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## **MONBRODO - PRAPOVIJESNA GRADINA BLIZU PLAŽE CISTERNA, JUŽNO OD GRADA ROVINJA, U SVJETLU NOVIH ISTRAŽIVANJA**

## **MONBRODO - A PREHISTORIC HILLFORT NEAR CISTERNA BEACH SOUTH OF THE CITY OF ROVINJ IN THE LIGHT OF NEW RESEARCHES**

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*U razdoblju između 2016. i 2018. godine, u sklopu zajedničkog korejsko-hrvatskog projekta provedena su arheološka istraživanja gradine Monbrodo, južno od Rovinja, u blizini plaže Cisterna. Cilj projekta bio je prikupiti nove podatke o sustavu gradina oko središnjeg naselja Monkodonje, koje je oko 5 km udaljeno od Monbroda. U ovom su radu predstavljeni preliminarni rezultati triju istraživačkih kampanja koje su rasvijetlile razne podatke o povijesti naseljavanja ovog lokaliteta, od razvijenog ranog i srednjeg brončanog doba pa do zadnjih stoljeća prije Krista<sup>1</sup>.*

*Between 2016 and 2018, in the context of a Korean-Croatian joint project, research excavations were carried out on the hilltop settlement Monbrodo near Cisterna beach south of the modern city of Rovinj. Objective of the project was to gain new data on the settlement system of hillforts around the presumed central settlement of Monkodonja, which is located in around 5 km distance from Monbrodo. This paper presents preliminary results of the three excavation campaigns, which brought to light a variety of data regarding the occupation history of the site spanning two millennia from the developed Early and Middle Bronze Ages until the last centuries before Christ.<sup>1</sup>*

**KLJUČNE RIJEČI:** *Istria; gradine; brončano doba; željezno doba; stratigrafija; kronologija*

**KEY WORDS:** *Istria; hillforts; Bronze Age; Iron Age; stratigraphy; chronology*

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## UVOD

I me Istre, najvećeg poluotoka u sjevernom Jadranu, spominje se u antičkim izvorima, kao što je djelo *Periegeza* Hekateja Milećanina, u kojem se predrimski stanovnici toga kraja nazivaju Histrima ili Istrima (Hänsel, Mihovilić i Teržan, 2015, str. 45 i sljedeće). Poluotok je nastao u kvartaru, početkom holocena, podizanjem razine mora. Istru, koja se geološki sastoji od vapnenca, odlikuju sedimentirana crvenica (*terra rossa*) te prepoznatljiva krška vegetacija i submediteranske hrastove i borove šume. Krajolikom dominiraju brojna zaobljena brda, doline, kotline i špilje. Danas se u podnožjima brda nalaze polja i površine koje se koriste za poljoprivredu i uzgoj životinja. Obala Istre iznimno je razvedena zbog velikog broja uvala. Iz Hesiodovog djela *Poslovi i dani*, poznato je da je pomorski promet u antici bio moguć samo od proljeća do jeseni te da su se za plovidbu koristile prirodne morske struje. One se u istočnom Jadranu kreću prema sjeveru i prolaze zapadnom obalom Istre (*ibid.* 50, sl. 14). Moguće je da su se uvale već koristile u prapovijesnom razdoblju kao pristaništa za brodove koji su se tamo sidrili čekajući bolje vremenske prilike. More nije bilo samo svojevrsna prometnica nego i izvor hrane.

Od 19. stoljeća interes znanstvenika i ljubitelja antike usmjeren je na tragove prapovijesnih i ranopovijesnih naselja na istarskom poluotoku (*ibid.* str. 27 i sljedeće). To se poglavito može zahvaliti tome što se tragovi povijesnih naselja u obliku kamenih zidina mogu naći posvuda. Te utvrde, poznate kao gradine, *castellieri* ili *kastelliere*, smještene su na vrhovima brojnih krških brda. Danas se na mnogim mjestima među vegetacijom mogu razaznati karakteristični zidovi prstenastog oblika, podignuti tehnikom gradnje suhozida. Nalazi ulomaka keramičkih posuda, koji se mogu prikupiti s površine tla, ukazuju na to da je većina tih mjesta izgrađena u brončanom dobu, u drugom tisućljeću prije Krista. Do željeznog doba djelomično su korištena kao naselja, a na vrhovima nekih brda kasnije su nastali važni gradovi, poput Rovinja ili Motovuna (Buršić-Matijašić, 2007, 185, 386).

Bez obzira na veliki broj gradina u istarskom krajoliku, samo ih je nekoliko detaljno istraženo. Najistaknutiji primjer je gradina Monkodonja, na kojoj su sustavno provedena iskopavanja u pedesetim godinama prošlog stoljeća te između 1997. i 2008. (Hänsel, Mihovilić i Teržan, 2015). To se nalazište može nazvati najvažnijim primjerom gradina jer pruža brojne informacije o arhitekturi suhozida, životu, društvenim strukturama i kontaktima sa susjednim i udaljenijim područjima te o kronologiji kasnog ranog i početka srednjeg brončanog

## INTRODUCTION

The name of Istria, the largest peninsula in the Northern Adriatic, has been mentioned in the ancient sources such as the work *Periegesis* of Hecataeus of Miletus in which the pre-Roman inhabitants of the land were called Histri or Istri (Hänsel, Mihovilić and Teržan 2015, p. 45 et seq.). The peninsula was formed in the Quaternary, at the beginning of the Holocene, by the rising sea levels. Istria, which is geologically composed of limestone, is characterized by sedimented red soil (*terra rossa*) and the distinctive karst vegetation with sub-Mediterranean oak and pine forests. The landscape is defined by numerous rounded hills, sinkholes (dolines), ravines and caves. The lowlands around the hills are mainly used as agricultural fields and pastures. The coastline of Istria is well indented due to the large number of bays. From the work of Hesiod (*Works and Days*) it is known that maritime traffic in antiquity was only possible from spring to autumn and that the natural sea currents were used for navigation. The sea currents in the eastern Adriatic move northwards and pass along the western coast of Istria (*ibid.* 50, fig. 14). It is likely that the bays functioned in prehistoric times as harbors for ships that had to wait for better weather conditions. The sea was not only used for transport, but, in particular, as a source of food.

Since the 19th century, the interest of scientists and laypersons has been focused on the remnants of prehistoric and early historic sites on the Istrian peninsula (*ibid.* p. 27 et seq.), mainly due to the fact that remains of past settlements in the form of stone walls can be found everywhere. These fortified settlements, also known as gradine, *castellieri* or *kastelliere*, are located on top of the countless hills of the Istrian karst landscape. It is possible at many sites to observe the characteristic circular walls built in dry stone technique. Finds of pottery shards that can be collected from the surface indicate that the majority of these sites were occupied during the Bronze Age, namely in the second millennium BC. The locations were used up to the Iron Age, and on some hilltops important towns such as Rovinj and Motovun were founded in later times (Buršić-Matijašić 2007, 185, 386).

Despite the high number of hillforts in the Istrian landscape, only a few of them have been researched in more depth. The most prominent example is the hillfort of Monkodonja, which has been systematically excavated in the 1950s and from 1997 to 2008 (Hänsel, Mihovilić and Teržan 2015). The site is known as a prime example of hillforts, providing plenty of information on the dry stone architecture, subsistence, social structure and relations

doba u Istri. Međutim, što se tiče uloge Monkodonje kao najvećeg središnjeg naselja unutar lokalnog sustava naselja, ima mnogo otvorenih pitanja. Usto, mnogim prapovijesnim gradinama u Istri prijeti uništenje zbog poljoprivrednih djelatnosti i gradnje. Stoga postaje sve važnije usredotočiti domaća i međunarodna istraživanja na gradine. Ne bi li se prikupile nove informacije, pokrenut je istraživački projekt “Sustavi naselja brončanog doba u Istri”. Projekt je bilo moguće realizirati zahvaljujući potpori fondacije National Research Foundation of Korea, Arheološkog muzeja Istre u Puli i Muzeja grada Rovinja.

Jedno od naselja koje pripada sustavu oko pretpostavljenog središnjeg naselja Monkodonje jest Monbrodo (Bekić, 1996, 84; Buršić-Matijašić, 2007, 177). Nalazi se na nešto više od 3 km zračne udaljenosti južno od Monkodonje. Površinski nalazi, prikupljeni u prošlosti, pokazali su da je naselje korišteno u raznim prapovijesnim razdobljima te u antici. Na lokalitetu Monbrodo su između 2016. i 2018. provedene tri istraživačke kampanje, a preliminarno izvješće objavljeno je 2016. (Müller, Čuka i Hellmuth Kramberger, 2016). Realizirana su tri istraživanja sondiranjem zapadnog boka gradine (sl. 1); jedno na središnjem platou (sonda 1), jedno na drugoj terasi (sonda 3) i jedno na trećoj terasi (sonda 2). Sve se sonde nalaze unutar polukružnih zidova koji su danas vidljivi u šumi.



Sl. 1 Položaj sondi: sonda 1 (2016.-2018.), sonda 2 (2016.) i sonda 3 (2018.) na gradini Monbrodo.

Fig. 1 Position of the excavation trenches Trench 1 (2016-2018), Trench 2 (2016) and Trench 3 (2018) on the Monbrodo hillfort.

### Sonda 1

Tijekom prve istraživačke kampanje u 2016., u kvadrantima C1-2/D1-2 otkriven je ugao kamene

with neighboring and distanced regions as well as on the chronology of the late Early and the beginning Middle Bronze Age in Istria. However, regarding the role of Monkodonja as the largest central site within the local settlement system, many questions still remain unanswered. Moreover, many of the prehistoric hillforts in Istria are in danger of being destroyed by agricultural activities and construction work. Therefore, hillforts should be more in the focus of national and international research endeavors. In order to collect new information, the research project “Bronze Age Settlement Hierarchies in Istria” has been established. The realization of the project was made possible through the support of the National Research Foundation of Korea, the Archaeological Museum of Istria in Pula and the Rovinj Heritage Museum.

One of the locations that belongs to the settlement system around the assumed central site of Monkodonja, is Monbrodo (Bekić 1996, 84; Buršić-Matijašić 2007, 177). Monbrodo is located in a little bit more than 3 km linear distance south of Monkodonja. Surface finds collected in the past indicate that the site was occupied during various prehistoric periods as well as in antique times. Between 2016 and 2018, three excavation campaigns took place at the site of Monbrodo and the first, preliminary report was published in 2016 (Müller, Čuka and Hellmuth Kramberger 2016). Altogether three trenches were excavated on the western flank of the hillfort (Fig. 1); one on the central plateau (Trench 1), one on the second terrace (Trench 3) and one on the third terrace (Trench 2). All trenches were located next to wall constructions that are still visible on the densely forested hill.

### Trench 1

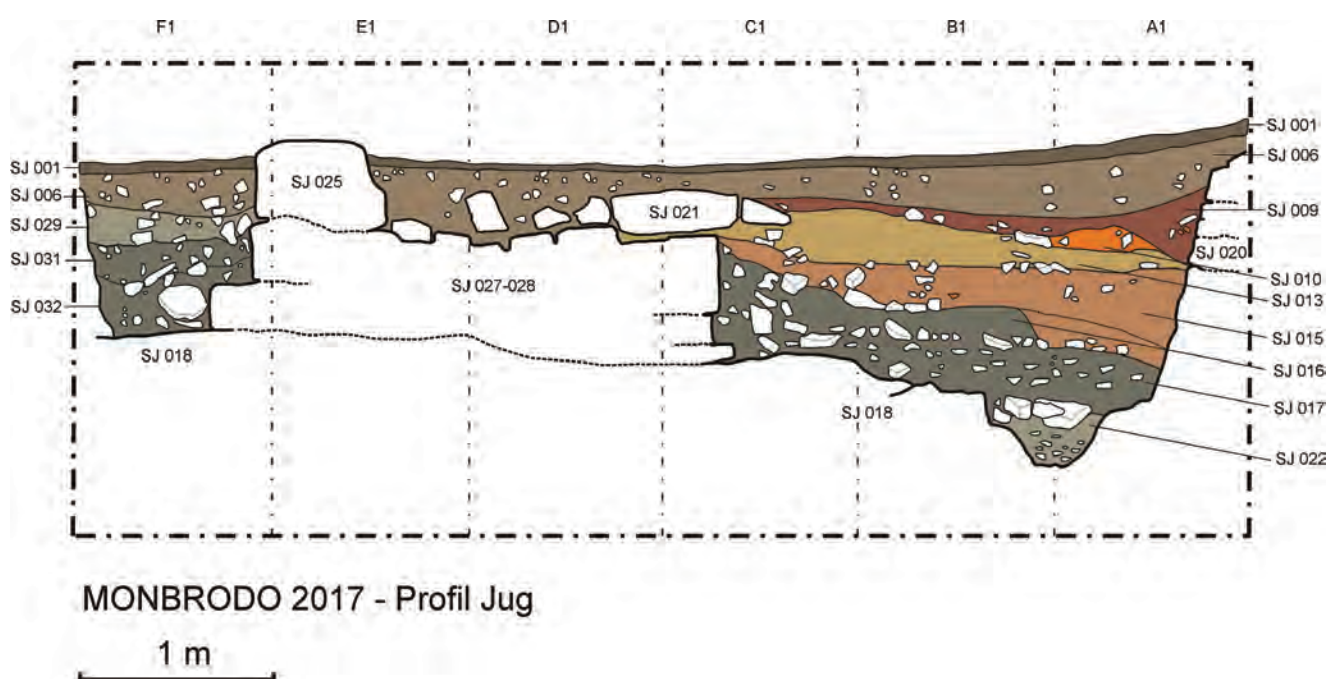
During the first excavation campaign, carried out in 2016, the corner of a monumental stone construction was discovered in quadrants C1-2/ D1-2 and documented as SU 21 (Müller, Čuka and Hellmuth Kramberger 2016, 27 fig. 5; 28 fig. 7) (compare fig. 2). However, its function could not be explained due to the limitations of the trench. The extension of the trench in the year 2017 revealed that the construction represents the foundations of an older wall, which is described as SU 27-28 (Fig. 3 and 6). This wall of around 2.5 m width is only preserved in one or two layers and, remarkably, there are almost no visible traces of this construction on the surface. Exceptions were a larger limestone block, which was designated as SU 04 in 2016, and another rock SU 25 that was barely visible on the surface (compare fig. 2). This wall shows all characteristics of Bronze Age

monumentalne građevine koja je dokumentirana kao SJ 21 (Müller, Čuka i Hellmuth Kramberger 2016, 27 sl., 5; 28 sl., 7) (usporediti sa sl. 2). Međutim, njezinu funkciju nije bilo moguće definirati zbog ograničenosti iskopa. Proširenjem iskopa u idućoj je godini otkriveno da se radi o temeljima starijeg zida, koji su opisani pod SJ 27-28 (sl. 3 i 6). Ovaj zid, širine oko 2,5 m, sačuvan je u samo jednom ili dva sloja te je neobično što na površini gotovo nema vidljivih tragova. Izuzetak predstavlja veći vapnenački blok, koji je 2016. označen kao SU 04, te stijena SU 25 koja je jedva vidljiva na površini (usporediti sliku 2). Taj stariji zid sadrži sve odlike tehnike gradnje suhozida iz brončanog doba: pročelje i unutarnja površina sačinjeni su od monumentalnih blokova, a prostor između njih ispunjen je kamenjem srednje veličine.

Rudimentarno stanje očuvanosti toga zida upućuje na to da je kameni materijal ponovno korišten u kasnijoj fazi života naselja. Čini se da gradnja i prva faza uporabe zida najvjerojatnije datiraju iz razvijenog ranog i srednjeg brončanog doba. Na to upućuje velika količina karakteristične keramike koja je nađena neposredno iznad matične stijene. Već tijekom prve istraživačke kampanje na Monbrodu 2016. godine pronađen je opsežan keramički materijal (*ibid.*, 31ff). Među tim materijalom pronađeni su i neki dijagnostički komadi koji su upućivali na barem djelomičnu istovremenost s

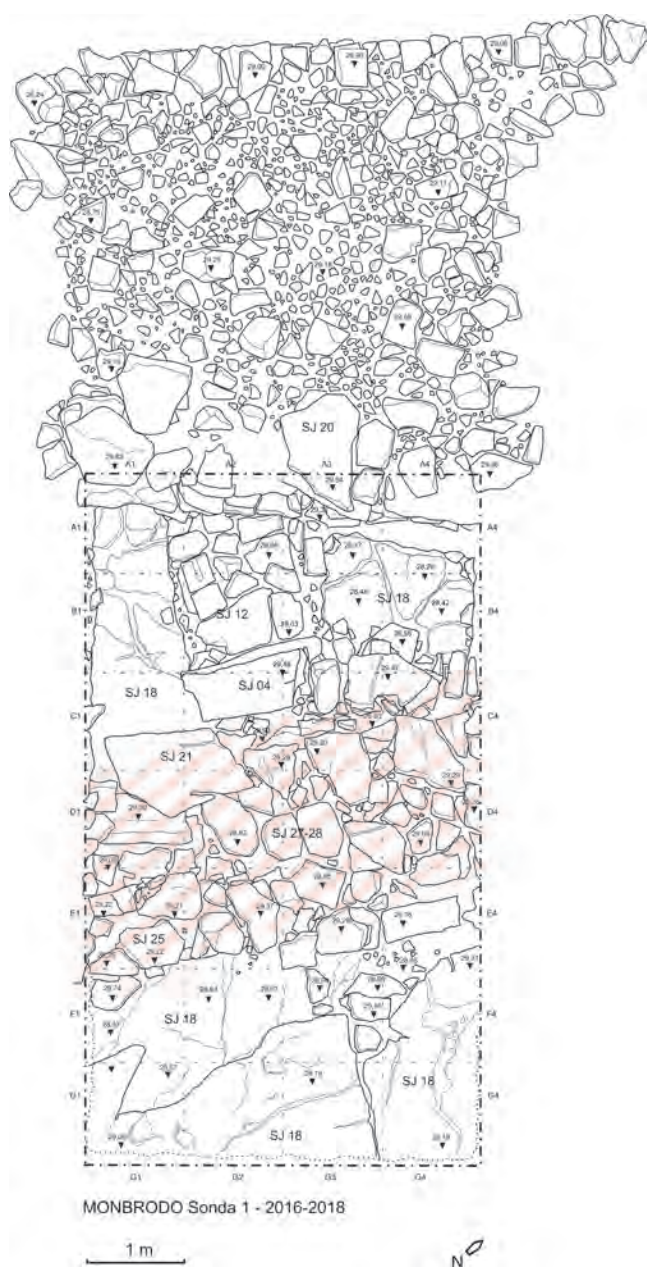
dry stone technique: the outer and inner facade of the construction is formed of monumental blocks and the space between is filled with medium sized stones.

The rudimentary state of conservation of this wall suggests that the stone material was reused during a later phase of the site's occupation. It seems likely that the construction and the first phase of the wall falls within the period of the developed Early and Middle Bronze Ages. This is suggested by a large quantity of characteristic pottery, which has been found just above the bedrock. During the first excavation campaign on Monbrodo in 2016 a large quantity of ceramic material was discovered (*ibid.*, 31ff.). The pottery assemblage also included diagnostic pieces that allowed for the conclusion that there was at least a partial contemporaneity with the nearby hillfort of Monkodonja (*ibid.* 32-34, Pl. I, 3-4; III, 1-2, 4-7; V, 1-4). In 2017, particularly rich ceramic finds were made in quadrants E1-4 and F1-2 on the inner side of the Bronze Age wall (SU 25) in the lowest level SU 32 directly above the bedrock SU 18 (Pl. 2; 3, 2-3). The material shows a relatively good state of preservation, because it consists of bigger pieces (see Pl. 2, 2) and of shards that belong to one and the same vessel (see Pl. 3, 2-3). Due to the good state of preservation, the classification of the surface treatment posed no problems and several pieces of fine black pottery with a polished surface have been identified (Pl. 2, 3-4). The polished surface suggests that the fragments



Sl. 2 Južni profil sonde 1, 2016.-2017.

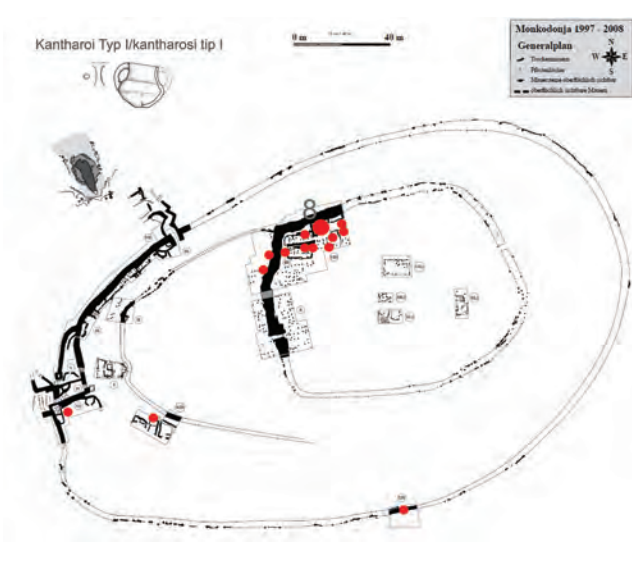
Fig. 2 Southern profile of Trench 1, 2016-2017.



Sl. 3 Kraj iskopa sonde 1, šrafirano područje označava stariji zid (iz brončanog doba) - SJ 21, 15, 27-28.

Fig. 3 Final planum Trench 1, the hatched area marks the older (Bronze Age) wall - SJ 21, 25, 27-28.

obližnjom gradinom Monkodonja (*ibid.*, 32-34, T. I,3-4; III,1-2.4-7; V,1-4). Veća količina keramike otkrivena je 2017. godine u kvadrantima E1-5 i F1-2, na unutarnjoj strani brončanodobnog zida (SJ 25), na najnižoj njegovoj razini SJ 32, točno iznad matične stijene SJ 18 (T. 2; 3,2-3). Materijal je relativno dobro očuvan jer s jedne strane sadrži velike ulomke (vidjeti T. 2,2), a s druge strane dijagnostičke komade te ulomke koji se mogu pripisati istoj posudi (vidjeti T. 3,2 -3). Zahvaljujući



Sl. 4 Rasprostranjenost malih kantharosa na obližnjoj gradini Monkodonja (po Hellmuth Kramberger, 2017, 311, sl. 248).

Fig. 4 Distribution of small kantharoi in the nearby hillfort of Monkodonja (after Hellmuth Kramberger 2017, 311, fig. 248).

belong to two amphora-shaped pots with x-handles (Pl. 2,5; 3,3), which were probably used as containers for liquids (see Hellmuth Kramberger 2017, 205). Among the finds of the excavation campaign in 2016 the presence of amphora-shaped pots and pithoi on Monbrodo was only proven by a convex belly fragment (Müller, Čuka and Hellmuth Kramberger 2016, 32, pl. III, 7). Finds of the new excavation campaign have proven the presence of these vessels beyond doubt (Pl. 2.5; 3.3). This vessel shape (for liquids) can be described as an important leading type of the Early and Middle Bronze Age hillforts in Istria and the Trieste Karst / Carso (Hellmuth 2014; Hellmuth Kramberger 2017, 203ff., 205 Fig. 170). By considering that grape seeds have been discovered in Monkodonja (Knoll 2015, p. 105 et seq.), it has been argued that these vessels were used for storing wine. Another important Early and Middle Bronze Age leading type of vessels that has been repeatedly observed at Monbrodo are bowls with decorated bottom-underside (see Hellmuth Kramberger 2017, p. 163 et seq., 162 fig. 133, 164 fig. 134) (Pl. 2,3-4). Both bottom-fragments have a polished surface and the slightly rounded walls indicate that they were variants of the hemispherical bowls (Hellmuth Kramberger 2017, p. 144 et seq.). While one of the specimens was decorated with concentric circles or a spiral (Pl. 2,3), the bottom of the other was decorated with parallel arches and impressed dots (Pl. 2,4). Since the ornaments are positioned on the bottom underside, we can speculate that these bowls were mainly used as lids.



Sl. 5 Detaljni prikaz sonde 1, sjeverni profil u kvadrantima A4 i B4, vidljivi su SJ 01, SJ 06, SJ 12, SJ 26, SJ 30, SJ 16 i SJ 18.

Fig. 5 Detailed view of Trench 1, northern profile in quadrants A4 and B4, visible are SJ 01, SJ 06, SJ 12, SJ 26, SJ 30, SJ 16 and SJ 18.

dobroj očuvanosti, utvrđivanje površinske obrade nije predstavljalo poteškoće te je identificirano nekoliko komada fine crne keramike sa zaglađenom površinom (T. 2,3-4). Zaglađena površina ukazuje na to da se radi o ulomcima dviju posuda u obliku amfore s ručkama oblika slova X (T. 2,5; 3,3), u pogledu kojih se može pretpostaviti da se radi o posudama za tekućine (vidjeti Hellmuth Kramberger 2017, 205). Među nalazima iz 2016. samo je zaobljeni trbušasti ulomak s trokutastom ručkom upućivao na prisutnost posuda u obliku amfore i pitosa na Monbrodu (Müller, Čuka i Hellmuth Kramberger, 2016, 32, T. III, 7), no to se sada može nedvojbeno dokazati (T. 2,5; 3,3). Taj oblik posuda (za tekućine) može se opisati kao važni vodeći tip posuda iz gradina iz ranog i srednjeg brončanog doba u Istri i tršćanskom Krasu (Carso) (Hellmuth, 2014; Hellmuth Kramberger, 2017, 203ff, 205, sl. 170), a uzimajući u obzir da su u Monkodonji pronađene koštice grožđa (Kroll 2015, str. 105 i sljedeće), zgodna je teza da se radi o posudama koje su se koristile za čuvanje vina. Drugi važni vodeći tip posuda iz ranog i srednjeg brončanog



Sl. 6 Sonda 1, kraj iskopa 2017. (fotografiju snimio dronom Zoran Grbin, 2017.).

Fig. 6 Trench 1, final planum 2017 (drone photo taken by Zoran Grbin 2017).

A contemporaneity between Monbrodo and Monkodonja is also underlined by the presence of pots and pithoi with anthropomorphic ornamentation (compare Hellmuth 2012; Hellmuth Kramberger 2017, 214-215, 214 fig. 182). Among the ceramic finds from 2016, fragments of arched ledges and grips decorated with finger-imprints suggest the presence of such vessel-ornaments (Müller, Čuka and Hellmuth Kramberger 2016, 33, pl. III, 1-2.4; V, 4). SU 32 contained several large fragments of storage vessels decorated with handles and plastic ledges or incised arches. Especially distinctive is an anthropomorphic decoration on vessel-fragments, which in all likelihood belonged to a bell-shaped pot (Pl. 3,2). The fine drinking vessels include a large cup with a rounded belly, bordered rim and fragmented handle (Pl. 2,2), as well as a small jug or kantharos with a cylindrical neck<sup>2</sup> (Pl. 2,1). Interesting is the fact that on the inside surface of the large cup, which was unearthed directly next to the wall SU 25, white residues were observed. This raises the question of whether it is lime sinter or a similar white crust as the one observed on drinking vessels from the Monkodonja hillfort (Hellmuth Kramberger 2017, 72-75). The results of the EDX analysis (Energy Dispersive X-ray analysis) executed on three samples from Monkodonja showed a high percentage of calcium

<sup>2</sup> Handles were not preserved.

doba, koji je sada već više puta dokazan u Monbrodu, bile su zdjele s ukrašenom donjom stranom dna (vidjeti Hellmuth Kramberger, 2017, str. 163, 162, sl. 133, 164, sl. 134) (T. 2,3-4). Oba ulomka dna posude glatke su površine, a lagano zaobljene stijenske ukazuju na to da su to bile varijante polukružnih zdjela (Hellmuth Kramberger, 2017, str. 144 i sljedeće). Jedan je primjerak ukrašen koncentričnim krugovima ili spiralom (T. 2,3), dok je dno drugog ukrašeno paralelnim lukovima i utisnutim točkama (T. 2,4). Budući da se ukrasi nalaze s donje strane dna, možemo nagađati da su se te zdjele većinom koristile kao poklopci.

Istovremenost Monbroda i Monkodonje istaknuta je i prisutnošću zdjela i pitosa s antropomorfnim ukrasima (usporediti s Hellmuth, 2012; Hellmuth Kramberger, 2017, 214-215, 214, sl. 182). Među keramičkim nalazima iz 2016., ulomci s lučnim rebrima i ulomci ručki ukrašenih utiskivanjem prsta upućuju na postojanje takvih ukrasa na posudama (Müller, Čuka i Hellmuth Kramberger, 2016, 33, T. III,1-2.4;V,4). SJ 32 sadržavao je nekoliko velikih ulomaka posuda za pohranu namirnica, s ukrašenim ručkama i plastičnim rebrima ili urezanim lukovima. Posebno se razaznaje antropomorfnu ukras na ulomcima posuda, koji je najvjerojatnije pripadao loncu zvonastog oblika (T. 3,2). Fine posude za pijenje uključuju veliki pehar zaobljenog trbuha, s bordurom ukrašenim rubom i s fragmentiranom ručkom (T. 2,2), te mali vrč ili kantaros s cilindričnim vratom<sup>2</sup> (T. 2,1). Interesantno je što je na unutarnjoj površini pehara koji je pronađen odmah pored zida SJ 25 uočen bijeli talog. To otvara pitanje o tome radi li se o vapnenačkom sinteru ili sličnoj bijeloj kori primijećenoj na posudama za pijenje iz gradine u Monkodonji (Hellmuth Kramberger, 2017, 72-75). Analiza triju uzoraka iz Monkodonje, provedena energijski razlučujućom rendgenskom spektrometrijom (eng. EDX), u svim je talozima pokazala visoki postotak kalcija (Ca) i fosfora (P). Radi se o kalcijevu fosfatu ili hidroksiapatitu, koji je glavni sastojak kosti. Usporedbom s rezultatima iz drugih područja i razdoblja, protumačeno je da je riječ o koštanom prahu koji se dodavao napicima kao dodatak prehrani ili zamjena za mlijeko. Možda se nešto slično prakticiralo i na Monbrodu<sup>3</sup>.

Što se tiče malog vrča ili kantarosa (T. 2,1), prema rezultatima analize iz Monkodonje on pripada vrsti posude koja, osim što je važni tip posude iz ranog i srednjeg brončanog doba u Istri (Hellmuth Kramberger, 2017, str. 99 i sljedeće), daje naslutiti kakvi su bili običaji povezani s pićem, ali i koja može biti pokazatelj društvenog

(Ca) and phosphorus (P) in all the sediments. It has been identified as calcium phosphate or hydroxyapatite, which forms the main component of the bone. By comparing the results with finds belonging to other regions and periods, it has been concluded that the substance was bone powder which was added to beverages as a food supplement or as milk substitute. Maybe something similar was also practiced on Monbrodo<sup>3</sup>.

Taking into consideration the analysis carried out on the finds of Monkodonja, the small pitcher or kantharos (Pl. 2,1) can be assigned to the type of vessel that besides being an important leading type of the Early and Middle Bronze Ages in Istria (Hellmuth Kramberger 2017, p. 99 et seq.), gives a hint of certain drinking habits and possibly also serves as a social indicator (ibid., 310, 311 fig. 248, 318, 407, 409). Remarkably, in Monkodonja the occurrence of small kantharoi is almost entirely limited to the acropolis (Fig. 4). Accordingly, it might not be a coincidence that on Monbrodo a small pitcher or kantharos was also found on the inside of the Bronze Age fortification of the acropolis. However, future investigations will show whether Monbrodo has a different spectrum of ceramic finds in the inner area of the acropolis and thus, as in Monkodonja, a hierarchical division can be postulated between individual settlement areas.

During the excavation campaign of 2016, an “intermediate phase”, SU 13-15, was documented between the Iron Age layer SU 09 and the presumed Middle Bronze Age layers SU 16-17, 22 (Müller, Čuka and Hellmuth Kramberger 2016, 26 fig. 4; 29 fig. 8) (compare Fig. 2 and 13). Most likely connected with this phase is a stone construction, SU 12, which runs transversely towards the older Bronze Age wall and extends beneath the younger wall SU 20 in the quadrants A2-3, B2-3 and C2-3 (Ibid. fig. 8; 10) (Fig. 3 and 6). Whilst the pottery from the layers SU 16-17, 22 is entirely comparable with the material from Monkodonja (compare with: Hellmuth 2012; Hellmuth 2014; Hellmuth Kramberger 2017), the pottery from SU 13-15 in Monbrodo shows significant differences in form and technology. In the campaign of 2017 it has been recognized that the sandy, bright colored layer SU 13 could partly be detected under the large stone SU 21 which represents a part of the older wall (Fig. 2). Thus, the last (re-) building phase of the Bronze Age wall on its outside, in the quadrants A1-2 to C1-2, is connected with the cultural layer documented as SU 13. However, on the inside of the older wall, in quadrants F1-2, the “intermediate phase” with its distinct bright color was

<sup>2</sup> Ručke nisu očuvane na ulomku.

<sup>3</sup> Odogovarajuće analize su u tijeku.

<sup>3</sup> Corresponding analyses are currently being carried out.

statusa (*ibid.* 301, 311 sl. 248, 318, 407, 409). Ono što je iznenađujuće jest da su se u Monkodonji skoro svi mali kantarosi nalazili na akropoli (sl. 4). Jednako tako, nije slučajnost da je na Monbrodu mali vrč ili kantaros također pronađen unutar utvrde akropole iz brončanog doba. Međutim, buduća će istraživanja pokazati i jesu li pronađeni keramički predmeti iz unutrašnjosti akropole Monbroda nešto drukčiji, na temelju čega će se stoga, kao u Monkodonji, moći napraviti hijerarhijska podjela pojedinih naseljenih područja.

Tijekom istraživačke kampanje iz 2016., u kvadrantima A1-2 do C1-2 dokumentirana je “međufaza” (SJ 13-15), između sloja iz željeznog doba (SJ 09) i pretpostavljenih slojeva iz srednjeg brončanog doba (SJ 16-17, 22) (Müller, Čuka i Hellmuth Kramberger 2016, 26, sl. 4; 29, sl. 8) (usporediti sa sl. 2 i 13). S ovom je fazom najvjerojatnije povezana kamena konstrukcija SJ 12 koja se transverzalno proteže prema starijem brončanodobnom zidu i nestaje ispod mlađeg zida SJ 20 u kvadrantima A2-3, B2-3 i C2-3 (*ibid.* sl. 8; 10) (sl. 3 i 6). Dok se keramičko posuđe iz slojeva SJ 16-7, 22 u potpunosti može usporediti s materijalom iz Monkodonje (usporediti s: Hellmuth, 2012; Hellmuth, 2014; Hellmuth Kramberger, 2017), kod keramičkog posuđa označenog sa SJ 13-15 iz Monbroda uočene su znatne razlike u oblicima i tehnologiji izvedbe. U kampanji iz 2017. utvrđeno je da se pješčani sloj svijetle boje, SJ 13, može djelomično uočiti ispod velikog kamena SJ 21, koji je dio starijeg zida (sl. 2) Stoga, posljednja faza (re)konstrukcije vanjske strane zida iz brončanog doba, u kvadrantima A1-2 do C1-2, povezana je s kulturnim slojem dokumentiranim kao SJ 13. Međutim, na unutarnoj strani starijeg zida, u kvadrantima F1-2, nije uočena “međufaza” koja se odlikuje svojom svijetlom bojom. Tamo se, neposredno ispod mješovitog sloja SJ 06 (koji također sadrži keramiku iz željeznog i brončanog doba), pojavio pješčani sivi sloj prepun keramike koja je posve usporediva s materijalom SJ 16-17, 22, odnosno s keramikom iz Monkodonje. U konačnici se postavlja pitanje nalazi li se takozvana “međufaza” SJ 13-15 i ispod zida iz željeznog doba SJ 20 i prostire li se na drugu terasu naselja. Promatranjem južnog profila (sl. 2) čini se vrlo vjerojatnim da se SJ 13 i 15 protežu prema moru do ispod zida iz željeznog doba SJ 20. To vrijedi i za kamenu konstrukciju dokumentiranu kao SJ 12 u kvadrantima A2-3, B2-3 i C2-3, koja se proteže, kao što je prethodno navedeno, transverzalno u odnosu na stariji zid iz brončanog doba. Zasad se funkcija i opseg tog “transverznog zida” još ne mogu objasniti. U kvadrantima A3-4 i B3-4 otkriveno je nekoliko slojeva kamenja manje i srednje veličine (usporediti sa sl. 5) koji predstavljaju urušene ostatke “transverznog

not detected (Fig. 2). Here, immediately under the mixed layer SU 06 (which contains Iron Age and Bronze Age pottery as well) appeared a sandy gray layer containing large amounts of pottery which is comparable with the material from SU 16-17 and 22 as well as with the pottery from Monkodonja. Finally the question arises whether the so called “intermediate phase” described as SU 13-15 can be observed under the Iron Age wall SU 20 and whether it extends to the second settlement terrace. From the observation of the southern profile (Fig. 2) it seems quite likely that SU 13 and 15 extend under the Iron Age wall SU 20. The same is true for the stone structure documented as SU 12 in the quadrants A2-3, B2-3 and C2-3 which runs, as mentioned above, transversely to the older Bronze Age wall. So far, the function and extent of this “transverse wall” is not understood. In the quadrants A3-4 and B3-4 several layers of smaller and medium sized stones (compare fig. 5) which represent either collapsed remains of the “transverse wall” itself or, also possible, the filling for a space of unknown purpose were discovered. Only future investigations will clarify the situation. In any case, it seems that the “transverse wall” and the cultural layers documented as SU 13-15 were located outside of the Bronze Age acropolis wall that encloses the inner settlement area.



Sl. 7 A Fibula iz Picuga, tip Nezakcij (po Guštinu, 1987, 45, sl. 3, 5), B - ulomak fibule iz Monbroda, tip Nezakcij.  
Fig. 7 A - Nesactium type fibula from Picuga (after Guštin 1987, 45, fig. 3, 5), B - fragment of a Nesactium type fibula from Monbrodo.

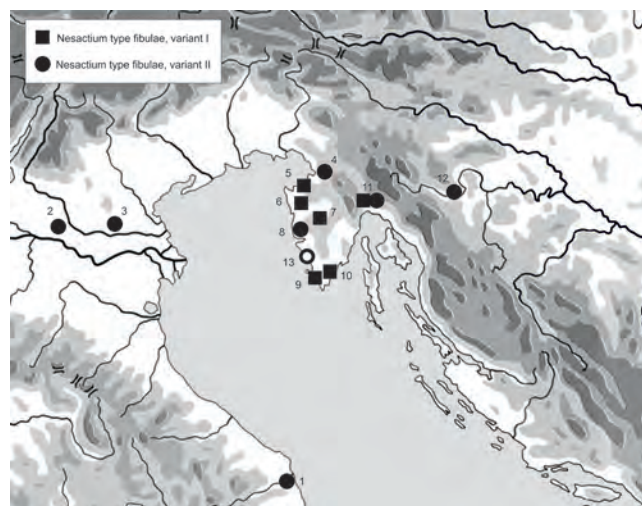


zida” ili se mogu objasniti kao kamenje koje je služilo kao ispuna prostora nepoznate namjene. Samo buduća istraživanja to mogu rasvijetliti. U svakom slučaju, čini se da su “transverzalni zid” i kulturni slojevi koji su dokumentirani kao SJ 13-15, locirani izvan zida akropole iz brončanog doba, odnosno izvan unutarnjeg područja naselja.

Osim što je uočen stariji zid, čiji su temelji najvjerojatnije postavljeni u razvijenom ranom ili srednjem brončanom dobu, utvrđeno je i da je zid širok četiri metra (glavni zid akropole, SJ 20), koji je danas vidljiv, vjerojatno pripadao naselju u željeznom dobu te da njegovi temelji datiraju ne prije 4. stoljeća, vjerojatnije iz 3. stoljeća prije Krista. Važan pokazatelj života u mlađem željeznom dobu nekoliko je brončanih fibula koje su nađene neposredno unutar zidina u kvadrantu A3 i SJ 06 te SJ 09 (T. 1, 2-3), kao i u kvadrantima A1 i B2 (Müller, Čuka i Hellmuth Kramberger, 2016, T. 1,5-6; 6,2.5). Radi se o tri kasnija oblika *Certosa fibulae*, tipa VII. po Teržan (Teržan, 1977, 383, str. 436, 371 mapa 42; usporediti i s Blečić Kavur 2015, 156, sl. 56) u raznim varijantama (e-h), i fibuli srednje latenske sheme, slične tipu Nezakcij po Blečić Kavur (Blečić Kavur 2009; usporediti i s Mihovilić, 2013, 281, sl. 213 u sredini). Fibule tipa Nezakcij oblika su karakterističnog za 3. i 2. stoljeće prije Krista i prevladavaju u Istri (vidjeti također: Mihovilić, 2009, 210, sl. 2,5) (sl. 8). Opisane su dvije varijante, od kojih se II. varijanta može naći i izvan Istre, poglavito u Kastvu, zapadno od Rijeke, u slovenskoj Beloj Krajini i sjevernoj Italiji na području rijeke Po te na obalnom lokalitetu Numana u talijanskoj pokrajini Marche. Fibula iz Picuga može se dobro usporediti s primjerkom iz Monbroda (Gabrovec i Mihovilić, 1987, sl. 18, 17; Guštin, 1987, 45 sl. 3, 5; Blečić Kavur 2009, sl. 4, 3) (usporediti sa sl. 7A), koja istodobno predstavlja i jedan od rijetkih primjeraka II. varijante fibule tipa Nezakcij u Istri. Po M. Blečić Kavur, pretpostavlja se da se II. varijanta fibula tipa Nezakcij izrađivala za vanjsko tržište, dok se relativno skromna I. varijanta, koja dominira nalazištima u Istri, izrađivala za lokalno tržište (Blečić Kavur, 2009, 203).

Samo nekoliko centimetara ispod površine, u kvadrantu E1, ukazao se još jedan ulomak brončane fibule (T. 1,1). Iako se radi tek o malom ulomku, može se utvrditi da je pripadao fibuli s tri čvora na luku i nožicom u obliku diska<sup>4</sup>. Stoga, radi se o tipu fibule koji je karakterističan za područje Soče u zapadnoj Sloveniji i koji datira, kao i fibula tipa Nezakcij, iz

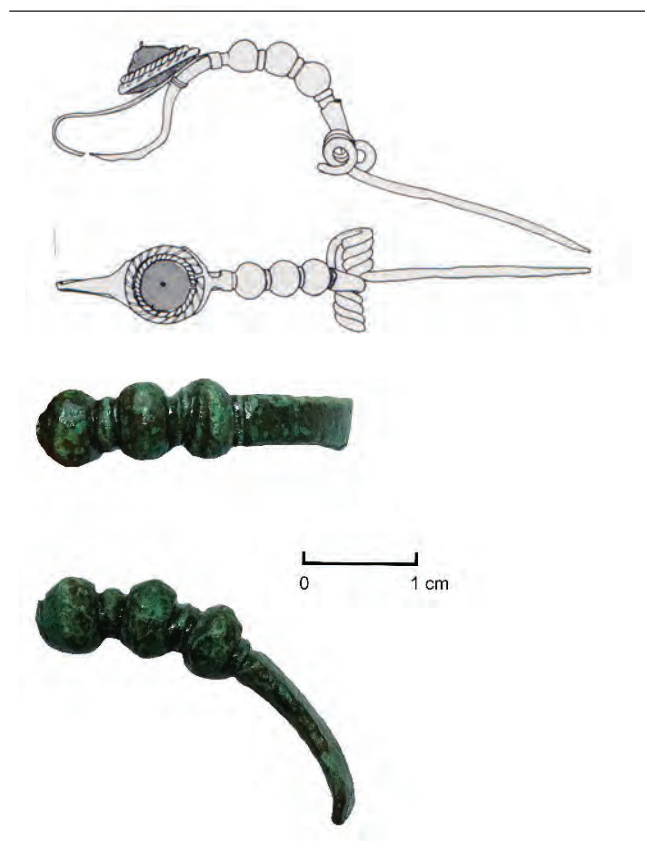
Besides the identification of the older wall, whose foundation was very likely constructed during the developed Early or Middle Bronze Age, it was possible to determine that the today visible, four-meter-wide wall (the main acropolis wall, SU 20) probably belonged to the Iron Age occupation of the site and its foundations can be dated to a period not earlier than the 4<sup>th</sup>, most likely the 3<sup>rd</sup> century BC. Important indicators for the dating of the younger Iron Age occupation are several bronze fibulae which were found next to the walls in the quadrant A3 in SU 06 and SU 09 (Pl. 1,2-3) as well as in quadrants A1 and B2 (Müller, Čuka and Hellmuth Kramberger 2016, Pl. 1,5-6; 6,2.5). These are, in particular, three late forms of Certosa fibulae, type VII after Teržan (Teržan 1977, 383, 436p., 371 map 42; compare also Blečić Kavur 2015, 156, fig. 56) in different variants (e-h), and a fibula of the developed Middle La Tène scheme, similar to the Nesactium type after Blečić Kavur (Blečić Kavur 2009; compare also Mihovilić 2013, 281 fig. 213 middle). The Nesactium type fibulae represent a shape which was characteristic for the 3<sup>rd</sup> and 2<sup>nd</sup> centuries BC and has its main distribution in Istria (see also: Mihovilić 2009, 210, fig. 2,5) (Fig. 8). Two variants have been described, with variant II also occurring outside Istria, namely in Kastav west of Rijeka, in the Slovenian Bela Krajina, in northern Italy in the Po-region as well as in the coastal site of Numana in the Marche region. Well comparable



Sl. 8 A - Rastrostranjenost fibula tipa Nezakcij (po Blečić Kavur, 2009, 203, sl. 5): 1 - Numana, IT; 2 - Gazzo Cassinate, IT; 3 - Este, IT; 4 - Socerb, SI; 5 - Koper, SI; 6 - Kaštelir- Nova Vas, HR; 7 - Beram, HR; 8 - Picugi, HR; 9 - Pula, HR; 10 - Nezakcij, HR; 11 - Kastav, HR; 12 - Golek pri Vinici, SI; 13 - Monbrodo, HR.

Fig. 8 - Distribution of Nesactium type fibulae (after Blečić Kavur 2009, 203, fig. 5): 1 - Numana, IT; 2 - Gazzo Cassinate, IT; 3 - Este, IT; 4 - Socerb, SI; 5 - Koper, SI; 6 - Kaštelir- Nova Vas, HR; 7 - Beram, HR; 8 - Picugi, HR; 9 - Pula, HR; 10 - Nezakcij, HR; 11 - Kastav, HR; 12 - Golek pri Vinici, SI; 13 - Monbrodo, HR.

<sup>4</sup> Fibel mit Dreiknopfbügel und Scheibenfuß - vidjeti Guštin 1991, 37-38, Pl. 3,15; 6,6; 12,2; 13,1; 21,13; 35,1-4; 40,4; 41,6.



Sl. 9 A - Fibula s tri čvora na luku i nožicom u obliku diska iz Reke pri Crknem (po Guštinu, 1991, 137, pl. 35,1), B - ulomak fibule s tri čvora na luku iz Monbrodo.

Fig. 9 A - Fibula with three knots on the bow and disc-shaped foot from Reka pri Crknem (after Guštin 1991, 137, pl. 35,1), B - fragment of a fibula with three knots on the bow from Monbrodo.

razvijenog srednjeg razdoblja latenske kulture, odnosno iz razdoblja između 3. i 2. st. prije Krista. Usporediti se mogu, na primjer, primjerci iz Reke pri Crknem (sl. 9A), Mosta na Soči (Guštin, 1991, Pl. 42,8) ili Idrije pri Bači (*ibid.* T. 28,4).

Ostali nalazi pronađeni na gradini Monbrodo koji se mogu dobro usporediti u kontekstu (mlađeg) željeznog doba s onima iz grobnice u Nezakciju (1981.) ili iz građevine iz željeznog doba koja je iskopana pored temelja Arheološkog muzeja Istre u Puli, koštane su igle za izradu ili popravak ribarskih mreža (Mihovilić, 2011, 17; Mihovilić, 2013, 298, sl. 232) (T. 1,8 - usporediti sa sl. 10) te perforirani astragali i koštani članci preživača (Mihovilić, 2011, 17; Mihovilić, 2013, 298, sl. 232) (Pl. 1,6-7). Potonji su služili za razne vještine i igre s kockicama (Schädler, 1996).

Proširenjem kvadranta F3-4/G1-2 na jugoistočnom rubu sonde 1, 2018. godine, utvrđeno je da se matična stijena proteže skoro do hodne površine na unutarnjoj strani temelja starijeg zida (SJ 25, 27-28), osim kvadranta

to the specimen from Monbrodo is a fibula from Picugi (Gabrovec and Mihovilić 1987, fig. 18, 17; Guštin 1987, 45 fig. 3,5; Blečić Kavur 2009, fig. 4,3) (compare fig. 7A), which also represents one of the rare specimens of the variant II of the Nesactium type fibulae in Istria. According to M. Blečić Kavur the variant II of the Nesactium type fibulae was presumably produced for the external market, while the rather modest variant I, which dominates in the Istrian sites, was produced for the local market (Blečić Kavur 2009, 203).

Just a few centimeters below the surface in quadrant E1 another fragment of a bronze fibula came to light (Pl. 1,1). Even if it is just a small fragment, it can be determined as part of a fibula with three knots on the bow and a disc-shaped foot<sup>4</sup>. This is a type of fibula which is characteristic for the Soča-region in western Slovenia and dates - as well as the Nesactium type fibula - in the developed Middle La Tène period, between the 3<sup>rd</sup> and 2<sup>nd</sup> century BC. Comparisons can be drawn with specimens from Reka pri Crknem (Fig. 9A), Most na Soči (Guštin 1991, Pl. 42,8) or Idrija pri Bači (*ibid.* Pl. 28,4).

Other finds from Monbrodo that can be compared in the context of the (younger) Iron Age with artefacts from the grave vault of Nesactium (1981) or from an Iron Age construction excavated nearby the foundations of the Archaeological Museum of Istria in Pula, are a bone needle to make and mend fishing nets (Mihovilić 2011, 17; Mihovilić 2013, 298 fig. 232) (Pl. 1,8 - compare with Fig. 10) and perforated astragali as well as phalanges of ovicaprids (Mihovilić 2011, 17; Mihovilić 2013, 298 fig. 232) (Pl. 1,6-7). The latter were used for various skill and dice games (Schädler 1996).

The 2018 extension of the quadrants F3-4/G1-2 in the southeastern edge of Trench 1 showed that the bedrock extended almost to the inner facade of the foundation of the older wall (SU 25, 27-28) with the exception of the quadrants F1-2/G1-2 where an irregular shaped depression caused by an around 1 m high step in the bedrock occurred (see Fig. 12). The around 30 cm wide gap between the bedrock and the older wall in quadrants F3-4 was seemingly intentionally filled with small and medium sized stones (SU 37-38). The pottery found between the stones of SU 37-38 represents the Monkodonja-type of pottery (Hellmuth Kramberger 2017) that can be dated to the period between the developed Early and the Middle Bronze Age. However, so far it has not been possible to determine whether the stone-filling was already implemented during the time

<sup>4</sup> Fibel mit Dreiknopfbügel und Scheibenfuß - see Guštin 1991, 37-38, Pl. 3,15; 6,6; 12,2; 13,1; 21,13; 35,1-4; 40,4; 41,6.



Sl. 10 Koštana igla za izradu i popravljanje ribarskih mreža iz željeznodobne kuće pronađene uz temelje Arheološkog muzeja Istre u Puli (po Mihovilić, 2011, slika na str. 17).

Fig. 10 Bone needle to make and mend fishing nets from the Iron Age house at the foundation of the Archaeological Museum of Istria (after Mihovilić 2011, fig. page 17).

F1-2/G1-2 gdje se može primijetiti nepravilna udubina nastala zbog stepenice u matičnoj stijeni, visoke oko 1 m (vidjeti sl. 12). Čini se da je praznina, širine od oko 30 cm, između matične stijene i starijeg zida u kvadrantima F3-4, bila namjerno ispunjena kamenjem male i srednje veličine (SJ 37-38) kako bi se zapunila. Keramika koja je pronađena među kamenjem SJ 37-28 slična je onoj iz Monkodonje (Hellmuth Kramberger, 2017), koja se može datirati u razdoblje između razvijenog ranog i srednjeg brončanog doba. Međutim, zasad nije moguće utvrditi je li se tehnika ispune praznina kamenjem već koristila u vrijeme naseljenosti tijekom (ranog-srednjeg) brončanog doba ili kasnije. Na dnu praznine u kvadrantima F3-4, blizu vrha matične stijene, pronađene su životinjske kosti i nekoliko komada vrlo grubog keramičkog posuđa i kućnog lijepa (sl.11). Ta se keramika znatno razlikuje u smislu izvedbe (kaljenje i površinska obrada) od keramike iz razvijenog ranog i srednjeg brončanog doba, poput one iz Monkodonje ili samog Monbroda. Moguće je da predstavlja ostatke starijeg naselja na brdu tijekom razdoblja prije izgradnje prvog bronačodobnog zida.

Stepenica nepravilnog oblika u matičnoj stijeni u kvadrantima F1-2/G1-1, koja se nalazi ispred unutarnje plohe starijeg brončanodobnog zida (SJ 21, 25, 27-27), oblikuje udubinu koja je bila ispunjena s nekoliko slojeva zemlje koja je sadržavala kamenje, keramiku i mnoštvo životinjskih kostiju. U prvih 20 cm mješovitog sloja (SJ 06) nalazila se keramika izrađena uz pomoć lončarskog kola, nekoliko brončanih predmeta (dijelovi fibula, prsten (T. 1,5), brončana dugmad, kopča za remen, igla za šivanje), kućni lijep te ručno rađena keramika, a u slojevima ispod njega (SJ 29, 31-32 i 35) pronađena je samo ručno rađena keramika, koja se može usporediti s materijalom iz Monkodonje. Posebno je u najdubljem sloju iznad matične stijene pronađena velika količina životinjskih kostiju, među ostalima i kosti ovaca/koza, svinja, stoke, konja, ostaci ljuštura mekušaca poput kamenica te čeljusna kost komarče.

Značajni su tragovi urezivanja u matičnoj stijeni, moguće tragovi ležišta nosivih stupova, koji su prisutni



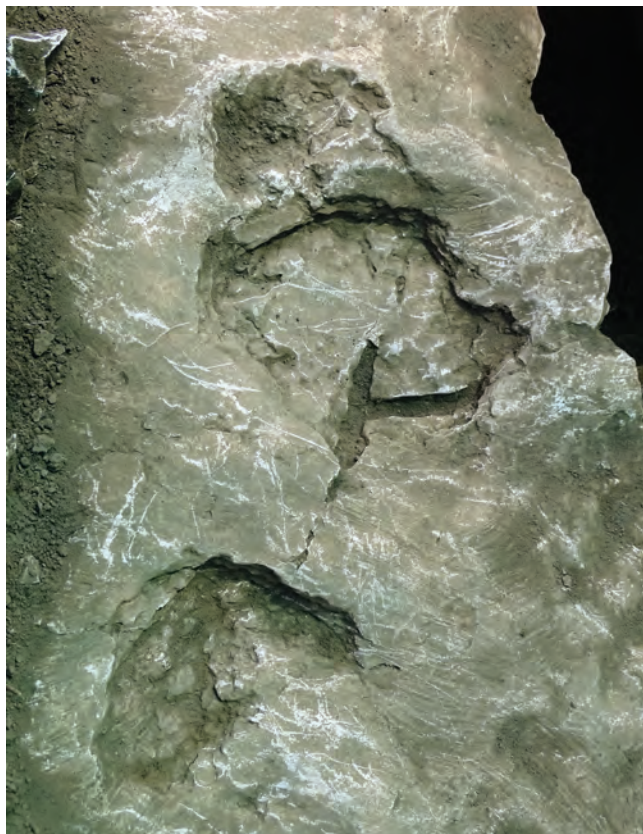
Sl. 11 Sonda 1, keramički nalazi iz udubljenja u kvadrantima F3-4, nad matičnom stijenom.

Fig. 11 Trench 1, ceramic finds from a gap in the quadrants F3-4 close above the bedrock.

of the (early-middle) Bronze Age occupation or at a later time. On the bottom of the gap in quadrants F3-4, close above the bedrock, animal bones and several pieces of very coarse pottery or tempered clay daub (Fig. 11) were discovered. This ceramic differs in its appearance - temper and surface treatment - significantly from the ceramic objects of the developed Early and Middle Bronze Ages like the ones from Monkodonja or from Monbrodo itself. It is possible that it represents the remains of an older occupation of the hill dating to a period preceding the construction of the first Bronze Age wall.

The irregular shaped step in the bedrock in the quadrants F1-2/G1-2 in front of the inner facade of the older Bronze Age wall (SU 21, 25, 27-28) forms a depression that was filled with several layers of soil containing stones, pottery and plenty of animal bones. While the first 20 cm represent a mixed layer (SU 06) which contained wheel made pottery, several bronze finds (parts of fibulae, a ring (Pl. 1,5), bronze buttons, a belt-buckle, a sewing needle), clay daub as well as handmade pottery, the layers below (SU 29, 31-32 and 35) contained solely handmade pottery that is comparable to the material from Monkodonja. Especially in the deepest layer above the bedrock, a large amount of animal bones was found, including bones of sheep/goat, pig, cattle, horse, molluscs like oysters and a jaw-bone of a large gilt-head bream.

Significant is the discovery of carvings on the bedrock, possibly traces of moulds for supporting posts, which are positioned around the edge of an irregular shaped step in the limestone (see fig. 12). With respect to the presence



Sl. 12 A-B sonda 1, detaljni prikaz tragova urezivanja na matičnoj stijeni, mogući tragovi ležišta nosivih stupova?

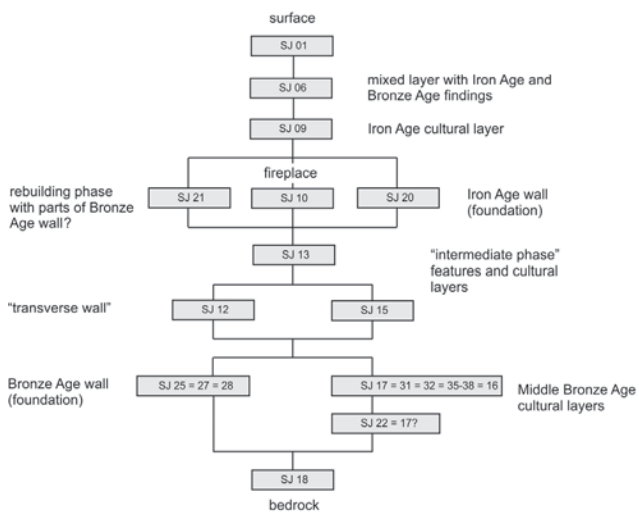
Fig. 12 A-B Trench 1, details of the traces of carvings on the bedrock, possible traces of moulds for supporting posts?

oko ruba nepravilne stepenice u vapnencu (vidjeti sl. 12). Što se tiče prisutnosti kućnog lijepa u tim kvadrantima, vrlo je vjerojatno da je na tom mjestu uza zid nekoć bio izgrađen neki objekt. Možda je čak ta udubina bila dio objekta u smislu neke vrste podruma. Međutim, navodna struktura ne može se datirati. Budući da u gornjem mješovitom sloju SJ 06 ima mnogo ulomaka uvozne keramike s crnim premazom i krhotina amfora iz rimskog doba, s kraja 2. st. i početka 1. st. pr.Kr.<sup>5</sup>, moguće je i da predmetna struktura pripada zadnjoj fazi naseljenosti.

### Sonda 3

U trećem iskopu na drugoj terasi naselja, u smjeru mora, 2018. godine istražena je sonda 3 (sl. 1). Njezine dimenzije iznosile su 3 x 6 m i djelomično je pokrivala vidljivi kameni zid br. 3 (sl. 14 i 18). Svrha iskopavanja treće sonde bila je istražiti dokle je sezalo naselje u brončanom i željeznom dobu, koje je bilo smješteno na drugoj terasi i okruženo danas vidljivim zidom br.

<sup>5</sup> Krhotine amfora grčko-italskog su tipa. Svi dosad pronađeni komadi upućuju na rub trokutastog oblika, što je karakteristično za tip Lamboglia 2 (usporediti, na primjer, s nalazima iz Mandrge: Horvat/Bavdek, 2009, 85 sl. 54-55). U pogledu nekih ulomaka keramike s crnim premazom iz Monbroda, dr. Barbara Porod (Graz) predložila je da potječu iz druge polovine 2. st. pr.Kr./prve polovine 1. st. pr.Kr, na čemu joj zahvaljujemo.



Sl. 13 Stratigrafija sonde 1 (2016.-2018.) prikazana s pomoću Harrisove matrice.

Fig. 13 Stratigraphy of Trench 1 (2016-2018) depicted in Harris matrix.

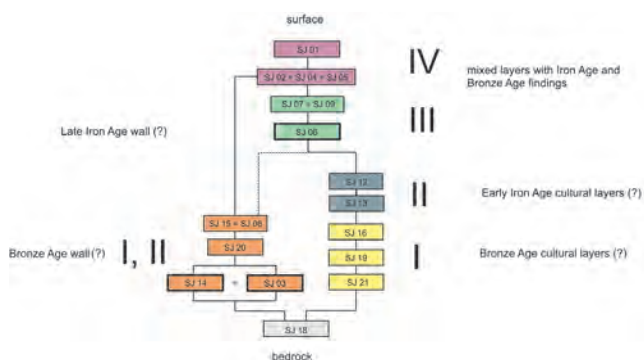
of clay daub in these quadrants, it seems likely, that on this position once some kind of structure was built next to the wall. It even seems possible that the depression was included in the structure as some kind of basement. However, it is not possible to date this presumed structure. Since there are in the upper mixed layer SU 06 many fragments of imported wheel made pottery with black

3 (usporediti s Müller, Čuka i Hellmuth Kramberger, 2016, 24, sl. 2).

Slično kao u slučaju sonde 1 na akropoli, kod sonde 3 je na drugoj terasi naselja otkriven složeni redosljed slojeva i faza gradnje, što se zasad može samo djelomično protumačiti. Možemo razlikovati četiri glavna horizonta (sl. 15). Najstariji je kulturni sloj iznad matične stijene u kvadrantima B1-2/C2, koji je opisan kao SJ 21<sup>6</sup> i vjerojatno je povezan sa SJ 19 i SJ 16 te s velikom strukturom točno na vrhu matične stijene u kvadrantima F1-2/D1-2, odnosno SJ 03 i SJ 14 (usporediti sl. 17 i 18). Moguće je da je riječ o starijem zidu na drugoj terasi. Međutim, to u budućnosti treba još potvrditi. Sa SJ 03 i SJ 14 povezana su dva sloja, SJ 20 i SJ 15 (= SJ 08), koja bi mogla predstavljati kamenu ispunu navodnog zida. Slojevi/kamene ispune SJ 20, 15 i 08 sadržavali su veliku količinu isključivo ručno izrađene keramike.



Sl. 14 Pogled na sondu 3, (fotografiju snimio dronom Zoran Grbin, 2018.).  
Fig. 14 View of Trench 3 (drone photo taken by Zoran Grbin 2018).



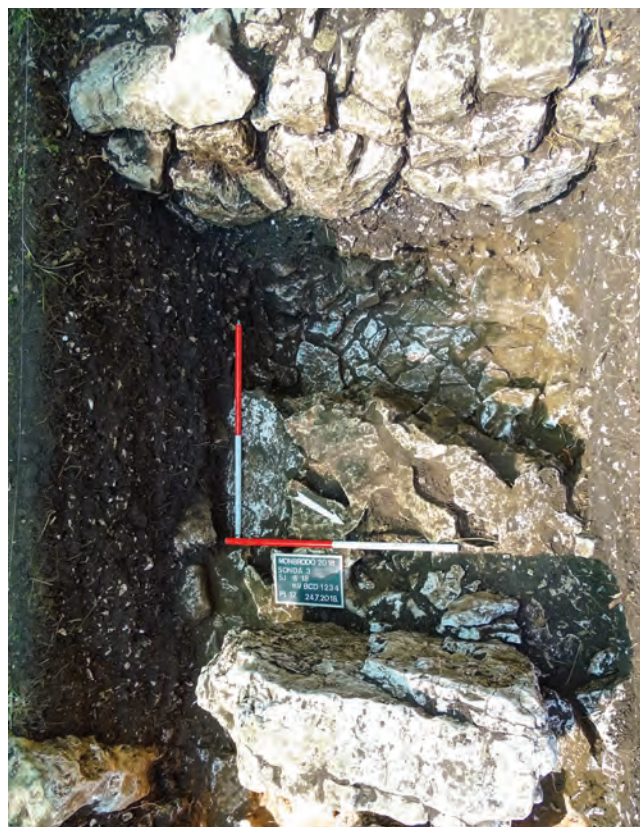
Sl. 15 Stratigrafija sonde 3 (2018.) prikazana pomoću Harrisove matrice.  
Fig. 15 Stratigraphy of Trench 3 (2018) depicted in Harris matrix.

<sup>6</sup> Napominje se da su promijenjeni brojevi stratigrafskih jedinica sonde 3.

slip and shards of amphorae, dated to the Roman period from the end of the 2<sup>nd</sup> century BC to the beginning of the 1<sup>st</sup> century BC<sup>5</sup>, it is also possible that the structure belongs to the latest occupation phase.

### Trench 3

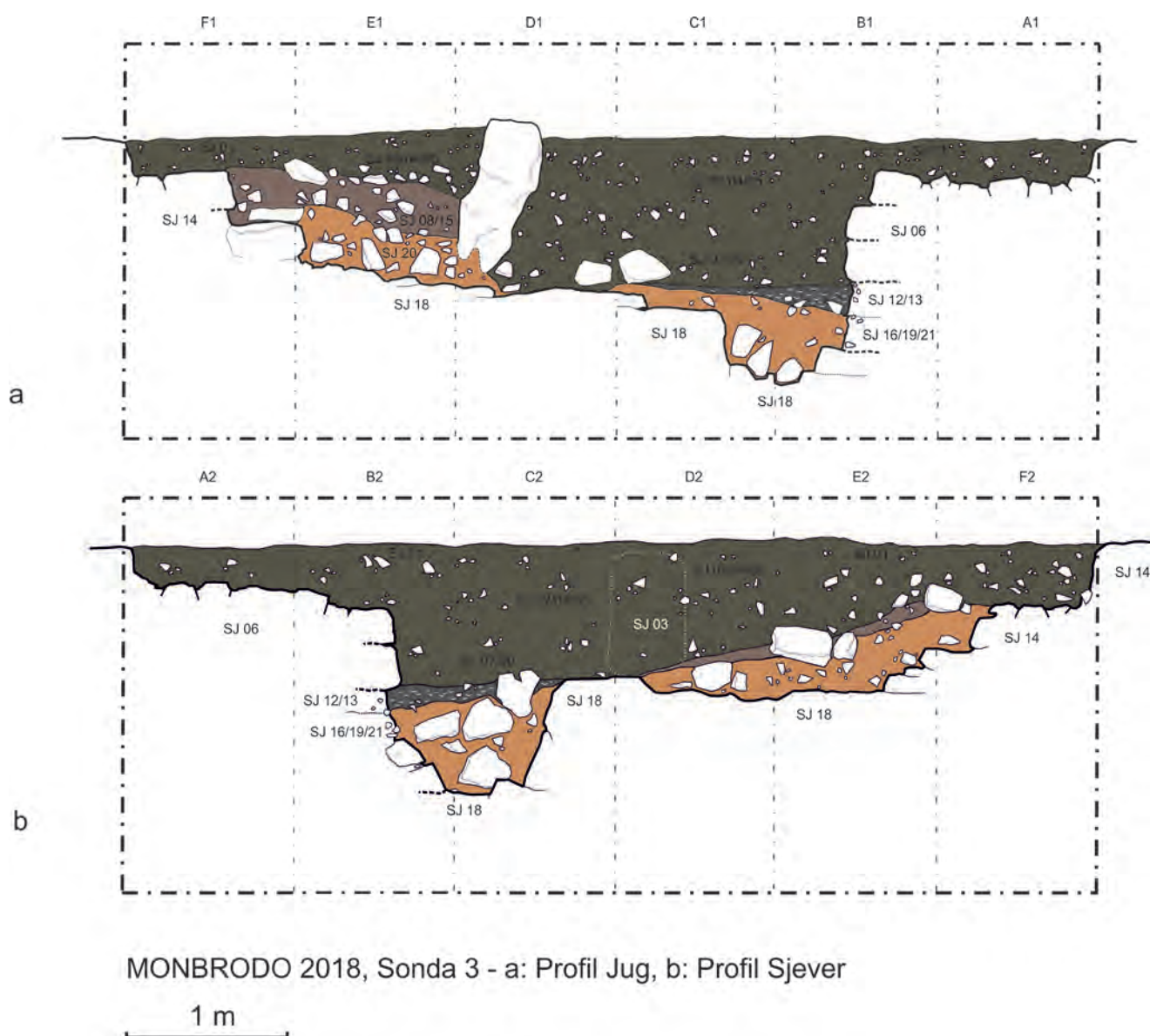
In 2018 a third trench, Trench 3, was outlined on the second settlement terrace facing the sea (Fig. 1). It measured 2 x 6 m and covered partly the visible stone wall No. 3 (Fig. 14 and 18). The purpose to open the third trench was to investigate the extent of the settlement in the Bronze and Iron Ages on the second terrace, surrounded by the today visible wall No. 3 (compare Müller, Čuka and Hellmuth Kramberger 2016, 24 fig. 2).



Sl. 16 Sonda 3, kvadranti A1-2 sa SJ 03 (monumentalni blok od vapnenca), SJ 06 (mlađi zid/zid br. 3) i SJ 18 (matična stijena), dokumentacija kraja iskopa.

Fig. 16 Trench 3, quadrants A1-2 with SJ 03 (monumental limestone block), SJ 06 (the younger wall/wall No. 3) and SJ 18 (bedrock), documentation of the final planum.

<sup>5</sup> The shards of amphorae belong to the Graeco-Italic type. All pieces which were found so far show a triangular shaped rim as it is characteristic for the Lamboglia 2-type (compare for example with finds from Mandrga: Horvat/Bavdek 2009, 85 Fig. 54-55). For some fragments of black-slip pottery from Monbrodo, Dr. Barbara Porod (Graz) suggested a dating into the second half of the 2<sup>nd</sup> century BC/first half of the 1<sup>st</sup> century BC, and we thank her for this information.



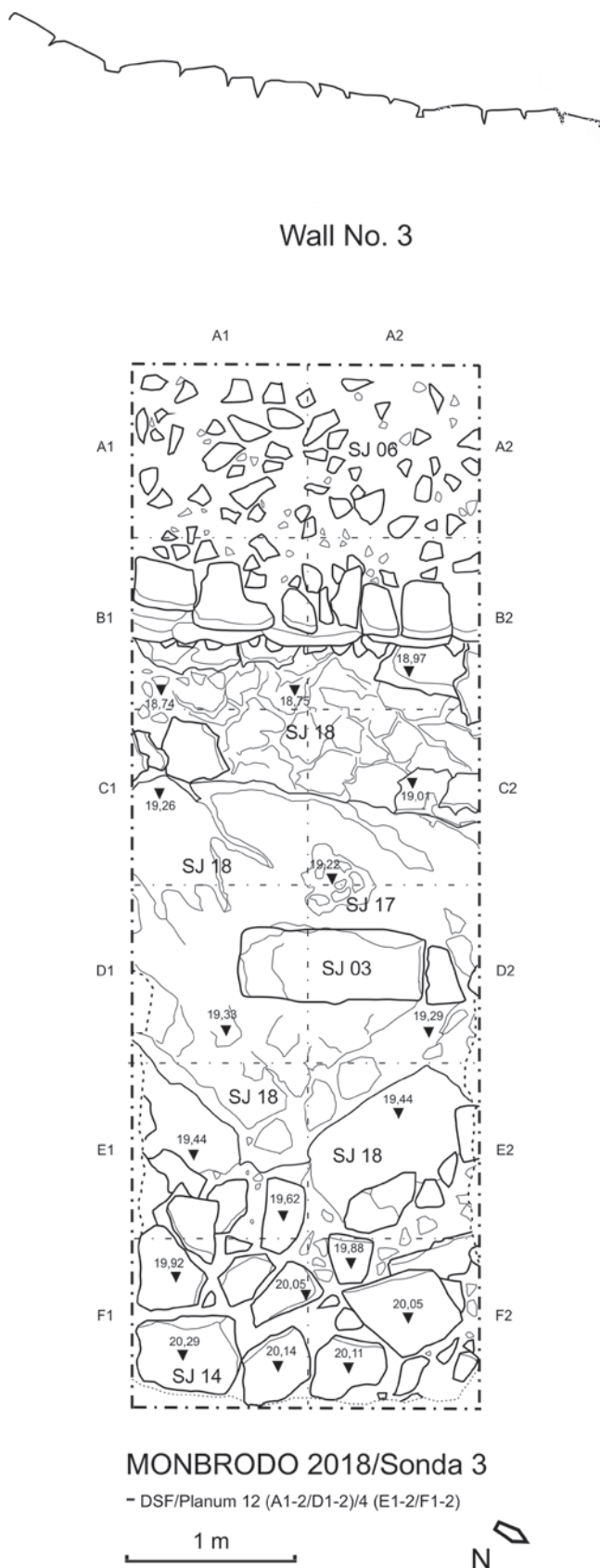
Sl. 17 Sonda 3, južni (a) i sjeverni (b) profil.

Fig. 17 Trench 3, southern (a) and northern (b) profile.

Preliminarna procjena te keramike upućuje na to da se ona može kronološki smjestiti u razvijeno rano ili srednje brončano doba, odnosno da je iz istog doba kao Monkodonja s jedne strane i, s druge strane, kao najniži slojevi sonde 1 na akropoli samog Monbroda. Budući da je keramika pronađena među kamenjem, vjerojatno je starija od stvarne faze izvedbe navodne ispune. Interesantni nalaz predstavlja brončano dlijeto koje je otkriveno u kvadrantu E1 u SJ 20. Ima nekih sličnosti s brončanim dlijetom koje je pronađeno u kupolastoj grobnici u Maklavunu (Mihovilić, Teržan, Hänsel et al., 2001, str. 64, gornja slika). Premda zasad ne možemo točno odrediti starost strukture i najnižih

Similarly to Trench 1 on the acropolis, in Trench 3 on the second settlement terrace, a complex stratigraphy of settlement layers and building phases was discovered which can only partially be interpreted. A distinction can be made between four main horizons (Fig. 15). The oldest is the cultural layer above the bedrock in quadrants B1-2/C2, described as SU 21<sup>6</sup>, which was most likely connected to SU 19 and SU 16, as well as to a large structure directly on top of the bedrock in quadrants F1-2/D1-2, named as SU 03 and SU 14 (compare Fig. 17-18). It seems possible, that this structure represents an older wall on the second terrace; however this needs

<sup>6</sup> Please note that for Trench 3 the stratigraphic units were renumbered.



Sl. 18 Kraj iskopa, sonda 3.  
Fig. 18 Final planum, Trench 3.

to be confirmed in the future. Connected with SU 03 and SU 14 are two layers - SU 20 and SU 15 (= SU 08) - which may have served as the stone filling of the presumed wall. The layers/stone fillings SU 20, 15 and 08 contained a large amount of exclusively handmade pottery. Preliminary assessment of this pottery suggests that it can be dated to the developed Early or Middle Bronze Age, thus belonging to the same period as Monkodonja and the lowest layers of Trench 1 on the acropolis of Monbrodo. Since the pottery was discovered among the stones, it is likely older than the actual construction phase of the presumed filling. An interesting find is a bronze chisel, which was discovered in quadrant E1 in SU 20. It shows some similarities to a bronze chisel which was found in the domed tomb of Maklavun (Mihovilić, Teržan, Hänsel et al. 2001, page 64 upper figure). Although we cannot date the structure and the lowest cultural layers above the bedrock in Trench 3 absolutely, all the evidence show that the second settlement terrace of Monbrodo was occupied during the developed Early and Middle Bronze Ages.

A distinct horizon in Trench 3 is represented by the cultural layers SU 13 and SU 12 (Fig. 17). They mark a very pronounced change in the color of the soil and the composition of finds in comparison to the cultural layers SU 21, 19 and SU 16 below. While the latter showed a light brown color and a soft and rather loose consistency, the soil of SU 13 and 12 was very compact and of blackish brown color. SU 12 contained a large amount of sea snails and shells, clay daub, handmade pottery and small finds. SU 12 in Trench 3 resembles strongly SU 06 in the quadrants A1-4/B1-4 in Trench 1 (compare fig. 5), especially due to the massive occurrence of molluscs, sea snails and shells. In all likelihood SU 12 and SU 13 in the quadrants B1-2/D2 in Trench 3 represent the remains of an Iron Age occupation on the second settlement terrace. Undoubtedly younger is the today visible wall (wall No. 3) of the second settlement terrace SU 06 (Fig. 16-18). It is located on top of the cultural layer SU 12. So far, the dating of this wall remains unclear. It could easily belong to the Iron Age as well as the Roman period. The fact that the second settlement terrace was extensively used during the last centuries before Christ is indicated by the presence of wheel made pottery, especially by characteristic shards of amphorae and fine pottery with black-slip<sup>7</sup>.

The last horizon in Trench 3 distinguishes itself by a thick layer of mixed cultural deposits between the depth

<sup>7</sup> This is the same material as found in the acropolis; compare footnote 5.

kulturnih slojeva iznad matične stijene u području sonde 3, svi dokazi upućuju na to da je druga terasa gradine Monbrodo bila naseljena tijekom razvijenog ranog i srednjeg brončanog doba.

Drukčiji horizont pruža sonda 3 sa svojim kulturnim slojevima SJ 13 i SJ 12 (sl. 17). Oni označavaju vrlo istaknutu promjenu u boji tla i sastavu nalaza u odnosu na niže kulturne slojeve SJ 21, 19 i SJ 16. Dok su potonji slojevi svjetlosmeđe boje te meke, relativno rahle konzistencije, tlo u SJ 13 i 12 bilo je iznimno čvrsto i crnkasto-smeđe boje. U SJ 12 pronađeno je pregršt morskih puževa i školjki, ručno rađene keramike i sitnih predmeta. SJ 12 na području sonde 3 u svakom pogledu podsjeća na SJ 06 u kvadrantima A1-4/B1-4 na području sonde 1 (usporediti sa sl. 5), posebno zbog opsežne prisutnosti ljuštura mekušaca, morskih puževa i školjaka. Najvjerojatnije su SJ 12 i SJ 13 u kvadrantima B1-2/D2 na području sonde 3 ostaci iz željeznog doba iz naselja na drugoj terasi. Nesporno mlađi jest danas vidljivi zid (zid br. 3) druge terase naselja SJ 06 (sl. 16-18). On se nalazi povrh kulturnog sloja SJ 12. Zasad je starost toga zida još uvijek nejasna. Može se vremenski smjestiti kako u željezno, tako i u rimsko doba. Činjenica da je druga terasa naselja bila dosta korištena u zadnjim stoljećima prije Krista, potkrijepljena je prisutnošću keramike izrađene na lončarskom kolu, a potom posebno karakterističnim ulomcima amfora te finom keramikom s crnim premazom<sup>7</sup>.

Posljednji horizont na području sonde 3 razlikuje se po debelom sloju mješovitih kulturnih naslaga na dubini od 1 m ispod površine pa do površinskog sloja tla u kvadrantima B1-2/D1-2 (SJ 01, SJ 02, SJ 04, SJ 05 i vjerojatno SJ 07 te SJ 09). U kvadrantima E1-2/F1-2 debljina toga sloja iznosi tek 20-40 cm i on pokriva navodni stariji zid (SJ 03, SJ 14 s ispunama SJ 08, SJ 15 i SJ 20). Najvjerojatnije se radi o naslagama koje su se formirale stoljećima nakon završetka života u posljednjem naselju. Miješani keramički materijal (onaj ručno izrađen i onaj izrađen na lončarskom kolu) loše je očuvan, radi se o sitnim ulomcima jako erodirane površine pa je moguće da je pristigao s viših mjesta brda. Druga je mogućnost da je riječ o materijalu koji je namjerno upotrijebljen kao ispuna za prazninu između zida SJ 06 i strukture za koju se pretpostavlja da je stariji zid SJ 03/SJ 14 (usporediti sl. 17). To se moglo dogoditi čak u modernom dobu, kako bi se stvorio prostor za poljoprivredne djelatnosti.

of 1 m below the surface and the topsoil in the quadrants B1-2/D1-2 (SU 01, SU 02, SU 04, SU 05 and probably SU 07 and SU 09 as well). In the quadrants E1-2/F1-2 this layer is just 20-40 cm thick and covers the presumed older wall (SU 03, SU 14 with the fillings SU 08, SU 15 and SU 20). Most likely these are deposits which formed over the centuries after the end of the last occupation. The mixed pottery material (handmade and wheel made pottery) shows a very poor state of preservation; these are specifically small shards with heavily eroded surfaces, thus this might be material which was displaced from higher areas of the hill. Another possibility is that this material was intentionally placed there to close the gap between the wall SU 06 and the structure that is presumed to represent an older wall SU 03/SU 14 (compare Fig. 17). This could have taken place even in the modern era in order to create space for agricultural activities.

### Summary - conclusion

After three excavation campaigns carried out between 2016 and 2018, it can be stated that Monbrodo is one of the potential key-sites for researching and understanding the cultural and chronological development from the Early Bronze Age through the Iron Age until the time of the Roman occupation of Istria. Of special importance in terms of chronology is the extensive stratigraphic sequence which was detected at the acropolis. A similar situation is most likely also present on the second terrace of the settlement. However, the complex architectural development over approx. two millennia, the numerous modifications and (re-) building phases of the walls and other structures, cannot be fully interpreted so far. Fibulae of typo-chronological importance as well as amber (Müller, Čuka and Hellmuth Kramberger 2016, pl. 6, middle) from the (younger) Iron Age layers reflect the role of Monbrodo as a possible station in the trading network during the second half of the first millennium BC, in the time of the transition and before the Roman occupation of Istria.

The huge amount of animal bones and molluscs<sup>8</sup> found in Trench 1 and Trench 3 provides the basis for promising archaeozoological research. Of special interest in this regard might be the observation of drastic changes in the spectrum of the archaeozoological material: the Bronze Age cultural layers include huge amounts of

<sup>7</sup> Radi se o jednakom materijalu kao onom pronađenom na akropoli; usporediti fusnotu 5.

<sup>8</sup> Among the molluscs identified so far are: *Muricidae*, *Bolma rugosa*/ Rough star shell (*Turbinidae*), *Ostreidae*, *Turbinidae*, *Patellidae* and *Pinnidae*.



## Sažetak - zaključak

Općenito, nakon tri istraživačke kampanje u razdoblju između 2016. i 2018., možemo ustvrditi da je gradina Monbrodo jedno od potencijalno ključnih nalazišta za istraživanje i razumijevanje kulturno-kronološkog razdoblja od ranog brončanog doba preko željeznog doba pa sve do rimske okupacije Istre. Od posebne važnosti, u smislu kronologije, opsežan je stratigrafski redosljed utvrđen na akropoli. Slična je situacija najvjerojatnije prisutna i na drugoj terasi naselja. Međutim, složen arhitektonski razvoj u razdoblju od približno dva tisućljeća, brojne izmjene i faze (re)konstrukcije zidova i drugih struktura, ne mogu se zasad u potpunosti protumačiti. Fibule od tipološko-kronološke važnosti te jantar (Müller, Čuka i Hellmuth Kramberger 2016, T. 6, u sredini) u slojevima iz (mlađeg) željeznog doba odražavaju ulogu gradine Monbrodo kao moguće točke u trgovinskoj mreži tijekom druge polovine prvog tisućljeća prije Krista, u vrijeme tranzicije odnosno prije rimske okupacije Istre.

Ogromna količina životinjskih kosti i ljuštura mekušaca<sup>8</sup> pronađena u području sonde 1 i sonde 3 temelj je za intenzivna arheozoološka istraživanja. Od posebnog interesa u tom pogledu mogu biti drastične promjene koje su opažene u spektru arheozoološkog materijala. Naime, za razliku od kulturnih slojeva iz brončanog doba, koji sadrže ogromne količine kostiju sisavaca (posebno zuba konja), jedan drukčiji sloj sadrži velike količine morskih puževa i školjaka. To je opaženo u području sonde 1 na akropoli te sonde 3 na drugoj terasi.

Što se tiče Monbroda u sklopu sustava naselja oko obližnje gradine Monkodonja kao pretpostavljenog središnjeg naselja u razvijenom ranom i srednjem brončanom dobu, nova istraživanja otvorila su više pitanja nego što su dala odgovora. Iskopavanja su pokazala da je u brončanom i željeznom dobu Monbrodo bio naseljen i na akropoli i na drugoj terasi. To znači da se naselje protezalo površinom od oko 180 x 170 m, što znači da je nedvojbeno bilo manje od Monkodonje. Društvenu strukturu naselja nije bilo moguće utvrditi zbog ograničene veličine iskopa. Premda je interesantna prisutnost malih kantarosa kao mogućeg pokazatelja društvenog statusa na području akropole, najprije je potrebno obraditi cijeli keramički materijal da bi se mogao steći uvid u situaciju naselja na drugoj terasi. Općenito, može se reći da spektar keramike iz gradine Monbrodo ne ukazuje ni na kakve značajne razlike

bones from mammals (especially horse teeth). This stands in contrast to a distinct Iron Age layer which contains large amounts of sea-snails and shells. This observation was made for Trench 1 on the acropolis as well as for Trench 3 on the second terrace.

As for the role of Monbrodo within the settlement system around the nearby hillfort of Monkodonja as presumed central settlement in the developed Early and Middle Bronze Ages, the new excavations raised more questions than they could answer. The excavations have demonstrated that Monbrodo was occupied in the Bronze and Iron Age at the acropolis and on the second terrace. This means that the settlement extended over an area of approx. 180 x 170 m, which means it was undoubtedly of smaller size than Monkodonja. A social division within the settlement could not be determined due to the limited scale of the excavation trenches. Nevertheless, very interesting is the presence of small kantharoi that might be possible indicators of high social status within the acropolis. However, further examinations of the entire ceramic material must be carried out in order to fully comprehend the situation on the second terrace. In general, it can be stated that the spectrum of pottery from Monbrodo does not show any significant differences in comparison to the pottery from Monkodonja. The nature of the relationship between these two, at least partly simultaneously occupied sites, remains at the moment still unclear.

## Catalogue (Tables 1-3)

### Table 1

#### 1. Trench 1, Quadrant E1, SU 01

Fragment of a fibula with three knots on the bow, bronze, needle not preserved. The maximum length is 2.9 cm, the maximum height is 1.8 cm.

#### 2. Trench 1, Quadrant A3, SU 06

Middle La Tène fibula (Nesactium type), bronze, ornamented with fine incised lines, needle not preserved. The maximum length is 5.5 cm, the maximum height is 1.9 cm.

#### 3. Trench 1, Quadrant A3, SU 06

Certosa fibula, bronze, needle not preserved. The maximum length is 6.0 cm, the maximum height is 1.8 cm.

#### 4. Trench 1, Quadrant A3, SU 06

Needle-fragment of a fibula, bronze. The maximum length is 3.3 cm, the maximum height is 0.8 cm.

<sup>8</sup> Među mekušcima dosad su utvrđeni: *Muricidae*, *Bolma rugosa*/ *Turban* (*Turbinidae*), *Ostreidae*, *Turbinidae*, *Patellidae* i *Pinnidae*.

u odnosu na keramiku iz Monkodonje. Kakav je bio odnos između ta dva, barem u određenom razdoblju istovremeno nastanjena mjesta, još nije jasno.

## Katalog (tablice 1-3)

### Tablica 1

#### 1. Sonda 1, kvadrant E1, SU 01

Ulomak brončane fibule s tri čvora na luku, bez igle. Maksimalna debljina 2,9 cm, maksimalna visina 1,8 cm.

#### 2. Sonda 1, kvadrant A3, SU 06

Fibula (tip Nezakcij) iz srednjeg latenskog razdoblja, brončana, ukrašena tankim urezanim linijama, bez igle. Maksimalna debljina 5,5 cm, maksimalna visina 1,9 cm.

#### 3. Sonda 1, kvadrant A3, SU 06

Fibula *Certosa*, brončana, bez igle. Maksimalna debljina 6,0 cm, maksimalna visina 1,8 cm.

#### 4. Sonda 1, kvadrant A3, SU 06

Ulomak brončane igle s fibule. Maksimalna debljina 3,3 cm, maksimalna visina 0,8 cm.

#### 5. Sonda 1, kvadranti E1, SU 01/SU 06

Prsten, brončani, puknut i izobličen, ukrašen dijagonalnim urezima. Maksimalna debljina 3,4 cm, maksimalna visina 2,0 cm.

#### 6. Sonda 1, kvadrant A3, SU 06

Astragal, koštani, perforirani. Maksimalna dužina 3,1 cm, maksimalna širina 2,1 cm.

#### 7. Sonda 1, kvadrant C3, SU 06

Astragal, koštani, perforirani. Maksimalna dužina 3,4 cm, maksimalna širina 1,7 cm.

#### 8. Sonda 1, kvadranti A3, SU 06/SU 20

Igla za ribarske mreže, koštana, perforirana. Maksimalna dužina 5,0 cm, maksimalna širina 1,3 cm.

### Tablica 2

#### 1. Sonda 1, kvadrant F2, SU 32

Djelomično očuvan keramički vrčić ili kantaros, ručno izrađen. Sjajne unutarnje i vanjske površine stijenke, crn izvana i iznutra, tamnog presjeka. Tvrda keramika fine poroznosti. Glina MA a (Hellmuth Kramberger, 2017, sl. 24, 31). Promjer ruba približno 5,2 cm, maksimalna debljina 0,5 cm, maksimalna visina 5,1 cm.

#### 2. Sonda 1, kvadrant E2, SU 25

Djelomično očuvan keramički pehar s ulomkom ručke, ručno izrađen. Sjajne unutarnje i vanjske površine stijenke, crn izvana i iznutra, tamnog presjeka. Tvrda

#### 5. Trench 1, Quadrant E1, SU 01/SU 06

Ring (finger ring), bronze, broken and deformed, ornamented with diagonal grooves. The maximum length is 3.4 cm, the maximum height is 2.0 cm.

#### 6. Trench 1, Quadrant A3, SU 06

Astragal, bone, perforated. The maximum length is 3.1 cm, the maximum width is 2.1 cm.

#### 7. Trench 1, Quadrant C3, SU 06

Astragal, bone, perforated. The maximum length is 3.4 cm, the maximum width is 1.7 cm.

#### 8. Trench 1, Quadrant A3, SU 06/SU 20

Needle for fishing net, bone, perforated. The maximum length is 5.0 cm, the maximum width is 1.3 cm.

### Table 2

#### 1. Trench 1, Quadrant F2, SU 32

Partially preserved small jug or kantharos, hand-made pottery. Surface on the internal and external side burnished, color on the internal and external surface black, color in the cross-section dark. Porosity is fine, the pottery is hard. Clay fabric MA a (Hellmuth Kramberger 2017, Fig. 24, 31). The diameter of the rim is app. 5.2 cm, the maximum thickness is 0.5 cm, the maximum height is 5.1 cm.

#### 2. Trench 1, Quadrant E2, SU 25

Partly preserved large cup with fragmented handle, hand-made pottery. Surface on the internal and external side burnished, color on the internal and external surface black, color in the cross-section dark. Porosity is very fine, the pottery is hard. Clay fabric FA (Hellmuth Kramberger 2017, Fig. 23, 31). On the internal surface traces of white residue can be recognized. The diameter of the rim is app. 11.2 cm, the maximum thickness is 0.8 cm, the maximum height is 8.1 cm.

#### 3. Trench 1, Quadrant F1, SU 32

Bottom-fragment of a bowl, hand-made pottery, ornamented with concentric grooves. Surface on the internal and external side polished, color on the internal and external surface black, color in the cross-section dark. Porosity is fine, the pottery is hard. Clay fabric MA a (Hellmuth Kramberger 2017, Fig. 24, 31). The diameter of the bottom is app. 7.8 cm, the maximum thickness is 1.6 cm, the maximum height is 2.2 cm.

#### 4. Trench 1, Quadrant F1, SU 32

Bottom-fragment of a bowl, hand-made pottery, ornamented with incised bows and imprinted dots.

keramika vrlo fine poroznosti. Glina FA (Hellmuth Kramberger, 2017, sl. 23, 31). Na unutarnjoj površini uočljivi su tragovi bijelog taloga. Promjer ruba približno 11,2 cm, maksimalna debljina 0,8 cm, maksimalna visina 8,1 cm.

### 3. Sonda 1, kvadrant F1, SU 32

Ulomak dna ručno izrađene keramičke posude, ukrašen koncentričnim urezima. Zaglađene unutarnje i vanjske površine stijenke, crne boje izvana i iznutra, tamnog presjeka. Tvrdi keramika fine poroznosti. Glina MA a (Hellmuth Kramberger, 2017, sl. 24, 31). Promjer dna približno 7,8 cm, maksimalna debljina 1,6 cm, maksimalna visina 2,2 cm.

### 4. Sonda 1, kvadrant F1, SU 32

Ulomak dna ručno izrađene keramičke posude, ukrašen urezanim lukovima i utisnutim točkama. Zaglađene unutarnje i vanjske površine stijenke, crne boje izvana i iznutra, tamnog presjeka. Vrlo tvrda keramika vrlo fine poroznosti. Glina FA (Hellmuth Kramberger, 2017, sl. 23, 31). Promjer dna približno 8,0 cm, maksimalna debljina 1,2 cm, maksimalna visina 3,8 cm.

### 5. Sonda 1, kvadrant F1, SU 32

Ulomak ruba ručno izrađenog keramičkog vrča u obliku amfore, s drškom oblika slova X i horizontalnim plastičnim rebrom. Zaglađena vanjska površina stijenke, unutrašnja površina neočuvana zbog erozije; crne boje izvana i iznutra, tamnog presjeka. Tvrdi keramika fine poroznosti. Glina MA a (Hellmuth Kramberger, 2017, sl. 24, 31). Promjer ruba približno 21,0 cm, maksimalna debljina 2,0 cm, maksimalna visina 5,5 cm.

## Tablica 3

### 1. Sonda 1, kvadranti B3/B4, SU 26/SU 30

Ulomci ruba ručno izrađenog keramičkog vrča s konusnim vratom i horizontalnim plastičnim rebrom. Vanjska i unutarnja površina stijenke neočuvane zbog erozije, obje crvenkasto-narančaste boje, tamnog presjeka. Vrlo tvrda keramika grube poroznosti. Glina MC b (Hellmuth Kramberger, 2017, sl. 24, 31). Maksimalna debljina 1,5 cm, maksimalna visina 10,4 cm.

### 2. Sonda 1, kvadrant F1, SU 32

Ulomci ruba ručno izrađenog keramičkog vrča s plastičnim lučnim rebrom, bradavicama i ručkama ukrašenim utiskivanjem prsta. Vanjska površina stijenke ukrašena tehnikom barbotina, unutarnja površina zaglađena i loše očuvana zbog erozije; unutarnja i vanjska površina crne boje s crvenkasto-narančastim mrljama na vanjskoj površini; tamnog presjeka. Vrlo tvrda

Surface on the internal and external side polished, color on the internal and external surface black, color in the cross-section dark. Porosity is very fine, the pottery is very hard. Clay fabric FA (Hellmuth Kramberger 2017, Fig. 23, 31). The diameter of the bottom is app. 8.0 cm, the maximum thickness is 1.2 cm, the maximum height is 3.8 cm.

### 5. Trench 1, Quadrant F1, SU 32

Rim-fragment of an amphora-shaped jar with x-shaped handle and horizontal plastic ledge, hand-made pottery. Surface on the external side polished, on the internal side due to erosion not preserved, color on the internal and external surface black, color in the cross-section dark. Porosity is fine, the pottery is hard. Clay fabric MA a (Hellmuth Kramberger 2017, Fig. 24, 31). The diameter of the rim is app. 21.0 cm, the maximum thickness is 2.0 cm, the maximum height is 5.5 cm.

## Table 3

### 1. Trench 1, Quadrants B3/B4, SU 26/SU 30

Rim-fragments of a jar with conical neck and horizontal plastic ledge, hand-made pottery. Surface on the internal and external side due to erosion not preserved, color on the internal and external surface reddish-orange, color in the cross-section dark. Porosity is coarse, the pottery is very hard. Clay fabric MC b (Hellmuth Kramberger 2017, Fig. 24, 31). The maximum thickness is 1.5 cm, the maximum height is 10.4 cm.

### 2. Trench 1, Quadrant F1, SU 32

Rim-fragments of a jar with arched plastic ledges, knots and grips with finger-imprint, hand-made pottery. Surface on the external side ornamented with barbotine, on the internal side smoothed/poorly preserved due to erosion, color on the internal and external surface black, on the external surface with reddish-orange patches, color in the cross-section black. Porosity is very fine, the pottery is very hard. Clay fabric MA a (Hellmuth Kramberger 2017, Fig. 24, 31). The maximum thickness is 0.8 cm, the maximum height is 7.8 cm.

### 3. Trench 1, Quadrant F1, SU 32

Rim-fragment, completely preserved bottom and wall-shards with triangular handle of an amphora-shaped jar with x-shaped handle, hand-made pottery. Surface on the external side polished, on the internal side burnished with tool-traces, color on the internal and external surface brown, color in the cross-section black. Porosity is fine, the pottery is very hard. Clay fabric MA a (Hellmuth Kramberger 2017, Fig. 24, 31). The diameter of the rim

keramika vrlo fine poroznosti. Glina MA a (Hellmuth Kramberger, 2017, sl. 24, 31). Maksimalna debljina 0,8 cm, maksimalna visina 7,8 cm.

is app. 20.4 cm, the maximum thickness is 0.9 cm, the reconstructed height is 33.5 cm.

### **3. Sonda 1, kvadrant F1, SU 32**

Ulomak ruba, posve očuvano dno i ulomak stijenske s trokutastom ručkom ručno izrađenog keramičkog vrča u obliku amfore, s ručkama oblika slova X. Zaglađena vanjska površina, sjajna unutarnja površina s tragovima alata; smeđe boje izvana i iznutra; tamnog presjeka. Vrlo tvrda keramika fine poroznosti. Glina MA a (Hellmuth Kramberger, 2017, sl. 24, 31). Promjer ruba približno 20,4 cm, maksimalna debljina 0,9 cm, rekonstruirana visina 33,5 cm.

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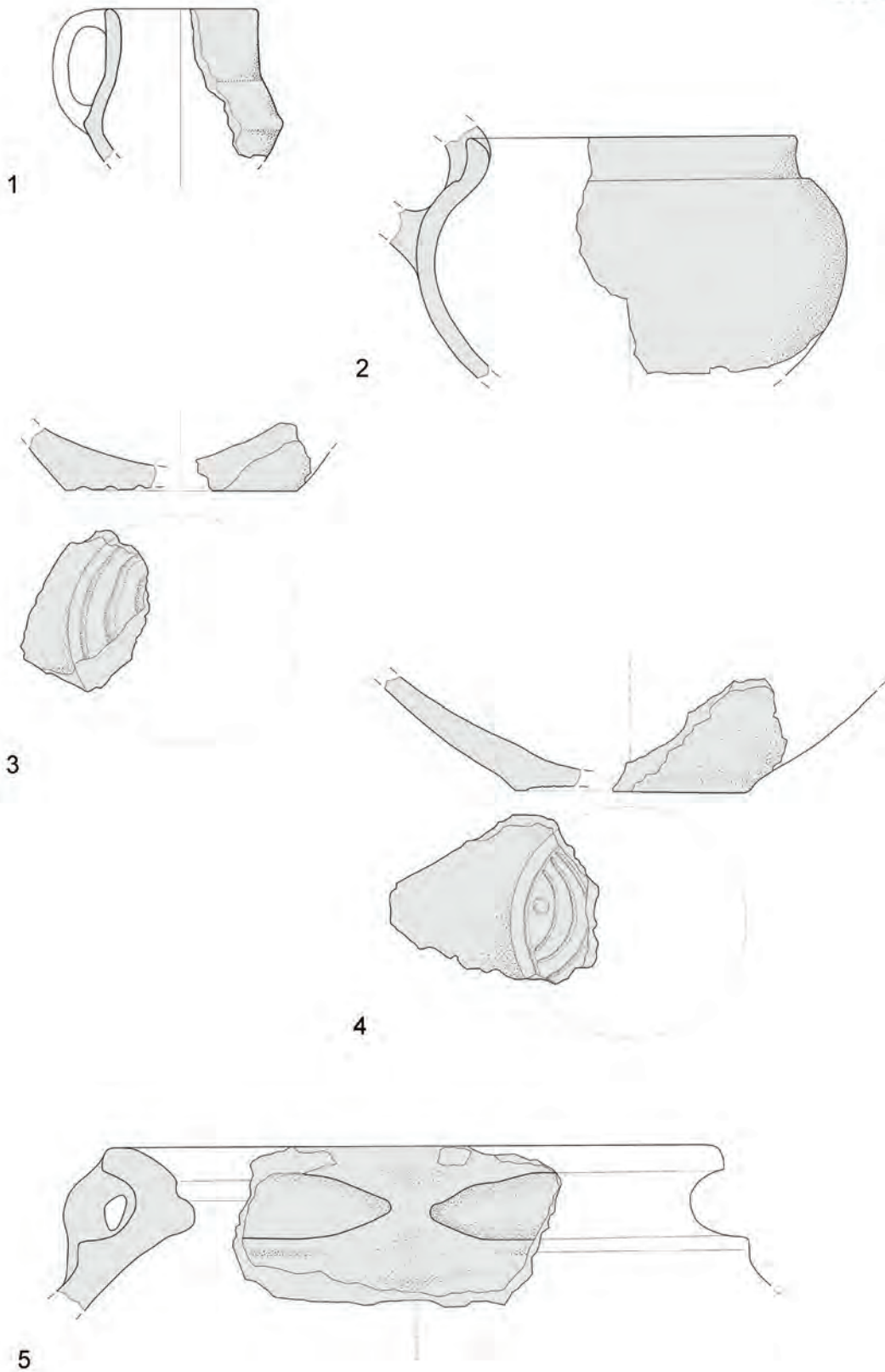
Napomena: Autorica crteža i tabli je A. Hellmuth Kramberger.

Note: The author of drawings and tables is A. Hellmuth Kramberger.



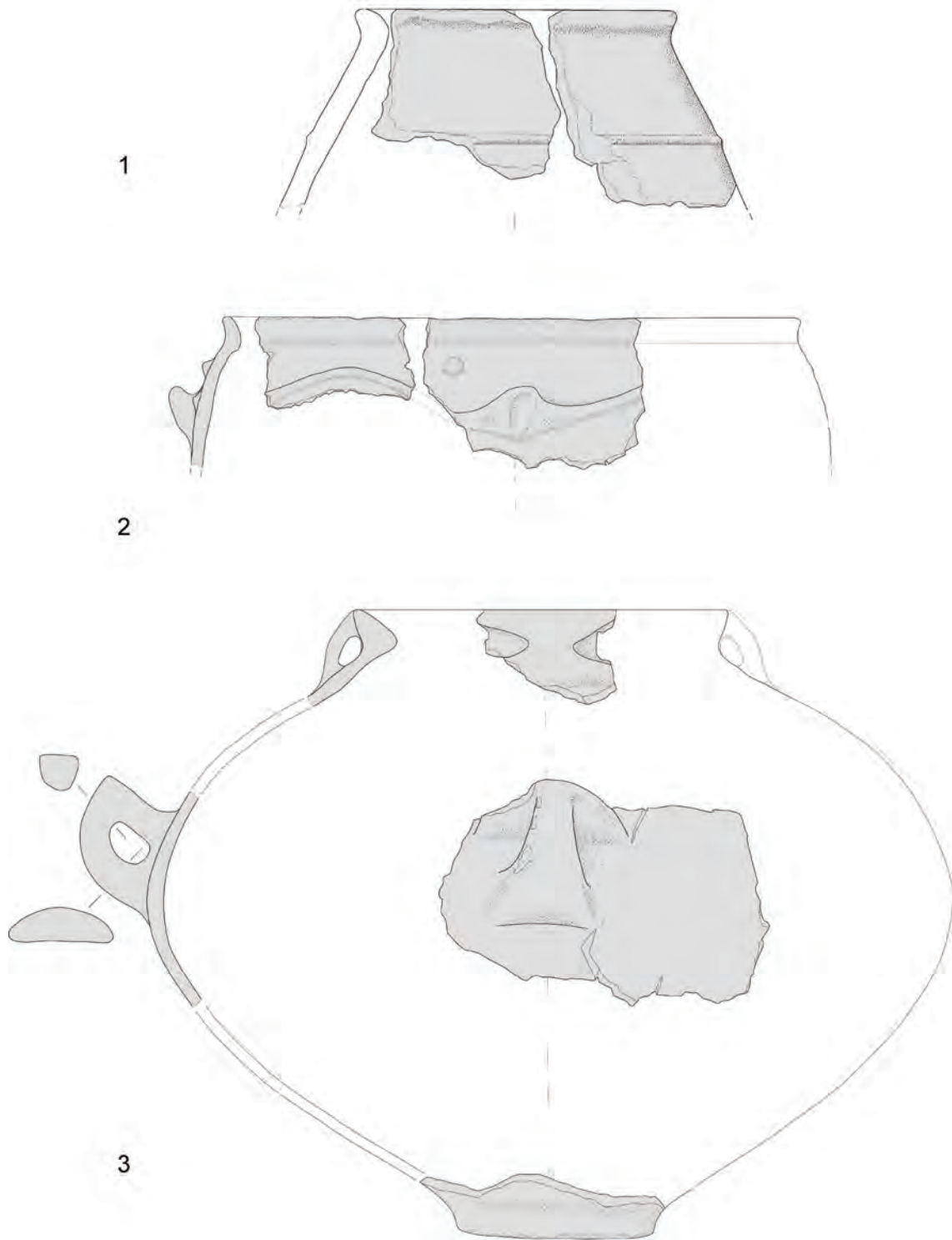
T. I. Monbrodo sonda 1 / Monbrodo Trench 1 - 1: SJ/SU 001; 2: SJ/SU 006; 3: SJ/SU 006; 4: SJ/SU 006; 5: SJ/SU 001/006; 6: SJ/SU 006; 7: SJ/SU 006; 8: SJ/SU 006/020. Mjerilo / scale: 1:1.

**T. 2**



T. II. Monbrodo sonda 1 / Monbrodo Trench 1 - 1: SJ/SU 032; 2: SJ/SU 025; 3: SJ/SU 032; 4: SJ/SU 032; 5: SJ/SU 032. Mjerilo 50% izvorne veličine / Scale 50% of original size.

**T. 3**



T. III. Monbrodo sonda 1 / Monbrodo Trench 1 - 1: SJ/SU 026/030; 2: SJ/SU 032; 3: SJ/SU 032. Mjerilo 33% izvorne veličine / Scale 33% of original size.

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