

Sodolek - još jedno nalazište s prijelaza srednjeg u kasno brončano doba

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Sodolek – još jedno nalazište s prijelaza srednjeg u kasno brončano doba

Sodolek – just another site from the Middle/Late Bronze Age boundry

Izvorni znanstveni rad
Prapovijesna arheologija

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Opsežna arheološka istraživanja poduzeta posljednjih godina omogućavaju nam nove spoznaje o unutrašnjoj strukturi i dinamici razvoja brončanodobnih nalazišta. Precizni programi datiranja pokazuju kako su gotovo sva nalazišta imala najmanje dvije faze djelatnosti. Jedno od, u tom smislu, najzanimljivijih nalazišta, Sodolek u istočnoj Sloveniji, prikazuje razvoj naselja na prijelazu iz srednje u kasno brončano doba. Datiranje njegovih pojedinih struktura omogućuje stvaranje pretpostavke o početku i drugih, nedatiranih, nalazišta, a time i o apsolutnom datiranju početka kulture polja sa žarama u široj regiji.

Ključne riječi: istočna Slovenija, Sodolek, srednje brončano doba, kasno brončano doba, radiometrijsko datiranje, nalazište, ostave keramike.

Large scale archaeological excavations conducted in recent years enabled us to get the information about the internal structure of the Bronze Age settlements and the dynamics of their development. Detailed dating programs demonstrated that almost all the settlements had at least two phases of activities. Among the most interesting ones is Sodolek from eastern Slovenia demonstrating the development of the settlement from the Middle to the Late Bronze Age. The dating of individual structures containing finds enabled us to formulate hypotheses about the beginning of other, undated, sites as well as to propose an absolute date for the beginning of the Urnfield Culture in the region.

Key words: East Slovenia, Sodolek, Middle Bronze Age, Late Bronze Age, radiometric dating, settlement, pottery depots.

Uvod

Posljednjih godina u austrijskoj, mađarskoj, hrvatskoj i slovenskoj arheologiji objavljeno je nekoliko knjiga i članaka, organizirani su kongresi i predstavljene izložbe, usmjerene na problem kronologije i kulturnih odnosa za prijelaz/razvoj iz srednjeg u kasno brončano doba. Raspravljanje o slovenskim gledištima i doprinosima toj raspravi izvan je okvira ovog članka. No, želio bih predstaviti prilog toj raspravi koji će biti izveden iz preciznog promatranja jednog nalazišta u istočnoj Sloveniji, s arheološkim ostacima iz kasne faze srednjeg i rane faze kasnog brončanog doba, nalazišta Sodolek.

Dosadašnji općeniti pregled, koji predstavlja kulturni razvoj brončanog doba na prostoru današnje Slovenije sa širim regionalnim utjecajem, objavljen je u jubilarnom 50-om izdanju *Arheološkog vestnika* 1999. godine, a kojeg potpisuju Janez Dular (Dular 1999) i Biba Teržan (Teržan 1999). Predstavljali su sintezu dotadašnjih rezultata, uglavnom temeljenih na pola stoljeća dugoj tradiciji arheološkog istraživanja, no s iznimno skromnim, tj. uvodnim predstavljanjem rezultata novijih terenskih istraživanja u okviru zaštitnih istraživanja na trasama autocesta.

Introduction

In recent years in Austrian, Hungarian, Croatian and Slovenian archaeology several books and articles were published as well as conferences organized and exhibitions presented focusing on the question of the chronology and cultural relations of the Middle to Late Bronze Age transition/development. It is beyond the scope of this article to discuss the Slovenian perspectives and contributions to the debate, but I hope to present a contribution which can be deduced from the detailed observations of a single site located in eastern Slovenia with the archaeological remains from the Late Middle and Early Late Bronze Age – the site of Sodolek.

The last general overviews presenting the cultural development of the Bronze Age on the territory of present day Slovenia with wider regional impact published in the 50th anniversary edition of *Arheološki vestnik* in 1999 were written by Janez Dular (Dular 1999) and Biba Teržan (Teržan 1999). They were still presenting the synthesis of past results largely based on the half a century long tradition of archaeological work, while only minor parts of the presented were introducing the results of the recent field research from the framework of the highway rescue excavations. A few years

Nekoliko godina ranije započeo je, naime, proces zaštitnih arheoloških istraživanja uključen u izgradnju slovenskih autocesta; proces koji je gotovo istovremeno otpočeo i u susjednim regijama Austrije i Hrvatske. Dobiveni podaci: opseg iskopavanja, količina i kvaliteta nalaza istraženih suvremenim terenskim metodama i, naravno, količina radiokarbonskih datuma, otpočeli su stvaranje temeljnih promjena u našim spoznajama o prošlosti te regije i njezine kulturne povijesti.

Promatrajući početak kasnog brončanog doba i kulture polja sa žarama na širem području, osnovno žarište znanstvenog zanimanja krajem prošlog stoljeća bilo je usmjereno na određivanje prostornog doseg a i moguće unutrašnje relativnokronološke podjele virovitičke kulture, kako ju je bila definirala Ksenija Vinski-Gasparini (Vinski-Gasparini 1973; 1983). Većina istočnoslovenskih nalazišta i nalaza bila je uključena u kasnije postavljena pitanja o njezinoj relativnoj kronološkoj shemi, promatrana na primjeru sustavno, ali djelomično istraženog nalazišta Oloris kod Donjeg Lakoša (sl. 1). U raspravama su glavni protagonisti predlagali stariji (Br B2 – Teržan 1995; 1996) i mlađi (Br C – Dular 1999) datum početka formiranja toga naselja.

U desetljeću koje je uslijedilo detaljno je bilo analizirano i objavljeno nalazište Oloris (Dular et al. 2002; Dular 2002), počeli su se objavljivati preliminarni rezultati s iskopavanja autocesta u kongresnim zbornicima posvećenima toj temi (Kavur 2007; 2011; Črešnar 2011; Kerman 2011a), kao i detaljne objave analiza nalaza u pojedinim časopisima (Črešnar 2010). U proteklim godinama otpočelo je i objavljivanje kataloga s rezultatima iskopavanja s autocesta (Šavel 2008; Tomaž 2010; Kerman 2011b; Šavel, Sankovič 2011) omogućujući time pristup podacima koji pokreću reviziju prijašnjih mišljenja i pretpostavki.

Prikazana količina građe, predstavljena uz radiokarbonske datume, dopustila je i prvu raspravu o mogućnosti postavljanja apsolutne kronologije (Črešnar 2009). Ali rasprava je, iznova, ponajviše bila usmjerena na vremensko određivanje nalaza iz Olorisa, gdje su podaci dobiveni iz novih istraživanja korišteni kako bi se definirala njihova relativnokronološka pozicija (Teržan 2010; Dular 2011).

Nalazište

Prapovijesno nalazište Sodolek smješteno je na zapadnom rubu doline Ščavnice u blizini sela Sv. Jurij (nekadašnji Videm) ob Ščavnici, u središnjem dijelu Slovenskih gorica u istočnoj Sloveniji (Djurić 2003) (sl. 1). Nekoliko pojedinačnih arheoloških nalaza, nađenih na nižim terasama uz rubne dijelove doline, već je bilo poznato iz okolnog područja, a većina njih se odnosi na glačane sjekire okvirno datirane u razdoblje eneolitika (Tušek, Kavur 2012). Među pojedinačnim nalazima bilo je i nekoliko brončanodobnih predmeta – npr. šuplja sjekira s ušicom nađena u Biserjanama, području gdje su nađeni i pojedinačni nalazi keramike starijeg i mlađeg željeznog doba te ostaci rimske arhitekture (Pahič 1965: 190; 1966: 192–193, T. 1: 9). Nadalje, vrlo srodna sjekira, također prilično oštećena, nađena je jugozapadno od sela Sv. Jurij kod Ženika (Pahič 1968: 186; Šinkovec 1995: 76, T. 21: 128), dok je sjekira s krilcima nađena u blizini sela Spodnji Kocjan

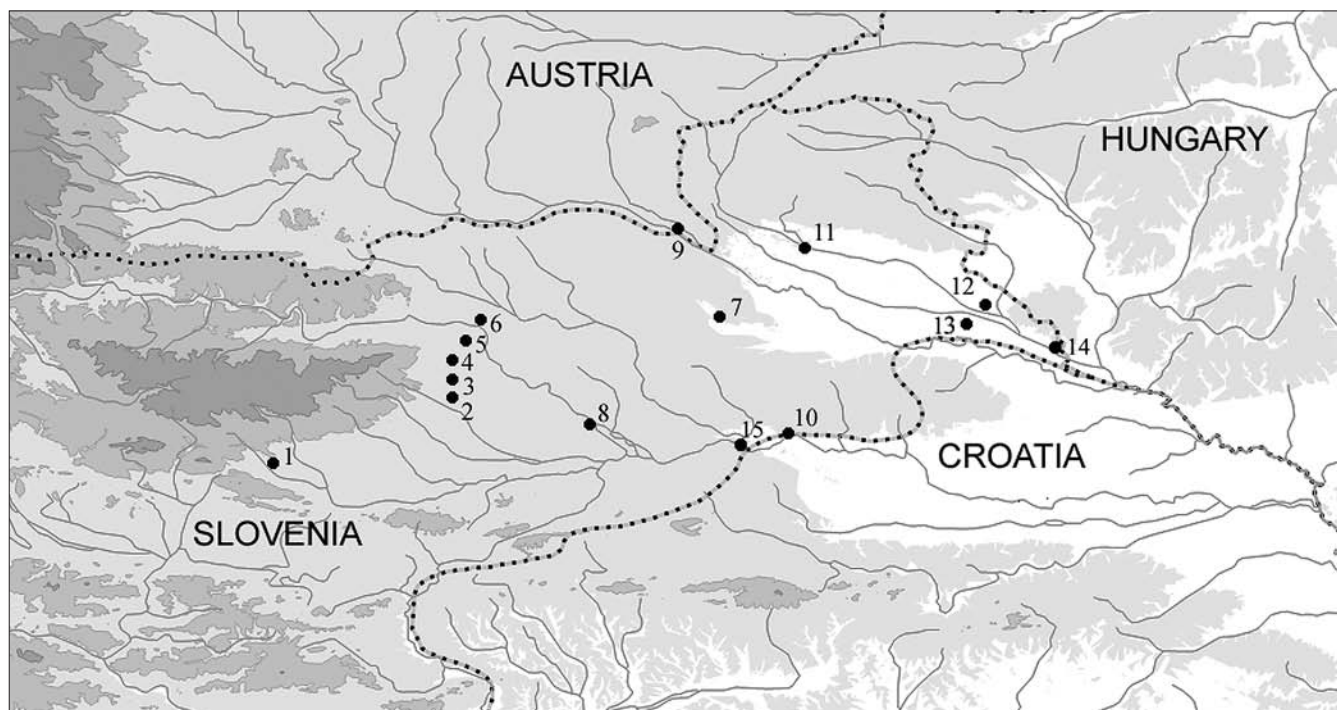
earlier the process of highway building with integrated rescue excavations started in Slovenia, a process which almost contemporary started in the neighboring regions of Austria and Croatia. The data obtained – the scale of excavations, the quantity and quality of finds excavated with modern field methods and of course the quantity of radiocarbon dates began to change profoundly our knowledge about the past of the region and its cultural history.

When observing the beginning of the Late Bronze Age and the Urnfield Culture in the region the main focus of interest was oriented at the end of the century towards the determination of the spatial extent and the possible internal chronological division of the Virovitica culture as defined by Ksenija Vinski Gasparini (Vinski-Gasparini 1973; 1983). The majority of eastern Slovenian sites and finds were included in to the later posing the question about its relative chronology as observed in the case of the systematically partly excavated site of Oloris near Dolnji Lakoš (Fig. 1). In the discussions the main protagonists of the debate proposed an early (Bd B2 – Teržan 1995; 1996) and a later date (Bd C – Dular 1999) for its beginning.

In the following decade the site of Oloris was analyzed in details and published (Dular et al. 2002; Dular 2002) and the preliminary results of the highway excavations began to be published in conference proceedings devoted to the topic (Kavur 2007; 2011; Črešnar 2011; Kerman 2011a) as well as in detailed analysis of finds published in periodicals (Črešnar 2010). In the last years also the catalogues presenting the results of the excavations on the highways started to be published (Šavel 2008; Tomaž 2010; Kerman 2011b; Šavel, Sankovič 2011) enabling the access to data which triggered the revision of previous opinions and hypotheses. The appearing quantity of material presented accompanied with radiocarbon dates enabled the first discussions about possibilities of creating an absolute chronology (Črešnar 2009). But again the discussion focused mostly on the chronological determination of the finds from Oloris, where the dates obtained from new research were used to determine its chronological position (Teržan 2010; Dular 2011).

The site

The prehistoric site named Sodolek was located on the western edge of the Ščavnica valley near the village of Sv. Jurij (former Videm) ob Ščavnici in central part of Slovenske gorice in Eastern Slovenia (Djurić 2003) (Fig. 1). In the past, several isolated archaeological finds were known from the surrounding area, majority of them being polished stone tools approximately dated in to the Copper Age discovered on low terraces at the valley edges (Tušek, Kavur 2012). Among the isolated finds were also several Bronze Age artifacts - an isolated bronze socketed axe with a loop was discovered in Biserjane in an area where stray finds of Early and Late Iron Age pottery were discovered on the fields as well as remains of Roman architecture (Pahič 1965: 190; 1966: 192–193, T. 1: 9). **A similar axe, also heavily damaged was discovered to the south-west from Sv. Jurij near Ženik (Pahič 1968: 186; Šinkovec 1995: 76, T. 21: 128), while a winged axe was discovered near Spodnji Kocjan (Pahič 1962: 193; 1968:**



Sl. 1 Najvažnija srednje i kasnobrončanodobna nalazišta na prostoru istočne Slovenije: 1 Brinjeva gora; 2 Slivnica; 3 Spodnje Hoče; 4 Rogoza; 5 Pobrežje; 6 Malečnik i Meljski hrib; 7 Sodolek; 8 Ptuj; 9 Gorice pri Turnišču; 10 Ormož; 11 Pod Kotom-sever, Kotare – baza i Nova tabla; 12 Pri Muri; 13 Oloris; 14 Pod Grunti – Pince; 15 Zavrč (nadopunjeno prema: Kavur 2011)

Fig. 1 Main Middle and Late Bronze Age site in Eastern Slovenia: 1 Brinjeva gora; 2 Slivnica; 3 Spodnje Hoče; 4 Rogoza; 5 Pobrežje; 6 Malečnik and Meljski hrib; 7 Sodolek; 8 Ptuj; 9 Gorice pri Turnišču; 10 Ormož; 11 Pod Kotom-sever, Kotare – baza and Nova tabla; 12 Pri Muri; 13 Oloris; 14 Pod Grunti – Pince; 15 Zavrč (supplemented after: Kavur 2011)

(Pahič 1962: 193; 1968: 180, 186; Šinkovec 1995: 50, T. 8: 51).

Izgledno je da su niže terase doline Ščavnice, na istegnutim izbočenjima, naseljene od kraja neolitika nadalje. Tako je u nekoliko navrata već bilo izvještavano o nalazima prapovijesne keramike s prostora između Biserjana i sela Sv. Jurij ob Ščavnici, datiranim pak u brončano i željezno doba (Pahič 1965: 190; 1968: 186). Jedan od položaja, također naveden u starijoj literaturi, opisan kao polje istočno od ceste iz sela Ivanjci prema selu Sv. Jurij (Pahič 1975: 333), najvjerojatnije predstavlja prostor ponovno nađenog i potom istraženog nalazišta Sodolek (Kavur et al. 2006; Kavur 2011).

Terenski pregled poduzet na trasi buduće autoceste pokazao je, naime, nekoliko potencijalnih nalazišta smještenih na rubovima široke, s erozijskim sedimentima ispunjene doline. Koncentracija ulomaka prapovijesne keramike nalazila se na jugozapadnoj niskoj strani izbočenja koja su se protezala od niskog grebena na granici južnog dijela doline i usporedno s njime. Ta se izbočenja proširuju prema sjeveru i protežu u središnji, niski i močvarniji dio doline. Zatim su, tijekom iskopavanja, otkrivene strukture i nalazi koji su ukazali na djelatnosti iz nekoliko različitih razdoblja zauzimanja toga položaja. Najstariji nalazi istraženi na nalazištu, ostaci jedne građevine, nekoliko jama i rastresenih nalaza, datirani su u 45. st. pr. Kr., tj. u razdoblje početka ranog eneolitika (Kavur et al. 2006). Tisućljeće kasnije, nalazište je bilo ponovno posjećeno pa su tako nađene dvije jame i nekoliko rastresitih nalaza koji mogu biti smješteni u 35. st. pr. Kr., tj. u vrijeme srednjeg eneolitika (Kavur u pripremi). Ipak, većinu, uključujući ostatke od najmanje šest građevina in-

180, 186; Šinkovec 1995: 50, T. 8: 51).

It seems that the low terraces were settled on their, in to the valley reaching, prominences from the end of the Neolithic onwards. On several occasions in the past discoveries of prehistoric pottery which could be dated to the Bronze and Iron Age were reported from locations between Biserjane and Sv. Jurij ob Ščavnici (Pahič 1965: 190; 1968: 186). One of the locations mentioned in the past, described as the fields to the east of the road from Ivanjci to Sv. Jurij (Pahič 1975: 333), is most probably the location of the later re-discovered and excavated site of Sodolek (Kavur et al. 2006; Kavur 2011).

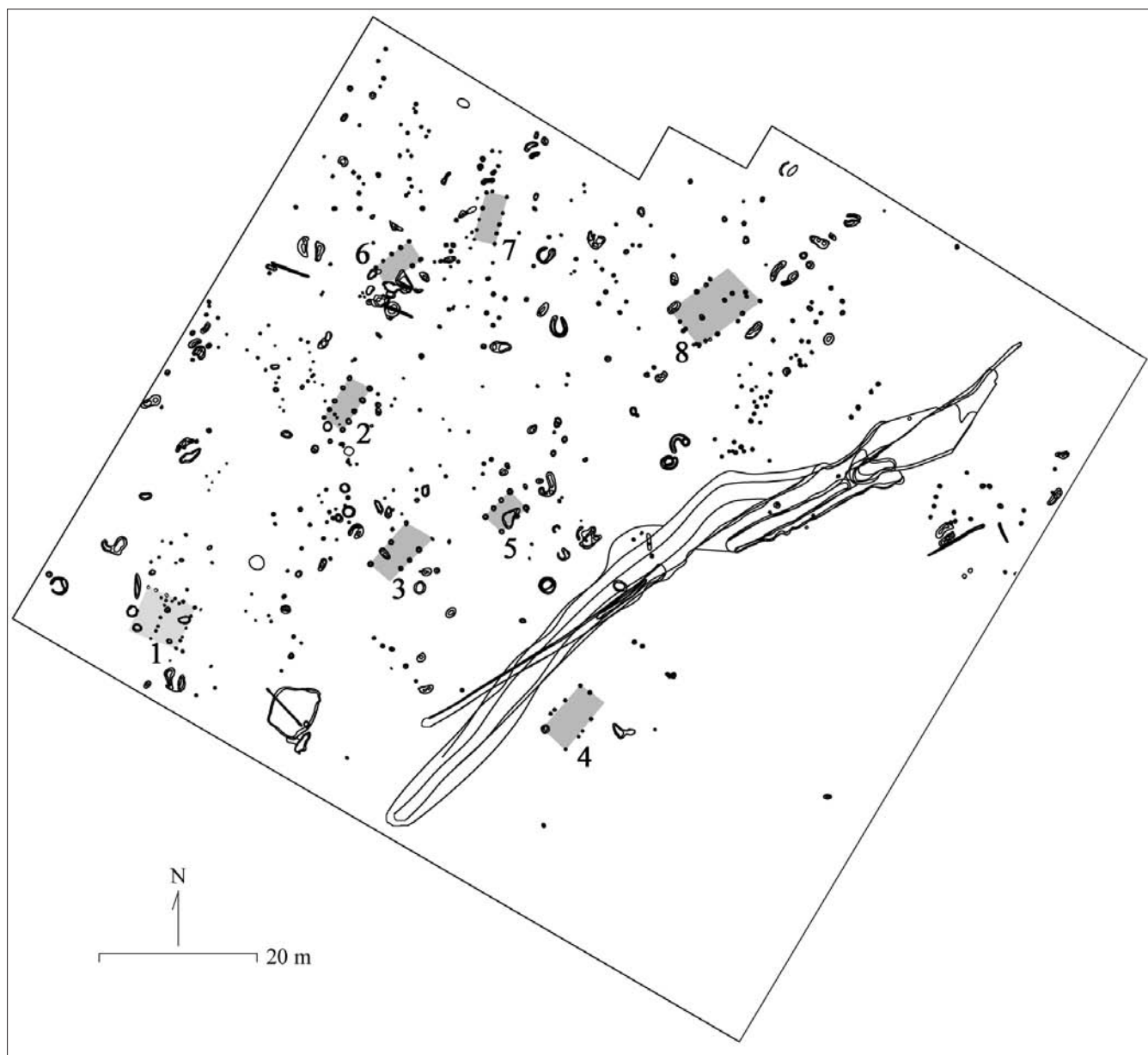
The survey conducted on the layout of the future highway demonstrated several potential sites located on the fringes of the wide, with erosional sediments filled, valley. A concentration of prehistoric pottery fragments was located on the southwestern side on a low prominence, which extended from a low ridge, bordering the southern part of the valley and running parallel to it. The prominence extended to the north and stretched into the central, low and swampiest part of the valley. During the excavations finds and structures were discovered, demonstrating the activities on this area in several periods of occupation. The oldest finds discovered on the site – remains of a single building, several pits and stray finds, were dated to the 45th century BC – in to the period of the beginning of the Early Copper Age (Kavur et al. 2006). A millennium later the site was visited again and two pits and several stray finds were discovered which could be dated to the 35th century BC – the Middle Copper Age (Kavur in prep.). But the majorities

terpretiranih kao kuće i nekoliko erozijskih jaraka ispunjenih sedimentom, predstavljaju nalazi nastali dvije tisuće godina kasnije, koji tako mogu biti datirani na kraj srednjeg i početak kasnog brončanog doba. Naposljetku, otkriveni su i slijedovi djelatnosti koji se datiraju ponovno dva tisućljeća kasnije, tj. u rani srednji vijek, dok značajke s nalazima iz posljednja dva stoljeća ukazuju na određene navike vezane uz poljoprivredne djelatnosti obavljane na tome položaju.

Ostaci brončanodobnog naselja na Sodoleku bili su koncentrirani u središnjem, blago povišenom dijelu izboče-

of features including the remains of at least six buildings interpreted as houses and several erosional ditches filled with sediments containing finds were erected two thousand years later and could be dated to the end of the Middle and the beginning of the Late Bronze Age. Again two millennia later traces of activities dated to the Early Medieval Period were discovered, while features with finds dated in to the last two centuries demonstrated the specific habits connected to agricultural activities performed on the site.

The remains of the Bronze Age settlement were con-



Sl. 2 Sodolek; plan brončanodobnog nalazišta s naznačenim tlorisima kuća (prema: Kavur 2011)

Fig. 2 Sodolek; Plan of the Bronze Age settlement with the houses indicated (after: Kavur 2011)

nja koje se proteže prema jugoistoku. Naselje, ograničeno depresijom otvorenom niz padinu na istočnoj strani, u kojoj je nekoliko jaraka najvjerojatnije bilo usječeno erozijskim procesima, se sastojalo od kružno raspoređenih objekata. Šest građevina bilo je organizirano okolo središnjeg otvorenog prostora, a samo je jedna bila smještena izdvojeno od

centrated on the central, slightly elevated part of the prominence, and extending to the south-east. It consisted of a circular array of buildings and was limited by a depression running down the slope on the eastern side in to which several ditches were most probably cut by erosional activities. Six buildings were organized around a central open

drugih, preko depresije s jarcima na istočnoj strani područja iskopavanja. Građevine, interpretirane kao kuće, bile su široke do tri i dugačke do pet metara, svojim osima usmjerenе približno u pravcu sjeveroistok-jugozapad (sl. 2). Njihovi ostaci sastojali su se od velikih rupa od stupova poredanih usporedno u nizu, a neki su sadržavali i veće jame iskopane u unutrašnjem prostoru samih kuća. Nažalost, rupe od stupova rijetko su sadržavale nalaze keramike, glavina kojih je ipak bila iskopana u većim jamama oko kuća i u većim jarcima smještenim na istočnoj strani naselja.

Kako bi se mogao ustanoviti što precizniji kronološki odnos između jarka i naselja, nekoliko je glavnih obilježja u naselju datirano radiometrijskom ^{14}C metodom. Iz jarka su stoga analizirana tri uzastopna uzorka preuzeta iz najniže, najgornje i stratigrafski srednje zapune jarka. Iz naselja su pak datirana tri nalaza: jama ispunjena keramikom i dvije strukture rastumačene kao ostave keramike (Kavur 2011).

Datiranje jarka

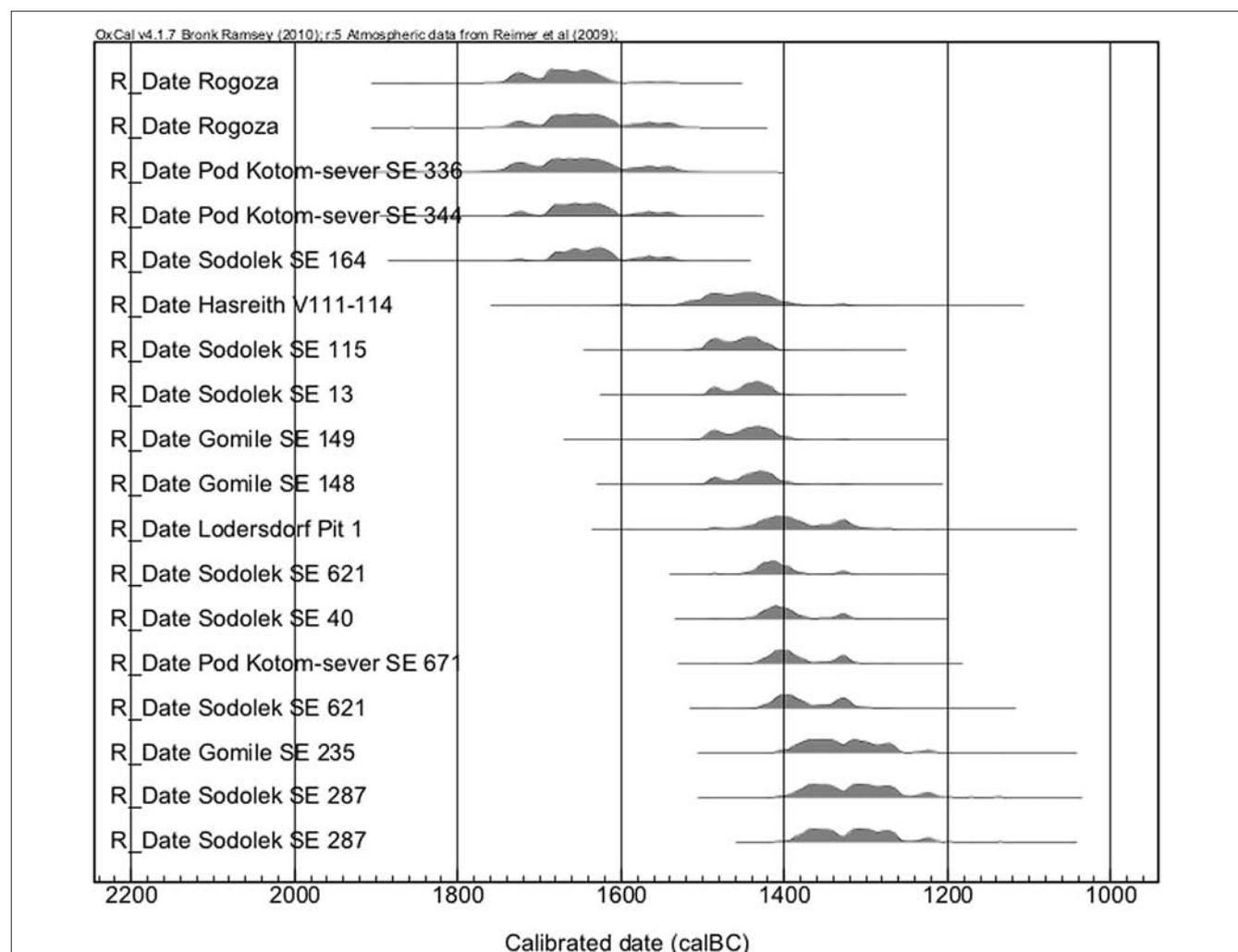
Na istočnoj strani izbočenja, na kojem je bilo smješteno naselje, produbljivanjem prirodne depresije iskopan je sustav jaraka ispunjenih naslagama uvjetovanim erozijskim procesima. Preciznim iskopavanjem pokazalo se kako su ti

space and perhaps a single one was located isolated, across the depression with the ditches, on the eastern side of the excavated area. The buildings, interpreted as houses, were up to 3 meters wide and up to 5 meters long with their axe running approximately from the north-east to the south-west (Fig. 2). Their remains consisted of parallel pairs of large post-holes, some of them including also a larger pit dug inside the area of the house. Unfortunately the postholes only seldom included pottery finds – the majority of finds were discovered in larger pits around the houses and in the larger ditches located on the eastern side of the settlement.

In order to be able to determine as precisely as possible the chronological relation between the ditch and the settlement several major features in the settlement were dated with the radiocarbon method. From the ditches three successive samples were analyzed taken from the lowest, uppermost and stratigraphic intermediate fillings. From the settlement three features were dated – a pit filled with pottery and two features interpreted as pottery depots (Kavur 2011).

The dating of the ditch

On the eastern side of the prominence, on which the settlement was located, deepening a natural depression a



Sl. 3 Apsolutne datacije nekih brončanodobnih nalazišta u istočnoj Sloveniji (prema: Črešnar 2009; Kerman 2011; Tiefengraber 2007; Tomaž 2010)

Fig. 3 Absolute dates of some Bronze Age sites in eastern Slovenia (after: Črešnar 2009; Kerman 2011; Tiefengraber 2007; Tomaž 2010)

objekti doživjeli nekoliko različitih „epizoda“ zatrpavanja naslagama. Smjer njihova erozijskog nastanka mijenjao se vrlo malo i najčešće je ostajao na najnižoj točki prirodne depresije. No, taj pomak smjera omogućio je pak njihovu stratigrafsku podjelu. Kako je najstarija sedimentna zapuna jarka mogla biti ona određena stratigrafskom jedinicom (SE) 164, primijećeno je da je najmlađa zapuna bila ona određena kao SE 13, dok je zapuna SE 115 bila starija od SE 13 i mlađa od SE 164.

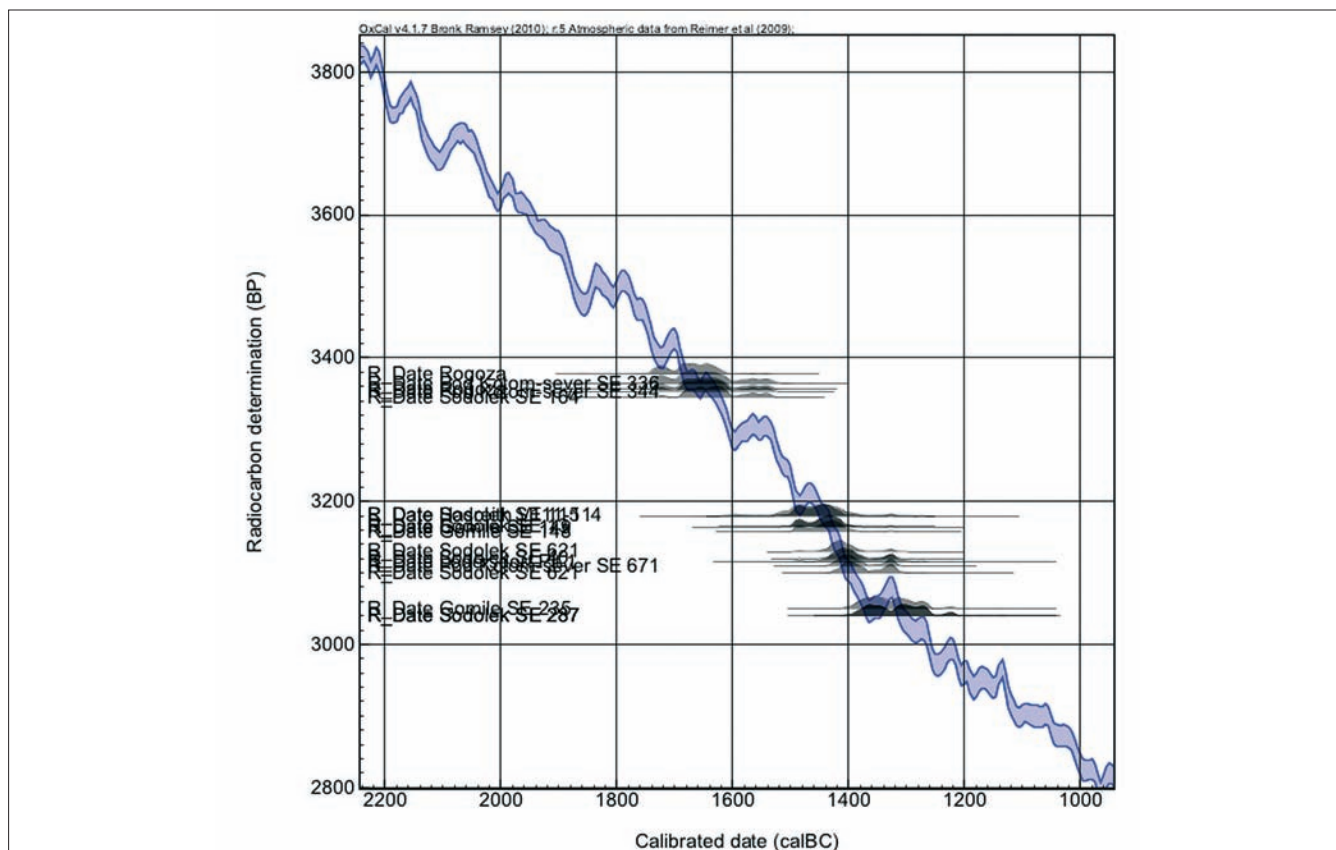
Najveća koncentracija ugljena nađena je samo u temeljnom sloju SE 164, dok je kod drugih slojeva ugljen, iako ponekad prisutan i u većim ulomcima, uglavnom bio raspršen. U najdubljem dijelu jarka sadržano je nekoliko većih komada keramike koja je u svim gornjim slojevima bila izrazito fragmentirana i uništene površine. To, najvjerojatnije, ukazuje kako su predmeti u odlagalištu jarka dugo bili izloženi utjecajima, tj. da je punjenje jarka bilo zapravo rezultat erozijskih procesa kojima su nalazi i dospijevali u jarke.

Apsolutno datiranje tih slojeva potvrdilo je njihovu stratigrafsku poziciju. Međutim, opći rezultati bili su uistinu iznenađujući. Najdonji sloj SE 164 datiran je u 17. st. pr. Kr., dok su slojevi SE 115 i 13 datirani u 15. st. pr. Kr. (sl. 3). Promatrajući datume na kalibracijskoj krivulji, možemo vidjeti da je rezultat najstarijeg sloja smješten u sredini vijugave platforme, stvarajući time dugačak interval koji pokriva cijelo 17. st. pr. Kr., dok mlađe slojeve valja razmatrati samo u drugoj polovici 15. st. pr. Kr. (sl. 4). Od ostalih srednjobrončanodobnih nalazišta istovjetni apsolutni datumi dobiveni su iz Rogoze kod Maribora (Črešnar 2009: 45) i iz nalazišta Pod

system of ditches was excavated – they were located in a depression, filled with sediments most probably due to the erosional processes. The detailed excavation demonstrated that they experienced several episodes of filling with sediments. Being of erosional origins their course changed a little bit but generally it remained at the lowest point of the natural depression. This displacement of the course enabled the stratigraphic division and according to the observation it looked as if the sediment filling of the ditch designated as the stratigraphic unit (SE) 164 could be the oldest and the filling designated as SE 13 the youngest while the filling SE 115 being older than SE 13 and younger than SE 164.

A major concentration of charcoal occurred only in the base of the layer SE 164 while on the other ones the charcoal, although sometimes present even in larger fragments, was dispersed. The pottery in the lowermost ditch contained several larger pieces, but in all the upper layers it was intensively fragmented and the surfaces were eroded – most probably demonstrating that the artifacts in the deposit were exposed for a longer period to the elements, that the filling of the ditch was a result of erosional processes which most probably also moved the finds in the ditches.

Absolute dating of the layers confirmed their stratigraphic position, but the results were surprising. The layer SE 164 was dated in to the 17th century BC, while the layers SE 115 and SE 13 were dated in to the 15th century BC (Fig. 3). When observing the dates plotted on a calibration curve we can see that the result for the oldest layer is located in the middle of an wiggle platform creating consequently a long interval covering the whole of the 17th century BC, while the younger ones should be most probably considered



Sl. 4 Apsolutni datumi brončanodobnih nalazišta u grafičkom prikazu na kalibracijskoj krivulji
Fig. 4 Absolute dates of some Bronze Age sites plotted against the calibration curve

Kotom-sever kod Murske Sobote (SE 336/337 i SE 344/345 – Kerman 2011b: 66–68) (sl. 3).

Od prisutnih nalaza materijalne kulture u sloju SE 164 valja se usredotočiti na tipične srednjobrončanodobne urezane ukrase na keramici kao što su: snopovi kosih i vodoravnih linija, šrafiranih visećih trokuta te horizontalnih i/ili vertikalnih traka (sl. 5). O tim je ukrasima raspravljala B. Teržan, ukazujući na njihovu distribuciju i relativnu kronologiju te zaključujući da takve ukrase treba datirati u srednje, a ne u kasno brončano doba (Teržan 2010). Daljnji primjeri objavljeni su nedavno iz Kainacha u Austriji (Obj. 148, Obj. 352, Obj. 354, Obj. 354 – Gutjahr 2011: T. 1: 1; T. 4: 17, 21; T. 5: 23; T. 9: 43–47; T. 11: 57, 58; T. 13: 81–84; T. 19: 119–121, 123), Pri Muri kod Lendave (Šavel, Sankovič 2011: 42, 181, G. 155) i s nalazišta Pod Kotom-sever (SE 336/337 – Kerman, Kavur 2011a: G159) gdje su, također, datirani u 17. st. pr. Kr.

Kod rezultata datiranja mlađih zapuna jarka, slojeva SE 13 i 115, možemo ipak biti znatno određeniji. Sukladno apsolutnim datacijama, vrijeme njihova intervala pokriva samo polovicu 15. st. pr. Kr. (sl. 3). Gotovo istovjetni apsolutni datumi zabilježeni su i za druga srednjobrončanodobna nalazišta; pr. za Gomile pri Lenartu u Slovenskim goricama (SE 149 i SE 148 – Tomaž 2010: 89–90) i, najvjerojatnije, za Hasreith u Austriji (V111–114 – Heymans 2007: 147) gdje je krivulja, zbog veće standardne devijacije, šira i manje određena.¹ No, ukoliko rezultate tih analiza grafički prikazemo na kalibracijskoj krivulji, tada postaje znatno veća statistička mogućnost za datiranje navedenih konteksta u vrijeme između sredine i kraja 15. st. pr. Kr. (sl. 4).

Ukoliko se usredotočimo na urezani ornament na keramici, snopova kosih i horizontalnih linija, šrafiranih visećih trokuta te horizontalnih i/ili vertikalnih traka, možemo primijetiti kako se pojedini ulomci takve keramičke dekoracije pojavljuju i u mlađim zapunama jaraka (SE 115, SE 55 i SE 13) (sl. 5). To nas vraća k interpretaciji njihova konteksta i datiranja. Jarci su, naime, bili ispunjeni erozijskim sedimentom i zato su datumi, dobiveni radiometrijskom metodom ¹⁴C, samo datumi određenih događanja. To podrazumijeva da je keramika u starijem jarku bila najmanje istovremena, ako ne i starija od dobivenog datuma, odnosno da je keramika u mlađem jarku bila istovremena dobivenom datumu, iako je mogla sadržavati i starije keramičke nalaze. Shodno tomu, možemo zaključiti kako je keramika s urezanim trakama ukošene ornamentacije i šrafiranih visećih trokuta bila proizvođena već u 17. st. pr. Kr. Međutim, postojeći konteksti nam ipak ne omogućuju pretpostavku datuma i njihove konačne uporabe. Konteksti iz nalazišta Oloris (jama 309) i Sodolek (SE 115 i SE 13) ukazuju na to da je ta vrsta ukrasa možda korištena sve do kraja 15. st. pr. Kr. Potvrđivali bi to i rezultati relativnog određenja koje je pokazao Lászlo Horváth (Horváth 1994) i sažela B. Teržan (Teržan 2010) za građu s mađarskih nalazišta: Esztergályhorváti-Alsóvárpuszta datiranog u Br B1 stupanj, Gelseziget i Balatonmagyaród-Hídvégpuszta datiranih u Br C2 stupanj, i kao što je to na širem području pokazano kod groba 65 iz nekropole Pitten

as belonging only to the second half of the 15th century BC (Fig. 4).

Amongst other Middle Bronze Age sites identical absolute dates were obtained from Rogoza near Maribor (Črešnar 2009: 45) and from Pod Kotom-sever near Murska Sobota (SE 336/337 and SE 344/345 – Kerman 2011b: 66–68) (Fig. 3).

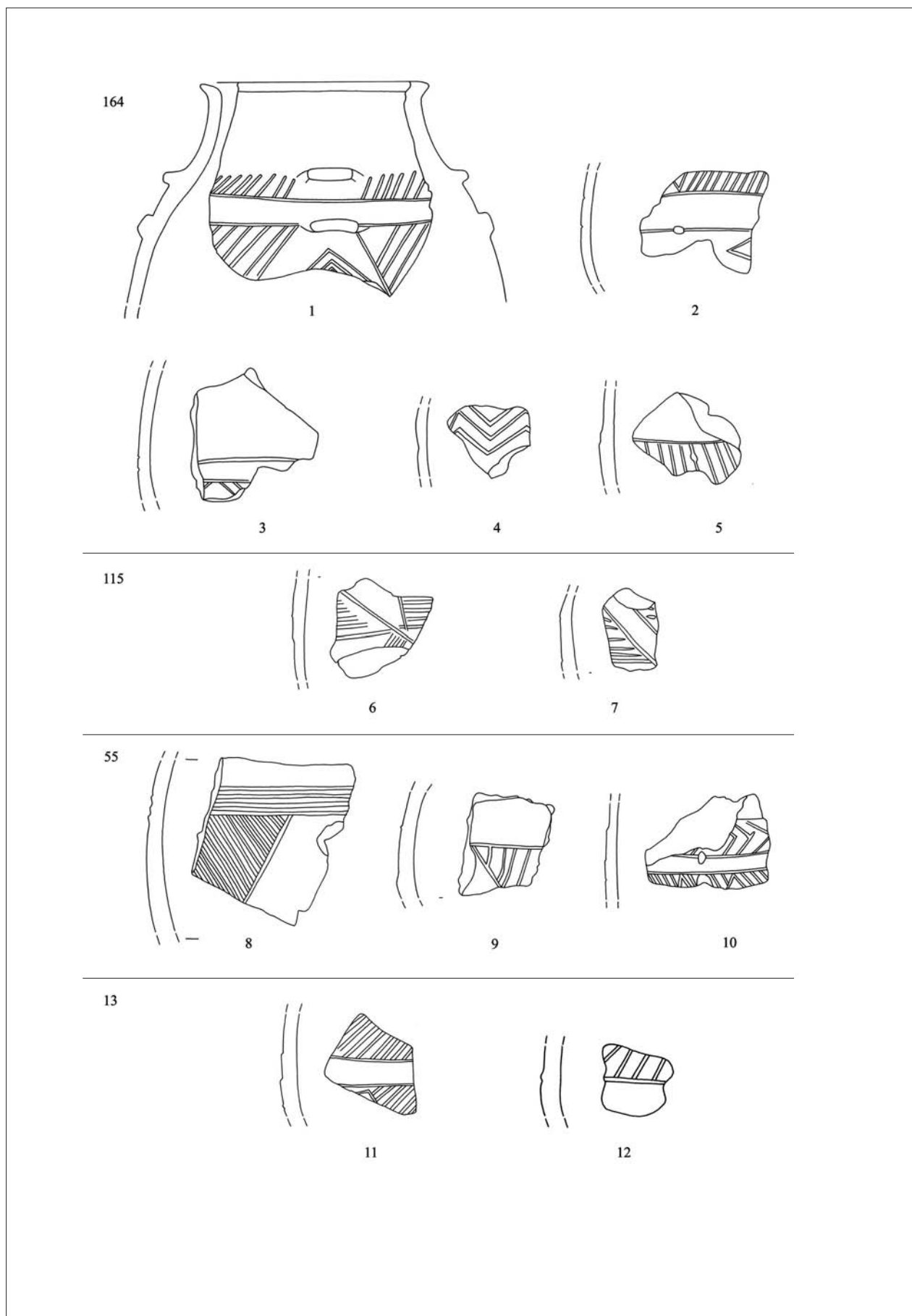
Amongst other finds in the layer SE 164 we should focus on the typical Middle Bronze Age incised ornaments such as the sheaves of oblique and horizontal lines as well as hatched hanging triangles and horizontal and/or vertical bands (Fig. 5). Such ornaments were discussed by B. Teržan (2010) where she demonstrated their distribution and relative chronology concluding that such ornaments should be dated in to the Middle and not the Late Bronze Age. Recently further examples were published from Kainach in Austria (Obj. 148, Obj. 352, Obj. 354, Obj. 354 – Gutjahr 2011: T. 1: 1; T. 4: 17, 21; T. 5: 23; T. 9: 43–47; T. 11: 57, 58; T. 13: 81–84; T. 19: 119–121, 123), from Pri Muri near Lendava (Šavel, Sankovič 2011: 42, 181, G. 155) and from the site of Pod Kotom-sever (SE 336/337 – Kerman, Kavur 2011a: G159) where they were dated in to the 17th century BC.

More precisely we can determine the results for the dating of the younger fillings of the ditches – the SE 13 and 115. According to the absolute dates the age interval covers half of the 15th century BC (Fig. 3). Amongst other Middle Bronze Age sites identical absolute dates were obtained from Gomile near Lenart in Slovenske Gorice (SE 149 and SE 148 – Tomaž 2010: 89–90) and most probably Hasreith in Austria (V111–114 – Heymans 2007: 147) where the curve is due to a larger standard deviation less pronounced and wider¹. But if we plot the results against a calibration curve it becomes statistically more likely to date the contexts into the period between the middle and the end of the 15th century BC (Fig. 4).

If we focus on the incised ornaments such as the sheaves of oblique and horizontal lines as well as hatched hanging triangles and horizontal and/or vertical bands, we can observe that individual fragments of this type of decoration occur also in the fillings of the younger ditches (SE 115, SE 55 and SE 13) (Fig. 5) which brings us back to the interpretation of their context and their dating. The ditches were filled with erosional sediments and the dates obtained are just the dates of these events – this means that the pottery in the oldest ditch was at least contemporary if not older than the date and the pottery in the youngest ditch was at least contemporary, but it could have included also older finds. Consequently we can conclude that the pottery with incised band like hatched ornaments and hanging triangles was produced as early as in the 17th century BC, but the discovered contexts do not enable us to assume the date of its final occurrence. The contexts in Oloris (pit 309) and Sodolek (SE 115 and SE 13) suggest that this kind of decoration might have been used still at the end of the 15th century BC. This confirms the results of the relative dating demonstrated by Lászlo Horváth (Horváth 1994) and summarized by B. Teržan (Teržan 2010) for the finds from the Hungarian

¹ Isti datumi dobiveni su i za nalazište Pod Grunti-Pince, još neobjavljeni. Podatci su mi prosljeđeni osobno od Branka Kermana iz Pokrajinskog muzeja Murska Sobota.

¹ The same dates were obtained also in Pod Grunti-Pince, unpublished. Personal information of Branko Kerman, Pokrajinski muzej Murska Sobota.



Sl. 5 Izbor keramičkih nalaza s urezanim ornamentom iz zapune jarka SE 164, SE 115, SE 55 i SE 13
Fig. 5 Selection of finds with incised ornaments from the fillings of the ditches SE 164, SE 115, SE 55 and SE 13

(Hampl et al. 1981: T. 220: 16), kod ostave iz Zwerndorfa an der March (Lindinger 1998/1999: 81, sl. 4: 37), na nalazištu Maisbierbaum (Doneus 1991: 110, sl. 1: 1; Neugebauer 1994: 164, sl. 91) i kod II. ostave iz Großmugla (Lauermaun, Hahnel 1998/1999: 97–101, T. 4: 1; Krenn-Leeb 2006).

Datiranje nalazišta

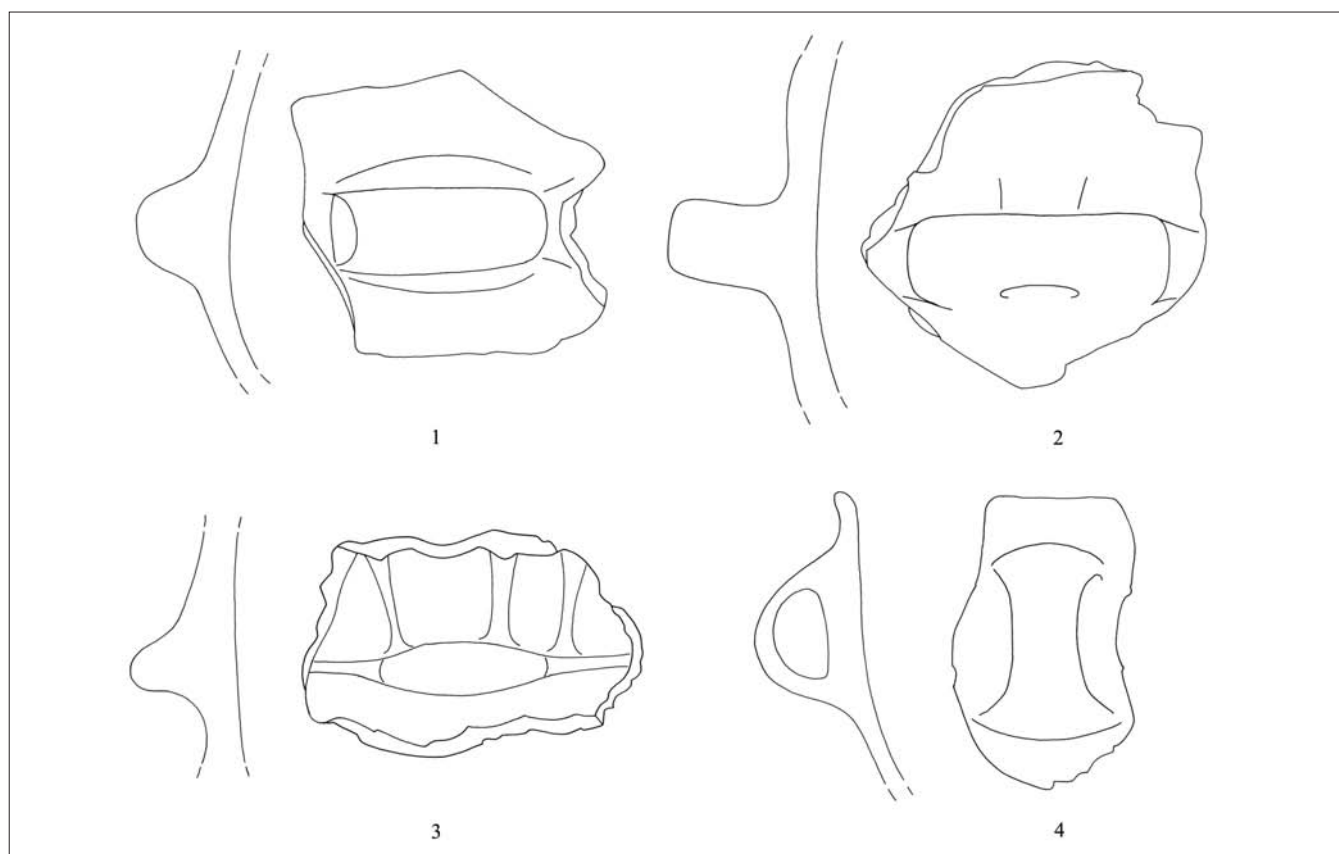
Uz jugoistočni rub naselja na Sodoleku istražena je i jedna manja jama: SE 40. Bila je smještena podalje od ostalih struktura na gotovo praznom prostoru naseobinskog područja pored jarka, odnosno na njegovom sniženom dijelu gdje se jarak protezao sve do močvarne okolice. Iako zapremine manje od jednog metra u promjeru, bila je iznimna glede svoga sadržaja, uključujući 17 ulomaka keramike smještenih na samom dnu jame. Premda su ulomci bili spaljeni, a poneki od njih i deformirani prilikom spaljivanja, stupanj njihove očuvanosti (odsutnost erozijske razgradnje kao posljedice duge izloženosti djelovanjima i prosječna veličina mnogo veća i time različita oblika od bilo koje druge keramičke građe iz zapuna jama u naselju) i tipološke karakteristike (od pet velikih sačuvanih ulomaka četiri pripadaju različitim tipu ručki i drški) (sl. 6), uvjeravali su kako su oni pomno odabrani i prekriveni sedimentom u jednom jedinstvenom činu formiranja iznimne ostave keramike. Izbor odlaganih ulomaka keramike učinjen je hotimice; kao da je netko odabrao po jedan primjerak od svake vrste ručke/drške proizvedene u mjesnoj keramografskoj proizvodnji i odložio ih u samo za to predviđenu jamu (Kavur 2011).

Ostave keramike najčešće uključuju cjelovite posude

sites of Esztergályhorváti-Alsóbárándpuszta dated in to the Bd B1 and Gelseziget and Balatonmagyaród-Hídvégpuszta dated to Bd C2, as well it is illustrated in the wider region by the Grave 65 from Pitten (Hampl et al. 1981: T. 220: 16) or the depots from Zwerndorf an der March (Lindinger 1998/1999: 81, Abb. 4: 37), Maisbierbaum (Doneus 1991: 110, Abb. 1: 1; Neugebauer 1994: 164, Abb. 91) or the Depot II from Großmugl (Lauermaun, Hahnel 1998/1999: 97–101, T. 4: 1; Krenn-Leeb 2006).

The dating of the settlement

On the south-eastern edge of the settlement a small pit was discovered: the pit SE 40. It was located away from any other features in an almost empty area near the ditch or actually in the lower part where the ditch would spill into the lower swampy surrounding area. Less than a meter in diameter it was special due to its content – it included 17 fragments of pottery positioned on the bottom of the pit. Although the fragments were burned through and several of them even deformed due to the burning, their state of preservation (the absence of erosional decomposition as a consequence of long exposure to the elements and average size much larger and consequently differing from any other pits in the settlement) as well as their typological characteristics (on five larger fragments four different types of handles and grips were preserved) (Fig. 6) were suggesting that they were selected and covered with sediment in a single act creating a specific pottery depot. The selection of deposited fragments of pottery was done intentional – as if



Sl. 6 Različiti tipovi drški i ručki iz zapune jame SE 40
Fig. 6 Different types of handles and grips from the pit SE 40

tipološke ili stilske znakovitosti koje, uz ostatke struktura vezanih uz aktivne djelatnosti i pokopavanja, obilježavaju treći oblik nalaženja prapovijesne keramike. Po svojim strukturama nalikuju ukopima budući da su lonci uglavnom u cijelosti i namjerno ukopani u određenom kontekstu i na određenom mjestu. Područje današnje istočne Slovenije nalazi se upravo na rubu šireg prostora gdje je namjerno odlaganje keramike bilo zajedničko obilježje kultura u razdoblju od kraja ranog brončanog do početka kasnog brončanog doba (Palátová, Salaš 1998/1999; 2002: 103–112; Lindinger 1998/1999).

Na primjeru jame iz Sodoleka, pet ulomaka zapravo simbolizira čitav dijapazon mogućih prosudbi o tehnološkom procesu oblikovanja ručki i drški na velikim loncima. Možemo pretpostaviti da je bitna uloga u tom procesu ostvarivana u shvaćanju temeljenom na materijalnim karakteristikama pojedinih predmeta. No, odlučujuću je ulogu ipak imalo semantičko shvaćanje temeljeno na prethodno stečenom znanju o samome predmetu (Martin 1998: 72). To je, naime, skup podataka o odlikama i atributima kojima se određuje neki predmet. Drugim riječima, ovdje nije riječ o promatranju samo pet određenih ručki, već je riječ o percepciji cijele grupe predmeta, u prepoznavanju simbolički izgrađenog identiteta. Tipologiju proizvodnje i potrošnju materijalne kulture, unutar ograničenja nametnutih od strane kulturno određenih normi, oblikovali su upravo umnožavanje i rekombinacija atributa. Možemo zato pretpostaviti da su cjeline, poput one iz Sodoleka gdje su ulomci znakovitih oblika bili u optjecanju i konačno pohranjivani, djelujući kao mentalni predlošci, bile zapravo dijelom svakodnevne materijalne kulture, a iznimno se rijetko događalo da je korisnik odlučio njima manipulirati u određenom ritualu kako bi ih uklonio iz uporabe i „zaustavio“ u vremenu.

Pri analizi tog fenomena predložena je nova opća podjela za opisivanje ostava keramike (Kavur 2011). One se mogu sastojati od cjelovitih (cijelih posuda ili čitavog zbira ulomka) ili djelomičnih posuda. U prvom slučaju stanje očuvanosti keramike razlikuje se u odnosu na posebne ritualne radnje izvedene prije ukopa. No, ideja o cijelom loncu ostaje nepromijenjena. Lonci kao nositelji kulturne, kronološke, stilske i društvene informacije, zarobljeni su u nizu simboličkih djelovanja, a na kraju i u samom obredu kada je riječ o priložima u ostavi. Oni, dakle, imaju simboličku ulogu, manipulirani su na simbolički način prije ukopa, pri čemu se posebna pozornost obraćala na nove ili starije obiteljske primjerke ili čak na namjerno razbijanje posuda tijekom obreda. Međutim, postavlja se pitanje kada tako fragmentirana keramika i ulomci, kao odvojeni elementi, postaju simbolima cijele posude?

To nas dalje vodi k drugom slučaju u kojem će, nakon namjerne fragmentacije lonaca, samo pojedini njihovi dijelovi biti ukopani. U tom slučaju naglasak treba staviti na izbor dijelova, jer, prema primjeru naše jame SE 40, ulomci ne predstavljaju cijele lonce, već tipologiju njihovih ručki. One su, naime, simbolički odraz apstraktne ideje i atributi samih posuda, atributi koji u pravilu nisu povezani uz određen tip lonca, nego su ukorijenjeni u općim tehničkim, formalnim i kulturnim normama društva. Specifični elementi odabrani

someone would select a single specimen from every type of handle/grip produced in the local ceramic production and deposit it in the pit (Kavur 2011).

Pottery depots, mostly including complete vessels of a typological or stylistic eminence signify the third form of occurrence of prehistoric pottery beside remains of features connected to the living activities and the burials. In their structure they resemble burials, since the pots are mostly complete and deliberately buried in a specific context on a specific place. But the territory of today's eastern Slovenia is located on the fringes of the area where the intentional deposition of pottery is a common feature in the period from the end of the Early Bronze Age to the beginning of the Late Bronze Age (Palátová, Salaš 1998/1999; 2002: 103–112; Lindinger 1998/1999).

In the case of the pit at Sodolek, the five fragments actually symbolize the whole spectrum of possible decisions in the technological process of shaping the handles and grips on large pots. We can assume that the basic role in this process is performed by perception, which is founded on material characteristics of the artifact, but the decisive part is still performed by the semantic perception based on the previously acquired knowledge about the artifact (Martin 1998: 72). It is a set of data about the characteristics and attributes which determine the artifact – with other words it is not about observing five appointed handles, it is about the perception of the whole group of artifacts, about the recognition of a symbolically constructed identity. Within the limitations imposed by the culturally determined restrictive norms it was the reproduction and recombination of attributes which shaped the typology of production and consumption of the material culture. We can assume that the assemblages like the one from Sodolek, where fragments with indicative forms were circulated and finally stored to act as mental templates were a part of the everyday material culture, but it happened only seldom, that the user decided to manipulate them in a specific ritual, to remove them from use and freeze them in time.

In our analysis of the phenomena (Kavur 2011) we have proposed a new general division for the description of pottery depots. They can consist of complete (whole vessels or the entire collection of fragments) or parts of vessels. In the first case the state of preservation differs in regards to the specific ritual of manipulation before the burial – but the idea is about the whole pot. Pots as carriers of cultural, chronological, stylistic and social information are trapped in a series of symbolic acts – and end in the burial rite (either as grave goods of depot). They have a symbolic role, they are manipulated in a symbolic way before the burial (either made with special care, new or old family pieces or even deliberately smashed during the ritual) but when fragmented and fragments separated the elements become symbols of the whole pot. This brings us to the second case – after the intentional fragmentation only parts of the pots become buried. In this case the emphasis should be put on the selection of the parts since, as we can see in our pit number 40, the fragments do not represent the whole pots, but the

za odlaganje podrazumijevaju tako prepoznavanje cjeline, ulomci time postaju dijelom složenog *pars pro toto* „jezika“ prapovijesti, ostvarujući na taj način povezanost između ukopa i ukopa na nekom drugom mjestu, između ukopano i neukopano, između preostalog materijala i samih ideja u njihovoj pozadini.

Rasponu ideja koje su optjecale u prošlosti možemo se pak najviše približiti promatrajući promjenjivost korištenih oblika. Dakle, nađene ručke i drške možemo razmatrati u okviru tipologije koju je J. Dular postavio pri analizi nalaza otkrivenih u Olorisu kod Dolnjeg Lakoša (Dular 2002: 155, 157, sl. 10), nalazištu na kojem za naše ulomke keramike nalazimo najbolje usporedbe. Među njima je najupadljivija karakteristika horizontalna trakasta ručka (sl. 6: 2). To je prilično rijedak element odsutan inače na samome nalazištu, a predstavljen samo kod većih lonaca u Olorisu (jama J 309 – Dular et al. 2002: T. 13: 1; T. 14: 2; T. 35: 13; T. 45: 1; T. 55: 3) i na Ptuj – Rabelčjoj vasi (jama 100 – Strmčnik-Gulič 1988/1989: T. 1: 12). Nedavno je jedna žara s horizontalnom trakastom ručkom nađena i u grobu 40 nekropole u Zavrču, između Ptuja i Ormoža, na samom graničnom prijelazu Slovenije i Hrvatske (Lubšina Tušek, Blečić Kavur, Kavur 2012).

U tom smislu, važno je napomenuti da je keramika s urezanim trakama kosih ukrasa i šrafiranih visećih trokuta u to vrijeme nestala u strukturama naselja, obilježavajući time činjenicu kako se krajem 15. st. pr. Kr. ona više nije koristila. S druge strane, iako većina nalaza, poput primjera iz jame SE 621, nalikuju onima iz Olorisa (jama J-309) i Ptuja – Rabelčje vasi (jama 100), paralele postoje i kod drugih istovremenih nalazišta u regiji.

Među nalazima u našoj ostavi SE 40 prisutne su i drške smještene na vodoravnom rebru, s podizanjem rebra iznad drške stvarajući ponekad valovit ukras (sl. 6: 3), kakva je ujedno poznata i iz jame 621 istog nalazišta (sl. 7: 3). Takvi oblici, s kombinacijom funkcionalnih i dekorativnih elemenata imaju dobre usporedbe na širem području i to u rasponu od zapadne Mađarske, npr. kod Muraszemenye-Aligvári-mező (Szárász 2006: 183, sl. 7: 10), do središnje Hrvatske, npr. kod Špišić Bukovice (Pavišić 1991: 12, T. 1: 1), premda je najveći broj uzoraka ipak prikazan i objavljen iz ne tako udaljenog Olorisa, gdje se posebno ističe primjerak iz jame J-309 (Dular et al. 2002: T. 21: 11–13).

Vrlo slična raspodjela može biti razmatrana i za zdjele s prema van izvučenim obodom (sl. 7: 1). U obližnjem prostoru takvi su primjerci istraženi u jami J-306 u Olorisu (Dular et al. 2002: T. 18: 1–2) i u jami 100 na Ptuj – Rabelčja vas (Strmčnik-Gulič 1988/1989: T. 2: 4, 6). Skupini možda možemo pribrojiti i ulomak iz jame SE 671 iz nalazišta Pod Kotom-sever (Kerman, Kavur 2011b: 40–41, 194–195, G 400). S druge strane, polukružna zdjela s trakastom ručkom smještenom ispod ruba obilježava drugu posebnost. Nekoliko takvih zdjela bilo je istraženo u jami J-309 u Olorisu (Dular et al. 2002: T. 18: 7–10), jami 100 na Ptuj – Rabelčja vas (Strmčnik-Gulič 1988/1989: T. 1: 11) i u jami 671 na nalazištu Pod Kotom-sever (Kerman, Kavur 2011b: 40–41, 194–195, G 399), koje sve imaju specifično postavljene ručke. Zdjela s ručkom smještenom na samom rubu ispostavljena je bila i u mlađem kasnobrončanodobnom kontekstu na nalazištu Pod

typology of handles. They are a symbolic reflection of an abstract idea; they are about attributes of the pots. Attributes which are in the general rule not linked to a specific type of the pot, but rooted in the general technical, formal, and cultural norms of the society. Specific elements selected for the deposition imply the recognition of the whole, fragments become a part in the complex *pars pro toto* language of prehistory creating the connection between the buried and buried elsewhere between the buried and the unburied, between the material remains and the ideas behind them.

We can get closest to the spectrum of ideas circulating in the past when observing the variability of forms used – consequently we can observe the discovered handles and grips in the framework of the typology created by J. Dular in his analysis of the finds discovered in Oloris near Dolnji Lakoš (Dular 2002: 155, 157, Abb. 10), the site where we can claim that the best analogies for them. Among them the most striking feature is an horizontal bar like handle (Fig. 6: 2) – a very rare element absent in the settlement itself, but present only on bigger pots in Oloris (pit J 309 – Dular et al. 2002: T. 13: 1; T. 14: 2; T. 35: 13; T. 45: 1; T. 55: 3) and Ptuj – Rabelčja vas (pit 100 – Strmčnik-Gulič 1988/1989: T. 1: 12). Recently an urn with a horizontal bar like handle was discovered in the grave number 40 in the cemetery of Zavrč, between Ptuj and Ormož, on the Slovenian border crossing with Croatia (Lubšina Tušek, Blečić Kavur, Kavur 2012).

It is important to note that the pottery with incised band like hatched ornaments and hanging triangles was missing in the features of the settlement – consequently it was not used any more at the end of the 15th century BC. On the other hand majority of finds, such as examples from the pit SE 621 resemble the finds from Oloris (pit J-309) and Ptuj – Rabelčja vas (pit 100) as well as other contemporary sites.

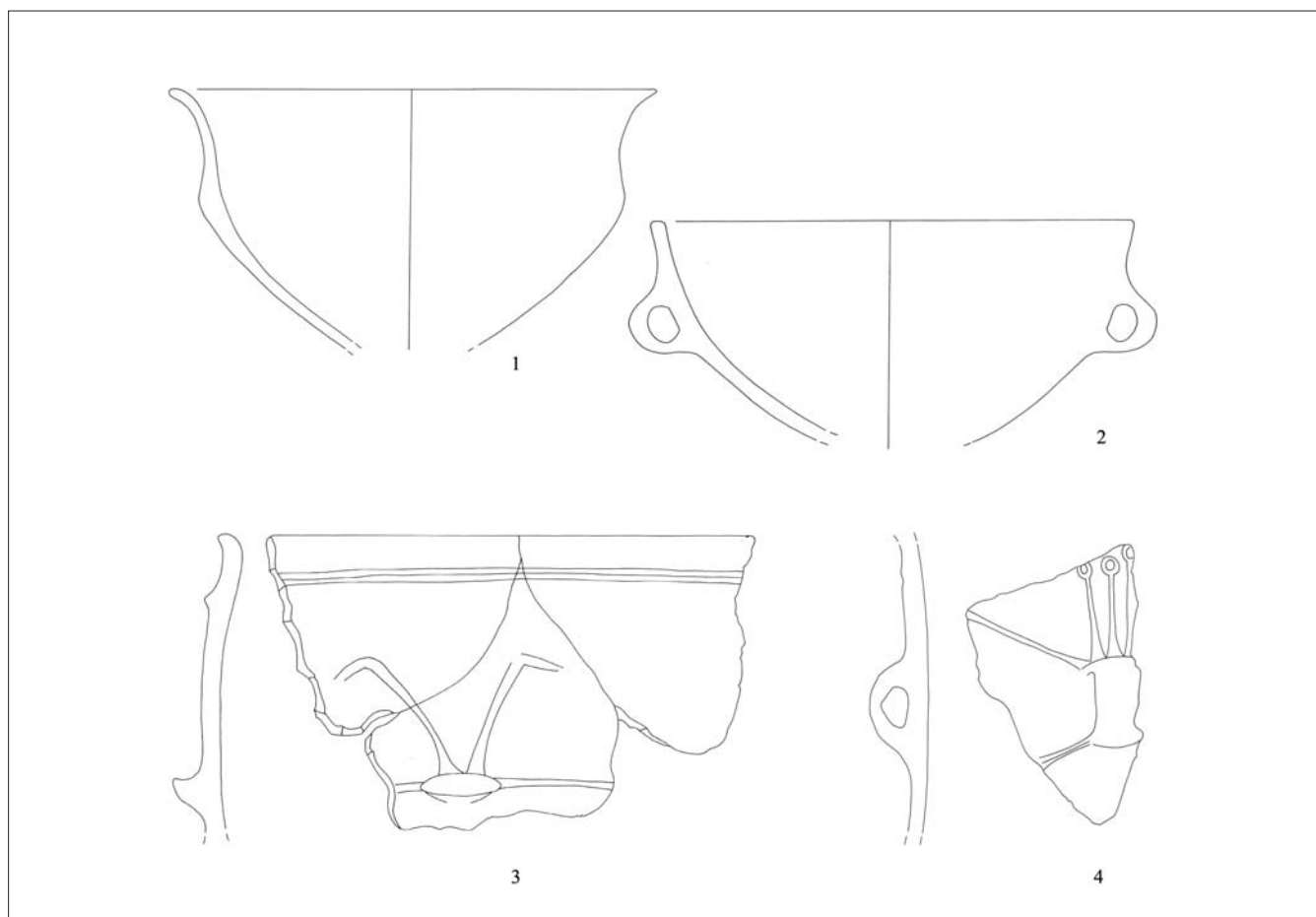
The grips positioned on a horizontal rib and with further ribs rising above, sometimes creating a wiggle-like ornament are present among finds in the depot SE 40 (Fig. 6: 3) as well as in the pit 621 (Fig. 7: 3). Such forms of combination of functional and decorative elements have got comparisons in a wider area ranging from western Hungary; for example in Muraszemenye-Aligvári-mező (Szárász 2006: 183, Fig. 7: 10) to central Croatia; for example in Špišić Bukovica (Pavišić 1991: 12, T. 1: 1) while most numerous examples are reproduced in the publication of Oloris where the examples from the pit J-309 stand out (Dular et al. 2002: T. 21: 11–13).

Similar distribution could be observed also for the bowls with an outward bent rim (Fig. 7: 1). In the region examples were discovered in the pit J-306 in Oloris (Dular et al. 2002: T. 18: 1–2) and pit 100 in Ptuj – Rabelčja vas (Strmčnik-Gulič 1988/1989: T. 2: 4, 6). Perhaps we could include in to this category also the fragment from the pit SE 671 in Pod Kotom-sever (Kerman, Kavur 2011b: 40–41, 194–195, G 400). On the other hand, the semiglobular bowl with the band-like handle positioned below the rim is another peculiarity. There were several semiglobular bowls discovered in the pits J-309 in Oloris (Dular et al. 2002: T. 18: 7–10), pit 100 in Ptuj – Rabelčja vas (Strmčnik-Gulič 1988/1989: T. 1: 11) and pit

Kotom-sever (Kerman, Kavur 2011b: 39, 144–145, G 140), dok su gotovo istovjetni primjerci poznati i iz ostave keramike s nalazišta Inzersdorf ob der Traisen u Austriji (Neugebauer et al. 1998/1999: 41, sl. 29: 10) i s nalazišta Dolní Věstonice u Češkoj (Palátová, Salaš 2002: 160, T. 2: A, 1), gdje su također datirani u kasno brončano doba Br D i Ha A stupnjeva (Palátová, Salaš 2002: 14, 16).

Srećom, zbog prisutnosti databilnog uzorka ugljena bili smo u mogućnosti odrediti vrijeme njihova odlaganja. Naj-

671 in Pod Kotom-sever (Kerman, Kavur 2011b: 40–41, 194–195, G 399), but they all lacked the specific handle. A bowl with the handle positioned on the rim was discovered in a younger Late Bronze Age context in Pod Kotom-sever (Kerman, Kavur 2011b: 39, 144–145, G 140), but almost identical examples come from pottery depots of Inzersdorf ob der Traisen in Austria (Neugebauer et al. 1998/1999: 41, Abb. 29: 10) and Dolní Věstonice in Bohemia (Palátová, Salaš 2002: 160, Taf. 2: A, 1) which were also dated to the Late Bronze Age – in to Bd D and Ha A (Palátová, Salaš 2002: 14, 16).



Sl. 7 Izbor nalaza iz zapune jame SE 621
Fig. 7 Selection of finds from the pit SE 621

vjerojatniji datum za interval bio je tako u rasponu od posljednje četvrtine 15. st. pr. Kr. do kraja prve četvrtine 14. st. pr. Kr. (sl. 3; sl. 4). Isti datum dobiven je i za jamu s ulomcima posuđa SE 621, a iz istog razdoblja apsolutne datacije potječu iz nalazišta Lodersdorf u Austriji (jama 1 – Jilg 2007: 119) i Pod Kotom-sever u Prekmurju (SE 671 – Kerman 2011b: 75). Do sada su iz naselja, uz uzorak iz ostave keramike (SE 40) i dva uzorka iz izdužene jame ispunjene ulomcima keramike (SE 621), bila datirana i dva uzorka iz pravilne kružne jame iza kuće broj 2 (SE 287). Tijekom iskopavanja očekivalo se kako će sve strukture naselja biti istovremene, ali rezultati njihova datiranja opovrgnuli su tu pretpostavku.

Sve je započelo s odnosom između jaraka i naselja; najmlađi datumi iz najgornje zapune jarka bili su stariji od rezultata datuma iz naseobinskih struktura, gdje su se pak po-

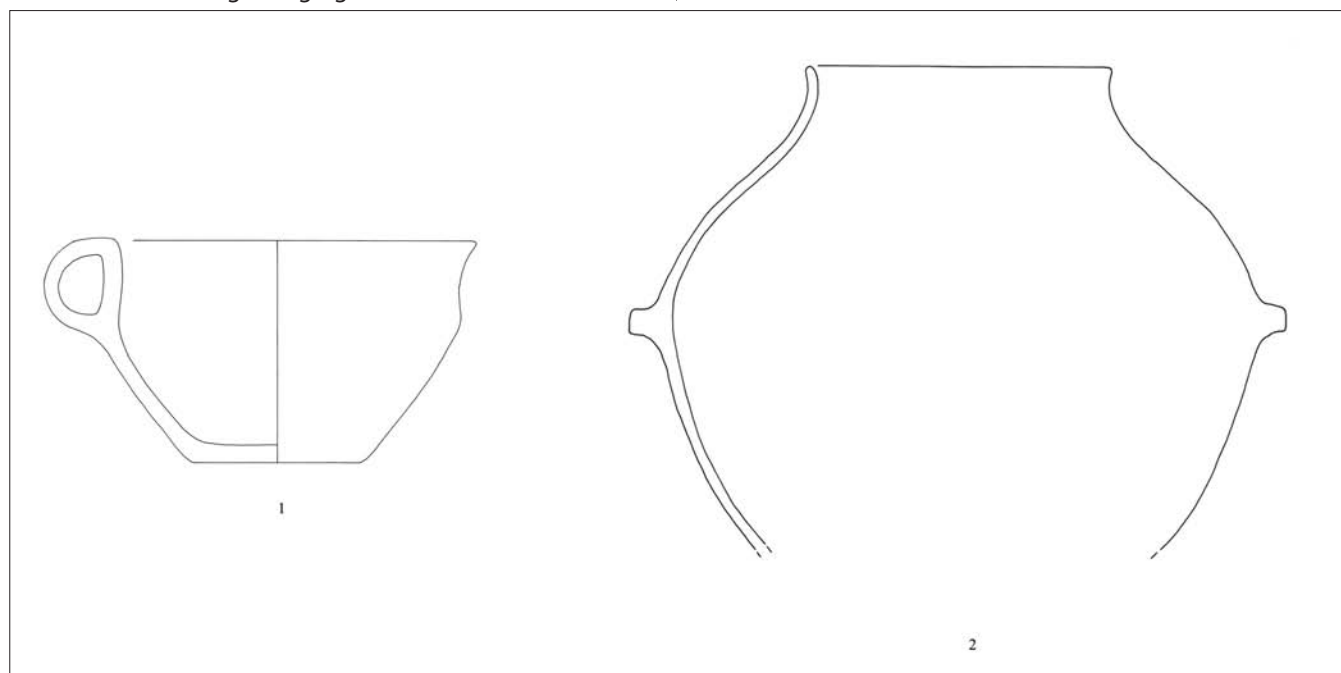
Luckily due to the presence of a datable sample of charcoal we were able to determine the time of deposition – the most probable date for the interval was ranging from the last quarter of the 15th century to the end of the first quarter of the 14th century BC (Fig. 3; Fig. 4). The same date was obtained also for the pit with pottery fragments SE 621 and from the same period we have ¹⁴C dates from the sites of Lodersdorf in Austria (Pit 1 – Jilg 2007: 119) and Pod Kotom-sever in Prekmurje (SE 671 – Kerman 2011b: 75). To date the settlement beside the sample from the pottery depot (SE 40) and two samples from an elongated pit filled with pottery fragments (SE 621), two samples were dated from a regular circular pit behind the house number 2 (SE 287). During the excavations all the features in the settlement were expected to be contemporary, but the results of the dating disproved the hypothesis.

klapali rezultati iz ostave keramike s ulomcima ručki (SE 40) i iz jame s keramikom (SE 621). No, posljednja struktura, tumačena kao prilično važna za završno djelovanje pri formiranju naselja, velika ovalna jama iza kućnog broja 2 (SE 287), bila je opet mlađa (sl. 3). Zbog specifičnog sastava nalaza i njihovog očuvanja tumačena je također kao ostava keramike. Njoj vrlo srodan apsolutni datum dobiven je samo za nalazište Gomile u Slovenskim Goricama kod Lenarta (jama SE 235 – Tomaž 2010: 89–90) kojemu, nažalost, zbog malo-brojnih nalaza nedostaju bilo kakve konkretnije usporedbe.

Spomenuta jama broj SE 287 bila je kružnog oblika, strmih stijenki i oštrog prijelaza prema horizontalnom dnu. U sredini jame, na samom dnu, bila je pohranjena šalica zajedno s ulomcima većeg okruglog lonca s trakastom ručkom i

It started with the relation between the ditches and the settlement – the youngest dates from the uppermost filling of the ditch were older than the results of the dates from the settlement features where the results from the depot of fragments with handles (SE 40) and the pit with pottery (SE 621) corresponded. But the last feature, interpreted as being important for the final act of the settlement genesis, a large oval pit due to its specific composition of finds and their preservation also interpreted as an pottery depot, from behind the house number 2 (SE 287), was younger again (Fig. 3). A similar absolute date was obtained only in the site of Gomile in Slovenske gorice near Lenart (pit SE 235 – Tomaž 2010: 89–90) unfortunately lacking due to the scarcity of preserved finds any comparisons.

The pit number SE 287 was circular in shape with steep



Sl. 8 Keramički nalazi iz zapune jame SE 287

Fig. 8 Finds from the pit SE 287

najmanje tri piramidalna tkalačka utega, smještena u razlomljenom loncu (sl. 8). Šalica i lonac nisu bili potpuni, iako nisu bili niti namjerno fragmentirani, tako da su u jamu bili odloženi samo veći dijelovi posuda (oko 2/3 posude) koji su kasnije polomljeni pod pritiskom sedimenta.

Sedimentna zapuna jame nije uključivala nikakve druge ulomke keramike. To je prilično neobično budući da su u gotovo svim ostalim zapunama jama na nalazištu pronađeni i manji ulomci keramike s djelomično erodiranim lomovima i površinama. Oblik same jame, ravnih i neoštećenih stijenki, također je ukazivao na to da su iskop i zapuna izvršeni istovremeno. Isto je sugerirala i prisutnost očuvanih razmrvljenih tkalačkih utega koji su odavali dojam kao da su izrađeni samo od suhe gline ili izrazito grube keramike pečene na vrlo niskoj temperaturi. Cijeli repertoar nalaza pokazao je tako očigledan izbor – izbor (gotovo) cjelovitih posuda tipološke i stilske znakovitosti, s odsutnošću naseobinskog otpada na položaju koji je bio vezan uz građevinu. Sam proces polaga-

sides, a sharp transition from the sides in to the horizontal bottom. In the middle of the pit on its bottom a dish was deposited together with the fragments of a larger globular pot with a bar like handle and at least 3 pyramidal loom weights positioned in the fragmented pot (Fig. 8). The dish and the pot were not complete, although they were not fragmented – larger parts (approximately 2/3), were deposited in the pit and were later broken by the pressure of the sediment. The sediment filling the pit did not include any other fragments of pottery, which was unusual since almost all the other pits with finds on the site included also smaller fragments of pottery with partly eroded breaks and surfaces. Also the form of the pit itself – the straight and undamaged edges of the pit suggest that it was excavated and filled up immediately. The same is suggested also by the presence of the preserved weight looms – crumbling, they made the impression that they were made from only dried clay or exceedingly coarse ceramic fired at a very low temperature. The whole repertory exhibits an obvious selection

nja i namjernog odlaganja uvjeravaju, prilično sigurno, kako smo, dakle, ponovno u potrazi za ostavom keramike.

Položaj jame, uz završetak kuće na suprotnoj strani od središnjeg dijela naselja, i specifičan sastav sakupljene keramike, potaknuli su na promišljanje kako se ondje zapravo radilo o ostavi koja je obilježila „zatvaranje“ naselja. Ritualni čin prilaganja glavnih nalaza iz kuće ukazuje na završetak djelatnosti na tome prostoru, tj. na zaključivanje životnog ciklusa u kući i u naselju. No, sa simboličkim završetkom jednog životnog ciklusa na Sodoleku nekoliko je dodatnih elemenata ipak ukazivalo i na promjene koje su nadolazile; tako je jajasti lonac s trakastom ručkom zapravo bio formalna novost. Možda bismo ga mogli razmotriti u istoj perspektivi, tj. kao dobru usporedbu za veliki ovalni lonac (sl. 8: 2) čiji je gornji dio sličan onom iz jame broj 6 na Ptuj – Rabelčja vas (Strmčnik-Gulič 1988/1989: 159, T. 7: 4), gdje on predstavlja jedno od najmlađih obilježja nalazišta, datiranog već u Ha A stupanj (Dular 2002: 174). Isti datum mogao bi biti prihvaćen i za ulomke velikih ovalnih posuda iz jame B iz nalazišta Vorwald u Austriji (Schamberger 2007: 292, T. 4: 14–16). No, nažalost njezina radiometrijska datacija obuhvaća predugačak interval između, otprilike, 1270. i 1100. god. pr. Kr. (Schamberger 2007: 239), koji je, u svakom slučaju, stoljeće mlađi od kraja naselja na Sodoleku.

Druga posuda iz jame SE 287 velika je šalica specifičnog oblika, konkavno izvučenog vrata, čineći time trećinu čitave visine posude, konveksnog donjeg dijela tijela i okomite trakaste ručke smještene točno ispod oboda (sl. 8: 1), za koju usporedbe opet možemo vidjeti kod nalaza iz jame B u Vorwaldu (Schamberger 2007: 290, T. 2: 6, 9).

Uzimajući u obzir položaj jame, njezin sadržaj, datiranje uzoraka, kao i činjenicu da ostaci arhitekture kuće ne pokazuju nikakve sukcesivne faze gradnje niti ojačanja građevine zbog propadanja arhitektonskih elementa, možemo konstatirati da je naselje bilo kratkog vijeka. Stoga je vrlo vjerojatno da datum njegova kraja treba tražiti s početkom datuma dobivenih iz jame SE 287, na početku krivulje, tj. oko 1370. god. pr. Kr. (sl. 3; sl. 4). Ukoliko prihvatimo takvu pretpostavku, dade se zaključiti da je naselje iz rane faze kasnog brončanog doba na Sodoleku podignuto negdje oko 1430. god. pr. Kr., i da je, najvjerojatnije, prestalo postojati 60-ak godina kasnije.

Zaključak

Iskopavanja velikih razmjera unutar projekta gradnje slovenskih autocesta duboko su promijenila naše poznavanje funkcioniranja brončanodobnih naselja. Time nije bila dobivena samo mogućnost razmatranja veće količine materijalne građe, nego smo dobili i uvid u prostorne organizacije naselja koje suptilno pokazuju aspekte prapovijesnog ponašanja prethodno neistražene ili neprepoznate u struci. Namjerna odlaganja u ostavama keramike, različitih sastava i namjena, bit će samo jedan od tih aspekata. No, jedan od glavnih noviteta, omogućen rezultatima radiokarbonskih analiza, bio je ostvarenje „oštrije rezolucije“ po pitanju trajanja pojedinih faza naselja u njihovoj povijesti.

U slučaju nalazišta Pod Kotom-sever kronološka je ra-

– the selection of (almost) complete vessels of a typological and stylistic eminence along with absence of settlement rubbish on a position connected to the building and the process of deposition and intentional deposition suggest that we are looking again at a pottery depot.

The position of the pit at the end of the house on the opposite side of the central part of the settlement and the specific composition of the assemblage, trigger the idea that this was actually a closing depot – a ritual act of deposition of the main artifacts from the house indicating the closing of the activities – of the life cycle in the house and in the settlement. But with the symbolical closing of one life circle in Sodolek several additional elements were added indicating the changes to come – the ovoid pot with the bar like handle is a formal novelty – perhaps we could consider from the same site as a good comparison for the large oval pot (Fig. 8: 2) the upper part of a similar one from pit number 6 in Ptuj – Rabelčja vas (Strmčnik-Gulič 1988/1989: 159, T. 7: 4) – one of the youngest features on the site which should be already dated in to the Ha A (Dular 2002: 174). The same date could be considered also for the fragments of large oval pots from the pit B in Vorwald in Austria (Schamberger 2007: 292, T. 4: 14–16). But unfortunately the radiocarbon date of the later covered a long interval between cca. 1270 and 1100 BC (Schamberger 2007: 239), which is still at least a century younger than the end of the settlement in Sodolek.

The second pot – the large dish from the pit SE 287 is a specific form with the concave neck measuring one third of the height, a convex lower body and a vertical band like handle positioned below the mouth (Fig. 8: 1). And perhaps we could again search for comparisons in the same pit B in Vorwald (Schamberger 2007: 290, T. 2: 6, 9).

Taking into consideration the position of the pit, its content, the dating of the samples as well as the fact that the architecture remains of the houses do not demonstrate any building of successive phases of building nor reinforcements of the construction due to the decay of the architectural elements; we can conclude that the settlement was only short lived. Consequently it is most probable that the date for its end should be sought in the beginning of the date obtained from SE 287 – in the beginning of the wiggle at approximately 1370 BC. (Fig. 3; Fig. 4). If we accept this assumption we can conclude that the Early Late Bronze Age settlement at Sodolek was erected somewhere around 1430 BC and it most probably ceased to exist some 60 years later.

Conclusions

The large scale excavations of the Slovenian highway building project changed profoundly our knowledge about the functioning of the Bronze Age settlements. It was not just that we were able to observe larger quantities of materials, but also we got the insight in to the spatial organization of the settlements subtly demonstrating also the aspects of prehistoric behavior previously undiscovered or not recognized – the intentional deposition of ceramic depots of different compositions and purposes just being one of them. But one of the major novelties, enabled by the results of the radiocarbon analyses, was the realization about the fine grained resolution of duration of individual phases of settlement histories.

zlika između srednjeg i kasnog brončanog doba bila toliko izrazita da se uglavnom ogledala i u strukturama i kod nalaza materijalne kulture. Razlike na nalazištima Pod Grunti-Pince i ovdje predstavljenom Sodoleku bile su mnogo osjetljivije i teže za određivanje, pogotovo ako se promatraju samo prikupljeni nalazi materijalne kulture.

S primjerom Sodoleka, stratigrafski podaci i rezultati radiokarbonskih analiza omogućili su doticanje raspršenih ostataka iz ranog brončanog doba i iz kasnije, glavne faze djelatnosti na naselju za srednjeg i kasnog brončanog doba. Ističući najmanje dva događaja u drugoj fazi naseljavanja, koja u velikoj mjeri pridonose razumijevanju ciklusa života prapovijesnog naselja, ostvarene su i mogućnosti daljnjeg razmatranja kronologije brončanog doba u široj regiji.

Prve brončanodobne aktivnosti morale su na našem nalazištu otpočeti već u 17. st. pr. Kr., za Br B stupnja. Nikakve intaktne strukture datirane u to razdoblje nisu očuvane, već samo najstariji jarak zapunjen sedimentom, koji uključuje nalaze keramike ukrašene urezanim ukrasima snopova kosih i vodoravnih linija, kao i šrafirane viseće trokute i horizontalne i/ili vertikalne trake iz ranog srednjeg brončanog doba.

Djelatnosti na tom prostoru uslijedile su u drugoj polovici 15. st. pr. Kr., u kasnom srednjem brončanom dobu, kada je nekoliko jaraka bilo ispunjeno naslagama na istom položaju. Druga faza nastanjanja naselja započela je čišćenjem područja i odlaganjem ostataka u jarke u depresiji na istočnoj strani. Odlagana građa uključivala je i ugljen, datiran u razdoblje između 1450. i 1400. god. pr. Kr., u kraj Br C2 stupnja, keramiku s urezanim ornamentima snopova kosih i vodoravnih linija, šrafiranih visećih trokuta i horizontalnih i/ili vertikalnih traka te žigosane dekoracije, ali i nalaze srodne onima iz samoga naselja.

Najmanje 30 godina kasnije, na rubu novopodignutog naselja, bila je ukopana ostava keramike koja može biti objašnjena kao ostava iz utemeljenja naselja. Uvrštavala je odabrane dijelove keramike koji se mogu tumačiti kao simbolički pohranjeni podaci o proizvodnji keramičkih oblika, odnosno kao materijaliziran odraz identiteta njihovih izrađivača. Važno je napomenuti da su ti tipovi keramike i dekoracije, kao obilježje najranije faze naselja (srednje brončano doba) prisutni u jarku, sada odsutni u naselju, gdje nastupaju nove tehnike ukrašavanja (primjena rebara sa ili bez otiska prstiju) i motiva (horizontalna rebra, vertikalna rebra, trostruka rebra sa zaravnjenim izbočinama na kraju). Najbolje usporedbe mogu im se pronaći kod nalaza keramike iz jame 309 u Olorisu i iz jame 100 s Ptuja – Rabelčja vas.

Potvrđujući sličnosti u tipologiji posuđa, uz prisutnost rijetkih elementa kao što je horizontalna trakasta ručka, možemo pretpostaviti da su strukture iz Sodoleka i, nedatirana a prilično raspravljana, nalazišta na Olorisu i Rabelčjoj vasi, kao i grob 40 iz nekropole Zavrča, bili istodobni i da su započeli već u razdoblju između 1425. i 1375. god. pr. Kr., početkom relativnog Br D stupnja. Time se ponovo potvrđuje, prije 15 godina predloženo datiranje početka kasnog brončanog doba P. Della Casa i C. Fischera (Della Casa, Fischer 1997), a pobija se novi prijedlog istoga od strane J. Müllera

In the case of the site Pod Kotom-sever the chronological differences between the Middle and Late Bronze Age were so profound that they were also majorly reflected in the structures and the material cultures discovered, while the differences on the sites such as Pod Grunti-Pince and, here presented, Sodolek were much more subtle and hard to determine when observing only the finds.

In the case of Sodolek the stratigraphic data and results of the radiocarbon analyses enabled us to touch upon the scattered remains of an early and a subsequent major phase of activities in the Middle and Late Bronze Age with the possibility of further recognition and pinpointing of at least two events in the second one contributing largely to the understanding of a life cycle of an prehistoric settlement and consequently of the chronology of the Bronze Age in the wider region.

First Bronze Age activities must have started at the site as early as in the 17th century BC (Bd B). No intact features dated to this period were preserved – just the oldest ditch filled with sediments. It included finds of Early Middle Bronze Age pottery decorated with incised ornaments such as the sheaves of oblique and horizontal lines as well as hatched hanging triangles and horizontal and/or vertical bands.

Activities followed on the same location in the second half of the 15th century BC in the Late Middle Bronze Age when several ditches were filled with sediments on the same location. The second phase started with the clearance of the area and the deposition of the remains in to the ditches in the depression on the eastern side. The material deposited included charcoal dated in to the period between 1450 and 1400 BC (end of Bd C2) as well as incised pottery with ornaments such as the sheaves of oblique and horizontal lines as well as hatched hanging triangles and horizontal and/or vertical bands and stamped decorations but it included also finds resembling finds from the settlement.

At least 30 years later a pottery depot, which could be explained as a founding depot, was buried on the edge of the newly erected settlement. It included selected remains of pottery which can be interpreted as the symbolically stored information about the production of pottery forms – a materialized reflection of identity of its makers. It is important to note that the types of pottery and decoration characteristic for the earliest phase of settlement (Middle Bronze Age) present in the ditches (fragments of pottery decorated with incised lines, hatched bands and triangles discovered in the ditch) were now absent while new decoration techniques (applied ribs with or without of finger impressions) and motives (horizontal ribs, vertical ribs, triple ribs with a flatted knob on the end) make their appearance. The best comparisons for the finds can be observed in the Pit 309 in Oloris and Pit 100 in Ptuj – Rabelčja vas.

Acknowledging the similarities in pottery typology – the presence of an rare element such as horizontal bar-like handle, we can assume that the features from Sodolek and the undated and much discussed sites of Oloris and Rabelčja vas and the grave number 40 from the cemetery of Zavrč were contemporary and started at least in a period between 1425 and 1375 BC (beginning of Bd D). Confirming again the 15 years ago proposed *dates*, for the beginning of the Late Bronze Age, by P. Della Casa and C. Fischer (Della Casa,

i B. Lohrke (Müller, Lohrke 2009). Uopćavanjem grobnog rituala zabilježenog u Zavrču (grob 40) i oblikovanjem kulturno-povijesnog zaključka možemo pretpostaviti da je i običaj spaljivanja pokojnika obavljan već u tome razdoblju, čime se ujedno iskazuje i stabilan datum za početak rane faze kulture polja sa žarama.

Ukratko, temeljem analize radiometrijskih datacija te arheoloških struktura i prikupljene keramike, možemo reziimirati kako je osnivanje kratkotrajnog naselja na Sodoleku mogao biti istaknut događaj s početka kasnog brončanog doba i rane kulture polja sa žarama u regiji.

Fischer 1997) and disproving the new proposal by J. Müller and B. Lohrke (Müller, Lohrke 2009).

Generalizing the burial practice discovered at Zavrč (grave number 40) and creating a cultural conclusion out of it we can assume that the habit of cremating the deceased was practiced in this period consequently indicating a fixed date for the beginning of the Early Urnfield Culture.

Based on the analyses of radiometric dates as well as archaeological features and pottery discovered we can conclude that the establishment of the short lived settlement at Sodolek could be pinpointed as the event of the beginning of the Late Bronze Age and the Early Urnfield Culture in the region.

Oznaka laboratorija / Laboratory number	Stratigrafska jedinica / Stratigraphic unit	Radiokarbonska starost / Radiocarbon age	Jednstruka standardna devijacija (vjerojatnost 68,3%) / One Sigma Range (Probability 68,3%)	Dvostruka standardna devijacija (vjerojatnost 95,4%) / Two Sigma Range (Probability 95,4%)
KIA41644	SE 164	3345±25	1686-1608 (67,6%) 1567-1565 (0,7%)	1727-1720 (1%) 1691-1600 (71,6%) 1594-1531 (22,9%)
KIA41643	SE 115	3180±30	1493-1475 (21,2%) 1461-1426 (47,1%)	1503-1408 (95,4%)
KIA41642	SE 13	3165±25	1489-1482 (6,1%) 1454-1414 (62,2%)	1496-1403 (95,4%)
KIA41654	SE 621	3130±25	1431-1395 (68,3%)	1452-1374 (87,8%) 1341-1318 (7,6%)
KIA41651	SE 40	3120±25	1431-1387 (68,3%)	1448-1370 (81,1%) 1351-1316 (14,3%)
KIA41655	SE 621	3100±25	1416-1376 (49,9%) 1338-1320 (18,4%)	1430-1312 (95,4%)
KIA41653	SE 287	3040±28	1376-1339 (28,7%) 1320-1267 (39,6%)	1400-1254 (89,7%) 1239-1214 (5,7%)
KIA41652	SE 287	3040±25	1374-1340 (27,3%) 1319-1267 (41%)	1395-1256 (90,6%) 1237-1215 (4,8%)

Sl. 9 Apsolutne datacije s nalazišta Sodolek

Fig. 9 Absolute dates from the site of Sodolek

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LITERATURA / BIBLIOGRAPHY

- Črešnar, M. 2009, Radiokarbonsko datiranje bronaste in starejše železne dobe – slovenska perspektiva, *Arheo*, Vol. 26, 33–51.
- Črešnar, M. 2010, New research on the Urnfield period of Eastern Slovenia. A case study of Rogoza near Maribor, *Arheološki vestnik*, Vol. 61, 7–119.
- Črešnar, M. 2011, New aspects on the Ha A phase in Eastern Slovenia, in: *Beiträge zur Mittel- und Spätbronzezeit sowie zur Urnenfelderzeit am Rande der Südostalpen*. Internationale Archäologie, Band 15, Gutjahr, C., Tiefengraber, G. (eds.), Rahden/Westfahlen, 37–50.
- Della Casa, P., Fischer, C. 1997, Neftenbach (CH), Velika Gruda (Yu), Kastanas (GR) und Trindhøj (DK) – Argumente für einen Beginn der Spätbronzezeit (Reinecke Bz D) in 14. Jahrhundert v. Chr., *Præhistorische Zeitschrift*, Vol. 72/2, 195–233.
- Djurić, B. 2003, Sodolek, in: *Zemlja pod vašimi nogami. Arheologija na avtocestah Slovenije*, Prešeren, D. (ed.), Ljubljana, 240.
- Doneus, M. 1991, Zum mittelbronzezeitlichen Keramikdepot von Maisbirbaum, MG Erstenbrunn, PB Korneburg, Niederösterreich, *Archaeologia Austriaca*, Vol. 75, 107–128.
- Dular, J. 1999, Älter, mittlere und jüngere Bronzezeit in Slowenien – Forschungsstand und Probleme, *Arheološki vestnik*, Vol. 50, 81–96.
- Dular, J. 2002, Dolnji Lakoš in mlajša bronasta doba med Muro in Savo, in: *Bronastodobno naselje Oloris pri Dolnjem Lakošu*, Opera Instituti Archaeologici Sloveniae, 5, Ljubljana, 141–228.
- Dular, J. 2011, Zur Datierung der Bronzezeitlichen Siedlung Oloris bei Dolnji Lakoš, *Arheološki vestnik*, Vol. 62, 111–130.
- Dular, J., Šavel, I., Tecco Hvala, S. 2002, Oloris pri Dolnjem Lakošu, in: *Bronastodobno naselje Oloris pri Dolnjem Lakošu*, Opera Instituti Archaeologici Sloveniae, 5, Ljubljana, 11–139.
- Dular, J., Šavel, I., Tecco Hvala, S. 2002, *Bronastodobno naselje Oloris pri Dolnjem Lakošu*, Opera Instituti Archaeologici Sloveniae, 5, Ljubljana.
- Gutjahr, C. 2011, Mittel bis frühspätbronzezeitliche Gruben aus dem Bereich des Gräberfeldes Kainach bei Wildon, Gem. Weitendorf, Stmk., in: *Beiträge zur Mittel- und Spätbronzezeit sowie zur Urnenfelderzeit am Rande der Südostalpen*. Internationale Archäologie, Band 15, Gutjahr, C., Tiefengraber, G. (eds.), Rahden/Westfahlen, 141–206.
- HAMPL, F., Kerchler, H., Benkovsky-Pivovarova, Z., 1981, *Das mittelbronzezeitliche Gräberfeld von Pitten in Niederösterreich*, Band 1, Mitteilungen der Prähistorischen Kommission, Band 19/20, Wien.
- Heymans, H. 2007, Die Mittel- und Spätbronzezeit im Gleinztal, in: *Studien zur Mittel- und Spätbronzezeit am Rande der Südostalpen*. Universitätsforschungen zur prähistorischen Archäologie, Band 148, Tiefengraber, G. (ed.), Bonn, 143–162.
- Horváth, L. 1994, Adatok Délnyugat-Dunántúl későbronzkorának történetéhez, *Zalai museum*, Vol. 5, 219–235.
- Jilg, E. 2007, Young Bronze Age Finds from Lödersdorf near Feldbach, eastern Austria, in: *Studien zur Mittel- und Spätbronzezeit am Rande der Südostalpen*, Universitätsforschungen zur prähistorischen Archäologie, Band 148, Tiefengraber, G. (ed.), Bonn, 117–123.
- Kavur, B. 2007, Middle to Late Bronze Age in eastern Slovenia. The highways to archaeological knowledge, in: *Studien zur Mittel- und Spätbronzezeit am Rande der Südostalpen*. Universitätsforschungen zur prähistorischen Archäologie, Band 148, Tiefengraber, G. (ed.), Bonn, 51–65.
- Kavur, B. 2011, This is how we do it, in: *Beiträge zur Mittel- und Spätbronzezeit sowie zur Urnenfelderzeit am Rande der Südostalpen*, Internationale Archäologie, Band 15, Gutjahr, C., Tiefengraber, G. (eds.), Rahden/Westfahlen, 81–88.
- Kavur, B., Tomaž, A., Mileusnič, Z. 2006, Sodolek – naselje bakrene dobe, in: *Od Sopota do Lengyela*, Tomaž, A. (ed.), Koper, 121–128.
- Kerman, B. 2011a, Die spätbronzezeitliche Siedlung Pod Grunti-Pince (Slovenien), in: *Beiträge zur Mittel- und Spätbronzezeit sowie zur Urnenfelderzeit am Rande der Südostalpen*, Internationale Archäologie, Band 15, Gutjahr, C., Tiefengraber, G. (eds.), Rahden/Westfahlen, 89–100.
- Kerman, B. 2011b, *Pod Kotom-sever pri Krogu*, Arheologija na avtocestah Slovenije, 24, Ljubljana.
- Kerman, B., Kavur, B. 2011a, Srednja bronasta doba, in: *Pod Kotom-sever pri Krogu*, Arheologija na avtocestah Slovenije, 24, Ljubljana, 29–34.
- Kerman, B., Kavur, B. 2011b, Pozna bronasta doba, in: *Pod Kotom-sever pri Krogu*, Arheologija na avtocestah Slovenije, 24, Ljubljana, 35–45.
- Krenn-Leeb, A. 2006, Gaben an die Götter? Depotfunde der Frühbronzezeit in Österreich, *Archäologie Österreichs*, Vol. 17/1, 4–17.
- Laueremann, E., Hahnel, B. 1998/1999, Die mittelbronzezeitlichen Gefäßdepots non Großmugl in Niederösterreich, *Archäologie Österreichs*, Vol. 9/10, 88–102.
- Lindinger, V. 1998/1999, Mittelbronzezeitliche Gefäßdeponierung von Zwerndorf an der March, NÖ, *Archäologie Österreichs*, Vol. 9/10, 78–87.
- Lubšina Tušek, M., Blečić Kavur, M., Kavur, B. 2012, In to the great wide open. Proceedings of the international conference *Beginning of the Late Bronze Age between the Southern Alps and the Danube* held in Osijek, October 20th–22nd 2011, Institute of Archaeology, Zagreb, Archaeological Museum Osijek.
- Martin, A. 1998, Organization of Semantic Knowledge and the Origin of Words in the Brain, in: *The Origin and Diversification of Language*. Memoires of the California Academy of Sciences, Vol. 24, Jablonski, N. G., Aiello, L. C. (eds.), San Francisco, 69–88.
- Neugebauer, J.-W. 1994, *Bronzezeit in Österreich*, Wissenschaftliche Schriftenreihe Niederösterreich, Band 98/99/100/101, St. Pölten, Wien.
- Neugebauer, J.-W., Blesl, C., Lochner, M., Neugebauer-Maresch, C., Gattinger, A., Preinfalk, F. 1998/1999, Zu Metal- und Keramikdepots der Bronzezeit aus dem Zentralraum Niederösterreichs, *Archäologie Österreichs*, Vol. 9/10, 5–45.
- Pahič, S. 1962, Arheološki spomeniki v Slovenskih gorah, *Ptujski zbornik*, Vol. II, Ptuj, 187–201.
- Pahič, S. 1965, Biserjane pri Vidmu ob Ščavnici, *Varstvo spomenikov*, Vol. 9, 190.
- Pahič, S. 1966, Biserjane pri Vidmu ob Ščavnici, *Varstvo spomenikov*, Vol. 10, 192–193.
- Pahič, S. 1968, K predslovenski naselitvi Slovenskih gor in Pomurja, in: *Svet med Muro in Dravo*, Vrtnjak, V. (ed.), Maribor, 158–253.
- Pahič, S. 1975, Biserjane, in: *Arheološka najdišča Slovenije*, Ljubljana, 333–334.
- Palátová, H., Salaš, M. 1998/1999, Bronze und urnenfelderzeitliche Gefäßdepotfunde in Mähren, *Archäologie Österreichs*, Vol. 9/10, 103–114.
- Palátová, H., Salaš, M. 2002, *Depoty keramických nádoby bronzové na Moravě a u sousedních zemích*, Pravěk, Supplementum 9, Brno.
- Pavišić, I. 1991, Prapovijesno nalazište Mali Zagreb u Špišić Bukovici – prilog poznavanju Virovitičke grupe, *Prilozi*, Vol. 8, 5–16.
- Schamberger, E. 2007, Die bronzezeitlichen Siedlungsreste aus Vorwald bei Wald am Schoberpass, Stmk., in: *Studien zur Mittel- und Spätbronzezeit am Rande der Südostalpen*, Universitätsforschungen zur prähistorischen Archäologie, Band 148, Tiefengraber, G. (ed.), Bonn, 235–326.
- Strmčnik-Gulič, M. 1988/1989, Bronastodobni naselitveni kompleks v Rabelčji vasi na Ptuju, *Arheološki vestnik*, Vol. 39/40, Ljubljana, 147–170.
- Szárász, C. 2006, Késő bronzkori fémeleletek Muraszemenye-Aligvári-mező lelőhelyről, *Zalai museum*, Vol. 15, 171–187.
- Šavel, I. 2008, Prazgodovinsko obdobje, in: *Gornje njive pri Dolgi Vasi*, Arheologija na avtocestah Slovenije, 6, Ljubljana, 18–27.
- Šavel, I., Kerman, B. 2008, *Gornje njive pri Dolgi Vasi*, Arheologija na avtocestah Slovenije, 6, Ljubljana.
- Šavel, I., Sankovič, S. 2011, *Pri Muri pri Lendavi*, Arheologija na avtocestah Slovenije, 23, Ljubljana.
- Šinkovec, I. 1995, Katalog posameznih kovinskih najdb bakrene in bronaste dobe, in: *Deposke in posamezne kovinske najdbe bakrene in bronaste dobe na Slovenskem I*, Catalogi et monographiae, 29, B. Teržan (ed.), Ljubljana, 29–127.
- Teržan, B. 1995, Stand und Aufgaben der Forschungen zur Urnenfelderzeit in Jugoslawien, in: *Beiträge zur Urnenfelderzeit nördlich und südlich der Alpen, Ergebnisse eines Kolloquiums*, Monographien des Römisch-Germanischen Zentralmuseums, Band 35, M. zu Erbach (ed.), Mainz, 323–372.
- Teržan, B. 1996, Zu Bestattungssitten während der mittleren und späten Bronzezeit auf der westlichen Balkanhalbinsel. Ein Überblick, in: *The Bronze Age in Europe and the Mediterranean*, XIII Congrès de l'Union internat. Scien. Préhist. Protohist. 11, Belardelli, C., Peroni, R. (ed.), Forlì, 151–157.
- Teržan, B. 1999, An Outline of the Urnfield Culture Period in Slovenia, *Arheološki vestnik*, Vol. 50, 97–143.
- Teržan, B. 2010, Diskusijski prispevek o srednji bronasti dobi v Prekmurju, *Zbornik Soboškega muzeja*, Vol. 15, 151–171.
- Tiefengraber, G. 2007, Zum Stand der Erforschung der Mittel- und Spätbronzezeit in der Steiermark, in: *Studien zur Mittel- und Spätbronzezeit am Rande der Südostalpen*. Universitätsforschungen zur Prähistorischen Archäologie, Band 148, Tiefengraber, G. (ed.), Bonn, 67–113.
- Tomaž, A. 2010, *Gomile pri Lenartu v Slovenskih gorah*, Arheologija na avtocestah Slovenije, 11, Ljubljana.
- Tušek, I., Kavur, B. 2012, *Kračine pri Dragotincih*, Arheologija na avtocestah Slovenije, 29, Ljubljana.
- Vinski-Gasparini, K. 1973, *Kultura polja sa žarama u sjevernoj Hrvatskoj*, Monografije filozofskog fakulteta Zadar, Vol. 1, Zadar.
- Vinski-Gasparini, K. 1983, *Kultura polja sa žarama sa svojim grupama*, in: *Praistorija Jugoslavenskih zemalja IV – Brončano doba*, A. Benac (eds.), Sarajevo, 547–646.