ulaz se, po svemu sudeći, nalazilo u zidu W44, odnosno u pravokutnoj „apsidi“ (sl. 7). Komadići vapna uzeti iz žbuke sa zidova apside W23 i W51 datirani su kroz sekvencijalnu disoluciju i R_Combine funkciju OxCal u 536. – 607. godinu⁵⁵. Ovo datiranje – dobiveno iz 2 CO₂ frakcije po uzorku i kombiniranom kalibracijom – u skladu je s radiokarbonskim datiranjem rotunde objavljenim u izvješćima za 2014. i 2015. godinu, ali nisu jednaki OSL datiranju uzorka tla uzetoga ispod velike apside W51 (438. – 502.)⁵⁶. Uzevši u obzir kasnije apsolutno datirane faze, za sada predlažemo interpretaciju kojom se konstrukcija rotunde stavlja u najkasniji period ODL kronologije (kraj 5. stoljeća) pretpostavljajući mogućnost jedne ili dviju renovacija i ponovno žbukanje zidova rotunde i memorije između sredine 6. i početka ili prve polovine 7. stoljeća.

Faza 4

U ovu fazu spada izgradnja strukture, koja nalikuje narteksu, zapadno od rotunde, od koje su sačuvani zidovi W66 i W86, kao i dograđivanje mogućega ulaznog hodnika ispred memorije, omeđenoga zidovima W9, W16 i W89. Stranice ovoga „narteksa“ (W66, W86) pokazuju odstupanje 5,5° od osi rotunde, što je glavni argument koji ide u prilog postojanju ove faze. Također se i zidovi W16 i W89 naslanjaju na W8 i W90, što ukazuje na činjenicu da su oni kasniji dodatak. Analiza komadića vapna u žbuci, koja je povezivala građevinske elemente u zidovima W66 i W16, dala je slično ¹⁴C datiranje nakon sekvencijalne disolucije. Datirana je u 399. – 537. godinu za W66⁵⁷, te u 399. – 540. godinu za W86⁵⁸. W66 je inače indirektno datiran grobom Gr17 izgrađenim između 420. i 540. (Cal AD, 1σ)⁵⁹. Ulazni hodnik

⁵³ Such as a fragmentary limestone urn (BR2016365).

⁵⁴ ETH-83818 – 1481 ± 30 BP (δ13C –27.1 ‰vs PDB), Cal AD 537-646 (95%, 2σ).

⁵⁵ ETH-81234, ETH-83812 – 1509 ± 17 BP, Cal AD 474-485 (1.6%), Cal AD 536-607 (93.8%) (95%, 2σ).

⁵⁵ ETH-81234, ETH-83812 – 1509 ± 17 BP, Cal AD 474-485 (1.6%), Cal AD 536-607 (93.8%) (95%, 2σ).

⁵⁶ V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 33-34.

⁵⁷ ETH-83814 – 1604 ± 28 BP (δ13C –26.7 ‰vs PDB), Cal AD 399-537 (95%, 2σ).

⁵⁸ ETH-83819 – 1597 ± 31 BP (δ13C –28.1 ‰vs PDB), Cal AD 399-540 (95%, 2σ).

⁵⁹ Usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 34.

i „narteks” trebalo bi povezati s podizanjem razine tla izvan rotunde i mauzoleja. U ovoj fazi i nakon povišenja razine okolnoga tla, ma uzolej je i dalje u upotrebi. Ovakvu situaciju objašnjava gradnja zida koji je blokirao pretpostavljenu ulicu na kojoj je memorija izgrađena. Zid i obrisi ulice mogu se uočiti i sjeverno od seoskoga groblja. Postojanje ovog nasipa moglo bi objasniti i ulogu zida W17 (sl. 7) koji je vjerojatno ograničio terasu nastalu ravnanjem tla ispred dromosa.

Faza 5

Ovu fazu karakterizira preuređenje prostora omeđenog zidovima W5 / W82 / W51 / W21 / W12 (sl. 7) u zatvorenu cisternu za prikupljanje kišnice koja se slijevala s krova rotunde i memorije sa sarkofazima. Njeno preuređenje i popravak vidljivi su u zidovima W18 i W95, kojima je kasnije dodan W81, a koji je pokrio fasadnu žbuku na velikoj apsidi i lezeni W94. Njeno korištenje od sredine 6. do kraja 7. stoljeća dokazuje *Spatheion 3C* amfora i rog crvenoga jelena koji su pronađeni na ožbukanom podu cisterne. Urušenje pokrova cisterne (SU1181) treba datirati oko sredine 6. stoljeća ili kasnije.

Faza 6

Ovoj fazi pripada prenamjena grobne komore i stomiona unutar memorije koji su kao ukopište korišteni tijekom ranoga srednjeg vijeka. Generalno, faza 6 definirana je podacima iz dnevnika S. Gunjače, koje još treba provjeravati⁶⁰.

Faza 7

U ovu fazu spada renoviranje rotunde, koja se u ovom razdoblju koristi kao crkva. Ovoj fazi, privremeno datiranoj u drugu polovinu 9. stoljeća⁶¹, pripada komad oltarne pregrade s natpisom JIERI ROCAVI, tri manja arhitektonska ulomka od vapnenca, i najbitnije, natpis na ulomku sarkofaga naknadno iskorištenom kao okvir vrata koji se vjerojatno odnosi na kneza Branimira. Svi ovi nalazi potječu iz 2015. godine⁶². U ovu se fazu može uvjetno uključiti i

from 2 CO₂ fractions per sample and through combined calibration, is consistent with the radiocarbon ages associated with the rotunda that we published in the 2014 and 2015 reports, but not with the OSL date range obtained for soil parent material sampled below the larger apse W51 (438 BCE-502 CE)⁵⁶. Taking into account, among others, the subsequent absolutely dated phases, the interpretation proposed here of these ages consists in situating the construction of the rotunda at the youngest end of the OSL chronological range (end of the 5th century) and in postulating one or two restorations of the coating of the walls of both the rotunda and the mausoleum between the mid-6th century and the beginning – or the first half – of the 7th.

Phase 4

Addition of a narthex to the west of the rotunda (of which survive the walls W66 and W86) and of a *dromos* in front of the mausoleum (delimited by the walls W9, W16 and W89). Parallel to one another, the sidewalls of the ‘narthex’ (W66, W86) display a deviation of 5.5° from the axis of the rotunda, a formal argument supporting this phase, in the same way as the walls W16 and W89, which abut W8 and W90 respectively, denote a later addition. Lumps of lime embedded in the mortar used as binding material in the masonry of W66 and W16 yielded similar ¹⁴C ages after sequential dissolution: 399-537 for W66⁵⁷, 399-540 for W16⁵⁸. W66 is otherwise indirectly dated by the grave Gr17 built along it between 420 and 540 (Cal AD, 1σ)⁵⁹. Both the *dromos* and the ‘narthex’ are to be associated and concomitant with a considerable raising of the circulation level outside the rotunda building and the mausoleum. In this phase, the risen topsoil level renders the mausoleum almost entirely sunken and leads likely to creating an earth embankment, which could explain the addition of a

⁶⁰ Vidi gore bilj. 33.

⁶¹ Usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 36.

⁶² Usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 19-20, 36-38.

⁵⁶ V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 34.

⁵⁷ ETH-83814 – 1604 ± 28 BP (δ13C –26.7 ‰vs PDB), Cal AD 399-537 (95%, 2σ).

⁵⁸ ETH-83819 – 1597 ± 31 BP (δ13C –28.1 ‰vs PDB), Cal AD 399-540 (95%, 2σ).

⁵⁹ Cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 34.

wall that blocks the street on which the mausoleum was built. Both this wall and the outline of the assumed street are clearly visible to the north of the mausoleum, outside the existing cemetery. The same phenomenon might illuminate the role of the wall W17 (fig. 7), which could have delimited the terrace resulting from the levelling of the soil carried out in front of the *dromos*.

Phase 5

This phase is characterised by re-arrangement of the space W5/W82/W51/W21/W12 (fig. 7) into an insulated *cisterna* designed for collecting rainwater pouring from rotunda's roof and the roof of the mausoleum. This repurposing of the space was realised through the construction of the junction walls W18 and W95 (and later W81), added on the mortared outside face of the large apse and of the buttress W94. The use of this *cisterna* during the period between the second half of the 6th to the end of the 7th century is attested by the Spatheion 3C amphora recovered on the mortared floor of the room. The collapse of the roof of this room (SU1181) is to be situated between mid-6th and, at the latest, the end of the 7th century or later.

Phase 6

Repurposing of the funerary space inside the mausoleum (*cella* and *stomion*). During this phase, datable to the earliest medieval period by the star-shaped earrings of Golubić type mentioned previously, the space of the *cella* outside the sarcophagi is partly filled with earth and used for inhumations⁶⁰. This phase is founded on the Stjepan Gunjača's diaries and remains to be confirmed.

Phase 7

Refurbishing of the rotunda, which serves in this period as a church. To this phase, which we temporarily date in the second half of the 9th century⁶¹, belong the element of altar screen gable bearing the inscription]IERI ROCAVI, three other smaller limestone decorated architectural fragments and, most importantly, the fragments of the sarcophagus reused as a portal embedded in the masonry of the rotunda and

produžetak prostorije koja nalikuje „narteksu”, o čemu svjedoči zid W85. Ovo produženje se dogodilo prije 992. – 1040. godine, kada je datiran Gr53, koji je napravljen na zidu W85, nakon njegovog rušenja. Ovaj izduženi „narteks” kojemu je pripadao W85, možda uključuje zidove W40 i W42, koji su uvjetno tvorili neku vrst ulaznoga koridora ili su, pak, pružali potporu zvoniku. Uključivanje ovoga kasnijega „narteksa” u ovu fazu dodatno podržava nalaz dječjih ostruga *hrvatskoga tipa* (sl. 26), koje se obično datiraju u kraj 8. i prvu polovinu 9. stoljeća⁶³. Ostruge su pronađene u stratigrafski nejasnim SU1098 i SU1099⁶⁴, u slojevima koji su možda kasniji od izgradnje drugoga produženja „narteksa”.

Faza 8

U ovu fazu spada rekonfiguracija ukopnoga prostora memorije (svakako, u stomionu, moguće i u grobnoj komori). U nju spadaju grobovi Gr49 i Gr54 uzduž bočnih strana stomiona (W12, W91; sl. 7), gdje su vršeni naknadni ukopi. ¹⁴C datiranje osobe pronađene *in situ* u Gr49 (885. – 995.) najvjerojatnije korespondira s početkom pretvorbe stomiona u ukopni prostor. U ovoj fazi, zid W84 je izgrađen kako bi zatvorio stomion i odvojio ga od dromosa (sl. 7). W84 je indirektno datiran ¹⁴C analizom karboniziranih ostataka organskog materijala uzetog iz sloja SU1208, koji je kasniji od W84 (sl. 20) te je datiran u 770. – 945. godinu. Prema tome, W84 te cjelokupno preuređenje stomiona trebalo bi biti datirano između posljednjih desetljeća 9. stoljeća i sredine 10. stoljeća, čime je ova faza istovremena preuređenju rotunde, što implicira istovremenost faza 7 i 8.

Faza 9

Ovu fazu predstavlja napuštanje i rušenje rotunde. Nekoliko drugih struktura izgrađenih na živcu, kao što su zidovi W79 i W110 (sl. 7), još uvijek trebaju biti pripisani ovim ili drugim fazama.

⁶⁰ See above n. 32.

⁶¹ Cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 36.

⁶³ Usp. A. MILOŠEVIĆ, Karolinški utjecaji u kneževini Hrvatskoj u svjetlu arheoloških nalaza, u: *Hrvati i Karolinzi. Rasprave i vrela.* (Ur. A. Milošević), Split, 2000, str. 120-122.

⁶⁴ Usp. V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., str. 27, sl. 24.



sl. 28. Projekt konzervacije i prezentacije (Ž. Peković).

Fig. 28 The project of conservation and preservation (Ž. Peković).

2. Restauracija, konzervacija i prezentacija

Tijekom istraživanja 2016. godine pojašnjen je vertikalna i horizontalna stratigrafija do tada iskopanih zidova u cijelome kompleksu s rotandom, pa se moglo pristupiti planu njihove konzervacije, rekonstrukcije i djelomične prezentacije (sl. 28). Prethodno su svi vanjski rubovi sonde obloženi metalnom konstrukcijom da bi bilo spriječeno njihovo urušavanje. Ta je privremena zaštita izvedena uz pomoć cijevi 40 x 40 x 2 m/m koje su bile usidrene u čvrstu podlogu u donjem i gornjem dijelu. Na njih je potom zavarena armaturna mreža Ø 6 m/m, s okom veličine 10 x 10 cm, na koju je pričvršćena plastična mrežica (sl. 29). Nakon što je završena konzervacija i rekonstrukcija planiranih zidova i nakon što su sonde zatrpane, ova je konstrukcija uklonjena.

U restauratorsko-konzervatorskim zahvatima, do nivoa hodne površine današnjega groblja nadograđeni su zidovi W66 (do zidarskoga završetka na zapadnom kraju, sl. 30), W86 (do tada iskopane dužine), W82 (od spoja sa središnjom lezenom velike apsida do recentnoga groba), W17 (u tada vidljivoj dužini, sl. 31), zatim svi zidovi malih apsida sa sjeverne strane rotunde (W 23, W22, W21, sl. 31-32) te zidovi malih apsida s južne strane (W65, W87, W93, sl. 33). Rekonstruiran je i vanjski plašt velike apsida (W51), od spoja s lezenom u njenom tjemenu (W95) pa do spoja s malom sjeveroistočnom apsidom (W21, sl. 34-35). U konačnici je u potpunosti rekonstruiran i svod na mauzoleju

bearing a fragmentary inscription referring to duke Branimirus – all of which unearthed in 2015⁶². In this phase could be tentatively included also the extension of the ‘narthex’, of which the wall W85 is evidence. This elongation is carried out before 992-1040, which is the date of Gr53, a grave that was embedded into W85 after the demolition of this wall. This extended ‘narthex’ to which W85 belonged included likely also the walls W40 and W42, which could have formed a sort of *fauces* or supported a belltower. The inclusion of this later ‘narthex’ in this phase is additionally supported by the finding of a pair of child spurs of ‘Croatian type’ (fig. 26) usually dated between the end of the 8th and the first half of the 9th century⁶³. The spurs were recovered in SU1098 and SU1099⁶⁴, two layers that postdate the erection of this second elongation of the ‘narthex’, but which cannot be securely considered as undisturbed.

Phase 8

Further reconfiguring of the funerary space in the mausoleum (certainly in the *stomion*, possibly also in the *cella*). It is in this phase that the graves Gr49 and Gr54 are built along the sidewalls of the *stomion* (W12, W91; fig. 7), used for inhumations and later for reburials of human remains. The ¹⁴C age of the individual found in burial position in Gr49 (885-995) corresponds in all likelihood to the beginning of this conversion of the *stomion* into a burial area. In this phase, the wall W84 is built in order to close the *stomion* and separate it from the *dro-mos* (fig. 7). W84 is dated indirectly by the ¹⁴C age of charcoal sampled in the layer SU1208, which postdates W84 (fig. 20): 770-945. It follows that W84 and, with it, the whole funerary reconfiguring of the *stomion* should be placed between the last decade of the 9th century and the mid-10th century. It could therefore be con-

⁶² Cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 19-20, 36-38.

⁶³ Cf. A. MILOŠEVIĆ, Karolinški utjecaji u kneževini Hrvatskoj u svjetlu arheoloških nalaza, in: *Hrvati i Karolinzi. Rasprave i vrela* (ed. A. Milošević), Split, 2000, p. 120-122.

⁶⁴ Cf. V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 27, fig. 24.



sl. 29. Privremena željezna ograda na lokalitetu sa sjeverne strane crkve (A. Z. Alajbeg).
Fig. 29 Temporary iron fence on the site, north of the church (A. Z. Alajbeg).

temporaneous of the refurbishing undertaken in the rotunda, which would imply the concomitance of phases 7 and 8.

Phase 9

Abandonment of the rotunda.

Several other structures built on the bed-rock surface, such as the walls W79 or W110 (fig. 7), are yet to be attributed to one of these phases or others.

2. Restoration and conservation

During 2016, the vertical and horizontal stratigraphy of the walls in the rotunda-mausoleum complex, excavated in earlier years, was sufficiently established to enable their conservation, reconstruction and partial preservation (fig. 28). Firstly, all the edges of the trenches were covered with a metal framework in order to prevent the soil from collapsing. This temporary protection was made with 40 x 40 x 2 mm tubes anchored in a firm base in its lower and upper parts. On those tubes was welded a steel

sa sarkofazima (sl. 36-37), čime je taj dio lokaliteta u cijelosti prezentiran (sl. 38-39). Također u svrhu prezentacije, postavljena je metalna rešetka nad južnim apsidama (sl. 40).

Tijekom i nakon arheološke kampanje 2016. godine obrađeni su svi pokretni nalazi pronađeni prilikom navedenih istraživanja. Podatci o mjestu i okolnostima nalaza te karakteristike predmeta uneseni su u bazu podataka, a metalni predmeti (95 kom.) su očišćeni i zaštićeni od daljnje oksidacije. Obradjeni su i nacrtani keramički ulomci (219 kom.), a dijelom su i rekonstruirani u konzervatorsko-restauratorskim radionicama Muzeja hrvatskih arheoloških spomenika. Obradeno je i očišćeno 19 kamenih predmeta⁶⁵.

Uz obradu materijala s ovogodišnjih istraživanja, obavljena je i revizija lapidarija na Bribirskoj glavici. Revidirana su i popisana 2062

⁶⁵ Pokretne nalaze su obrađivali muzejski konzervatori i restauratori: Maja Marković, Mladen Matijaca, Dalibor Popović, Ozren Radovanović i Ante Šundov.



sl. 30. Konzervacija i rekonstrukcija W66
(A. Milošević).
Fig. 30 Conservation and reconstruction of W66
(A. Milošević).



sl. 31. Konzervirani i rekonstruirani W17
(A. Milošević).
Fig. 31 Conserved and reconstructed W17
(A. Milošević).



sl. 32. Konzervirani i rekonstruirani W22 (A. Milošević).
Fig. 32 Conserved and reconstructed W22
(A. Milošević).



sl. 33. Konzervirani i rekonstruirani W86, W65, W87,
W93 (A. Milošević).
Fig. 33 Conserved and reconstructed W86, W65,
W87, W93 (A. Milošević).



sl. 34. Konzervacija W51 (A. Milošević).
Fig. 34 Conservation of W51 (A. Milošević).



sl. 35. Rekonstrukcija W51 (A. Milošević).
Fig. 35 Reconstruction of W51 (A. Milošević).



sl. 36. Rekonstrukcija svoda na mauzoleju sa sarkofazima (A. Milošević).

Fig. 36 Reconstruction of the roof of the mausoleum with sarcophagi (A. Milošević).



sl. 37. Rekonstruirani svod na mauzoleju sa sarkofazima i dio rekonstruiranog W82 (A. Milošević).

Fig. 37 Reconstructed roof of the mausoleum with sarcophagi and part of reconstructed W82 (A. Milošević)

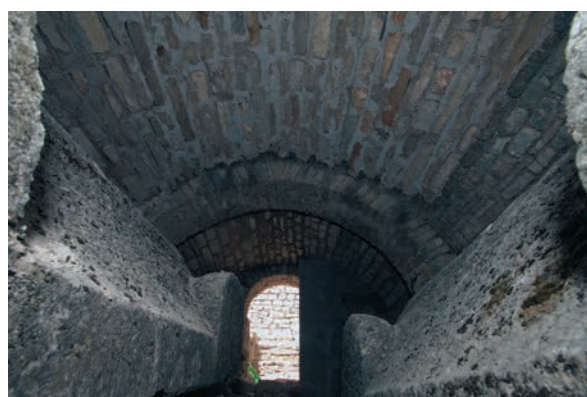
sl. 40. Postavljanje željezne mreže na apsidama rotunde s južne strane crkve (A. Milošević).

Fig. 40 Placing of the iron net on the apses of the rotunda on the southern side of the church (A. Milošević).



sl. 38. Rekonstruirana unutrašnjost mauzoleja, pogled prema istoku (A. Milošević).

Fig. 38 Reconstructed interior of the mausoleum, view towards East (A. Milošević).



sl. 39. Rekonstruirana unutrašnjost mauzoleja, pogled prema zapadu (A. Milošević).

Fig. 39 Reconstructed interior of the mausoleum, view towards West (A. Milošević).





sl. 41. Tzv. Marunova kuća prije nadogradnje
(A. Milošević).

Fig. 41 So-called Marun's house before renovation
(A. Milošević)



sl. 42. Tzv. Marunova kuća poslije nadogradnje
(A. Milošević).

Fig. 42 So-called Marun's house after renovation
(A. Milošević).

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sl. 43. Interijer muzejske zbirke, prapovijesna i
kasnosrednjovjekovna vitrina (A. Z. Alajbeg).

Fig. 43 Interior of the museum collection, prehistorical
and late medieval sections (A. Z. Alajbeg).



sl. 44. Interijer muzejske zbirke, ranosrednjovjekovna
i antička vitrina (A. Z. Alajbeg).

Fig. 44 Interior of the museum collection, early
medieval and the Roman sections (A. Z. Alajbeg).

kamena predmeta iz raznih razdoblja, koji su pronađeni tijekom ranijih istraživanja i pohranjeni u zbirci. Svi predmeti su očišćeni i signirani te smješteni u prostor vanjskog i unutrašnjeg lapidarija na Glavici.

U prvim mjesecima 2016. godine, u potpunosti je dovršena rekonstrukcija i dogradnja tzv. Marunove kuće (sl. 41-42). Na katu je uređen radni prostor, a u istočnoj polovini prizemlja nova muzejska zbirka (sl. 43-44) u kojoj

reinforced mesh \varnothing 6 mm, with square dimensions of 10 x 10 cm, on which was hitched a plastic net (fig. 29). After the conservation and reconstruction were finished, and the trenches filled, this framework was removed.

During the restoration and conservation, the following walls were raised up to the circulation level of the modern cemetery: W66 (up to the end of the masonry on the western side, fig. 30), W86 (all the length excavated up to that

moment), W82 (from the connection with the blind-arch pier of the large eastern apse, all the way to the modern grave), W17 (all the length excavated up to that moment, fig. 31), all the walls of the small apses on the northern side of the rotunda (W23, W22, W21, fig. 31-32) and the walls of the small apses on the southern side of the rotunda (W65, W87, W93, fig. 33). The outer face of the large apse (W51) was also reconstructed, from the connection with the blind-arch pier (W95) all the way to the connection with the small northeastern apse (W21, fig. 34-35). Finally, the roof of the mausoleum with sarcophagi was fully reconstructed (fig. 36-37), so that this part of the site is now fully restored (fig. 38-39). Also, for the sake of presentation, a metal netting was placed over the southern apses (fig. 40).

During and after the 2016 fieldwork, all small finds discovered this year were processed. The data about the context of the finds as well as the characteristics of the artefacts were entered in the database and all the 95 metal artefacts were cleaned and protected from further oxidation. All pottery fragments (219 pieces) were processed and drawn. Where possible, they were reconstructed in the Museum of Croatian Archaeological Monuments. Finally, 19 stone artefacts were processed and cleaned.⁶⁵

Together with the processing of the 2016 material from, a full revision of the lapidary on the site was realised in this year. A total of 2062 stone artefacts from different historical periods, discovered during earlier excavations, were processed. They were all cleaned and given new inventory numbers and stored in the lapidary on Bribirska glavica.

The so-called Marun's house of the site (fig. 41-42) was reconstructed and extended in the first months of 2016. The newly built floor features working spaces and the eastern part of the ground floor now houses a new museum collection (fig. 43-44) where the exhibits are presented in chronological order with descriptive texts and additional images on boards. Along with the renovation of the museum of the site was published a catalogue in four languages, which

su izloženi adekvatnije prezentirani kronološkim slijedom uz dodatne tekstove i legende na panoima. U istu svrhu tiskan je i četverojezični prospekt/katalog kojim su objašnjeni najvažniji spomenici u muzeju i na lokalitetu⁶⁶.

3. Keramika

Prioritet u analizi keramike imale su netaknute stratigrafske cjeline otkrivene ove godine, pri čemu je slijeden kompleksni protokol katalogiziranja, uspostavljen 2014. godine. Zastvoreni keramički konteksti, potvrđeni kao netaknuti, donji su stratigrafski slojevi u sondama T8 (SU1181, SU1215; sl. 11) i T12 (SU1160, SU1169, SU1173, SU1194; sl. 45), koji ne dolaze iz grobova. Uz njih, keramika 15. stoljeća pronađena je u netaknutim slojevima iznad najvišega sloja grobova u T8 i T14 (SU1031 i SU1032; sl. 9, 11), što sugerira njihovu dataciju u kasnosrednjovjekovni horizont budući da prodori u stratigrafski sloj nisu uočeni⁶⁷. Ostali keramički nalazi, kao što je bio slučaj i prethodnih godina, potječu iz konteksta u kojima se nalazila kronološki ispremiješana keramika.

Iako stanje brojnih ulomaka ne dozvoljava definitivnu statistiku, preliminarno mapiranje dijagnostičkih ulomaka iz 2016. godine, ukazuje na sličnu situaciju poput one iz 2014. i 2015. godine, u kojoj je afrička proizvodnja dominirala u ukupnom nalazu (42 %).

Što se tiče keramičkih svjetiljki, ove godine, kao i 2015. godine kada je pronađen ulomak s pečatom FORTIS⁶⁸, sva proizvodnja svjetiljki pripada talijanskom *Ivany XVII/Loeschcke X tipu*, datiranome od 2. do ranog 3. stoljeća⁶⁹.

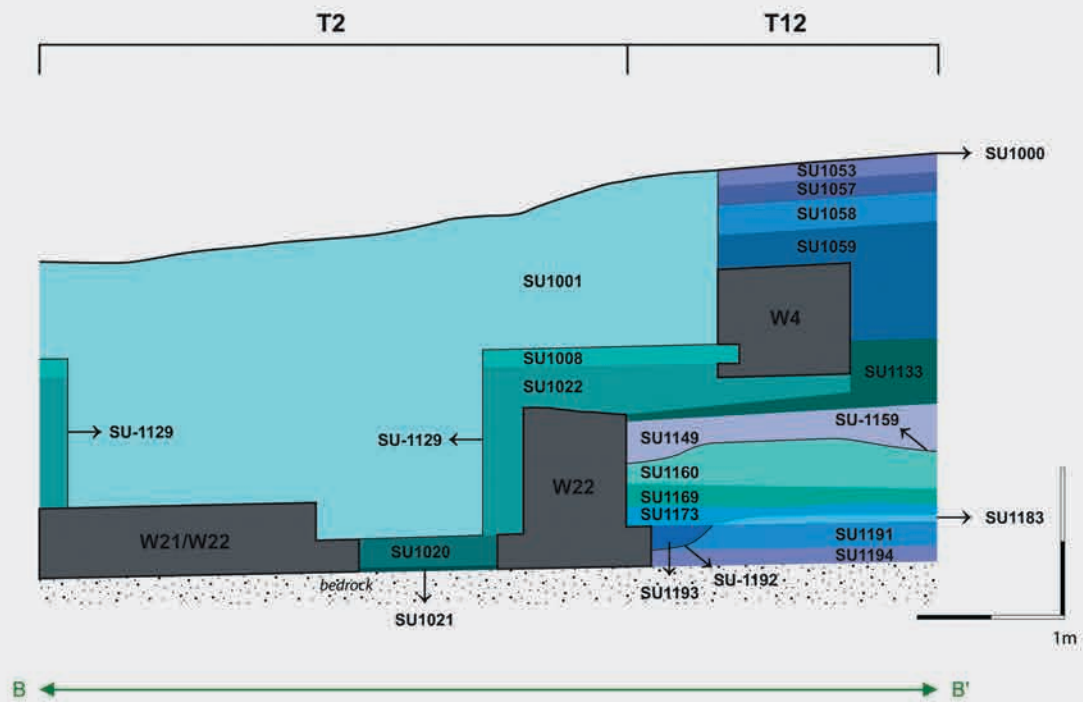
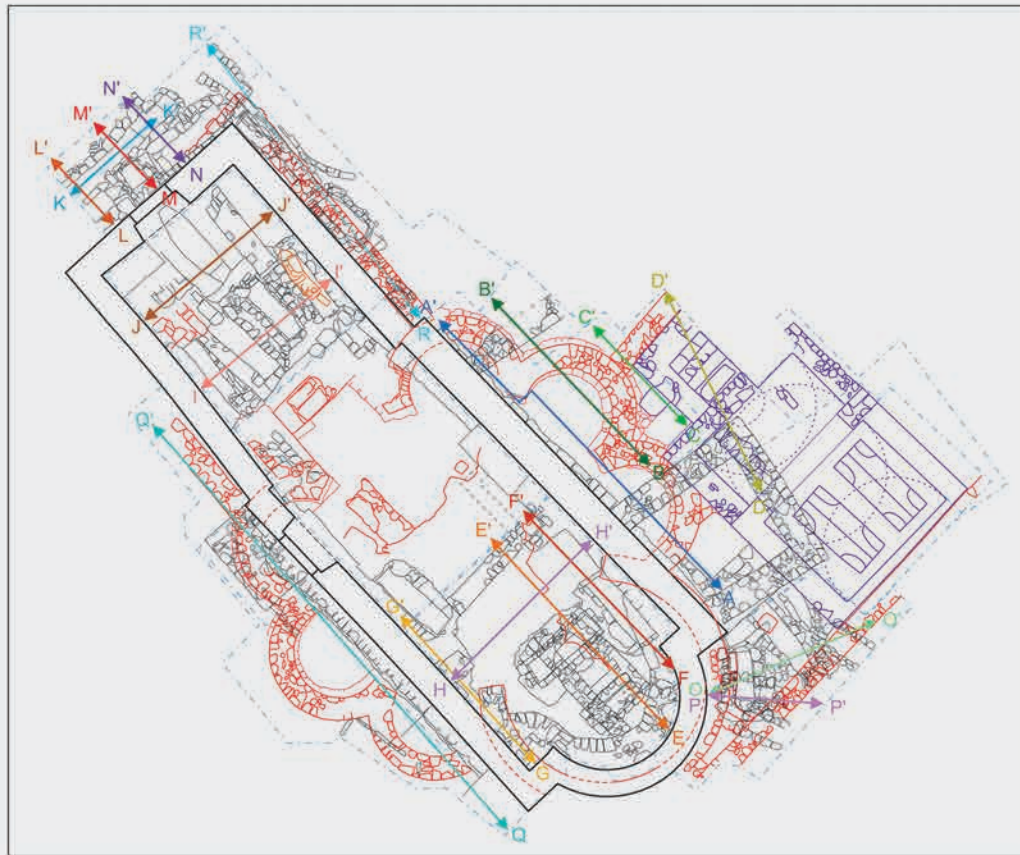
⁶⁵ All the finds were processed by the conservators and restorers Maja Marković, Mladen Matijaca, Dalibor Popović, Ozren Radovanović and Ante Šundov.

⁶⁶ A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: prošlost i spomenici*. Split, 2016. – A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: Antichi monumenti del pasato*. Split, 2015. – A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: Geschichte und Denkmäler*. Split, 2015. – A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: The Past and the Monuments*. Split, 2015.

⁶⁷ Šest takvih prodora uočeno je u odnosu na grobove Gr4, Gr18, Gr30, Gr38, Gr39, Gr40, Gr46.

⁶⁸ BR2015526, SU1125, T10.

⁶⁹ BR201617, W3, T1; BR201630, SU1020, T1; BR201695, SU1149, T12 (FORTIS); BR2016135, SU1174, T14.



sl. 45. Stratigrafski presjek B-B' u sondama T2 i T12 (V. Ghica).
Fig. 45 Stratigraphic cross-section B-B' in trenches T2 and T12 (V. Ghica)

describes and contextualises the most significant monuments and artefacts of the site.⁶⁶

3. Ceramic material

While following the comprehensive cataloguing protocol established in 2014, the examination of the ceramic material unearthed this year gave priority to stratigraphic units that appeared, during the dig, undisturbed. Coherent ceramic assemblages have thus confirmed as intact the lower, non-funerary, sequences in trenches T8 (SU1181, SU1215; fig. 11) and T12 (SU1160, SU1169, SU1173, SU1194; fig. 45). In addition, 15th century pottery found, without later intrusions, in the layers topping the highest series of graves in T8 and T14 (SU1031 and SU1032; fig. 9, 11) suggests that these burial levels are to be situated in the late medieval horizon when cuts are not detectable⁶⁷. The rest of the ceramic finds originate, as it was systematically the case in the past seasons, from contexts comprising chronologically mixed pottery.

Although the state of numerous fragments does not allow for definitive statistics, the preliminary mapping of the 2016 diagnostic fragments points to conclusions similar to those reached in 2014 and 2015, with African productions dominating the record (42%).

Regarding lamps, as in 2015 when a FORTIS fragment was found⁶⁸, this year's dig yielded only factory lamps, virtually all Italian of the Ivany XVII/Loeschke X type dated to the 2nd-early 3rd century CE⁶⁹.

4. Physical anthropology

Given the large number of funerary contexts excavated this season (44 graves and 5 newly identified ossuaries), the human remains select-

4. Fizička antropologija

Uzevši u obzir veliki broj ukopnih cjelina pronađenih ove godine (44 groba i 5 novootkrivenih kosturnica), analizirani ljudski ostatci odabrani među ukopima (ili sekundarnim ukopima) potječu iz starijih stratigrafskih konteksta. Kosturne cjeline analizirane ove godine dolaze iz sljedećih konteksta: E1 (T1/T9; minimalni broj individua (MBI) 28, kao dodatak MBI 12 otkrivenih 2014. i 2015. godine); grob Gr23 (T7; MBI 10, pronađenih u HRU1177, HRU1165, HRU1164, ali ne u E5 i E12); Gr47 (T7; MBI 2); Gr45 (T8; MBI 10); Gr49 (T9; HRU1217; MBI 5); Gr54 (T9; MBI 3); Gr60 (T15; MBI 8); Gr63 (T15; MBI 10).

Najznačajnije patološke karakteristike zamijećene u osteološkom materijalu iz 2016. godine, ne odstupaju od proteklih godina⁷⁰, a uključuju veliki broj trauma kod djece (*cribra orbitalia*, linearna hipoplazija cakline) i odraslih (Schmorlove hernije, degenerativni osteoartritis na kralježnici i zglobovima), razne dentalne poremećaje (karijes, bolesti alveola, antemortalni gubitak zuba [AMGZ], apscese), nespecifične zarazne bolesti (periostitis), specifične zarazne bolesti (guba) i traume.

Indikatori trauma na kosturnim ostatcima djece su vrlo brojni u odnosu na druge poznate lokalitete. Dvanaest pojedinaca pokazuju tragove zaliječene *cribrae orbitaliae*⁷¹, koja se morfološki manifestira kroz lezije koje nalikuju na sito ili udubljenja na sljepoočnicama. Iako točna etiologija nije u potpunosti određena, osteolozi smatraju da je *cribra orbitalia* kosturna manifestacija uzrokovana genetičkom predispozicijom ili anemijom uzrokovanom nedostatkom željeza⁷². Linearna hipoplazija

⁶⁶ A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: prošlost i spomenici*. Split, 2016. – A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: Antichi monumenti del pasato*. Split, 2015. – A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: Geschichte und Denkmäler*. Split, 2015. – A. MILOŠEVIĆ, *Varvaria - Breberium - Bribir: The Past and the Monuments*. Split, 2015.

⁶⁷ Six such cuts were identified in relation to the graves Gr4, Gr18, Gr30, Gr38, Gr39, Gr40, Gr46.

⁶⁸ BR2015526, SU1125, T10.

⁶⁹ BR201617, W3, T1; BR201630, SU1020, T1; BR201695, SU1149, T12 (FORTIS); BR2016135, SU1174, T14.

⁷⁰ V. GHICA - A. MILOŠEVIĆ - N. URODA - D. DŽINO, *Arheološki projekt Varvaria / Breberium / Bribir u 2015.*, str. 44-46.

⁷¹ E1, lubanja 2 (muškarac, 40 – 55 godina); E1, lubanja 3 (muškarac, 30 – 45 godina); E1, lubanja 4 (muškarac, 18 – 25 godina); E1, lubanja 5 (muškarac, preko 45 godina); E1, lubanja D (muškarac, 25 – 35 godina); E1, lubanja N (dijete, 5 – 6 godina); Gr26 (T14), osoba A (dijete, 7 – 8 godina); Gr45 (T8), osoba C (dijete, 0,5 – 1 godine); Gr45 (T8), osoba G (dijete, 6,5 – 7,5 godina); Gr53 (T14) (dijete, 2 – 3 godine); Gr54 (T9, HRU1231) (muškarac, 35 – 45 godina); Gr63 (T15), osoba C (dijete, 2 – 3 godine).

⁷² R. HUSS ASHMORE - A. H. GOODMAN - G. J. AR-



sl. 46. Moguća perimortalna ozljeda na lijevoj lopatičnoj kosti osobe sahranjene u HRU1177, Gr23, T7 (V. Vyroubal).

Fig. 46 Possible perimortem injury on the left scapula of the individual buried in HRU1177, Gr23, T7 (V. Vyroubal)

cakline (LHC) pronađena je na zubima sedam pojedinaca⁷³. LHC ili kronološka aplazija je makroskopski efekt na površini cakline⁷⁴, koji nalikuje udubinama ili rupicama i koristi se kao nespecifični pokazatelj sistematskih trauma tijekom djetinjstva⁷⁵.

ed for analysis were chosen amongst burials (or reburials) considered, on stratigraphic grounds, premodern. The skeletal assemblages studied this year come from the following contexts: E1 (T1/T9; minimum number of individuals [MNI] 28, in addition to the MNI 12 recovered in 2014 and 2015); tomb Gr23 (T7; MNI 10, recovered in HRU1177, HRU1165, HRU1164, but not in E5 and E12); Gr47 (T7; MNI 2); Gr45 (T8; MNI 10); Gr49 (T9, HRU1217; MNI 5); Gr54 (T9; NI 3); Gr60 (T15; MNI 8); Gr63 (T15; MNI 10).

The most salient pathological features observed in the 2016 osteological inventory are in keeping with the ones identified in 2014 and 2015⁷⁰ and include: subadult (*cribra orbitalia*, linear enamel hypoplasia) and adult hard physical stress (Schmorl's nodes, degenerative osteoarthritis on vertebrae and joints), various dental conditions (caries, alveolar diseases, antemortem tooth loss [AMTL], abscesses), non-specific infectious diseases (periostitis), specific infectious diseases (leprosy), trauma.

Indicators of subadult stress remain over-represented in comparison to other known sites. Twelve individuals display mild healed *cribra orbitalia*⁷¹, which is morphologically visible as sieve-like lesions or pitting on the orbital roof. Although its exact aetiology is not entirely established, osteologists consider *cribra orbitalia* a skeletal manifestation of genetic or iron deficiency anaemia⁷². Linear enamel

MELAGOS, Nutritional Inference from Paleopathology, u: *Advances in Archaeological Method and Theory*, (ur. M. B. Schiffer), vol. 5, New York, 1982, str. 395-474. – R. P. MENSFORTH - C. O. LOVEJOY - J. W. LALLO - G. J. ARMELAGOS, The Role of Constitutional Factors, Diet and Infectious Disease in the Etiology of Porotic Hyperostosis and Periosteal Reactions in Infants and Children, *Medical Anthropology* 2, London, 1978, str. 1-59.

⁷³ Lubanje D (muškarac, 25 – 35 godina), F (muškarac, 35 – 50 godina), G (dijete, 14 – 16 godina), H (muškarac, 30 – 45 godina), M (muškarac, 25 – 40 godina) i R (muškarac, 25 – 35 godina), u E1, kao i osoba sahranjena u Gr54 (T9, HRU1231) (muškarac, 35 – 45 godina).

⁷⁴ M. ŠLAUS, Bioarchaeology (Anthropological Archaeology), u: *Physical (Biological) Anthropology*, (ur. P. Rudan), Oxford, 2009, str. 37.

⁷⁵ A. H. GOODMAN - J. C. ROSE, Assessment of Systemic Physiological Perturbations from Dental Enamel Hypoplasias and Associated Histological Structures, *Yearbook of Physical Anthropology* 33, New York, 1990, str. 59-110. – D. GUATELLI STEINBERG - J.

⁷⁰ V. GHICA, A. MILOŠEVIĆ, N. URODA, D. DŽINO, Arheološki projekt *Varvaria / Breberium / Bribir* u 2015., p. 44-46.

⁷¹ E1, skull 2 (male, 40-55 y/o); E1, skull 3 (male, 30-45 y/o); E1, skull 4 (male, 18-25 y/o); E1, skull 5 (male, over 45 y/o); E1, skull D (male, 25-35 y/o); E1, skull N (subadult, 5-6 y/o); Gr26 (T14), individual A (subadult, 7-8 y/o); Gr45 (T8), individual C (subadult, 0.5-1 y/o); Gr45 (T8), individual G (subadult, 6.5-7.5 y/o); Gr53 (T14) (subadult, 2-3 y/o); Gr54 (T9, HRU1231) (male, 35-45 y/o); Gr63 (T15), individual C (subadult, 2-3 y/o).

⁷² R. HUSS-ASHMORE, A.H. GOODMAN, G.J. ARMELAGOS, Nutritional Inference from Paleopathology, in: *Advances in Archaeological Method and Theory* (ed. M.B. Schiffer), vol. 5, New York 1982, p. 395-474; R.P. MENSFORTH, C.O. LOVEJOY, J.W. LALLO, G.J. ARMELAGOS, The Role of Constitutional Factors, Diet, and Infectious Disease in the Etiology of Porotic Hyperostosis and Periosteal Reactions in Infants and Children, *Medical Anthropology* 2, London 1978, p. 1-59.

hypoplasia (LEH) is present on the teeth of 7 individuals⁷³. LEH, or chronological aplasia, is a macroscopic defect in the enamel surface⁷⁴, which appears as band like depressions (linear enamel hypoplasia), or as pits, and is used as a nonspecific indicator of systematic physiological stress during early life⁷⁵.

Schmorl's nodes show on the vertebral bodies of 4 individuals⁷⁶. Schmorl's defects are lesions that result from herniation and displacement of intervertebral disc tissue into the adjacent vertebral body. Although Schmorl's depressions can be idiopathic or related to diseases and congenital factors, their most common cause is degenerative changes associated with ordinary stress on the vertebral column.

Moderate degenerative osteoarthritis is distinguishable in a variety of areas (occipital condyles, temporomandibular joints, shoulders, elbows, vertebrae, radii, hips, sacrum, etc.) on 8 individuals⁷⁷. Next to these, severe cases of degenerative osteoarthritis were identified in 3 individuals⁷⁸. The changes produced by de-

Schmorlove hernije identificirane su na kralješcima četiriju osoba⁷⁶. Schmorlovi defekti su lezije uzrokovane hernijom i premještanjem tkiva kralježnog diska u susjedno kralježno tkivo. Iako Schmorlove depresije mogu biti idiopatske ili povezane s bolestima odnosno urođenim faktorima, najčešći su im uzrok degenerativne promjene povezane s traumom na kralježnici.

Umjereni degenerativni osteoarthritis može se uočiti na raznim područjima (potiljačnom kondilu, čeljusnim zglobovima, ramenima, laktovima, kralježnici, palačnim kostima, kukovima, križnoj kosti itd.) na osam osoba⁷⁷. Uz ove, slučajevi uznapredovaloga degenerativnog osteoartritisu pronađeni su na trima osobama⁷⁸. Promjene uzrokovane degenerativnim osteoartritisom povezane su s trošenjem kostiju tijekom života.

Zarazne lezije koje se pojavljuju zbog umjerenih aktivnih upala pokosnice pronađene su kod četiriju osoba⁷⁹, dok su na dvjema drugim osobama⁸⁰ pronađeni znakovi izliječene upale pokosnice. Upala pokosnice je obična upalna reakcija koju uzrokuje bakterijska infekcija,

⁷³ The skulls D (male, 25-35 y/o), F (male, 35-50 y/o), G (subadult, 14-16 y/o), H (male, 30-45 y/o), M (male, 25-40 y/o) and R (male, 25-35 y/o), in E1, as well as the individual buried in Gr54 (T9, HRU1231) (male, 35-45 y/o).

⁷⁴ M. ŠLAUS, Bioarchaeology (Anthropological Archaeology), in: *Physical (Biological) Anthropology* (ed. P. Rudan), Oxford 2009, p. 37.

⁷⁵ A.H. GOODMAN, J.C. ROSE, Assessment of Systemic Physiological Perturbations from Dental Enamel Hypoplasias and Associated Histological Structures, *Yearbook of Physical Anthropology* 33, New York 1990, p. 59-110; D. GUATELLI-STEINBERG, J.R. LUKACS, Interpreting Sex Differences in Enamel Hypoplasia in Human and Non-Human Primates: Developmental, Environmental, and Cultural Considerations, *Yearbook of Physical Anthropology* 110, New York 1999, p. 73-126.

⁷⁶ In the following contexts: 9 thoracic and 5 lumbar vertebrae of the individual buried in HRU1177 (Gr23, T7; male, 17-19 y/o); 1 lumbar vertebra of the individual A in Gr45 (T8; female, 35-45 y/o); 9 thoracic vertebrae of the individual A in Gr47 (T7, HRU1198; male, 25-30 y/o); 2 lumbar vertebrae of individual A in Gr49 (T9, HRU1217; male, over 55 y/o).

⁷⁷ E1, skull 1 (male, 35-50 y/o); E1, skull 2 (male, 40-55 y/o); E1, skull 3 (male, 30-45 y/o); Gr47 (T7, HRU1198), individual A (male, 25-30 y/o); Gr49 (T9, HRU1217), individual A (male, over 55 y/o); Gr54 (T9, SU1232), individual A (male, 45-55 y/o); Gr54 (T9, SU1232), individual B (female, 30-40 y/o); Gr63 (T15), individual A (male, 40-50 y/o).

⁷⁸ On the right distal femur of the individual 1 in

R. LUKACS, Interpreting Sex Differences in Enamel Hypoplasia in Human and Non-Human Primates: Developmental, Environmental, and Cultural Considerations, *Yearbook of Physical Anthropology* 110, New York, 1999, str. 73-126.

⁷⁶ U sljedećim kontekstima: 9 prsnih i 5 lumbalnih kralježaka osobe sahranjene u HRU1177 (Gr23, T7; muškarac, 17 – 19 godina); 1 lumbalni kralježak osobe A u Gr45 (T8; žena, 35 – 45 godina); 9 prsnih kralježaka osobe A u Gr47 (T7, HRU1198; muškarac, 25 – 30 godina); 2 lumbalna kralješka osobe A u Gr49 (T9, HRU1217; muškarac, preko 55 godina).

⁷⁷ E1, lubanja 1 (muškarac, 35 – 50 godina); E1, lubanja 2 (muškarac, 40 – 55 godina); E1, lubanja 3 (muškarac, 30 – 45 godina); Gr47 (T7, HRU1198), osoba A (muškarac, 25 – 30 godina); Gr49 (T9, HRU1217), osoba A (muškarac, preko 55 godina); Gr54 (T9, SU1232), osoba A (muškarac, 45 – 55 godina); Gr54 (T9, SU1232), osoba B (žena, 30 – 40 godina); Gr63 (T15), osoba A (muškarac, 40 – 50 godina).

⁷⁸ Na desnoj krajnjoj bedrenoj kosti osobe 1 u HRU1164 (Gr23, T7), na dvama slabinskim kralješcima osobe A u Gr45 (T8) i na krajnjoj desnoj lakatnoj kosti osobe A u Gr54 (T9, SU1232).

⁷⁹ Desna cjevanica i klinasta kost lubanje C u E1; desna cjevanica osobe B u Gr26 (T14); lijeva palačna kost, krajnja desna cjevanica osobe A u Gr49 (T9); desna bedrena kost djeteta u Gr53 (T14).

⁸⁰ Lijeve bedrene kost, desna cjevanica i obje lisne kosti osobe A u Gr47 (T7, HRU1198; muškarac, 25 – 30 godina); lijeve bedrene kost osobe A u Gr63 (T15).

trauma, ali i specifične infektivne bolesti, kao što su guba, tuberkuloza, treponemalna bolest, pa čak i stanja kao što je fluoroza⁸¹.

Serijski patološki značajki koje upućuju na gubu pronađena je na kosturnim ostatcima devet osoba⁸². Na spomenutim kosturnim ostatcima uočeno je mekšanje nosne kosti i maksiloalveolarna resorpcija, zatim umjerene upalne promjene na nosnoj šupljini i otvrdnulo nepce (poroznost); umjerena poroznost na temporalnim, frontalnim, klinastim ili jagodičnim kostima te oko nazalnog otvora ili čeljusti.

Antemortalni lomovi se najčešće pronalaze na lubanjama – na čeonj ili tjemenim kostima⁸³ – ali isto tako i na rebrima⁸⁴, petoj kosti zapešća⁸⁵, lijevoj cjevanici⁸⁶ ili lijevom gornjem kraju lakatne kosti (*olecranon*)⁸⁷. Među ovim slučajevima izdvaja se lubanja 1, pronađena ove godine u E1, koja pokazuje tri antemortalna prijeloma, na obje strane čeone kosti i na zadnjem dijelu desne tjemenne kosti. Još jedan zanimljiv slučaj predstavlja noga osobe pronađena u E1 (vjerojatno muškarac, preko 40 godina), koja pokazuje ozbiljne promjene uzrokovane upalnim procesima, resorpciju desnog koljena koja je rezultirala srastanjem zglobnih tijela (ankilozom) bedrene kosti i patele, kao i mogućim srastanjem zglobnih tijela bedrene kosti i goljenične kosti postavljene pod kutom od 90°. Ovo je vjerojatno posljedica antemor-

generative osteoarthritis are associated with the wear and tear of daily life.

Infectious lesions due to moderate active periostitis are discernible on four individuals⁷⁹, while two others⁸⁰ feature signs of healed periostitis. Periostitis is a basic inflammatory response resulting not only from non-specific bacterial infection, but also from trauma and specific infectious diseases such as leprosy, tuberculosis, treponemal disease, and even conditions such as fluorosis⁸¹.

A series of pathological features consistent with leprosy were observed on skeletal remains of 9 individuals⁸²: mild nasal bone and maxillo-alveolar resorption, moderate inflammatory changes of the nasal cavity and hard palate (porosity); mild porosity on the temporal, frontal, sphenoid, occipital or zygomatic bones, and around the nasal aperture and maxilla.

Antemortem fractures feature most frequently on skulls – on frontal or parietal bones⁸³ –, but also on ribs⁸⁴, on a 5th right metacarpus⁸⁵, a left clavicle⁸⁶ or the left proximal epiphysis of the ulna (*olecranon*)⁸⁷. Amongst these cases, stands out the skull 1 found this year in E1, which dis-

⁸¹ C. S. LARSEN, *Bioarchaeology. Interpreting Behavior from the Human Skeleton*. Cambridge, 1997, str. 82-84. – D. J. ORTNER, *Identification of Pathological Conditions in Human Skeletal Remains*. New York, 2003, str. 206-215.

⁸² E1, lubanja 1 (muškarac, 35 – 50 godina); E1, lubanja 2 (muškarac, 40 – 55 godina); E1, lubanja 3 (muškarac, 30 – 45 godina); E1, lubanja 4 (muškarac, 18 – 25 godina); E1, lubanja 5 (muškarac, preko 45 godina); E1, lubanja C (muškarac, 13 – 15 godina); Gr26 (T14), osoba B (dijete, 2,5 – 3,5 godine); Gr45 (T8), osoba A (žena, 35 – 45 godina); Gr47 (T7, HRU1198), osoba A (muškarac, 25 – 30 godina).

⁸³ E1, lubanja 1 (muškarac, 35 – 50 godina); E1, lubanja C (muškarac, 13 – 15 godina); E1, lubanja M (muškarac, 25 – 40 godina); E1, lubanja O (muškarac, preko 45 godina); E1, lubanja R (muškarac, 25 – 35 godina); Gr54, SU1232, osoba A (muškarac, 45 – 55 godina).

⁸⁴ Gr49 (HRU1217), osoba A (muškarac, preko 55 godina).

⁸⁵ Gr47 (HRU1198), osoba A (muškarac, 25 – 30 godina).

⁸⁶ Gr54 (T9, HRU1231) (muškarac, 35 – 45 godina).

⁸⁷ Gr63 (T15), osoba A (muškarac, 40 – 50 godina).

HRU1164 (Gr23, T7), on two lumbar vertebrae of the individual A in Gr45 (T8) and on the right distal ulnae of the individual A in Gr54 (T9, SU1232).

⁷⁹ The right tibia and the sphenoid bone of skull C, in E1; the right tibia of individual B in Gr26 (T14); the left radii and right distal tibiae of individual A in Gr49 (T9); the right femora of the subadult in Gr53 (T14).

⁸⁰ The left femora, right tibiae and both fibulae of the individual A in Gr47 (T7, HRU1198; male, 25-30 y/o); the left fibula of individual A in Gr63 (T15).

⁸¹ C.S. LARSEN, *Bioarchaeology. Interpreting Behavior from the Human Skeleton*, Cambridge 1997, p. 82-84; D.J. ORTNER, *Identification of Pathological Conditions in Human Skeletal Remains*, New York 2003, p. 206-215.

⁸² E1, skull 1 (male, 35-50 y/o); E1, skull 2 (male, 40-55 y/o); E1, skull 3 (male, 30-45 y/o); E1, skull 4 (male, 18-25 y/o); E1, skull 5 (male, over 45 y/o); E1, skull C (male, 13-15 y/o); Gr26 (T14), individual B (subadult, 2.5-3.5 y/o); Gr45 (T8), individual A (female, 35-45 y/o); Gr47 (T7, HRU1198), individual A (male, 25-30 y/o).

⁸³ E1, skull 1 (male, 35-50 y/o); E1, skull C (male, 13-15 y/o); E1, skull M (male, 25-40 y/o); E1, skull O (male, over 45 y/o); E1, skull R (male, 25-35 y/o); Gr54, SU1232, individual A (male, 45-55 y/o).

⁸⁴ Gr49 (HRU1217), individual A (male, over 55 y/o).

⁸⁵ Gr47 (HRU1198), individual A (male, 25-30 y/o).

⁸⁶ Gr54 (T9, HRU1231) (male, 35-45 y/o).

⁸⁷ Gr63 (T15), individual A (male, 40-50 y/o).

plays three antemortem fractures, on both sides of the frontal bone and on the posterior part of the right parietal bone. Another particular case is that of the leg of an individual found in E1 (probably male, over 40 y/o), which displays severe inflammatory changes and resorption of the right knee resulting in the ankylosis of the distal femur and patella and probable ankylosis of the femur and tibia positioned at 90°; this is probably the result of an antemortem fracture of the distal diaphysis of the right femur where a fracture line and lateral displacement is present. Last but not least, skeletal evidence for trauma includes a possible perimortem injury, a penetrating wound characterised by a round shaped defect, 16 mm in diameter, present on the left scapula of the individual buried in HRU1177 (Gr23, T7; male, 17-19 y/o) (fig. 46). This particular skeleton was carbon-dated to 1290-1405⁸⁸.

Hyper- and exostoses – *hyperostosis frontalis interna*⁸⁹ and *torus mandibularis*⁹⁰ – were also observed, as well as a case of flared distal metaphysis of right femora⁹¹; metaphyseal flaring can denote various disorders such as rickets, achondroplasia, fibrous dysplasia, disorders associated with marrow expansion such as thalassaemia, sickle cell disease and other kinds of anaemia. Lastly, one individual⁹² displays on the right distal humeri lateral epicondylitis, an inflammation of the tendons that join the forearm muscles on the outside of the elbow caused by overuse.

5. Archaeobotany

During the 2016 season, thirteen archaeobotanical samples were collected in contexts selected by stratigraphic relevance in trenches T1 (ca. 540 l of sediment), T8 (ca. 16 l), T9 (ca. 70 l) and T12 (ca. 250 l). The samples were processed by bucket flotation using a 250 µm sieve for the flot and a 1 cm mesh for the heavy residue.

talnoga loma dijafize desne bedrene kosti, pri čemu se vidi crta loma i bočno pomicanje. Analiza kostiju također pokazuje i moguću perimortalnu ozljedu, penetrirajuću ranu karakteriziranu defektom okrugloga oblika pronađenu na lijevoj lopatičnoj kosti osobe sahranjene u HRU1177 (Gr23, T7; muškarac, 17 – 19 godina, sl. 46). Ovaj kostur datiran je ¹⁴C metodom u 1290. – 1405. godinu⁸⁸.

Hiperostoze i egzostoze – *hyperostosis frontalis interna*⁸⁹ i *torus mandibularis*⁹⁰ – također su zamijećene, kao i slučaj upaljene distalne metafize desne bedrene kosti⁹¹. Upala metafize može ukazivati na različite poremećaje kao što su: rahitis, ahondroplazija (uzrok patuljastoga rasta), fibrozna displazija, bolesti povezane sa širenjem koštane moždine poput talasemije (manjak hemoglobina), bolesti srpastih stanica i drugih oblika anemije. Napokon, jedna osoba⁹² pokazuje na desnoj distalnoj ramenoj kosti lateralni epikondilitis, upalu tetive koja povezuje mišiće podlaktice na vanjskoj strani lakta, što je izazvano njezinim prekomjernim korištenjem.

5. Arheobotanika

Tijekom 2016. godine, trinaest arheobotaničkih uzoraka sakupljeno je u kontekstima izabranim po stratigrafskom značaju u sondama T1 (cca. 540 litara sedimenta), T8 (cca. 16 litara), T9 (cca. 70 litara) i T12 (cca. 250 litara). Uzorci su procesirani flotacijom vjedra uz korištenje 250 µm sita za flotaciju i mreže od 1 cm za talog.

Karbonizirani ostatci biljaka (žitarice, mahunarke, voće i korovske vrste) pronađeni su u svim uzorcima, osim u sondi T8. Njihova sačuvanost je osobito loša, s preko 50 fragmenata žitarica, mahunarki i voća te preko 400 dijelova biljaka koje nije moguće identificirati. Prosječna gustoća sjemenja od 0,25 sjemenki po litri sedimenta prilično je skromna. Pronađeno je 92 identificirana ostatka biljaka, od čega 48 % žitarica, 33 % korovskih vrsta, 12 % mahunarki

⁸⁸ See above, n. 3.

⁸⁹ Skull D, in E1.

⁹⁰ Skull I, in E1.

⁹¹ Individual B in Gr47 (T7, HRU1198; subadult, 3-5 y/o).

⁹² Individual A in Gr54 (T9, SU1232; male, 45-55 y/o).

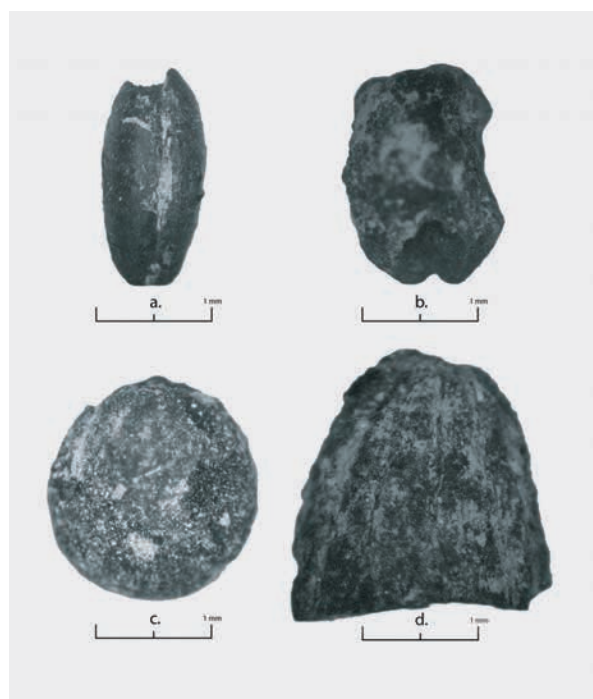
⁸⁸ Vidi gore, bilj. 3.

⁸⁹ Lubanja D u E1.

⁹⁰ Lubanja I u E1.

⁹¹ Osoba B u Gr47 (T7, HRU1198; dijete, 3 – 5 godina).

⁹² Osoba A u Gr54 (T9, SU1232; muškarac, 45 – 55 godina).



sl. 47. Arheobotanički ostatci: a. ječam; b. bijela brkulja (pšenica); c. leća; d. fragment koštice masline (T1, SU1020) (K. Reed).

Fig. 47 Archaeobotanical remains: a. barley; b. naked wheat; c. lentil; d. olive stone fragment (T1, SU1020) (K. Reed)

i 7 % sjemenki voća. Od žitarica (sl. 47) najviše je zastupljen ječam (*Hordeum vulgare* ssp. *vulgare*), a iza njega se nalazi vrsta dalmatinske pšenice (bijela brkulja) (*Triticum turgidum* ssp. *durum/Triticum aestivum* ssp. *aestivum*). Od mahunarki i voća, najčešća su leća (*Lens culinaris*) i maslina (*Olea europaea*), dok među korovskim vrstama dominiraju nalazi sljeza (*Malva* sp.) koji su pronađeni samo u sondi T9 (SU1208). U grobovima karbonizirani ostatci biljaka nisu povezani s tragovima paljevine, što sugerira da biljke nisu bile izložene vatri prije nego li su se našle u grobovima. Jesu li biljke namjerno ili slučajno dospjele u ove kontekste, za sada se ne može sa sigurnošću odrediti.

6. Prostorno modeliranje sonde

Trenutna situacija u sondama otvorenim izvan crkve sv. Joakima i Ane (sl. 1) je zabilježena optičkim radarom rezolucije 5 mm slijedeći isti radni protokol kao i 2015. godine. Snimanje je izvršeno prije restauracije zidova rotunde i memorije. Skupa s TST mapiranjem, rezultati prikupljanja i procesiranja TLS poda-

Carbonised plant remains (cereals, pulses, fruits and wild weedy species) were recovered from all samples, except those from trench T8. Their preservation was particularly poor, with over 50 unidentifiable cereal, pulse and fruit fragments and over 400 unidentifiable plant items, as well as a low average seed density of 0.25 seeds per litre of sediment. In total, ca. 92 identified plant remains were recorded, 48% cereals, 33% wild weed species, 12% pulses and 7% fruit seeds. Of the cereals (fig. 47), barley (*Hordeum vulgare* ssp. *vulgare*) was the most frequently recovered, followed by naked wheat (*Triticum turgidum* ssp. *durum/Triticum aestivum* ssp. *aestivum*). Of the pulses and fruits, lentil (*lens culinaris*) and olive (*Olea europaea*) were the most common, while the wild weedy species were dominated by finds of mallow (*Malva* sp.) recovered only from trench T9 (SU1208). In graves, the carbonised plant remains were not associated with traces of burning, suggesting that the plants were exposed to fire elsewhere before being deposited. Whether the remains were purposefully or accidentally discarded within these contexts has yet to be determined.

6. Terrestrial laser scanning

The current excavation state of the trenches opened outside the church of Sts Joachim and Ann (fig. 1) was recorded through a 5 mm resolution lidar survey following the same workflow employed in 2015. The survey was carried out prior to the restoration of rotunda's walls and of the mausoleum. In conjunction with the TST mapping, the various outputs of the TLS data acquisition and processing assisted in producing the excavation plans and sections as well as the 3D reconstructions.

7. 3D modelling

Much of the 3D reconstruction work carried out this year focused on refining models of churches and in particular that of the rotunda, most of whose architectural details have been revealed by this season's excavations. In addition, a model of the building complex adjacent to the rotunda was created based on the standing remains to the north of the modern graveyard and on their interpretation as a Roman *domus* (fig. 19).



sl. 48. Iskopavanja uokolo crkve sv. Joakima i Ane u 2016. godini (A. Z. Alajbeg).
Fig. 48 Excavation around the church of Sts Joachim and Ann in the year 2016 (A. Z. Alajbeg)

8. Archaeological database

Up to date and fully operational, the ARK database is now hosted on the project's recently built website⁹³.

taka pomogli su pri pravljenju planova iskopavanja, sekcija i 3D rekonstrukcija.

7. 3D modeliranje

Digitalna 3D rekonstrukcija fokusirala se na rafiniranju modela crkava, posebice dijelova rotunde koji su otkriveni ove godine. Uz to, napravljen je i model građevinskoga kompleksa do rotunde, koji se temeljio na vidljivim ostatcima sjeverno od današnjega groblja i njihovoj pretpostavljenoj interpretaciji kao rimskog doma (sl. 19).

8. Arheološka baza podataka

Ažurirana ARK baza podataka, za sada, se nalazi na nedavno napravljenim mrežnim stranicama projekta⁹³.

⁹³ www.varvaria-breberium-bribir.org

⁹³ www.varvaria-breberium-bribir.org