

NASELJE KULTURE ZAPADNOTRANS DANUBIJSKE LINEARNOTRAKASTE KERAMIKE¹ U DONJEM MEĐIMURJU

A SETTLEMENT OF THE WESTERN TRANS DANUBIAN LINEAR POTTERY CULTURE¹ IN DONJE MEĐIMURJE

Marijana Krmpotić
Hrvatski restauratorski zavod
Nike Grškovića 23
HR – 10000 Zagreb
mkrmpotic@hrz.hr

Marijana Krmpotić
Croatian Conservation Institute
Nike Grškovića 23
HR – 10000 Zagreb
mkrmpotic@hrz.hr

Dalibor Branković
Bože Milanovića 20
HR – 51553 Mali Lošinj
dalibrank@gmail.com

Dalibor Branković
Bože Milanovića 20
HR – 51553 Mali Lošinj
dalibrank@gmail.com

UDK / UDC: 903.4(497.524)»634»

10.52064/Vamz.55.2.2

Prethodno priopćenje / Preliminary report

Probna arheološka istraživanja nalazišta Vrti I u Domašincu, u Donjem Međimurju, otkrila su ostatke neolitičkog naselja kulture zapadnotransdanubijske linearnotrakaste keramike. Naselje se smjestilo na blagoj padini u blizini rijeke Trnave, na tlu pogodnom za bavljenje poljoprivredom. Duge, nadzemne kuće, uobičajene u kulturi linearnotrakaste keramike, nisu pouzdano potvrđene s obzirom na relativno malu istraženu površinu naselja od 63 m². Međutim, pronađene rupe od stupova, koje u nekim slučajevima tvore pravilne nizove smjera sjeveroistok – jugozapad, ukazuju na postojanje nadzemnih objekata i njihovu vjerojatnu orijentaciju. Ulomci keramičkog posuđa, pronađeni na naselju, pokazuju karakteristike kesteljske grupe koja se razvila početkom mlađe faze kulture zapadnotransdanubijske linearnotrakaste keramike. Kameni nalazi, iako relativno malobrojni, ukazuju na mogućnost razmjene dobara s naseljima oko gorja Bakony, odakle je vjerojatno nabavljan szentgalski crveni radiolarit, te onima oko zapadnih Karpata, gdje su najbliža ležišta opsidijana. Pretpostavlja se da je neolitičko naselje u Domašincu koristilo istu mrežu dobave sirovina kao i naselja zapadne Transdanubije. Naselje u Domašincu za sada je jedino objavljeno nalazište kesteljske grupe južno od Mure te također jedino u literaturi poznato naselje spomenute grupe na području Hrvatske.

Ključne riječi:

neolitik, naselje, zapadnotransdanubijska linearnotrakasta keramika, kesteljska grupa, Međimurje

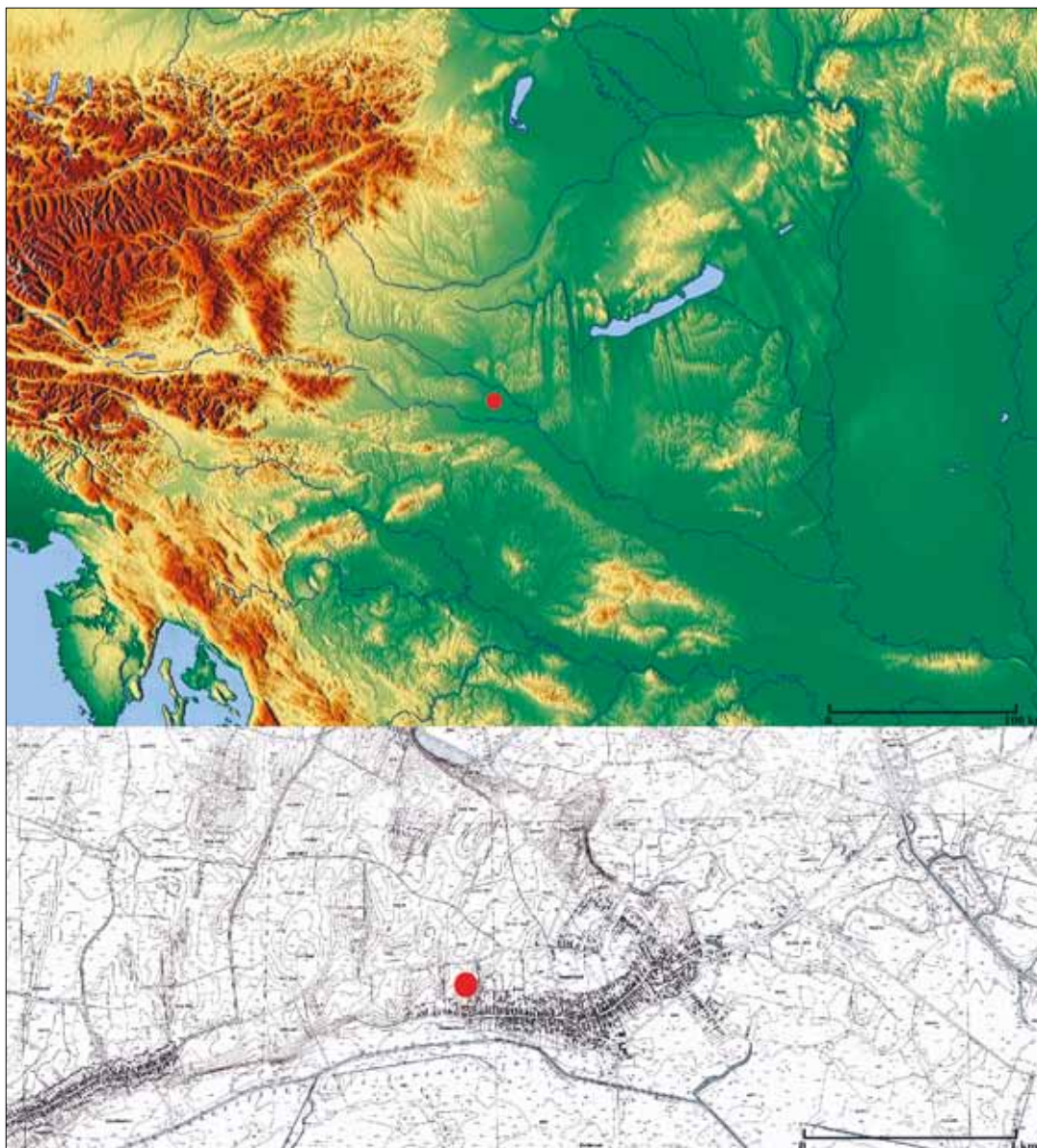
Trial archaeological excavations at the site of Vrti I in Domašinec, in Donje Međimurje, have revealed the remains of a Neolithic settlement of the Western Transdanubian Linear Pottery culture. The settlement is located on a gentle slope near the River Trnava, on land suitable for agriculture. Long above-ground houses, common in the Linear Pottery culture, have not been reliably confirmed, given the relatively small excavated area of the settlement, at 63 m². However, postholes have been found that sometimes form regular rows in a NE–SW direction, indicating the existence of above-ground structures and their probable orientation. Pottery fragments found at the site have characteristics of the Keszthely group, which developed at the beginning of the later phase of the Western Transdanubian Linear Pottery culture. Stone finds, although relatively scarce, indicate the possibility of good exchange with settlements around the Bakony Mountains, from where the Szentgal red radiolarite was probably procured, and with those around the Western Carpathians, where the nearest obsidian deposits are situated. It is possible to assume that the Neolithic settlement in Domašinec used the same raw-material supply network as the settlements of western Transdanubia. For the time being, the settlement in Domašinec is the only published site of the Keszthely group south of the River Mura, and also the only settlement of this group published in Croatia.

Keywords:

Neolithic, settlement, Western Transdanubian Linear Pottery, Keszthely group, Međimurje

KARTA 1. Geografski položaj nalazišta Domašinec - Vrti I (relefnja karta: <https://maps-for-free.com/>; HOK 1:5000: Geoport, DGU; obradila M. Krmpotić).

MAP 1. Geographical position of the site of Domašinec - Vrti I (relief map: <https://maps-for-free.com/>; HOK 1:5000: Geoport, DGU; edited by M. Krmpotić).



Uvod

Prilikom probnih arheoloških istraživanja na području Općine Domašinec,² smještene na prostoru Donjeg Međimurja, pronađeni su ostaci naselja kulture zapadnotransdanubijske linearnotrakaste keramike. Ostaci su naselja evidentirani na položaju Vrti I, smještenom na zapadnom dijelu današnjeg naselja

Introduction

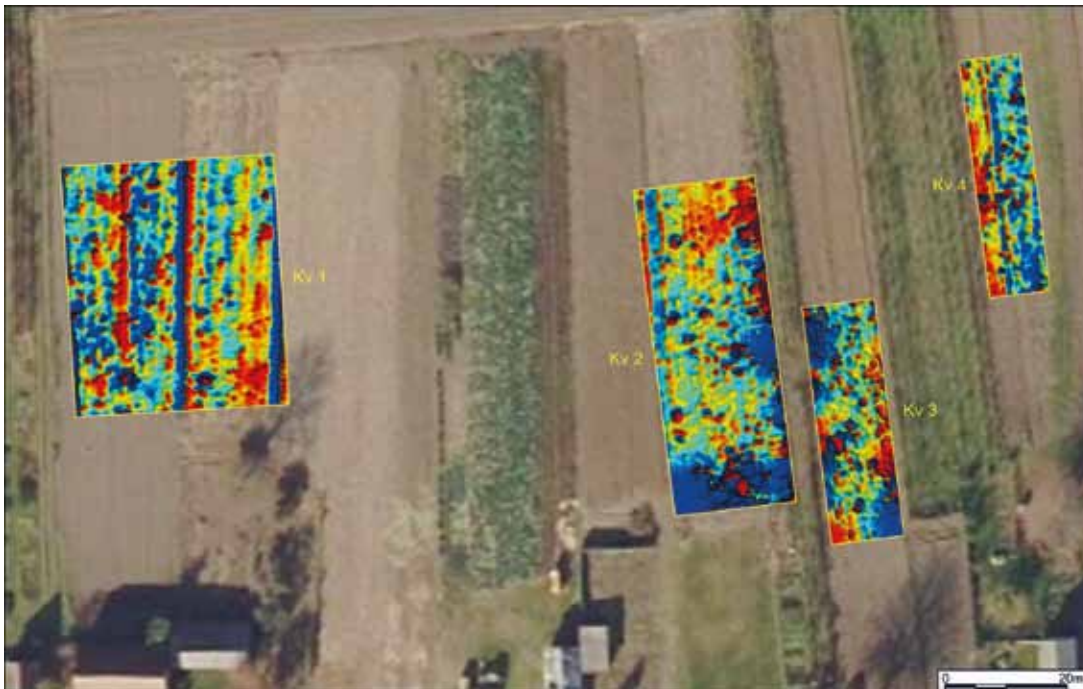
During trial archaeological excavations in the area of the Domašinec Municipality,² located in Donje Međimurje, remains were found of a settlement of the Western Transdanubian Linear Pottery culture. The remains were discovered at the Vrti I site, situated in the western part of the present-day settlement

1 U radu se koristi termin „kultura zapadnotransdanubijske linearnotrakaste keramike“ radi naglašavanja različitosti u odnosu na prostor istočne Transdanubije, pri čemu se termin „kultura“ upotrebljava jer se ne podrazumijevaju samo različitosti u keramografiji već i u drugim segmentima života (Bánffy 2004, 353–358). Termin se koristi i radi razlikovanja od korenovske kulture u sjevernoj Hrvatskoj, pripisane krugu linearnotrakaste keramike (Težak-Gregl 1993, 7–9, 38–43, 46–47).

2 Probna arheološka istraživanja na području Općine Domašinec proveo je Odjel za kopnenu arheologiju Hrvatskog restauratorskog zavoda (voditeljica istraživanja: dr. sc. Marijana Krmpotić). Istraživanja je financiralo Ministarstvo kulture i medija, a provedena su s ciljem određivanja granica i karaktera pojedinih arheoloških nalazišta na području općine kako bi se ona mogla adekvatno pravno zaštititi.

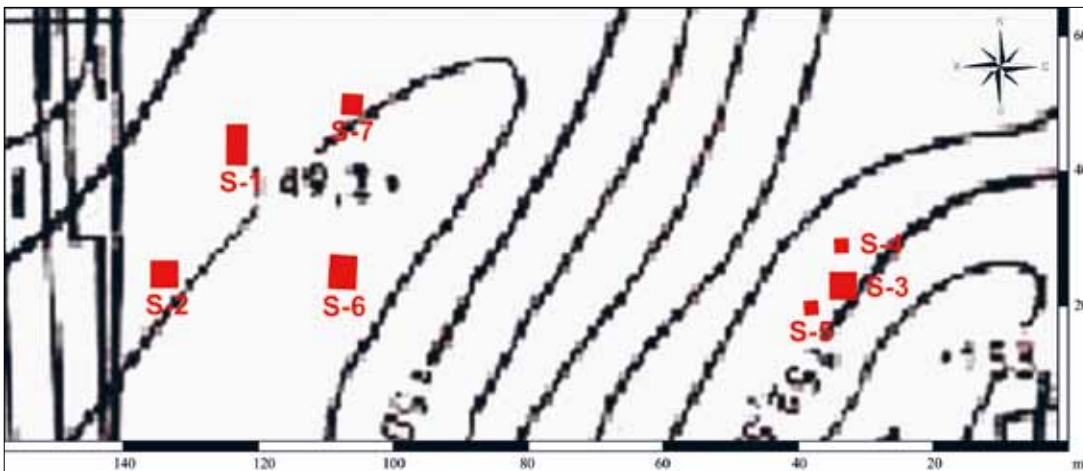
1 In the paper, the term ‘Western Transdanubian Linear Pottery culture’ is used to emphasize diversity in relation to the area of Eastern Transdanubia, while the term ‘culture’ is used because it implies differences not only in pottery production, but also in other segments of life (Bánffy 2004, 353–358). The term is also used to distinguish it from the Korenovo culture in northern Croatia, also attributed to the Linear Pottery culture (Težak-Gregl 1993, 7–9, 38–43, 46–47).

2 Trial archaeological excavations in the area of the Domašinec Municipality were conducted by the Croatian Conservation Institute, Department for Archaeology (head of research: Marijana Krmpotić, PhD). The excavations were financed by the Ministry of Culture and the Media. The excavations were carried out with the aim of determining the boundaries and character of the archaeological sites, so that they could be adequately legally protected.



SLIKA 1. Rezultati geomagnetskog istraživanja (izrada Gearh d.o.o., Maribor).

FIGURE 1. Results of the geomagnetic survey (made by Gearh d.o.o., Maribor).



SLIKA 2. Plan probnih sondi (Geoportal, DGU; obradila M. Krmpotić).

FIGURE 2. Plan of the trial trenches (Geoportal, DGU; edited by M. Krmpotić).

Domašinec. Nalazište leži pri dnu blago povišene grede koja se proteže u smjeru zapad – istok, južno uz današnju prometnicu koja Domašinec spaja sa susjednim Gardinovcem. Sjeverni je dio nalazišta pod oranicama, dok se na južnom razvilo današnje naselje (karta 1). Južno od nalazišta teče potok Crni jarak, koji nešto istočnije utječe u rječicu Trnavu.

Terenskim obilaskom, provedenim u kasnu jesen 2016. godine, na čitavom su neizgrađenom dijelu grede evidentirani površinski nalazi keramike iz razdoblja prapovijesti, srednjeg i novog vijeka. S ovog položaja potječu i slučajni nalazi grobova latenske kulture, pronađeni prilikom iskopa za temelje kuće i danas pohranjeni u Muzeju Međimurja u Čakovcu. Na dijelu grede, gdje su prema kazivanju lokalnog stanovništva bili pronađeni mladeželjeznodobni grobovi, 2017. je godine provedeno geofizičko istraživanje magnetskom metodom (sl. 1).³ Istraživanje je

of Domašinec. The site is situated at the bottom of the gentle slope of an elevated ridge that extends in an E-W direction, south of the road between Domašinec and Gardinovec. In the northern part of the site there are ploughed fields, while in the southern part the present-day settlement has developed (Map 1). South of the site there is a stream, the Crni jarak, which flows into the River Trnava slightly to the east.

During a field survey in the late autumn of 2016, stray pottery finds from prehistory, the Middle Ages and the Modern Age were found on the entire unbuilt part of the ridge. During the digging for the foundations of a house, graves of the La Tène culture were found at the site, and are today stored in the Museum of Međimurje, Čakovec. In 2017, a magnetic prospection was conducted on the part of the ridge where the Late Iron Age graves were discovered (Fig. 1).³ This geophysical survey was oriented

³ Geofizičko je istraživanje provela tvrtka Gearh d.o.o. iz Maribora (Mušič, Medarić, Marijević 2017).

³ Geophysical prospection was conducted by Gearh, Maribor (Mušič, Medarić, Marijević 2017).

bilo orijentirano na najviši dio grede i na blagu padinu zapadno od njega. Prema rezultatima geofizičkih istraživanja i s obzirom na dostupnost katastarskih čestica za istraživanje, u probnim arheološkim iskopavanjima provedenima 2018. godine postavljeno je sedam sondi ukupne površine 87 m² (sl. 2). Dok su sonde postavljene na najvišem dijelu grede (sonde 3, 4 i 5) bile potpuno sterilne, u onima smještenima pri dnu blage padine (sonde 1, 2, 6 i 7) otkriveni su ostaci naselja kulture zapadnotransdanubijske linearnotrakaste keramike. Unutar spomenute četiri sonde ukupno je istražena površina naselja od 63 m².

Ostaci naselja

Ostaci neolitičkog naselja evidentirani su u svim sondama smještenima pri dnu iznimno blage padine, na zapadnom dijelu geomagnetski istražene površine. Sonde su postavljene na položajima na kojima su očitane jače magnetske anomalije. Riječ je o sondama 1 (6 x 3 m), 2 (4 x 4 m), 6 (5 x 4 m) i 7 (3 x 3 m), raspršenima na arealu od oko 700 m² (sl. 3). Zapadnije smještene sonde (sonde 1 i 2) ležale su na nadmorskoj visini od 149,25 m, dok su se one smještene istočnije (sonde 6 i 7) nalazile na nešto nižem terenu, nadmorske visine 149,00 m. U svim je sondama stratigrafija bila identična: ispod površinskog sloja oranja, prosječne debljine 0,4 m, nalazila se žučkasta pjeskovita sterilna glinasta zemlja u koju su bili ukopani objekti. U sloju oranja pronađeni su sporadični arheološki nalazi, poput ulomaka keramike (T. 1: 1–8) i kamene radne plohe (T. 5: 39), koji svjedoče da su antropogenim i prirodnim procesima erozije uništeni hodni sloj i gornji dijelovi zapuna objekata. Na cijelom nalazištu nije pronađena niti jedna kost, što bi mogla biti posljedica kiselosti tla.⁴ S druge strane, posebice s obzirom na relativno malobrojne druge pokretne nalaza, ova bi se situacija mogla protumačiti činjenicom da su nalazi keramike i životinjskih kostiju slabo zastupljeni u ovom kulturnom krugu.⁵ Malobrojnost kamenih artefakata i potpuni nedostatak kostiju također bi se mogao objasniti time da probnim sondama nisu bili obuhvaćeni ukopi u koje su odbacivane životinjske kosti, odnosno otpad nastao pri izradi kamenih alatki. Naime, studija distribucije nalaza u jamama ukopanim uz zidove dugih kuća na pojedinim naseljima kulture linearnotrakaste keramike na prostoru današnje Francuske pokazala je da je svaka kuća imala tendenciju odbacivanja životinjskih kostiju samo s jedne strane kuće, ili čak isključivo s jedne strane, a sličan je princip primijećen i za odlaganje otpada nastalog pri izradi kamenih alatki.⁶

Na istraženom dijelu nalazišta ustanovljeni su veći ukopani objekti, jame manjih do srednjih dimenzija i rupe od stupova. S obzirom na to da su istraživanja bila probnog karaktera, provedena s ciljem utvrđivanja granica, stratigrafije i karaktera nalazišta, otvoreno je više manjih sondi pa na ovom stupnju istraženosti nije moguće raspoznati raster naselja. Jedan veći objekt (S) 003/004) djelomično je istražen u sondi 1 (sl. 4). Istra-

towards the highest part of the ridge and the slight slope west of it. According to the results of the geophysical prospection, and considering the availability of the cadastral plots for excavation, in 2018, seven trial trenches were excavated with total area of 87 m² (Fig. 2). While trenches located on the highest part of the ridge (probes 3, 4 and 5) were without any finds, in those situated at the bottom of the gentle slope (probes 1, 2, 6 and 7) the remains of a settlement of the Western Transdanubian Linear Pottery culture were found. The total area of the settlement excavated within these four trenches is 63 m².

Remains of the settlement

Remains of a Neolithic settlement have been found in all the trenches located at the bottom of a very gentle slope, in the western part of the geomagnetically-surveyed area. The trenches were positioned in accordance with the stronger magnetic anomalies. These are trenches 1 (6 x 3 m), 2 (4 x 4 m), 6 (5 x 4 m) and 7 (3 x 3 m), scattered over an area of about 700 m² (Fig. 3). The western trenches (1 and 2) were situated at an altitude of 149.25 m, while the eastern ones (6 and 7) were located on slightly lower terrain, 149.00 m above sea level. In all of the trenches, the stratigraphy was identical: a ploughing layer with an average thickness of 0.4 m, below which there was yellow sandy clay without any finds, into which the archaeological features were dug. Sporadic archaeological finds, such as pottery fragments (Pl. 1: 1–8) and a stone worktop fragment (Pl. 5: 39), were found in the ploughing layer, suggesting that the cultural layer and the upper parts of the fills have been destroyed by anthropogenic and natural processes of erosion. No bones were found at the site, which could be the result of the acidity of the soil.⁴ On the other hand, especially considering the relatively rare other mobile finds, this situation could be interpreted by the fact that pottery fragments and animal bones are poorly represented in this cultural circle.⁵ The small number of stone artefacts and the complete lack of bones could also be explained by the hypothesis that the pits in which animal bones and waste created during the manufacture of stone tools were discarded were not found in the trenches. Study of the distribution of finds in pits dug next to the walls of long houses in certain settlements of the Linear Pottery culture in France has shown that each house had a tendency to discard animal bones only on one side of the house, or even exclusively on the one side, and a similar principle was observed for disposal waste generated during the manufacture of stone tools.⁶

Larger features, pits of small to medium dimensions, and post-holes were found in the excavated part of the site. Given that the research was of a trial nature, with the aim of determining the boundaries, stratigraphy and character of the site, several smaller trenches were opened, and therefore, at this level of research, it is not possible to recognize the grid of the settlement.

4 Nalazište leži na lesiviranom, kombiniranom pseudoglejnom i smeđem eutričnom tlu. Lesivirano je tlo, posebice u površinskom horizontu, uglavnom kiselo, dok smeđe eutrično tlo može biti kiselo do jako kiselo (Husnjak 2014, 124–125, 156, 158, 222–223, sl. 43, sl. 57, sl. 91).

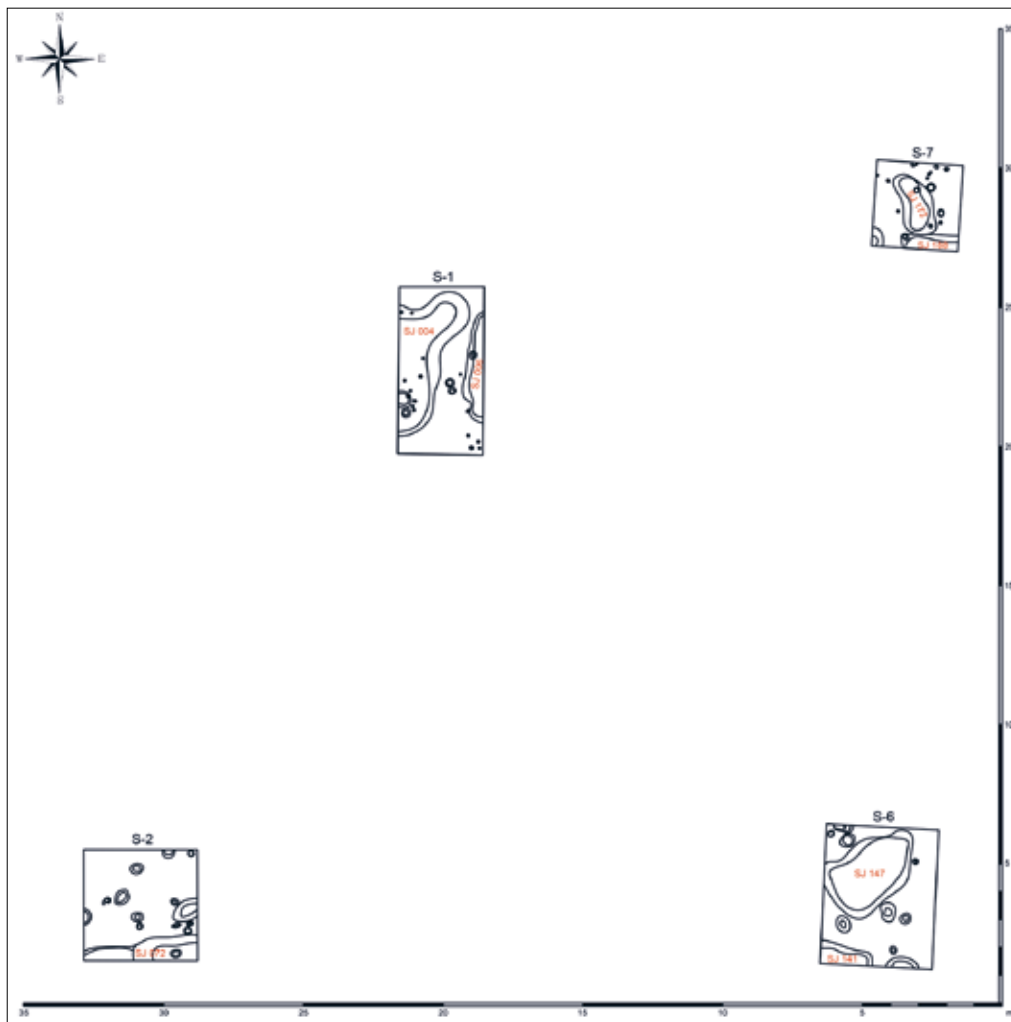
5 Bánffy 2019, 86, 135–136.

6 Hachem 2020, 310.

4 The site is situated on a leached, combined pseudogley and brown eutric soil. The leached soil, especially in the surface horizon, is mostly acidic, while the brown eutric soil can be acidic to very acidic (Husnjak 2014, 124–125, 156, 158, 222–223, sl. 43, sl. 57, sl. 91).

5 Bánffy 2019, 86, 135–136.

6 Hachem 2020, 310.



SLIKA 3. Plan sondi s ostacima neolitičkog naselja (izradila M. Krmpotić).

FIGURE 3. Plan of the trenches with the remains of a Neolithic settlement (made by M. Krmpotić).

žen je istočni dio objekta u površini od 7,85 m², dok je zapadni dio ulazio pod profil. Objekt, najveće sačuvane relativne dubine od 0,7 m, bio je zapunjen sivkastožutom pjeskovitom zemljom s primjesama gara, ulomcima keramičkih posuda (T. 1: 9–12; T. 2: 13–18) i ulomkom kamenog brusa (T. 5: 40), a pri dnu zapune u središnjem je dijelu objekta evidentiran manji zasip gorenog materijala (SJ 028) (sl. 5) s gotovo čitavom šalicom i ulomcima još nekoliko posuda (T. 2: 19–22). Uz južnu stijenku objekta nalazila se rupa od stupa i nekoliko manjih rupa od kolaca, dok su dva kolca bila ukopana u sjevernu stijenku objekta. Neposredno istočno uz ovaj objekt istražen je dio još jednog većeg objekta (SJ 005/006) s vrlo sličnom zapunom, u čiju je zapadnu stijenku bio ukoso ukopan stup.

Veći objekt (SJ 146/147), pronađen u sondi 6, 20-ak metara ju-goistočno od spomenutih objekata u sondi 1, u potpunosti je istražen (sl. 6). Tlocrt je ovog objekta gotovo pravokutnog oblika, izdužen u smjeru sjeveroistok – jugozapad. Dimenzije su mu 3,6 x 2,4 m (površina 6,6 m²), a sačuvan je do relativne dubine od 0,95 m. Zapunu je činila pjeskovita mrljasta sivo-žuta zemlja sa sitnim primjesama gara i zapečene zemlje, ulomcima keramičkih posuda (T. 3: 23–32), kamenom teslom (T. 5: 41) i nekoliko lomljenih kamenih izrađevina (T. 5: 44–47). Unutar objekta nisu pronađeni nikakvi ukopi ili strukture, ali uz njegov vanjski rub nalazilo se nekoliko većih rupa od stupova.

One sizeable feature (SU 003/004) was partially excavated in trench 1 (Fig. 4). The eastern part of the feature was excavated in an area of 7.85 m², while the western part remained under the profile of the trench. This feature, with a maximum relative depth of 0.7 m, was filled with greyish-yellow sandy soil with some scattered char, which contained pottery fragments (Pl. 1: 9–12; Pl. 2: 13–18) and a fragment of a whetstone (Pl. 5: 40). At the bottom of the fill, in the central part of the feature, a small backfill of burnt material (SU 028) was found (Fig. 5), where almost a whole cup and fragments of several other vessels (Pl. 2: 19–22) were excavated. Along the southern wall of the feature, there were one large and several smaller postholes, while two posts were dug in the northern wall of the feature. Directly to the east, next to this feature, part of another sizeable feature (SU 005/006) with a similar fill was found, which had a posthole dug at a slanting angle in the western wall.

A larger feature (SU 146/147), found in trench 6, some 20 m southeast of the above features in trench 1, has been completely excavated (Fig. 6). The ground plan of this feature is almost rectangular in shape, and elongated in a NE–SW direction. Its dimensions are 3.6 x 2.4 m (area 6.6 m²), and it has been preserved to a relative depth of 0.95 m. It was filled with sandy grey-yellow soil with some traces of char and pieces of daub. In the fill, pottery fragments (Pl. 3: 23–32), a stone adze (Pl. 5: 41) and several

SLIKA 4. Ukopi objekata u sondi 1, ortofotografija (izradila A. Fundurulić).

FIGURE 4. Dug-in features in trench 1, orthophoto (made by A. Fundurulić).



SLIKA 5. Zasip gorenog materijala SJ 028 u objektu SJ 003/004 (snimila M. Krmpotić).

FIGURE 5. Backfill of burnt material SU 028 in feature SU 003/004 (photo by M. Krmpotić).



SLIKA 6. Ukop objekta SJ 147 i rupa od stupova u sondi 6 (snimila M. Krmpotić).

FIGURE 6. Feature SU 147 and the postholes in trench 6 (photo by M. Krmpotić).





SLIKA 7. Ukopi rupa od stupova u sondi 7, ortofotografija (izradila A. Fundurulić).

FIGURE 7. Postholes in trench 7, orthophoto (made by A. Fundurulić).

Preostali ukopi na istraženom dijelu bili su, ili manjih dimenzija, ili je sondom bio obuhvaćen samo njihov manji dio. Među njima izdvaja se nešto veća jama (SJ 171/172) u sondi 7, izduženog tlocrta, dimenzija 2,3 x 1,1 m (površina 2,1 m²) i sačuvane relativne dubine do 0,35 m. Jamu je zapunjavala siva pjeskovita zemlja sa sitnim primjesama gara i većom količinom ulomaka keramičkih posuda, uglavnom grube fature (T. 4: 33–38), dok su u preoranom sloju (SJ 158) neposredno iznad zapune jame pronađeni glačana kamena tesla (T. 5: 42) i tučak (T. 5: 43). U istočnoj stijenci jame nalazile su se dvije manje rupe od stupova, a rupe od stupova i kolaca evidentirane su i oko jame. Maleni dio većeg objekta (SJ 071/072), s rupama od kolaca i rupom od stupa na dnu, istražen je uz sam južni rub sonde 2, dok su sjeverno od njega dokumentirane rupe od stupova i kolaca (sl. 7). Premda je sonda 2 mala površinom, u rasporedu rupa od stupova moguće je uočiti pravilnost. Naime, niz stupova proteže se u pravilnoj liniji smjera sjeveroistok – jugozapad, što ukazuje na vjerojatno postojanje nadzemnog objekta.

Tlocrt istraženog dijela naselja preklapljen je s rezultatima geomagnetskog snimanja (sl. 8) kako bi se definirali puni tlocrti iskopanih objekata ili eventualno tlocrti potencijalnih, za kulturu linearnotrakaste keramike karakterističnih, dugih kuća. Primijećeno je da stvarni tlocrti objekata u sondama 1, 6 i 7 odgovaraju rezultatima snimanja, dok se na području geomagnetske anomalije u sondi 2 nalazio zapravo niz rupa od stupova. Pri tome su na rezultatima geomagnetskog snimanja jasno uočljivi

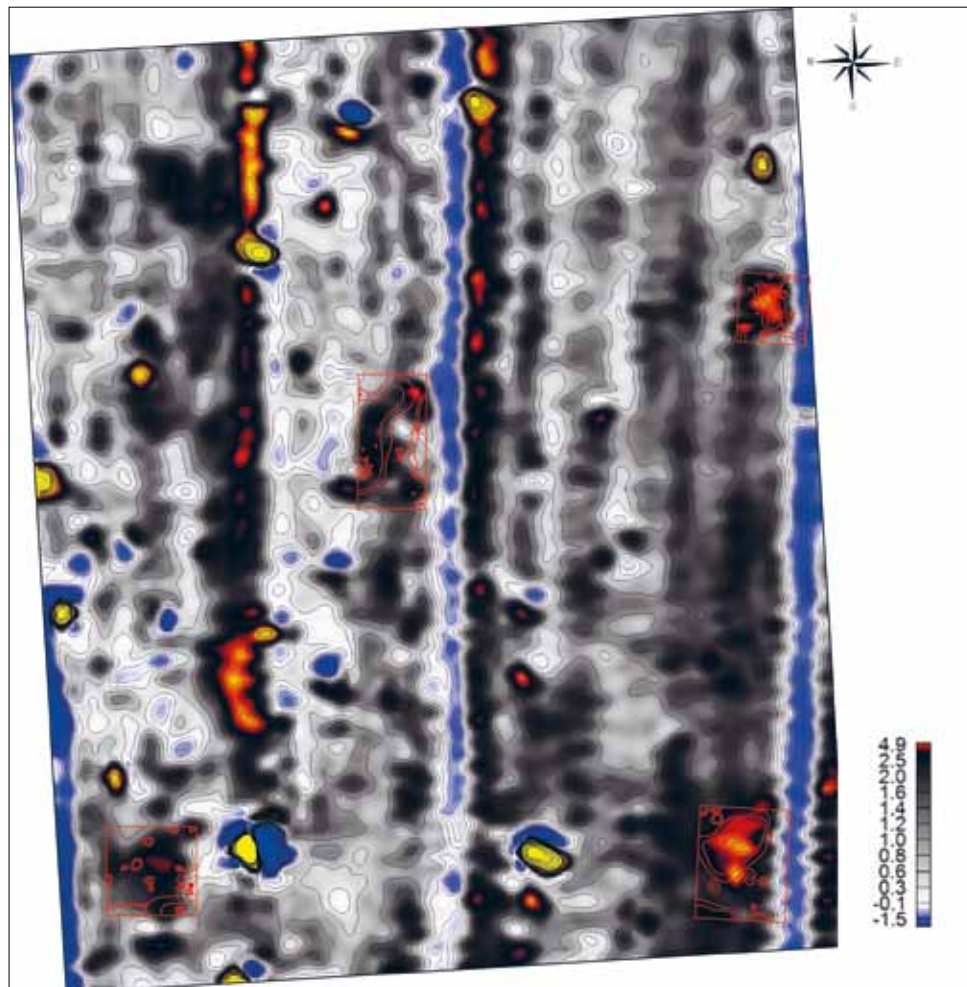
knapped stone artefacts (Pl. 5: 44–47) were found. No postholes or other dug-in features were recorded inside, but along the outer edge of this feature there were several larger postholes.

The remaining excavated features were small, or else only a small part of them was inside the trenches. Among them, there is a sizeable pit (SU 171/172) in trench 7, which has an elongated floor plan, dimension 2.3 x 1.1 m (area 2.1 m²) and a preserved relative depth of up to 0.35 m. This pit was filled with grey sandy soil with some traces of char and a considerable number of pottery fragments, mostly of coarse texture (Pl. 4: 33–38), while in the ploughed layer (SJ 158), just above the pit, a ground stone adze (Pl. 5: 42) and a stone pestle (Pl. 5: 43) were found. There were two small postholes in the eastern wall of the pit, and some postholes were also found next to it. A small part of a larger feature (SU 071/072), with postholes at the bottom, was excavated along the southern edge of trench 2, while postholes were also documented north of this feature (Fig. 7). Although trench 2 is small in area, it is possible to notice a regularity in the arrangement of the postholes: a sequence of posts extends in a regular row in a NE–SW direction, indicating probable existence of an above-ground structure.

The ground plan of the excavated part of the settlement was overlapped with the results of the geomagnetic survey (Fig. 8) in order to define the full floor plans of the excavated features, or possibly floor plans of potential long houses, characteristic

SLIKA 8. Plan sondi preklopljen s rezultatima geofizičkih istraživanja (izrada Gearh d.o.o. i M. Krmpotić).

FIGURE 8. Trench plan overlapped with the results of the geophysical prospection (made by Gearh d.o.o. and M. Krmpotić).



samo dublje ukopani objekti s nešto većim brojem keramičkih ulomaka ili više zapečene zemlje. Rupe od stupova na rezultatima geofizičkih istraživanja nisu prepoznatljive. Najjasnije se vide recentni zahvati vezani uz oranje, koji se očituju pravilnim linijama smjera sjever – jug. Potencijalni prostori neolitičkih kuća mogu se prepoznati samo kao tamnije mrlje unutar kojih se najčešće ocrtavaju jače magnetske anomalije (crvene boje na slici) na mjestima većih količina keramike, odnosno zapečene zemlje.

Za kulturu linearnotrakaste keramike općenito, pa tako i za prostor susjedne Transdanubije, tipična je gradnja stambenih objekata u vidu dugih nadzemnih kuća, od kojih je svaka imala svoju okućnicu i prateće gospodarske objekte. Nakon velikih zaštitnih istraživanja, provedenih posljednjih 20-ak godina na području Transdanubije, u kojima je istraženo 30-ak naselja kulture transdanubijske linearnotrakaste keramike s ostacima dugih kuća,⁷ potpuno je odbačeno tumačenje korištenja zemunica kao trajnih stambenih objekata.⁸ Jedan od primjera je i naselje kulture zapadnotransdanubijske linearnotrakaste keramike Becsehely – Homokos (u starijoj literaturi Becsehely II), smješteno samo 15-ak kilometara istočno od Domašince. Dok su u

of the Linear Pottery culture. It was observed that the actual floor plans of features in trenches 1, 6 and 7 correspond to the results of the geophysical survey, while in the area of the magnetic anomaly in trench 2 there were several postholes. Only deeper dug-in features with a relatively large number of pottery fragments or daub are clearly visible on the results of the magnetic prospection, while postholes are not recognizable. Traces of recent ploughing are the most evident, as evidenced by regular N-S lines. Potential areas of the Neolithic houses can be recognized only as darker spots within which stronger magnetic anomalies (coloured red in the figure) are most often outlined in places of larger quantities of pottery or daub.

Typical of the Linear Pottery culture in general, and thus of the area of neighbouring Transdanubia, is the construction of residential buildings in the form of long above-ground houses, each of which has its own yard and accompanying outbuildings. After the extensive rescue excavations conducted in the last 20 years in Transdanubia, which revealed the remains of about 30 settlements of the Transdanubian Linear Pottery culture with long houses,⁷ the interpretation of the use of dwellings for permanent housing was completely abandoned.⁸ One of the

7 Marton, Oross 2009, 52.

8 Oross 2010, 68.

7 Marton, Oross 2009, 52.

8 Oross 2010, 68.

starijim istraživanjima manjeg opsega bile evidentirane samo manje jame,⁹ novija istraživanja, provedena na površini od oko 16 000 m² ovog dugotrajnog naselja, koje je egzistiralo od najstarije do najmlađe faze zapadnotransđanubijske linearnotrakaste keramike, pokazala su postojanje karakterističnih dugih kuća (njih 6 do 7) s pratećim objektima.¹⁰ Duge su kuće potvrđene i na Becsehelyu susjednim nalazištima Sormás – Török-földek i Sormás – Mátai-dűlő (oko 25 kilometara istočno od Domašinec), naseljenima, među ostalim, tijekom razdoblja kestelske grupe.¹¹ S obzirom na zemljopisnu i kulturološku povezanost s jugozapadnom Transđanubijom, treba pretpostaviti postojanje dugih kuća i na prostoru Donjeg Međimurja.

Do sada su na području sjeverne Hrvatske bili evidentirani samo ukopani objekti korenovske kulture, od kojih su neki tumačeni kao zemunice.¹² Revizija objavljenih nacrtā s naselja Kaniška Iva – Osušak pokazala je kako bi se moglo raditi zapravo o jamama ukopanima uz nadzemnu kuću, a vjerojatni ostaci dugih kuća pronađeni su u novijim istraživanjima na još nekoliko lokaliteta korenovske kulture.¹³ Ovaj je način gradnje zabilježen u Hrvatskoj i izvan prostora rasprostranjenosti kulture linearnotrakaste keramike. Na prostoru istočnog dijela Podravine ostaci klasičnih dugih kuća evidentirani su na nalazištima Virovitica – Brekinja i Donji Miholjac – Vrancari čija kulturna pripadnost nije pouzdano ustanovljena.¹⁴ Naime, keramički materijal iz Vrancara stilski je vrlo raznolik te su, uz elemente kulture linearnotrakaste keramike, prepoznati i oni starčevačke i rane vinčanske kulture te stila Ražište.¹⁵ Novija su arheološka istraživanja dokazala postojanje naselja sličnih arhitektonskih karakteristika i na nalazištu Golubovac/Sadice, pripisanom sopskoj kulturi.¹⁶ Naselja s dugim kućama evidentirana su i na širem području, primjerice na nekoliko kasnoneolitičkih nalazišta u Posavini (Kruševica – Njivice i Dubovo – Košno) oko čijeg je datiranja i kulturne pripadnosti još uvijek otvorena rasprava.¹⁷

Karakter probnih istraživanja i njima otvorena manja površina na nalazištu Vrti I ne omogućavaju rekonstrukciju rastera naselja ili tipa objekata. Može se utvrditi jedino postojanje rupa od stupova i većih jama, od kojih su u neke bili ukopani veći ili manji stupovi. Uobičajen način gradnje dugih kuća podrazumijevao je iskop tzv. dugih jama uz uzdužne strane kuće. Pretpostavlja se da su duge jame nastale vađenjem ilovače za potrebe izgradnje zidova, a kasnije su mogle služiti kao drenažni kanali ili zaštita od životinja. U nekim slučajevima, na dnu dugih jama nalaze se rupe od stupova koji su vjerojatno držali nadstrešnicu koja je štitila zid kuće od kiše.¹⁸ Na više je naselja primijećeno

examples is the settlement of the Western Transđanubian Linear Pottery culture at Becsehely - Homokos (Becsehely II in the older literature), located only 15 km east of Domašinec. While only smaller pits were found during the older, smaller-scale excavations,⁹ newer excavations, conducted in an area of about 16 000 m² of this long-lasting settlement, which existed from the earliest to the latest phase of the Transđanubian Linear Pottery culture, confirmed the existence of the characteristic long houses (6 to 7 of them) with accompanying features.¹⁰ Long houses have also been confirmed at the sites of Sormás - Török-földek and Sormás - Mátai-dűlő, near Becsehely (about 25 km east of Domašinec), inhabited, among others, during the period of the Keszthely group.¹¹ Given the geographical and cultural connections with the area of southwestern Transđanubia, it should be assumed that long houses also existed in the area of Donje Međimurje.

Until now, only dug-in features of the Korenovo culture have been recorded in northern Croatia, some of which were interpreted as dwellings.¹² A revision of the published plans of the settlement of Kaniška Iva - Osušak has shown that they could actually be pits dug-in next to an above-ground house, and probable remains of long houses have also been found in recent excavations at several other sites of the Korenovo culture.¹³ This method of construction has also been recorded outside the distribution area of the Linear Pottery culture in Croatia. In the eastern part of Podravina, remains of the classic long houses have been recorded at the sites of Virovitica - Brekinja and Donji Miholjac - Vrancari, whose cultural affiliation has not been reliably established.¹⁴ Pottery found at Vrancari is stylistically diverse; and, in addition to the elements of the Linear Pottery culture, those of the Starčevo and early Vinča cultures and the Ražište style are recognized.¹⁵ Recent archaeological research has proven the existence of settlements with similar architectural characteristics at Golubovac/Sadice, a site attributed to the Sopot culture.¹⁶ Settlements with long houses have also been recorded in the wider area, for example at several late-Neolithic sites in Posavina (Kruševica - Njivice and Dubovo - Košno), whose dating and cultural affiliation is still an open debate.¹⁷

The nature of the trial excavations and the smaller excavated area at the site of Vrti I does not enable the reconstruction of the settlement grid or the types of features. The only thing that can be confirmed is the existence of postholes and sizeable pits, some of which contain postholes, large or small. The common way of building long houses involved excavating so-called long

9 Kalicz 1980, 15.

10 Barna 2004, 43.

11 Barna 2005, 27; Barna, Pásztor 2011, 187.

12 Težak-Gregl 2014, 37.

13 Botić 2017, 68, 73–74, sl. 43; 2018, 91, Fig. 2.2.

14 Botić 2017, 69–71, sl. 44, sl. 45, sl. 47; 2018, 90–92, Fig. 2.1, Fig. 3; 2020, 201, 204, Fig. 5.

15 Botić 2020, 198.

16 Botić 2017, 289, 297; Kulenović Ocelić, Kulenović 2018.

17 Botić 2017, 54, 64, 65, sl. 39, sl. 40.

18 Bánffy 2004, 36–37.

9 Kalicz 1980, 15.

10 Barna 2004, 43.

11 Barna 2005, 27; Barna, Pásztor 2011, 187.

12 Težak-Gregl 2014, 37.

13 Botić 2017, 68, 73–74, Fig. 43; 2018, 91, Fig. 2.2.

14 Botić 2017, 69–71, Fig. 44, Fig. 45, Fig. 47; 2018, 90–92, Fig. 2.1, Fig. 3; 2020, 201, 204, Fig. 5.

15 Botić 2020, 198.

16 Botić 2017, 289, 297; Kulenović Ocelić, Kulenović 2018.

17 Botić 2017, 54, 64, 65, Fig. 39, Fig. 40.

da duge jame iskopane uz uzdužne strane dugih kuća ne moraju biti spojene, već se može raditi o nekoliko jama iskopanih u istom smjeru pružanja (npr. Szentgyörgyvölgy – Pityerdomb,¹⁹ Balatonszárszó – Kiserdei-dűlő,²⁰ Becsehely – Homokos,²¹ Keszthely – Lendl Adolf út²²). Prema primjerima sa znatno bolje istraženih nalazišta kulture linearnotrakaste keramike na području zapadne Transdanubije, s oprezom se može pretpostaviti da i neki od većih ukopanih objekata pronađenih u Domašincu, posebno oni s rupama od stupova na dnu, predstavljaju dijelove dugih jama. Na postojanje nadzemnih objekata ukazuje i niz rupa od stupova pronađenih u sondi 2, koji se pruža u smjeru sjeveroistok – jugozapad. S vanjske strane ovog niza stupova pronađene su rupe od manjih stupova i dio veće jame. Ovakav tlocrtni raspored ukopa može se usporediti sa situacijom na spomenutom naselju Balatonszárszó – Kiserdei-dűlő, gdje je konstrukciju kuće nosilo pet redova stupova, od kojih su stupovi u dva vanjska reda bili manjih dimenzija i međusobno bliže smješteni, a pored njih su se pružale duge jame.²³ Dio druge duge kuće vjerojatno je pronađen u sondi 6, smještenoj 20-ak metara istočno od spomenute sonde 2. Naime, u ovoj je sondi istražen veći ukopani objekt (SJ 146/147), također izdužen u smjeru sjeveroistok – jugozapad, uz koji su se nalazile rupe od stupova. U tom bi se slučaju mogla naslutiti orijentacija pretpostavljenih dugih kuća na naselju u Domašincu. Orijehtacija je kuća uglavnom uvjetovana klimatskim uvjetima i kulturnom tradicijom, pri čemu u Karpatskoj kotlini prevladava orijentacija u smjeru sjeverozapad – jugoistok.²⁴ Međutim, poznati su primjeri orijentacije dugih kuća kulture linearnotrakaste keramike i u drugim smjerovima, pa tako i u smjeru sjeveroistok – jugozapad, primjerice na naseljima Szederkény – Kukorica-dűlő²⁵ i Keszthely – Lendl Adolf út.²⁶

Keramički nalazi

Uz sporadične nalaze iz površinskog sloja, većina keramičkog materijala potječe iz zapuna većih ukopanih objekata. Riječ je o ulomcima keramičkog posuđa i dijelu pršljena. Općenito, posude se može podijeliti na ono grube fature s površinom uglavnom narančaste boje i ono fine fature, čija je površina najčešće siva do crna. S obzirom na čestu mrljastu površinu, može se pretpostaviti da posude nije pečeno u strogo kontroliranim uvjetima, već na otvorenom, ili pak u plitkoj jami. Zastupljenost posuđa grube i fine fature otprilike je podjednaka.

pits along the sides of houses. It is assumed that the long pits were created by excavating clay for the building of walls, and later they could have served as drainage trenches or for protection from animals. In some cases, at the bottom of the long pits there were posts that probably held a canopy that protected the house wall from rain.¹⁸ At several settlements, it was noticed that long pits along the sides of long houses of the Linear Pottery culture do not have to be connected, but there may be several pits dug in the same direction (e.g. Szentgyörgyvölgy - Pityerdomb,¹⁹ Balatonszárszó - Kiserdei-dűlő,²⁰ Becsehely - Homokos,²¹ Keszthely - Lendl Adolf út²²). From the examples of the Linear Pottery culture sites in western Transdanubia, where larger areas of the sites were excavated, it can be cautiously assumed that some of the larger dug-in features in Domašinec, especially those with postholes at the bottom, could be parts of the long pits. The existence of above-ground structures is also indicated by a row of postholes which extends in a NE–SW direction, found in trench 2. On the outside of this row of posts, smaller postholes and part of a larger pit were found. The layout of these pits can be compared to the situation at the aforementioned settlement of Balatonszárszó - Kiserdei-dűlő, where five rows of posts carried the construction of a house, of which the posts in the two outer rows were smaller and closer to each other, while long pits were dug beside them.²³ Part of a second long house may have been found in trench 6, situated about 20 m east of trench 2: a larger dug-in feature (SU 146/147) was excavated in this trench, also elongated in a NE–SW direction, along which postholes were found. In this case, one could assume the orientation of the presumed long houses at the settlement in Domašinec. The orientation of the houses is conditioned mainly by the climatic conditions and cultural tradition, with the NW–SE orientation prevailing in the Carpathian Basin.²⁴ However, examples of the orientation of long houses of the Linear Pottery culture in other directions are also known, as well as in a NE–SW direction, for example at Szederkény - Kukorica-dűlő²⁵ and Keszthely - Lendl Adolf út.²⁶

Ceramic finds

Most of the ceramic finds come from the fills of the larger features, with sporadic finds from the surface layers. These are pottery fragments and part of a spindle whorl. In general, pottery can be divided, according to texture and production, into that of a coarse texture with mostly orange surface, and that of a fine texture whose surface is usually grey to black in colour. Given the often mottled surface, the vessels probably were not fired under strictly controlled conditions, but in the open air, or in a shallow pit. Vessels with coarse and fine texture are represented in approximately equal numbers.

19 Bánffy 2004, 73, 117, 143, Fig. 9, Fig. 48, Fig. 72 itd.

20 Oross 2010, 70.

21 Barna 2004.

22 Oross, Simmer, Straub 2019, 26, 28, 35, Fig. 9, Fig. 12, Fig. 16.

23 Oross 2010, 70.

24 Bánffy 2004, 43.

25 Jakucs *et al.* 2016, 278.

26 Oross, Simmer, Straub 2019, 32.

18 Bánffy 2004, 36–37.

19 Bánffy 2004, 73, 117, 143, Fig. 9, Fig. 48, Fig. 72 etc.

20 Oross 2010, 70.

21 Barna 2004

22 Oross, Simmer, Straub 2019, 26, 28, 35, Fig. 9, Fig. 12, Fig. 16.

23 Oross 2010, 70.

24 Bánffy 2004, 43.

25 Jakucs *et al.* 2016, 278.

26 Oross, Simmer, Straub 2019, 32.



SLIKA 9. Ulomci keramičkih posuda grube fature, SJ 171 (snimio Lj. Gamulin).
FIGURE 9. Pottery fragments of coarse texture, SU 171 (photo by Lj. Gamulin).



SLIKA 10. Kuglasta keramička zdjela fine fature, SJ 146 (snimio Lj. Gamulin).
FIGURE 10. Spherical ceramic bowl of fine texture, SU 146 (photo by Lj. Gamulin).

Keramika grube fature (T. 1: 4–7; T. 2: 16–18; T. 3: 31; T. 4: 33, 34, 38) izrađena je od gline s anorganskim primjesama, najčešće kamenčića i krupnijeg šljunka, vjerojatno sastavnog dijela sedimenta korištenog za izradu posuda, kao i primjesama organskog materijala, vjerojatno pljeve, te često i sitnim komadićima drobljene keramike. Keramičarska smjesa od koje je rađeno sve posuđe, i ono grube i ono fine fature, redovito sadrži i fini kvarcni pijesak. Površina i presjek stijenki grubog keramičkoga posuđa najčešće su u nijansama narančaste boje. Vanjska je površina posuda neravna ili samo blago zaglađena, a debljina stijenki kreće se uglavnom između 0,8 i 1 cm. Ovo je posuđe redovito neukrašeno, a na pronađenim ulomcima česte su bradavice ovalnog do kružnog oblika, vjerojatno u funkciji drške, ponekad s otiskom prsta ili neke alatke u sredini (sl. 9). Drške su u pravilu smještene na najširem dijelu posude, na njezinu trbuhu.

Keramičko posuđe fine fature (T. 1: 1–2, 9–12; T. 2: 13–15, 20, 22; T. 3: 23–25, 30; T. 4: 36) rađeno je od pročišćene gline s finim kvarcnim pijeskom. Tek iznimno su u fakturi primjetne sporadične primjese sitno drobljene keramike. Kod dijela posuda fine fature površina i presjek stijenke su tamnije sive boje. Međutim, najveći dio fine keramike ima tamnosivi presjek, dok je površina u svjetlijim nijansama sive ili oker boje. U nekoliko slučajeva na vanjskoj površini posuda ostali su sačuvani tragovi finoga glinenog premaza, redovito svijetle oker boje, nanesenog vjerojatno prije pečenja. Površina posuda je zaglađena ili uglačana, a debljina stijenki iznosi prosječno između 0,4 i 0,5 cm. Fino je keramičko posuđe gotovo redovito ukrašeno žlijebljenjem (sl. 10), rjeđe otiscima prsta na vrhu oboda, a tek iznimno pojavljuju se neukrašeni primjerci.

Dio pronađenih keramičkih ulomaka nije bilo moguće svrstati niti u grubu niti u finu keramiku, već je ono opisano kao posuđe srednje fature (T. 1: 8; T. 2: 19, 21; T. 3: 26–29, 32; T. 4: 35, 37). Naime, u keramičarsku smjesu, od koje je ovo posuđe izrađeno, uz fini kvarcni pijesak, dodane su i primjese sitnih kamenčića, često i sitno drobljene keramike i organskog materijala, ali u znatno manjoj količini nego što je to slučaj kod keramike grube fature

Coarse pottery (Pl. 1: 4–7; Pl. 2: 16–18; Pl. 3: 31; Pl. 4: 33, 34, 38) is made of clay with inorganic admixtures of pebbles, and often coarse gravel, probably a constituent part of the sediment used for pottery, as well as admixtures of organic materials, probably chaff, and often with small pieces of ground ceramics. The ceramic mixture, from which the pottery was made, both that of coarse texture and of fine, always contains fine quartz sand. The surface and cross-section of the walls of coarse pottery are usually in shades of orange. The outer surface of the coarse vessels is rough or slightly smoothed, and the wall thickness is mostly between 0.8 and 1 cm. This pottery is not decorated, and the found fragments often have oval to circular grip, sometimes with a fingerprint or impression of some tool in the middle (Fig. 9). The grips are usually placed on the widest part of the vessel, i.e. on its belly.

Fine pottery (Pl. 1: 1–2, 9–12; Pl. 2: 13–15, 20, 22; Pl. 3: 23–25, 30; Pl. 4: 36) was made of purified clay with some fine quartz sand. Only in very rare instances are admixtures of finely ground ceramics noticeable in the texture. Some of the vessels have a dark-grey surface and wall cross-section. However, most of the fine pottery has a dark-grey cross-section, while its surface is of lighter shades of grey or ochre. In several cases, traces of a fine clay coating, always light ochre in colour, probably applied before firing, have been preserved on the outer surface of the vessels. The surface of fine vessels is smoothed or polished, and the wall thickness averages between 0.4 and 0.5 cm. Fine pottery is almost regularly decorated with fluting (Fig. 10), less often with fingerprints on the top of the rim, and only rare finds are undecorated.

Some of the pottery fragments found could not be classified as coarse or fine, so they were described as medium-texture pottery (Pl. 1: 8; Pl. 2: 19, 21; Pl. 3: 26–29, 32; Pl. 4: 35, 37). Here, in the ceramic mixture, in addition to fine quartz sand, admixtures of small pebbles were added, and often ground ceramics and organic material, but in much smaller amount than in the coarse pottery (Fig. 11). The surface of the medium-texture ves-



SLIKA 11. Ulomak keramičke zdjele srednje fakture, SJ 146 (snimio Lj. Gamulin).
FIGURE 11. Fragment of a ceramic bowl of medium texture, SU 146 (photo by Lj. Gamulin).



SLIKA 12. Keramička amfora, SJ 146 (snimio Lj. Gamulin).
FIGURE 12. Ceramic amphora, SU 146 (photo by Lj. Gamulin).

(sl. 11). Površina posuda srednje fakture uglavnom je blago zagađena, a debljina stijenki varira između 0,5 i 0,9 cm. Površina im je najčešće u nijansama narančaste ili oker boje, ponekad s tamnijim presjekom. Kao i kod fine keramike, u nekoliko slučajeva na vanjskoj su površini posuda ostali sačuvani tragovi finoga glinenog premaza. Neki od ulomaka posuda srednje fakture bili su ukrašeni žlijebljenjem, odnosno istom tehnikom kojom je dekorirano i posuđe fine fakture.

Među oblicima posuda prevladavaju zdjele polukuglastog i kuglastog tipa (sl. 10), (T. 1: 9–12; T. 2: 13, 19; T. 3: 27; T. 4: 34), rjeđe s blago uzdignutim rubom koji može formirati vrlo niski cilindrični vrat (T. 4: 33), dok je blaga S-profilacija zabilježena na samo jednom primjerku (T. 2: 21). Polukuglaste su zdjele zabilježene samo kod fine keramike, dok kod kuglastih oblika faktura posuda varira od grube do fine. Kod zdjela srednje do grube fakture, na najširem dijelu trbuha nalaze se bradavice, odnosno drške (sl. 9), (T. 1: 4, 5, 7, 8; T. 2: 16–18; T. 3: 31, 32; T. 4: 33, 34, 38). Osim zdjela, zabilježen je samo još jedan funkcionalni oblik, a to su minijaturne amfore niskoga cilindričnog vrata s tri ušice za vješanje na truhu, fine fakture (sl. 12), (T. 3: 23, 24).

Dominantna tehnika ukrašavanja, koja se pojavljuje na posudu fine, rjeđe onom srednje fakture, jest žlijebljenje. Radi se o širokim i dubokim žljebovima U-presjeka, širine između 3 i 4 mm (sl. 10; sl. 12). Urezivanje, koje bi rezultiralo V-presjekom, nije zabilježeno niti u jednom slučaju. Pravocrtni motivi nešto su češće zastupljeni od krivocrtnih, a predstavljaju ih vodoravne, okomite te izlomljene linije koje ponekad tvore motiv kuke (sl. 10; sl. 12), (T. 1: 1, 2, 9, 11, 12; T. 2: 21, 22; T. 3: 23–27; T. 4: 35, 37) ili tzv. riblje kosti (T. 2: 21). Krivocrtni motivi na pronađenim su ulomcima sačuvani samo u manjim segmentima pa je teško re-

sels is generally slightly smoothed, and the wall thickness varies between 0.5 and 0.9 cm. Their surface is mostly in shades of grey or ochre, sometimes with a darker cross-section. As with fine pottery, in several cases traces of a fine clay coating have been preserved on the outer surface of the vessels. Some of the fragments were decorated with fluting, i.e. the same technique used for decoration of the fine pottery.

Among the vessel forms, bowls of the hemispherical and spherical type predominate (Fig. 10), (Pl. 1: 9–12; Pl. 2: 13, 19; Pl. 3: 27; Pl. 4: 34); less frequent are fragments of bowls with a slightly raised rim that can form a very low cylindrical neck (Pl. 4: 33), while a slight S-shaped form was recorded only on one vessel (Pl. 2: 21). Hemispherical bowls always have fine texture, while spherical shapes can have different types of textures, from coarse to fine. Bowls of medium and coarse texture have grips on the widest part of the belly (Fig. 9), (Pl. 1: 4, 5, 7, 8; Pl. 2: 16–18; Pl. 3: 31, 32; Pl. 4: 33, 34, 38). Apart from the bowls, there is only one other functional form, and these are miniature amphorae with a low cylindrical neck and three undercut handles on the belly for hanging, which are of fine texture (Fig. 12), (Pl. 3: 23, 24).

The main decorating technique, which occurs on the fine pottery, and less often on the medium-textured, is fluting. These are wide and deep flutes with a U-section, between 3 and 4 mm wide (Fig. 10; Fig. 12). Incising, which would result in a V-section, is not recorded. Rectilinear motifs are somewhat more common than curvilinear ones, and are represented by horizontal, vertical and broken lines that sometimes form a hook motif (Fig. 10; Fig. 12), (Pl. 1: 1, 2, 9, 11, 12; Pl. 2: 21, 22; Pl. 3: 23–27; Pl. 4: 35, 37), or the so-called fish-bone motif (Pl. 2: 21). Curvilinear motifs on the pottery fragments found are preserved only in smaller

konstruirati cjelovite ukrase (T. 2: 13–15, 20; T. 3: 28–30; T. 4: 36). Znatno rjeđe od žlijebljenja, kao tehnika ukrašavanja, pojavljuju se otiskivanje. Radi se o otiscima prsta na vrhu oboda (T. 1: 10; T. 3: 32), odnosno prsta ili neke alatke po sredini bradavice ili drške (T. 3: 31, 32; T. 4: 38).

Prema općim karakteristikama izrade, što se odnosi na fakturu i način pečenja posuda, keramički nalazi iz Domašince u potpunosti se uklapaju u keramografiju zapadnotransdanubijske linearnotrakaste keramike. U oblikovanju posuda uočljiv je potpuni nedostatak oštrijeg bikoničnoga profiliranja, kao i odsustvo barbotina i štipanog ukrasa, što su obilježja starije linearnotrakaste keramike.²⁷ Oblici posuda, a posebice tehnika ukrašavanja i dekorativni motivi, prisutni na naselju u Domašincu, pokazuju velike sličnosti s keramičkim materijalom pronađenim na prostoru južne i središnje Transdanubije, pripisanim kesteljskoj grupi. Osim kuglastih i polukuglastih oblika, kakvi su uobičajeni u mlađoj, odnosno kasnoj zapadnotransdanubijskoj linearnotrakastoj keramici, u materijalu navedene grupe pojavljuju se i amfore s niskim cilindričnim vratom i kuglastim tijelom, poput onih nađenih u Domašincu.²⁸ Neki su primjerci amfora ovog tipa pripisani, na temelju ukrasa, već starijoj fazi zapadnotransdanubijske linearnotrakaste keramike.²⁹ S druge strane, u Domašincu potpuno nedostaju posude s nogom, dok je S-profilacija zastupljena samo u jednom slučaju (T. 2: 21). Sličnosti s materijalom kesteljske grupe vidljive su i u tehnici i motivima ukrašavanja fine keramike. Naime, za grupu je karakteristično ukrašavanje urezivanjem dubokih i širokih linija, koje mogu imati V- ili U-presjek.³⁰ Od dekorativnih su motiva zastupljene polukružne i S-linije, spirale, meandri, vodoravne linije, motiv riblje kosti te izlomljene linije u obliku kuke.³¹ Motivi su najčešće organizirani u tri dijela: glavni motiv teče uokrug posude, unutar i oko njega nalaze se popratni manji motivi, dok se ispod oboda nalazi vodoravna linija.³² Uz urezivanje, u ukrašavanju fine keramike kesteljske grupe upotrebljava se i crveno slikanje.³³ Gruba keramika ove grupe uglavnom je neukrašena, sporadično se pojavljuju štipanje, odnosno otiskivanje i aplicirane plastične trake, a drške su često ukrašene otiskom.³⁴ Na više je ulomaka posuda fine fature iz Domašince prepoznatljiv ukras vodoravne linije, urezane neposredno ispod oboda (T. 1: 9, 12; T. 2: 13; T. 3: 23–25), kao i motivi linija lomljenih u obliku kuke (T. 1: 9; T. 3: 23–25), a povremeno i kraće urezane linije kao sporedni motivi onom glavnom (T. 1: 9). Također, u nekoliko se slučajeva može naslutiti ukrašavanje potkovičastim ili polukružnim linijama, eventualno S-motivima (T. 2: 13–15, 20; T. 3: 28–30; T. 4: 36). Svi spomenuti ukrasi izvedeni su širokim i dubokim linijama U-presjeka. Sličnosti su očite i kod grube keramike, a s obzirom

segments, so it is difficult to reconstruct the complete decoration (Pl. 2: 13–15, 20; Pl. 3: 28–30; Pl. 4: 36). Impressing is much less common than fluting as a decorative technique. There are some fragments with fingerprints on the top of the rim (Pl. 1: 10; Pl. 3: 32), or a finger or tool impression in the middle of the handle (Pl. 3: 31, 32; Pl. 4: 38).

According to the general characteristics of the production, which relate to texture and methods of baking, pottery from Domašince completely conforms with the production of western Transdanubian linear pottery. The complete lack of sharper biconical shapes is noticeable, as well as the absence of barbotine and pinched decoration, which are characteristics of the older linear pottery.²⁷ The forms of the vessels, and especially the decorating techniques and motifs on the pottery, found at the settlement in Domašince show great similarities with the pottery from southern and central Transdanubia, attributed to the Keszthely group. In addition to the usual spherical and hemispherical shapes, which are typical of the younger, or so-called late, linear pottery in western Transdanubia, amphorae with a low cylindrical neck and spherical body, such as those found at Domašince, also appear in the material of this cultural group.²⁸ However, some amphorae of this type are attributed, on the basis of the ornaments, to the older phase of the Transdanubian linear pottery.²⁹ On the other hand, there is a complete lack of vessels with a foot at Domašince, while only one pottery fragment is S-shaped (Pl. 2: 21). Similarities with the material of the Keszthely group are also visible in the decoration technique and motifs on the fine pottery. Specifically, incising of deep and wide lines, which may have V- or U-section, is characteristic of this cultural group.³⁰ Decorative motifs include semi-circular and S-lines, spirals, meanders, horizontal lines, fish-bone motifs and motifs of broken hook-shaped lines.³¹ Most often, the motifs are organized in three parts: the main motif flows around the vessel, and inside and around it there are accompanying smaller motifs, while below the rim there is a horizontal line.³² In addition to incising, red painting is also used for decoration of the fine pottery of the Keszthely group.³³ The coarse pottery of this group is mostly undecorated, with sporadic appearance of pinching, impressing and applying of plastic ribs, and the grips are often decorated with an impression.³⁴ On the fine pottery from Domašince, the decoration of a horizontal line incised just below the rim is recognizable on several fragments (Pl. 1: 9, 12; Pl. 2: 13; Pl. 3: 23–25), as well as the motifs of broken hook-shaped lines (Pl. 1: 9; Pl. 3: 23–25), and occasionally shorter incised lines as secondary motifs to the main one (Pl. 1: 9). Decoration with arc-shaped or semi-circular lines, possibly with S-motifs, can

27 Marton 2008, 202–203; Oross, Bánffy 2009, 181.

28 Oross, Bánffy 2009, 184; Oross, Simmer, Straub 2019, 40.

29 Kalicz 1995, 32, 41, Abb. 7: 1; Kalicz, Kalicz-Schreiber 2001, 28, 33, Abb. 5: 1.

30 Kalicz 1991, 22; Marton 2008, 200.

31 Kalicz 1991, 22; Marton 2008, 204; Marton, Oross 2009, 61; Oross, Bánffy 2009, 184; Oross, Simmer, Straub 2019, 40.

32 Oross, Simmer, Straub 2019, 40.

33 Marton 2008, 204; Oross, Bánffy 2009, 185; Oross, Simmer, Straub 2019, 42.

34 Kalicz 1991, 23; Oross, Simmer, Straub 2019, 42.

27 Marton 2008, 202–203; Oross, Bánffy 2009, 181.

28 Oross, Bánffy 2009, 184; Oross, Simmer, Straub 2019, 40.

29 Kalicz 1995, 32, 41, Abb. 7: 1; Kalicz, Kalicz-Schreiber 2001, 28, 33, Abb. 5: 1.

30 Kalicz 1991, 22; Marton 2008, 200.

31 Kalicz 1991, 22; Marton 2008, 204; Marton, Oross 2009, 61; Oross, Bánffy 2009, 184; Oross, Simmer, Straub 2019, 40.

32 Oross, Simmer, Straub 2019, 40.

33 Marton 2008, 204; Oross, Bánffy 2009, 185; Oross, Simmer, Straub 2019, 42.

34 Kalicz 1991, 23; Oross, Simmer, Straub 2019, 42.

na fragmentiranost nalaza, odnose se prvenstveno na smještaj bradavica, odnosno drški na najširem dijelu posude te otiskivanja prsta na drškama i obodu posuda (T. 1: 4, 5, 7, 8; T. 2: 16–18; T. 3: 31, 32; T. 4: 33, 34, 38). Na naselju u Domašincu nije evidentiran niti jedan crveno oslikani ulomak, niti su zabilježeni motivi meandra i spirale koji bi prekrivali gotovo cijelo tijelo posude, kao ni ukrašavanje štibanjem na gruboj keramici.

Kamene izrađevine

Prilikom arheoloških istraživanja naselja kulture zapadnotransdanubijske linearnotrakaste keramike u Domašincu pronađeno je 12 kamenih izrađevina, koje uglavnom potječu iz zapuna objekata. Primarnom se podjelom sedam izrađevina može pripisati nalazima lomljene, a pet nalazima glačane kamene industrije. Sirovinska analiza kamenih nalaza nije provedena, već su sirovine preliminarno određene makroskopski. S obzirom na iznimno malen broj nalaza, nije bilo moguće provesti ni detaljnu statističku analizu.

Tehnološke kategorije lomljenih izrađevina definirane su prema tehnologiji korištenoj u radu Šošić – Klindžić³⁵ za litičke nalaze ranih poljodjelskih zajednica na prostoru istočne Hrvatske, a definicije određenih tipova preuzete su iz radova Šošić – Klindžić³⁶ i Karavanić *et al.*³⁷ Analizom tehnologije lomljenih izrađevina utvrđeno je postojanje pet kategorija: sječivo, pločica, odbojak, dotjerujući odbojak jezgre i krhotina (sl. 13). Dvije alatke mogu se svrstati u tehnološku kategoriju odbojka (T. 5: 47, 48), dvije u kategoriju pločice (T. 5: 46, 49) te po jedan predmet u kategoriju sječiva (T. 5: 45), dotjerujućeg odbojka jezgre (T. 5: 44) i krhotine (T. 5: 50). Gotovo svi nalazi lomljene industrije su cjeloviti, izuzev jednog sječiva i jedne pločice, kojima je pronađen po manji fragment. Tipološki se mogao definirati samo tip komada s obradom, čije osobine pokazuje pet od sedam pronađenih izrađevina. Jezgre na nalazištu nisu nađene, a s obzirom na to da je pronađena količina lomljenih izrađevina izrazito mala, mjesto proizvodnje lomljavine se na trenutnom stupnju istraženosti ne može odrediti. Izrazito uredno izrađene pločice i sječivo daju naslutiti postojanje pripreme jezgre u tehnološkom procesu, kako bi se dobili što kvalitetniji alati i kako bi se maksimizirala proizvodnja. Preliminarnom makroskopskom analizom sirovine utvrđeno je da je pet alatki vjerojatno izrađeno od specifičnog crvenog radiolarita, jedna od rožnjaka, a jedna od svjetlopropusnog opsidijana.³⁸

also be assumed in several cases (Pl. 2: 13–15, 20; Pl. 3: 28–30; Pl. 4: 36). All of these ornaments were made of wide and deep U-section lines. Similarities are evident in coarse pottery as well; and, given the fragmentation of the finds, they relate primarily to the placement of the grips on the widest part of the vessel and fingerprints on the handles and rims (Pl. 1: 4, 5, 7, 8; Pl. 2: 16–18; Pl. 3: 31, 32; Pl. 4: 33, 34, 38). At the settlement in Domašinec, not a single red-painted fragment was recorded, nor were meander and spiral motifs, which would cover almost the entire body of the vessel, nor is there any decoration made by pinching on the coarse pottery.

Stone artefacts

During the archaeological excavations of the Neolithic settlement of the Western Transdanubian Linear Pottery culture in Domašinec, 12 stone artefacts were found, originating mostly from the fills of the features. In the primary classification, seven of the artefacts can be attributed to the knapped-stone industry, and five to the ground-stone industry. Raw-material analysis of the stone finds was not carried out, but the raw materials were preliminarily determined macroscopically. Due to the extremely small number of findings, it was not possible to conduct a detailed statistical analysis.

Technological categories of the knapped stone artefacts were defined according to the technology analysis used by Šošić Klindžić³⁵ for lithic findings of early agricultural communities in eastern Croatia, and definitions of certain types were taken from Šošić Klindžić³⁶ and Karavanić *et al.*³⁷ During the analysis of the technology of the knapped-stone industry, five technological categories were established: blade, bladelet, flake, core-trimming flake and chunk (Fig. 13). Two artefacts can be attributed to the category of flakes (Pl. 5: 47, 48) and two to the category of bladelets (Pl. 5: 46, 49), and the remaining three are distributed to the categories of blades (Pl. 5: 45), core-trimming flakes (Pl. 5: 44) and chunks (Pl. 5: 50). Almost all the finds of the knapped-stone industry were found whole, except for one blade and one bladelet, of which smaller fragments were found. Typologically, the only type of tool which could be identified is a retouched piece. The characteristics of it are observed on five of the seven artefacts found. No cores were found at the site; and, given that the quantity of knapped artefacts is extremely small, the place of production cannot be determined at the current stage of research. Extremely neatly-made bladelets and blades suggest the existence of core preparation in the technological process, in order to obtain the highest-quality tools and to maximize production. Preliminary macroscopic raw-material analysis revealed that five tools were probably made from specific red radiolarite, one from flint, and one from translucent obsidian.³⁸

35 Šošić Klindžić 2010.

36 Šošić Klindžić 2010.

37 Karavanić *et al.* 2015.

38 Zahvaljujemo kolegama dr. Zlatku Perhoću i Marku Bandi na pomoći prilikom analize sirovina.

35 Šošić Klindžić 2010.

36 Šošić Klindžić 2010.

37 Karavanić *et al.* 2015.

38 We would like to thank our colleagues Dr Zlatko Perhoć and Marko Banda for their help with the raw-material analysis.



SLIKA 13. Lomljene kamene izrađevine: SJ 144, 079, 049 (gornji red) i SJ 146 (donji red) (snimio Lj. Gamulin).

FIGURE 13. Knapped stone artefacts: SU 144, 079, 049 (upper row) and SU 146 (lower row) (photo by Lj. Gamulin).

Za potrebe tehnološke analize glačanih izrađevina, upotrijebljen je lanac operacija glačanih kamenih izrađevina modificiran prema različitim autorima.³⁹ Za tipološku je analizu korištena modificirana tipologija izrađena prema Wright⁴⁰ i Antonović,⁴¹ a s obzirom na probleme u nazivlju određenih tipova,⁴² korišteni su termini prema Branković.⁴³ Analizom tehnologije glačanih izrađevina, nalaze iz Domašince moguće je podijeliti u tri tehnološke kategorije prema Branković:⁴⁴ B3 – brušenje i glačanje, B1/2 – iskucavanje i brušenje te B1/3 – iskucavanje, brušenje i glačanje. Važno je napomenuti da se na gotovim proizvodima glačane industrije teško makroskopski primjećuju tragovi različitih tehnika obrade, a njihova tehnologija proizvodnje nije u literaturi u potpunosti standardizirana te postoji i velik broj terminologija i tipoloških sustava koji se često razlikuju od lokaliteta do lokaliteta.⁴⁵

Može se zaključiti da se na svim pronađenim glačanim izrađevinama iz Domašince mogu primijetiti tragovi brušenja, dok se na tri predmeta može primijetiti i faza glačanja površine (T. 5: 39, 41, 42) te iskucavanje površine prije brušenja (T. 5: 39, 40, 43).

Tipološki se nalazi glačane industrije mogu podijeliti u tri kategorije – izrađevine sa sječivom, tučkovi i radne plohe, od kojih je svaka preciznije određena podtipom. Od evidentiranih glačanih izrađevina, samo su tesle pronađene cjelovite (sl. 14), (T. 5: 41, 42), dok su ostali nalazi fragmentirani. Objе su izrađevine

During the ground-stone artefact technological analysis, a chain of operations of polished/ground stone tools was used, modified in accordance with various authors.³⁹ Typological analysis of said artefacts was conducted using a modified typology made by Wright⁴⁰ and Antonović,⁴¹ and, in view of the problems in the nomenclature of certain types,⁴² terms according to Branković⁴³ were used. In analysis of the technology of ground artefacts, the finds from Domašinec can be divided into three technological categories according to Branković:⁴⁴ B3, grinding and polishing; B1 / 2, pecking and grinding; and B1 / 3, pecking, grinding and polishing. It is important to note that traces of various processing techniques are difficult to detect macroscopically on finished products of the ground-stone industry, and their production technology is not fully standardized in the literature. There is also a large number of terminologies and typological systems that often differ from site to site.⁴⁵

It can be concluded that traces of grinding can be noticed on all ground-stone products found at Domašinec, while on three objects a surface-smoothing phase (polishing) can be noticed (Pl. 5: 39, 41, 42), as well as surface pecking before grinding (Pl. 5: 39, 40, 43).

Typologically, the findings of the ground-stone industry can be divided into three categories: artefacts with a blade, pestles and worktops, each of which is more precisely determined by

39 Wright 1992; Antonović 2003; Dimić 2015; Branković 2019; Rajković 2019.

40 Wright 1992.

41 Antonović 2003.

42 Rajković 2019.

43 Branković 2019.

44 Branković 2019.

45 Rajković 2019, 8.

39 Wright 1992; Antonović 2003; Dimić 2015; Branković 2019; Rajković 2019.

40 Wright 1992.

41 Antonović 2003.

42 Rajković 2019.

43 Branković 2019.

44 Branković 2019.

45 Rajković 2019, 8.



SLIKA 14. Glačane kamene tesle, SJ 158 (snimio Lj. Gamulin).

FIGURE 14. Polished/ground stone artefacts, SU 158 (photo by Lj. Gamulin).

sa sječivom svrstane u podtipove tesli: III/5 (T. 5: 42) i III/1 (T. 5: 41) prema Antonović.⁴⁶ Pronađeni tučak podtipa je 67 (T. 5: 43) prema Wright,⁴⁷ a radna ploha (T. 5: 40) definirana je kao statični brus prema Branković.⁴⁸ Najveći zabilježeni kameni nalaz (T. 5: 39) nije preciznije određen jer pokazuje elemente i radne plohe rastirača, a zbog njegove fragmentiranosti nije mu moguće točno odrediti tip. Navedenom fragmentu radne plohe sačuvano je lice (radna površina) te manji dijelovi lateralnih strana i naličja. Na dijelovima lateralnih strana i manjoj očuvanoj površini naličja vidljivo je oblikovanje udaranjem i iskucavanjem, ali zbog fragmentiranosti, nije moguće utvrditi primarni oblik i presjek predmeta. Radna je površina blago konkavna i intenzivno uglučana, vjerojatno uslijed uporabe, što bi moglo sugerirati da je zapravo riječ o većem rastiraču, odnosno pokretnom alatu pri mljevenju i drobljenju. Preliminarnom makroskopskom sirovin-skom analizom utvrđeno je da su navedene tesle obje izrađene od zelenog škrljajca, koji je česta sirovina za izradu glačanih alatki u vrijeme neolitika i eneolitika na području Europe,⁴⁹ a za ostale izradevine korišten je pješčenjak. Za izradu tučka i statičnog brusa upotrijebljen je pješčenjak finije granulacije, a za izradu spomenute radne plohe/rastirača onaj krupnije granulacije, odnosno konglomerat.

Prapovijesni je čovjek birao kamen prema njegovoj pogodnosti za obradu i dostupnosti pa se za izradu glačanih kamenih alatki vrlo često, ako ne i prvenstveno, koristio oblucima, a ne materijalom s primarnog ležišta.⁵⁰ Za potrebe izrade lomljenih izradevina, sirovina bolje kvalitete, potrebna za izradu standardiziranih sječiva, bila je od iznimne važnosti pa se može pretpo-

subtype. Of the recorded ground-stone artefacts, only adzes were found whole (Fig. 14), (Pl. 5: 41, 42), while other finds were fragmented. Both artefacts with blades are classified into adze subtypes: III/5 (Pl. 5: 42) and III/1 (Pl. 5: 41) according to Antonović.⁴⁶ The pestle was classified as subtype 67 (Pl. 5: 43) according to Wright,⁴⁷ and the worktop (Pl. 5: 40) was defined as a stationary whetstone according to Branković.⁴⁸ The largest recorded stone find (Pl. 5: 39) is not precisely determined, because it shows elements of both the worktop and the handstone; and, due to its fragmentation, it is not possible to determine the exact type. The face of the said fragment (work surface) is preserved, as well as smaller parts of the sides and the back. Shaping and surface pecking is visible on parts of the sides and on the smaller preserved surface of the reverse; but, due to fragmentation, it is not possible to determine the primary shape and cross section of the object. The work surface is slightly concave and intensely polished, probably due to use, which could suggest that it is actually a larger handstone, or a portable tool for grinding and crushing. Preliminary macroscopic raw-material analysis showed that said adzes were both made of Greenschist, which is a common raw material for making polished/ground stone tools in the Neolithic and Copper Age in Europe;⁴⁹ for the production of other artefacts, sandstone was used. Fine-granulation sandstone was used to make the pestle and stationary whetstone, and coarse-granulation conglomerate was used to make the said worktop/handstone.

Prehistoric man chose stone according to its convenience for processing and availability; so, for the manufacture of ground stone tools, very often, if not primarily, he used pebbles rather than material from the deposit.⁵⁰ For the knapped artefacts, raw materials of better quality, needed for the production of standardized blades, were of exceptional importance, and it can be assumed that, in search of these, Neolithic communities could send a kind of expedition to distant regions.⁵¹ Tools made from rare materials, such as obsidian, are likely to be luxury items or gifts that are occasionally imported in limited quantities through trade and along migration routes.⁵² The findings of the knapped-stone industry at the settlement in Domašinec show elements of exchange with the area of Transdanubia. Obsidian and red radiolarite finds are a standard part of the Neolithic assemblage north of the River Drava, as seen at the sites of Alsonyek - Bataszek,⁵³ Balatonszárszó,⁵⁴ Boldogkőváralja,⁵⁵ Brunn am Gebirge in Austria⁵⁶ and others, and therefore a similar assemblage can be expected in the area of Medimurje. The

46 Antonović 2003, 54.

47 Wright 1992, 70.

48 Branković 2019, 140.

49 Paunović 2002, 11; Marciuš 2017, 24–25; Đukić 2018, 276.

50 Starnini 2000, 215; Marciuš 2017, 24.

46 Antonović 2003, 54.

47 Wright 1992, 70.

48 Branković 2019, 140.

49 Paunović 2002, 11; Marciuš 2017, 24–25; Đukić 2018, 276.

50 Starnini 2000, 215; Marciuš 2017, 24.

51 Šošić-Klindžić 2014, 187.

52 Paunović 2002, 9.

53 Szilagy 2018, 131.

54 Marton, Oross 2009, 68.

55 Faragó, Mester, Király 2021, 56.

56 Stadler 2005, 270.

staviti da su neolitičke zajednice u potragu za njom mogle slati u udaljene krajeve i svojevrsne ekspedicije.⁵¹ Alati izrađeni od rijetkih materijala, poput opsidijana, vjerojatno predstavljaju luksuzne predmete ili darove koji su povremeno u ograničenim količinama bili uvezeni trgovačkim i migracijskim putovima.⁵² Nalazi lomljene industrije na naselju u Domašincu pokazuju elemente vjerojatne razmjene s područjem Transdanubije. Nalazi opsidijana i crvenog radiolarita standardni su dio neolitičkog skupa nalaza populacija sjeverno od Drave, što je vidljivo na nalazištima Alsonyek – Bataszek,⁵³ Balatonszárszó,⁵⁴ Boldogkőváralja,⁵⁵ Brunn am Gebirge u Austriji⁵⁶ i drugima pa se sličan skup nalaza može očekivati i na području Međimurja. Crveni radiolarit pronađen u Domašincu pokazuje sve elemente radiolarita iz gorja Bakony, smještenog sjeverno od Blatnog jezera te je vjerojatno dopremljen upravo iz tog područja. Upotreba navedenog radiolarita može se pratiti od kasnog mezolitika u sjevernoj Mađarskoj, a njezin je vrhunac vidljiv u kasnoj starčevačkoj kulturi i za vrijeme kulture linearnotrakaste keramike.⁵⁷ Korištenje sirovina za izradu lomljenih kamenih izrađevina s ovog gorja dokazano je u više slučajeva u razdoblju kulture linearnotrakaste keramike.⁵⁸ Nalazi tzv. transdanubijskog radiolarita dominiraju arheološkim litičkim skupovima nalaza u Mađarskoj, većinom u kombinaciji s drugim vrstama rožnjaka, poput sivog rožnjaka s Tevela i drugih područja gorja Bakony.⁵⁹ Alati od lomljenog kamena u Domašincu mogli bi biti izrađeni od tzv. szentgalskog radiolarita crvene boje. S obzirom na to da je radiolarijski rožnjak moguće pronaći i na prostoru Hrvatske, na području Banovine i u riječnim koritima, ali i u središnjoj Bosni,⁶⁰ a crvenkasto smeđi radiolarit u rijeci Kupi,⁶¹ za pouzdano određivanje porijekla sirovina potrebne su detaljne sirovinske analize. Pri određivanju porijekla sirovine, veća je vjerojatnost da su pretpostavljeno iste populacije koristile istu, provjereno dobru sirovinu, na cijelom području njezina rasprostiranja, kao što je to slučaj na nalazištima u Austriji⁶² i istočnoj Mađarskoj,⁶³ ali i na ustaljenoj praksi korištenja karpatskog opsidijana.⁶⁴ Nalazi predmeta od opsidijana nisu česti na području rasprostiranja kulture linearnotrakaste keramike,⁶⁵ no ipak su prisutni, a mogući fragment jedne takve alatke pronađen je na naselju u Domašincu. Riječ je o trapezoidnom fragmentu sječiva s tragovima dodatne obrade na obje lateralne strane. Unatoč njegovu obliku, ne pripada tipu geometrijskih oblika jer je njegov završni izgled nastao nenamjernim fragmentiranjem. Izrađen je od

red radiolarite found in Domašinec shows all the elements of radiolarites from the Bakony Mountains, located north of Lake Balaton, and was probably brought from that area. The use of this radiolarite can be traced back to the late Mesolithic in northern Hungary, and its peak is visible in the late Starčevo culture and during the Linear Pottery culture.⁵⁷ The use of raw materials for the production of knapped stone tools from these mountains has been proven in several cases during the Linear Pottery culture period.⁵⁸ Finds of so-called Transdanubian radiolarites dominate archaeological lithic clusters of finds in Hungary, mostly in combination with flints, such as the grey flint from Tevel and other areas of the Bakony Mountains.⁵⁹ Knapped stone tools in Domašinec could be made from the so-called Szentgal red radiolarite. Given that the radiolarian flint can also be found in Croatia, in the Banovina area and in riverbeds, and also in central Bosnia,⁶⁰ and reddish-brown radiolarite has been discovered in the River Kupa,⁶¹ detailed raw-material analysis is needed to reliably determine the origin of the raw materials. When determining the origin of a raw material, it is more likely that the assumedly same populations used the same raw material of proven quality in the whole area of its distribution, as is the case in Austria⁶² and eastern Hungary,⁶³ as well as the established practice of using the Carpathian obsidian.⁶⁴ Finds of obsidian objects are not common in the area of the Linear Pottery culture,⁶⁵ but they are still present, and a possible fragment of one such tool was found at the settlement in Domašinec. It is a trapezoidal fragment of a blade with traces of retouch on both lateral sides. Despite its shape, it does not belong to the type of geometric shapes, as its final appearance was created by unintentional fragmentation. It is made of translucent obsidian which most likely belongs to type 1 Carpathian obsidian.⁶⁶ The nearest sources of this type of obsidian are located about 350 km away from Domašinec, while the distance to the Szentgal radiolarite mines is about 115 km, which was an acceptable distance for the population of that time, especially compared to some other sites. For example, the Linear Pottery culture settlements of Rosenberg and Strogen in Austria, where more than half of the stone artefacts found were made of radiolarites from the Szentgal mine, are about 230 km from the said mine, and the Vedrovice and Kladniky sites in Moravia, which also contain finds made from the same raw material, are located at distances of about 245 and 300 km respectively. Findings of the

51 Šošić-Klindžić 2014, 187.

52 Paunović 2002, 9.

53 Szilagy 2018, 131.

54 Marton, Oross 2009, 68.

55 Faragó, Mester, Király 2021, 56.

56 Stadler 2005, 270.

57 Mateiciucova 2007, 683.

58 Npr. Bánffy 2004; Szilasi 2017; Szilagy 2018.

59 Szilasi 2017, 243.

60 Halamić, Šošić 2009, 21.

61 Vukosavljević, Perhoč, Karavanić 2015, 77.

62 Stadler 2005, 270.

63 Szilagy 2018, 132.

64 Biró 1993, 408.

65 Szilasi 2017, 243.

57 Mateiciucova 2007, 683.

58 E.g. Bánffy 2004; Biró 2008; Szilasi 2017; Szilagy 2018.

59 Szilasi 2017, 243.

60 Halamić, Šošić 2009, 21.

61 Vukosavljević, Perhoč, Karavanić 2015, 77.

62 Stadler 2005, 270.

63 Szilagy 2018, 132.

64 Biró 1993, 408.

65 Szilasi 2017, 243.

66 Biró 1993, 408.

svjetlopropusnog opsidijana koji najvjerojatnije pripada tipu 1 karpatskog opsidijana.⁶⁶ Najbliža izvorišta ovog tipa opsidijana smještena su oko 350 km daleko od Domašince, dok udaljenost do szentgalskih rudnika radiolarita iznosi oko 115 km, što je za onodobne populacije predstavljalo prihvatljivu udaljenost, naročito u usporedbi s nekim drugim nalazištima. Primjerice, naselja kulture linearnotrakaste keramike Rosenberg i Strögen u Austriji, gdje je više od polovice pronađenih kamenih izrađevina izrađeno od radiolarita iz rudnika u Szentgalu, udaljena su od ubiciranog rudnika oko 230 km, a nalazišta Vedrovice i Kladniky u Moravskoj, koji također sadrže nalaze izrađene od iste sirovine, smještena su na oko 245 i 300 km udaljenosti. Nalazi istog tipa radiolarita evidentirani su i na lokalitetima i do 1000 km udaljenima od izvorišta.⁶⁷ Pritom treba imati u vidu da nisu stanovnici svih naselja putovali do ležišta, već je postojala mreža naselja pa se sirovina mogla dobavljati razmjenom i u bližjoj okolici. Kako je ustanovljeno da su se nalazišta s manjim udjelom nalaza nalazila na većoj udaljenosti od ležišta,⁶⁸ ista se pretpostavka može primijeniti i na stanovnike neolitičkog naselja u Domašincu.

Unatoč malom broju kamenih nalaza pronađenih na naselju u Domašincu, može se pretpostaviti svakodnevno korištenje ovih predmeta za različite poslove vezane uz proizvodnju i obradu hrane, obradu drva, proizvodnju koštanih, kamenih i keramičkih predmeta i dr. Postojanje tučkova i rastirača upućuje na postojanje i popratnih, donjih segmenata alatki (tarionika, žrvnjeva i sl.), koji su mogli biti izrađeni i od drugih materijala, ponajprije od drva. Pronađene tesle vjerojatno su služile upravo u obradi drva, što je najčešća interpretacija takvih nalaza tijekom neolitika.⁶⁹ Slični predmeti pronađeni su na gotovo svim neolitičkim nalazištima, dok se najsličniji i zemljopisno najbliži predmet, koji je slučajni nalaz, čuva u muzeju Međimurja u Čakovcu.⁷⁰

Činjenica da se na nalazištu vjerojatno većinom radi o izrađevinama od uvoznog materijala naglašava standarde ondašnjeg stanovništva koje pripada istome kulturnom krugu i koristi iste, provjereno dobre sirovine na širokome geografskom području. Slični materijal mogao se pronaći i u obližnjim potocima, ali specifičnosti szentgalskog radiolarita i karpatskog opsidijana sugeriraju njihovu nabavu udaljenom razmjenom iz izvorišta ili posredno putem mreža razmjene s drugim istovremenim naseljima. S druge strane, nalazi glačane industrije i rožnjaka pronađeni u Domašincu vrlo vjerojatno potječu iz nanosa obližnjih rijeka i potoka.

same type of radiolarite have been recorded at sites up to 1000 km away from the source.⁶⁷ It should be kept in mind that not all settlements sent inhabitants to travel to the source, but there was probably a network of settlements, and the raw material could be supplied by exchange in the immediate vicinity. As it has been established that the sites with a smaller proportion of finds were located at a greater distance from the deposits,⁶⁸ the same assumption can be applied to the inhabitants of the Neolithic settlement in Domašinec.

Despite the small number of stone finds found at the settlement in Domašinec, it can be assumed that these objects were used daily for various jobs related to food production and processing, wood processing, production of bone, stone and ceramic objects, etc. Pestle and handstone finds suggest the existence of accompanying stationary tools (grindstones, mortars etc.), which could have been made of other materials, primarily wood. The adzes found were probably used in woodworking, which is the most common interpretation of such finds during the Neolithic.⁶⁹ Similar objects have been found at almost all Neolithic sites, while the most similar and geographically closest artefact, which is an accidental find, is kept in the Museum of Međimurje, Čakovec.⁷⁰

The fact that the artefacts found at the said site were probably mostly made from imported raw materials highlights the standards of the Neolithic population belonging to the same cultural circle and using the same raw materials of proven quality in a wide geographical area, despite great distances from raw-material deposits. Similar raw materials could be found in nearby streams, but the specifics of the Szentgal radiolarite and Carpathian obsidian suggest their acquisition by distant exchange from sources or indirectly by exchange networks with other contemporaneous settlements. On the other hand, the finds of the ground-stone industry and flint in Domašinec most likely come from sediments of nearby rivers and streams.

66 Biró 1993, 408.

67 Bánffy 2004, 346.

68 Matieiciucova 2007, 703, Fig. 31.10.

69 Antonović 2003, 54.

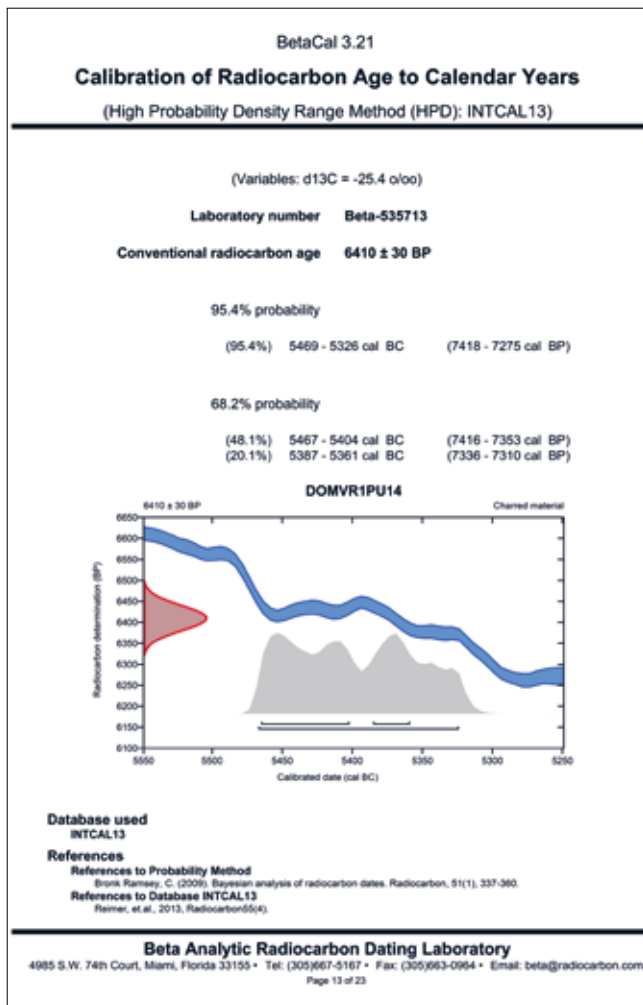
70 Marciuš 2017, 39, inv. br. MMČ-13699.

67 Bánffy 2004, 346.

68 Matieiciucova 2007, 703, Fig. 31.10.

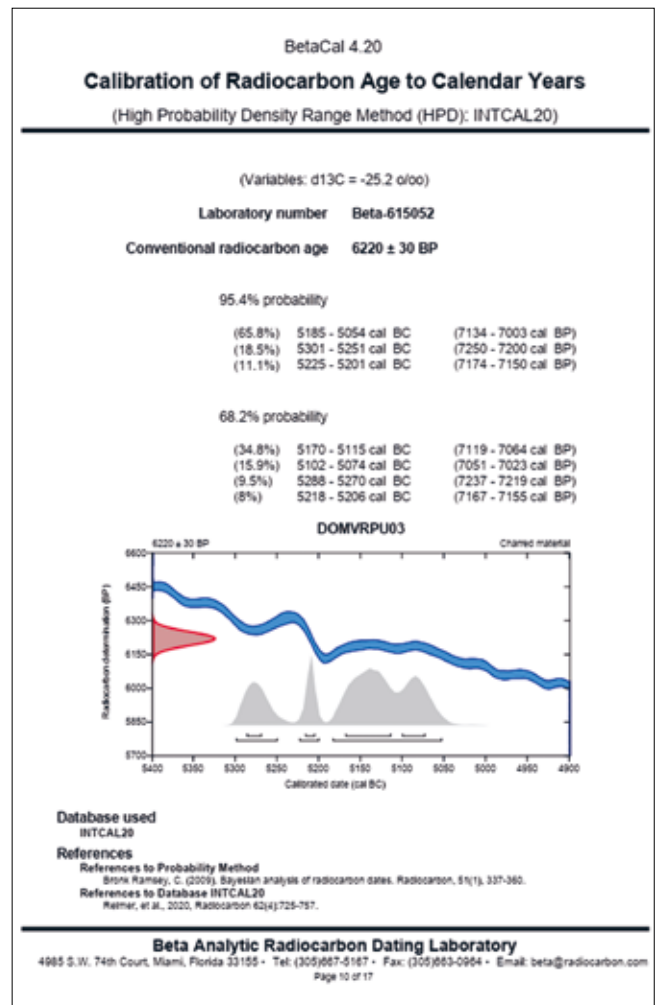
69 Antonović 2003, 54.

70 Marciuš 2017, 39, inv. no. MMČ-13699.



SLIKA 15. Rezultati radiokarbonske analize uzorka ugljena iz zapune SJ 146 (Beta Analytic Radiocarbon Dating Laboratory).

FIGURE 15. Results of the radiocarbon analysis of a charcoal sample from filling SU 146 (Beta Analytic Radiocarbon Dating Laboratory).



SLIKA 16. Rezultati radiokarbonske analize uzorka ugljena iz zasipa gorenog materijala SJ 028 u objektu SJ 003/004 (Beta Analytic Radiocarbon Dating Laboratory).

FIGURE 16. Results of the radiocarbon analysis of a charcoal sample from a backfill of burnt material SU 028 in feature SU 003/004 (Beta Analytic Radiocarbon Dating Laboratory).

Apsolutna i relativna datacija

Uzorci ugljena iz zapune objekta SJ 146/147 u sondi 6 (PU 14) i zasipa gorenog materijala (SJ 028) u objektu SJ 003/004 u sondi 1 (PU 03) radiokarbonski su analizirani (Tablica 1).⁷¹ Kalibrirani datum dobiven za uzorak iz zapune SJ 146 (Beta-535173: 6410 ± 30 BP) (sl. 15) odgovara kalibriranim apsolutnim datumima za stariju, čak formativnu fazu linearnotrakaste keramike na području Transdanubije, poklapajući se s datumom Becsehely I i nekoliko datuma za Szentgyörgyvölgy – Pityerdomb.⁷² Rezultati analize uzorka ugljena iz zasipa gorenog materijala u zapuni SJ 003 (Beta-615052: 6220 ± 30 BP) (sl. 16) poklapaju se s

Absolute and relative dating

A charcoal sample from the fill of feature SU 146/147 in trench 6 (sample PU 14) and one from a backfill of burnt material (SU 028) in feature SU 003/004 in trench 1 (sample PU 3) were dated by the radioactive-carbon method (Tab. 1).⁷¹ The calibrated date obtained for the sample from fill SU 146 (Beta-535173: 6410 ± 30 BP) (Fig. 15) corresponds to the calibrated dates for the older, even formative, phase of the linear pottery in western Transdanubia, coinciding with the Becsehely I date and several dates for Szentgyörgyvölgy - Pityerdomb.⁷² The results of the analysis of the charcoal sample from the backfill of burnt material in fill

71 AMS radiokarbonska analiza provedena je u Beta Analytic Radiocarbon Dating Laboratory.

72 Bánffy 2004, 299, 300, 302, 304 – 306, Fig. 147, 149, 151–153; Bánffy, Oross 2010, 264, 265, Fig. 2, Tab. 3; Jakucs et al. 2016, 323.

71 AMS radiocarbon analysis was conducted in the Beta Analytic Radiocarbon Dating Laboratory.

72 Bánffy 2004, 299, 300, 302, 304–306, Fig. 147, 149, 151–153; Bánffy, Oross 2010, 264, 265, Fig. 2, Tab. 3; Jakucs et al. 2016, 323.

kalibriranim datumima mlađe faze linearnotrakaste keramike na prostoru zapadne Transdanubije, odnosno kesteljske grupe, apsolutno datirane između 5300./5250. i 5000./4900. pr. Kr.⁷³ Datum dobiven za uzorak ugljena iz zapune SJ 146 ne poklapa se s karakteristikama pokretnih nalaza pronađenih u istoj zapuni, niti s onima evidentiranim u drugim objektima naselja. Mogući uzrok ovakvog rezultata je tzv. efekt starog drva (*Old wood effect*), koji se pojavljuje kada je drvo upotrebljavano kroz više generacija, ili kada uzorak potječe od drveta koje je dugo živjelo. U drugom slučaju rezultat ovisi o tome s kojeg dijela drveta uzorak potječe, tj. uzorak iz srednjeg dijela debla dat će znatno stariji datum od uzorka prikupljenog na dijelu debla s kasnije izraslim godovima.⁷⁴

Keramički materijal pronađen u datiranim zapunama istih je obilježja, karakterističnih za kesteljsku grupu. U zapuni SJ 146 evidentirane su dvije amfore i manja kuglasta zdjela, ukrašene za spomenutu grupu specifičnim motivima linija lomljenih u obliku kuke te s vodoravnom linijom ispod oboda (T. 3: 23–25), a identično dekorirana zdjela pronađena je i u zapuni SJ 003 (T. 1: 9). Paralele se mogu pronaći među zapadnotransdanubijskim materijalom kulture linearnotrakaste keramike, primjerice onim evidentiranim na naselju Kustánszeg,⁷⁵ odakle su poznata tri konvencionalna radiokarbonska datuma.⁷⁶ Njihovom naknadnom kalibracijom u programu Calib810 dobiveni su rezultati (jednostruka standardna devijacija) koji ukazuju na razdoblje između 5208. – 4944. pr. Kr.⁷⁷ i 5045. – 4792. pr. Kr.⁷⁸ Ovi datumi odgovaraju vrijednosti jednostruke standardne devijacije kalibriranog datuma s lokaliteta Sormás – Mántai-dűlő⁷⁹ te također datumu zasipa gorenog materijala s nalazišta Vrti I. Ulomak kuglaste, slično ukrašene, zdjele evidentiran je u kući 14 na nalazištu Keszthely – Lendl Adolf út, gdje je pronađen s ulomkom Notenkopf keramike.⁸⁰ Sporadična pojava Notenkopf keramike s materijalom kesteljske grupe na naselju Balatonszárszó – Kiserdei-dűlő karakteristična je za stilsku grupu 3, koja označava prijelaz iz starije faze linearnotrakaste keramike u kesteljsku grupu, odnosno vrijeme formiranja navedene grupe.⁸¹ Međutim, prema N. Kaliczu⁸², prevladavajuća pojava kesteljske keramike s tek ponekim ulomkom Notenkopf tipa pripadala bi već klasičnoj fazi kesteljske grupe,⁸³ čiji početak K. Oross i E. Bánffy datiraju oko 5300./5250. pr. Kr.⁸⁴

SU 003 (Beta-615052: 6220 ± 30 BP) (Fig. 16) coincide with the calibrated dates for the later phase of the linear pottery in western Transdanubia, i.e. the Keszthely group, absolutely dated between 5300/5250 and 5000/4900 BC.⁷³ The date obtained for the charcoal sample from filling SU 146 is not concurrent with the characteristics of the other finds found in the same filling, nor with those recorded in the other features at the settlement. A possible cause of this result is the so-called ‘old wood’ effect, which occurs when wood has been used for several generations, or when the sample came from a tree that lived for a long time. In the second case, the result depends on which part of a tree the sample originates from, i.e. a sample from the central part of the tree would give a much earlier date than a sample of later-grown tree-rings.⁷⁴

Pottery found in the dated fills has the same characteristics, those of the Keszthely group. Two amphorae and a smaller spherical bowl decorated with the specific hook-shaped motifs and a horizontal line below the rim (Pl. 3: 23–25), characteristic of the given group, were found in filling SU 146, and an identically decorated bowl was found in SU 003 (Pl. 1: 9). Parallels can be found among the western Transdanubian linear pottery, for example those found at the Kustánszeg settlement,⁷⁵ from where three conventional radiocarbon dates are known.⁷⁶ Their subsequent calibration in the Calib810 program yielded results (1–Sigma) indicating a period between 5208–4944 BC⁷⁷ and 5045–4792 BC⁷⁸. These dates correspond to the 1–Sigma value of the calibrated date from the Sormás – Mántai-dűlő site,⁷⁹ and also the date of the backfilling of burnt material from the Vrti I site. A fragment of a spherical bowl, similarly decorated, was found in house 14 at the site of Keszthely – Lendl Adolf út, together with a fragment of Notenkopf pottery.⁸⁰ Sporadic appearance of the Notenkopf pottery with the pottery of the Keszthely group at the site of Balatonszárszó – Kiserdei-dűlő is characteristic of style group 3, which marks the transition from the older phase of the linear pottery to the Keszthely group, i.e. the formation time of this group.⁸¹ However, according to N. Kalicz,⁸² the predominant appearance of the Keszthely pottery with only a few fragments of the Notenkopf type would already belong to the classic phase of the Keszthely group,⁸³ which K. Oross and E. Bánffy date from 5300/5250 BC.⁸⁴

73 Bánffy, Oross 2009, 233–235, Tab. 3.

74 Wright 2017, 306–307.

75 Kalicz 1991, 17, 18, 20, Abb. 8: 2–3, Abb. 9: 8–10, Abb. 10: 3–6, Abb. 11: 1. Abb. 12: 16.

76 Bln 1221 (6025 ± 100 BP), Bln 1203 (6120 ± 100 BP) i Bln 1204 (6040 ± 100 BP) (Kalicz 1991, 27).

77 Bln 1203.

78 Bln 1221.

79 VERA 3099: 5220 – 5070. pr. Kr. (Barna, Pasztor 2011, 189, Tab. 1).

80 Oross, Simmer, Straub 2019, 45, Fig. 21: 10.

81 Marton 2008, 203, 204, Fig. 4: 5, 15; Marton, Oross 2012, 223–225, Abb. 2.

82 Kalicz 1991, 26.

83 Oross, Simmer, Straub 2019, 14.

84 Oross, Bánffy 2009, 177, Tab. 1.

73 Bánffy, Oross 2009, 233–235, Tab. 3.

74 Wright 2017, 306–307.

75 Kalicz 1991, 17, 18, 20, Abb. 8: 2–3, Abb. 9: 8–10, Abb. 10: 3–6, Abb. 11: 1, Abb. 12: 16.

76 Bln 1221 (6025 ± 100 BP), Bln 1203 (6120 ± 100 BP) and Bln 1204 (6040 ± 100 BP) (Kalicz 1991, 27).

77 Bln 1203.

78 Bln 1221.

79 VERA 3099: 5220 – 5070 BC (Barna, Pasztor 2011, 189, Tab. 1).

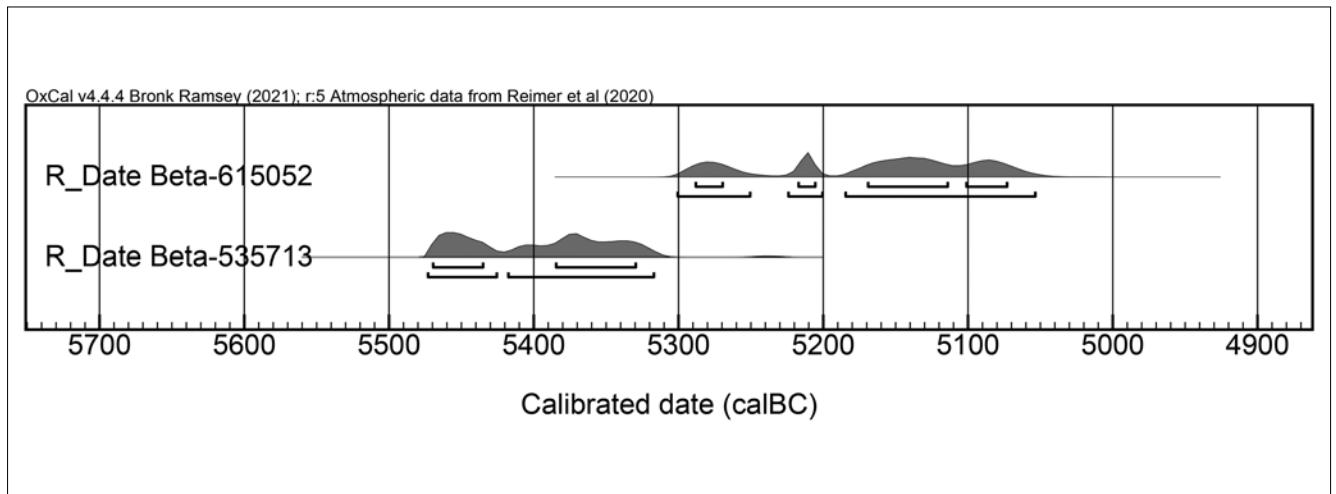
80 Oross, Simmer, Straub 2019, 45, Fig. 21: 10.

81 Marton 2008, 203, 204, Fig. 4: 5, 15; Marton, Oross 2012, 223–225, Abb. 2.

82 Kalicz 1991, 26.

83 Oross, Simmer, Straub 2019, 14.

84 Oross, Bánffy 2009, 177, Tab. 1.



TABLICA 1. Vremenski raspon kalibriranih radiokarbonskih datuma za nalazište Vrti I (program: OxCal v.4.4.4).

TABLE 1. Time range of calibrated radiocarbon dates for the Vrti I site (program: OxCal v.4.4.4).

Preostale dekorirane posude iz radiokarbonski datiranih zapuna sačuvane su samo u manjim ili većim ulomcima. Na nekoliko ulomka ostali su sačuvani dijelovi krivocrtnih motiva (T. 2: 13, 14, 15, 20; T. 3: 28–30). U slučaju donjeg dijela posude T. 3: 29 i ulomaka polukuglastih zdjela T. 2: 13 i T. 3: 30 može se pretpostaviti da sadrže prikaz dijela tzv. potkovičastog motiva. Polukružne, odnosno potkovičaste linije, također se pojavljuju na keramičkim posudama kesteljske grupe.⁸⁵ Spomenuti ulomci mogli su pripadati zdjelama ukrašenima potkovičastim linijama kakve su evidentirane na istim nalazištima kao i prije navedene posude s pravocrtnim motivima.⁸⁶ Na temelju usporedbe s nalazima iz zapadne Transdanubije, može se zaključiti da se karakteristike pokretnog materijala s nalazišta Vrti I i kalibrirani radiokarbonski datum za uzorak iz objekta SJ 003/004 poklapaju s poznatim nalazima iz Mađarske, ukazujući na mlađu, tj. kasnu fazu zapadnotransdanubijske linearnotrakaste keramike, odnosno kesteljsku grupu.

Novija istraživanja, ponajprije na prostoru južne Transdanubije, omogućila su preciznije određivanje relativnokronološkog položaja kesteljske grupe na temelju zajedničke pojave kesteljske keramike u zatvorenim cjelinama s materijalom drugih kulturnih manifestacija, odnosno keramičkih stilova.⁸⁷ Preliminarni pregled keramičkog materijala s nalazišta Szemely – Irtás uka-

The remaining decorated vessels from the radiocarbon-dated fillings are preserved only in fragments, large or small. Parts of the curvilinear motifs have been preserved on several fragments (Pl. 2: 13, 14, 15, 20; Pl. 3: 28–30). In the case of the lower part of a vessel Pl. 3: 19 and fragments of the hemispherical bowls Pl. 2: 13 and Pl. 3: 30, it can be assumed that they were decorated with part of an arc-shaped motif. Semi-circular and arc-shaped lines also appear on the pottery of the Keszthely group.⁸⁵ The fragments mentioned may have belonged to the bowls decorated with arc-shaped lines, found at the same sites as the aforementioned vessels with rectilinear motifs.⁸⁶ Based on comparison with finds from western Transdanubia, it can be concluded that the characteristics of all the finds from the site of Vrti I and calibrated radiocarbon age for the sample from feature SU 003/004 coincide with the known findings from Hungary, indicating a later phase of the Western Transdanubian Linear Pottery culture, namely the Keszthely group.

Recent research projects, in the first place those in the area of southern Transdanubia, have enabled a more precise determination of the relative chronological position of the Keszthely group, based on the joint appearance of the Keszthely pottery with those of the other cultural manifestations, i.e. ceramic styles.⁸⁷ A preliminary examination of the ceramic material

⁸⁵ Marton 2008, 200–204; Oross, Bánffy 2009, 184; Oross, Simmer, Straub 2019, 40.

⁸⁶ Npr. Kustánszeg (Kalicz 1991, 15, Abb. 6: 3, 4), Becsehely-Bükkaljai-dűlő (Kalicz *et al.* 2012, 152, Fig. 9: 3–5, 11), Keszthely-Lendl Adolf út (Oross, Simmer, Straub 2019, Fig. 19: 8).

⁸⁷ Posljednjih godina u stručnoj se literaturi postavlja pitanje opravdanosti izdvajanja kesteljske grupe, a pojedini autori koriste termin kesteljski stil. Naime, rezultati petrografskih analiza ulomaka keramičkih posuda pripisanih različitim kulturama, kulturnim grupama ili keramičkim stilovima, pronađenih na istom lokalitetu i često u istim stratigrafskim cjelinama s materijalom kulture linearnotrakaste keramike, ukazuju na velike sličnosti u pripremi keramičar-

⁸⁵ Marton 2008, 200–204; Oross, Bánffy 2009, 184; Oross, Simmer, Straub 2019, 40.

⁸⁶ For example: Kustánszeg (Kalicz 1991, 15, Abb. 6: 3, 4), Becsehely - Bükkaljai-dűlő (Kalicz *et al.* 2012, 152, Fig. 9: 3–5, 11), Keszthely - Lendl Adolf út (Oross, Simmer, Straub 2019, Fig. 19: 8).

⁸⁷ In recent years, the question of justification of distinguishing the Keszthely group has been raised in the literature, and some authors use the term 'Keszthely style'. The results of the petrographic analyses of pottery fragments attributed to different cultures, cultural groups or pottery styles, found together at the same site and often in the same stratigraphic units with the

zao je na redovitu zajedničku pojavu keramičkog posuđa različitih stilova u dugim jamama, pri čemu su, uz rjeđe nalaze kesteljske, Notenkopf i Zseliz/Želiezovce keramike, redovito zastupljeni i brojni nalazi keramičkog posuđa korenovskog i Ražište stila. Ova je faza naseljavanja apsolutno radiokarbonski datirana u vremenski raspon između 5200. i 4900. pr. Kr.⁸⁸ Istovremeni apsolutni datumi dobiveni su i za nalaze s naselja Becsehely – Bükkaljai-dűlő,⁸⁹ gdje je keramika kesteljske grupe pronađena u jamama s korenovskom i Zseliz/Želiezovce te keramikom tipa Šarka.⁹⁰ Potvrdu kronološkog položaja kesteljske grupe predstavljaju nalazi rane linearnotrakaste keramike povezan s ranovinčanskim i materijalom stila Ražište na nalazištu Szederkény – Kukorica dűlő, odnosno s ranovinčanskim i starčevačkom keramikom na nalazištu Versand – Gilencsa, u razdoblju koje neposredno prethodi nalazima iz Szemelya.⁹¹ Treba napomenuti da ovi zaključci, temeljeni na morfološkim i stilskim karakteristikama keramičkih nalaza, ne moraju biti ispravni. Naime, početni objavljeni rezultati nalaza iz Szederkénya, koji su se temeljili na obradi keramičkog materijala, sugerirali su da su središnji i istočni dio naselja, s predominantno vinčanskim keramikom, stariji, a zapadni, s većinom materijala Ražište stila, mlađi.⁹² Kasnije provedene radiokarbonske analize pokazale su da oba dijela naselja započinju istovremeno.⁹³ Modelirani radiokarbonski datumi za fazu kasne starčevačke i kulture linearnotrakaste keramike s lokaliteta Virovitica – Brekinja, odnosno fazu kasne starčevačke, linearnotrakaste, Ražište i Vinča A keramike s nalazišta Donji Miholjac – Vrncari⁹⁴ poklapaju se sa spomenutim datumima za lokalitete Szederkény – Kukorica dűlő i Versand – Gilencsa, što svjedoči o istom kulturnom razvoju na prostoru istočne Podravine. U sljedećoj fazi, istovremeno naselju kulture zapadnotransdanubijske linearnotrakaste keramike na nalazištu Vrti I, na prostoru istočne Slavonije i dalje je prisutan materijal pripisan stilu Ražište. Nalazi ovog stila radiokarbonski su datirani na lokalitetima Podgorač – Ražište,⁹⁵ Golinci – Selište⁹⁶ i Novi Perkovci – Krčavina.⁹⁷ Uz keramičko

from the Szemely - Irtás site indicates the regular co-occurrence of different styles of pottery in long pits, whereby, in addition to the less frequent finds of Keszthely, Notenkopf and Zseliz/Želiezovce pottery, numerous fragments of Korenovo and Ražište styles have been found. This settlement phase is absolutely dated by radiocarbon analysis to a time range between 5200 and 4900 BC.⁸⁸ Simultaneous absolute dates were also obtained for the finds from the Becsehely - Bükkaljai-dűlő settlement,⁸⁹ where pottery of the Keszthely group was also found in pits together with Korenovo and Zseliz/Želiezovce fragments, as well as some of Šarka type.⁹⁰ The chronological position of the Keszthely group is confirmed by the finds of early linear pottery associated with early Vinča- and Ražište-style material at the Szederkény - Kukorica dűlő site, or with early Vinča and Starčevo pottery at the Versand - Gilencsa site, in the period immediately preceding the finds from Szemely.⁹¹ It should be noted that these conclusions, based on the morphological and stylistic characteristics of pottery, may not be correct. For instance, the initial published results of the findings from Szederkény, which were based on the processing of pottery, suggested that the central and eastern part of the settlement, with predominantly Vinča pottery, are older, and that the western part, with most of the Ražište-style pottery, is more recent.⁹² Later radiocarbon analyses showed that both parts of the settlement started at the same time.⁹³ Modelled radiocarbon dates for the phase of the late Starčevo and Linear Pottery culture at the Virovitica - Brekinja site, that is, the phase of the late Starčevo, Linear Pottery culture, Ražište and Vinča A pottery from the site of Donji Miholjac - Vrncari⁹⁴ coincide with the dates given above for the sites of Szederkény - Kukorica dűlő and Versand - Gilencsa, which testifies to the same cultural development in the area of eastern Podravina. In the next phase, at the same time as the settlement of the Western Transdanubian Linear Pottery culture at the Vrti I site, material attributed to the Ražište style still appears in the area of East-

ske smjese i tehnici ukrašavanja (Oross, Simmer, Straub 2019, 57–59). Primjerice, petrografska analiza, rendgenska difrakcija (XRD) i rendgenska fluorescentna spektroskopija (XFR) provedene su na ulomcima keramičkih posuda s nalazišta Becsehely – Bükkaljai-dűlő (Bechehely I). Analizirani su ulomci pripisani kesteljskoj i Zseliz/Želiezovce grupi, keramici tipa Šarka te korenovskoj i vinčanskoj kulturi. Provedene analize pokazale su, međutim, iznimne sličnosti između sirovinskog materijala korištenog u proizvodnji keramičkog posuđa pripisanog svim spomenutim kulturnim pojavama, odnosno stilovima, a također je dokazano i lokalno porijeklo sirovina (Kalicz *et al.* 2012, 122–123). Na temelju rezultata provedenih analiza, koji dokazuju da je keramika različitih stilova proizvedena lokalno, zaključeno je da je nužno provesti reviziju konvencionalnog pristupa kada se govori o lokalnoj proizvodnji ili importima s područja drugih kultura (Oross, Simmer, Straub 2019, 59).

88 Jakucs 2020, 125, 134–137, Fig. 6, Fig. 14, Fig. 15, Fig. 16.

89 Kalicz, Kreiter, Tokai 2007, 44; Bánffy, Oross 2009, 234, Tab. 3.

90 Kalicz *et al.* 2012, 122.

91 Jakucs 2020, 137, Fig. 16.

92 Jakucs, Voicsek 2015.

93 Jakucs *et al.* 2016.

94 Botić 2018, 95, Fig. 5; 2020, 200, Tab. 2.

95 DeA 8338 (6109 ± 29 BP) (Marković, Botić 2016, 66; Botić 2020, 198–201, Tab. 2).

96 LTL-5772A (6160 ± 45) (Čataj, Janeš 2013, 170; Botić 2020, 198–201, Tab. 2).

97 Z-3800 (6040 ± 100) (Marković, Botić 2008, 16–17; Botić 2020, 198–201, Tab. 2).

finds of the Linear Pottery culture, indicate great similarities in the preparation of the ceramic mixture, and also in decoration techniques (Oross, Simmer, Straub 2019, 57–59). For example, petrographic analysis, X-ray diffraction (XRD) and X-ray fluorescence (XFR) spectroscopy were performed on fragments of the pottery from the site of Becsehely - Bükkaljai-dűlő (Bechehely I). Fragments attributed to the Keszthely and Zseliz/Želiezovce groups, Šarka-type, and those of the Korenovo and Vinča cultures, were analysed. The analyses conducted, however, showed remarkable similarities between the raw material used for the production of the pottery associated with all of these cultural phenomena or pottery styles, and the local origin of the raw materials has also been proven (Kalicz *et al.* 2012, 122–123). Based on the results of the analyses, which proved that pottery of the different styles was produced locally, it was concluded that it is necessary to revise the conventional approach when talking about local production or imports from other cultures (Oross, Simmer, Straub 2019, 59).

88 Jakucs 2020, 125, 134–137, Fig. 6, Fig. 14, Fig. 15, Fig. 16.

89 Kalicz, Kreiter, Tokai 2007, 44; Bánffy, Oross 2009, 234, Tab. 3.

90 Kalicz *et al.* 2012, 122.

91 Jakucs 2020, 137, Fig. 16.

92 Jakucs, Voicsek 2015.

93 Jakucs *et al.* 2016.

94 Botić 2018, 95, Fig. 5; 2020, 200, Tab. 2.

posuđe pripisano mlađoj fazi stila Ražište, na Golincima se pojavljuju i elementi linearnotrakaste keramike, dok su u Novim Perkovicima primijećeni utjecaji sopotske i vinčanske kulture.⁹⁸

S obzirom na nedostatak elemenata drugih keramičkih stilova na naselju Vrta I u Domašincu, na sadašnjem stupnju istraživosti njegov se relativnokronološki položaj može ustanoviti jedino na temelju pronalaska materijala kestelske grupe u zatvorenim cjelinama s onim drugih kultura, ili keramičkih stilova na drugim nalazištima, prvenstveno na prostoru južne Transdanubije. Na ovoj osnovi može se pretpostaviti barem djelomična istovremenost s korenovskom kulturom, pri čemu je korenovski materijal prisutan već i u starijoj fazi kulture linearnotrakaste keramike u jugoistočnoj Transdanubiji,⁹⁹ dok je u jugozapadnoj Transdanubiji na nalazištu Becsehely – Bükkaljai-dűlő pojava korenovske keramike datirana kasnije, otprilike istovremeno sredini trajanja kestelske grupe.¹⁰⁰ Keramika stila Ražište pojavljuje se također već u fazi rane transdanubijske linearnotrakaste keramike te traje i u kasnijoj fazi razvoja ove kulture, odnosno u vrijeme kestelske grupe.¹⁰¹ Dosadašnji kalibrirani radiokarbonski datumi ukazuju na vrijeme formiranja kestelske grupe oko 5300./5250. pr. Kr.,¹⁰² dok se datumi za stil Ražište kreću u rasponu između 5350. i 4900. pr. Kr.¹⁰³

Nalazište Vrta I u kontekstu dosadašnjih nalaza kulture zapadnotransdanubijske linearnotrakaste keramike

Tipološka analiza keramičkih nalaza s lokaliteta Vrta I u Domašincu pokazala je pripadnost ovog naselja kestelskoj grupi kulture linearnotrakaste keramike. To je do sada prvo objavljeno nalazište ove kulturne grupe na području Hrvatske. Ostala, do sada poznata nalazišta na prostoru sjeverne Hrvatske, pripadaju korenovskoj kulturi, kao najjužnijem dijelu kulturnog kompleksa linearnotrakaste keramike. Korenovska je kultura rasprostranjena u središnjem dijelu Hrvatske, na bjelovarskom, moslavačkom i virovitičkom području, a njezini importi zabilježeni su u južnoj Transdanubiji.¹⁰⁴ Na nalazištu Becsehely – Bükkaljai-dűlő dvije keramičke figurine i ulomci keramičkih posuda korenovske kulture pronađeni su s materijalom kasne faze kestelske grupe.¹⁰⁵ Korenovski nalazi poznati su i s naselja

ern Slavonia. Finds of this style have been radiocarbon-dated at the sites of Podgorač - Ražište,⁹⁵ Golinci - Selište⁹⁶ and Novi Perkovci - Krčavina⁹⁷. In addition to the pottery attributed to the later phase of the Ražište style, elements of linear pottery appear in Golinci, while in Novi Perkovci the influences of the Sopot and Vinča cultures have been noticed.⁹⁸

In view of the lack of elements of other pottery styles at the Vrta I settlement in Domašinec, at the current level of research, its relative chronological position can only be established on the basis of the finding of Keszthely pottery in closed contexts together with those of the other cultures or pottery styles at the other sites, primarily in the area of southern Transdanubia. On this basis, at least a partial contemporaneity with the Korenovo culture can be assumed, whereby the Korenovo pottery is already present in the older phase of the Linear Pottery culture in southeast Transdanubia,⁹⁹ while in southwest Transdanubia, at the Becsehely - Bükkaljai-dűlő site, appearance of the Korenovo pottery is dated later, approximately contemporaneous with the middle of the Keszthely group.¹⁰⁰ Pottery of the Ražište style also appears as early as the phase of the early Transdanubian linear pottery and continues in the later phase of the development of this culture, i.e. in the time of the Keszthely group.¹⁰¹ Known calibrated radiocarbon dates indicate a time for the formation of the Keszthely group around 5300/5250 BC,¹⁰² while dates for the Ražište style range between 5350 and 4900 BC.¹⁰³

The site of Vrta I in the context of previous finds of the Transdanubian Linear Pottery culture

Typological analysis of the pottery from the site of Vrta I in Domašinec showed that this settlement belonged to the Keszthely group of the Transdanubian Linear Pottery culture. So far this is the first published site of this cultural group in Croatia. The other sites in north Croatia, known so far, belong to the Korenovo culture, as the southernmost part of the Linear Pottery culture complex. The Korenovo culture is widespread in the central part of Croatia, in the areas of Bjelovar, Moslavina and Virovitica, and its imports have been recorded in southern Transdanubia.¹⁰⁴ At the site of Becsehely - Bükkaljai-dűlő, two ceramic figurines and pottery fragments of the Korenovo culture were found together with the material of the late phase of the Keszthely group.¹⁰⁵ Finds of the Korenovo culture are

98 Botić 2018, 94; 2020, 201. Zahvaljujemo dr. sc. Katarini Botić na objašnjenjima i pomoći prilikom utvrđivanja relativnokronološkog položaja neolitičkog naselja u Domašincu.

99 Jakucs 2020, 137, Fig. 16.

100 Kalicz *et al.* 2012, 122.

101 Jakucs 2020, 137, Fig. 16.

102 Oross, Bánffy 2009, 177, Tab. 1.

103 Jakucs 2020, 137, Fig. 16; Botić 2018, 95, Fig. 5; 2020, 200, Tab. 2.

104 Težak-Gregl 2014, 37, 38.

105 Kalicz, Kreiter, Tokai 2007, 30, 39, Abb. 6: 5a-c, 7a-b; Kalicz *et al.* 2012, 121-122, Fig. 10: 2a-b, 4a-b, Fig. 11: 1-6b.

95 DeA 8338 (6109 ± 29 BP) (Marković, Botić 2016, 66; Botić 2020, 198-201, Tab. 2).

96 LTL-5772A (6160 ± 45) (Čataj, Janeš 2013, 170; Botić 2020, 198-201, Tab. 2).

97 Z-3800 (6040 ± 100) (Marković, Botić 2008, 16-17; Botić 2020, 198-201, Tab. 2).

98 Botić 2018, 94; 2020, 201. We would like to thank Katarina Botić, PhD, for her explanations and help in determining the relative chronological position of the Neolithic settlement in Domašinec.

99 Jakucs 2020, 137, Fig. 16.

100 Kalicz *et al.* 2012, 122.

101 Jakucs 2020, 137, Fig. 16.

102 Oross, Bánffy 2009, 177, Tab. 1.

103 Jakucs 2020, 137, Fig. 16; Botić 2018, 95, Fig. 5; 2020, 200, Tab. 2.

104 Težak-Gregl 2014, 37, 38.

105 Kalicz, Kreiter, Tokai 2007, 30, 39, Abb. 6: 5a-c, 7a-b; Kalicz *et al.* 2012, 121-122, Fig. 10: 2a-b, 4a-b, Fig. 11: 1-6b.

Sormás – Mántai-dűlő i Sormás – Török-földek.¹⁰⁶ Nisu uočeni eventualni elementi koji bi se nedvosmisleno mogli povezati s korenovskom kulturom na naselju u Domašincu.

Kesteljska grupa definirana je kao regionalna i kronološka manifestacije kulture zapadnotransdanubijske linearnotrakaste keramike. Keramičko posuđe karakteristično za ovu grupu pojavljuje se u južnom i središnjem dijelu Transdanubije, na sjeveru do Kőszega i Soprona, pa prema istoku preko okolice Veszprema do Blatnog jezera. Od Blatnog jezera dalje na istok granica prolazi okolicom Sárvíza do dijela Podunavlja oko Tolne, dok prema jugu granicu čine tokovi rijeka Mure i Drave.¹⁰⁷ Naselje kesteljske grupe u Domašincu ukazuje na to da je grupa ipak prešla južno od Mure, barem u dijelu Donjeg Međimurja. Naselja kesteljske grupe smještena su uglavnom na blagim padinama u nizini, u blizini vode, na plodnim lesnim platoima pogodnima za poljoprivredu.¹⁰⁸

U vrijeme formiranja kesteljske grupe, koje odgovara početku mlađe, odnosno kasne faze kulture zapadnotransdanubijske linearnotrakaste keramike, primijećene su važne promjene u gustoći mreže naselja te organizaciji i gustoći naseljenosti samih naselja u južnom dijelu Transdanubije. Regionalno je uočena pojava otprilike istovremenog osnivanja više naselja na relativno malom području. O povećanju gustoće naseljenosti svjedoči činjenica da od 150 kuća kulture linearnotrakaste keramike istraženih u Transdanubiji, njih 93 – 95% pripada mlađoj, odnosno kasnoj fazi kulture.¹⁰⁹ Balatonszárszó – Kiserdei-dűlő jedno je od naselja na kojem se mogu pratiti promjene u njegovoj organizaciji, s jasno izdvojenim dijelovima naselja starije i mlađe faze zapadnotransdanubijske linearnotrakaste keramike. Dok su kuće na starijem, sjeveroistočnom dijelu nalazišta znatno udaljene jedna od druge i raspršene na široj površini, u mlađem, južnom dijelu primjetna je organizacija kuća u redove, pri čemu je udaljenost između kuća znatno manja, a vjerojatno je u ovoj fazi naselje bilo i ograđeno.¹¹⁰ Općenito, na naseljima kulture linearnotrakaste keramike u Transdanubiji uočena su dva modela organizacije prostora: model samostalnih domaćinstava i model kuća organiziranih u redove. Potonji model, koji je znatno češći na ovom području, ukazuje i na kompleksniju društvenu organizaciju.¹¹¹ Primjer naselja Balatonszárszó – Kiserdei-dűlő sugerira da bi se model samostalnih domaćinstava mogao vezati uz stariju, a model redova kuća uz mlađu fazu kulture. U samoj tehnici gradnje dugih kuća nisu uočene razlike između starije i mlađe faze. Naime, karakterističan pravokutni tlocrt kuće, čiju konstrukciju nosi pet redova stupova te s dugim jamama uz uzdužne zidove, pojavljuje se već u starijoj fazi kulture linearnotrakaste keramike i ostaje u upotrebi tijekom čitave egzistencije kesteljske grupe.¹¹² Analize keramičkog materijala

also known from the settlements at Sormás - Mántai-dűlő and Sormás - Török-földek.¹⁰⁶ Possible elements that could undoubtedly be attributed to the Korenovo culture at the settlement in Domašinec have not been noticed.

The Keszthely group is defined as a regional and chronological phenomenon of the Transdanubian Linear Pottery culture. The pottery characteristic of this cultural group can be found in the southern and central parts of Transdanubia, to the north towards Kőszeg and Sopron, and to the east towards the surroundings of Veszprem and Lake Balaton. From Balaton to the east, the border passes around Sárvíz to the part of the Danube region around Tolna, while to the south the border was situated around the Rivers Mura and Drava.¹⁰⁷ Nevertheless, the settlement of the Keszthely group in Domašinec indicates that the group crossed south of the River Mura, at least in the part of Donje Međimurje. The settlements of the Keszthely group are located mainly on gentle slopes in lowlands, near water, or on fertile loess plateaus suitable for agriculture.¹⁰⁸

During the formation of the Keszthely group, which corresponds to the beginning of the younger, or so-called late phase of the Western Transdanubian Linear Pottery culture, significant changes were observed in the settlement network density and in the organization and population density of the settlements in southern Transdanubia. Regionally, an approximately simultaneous establishment of several settlements in a relatively small area has been observed. The increase in population density is proved by the fact that, of the 150 houses of the Linear Pottery culture surveyed in Transdanubia, 93–95% belong to the younger or late phase of the culture.¹⁰⁹ An example of the changes in the organization of the settlement can be observed at the site of Balatonszárszó - Kiserdei-dűlő, where the parts of the settlement of the earlier and later phases of the Western Transdanubian Linear Pottery culture are clearly separated. While the houses in the older, north-eastern part of the settlement are significantly distant from each other and scattered over a wider area, in the more recent, southern part, the organization of houses in rows is noticeable, with much smaller distance between them, and in this phase the settlement was probably fenced, too.¹¹⁰ In general, two models of spatial organization have been observed at the settlements of the Linear Pottery culture in Transdanubia: the model of independent households and the model of houses organized in rows. The latter model, which is much more common in this area, also indicates a more complex social organization.¹¹¹ The example of the Balatonszárszó - Kiserdei-dűlő settlement suggests that the model of the independent households could be linked to the older stage of the culture, and the model of the houses organized in rows

106 Barna 2005, 36, kep. 8; 2017, 235, T. XIII; Barna, Biró 2009, 286, 290, 292, Fig. 2: 5–8, Fig. 4: 1–7.

107 Kalicz 1991, 5, 6, Abb. 1.

108 Kalicz 1991, 8; Bánffy, Oross 2009, 224; Oross, Bánffy 2009, 182.

109 Oross, Bánffy 2009, 183.

110 Marton, Oross 2009, 56–57, Fig. 2.

111 Oross, Simmer, Straub 2019, 48.

112 Marton, Oross 2009, 55; Oross, Bánffy 2009, 184.

106 Barna 2005, 36, kep. 8; 2017, 235, T. XIII; Barna, Biró 2009, 286, 290, 292, Fig. 2: 5–8, Fig. 4: 1–7.

107 Kalicz 1991, 5, 6, Abb. 1.

108 Kalicz 1991, 8; Bánffy, Oross 2009, 224; Oross, Bánffy 2009, 182.

109 Oross, Bánffy 2009, 183.

110 Marton, Oross 2009, 56–57, Fig. 2.

111 Oross, Simmer, Straub 2019, 48.

različitih stilskih, odnosno razvojnih faza linearnotrakaste keramike na naselju Balatonszárszó – Kiserdei-dűlő pokazale su znatne promjene u sastavu sirovinskog materijala početkom mlađe, odnosno kasne faze. Ove su promjene istovremene promjenama u proizvodnji kamenog oruđa, pogrebnim običajima i uzgoju stoke te već spomenutim promjenama u strukturi naselja. Sve ove promjene sugeriraju da je na području na kojem se razvija kesteljska grupa u vrijeme njezina formiranja došlo do važnih promjena u privredi i društvenoj organizaciji.¹¹³ Osnovnu privrednu aktivnost i temelj preživljavanja stanovništva, koje je nositelj kesteljske grupe, predstavljala je poljoprivreda. Prava proizvodnja hrane povezuje se tek s ovom mlađom razvojnom fazom kulture linearnotrakaste keramike, o čemu svjedoče i prevladavajući nalazi oruđa (najčešće od lomljenog kamena) koje se izravno povezuje s uzgojem biljaka.¹¹⁴

Unutarnja kronologija grupe Keszthely, s obzirom na praktički identičnu keramografsku produkciju tijekom čitavog razdoblja trajanja grupe, temelji se prvenstveno na pojavi elemenata starije linearnotrakaste keramike, odnosno pojavi nalaza drugih kulturnih pojava ili keramičkih stilova. Na ovim je temeljima N. Kalicz izdvojio tri stupnja kesteljske grupe: rani, klasični i kasni. Rani stupanj karakterizira prisutnost elemenata starije faze linearnotrakaste keramike, koji u sljedećem, klasičnom stupnju potpuno nedostaju. Klasični stupanj obilježava keramika karakteristična za kesteljsku grupu, a tek kao iznimka se pojavljuju sporadični ulomci Notenkopf keramike. U kasnom stupnju zastupljenost Notenkopf keramike je znatno veća, a uz posude tipično za kesteljsku grupu, nailazi se na keramiku tipa Šarka, materijal Zseliz/Želiezovce stila, korenovske kulture te onaj pripisan sopotskoj kulturi.¹¹⁵ Među nalazima pripisanima sopotskoj kulturi prepoznatljiv je keramički materijal identičan onome iz Brezovljana.¹¹⁶ Na temelju analize materijala s nalazišta Balatonszárszó – Kiserdei-dűlő, T. Marton i K. Oross izdvojili su pet stilskih skupina zapadnotransdanubijske linearnotrakaste keramike, koje imaju i relativnokronološki karakter, označavajući slijed razvoja keramičke produkcije na širem području južne i središnje Transdanubije. Razdoblje formiranja kesteljske grupe označeno je kao stilaska skupina 3, koja na transdanubijskom prostoru označava početak tzv. kasne linearnotrakaste keramike. U ovoj stilskoj skupini na keramici južne Transdanubije pojavljuju se motivi karakteristični za kesteljsku grupu.¹¹⁷ Stilsku skupinu 4 predstavlja tipičan keramički materijal kesteljske grupe s motivima međusobno isprepletenih linija, polukružnih, odnosno potkovičastih linija i S-linija koji okružuju cijelu posudu. Primjerci keramike ukrašene u Zseliz/Želiezovce stilu u skupini 4 su rijetkost, dok su u sljedećoj stilskoj skupini, skupini 5, podjednako zastupljeni kao i primjerci keramike karakteristične za kesteljsku grupu.¹¹⁸ Relativnokronološke skupine T. Martona i K. Orossa, uspostavljene na temelju stilskih karakteristika

to the more recent one. In the technique of building the long houses, no differences were noticed between the older and more recent phases. The characteristic rectangular floor plan of the house, whose construction is supported by five rows of posts and with long pits next to the longitudinal walls, had already appeared in the older phase of the Linear Pottery culture and remained in use throughout the existence of the Keszthely group.¹¹² Analyses of the pottery of different stylistic or developmental phases of the Transdanubian linear pottery found at the site of Balatonszárszó - Kiserdei-dűlő have shown significant changes in the composition of the raw materials at the beginning of the late phase. These changes are accompanied by changes in the production of stone tools, funeral customs and livestock breeding, and by the aforementioned changes in the settlement's structure. All of these changes suggest significant changes in the economy and social organization at the time and in the area where the Keszthely group developed.¹¹³ The main economic activity and the basis for the survival of the population of the Keszthely group was agriculture. Real food production is associated only with this later developmental stage of the Linear Pottery culture, as evidenced by the predominant finds of tools (mostly knapped stone tools) that directly relate to plant cultivation.¹¹⁴

The internal chronology of the Keszthely group, given the practically identical pottery production during the entire period of the group, is based primarily on the appearance of elements of the older linear pottery, and on the presence of the finds of other cultures or pottery styles. On this basis, Kalicz has determined three stages of the Keszthely group: early, classical and late. The early stage is characterized by the presence of elements of the older phase of linear pottery, which are completely missing in the next, classical stage. In the classical stage, only pottery specific to the Keszthely group appears, with very rare finds of Notenkopf pottery fragments. In the late stage, the Notenkopf pottery is much more numerous; and, in addition to the pottery characteristic of the Keszthely group, there are finds of Zseliz/Želiezovce and Šarka-type pottery, and pottery of the Sopot and Korenovo cultures.¹¹⁵ The finds ascribed to the Sopot culture include material that is identical with that discovered at Brezovljani.¹¹⁶

Based on the analyses of the finds from the site of Balatonszárszó - Kiserdei-dűlő, Marton and Oross defined five style groups of the western Transdanubian linear pottery, which also have a chronological significance, marking the sequence of pottery production in the wider area of south and central Transdanubia. The period of the formation of the Keszthely group is marked as style group 3, which marks the beginning of the so-called late linear pottery in Transdanubia. In this style group,

113 Kreiter *et al.* 2017, 128–129.

114 Bánffy, Oross 2009, 224.

115 Kalicz 1991, 26–27; Barna 2017, npr. 223–228, T. I: 17–19, T. II: 3–6, 12, T. IV: 7–8, T. VI: 5–6 i dr.

116 Marković 1994, 263, T. 14; Okroša Rožić 2014, 16–18.

117 Marton, Oross 2012, 223–225.

118 Marton, Oross 2012, 225.

112 Marton, Oross 2009, 55; Oross, Bánffy 2009, 184.

113 Kreiter *et al.* 2017, 128–129.

114 Bánffy, Oross 2009, 224.

115 Kalicz 1991, 26–27, Barna 2017, e.g. 223–228, T. I: 17–19, T. II: 3–6, 12, T. IV: 7–8, T. VI: 5–6 etc.

116 Marković 1994, 263, T. 14; Okroša Rožić 2014, 16–18.

keramičkog materijala, mogu se usporediti s unutarnjom kronologijom kestelske grupe N. Kalicza. Stilska skupina 3 odgovarala bi Kaliczovom ranom stupnju kestelske grupe, skupina 4 klasičnom, a skupina 5 kasnom stupnju. Polukuglaste i kuglaste zdjele, koje su vodeći oblici posuđa na naselju u Domašincu, na nalazištu Balatonszárszó – Kiserdei-dűlő pojavljuju se tek od stilske skupine 3, ukrašene polukružnim, odnosno potkovičastim linijama ili S-motivima.¹¹⁹ Motiv riblje kosti pojavljuje se isključivo u stilskim skupinama 4 i 5, kao i crveno oslikavanje posuda. U stilskoj skupini 4 pojavljuju se i prvi primjerci keramike ukrašene u Zseliz/Želiezovce stilu. Oblici poput koničnih zdjela i zdjela na nogama, kakvi su na naselju Balatonszárszó – Kiserdei-dűlő prisutni u stilskim skupinama od 1 do 3,¹²⁰ u Domašincu potpuno nedostaju, kao i oslikana i keramika Zseliz/Želiezovce stila. Na temelju usporedbe s transdanubijskim nalazima i prema relativnim kronologijama, uspostavljenima na temelju stilskih karakteristika keramičkog posuđa, naselje u Domašincu okvirno se može smjestiti u klasičnu fazu kestelske grupe, odnosno stilsku skupinu 4 zapadnotransdanubijske linearnotrakaste keramike u južnoj i središnjoj Transdanubiji. S obzirom na rijetku zastupljenost materijala karakterističnog isključivo za stilske skupine 4 i 5 te nedostatak primjeraka keramike drugih kultura ili stilova, čija je pojava uobičajena u kasnom stupnju kestelske grupe na području obližnjeg Becsehelya, primjerice keramike korenovske kulture ili Zseliz/Želiezovce stila, naselje je vjerojatno i nešto starije. Naime, postoji mogućnost da se naselje na Domašincu razvilo već tijekom prijelaza ranog u klasični stupanj kestelske grupe, odnosno stilske skupine 3 u skupinu 4. Spomenuto pripisivanje prijelazu rane u klasičnu, odnosno klasičnoj fazi kestelske grupe tek je preliminarno postavljeno, uzimajući u obzir relativno mali broj nalaza i njihovu fragmentiranost.

Zaključak

Nalazište Vrti I u Domašincu prvo je objavljeno naselje kestelske grupe na području Hrvatske te je ujedno i jedino u literaturi poznato nalazište ove grupe južno od Mure. Naselje se razvilo na blagoj padini u blizini potoka Crni jarak, lijeve pritoke rječice Trnave, na tlu pogodnom za bavljenje poljoprivredom. Povišena pješćana greda, koja leži oko 60 m istočno od ustanovljenih

motifs characteristic of the Keszthely group appear on pottery in southern Transdanubia.¹¹⁷ Style group 4 is represented by pottery typical of the Keszthely group, with motifs of intertwined, semi-circular or arc-shaped and S-shaped lines which surround the entire vessel. Pottery fragments decorated in the Zseliz/Želiezovce style in this style group are extremely rare, while in the following style group 5 they are equally well-represented as the pottery specific to the Keszthely group.¹¹⁸ The typo-chronological groups of Martin and Oross, established on the basis of the characteristics of the pottery, can be compared with the internal chronology of the Keszthely group made by Kalicz. Style group 3 would correspond to Kalicz's early stage of the Keszthely group, style group 4 to the classical, and group 5 to the late stage. Hemispherical and spherical bowls, which are the main forms of the pottery at the settlement in Domašinec, appear only in style group 3 at the site of Balatonszárszó - Kiserdei-dűlő, and they are decorated with arc-shaped or semi-circular lines or S-motifs.¹¹⁹ The fish-bone motif appears exclusively in style groups 4 and 5, as well as red painting on vessels. Style group 4 also features the first examples of pottery decorated in the Zseliz/Želiezovce style. Pottery forms like conical bowls and bowls on foot, such as those found at the settlement of Balatonszárszó - Kiserdei-dűlő in style groups 1–3¹²⁰ are completely absent in Domašinec; nor was there any recorded painted pottery or those of the Zseliz/Želiezovce style. Based on comparisons with the Transdanubian finds and relative chronologies established on the basis of the stylistic characteristics of the pottery, the settlement in Domašinec can be roughly placed in the classical phase of the Keszthely group, i.e. style group 4 of the linear pottery in southern and central Transdanubia. Due to the extremely rare presence of the pottery characteristic only of style groups 4 and 5, and the complete lack of pottery of other cultures or types, whose occurrence is common in the late stage of the Keszthely group in the area of nearby Becsehely, such as pottery of the Korenovo culture or that of the Zseliz/Želiezovce style, the settlement in Domašinec could be a little older. So there is a possibility that this settlement had already developed during the transition from the early to the classical stage of the Keszthely group, i.e. the transformation from style group 3 to style group 4. This attribution to this transitional phase or to the classical stage of the Keszthely group is established only preliminarily, taking into account the relatively small number of finds and their fragmentation.

Conclusion

The Vrti I site in Domašinec is the first published settlement of the Keszthely group in Croatia and also the only published site of this cultural group south of the River Mura. The settlement developed on a gentle slope near the stream of Crni jarak, a left tributary of the River Trnava, on land suitable for agriculture. The elevated sand ridge, which is situated about 60 m east of

119 Kreiter *et al.* 2017, 115, Fig. 3.

120 Kreiter *et al.* 2017, 115, Fig. 3.

117 Marton, Oross 2012, 223–225.

118 Marton, Oross 2012, 225.

119 Kreiter *et al.* 2017, 115, Fig. 3.

120 Kreiter *et al.* 2017, 115, Fig. 3.

ostataka naselja i viša za svega oko 3,5 m, ostala je nenaseljena. Za kulturu linearnotrakaste keramike uobičajene duge kuće nisu pouzdano potvrđene, s obzirom na relativno malu istraženu površinu. No nalazi većih rupa od stupova, koje u nekim slučajevima tvore niz smjera sjeveroistok – jugozapad, mogle bi ukazivati na nadzemne objekte i njihovu moguću orijentaciju. Naselje u Domašincu osnovano je u mlađoj, odnosno tzv. kasnoj fazi kulture zapadnotransdanubijske linearnotrakaste keramike, u vrijeme prijelaza rane u klasičnu ili tijekom klasične faze kesteljske grupe. Razdoblje formiranja ove kulturne grupe obilježile su značajne promjene koje su, među ostalim, obuhvaćale i rast gustoće naseljenosti. Kao odraz ovih promjena, vjerojatno je došlo i do širenja kulture preko rijeke Mure, na područje Donjeg Međimurja. Međutim, kako je rani neolitik međimurskog prostora slabo istražen, ne može se isključiti mogućnost postojanja i starije linearnotrakaste keramike na ovom području.

Katalog nalaza

SJ – stratigrafska jedinica

F – faktura

B – boja: VP – vanjska površina, P – presjek, UP – unutarnja površina

OP – obrada površine

U – ukrašavanje: tehnika, motiv

DM – dimenzije: R – radijus, V – visina, D – dužina, Š – širina,

DS – debljina stijenke

Sloj SJ 001

1. ulomak trbuha keramičke zdjele (T. 1: 1)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – oker do siva, P – siva do oker-siva-okor, UP – oker do siva

OP: zaglađena, tragovi premaza s vanjske i unutarnje strane

U: široko žlijebljenje, pravocrtni motivi kosih, lomljenih linija

DM: D – 6,8 cm, Š – 7,1 cm, DS – 0,3 – 0,4 cm

2. ulomak trbuha keramičke zdjele (T. 1: 2)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – oker do siva, P – siva do oker-siva-okor, UP – oker do siva

OP: zaglađena, tragovi premaza s vanjske i unutarnje strane

U: žlijebljenje, okomite linije

DM: D – 4,1 cm, Š – 5,8 cm, DS – 0,4 – 0,5 cm

3. dio keramičkog pršljena, jajolikog ili bikoničnog oblika (T. 1: 3)

F: fina, pročišćena glina s vrlo malo organskih primjesa i finim kvarcnim pijeskom

B: VP – siva do smeđa, P – smeđa

OP: neravna, tragovi premaza

DM: V – 3,1 cm, D – 6,8 cm, Š – 6,2 cm

4. ulomak trbuha keramičke posude s duguljastom drškom (T. 1: 4)

F: gruba, loše pročišćena glina s primjesama šljunka i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasto-siva, UP – siva

OP: neravna

DM: D – 3,6 cm, Š – 4,0 cm, DS – 1,0 cm

the settlement and is only about 3.5 m higher, remained uninhabited. Long houses, common in the Linear Pottery culture, have not been reliably confirmed, given the relatively small area excavated. However, sizeable postholes, which in some cases form a row in a NE–SW direction, indicate the existence of above-ground structures and their orientation. The settlement in Domašinec was founded in the so-called late phase of the Transdanubian Linear Pottery culture, at the time of transition from the early phase to the classical, or during the classical phase, of the Keszthely group. The period of formation of this cultural group was marked by significant changes which, among other things, included an increase in population density. As a reflection of these changes, it is possible that the culture spread across the River Mura to the area of Donje Međimurje. However, as the early Neolithic of the area of Međimurje is extremely poorly known, the possibility of existence of the older linear pottery in this area cannot be ruled out.

Catalogue

SU = stratigraphic unit

T = texture

C = colour: ES = external surface, S = section, IS = internal surface

S = surface

D = decoration: technique, motif

Dim = dimensions: R = radius, H = height, L = length, W = width,

Th = wall thickness

Layer SU 001

1. Fragment of the belly of a ceramic bowl (Pl. 1: 1)

T: fine, purified clay with fine quartz sand

C: ES ochre to grey, S grey to ochre-grey-ochre, IS ochre to grey

S: smoothed, traces of a clay coating on the outer and inner surface

D: wide fluting, rectilinear motifs of oblique, broken lines

Dim: L 6.8 cm, W 7.1 cm, Th 0.3–0.4 cm

2. Fragment of the belly of a ceramic bowl (Pl. 1: 2)

T: fine, purified clay with fine quartz sand

C: ES ochre to grey, S grey to ochre-grey-ochre, IS ochre to grey

S: smoothed, traces of a clay coating on the outer and inner surface

D: fluting, vertical lines

Dim: R 4.1 cm, W 5.8 cm, Th 0.4–0.5 cm

3. Fragment of a ceramic spindle whorl, ovoid or biconical in shape (Pl. 1: 3)

T: fine, purified clay with very little admixture of organic material and fine quartz sand

C: ES grey to brown, S brown

S: rough, traces of a clay coating

Dim: H 3.1 cm, L 6.8 cm, W 6.2 cm

4. Fragment of the belly of a ceramic vessel with a grip (Pl. 1: 4)

T: coarse, poorly purified clay with admixtures of gravel and fine quartz sand

C: ES orange, S orange-grey, IS grey

S: rough

Dim: L 3.6 cm, W 4.0 cm, Th 1.0 cm

5. ulomak trbuha keramičke posude s čepastom drškom (T. 1: 5)
F: gruba, loše pročišćena glina s primjesama šljunka, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasto-siva, UP – siva

OP: neravna

DM: D – 4,7 cm, Š – 3,2 cm, DS – 0,9 – 1,1 cm

6. ulomak blago bikoničnog trbuha keramičke posude (T. 1: 6)

F: gruba, loše pročišćena glina s primjesama šljunka, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – siva do crna, P – crna do sivo-crna, UP – crna do narančasta

OP: blago zaglađena

DM: D – 4,2 cm, Š – 4,0 cm, DS – 1,0 – 1,2 cm

7. ulomak trbuha keramičke posude s duguljastom drškom (T. 1: 7)

F: gruba, loše pročišćena glina s primjesama šljunka, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasto-crna, UP – crna

OP: neravna

DM: D – 4,4 cm, Š – 3,9 cm, DS – 0,9 – 1,2 cm

8. ulomak trbuha keramičke posude s bradavičastom drškom (T. 1: 8)

F: srednja, djelomično pročišćena glina s primjesama sitnih kamenčića, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasto-sivo-oker, UP – oker

OP: neravna

DM: D – 4,9 cm, Š – 7,0 cm, DS – 0,6 cm

Zapuna SJ 003

9. ulomak kuglaste keramičke zdjele (T. 1: 9)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – svijetla oker, P – oker-sivo-svjetlosiva, UP – svjetlosiva

OP: zaglađena

U: široko žlijebljenje, pravocrtni motivi vodoravnih, okomitih i lomljenih linija

DM: R oboda – 4,0 cm, D – 5,0 cm, Š – 5,7 cm, DS – 0,3 – 0,5 cm

10. ulomak polukuglaste keramičke zdjele (T. 1: 10)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – siva, P – siva, UP – siva

OP: uglačana, premaz

U: otiskivanje, poprečni otisci na vrhu oboda

DM: R oboda – 10,0 cm, D – 6,8 cm, Š – 7,6 cm, DS – 0,5 cm

11. ulomak polukuglaste keramičke zdjele (T. 1: 11)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – oker, P – oker-siva, UP – siva

OP: zaglađena, premaz

U: široko žlijebljenje, pravocrtni motivi ukošenih linija

DM: R oboda – 6,5 cm, D – 5,9 cm, Š – 6,1 cm, DS – 0,4 – 1,0 cm

12. ulomak polukuglaste keramičke zdjele (T. 1: 12)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – siva, P – siva, UP – siva

OP: uglačana

U: široko žlijebljenje, pravocrtni motivi vodoravnih linija

DM: R oboda – 8,0 cm, D – 4,4 cm, Š – 4,9 cm, DS – 0,4 – 0,6 cm

5. Fragment of the belly of a ceramic vessel with a grip (Pl. 1: 5)

T: coarse, poorly purified clay with admixtures of gravel, ground ceramics, organic material and fine quartz sand

C: ES orange, S orange-grey, IS grey

S: rough

Dim: L 4.7 cm, W 3.2 cm, Th 0.9–1.1 cm

6. Fragment of the slightly biconical belly of a ceramic vessel (Pl. 1: 6)

T: coarse, poorly purified clay with admixtures of gravel, ground ceramics, organic material and fine quartz sand

C: ES grey to black, S black to grey-black, IS black to orange

S: slightly smoothed

Dim: L 4.2 cm, W 4.0 cm, Th 1.0–1.2 cm

7. Fragment of the belly of a ceramic vessel with a grip (Pl. 1: 7)

T: coarse, poorly purified clay with admixtures of gravel, ground ceramics, organic material and fine quartz sand

C: ES orange, S orange-black, IS black

S: rough

Dim: L 4.4 cm, W 3.9 cm, Th 0.9–1.2 cm

8. Fragment of the belly of a ceramic vessel with a grip (Pl. 1: 8)

T: medium, partially purified clay with some admixture of pebbles, organic material and fine quartz sand

C: ES orange, S orange-grey-ochre, IS ochre

S: rough

Dim: L 4.9 cm, W 7.0 cm, Th 0.6 cm

Fill SU 003

9. Fragment of a spherical ceramic bowl (Pl. 1: 9)

T: fine, purified clay with fine quartz sand

C: ES light ochre, S ochre-grey-light grey, IS light grey

S: smoothed

D: wide fluting, rectilinear motifs of horizontal, vertical and broken lines

Dim: R rim 4.0 cm, L 5.0 cm, W 5.7 cm, Th 0.3–0.5 cm

10. Fragment of a hemispherical ceramic bowl (Pl. 1: 10)

T: fine, purified clay with fine quartz sand

C: ES grey, S grey, IS grey

S: polished, clay coating

D: impressing, impresses on the top of the rim

Dim: R rim 10.0 cm, L 6.8 cm, W 7.6 cm, Th 0.5 cm

11. Fragment of a hemispherical bowl (Pl. 1: 11)

T: fine, purified clay with fine quartz sand

C: ES ochre, S ochre-grey, IS grey

S: smoothed, clay coating

D: wide fluting, rectilinear motifs of oblique lines

Dim: R rim 6.5 cm, L 5.9 cm, W 6.1 cm, Th 0.4–1.0 cm

12. Fragment of a hemispherical ceramic bowl (Pl. 1: 12)

T: fine, purified clay with fine quartz sand

C: ES grey, S grey, IS grey

S: polished

D: wide fluting, rectilinear motifs of horizontal lines

Dim: R rim 8.0 cm, L 4.4 cm, W 4.9 cm, Th 0.4–0.6 cm

13. ulomak polukuglaste keramičke zdjele (T. 2: 13)

F: fina, pročišćena glina s malo primjesa sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – siva, P – siva, UP – siva

OP: zaglađena

U: široko žlijebljenje, pravocrtni motiv vodoravne linije i krivocrtni motiv

DM: D – 4,2 cm, Š – 5,6 cm, DS – 0,3 – 0,6 cm

14. ulomak trbuha keramičke zdjele (T. 2: 14)

F: fina, pročišćena glina s malo primjesa sitno drobljene keramike i organskog materijala te finim kvarcnim pijeskom

B: VP – siva, P – oker do siva, UP – siva

OP: zaglađena

U: široko žlijebljenje, pravocrtni motivi lomljenih linija

DM: D – 5,0 cm, Š – 4,5 cm, DS – 0,6 – 0,8 cm

15. ulomak trbuha keramičke zdjele (T. 2: 15)

F: fina, pročišćena glina s malo primjesa sitno drobljene keramike, organskog materijala te finim kvarcnim pijeskom

B: VP – siva, P – sivo-narančasto-siva, UP – siva

OP: zaglađena

U: široko žlijebljenje, pravocrtni motiv okomite linije i krivocrtni motiv

DM: D – 5,1 cm, Š – 4,0 cm, DS – 0,4 – 0,5 cm

16. ulomak trbuha keramičke posude s čepastom drškom (T. 2: 16)

F: gruba, loše pročišćena glina s primjesama šljunka, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasto-siva, UP – siva

OP: neravna

DM: D – 4,7 cm, Š – 5,4 cm, DS – 0,9 – 1,2 cm

17. ulomak trbuha keramičke posude s blago duguljastom drškom (T. 2: 17)

F: gruba, loše pročišćena glina s primjesama šljunka, sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasta, UP – narančasta

OP – blago zaglađena

DM: D – 5,4 cm, Š – 6,1 cm, DS – 0,8 – 0,9 cm

18. ulomak trbuha keramičke zdjele s čepastom drškom (T. 2: 18)

F: gruba, loše pročišćena glina s primjesama šljunka, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasta, UP – narančasta

OP: neravna

DM: D – 4,0 cm, Š – 7,0 cm, DS – 0,9 – 1,3 cm

Zapuna SJ 028**19. kuglasta keramička zdjela (T. 2: 19)**

F: srednja, pročišćena glina s malo organskih primjesa i finim kvarcnim pijeskom

B: VP – crvenkasta do siva, P – siva, UP – siva

OP: blago zaglađena, mjestimični tragovi premaza

DM: R oboda – 5,5 cm, V – 10,0 cm, DS – 0,3 – 0,4 cm

20. ulomak trbuha keramičke zdjele (T. 2: 20)

F: fina, pročišćena glina s malo primjesa sitno drobljene keramike i finim kvarcnim pijeskom

13. Fragment of a hemispherical ceramic bowl (Pl. 2: 13)

T: fine, purified clay with a little admixture of ground ceramics and fine quartz sand

C: ES grey, S grey, IS grey

S: smoothed

D: wide fluting, rectilinear motif of horizontal line and curvilinear motif

Dim: L 4.2 cm, W 5.6 cm, Th 0.3-0.6 cm

14. Fragment of the belly of a ceramic bowl (Pl. 2: 14)

T: fine, purified clay with a little admixture of ground ceramics, organic material and fine quartz sand

C: ES grey, S ochre to grey, IS grey

S: smoothed

D: wide fluting, rectilinear motifs of broken lines

Dim: L 5.0 cm, W 4.5 cm, Th 0.6-0.8 cm

15. Fragment of the belly of a ceramic bowl (Pl. 2: 15)

T: fine, purified clay with a little admixture of ground ceramics, organic material and fine quartz sand

C: ES grey, S grey-orange-grey, IS grey

S: smoothed

D: wide fluting, rectilinear motif of vertical line and curvilinear motif

Dim: L 5.1 cm, W 4.0 cm, Th 0.4-0.5 cm

16. Fragment of the belly of a ceramic vessel, with a handle (Pl. 2: 16)

T: coarse, poorly purified clay with admixtures of gravel, ground ceramics, organic material and fine quartz sand

C: ES orange, S orange-grey, IS grey

S: rough

Dim: L 4.7 cm, W 5.4 cm, Th 0.9-1.2 cm

17. Fragment of the belly of a ceramic vessel with a grip (Pl. 2: 17)

T: coarse, poorly purified clay with admixtures of gravel, ground ceramics and fine quartz sand

C: ES orange, S orange, IS orange

S: slightly smoothed

Dim: L 5.4 cm, W 6.1 cm, Th 0.8-0.9 cm

18. Fragment of the belly of a ceramic bowl with a grip (Pl. 2: 18)

T: coarse, poorly purified clay with admixtures of gravel, ground ceramics, organic material and fine quartz sand

C: ES orange, S orange, IS orange

S: rough

Dim: L 4.0 cm, W 7.0 cm, Th 0.9-1.3 cm

Fill SU 028**19. Spherical ceramic bowl (Pl. 2: 19)**

T: medium, partially purified clay with some admixture of organic material and fine quartz sand

C: ES reddish to grey, S grey, IS grey

S: slightly smoothed, occasional traces of a clay coating

Dim: R rim 5.5 cm, H 10.0 cm, Th 0.3-0.4 cm

20. Fragment of the belly of a ceramic bowl (Pl. 2: 20)

T: fine, purified clay with very little admixture of ground ceramics and fine quartz sand

B: VP – oker, P – oker-sivo-okor, UP – oker

OP: zaglađena, premaz s vanjske i unutarnje strane

U: široko žlijebljenje, krivocrtni motivi

DM: D – 4,5 cm, Š – 4,8 cm, DS – 0,5 – 0,8 cm

21. ulomak keramičke zdjele s profiliranim vratom (T. 2: 21)

F: srednja, pročišćena glina s malo organskih primjesa i finim kvarcnim pijeskom

B: VP – oker, P – oker-siva, UP – siva

OP: zaglađena, premaz

U: žlijebljenje, pravocrtne motivi vodoravne i ukošenih linija

DM: R vrata – 8,0 cm, D – 6,1 cm, Š – 7,6 cm, DS – 0,5 – 0,7 cm

22. ulomak trbuha keramičke zdjele (T. 2: 22)

F: fina, pročišćena glina s malo primjesa sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – oker do siva, P – siva do oker-siva, UP – siva

OP: zaglađena, tragovi premaza s vanjske i unutarnje strane

U: žlijebljenje, pravocrtne motivi okomitih do kosih linija

DM: D – 4,1 cm, Š – 3,6 cm, DS – 0,6 – 0,7 cm

Zapuna SJ 146

23. minijaturna keramička posuda u obliku kuglaste amfore s niskim cilindričnim vratom i ušicama na najširem dijelu trbuha (T. 3: 23)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – oker, P – oker do oker-siva, UP – oker do siva

OP: zaglađena

U: žlijebljenje, pravocrtne motivi vodoravnih i lomljenih linija

DM: R oboda – 1,0 cm, V – 4,2 cm

24. ulomak manje keramičke amfore s niskim cilindričnim vratom i ušicom na ramenu (T. 3: 24)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – oker do siva, P – narančasta do sivo-narančasta, UP – narančasta

OP: uglačana

U: široko žlijebljenje, pravocrtne motivi vodoravnih i lomljenih linija

DM: R vrata – 2,0 cm, D – 7,5 cm, Š – 4,6 cm, DS – 0,7 – 1,0 cm

25. ulomak kuglaste keramičke zdjele (T. 3: 25)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – oker do siva, P – siva do oker-siva, UP – siva

OP: zaglađena

U: široko žlijebljenje, pravocrtne motivi vodoravne i lomljenih linija

DM: R oboda – 4,0 cm, D – 8,0 cm, Š – 6,9 cm, DS – 0,3 – 0,7 cm

26. ulomak donjeg dijela keramičke posude (T. 3: 26)

F: srednja, djelomično pročišćena glina s malo sitnih kamenčića, sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – oker do narančasta, P – oker-narančasta do oker-narančasto-okor, UP – oker

OP: blago zaglađena

U: žlijebljenje, pravocrtne motivi okomitih linija

DM: R dna – 2,3 cm, D – 7,2 cm, Š – 5,0 cm, DS – 0,5 – 0,9 cm

27. ulomak trbuha polukuglaste keramičke zdjele (T. 3: 27)

F: srednja, djelomično pročišćena glina s malo primjesa sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

C: ES ochre, S ochre-grey-ochre, IS ochre

S: smoothed, clay coating on the outer and inner surfaces

D: wide fluting, curvilinear motifs

Dim: L 4.5 cm, W 4.8 cm, Th 0.5–0.8 cm

21. Fragment of a ceramic bowl with a neck (Pl. 2: 21)

T: medium, partially purified clay with some admixture of organic material and fine quartz sand

C: ES ochre, S ochre-grey, IS grey

S: smoothed, clay coating

D: fluting, rectilinear motifs of horizontal and oblique lines

Dim: R neck 8.0 cm, L 6.1 cm, W 7.6 cm, Th 0.5–0.7 cm

22. Fragment of the belly of a ceramic bowl (Pl. 2: 22)

T: fine, purified clay with very little admixture of ground ceramics and fine quartz sand

C: ES ochre to grey, S grey to ochre-grey, IS grey

S: smoothed, traces of a clay coating on the outer and inner surfaces

D: fluting, rectilinear motifs of vertical and oblique lines

Dim: L 4.1 cm, W 3.6 cm, Th 0.6–0.7 cm

Fill SU 146

23. Miniature ceramic vessel in the shape of a spherical amphora with a low cylindrical neck and undercut handles at the widest part of the belly (Pl. 3: 23)

T: fine, purified clay with fine quartz sand

C: ES ochre, S ochre to ochre-grey, IS ochre to grey

S: smoothed

D: fluting, rectilinear motifs of horizontal and broken lines

Dim: R rim 1.0 cm, H 4.2 cm

24. Fragment of a smallish ceramic amphora with a low cylindrical neck and an undercut handle on the shoulder (Pl. 3: 24)

T: fine, purified clay with fine quartz sand

C: ES ochre to grey, S orange to grey-orange, IS orange

S: polished

D: wide fluting, rectilinear motifs of horizontal and broken lines

Dim: R neck 2.0 cm, L 7.5 cm, W 4.6 cm, Th 0.7–1.0 cm

25. Fragment of a spherical ceramic bowl (Pl. 3: 25)

T: fine, purified clay with fine quartz sand

C: ES ochre to grey, S grey to ochre-grey, IS grey

S: smoothed

D: wide fluting, rectilinear motifs of horizontal and broken lines

Dim: R rim 4.0 cm, L 8.0 cm, W 6.9 cm, Th 0.3–0.7 cm

26. Fragment of the lower part of a ceramic vessel (Pl. 3: 26)

T: medium, partially purified clay with some admixture of pebbles, ground ceramics and fine quartz sand

C: ES ochre to orange, S ochre-orange to ochre-orange-ochre, IS ochre

S: slightly smoothed

D: fluting, rectilinear motifs of vertical lines

Dim: R bottom 2.3 cm, L 7.2 cm, W 5.0 cm, Th 0.5–0.9 cm

27. Fragment of the belly of a hemispherical ceramic bowl (Pl. 3: 27)

T: medium, partially purified clay with some admixture of ground ceramics, organic material and fine quartz sand

B: VP – siva, P – oker do siva, UP – oker do siva

OP: zaglađena

U: žlijebljenje, pravocrtni motiv kose linije

DM: D – 3,7 cm, Š – 3,8 cm, DS – 0,7 – 0,9 cm

28. ulomak trbuha keramičke zdjele (T. 3: 28)

F: srednja, djelomično pročišćena glina s malo primjesa sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – siva, P – siva-okker, UP – oker

OP: zaglađena

U: široko žlijebljenje, krivocrtni motivi

DM: D – 4,2 cm, Š – 4,0 cm, DS – 0,8 – 0,9 cm

29. ulomak donjeg dijela keramičke posude, vjerojatno zdjele (T. 3: 29)

F: srednja, djelomično pročišćena glina s malo sitnih kamenčića, sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – siva do crna, P – siva/crno-svjetlosiva do crno-narančasto-svjetlosiva, UP – siva

OP: uglačana

U: široko žlijebljenje, krivocrtni motivi

DM: R dna – 4,0 cm, D – 10,9 cm, Š – 7,2 cm, DS – 0,4 – 1,3 cm

30. ulomak trbuha keramičke zdjele (T. 3: 30)

F: fina, pročišćena glina s finim kvarcnim pijeskom

B: VP – oker do siva, P – siva do oker-siva, UP – siva

OP: zaglađena, tragovi premaza

U: široko žlijebljenje, krivocrtni motivi

DM: D – 7,2 cm, Š – 4,6 cm, DS – 0,3 – 0,5 cm

31. ulomak keramičke posude s čepastom drškom (T. 3: 31)

F: gruba, loše pročišćena glina s primjesama šljunka, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasta, UP – narančasta

OP: neravna

U: otiskivanje, otisak alatke na vrhu drške

DM: D – 7,6 cm, Š – 6,3 cm, DS – 0,9 – 1,2 cm

32. ulomak gornjeg dijela kuglaste zdjele s čepastom drškom (T. 3: 32)

F: srednja, djelomično pročišćena glina s malo primjesa sitnih kamenčića, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – oker do siva, P – siva do oker-siva, UP – siva

OP: blago zaglađena, mjestimično oštri tragovi zaglađivanja, posebno s unutarnje strane

U: otiskivanje, poprečni otisci prsta na vrhu oboda

DM: R oboda – 14,0 cm, D – 11,9 cm, Š – 12,2 cm, DS – 0,7 – 0,8 cm

Zapuna SJ 171

33. ulomak gornjeg dijela duboke zaobljene keramičke zdjele blage S-profilacije s čepastom drškom na trбуhu (T. 4: 33)

F: gruba, loše pročišćena glina s primjesama sitnih kamenčića, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasto-crno-narančasta, UP – smeđa

OP: neravna

DM: R oboda – 14,0 cm, D – 14,0 cm, Š – 12,3 cm, DS – 0,5 – 0,8 cm

C: ES grey, S ochre to grey, IS ochre to grey

S: smoothed

D: fluting, rectilinear motif of an oblique line

Dim: L 3.7 cm, W 3.8 cm, Th 0.7–0.9 cm

28. Fragment of the belly of a ceramic bowl (Pl. 3: 28)

T: medium, partially purified clay with some admixture of ground ceramics, organic material and fine quartz sand

C: ES grey, S grey-ochre, IS ochre

S: smoothed

D: wide fluting, curvilinear motifs

Dim: L 4.2 cm, W 4.0 cm, Th 0.8–0.9 cm

29. Fragment of the lower part of a ceramic vessel, probably a bowl (Pl. 3: 29)

T: medium, partially purified clay with some admixture of pebbles, ground ceramics and fine quartz sand

C: ES grey to black, S grey/black-light grey to black-orange-light grey, IS grey

S: polished

D: wide fluting, curvilinear motifs

Dim: R bottom 4.0 cm, L 10.9 cm, W 7.2 cm, Th 0.4–1.3 cm

30. Fragment of the belly of a ceramic bowl (Pl. 3: 30)

T: fine, purified clay with fine quartz sand

C: ES ochre to grey, S grey to ochre-grey, IS grey

S: smoothed, traces of clay coating

D: wide fluting, curvilinear motifs

Dim: L 7.2 cm, W 4.6 cm, Th 0.3–0.5 cm

31. Fragment of a ceramic vessel with a grip (Pl. 3: 31)

T: coarse, poorly purified clay with admixtures of gravel, ground ceramics, organic material and fine quartz sand

C: ES orange, S orange, IS orange

S: rough

D: impressing, impress of the tool on the top of the handle

Dim: L 7.6 cm, W 6.3 cm, Th 0.9–1.2 cm

32. Fragment of the upper part of a spherical ceramic bowl with a grip (Pl. 3: 32)

T: medium, partially purified clay with some admixture of pebbles, ground ceramics, organic material and fine quartz sand

C: ES ochre to grey, S grey to ochre-grey, IS grey

S: slightly smoothed, traces of smoothing especially on the inner surface

D: impressing, fingerprints at the top of the rim

Dim: R rim 14.0 cm, L 11.9 cm, W 12.2 cm, Th 0.7–0.8 cm

Fill SU 171

33. Fragment of the upper part of a deep, rounded ceramic S-shaped bowl with a grip on the belly (Pl. 4: 33)

T: coarse, poorly purified clay with admixtures of pebbles, ground ceramics, organic material and fine quartz sand

C: ES orange, S orange-black-orange, IS brown

S: rough

Dim: R rim 14.0 cm, L 14.0 cm, W 12.3 cm, Th 0.5–0.8 cm

34. ulomak gornjeg dijela kuglaste keramičke zdjele s blago duguljastom drškom (T. 4: 34)

F: gruba, loše pročišćena glina s primjesama sitnih kamenčića, sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasta, UP – narančasta do siva

OP: blago zaglađena, oštri tragovi zaglađivanja s unutarnje strane

DM: R oboda – 14,0 cm, D – 11,2 cm, Š – 13,4 cm, DS – 0,7 – 0,9 cm

35. ulomak donjeg dijela keramičke posude (T. 4: 35)

F: srednja, djelomično pročišćena glina s malo primjesa sitnih kamenčića, sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – narančasta do siva, P – narančasto-siva, UP – siva

OP: blago zaglađena

U: široko žlijebljenje, pravocrtne motivi okomitih linija

DM: R trbuha – 10,0 cm, D – 8,2 cm, Š – 8,0 cm, DS – 0,7 – 1,3 cm

36. ulomak trbuha keramičke zdjele (T. 4: 36)

F: fina, pročišćena glina s malo primjesa sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – siva, P – siva, UP – siva

OP: zaglađena

U: široko žlijebljenje, krivocrtne motivi

DM: D – 5,6 cm, Š – 6,0 cm, DS – 0,6 – 0,7 cm

37. ulomak donjeg dijela keramičke posude (T. 4: 37)

F: srednja, djelomično pročišćena glina s malo primjesa sitno drobljene keramike, organskog materijala i finim kvarcnim pijeskom

B: VP – siva, P – siva, UP – siva

OP: blago zaglađena

U: žlijebljenje, pravocrtne motivi okomite linije

DM: R dna – 3,5 cm, D – 6,8 cm, Š – 1,6 cm, DS – 0,7 – 0,9 cm

38. ulomak trbuha keramičke posude s čepastom drškom (T. 4: 38)

F: gruba, loše pročišćena glina s primjesama šljunka, sitnih kamenčića, sitno drobljene keramike i finim kvarcnim pijeskom

B: VP – narančasta, P – narančasto-crna, UP – crna

OP: neravna

U: otiskivanje, otisak prsta ili alatke na vrhu drške

DM: D – 6,1 cm, Š – 4,8 cm, DS – 0,9 – 1,0 cm

Kameni nalazi

39. ulomak radne plohe sa sačuvanim licem (radnom površinom) i manjim dijelovima lateralnih strana i naličja; krupnozrnati pješčenjak/konglomerat (T. 5: 39)

SJ: 001 (sloj)

DM: D – 10,8 cm, Š – 14,0 cm, DS – 3,9 cm

40. ulomak statičnog brusa pločastog oblika, blago konveksne radne plohe uslijed uporabe; pješčenjak (T. 5: 40)

SJ: 003 (zapuna)

DM: D – 5,0 cm, Š – 5,8 cm, DP – 2,7 cm

41. tesla trapezoidnog presjeka sa širim distalnim krajem (sječivom) i ravnim lukom sječiva s intenzivnim tragovima uporabe; škriljavac (T. 5: 41)

SJ: 146 (zapuna)

DM: D – 4,4 cm, Š – 3,0 cm, DP – 1,1 cm

34. Fragment of the upper part of a spherical ceramic bowl with a grip (Pl. 4: 34)

T: coarse, poorly purified clay with admixtures of pebbles, ground ceramics, organic material and fine quartz sand

C: ES orange, S orange, IS orange to grey

S: slightly smoothed, traces of smoothing on the inner surface

Dim: R rim 14.0 cm, L 11.2 cm, W 13.4 cm, Th 0.7–0.9 cm

35. Fragment of the lower part of a ceramic vessel (Pl. 4: 35)

T: medium, partially purified clay with some admixture of pebbles, ground ceramics and fine quartz sand

C: ES orange to grey, S orange-grey, IS grey

S: slightly smoothed

D: wide fluting, rectilinear motifs of vertical lines

Dim: R belly 10.0 cm, L 8.2 cm, W 8.0 cm, Th 0.7–1.3 cm

36. Fragment of the belly of a ceramic bowl (Pl. 4: 36)

T: fine, purified clay with a little admixture of ground ceramics and fine quartz sand

C: ES grey, S grey, IS grey

S: smoothed

D: wide fluting, curvilinear motifs

Dim: L 5.6 cm, W 6.0 cm, Th 0.6–0.7 cm

37. Fragment of the lower part of a ceramic vessel (Pl. 4: 37)

T: medium, partially purified clay with some admixture of ground ceramics, organic material and fine quartz sand

C: ES grey, S grey, IS grey

S: slightly smoothed

D: fluting, rectilinear motif of a vertical line

Dim: R bottom 3.5 cm, L 6.8 cm, W 1.6 cm, Th 0.7–0.9 cm

38. Fragment of the belly of a ceramic vessel with a grip (Pl. 4: 38)

T: coarse, poorly purified clay with admixtures of gravel, pebbles, ground ceramics and fine quartz sand

C: ES orange, S orange-black, IS black

S: rough

D: impressing, impress of a finger or a tool on the top of the handle

Dim: L 6.1 cm, W 4.8 cm, Th 0.9–1.0 cm

Stone artefacts

39. Worktop fragment with preserved face (work surface) and smaller parts of lateral sides and reverse; conglomerate (Pl. 5: 39)

SU: 001 (layer)

Dim: L 10.8 cm, W 14.0 cm, Th 3.9 cm

40. Slab-shaped stationary whetstone fragment with slightly convex work surface, probably due to use; sandstone (Pl. 5: 40)

SU: 003 (fill)

Dim: L 5.0 cm, W 5.8 cm, Th 2.7 cm

41. Adze with trapezoidal cross-section and a wider distal end (blade) and a flat blade arch with intense traces of use; green-schist (Pl. 5: 41)

SU: 146 (fill)

Dim: L 4.4 cm, W 3.0 cm, Th 1.1 cm

42. tesla D-presjeka s paralelnim bočnim stranama, konkavnim lukom sječiva, nepravilno glačanom šijom te dvjema nepravilnim radnim ploham; škrljavac (T. 5: 42)
SJ: 158 (sloj)
DM: D – 6,7 cm, Š – 4,6 cm, DP – 1,4 cm
43. bipolarni konični tučak kojemu su oba kraja služila za rad, koničnog oblika i elipsoidnog do blago pravokutnog presjeka, s tragovima uporabe na radnim površinama; pješčenjak (T. 5: 43)
SJ: 158 (sloj)
DM: D – 8,7 cm, Š – 3,9 cm, DP – 2,9 cm
44. komad s obradom – odbojak nastao dotjerivanjem jezgre, s negativima prethodnih odbijanja i tragovima pripreme udarne plohe, izvnutog završetka, s tragovima dodatne obrade na desnoj lateralnoj strani; crveni radiolarit (T. 5: 44)
SJ: 146 (zapuna)
DM: D – 2,2 cm, Š – 2,0 cm, DP – 0,8 cm
45. komad s obradom – ulomak sječiva iz pripremljene jezgre za sječiva, geometrijskog (trapezoidnog) oblika s tragovima dodatne obrade na obje lateralne strane; svjetlopropusni opsidijan (T. 5: 45)
SJ: 146 (zapuna)
DM: D – 1,7 cm, Š – 1,5 cm, DP – 0,3 cm
46. komad s obradom – pločica iz pripremljene jezgre za pločice, s tragovima dodatne obrade na desnoj lateralnoj strani; crveni radiolarit (T. 5: 46)
SJ: 146 (zapuna)
DM: D – 2,1 cm, Š – 0,6 cm, DP – 0,3 cm
47. komad s obradom – manji zdepasti odbojak s okorinskim plohom i perastim završetkom te tragovima dodatne obrade s desne lateralne strane; rožnjak (T. 5: 47)
SJ: 146 (zapuna)
DM: D – 1,6 cm, Š – 1,3 cm, DP – 0,2 cm
48. manji odbojak bez tragova dodatne obrade, s ravnim plohom i perastim završetkom; crveni radiolarit (T. 5: 48)
SJ: 049 (zapuna)
DM: D – 1,2 cm, Š – 0,9 cm, DP – 0,3 cm
49. komad s obradom – distalni fragment pločice s tragovima dodatne obrade na lijevom lateralnom rubu; crveni radiolarit (T. 5: 49)
SJ: 079 (zapuna)
DM: D – 1,0 cm, Š – 0,6 cm, DP – 0,2 mm
50. krhotina s više manjih negativna; crveni radiolarit (T. 5: 50)
SJ: 144 (zapuna)
DM: D – 1,4 cm, Š – 1,2 cm, DP – 0,6 cm
42. Adze with D-shaped cross-section and parallel sides, concave blade arch, unevenly polished axebutt with two uneven work surfaces, probably due to secondary use; greenschist (Pl. 5: 42)
SU: 158 (layer)
Dim: L 6.7 cm, W 4.6 cm, Th 1.4 cm
43. Bipolar conical pestle with 2 work ends, conical in shape and ellipsoidal to slightly rectangular in cross-section, with traces of use on work surfaces; sandstone (Pl. 5: 43)
SU: 158 (layer)
Dim: L 8.7 cm, W 3.9 cm, Th 2.9 cm
44. Retouched piece: core-trimming flake, with previous flaking negatives and striking platform preparation, hinge termination, retouch traces on right lateral side; red radiolarite (Pl. 5: 44)
SU: 146 (fill)
Dim: L 2.2 cm, W 2.0 cm, Th 0.8 cm
45. Retouched piece: blade fragment out of pre-prepared blade core, geometrical (trapezoidal) shape with retouch traces at both lateral sides; semi-transparent obsidian (Pl. 5: 45)
SU: 146 (fill)
Dim: L 1.7 cm, W 1.5 cm, Th 0.3 cm
46. Retouched piece: bladelet out of pre-prepared bladelet core, retouch traces on right lateral side; red radiolarite (Pl. 5: 46)
SU: 146 (fill)
Dim: L 2.1 cm, W 0.6 cm, Th 0.3 cm
47. Retouched piece: small, stumpy flake with cortical butt and feathered termination and with retouch traces on right lateral side; flint (Pl. 5: 47)
SU: 146 (fill)
Dim: L 1.6 cm, W 1.3 cm, Th 0.2 cm
48. Small flake without retouch traces, flat butt and feathered termination; red radiolarite (Pl. 5: 48)
SU: 049 (fill)
Dim: L 1.2 cm, W 0.9 cm, DP 0.3 cm
49. Retouched piece: distal fragment of bladelet with retouch traces on left lateral side; red radiolarite (Pl. 5: 49)
SU: 079 (fill)
Dim: L 1.0 cm, W 0.6 cm, Th 0.2 mm
50. Chunk with small negatives; red radiolarite (Pl. 5: 50)
SU: 144 (fill)
Dim: L 1.4 cm, W 1.2 cm, Th 0.6 cm

BIBLIOGRAFIJA

BIBLIOGRAPHY

- Antonović 2003 – D. Antonović, *Neolitska industrija glačanog kamena u Srbiji*, Arheološki Institut, 2003.
- Bánffy 2004 – E. Bánffy, *The 6th Millennium BC boundary in western Transdanubia and its role in the Central European Neolithic transition (The Szentgyörgyvölgy-Pityerdomb Settlement)*, *Varia Archaeologica Hungarica* 15, Publicationes Instituti Archaeologici Academiae Scientiarum Hungaricae, 2004.
- Bánffy 2019 – E. Bánffy, *First Farmers of the Carpathian Basin. Changing patterns in subsistence, ritual and monumental figurines*, Prehistoric Society Research Papers No. 8, Oxbow, 2019.
- Bánffy, Oross 2009 – E. Bánffy, K. Oross, Entwicklung und Dynamik der Linearbandkeramik in Transdanubien, in Zeeb-Lanz, A. (ed.), *Krisen – Kulturwandel – Kontinuitäten, Zum Ende der Bandkeramik in Mitteleuropa: Beiträge der Internationalen Tagung in Herxheim bei Landau (Pfalz) vom 14.–17. 06. 2007*, Internationale Archäologie, Arbeitsgemeinschaft, Symposium, Tagung, Kongress 10, Marie Leidorf GmbH, 2009, 219–240.
- Bánffy, Oross 2010 – E. Bánffy, K. Oross, The earliest and earlier phase of the LBK in Transdanubia, in Gronenborn, D. (ed.), *Die Neolithisierung Mitteleuropas / The Spread of the Neolithic to Central Europe, Internationale Tagung, Mainz 24. bis 26. Juni 2005*, Verlag des Römisch-Germanisches Zentralmuseum Tagungen 4, 255–272.
- Barna 2004 – J. P. Barna, Becsehely – Homokos, Előzetes a M7 gyorsforgalmi út 71. sz. lelőhelyén feltárt neolitikus telep kutatásáról (1999–2000), *Ősorkos Kutatók 2*, Összejövetele, Debrecen 2000, ΜΩΜΟΣ 2, 2004, 33–44.
- Barna 2005 – J. P. Barna, Sormás–Török-földek településtörténeti áttekintése / A középső neolitikum, *Zalai Múzeum* 14, 2005, 17–36.
- Barna 2017 – J. P. Barna, *The formation of the Lengyel Culture in South-western Transdanubia*, *Archaeolingua* 39, Budapest, 2019.
- Barna, Biró 2009 – J. P. Barna, K. Biró, Import leletek és nyersanyagok Sormás-Mántai-dűlő és Sormás-Török-földek lelőhelyeken, *Ősorkos Kutatók 6*, Összejövetelének konferenciakötete, Kórszeg 2009. március 19-21, ΜΩΜΟΣ 6, 279–294.
- Barna, Pásztor 2011 – J. P. Barna, E. Pásztor, Different ways of using space: traces of domestic and ritual activities at a Late Neolithic settlement at Sormás-Török-földek, *Documenta Praehistorica* 38, 2011, 185–206.
- Biró 1993 – K. T. Biró, Good or Bad? Raw Material Procurement Criteria in the Carpathian Basin, A Diachronic Approach, in Andresen, J., Madsen, T., Scollar, I. (eds.), *Computing the Past, Computer Applications and Quantitative Methods in Archaeology* 92, Aarhus University Press, 1993, 405–414.
- Botić 2017 – K. Botić, *Neolitička naselja na tlu sjeverne Hrvatske*, unpublished PhD thesis, Filozofski fakultet Sveučilišta u Zagrebu, 2017.
- Botić 2018 – K. Botić, Middle Neolithic Absolute Dating in North Croatia – New Research, *Studia Universitatis Hereditati* 6 (1), 2018, 89–100.
- Botić 2020 – K. Botić, Middle Neolithic transformation: Starčevo-LBK-Vinča meeting point and the emergence of Ražište style in Drava river valley, *Quaternary International* 560–561, 2020, 197–207.
- Branković 2019 – D. Branković, Kamene izradevine, in Karavanić, S., Kudelić, A. (eds.), *Kalnik-Igrišće: Naselje kasnog brončanog doba*, Monografije Instituta za arheologiju 14, 2019, 143–154.
- Čataj, Janeš 2013 – L. Čataj, A. Janeš, Golinci – Selište. Prehistoric and Medieval settlement, in Višnjić, J. (ed.), *Nove arheološke spoznaje o donjoj Podravini, Zaštitna arheološka istraživanja na magistralnom plinovodu Slobodnica – Donji Miholjac / New Archaeological Insight into Lower Podravina, Rescue Archaeological Research of the Slobodnica – Donji Miholjac Natural Gas Trunk Pipeline*, Hrvatski restauratorski zavod, 2013, 167–225.
- Dimić 2015 – V. Dimić, O pojedinim terminološkim i interpretativnim problemima u studijama glačanog i abrazivnog kamenog oruđa, *Glasnik srpskog arheološkog društva* 31, 2015, 379–398.
- Đukić 2018 – A. Đukić, Prapovijesne glačane kamene izradevine sjeverozapadne Hrvatske, *Prilozi Instituta za arheologiju u Zagrebu* 35, 2018, 251–290.
- Faragó, Mester, Király 2021 – N. Faragó, Z. Mester, A. Király, The knapped stone assemblage from Boldgkővárálja in the light of a new statistical evaluation, *Litikum* Vol. 7–8/2019–2020, 2021, 55–70.
- Hachem 2000 – L. Hachem, New observations on the Bandkeramik house and social organization, *Antiquity* 74, 2000, 308–312.
- Halamić, Šošić 2009 – J. Halamić, R. Šošić, Radiolarites and radiolarian cherts in northern Croatia – possible sources for the production of artifacts, *Archeometriai Műhely* 2009/3, 2009, 19–24.
- Husnjak 2014 – S. Husnjak, *Sistematika tala Hrvatske*, Manualia Universitatis Zagrebensis / Udžbenici Sveučilišta u Zagrebu, 2014.
- Jakucs 2020 – J. Jakucs, LBK and Vinča in South-East Transdanubia: Comments on merging, interleaving and diversity, *Quaternary International* 560–561, 2020, 119–141.
- Jakucs et al. 2016 – J. Jakucs, E. Bánffy, K. Oross, V. Voicsek, C. Bronk Ramsey, E. Dunbar, B. Kromer, A. Bayliss, D. Hofmann, P. Marshall, A. Whittle, Between the Vinča and Linearbandkeramik Worlds: The Diversity of Practices and Identities in the 54th–53rd Centuries cal BC in Southwest Hungary and Beyond, *World Prehistory* 29, 2016, 267–336.
- Jakus, Voicsek 2015 – J. Jakucs, V. Voicsek, The northernmost distribution of the early Vinča Culture in the Danube valley: a preliminary study from Szerderkény-Kukorica-dűlő (Baranya County, southern Hungary), *Antaeus* 33, 2015, 13–54.
- Kalicz 1980 – N. Kalicz, Funde der ältesten Phase der Linienbandkeramik in Südtransdanubien, *Mitteilungen des Archäologischen Instituts der Ungarischen Akademie der Wissenschaften* 8/9 (1978/1979), 1980, 13–46, Taf. 1–14.
- Kalicz 1991 – N. Kalicz, Die Keszthely-Gruppe der Transdanubischen (Mitteleuropäischen) Linienbandkeramik im Lichte der Ausgrabung in Kustanszeg (Westungarn), *Communicationes Archaeologicae Hungariae* 1991, 5–32.
- Kalicz 1995 – N. Kalicz, Die älteste transdanubische (mitteleuropäische) Linienbandkeramik. Aspekte zu Ursprung, Chronologie und Beziehungen, *Acta Archaeologica Academiae Scientiarum Hungaricae* 47, 1995, 23–59.
- Kalicz, Kalicz-Schreiber 2001 – N. Kalicz, R. Kalicz-Schreiber, Die Verbreitungsgrenze der frühneolithischen Kulturen in Transdanubien (Westungarn), *Preistoria Alpina* 37, 2001, 25–44.
- Kalicz, Kreiter, Tokai 2007 – N. Kalicz, E. Kreiter, Z. M. Tokai, Die Rolle der Sopot Kultur in der Entstehung der Lengyel-Kultur auf Grund der neuen Ausgrabungen in Südwestungarn, in Kozłowski, J. K., Raczky, P. (eds.), *The Lengyel, Polgár and related cultures in the Middle/Late Neolithic in Central Europe*, Polish Academy of Arts and Sciences, 2007, 29–47.
- Kalicz et al. 2012 – N. Kalicz, A. Kreiter, E. Kreiter, Z. M. Tokai, M. Tóth, B. Bajnóczi, A neolitikum történeti kérdései Becsehely–Bükkaljai-dűlő lelőhelyen, in Kolozsi, B. (ed.), *Ősorkos kutatók IV, Összejövetelének konferenciakötete*, Debrecen, 2005, Március 22–24, ΜΩΜΟΣ 4, 2012, 87–170.
- Karavanić et al. 2015 – I. Karavanić, N. Vukosavljević, R. Šošić-Klindžić, T. Težak-Gregl, J. Halamić, T. Bošnjak Botica, B. Nahod, *Pojmovnik kamenoga doba*, Sveučilište u Zagrebu, Filozofski fakultet, FFpress, 2015.
- Kreiter et al. 2017 – A. Kreiter, T. Matron, L. Gomart, K. Oross, P. Pánczél, Looking into houses: analysis of LBK ceramic technological change on a household level, in Burnez-Lanotte, L. (ed.), *Matières à Penser: Raw materials Acquisition and Processing in Early Neolithic Pottery Productions, Proceedings of the Workshop of Namur (Belgium) 29 and 30 May 2015*, Société préhistorique française, 2017, 111–132.
- Kulenović Ocelić, Kulenović – N. Kulenović Ocelić, I. Kulenović, Neolitičko naselje Golubovac/Sadice – prilog poznavanju naseobinskih obrazaca donje Podravine / A Neolithic settlement Golubovac/Sadice – new research on settlement patterns in Lower Podravina, *Podravina* 17 (34), 2018, 5–17.

- Marciuš 2017 – B. Marciuš, *Kamen na prapovijesni način: Glačane kamene alatke iz fundusa muzeja Medimurja Čakovec*, katalog izložbe, Muzej Medimurja Čakovec, 2017.
- Marković 1994 – Z. Marković, *Sjeverna Hrvatska od neolita do brončanog doba*, Muzej grada Koprivnice, Koprivnica, 1994.
- Marković, Botić 2008 – Z. Marković, K. Botić, O neolitičkoj keramici iz Novih Perkovaca kod Đakova, *Prilozi Instituta za arheologiju u Zagrebu* 25, 2008, 15–32.
- Marković, Botić 2016 – Z. Marković, K. Botić, Podgorač, Ražište – rezultati arheoloških istraživanja, *Annales Instituti Archaeologici* 12 (2015), 2016, 63–70.
- Marton 2008 – T. Marton, Development of pottery style on the LBK settlement of Balatonszárszó-Kis-Erdei-dűlő in Hungary, *Acta Terrae Septemcastrensis* 7, 2008, 197–216.
- Marton, Oross 2009 – T. Marton, K. Oross, Reconstructing space in a familiar world: the formation of the late LBK settlements in Central Transdanubia, in Kozłowski, J. K. (ed.), *Interactions between different models of Neolithization north of the Central European Agro-Ecological Barrier*, Polish Academy of Arts and Sciences, 2009, 51–73.
- Marton, Oross 2012 – T. Marton, K. Oross, Siedlungsforschung in linienbandkeramischen Fundorten in Zentral- und Südtransdanubien - Wiege, Peripherie oder beides?, in Smolnik, R. (ed.), *Siedlungsstruktur und Kulturwandel in der Bandkeramik, Beiträge der internationalen Tagung "Neue Fragen zur Bandkeramik oder alles beim Alten?"* Leipzig, 23. bis 24. September 2010, Arbeits- und Forschungsberichte zur sächsischen Bodendenkmalpflege, Beiheft 25, 2012, 220–239.
- Mateiciucova 2007 – I. Mateiciucova, Worked stone: obsidian and flint, in Whittle A. (ed.), *The Early Neolithic on the Great Hungarian Plain. Investigations of the Körös culture site of Ecsegfalva 23, County Békés*, Volume 2, *Varia Archaeologica Hungarica* 21, Archaeological Institute of the Hungarian Academy of Sciences, School of History and Archaeology, Cardiff University, Budapest, 677–726.
- Mušič, Medarić, Marijević 2017 – B. Mušič, I. Medarić, F. Marijević, *Izvrješće o geofizičkim istraživanjima na lokalitetu Domašinec*, Maribor, 2017, arhiva Hrvatskog restauratorskog zavoda.
- Okroša Rožić 2014 – L. Okroša Rožić, Brezovljani, in Balen, J., Hršak, T., Šošić Klindžić, R. (eds.), *Darovi zemlje, neolitik između Save, Drave i Dunava / Gifts of the Earth, The Neolithic between the Sava, Drava and Danube*, Arheološki muzej u Zagrebu, Muzej Slavonije i Filozofski fakultet u Zagrebu, 2014, 15–19.
- Oross 2010 – K. Oross, Architecture of the Linearbandkeramik settlement at Balatonszárszó-Kiserdei-dűlő in central Transdanubia, in Gheorghiu, D. (ed.), *Neolithic and Chalcolithic archaeology in Eurasia: Building techniques and spatial organisation*, BAR International Series pre-2020, 2010, 63–80.
- Oross, Bánffy 2009 – K. Oross, E. Bánffy, Three successive waves of Neolithisation: LBK development in Transdanubia, *Documenta Praehistorica* 36, 2009, 175–189.
- Oross, Simmer, Straub 2019 – K. Oross, L. Simmer, P. Straub, Regionality in fluidity: the Linearbandkeramik site at Keszthely-Lendl Adolf út in western Hungary and its hinterland, in Bánffy, E., Barna, J. P. (eds.), *Trans Lacum Pelsonem, Prähistorische Forschungen in Südwestungarn (5500–500 v. Chr.) / Prehistoric research in south-western Hungary (5500–500 BC)*, Castellum Pannonicum Pelsonense 7, 2019, 9–72.
- Paunović 2002 – M. Paunović, Origin of Neolithic Raw Materials in Croatia, *Opuscula Archaeologica* 26, 2002, 7–11.
- Rajković 2019 – D. Rajković, *Glačane kamene izrađevine u životu starčevačke i sopske populacije na prostoru istočne Hrvatske*, unpublished PhD thesis, Filozofski fakultet Sveučilišta u Zagrebu, 2019.
- Stadler 2005 – P. Stadler, Settlement of the Early Linear Ceramics Culture at Brunn am Gebirge, Wolfholz Site, *Documenta Praehistorica* 32, 2005, 269–278.
- Starnini 2000 – E. Starnini, Stone Industries of the Early Neolithic Cultures in Hungary and their Relationship with the Mesolithic Background, *Quderno* 8, 2000, 207–219.
- Szilágy 2018 – K. Szilágy, Lithic Raw Material Procurement in the Late Neolithic Southern-Transdanubian Region: A Case Study From the Site of Alsónyék-Bátaszék, *Archaeologia Polona* 56, 2018, 127–140.
- Szilasi 2017 – A. B. Szilasi, Radiolarite sources from the Bakony mountains: new research, *Archaeologia Polona* 55, 2017, 243–265.
- Šošić-Klindžić 2010 – R. Šošić-Klindžić, *Proizvodnja cijepanih kamenih artefakata ranih poljodjelskih zajednica na prostoru istočne Hrvatske*, unpublished PhD thesis, Filozofski fakultet Sveučilišta u Zagrebu, 2010.
- Šošić Klindžić 2014 – R. Šošić Klindžić, 100% prirodno – sirovine korištene u neolitiku, in Balen, J., Hršak, T., Šošić Klindžić R. (eds.), *Darovi zemlje, neolitik između Save, Drave i Dunava / Gifts of the Earth, The Neolithic between the Sava, Drava and Danube*, Arheološki muzej u Zagrebu, Muzej Slavonije i Filozofski fakultet u Zagrebu, 2014, 178–190.
- Težak-Gregl 1993 – T. Težak-Gregl, *Kultura linearnotrakaste keramike u središnjoj Hrvatskoj*, Disertacije i monografije 2, Arheološki zavod Filozofskog fakulteta Sveučilišta u Zagrebu, 1993.
- Težak-Gregl 2014 – T. Težak-Gregl, Kultura linearnotrakaste keramike, in Balen, J., Hršak, T., Šošić Klindžić, R. (eds.), *Darovi zemlje, neolitik između Save, Drave i Dunava / Gifts of the Earth, The Neolithic between the Sava, Drava and Danube*, Arheološki muzej u Zagrebu, Muzej Slavonije i Filozofski fakultet u Zagrebu, 2014, 29–39.
- Vukosavljević, Perhoč, Karavanić 2015 – N. Vukosavljević, Z. Perhoč, I. Karavanić, Litički skup nalaza od lomljenog kamena iz špilje Zale: kasni gornji paleolitik i mezolitik, in Vukosavljević, N., Karavanić, I. (eds.), *Arheologija špilje Zale: od paleolitičkih lovaca skupljača do rimskih osvajača*, Katedra Čakavskog sabora Modruše, 2015, 74–118.
- Wright 1992 – K. Wright, A Classification System for Ground Stone Tools from the Prehistoric Levant, *Paléorient* 18/2, 1992, 53–81.
- Wright 2017 – D. K. Wright, Precision: Understanding Potential Errors from Radiocarbon Dating on African Landscapes, *African Archaeological Review* 34, 2017, 303–319.

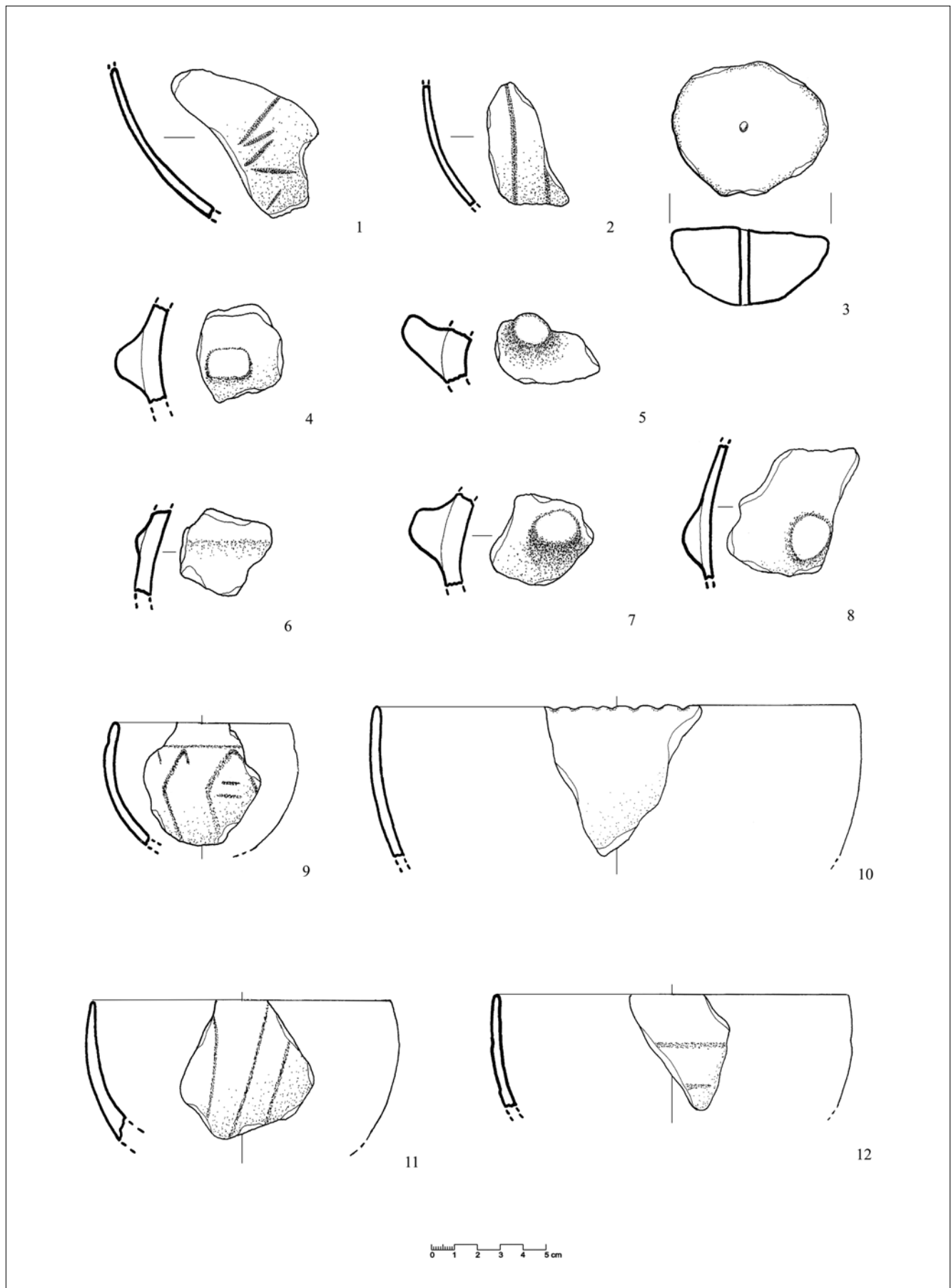


TABLA 1.
1 – 8: SJ 001, 9 – 12: SJ 003 (crtež D. Bergant).

PLATE 1.
1–8: SU 001; 9–12: SU 003 (drawing by D. Bergant).

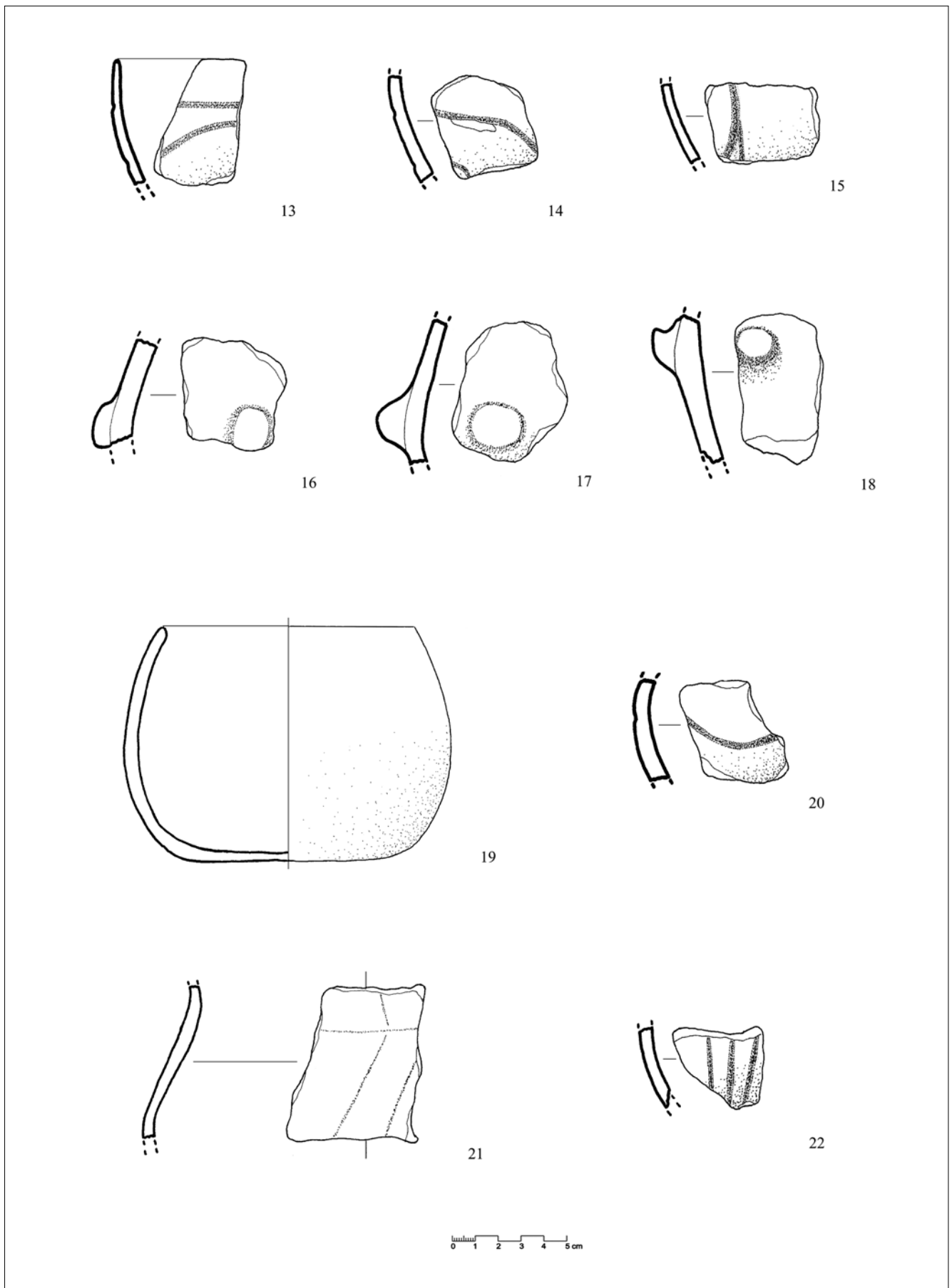


TABLA 2.
13 – 18: SJ 003, 19 – 22: SJ 028 (crtež D. Bergant).

PLATE 2.
13–18: SU 003; 19–22: SU 028 (drawing by D. Bergant).

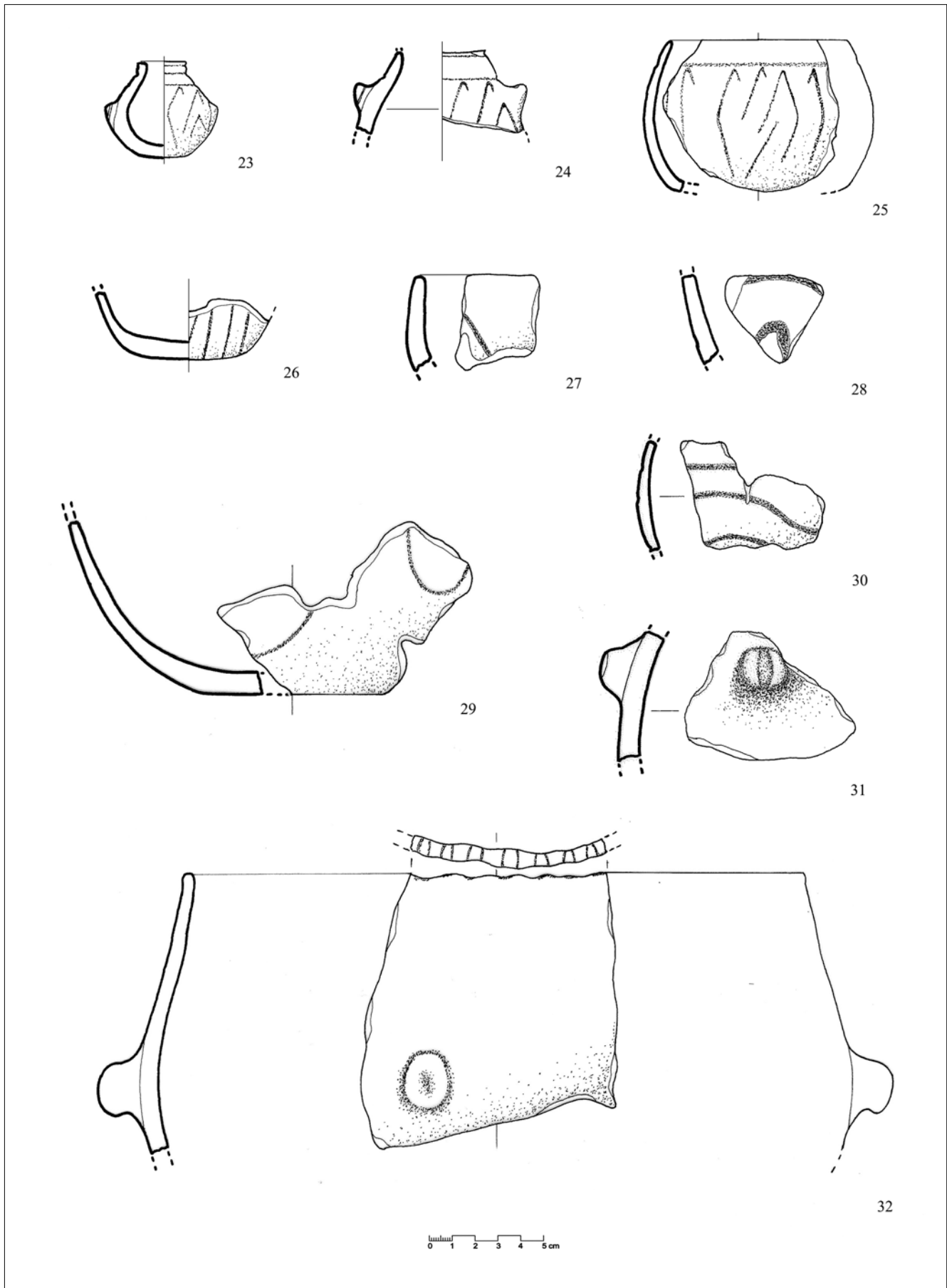


TABLA 3.
23 – 32: SJ 146 (crtež D. Bergant).

PLATE 3.
23–32: SU 146 (drawing by D. Bergant).

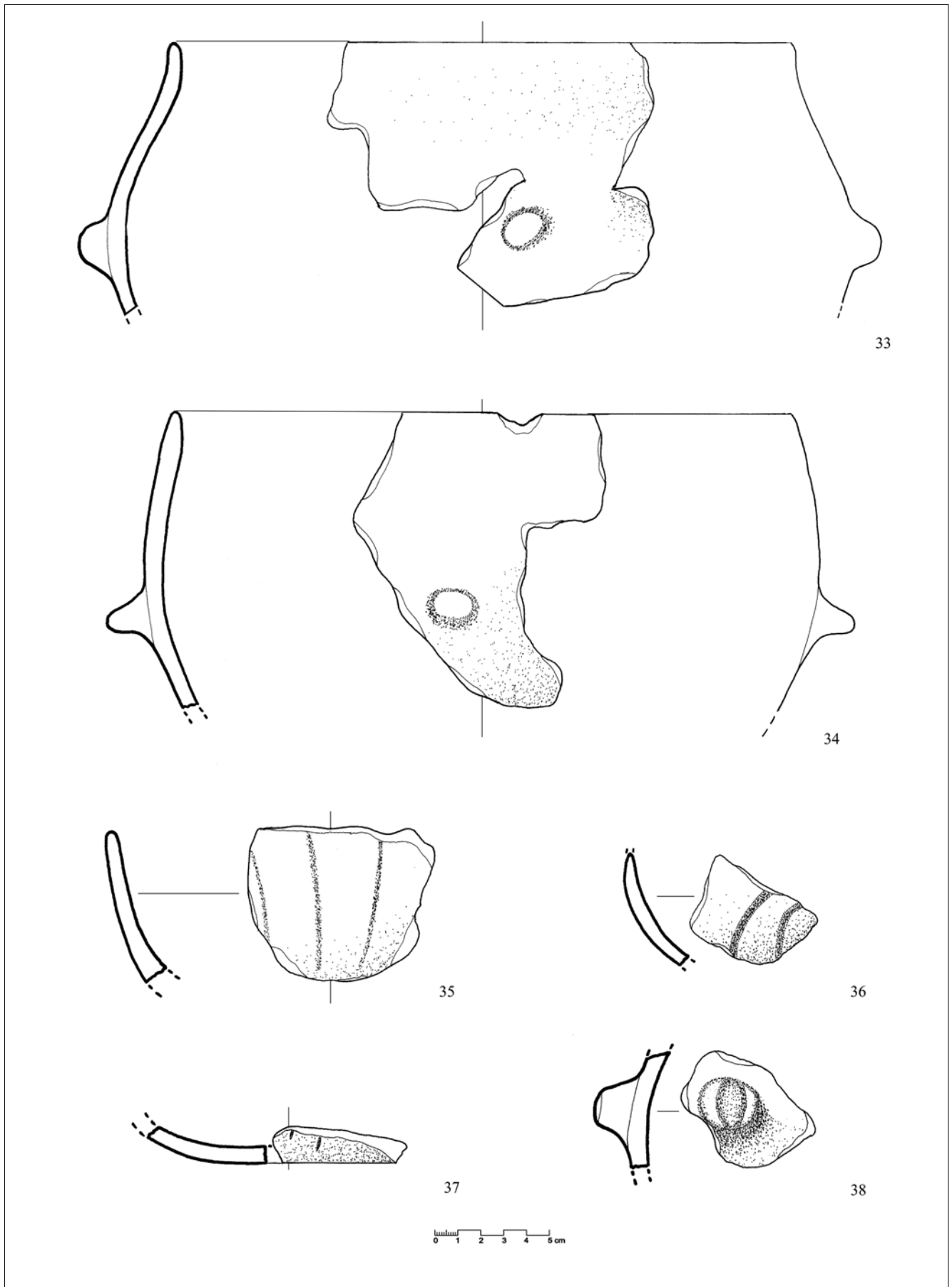


TABLA 4.
33 – 38: SJ 171 (crtež D. Bergant).

PLATE 4.
33–38: SU 171 (drawing by D. Bergant).

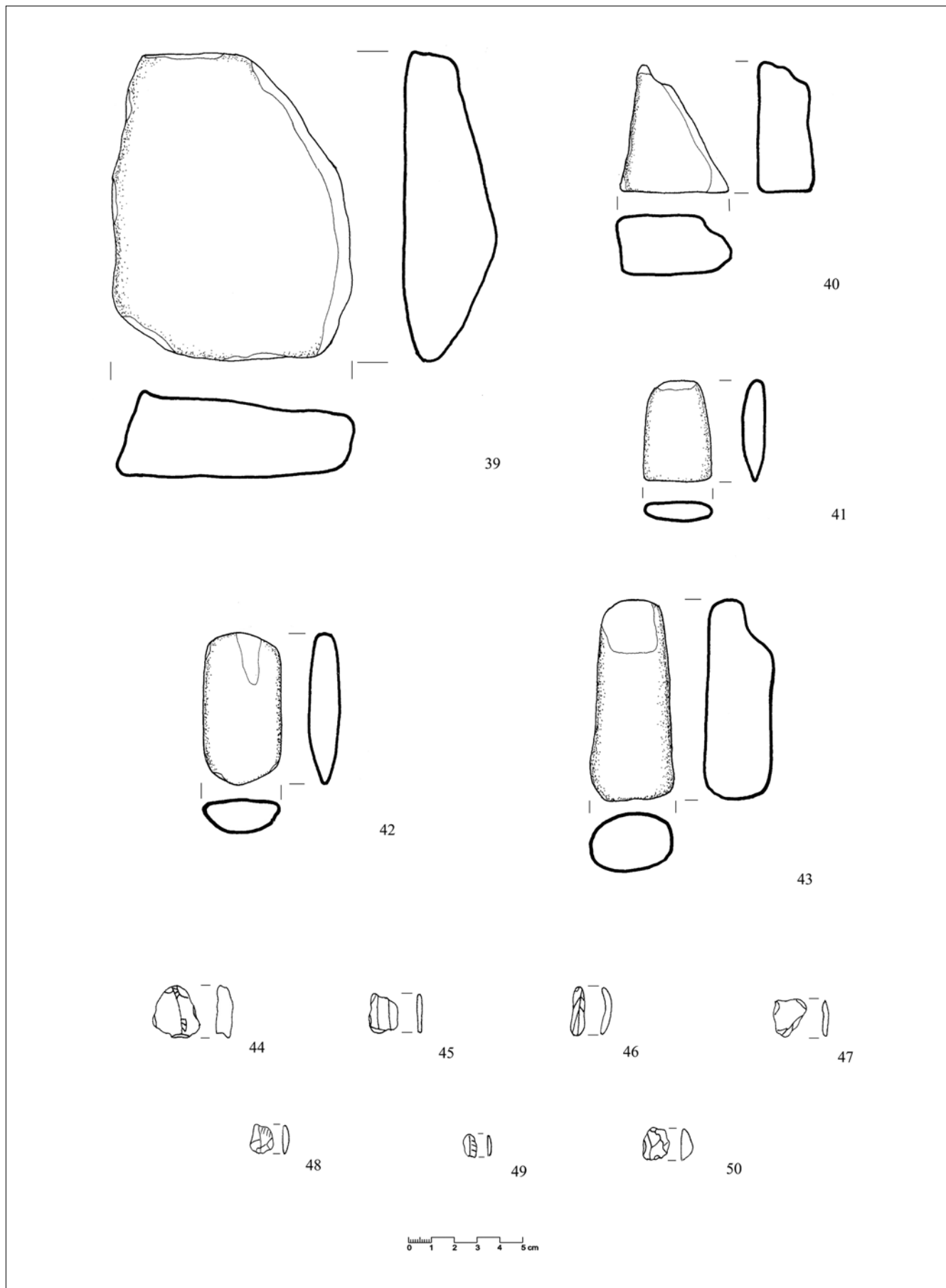


TABLA 5.
39: SJ 001; 40, 44 - 47: SJ 146; 42 - 43: SJ 158; 48: SJ 049; 49: SJ 079; 50: SJ 144 (crtež D. Bergant).

PLATE 5.
39: SU 001; 40, 44-47: SU 146; 42-43: SU 158; 48: SU 049; 49: SU 079; 50: SU 144 (drawing by D. Bergant).