

Architecture of Lasinja culture settlements in the light of new investigations in northern Croatia

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ABSTRACT – *The site of Beketinci, Bentež, stands out among Lasinja settlements as the site of the largest uncovered surface – the excavation at 30 900m² revealed a portion of a Lasinja culture settlement. Its western part (covering 24 700m²) was dedicated to working activities (working features: clay-extraction pits, working pits, self-standing partitions, pottery kilns, and wells), while in the eastern, residential, part (extending over 6200m² of excavated surface) we uncovered a cluster of 5 rectangular above-ground houses, two residential pit-houses, and five residential or working pit-houses. Absolute dates for this settlement span the period between 3900 and 3300 BC, dating it to the late phase of Lasinja culture.*

IZVLEČEK – *Najdišče Beketinci, Bentež izstopa glede na druga najdišča kulture Lasinja kot tisto z največjo odkrito površino – izkopavanje 30 900m² velike površine je odkrilo le del najdišča z lasinjsko kulturo. Na zahodnem delu (izkopna površina je znašala 24 700m²) so bile odkrite sledi dejavnosti, povezanih z delom (kot so jame za izkopavanje gline, delovne jame, samostoječe pregrade, lončarske peči in vodnjaki), medtem ko je bil v vzhodnem, bivalnem delu (izkopna površina je znašala 6200 m²) odkrit skupek petih pravokotnih nadzemnih hiš, dveh bivalnih jam in petih bivalnih ali delovnih jam. Absolutni datumi naselje datirajo med 3900 in 3300 pr.n.št., kar najdišče postavlja v zadnjo fazo lasinjske kulture.*

KEY WORDS – *above-ground houses; Lasinja culture; Beketinci; northern Croatia*

Introduction

The Lasinja culture was named after the village of Lasinja on the Kupa River, south of Zagreb, in northern Croatia (Dimitrijević 1961). Settlements of this culture were discovered in the entire territory between the Sava, Drava and Danube rivers, from Vukovar in the east to Velebit Mountain in the southwest. Its distribution area covered northern and central Croatia, northern Bosnia, western Hungary, Slovenia, and Austria, and in recent times its elements were discovered also in western Serbia. It was formed in a peaceful way as a result of autochthonous development, which is manifested in many of its features, which preserve traditions from the Late Neolithic in spite of the fact that it chronologically belongs to the Middle Eneolithic.

In Austria, Lasinja culture was discovered in the 1950s by Richard Pittioni (Pittioni 1954.208), and

in Slovenia and northwestern Croatia by Josip Korošec (Korošec 1958) in texts about individual sites. In Hungary, it was distinguished by Nándor Kalicz (Kalicz 1974), and in Bosnia by Alojz Benac (Benac 1964). In northern Croatia, the first investigations of Lasinja culture were carried out in the mid-20th century by the amateur archaeologist Vjekoslav Dukić and the Varaždin archaeologist Stjepan Vuković. Stojan Dimitrijević was the first to identify, systematise, and name this culture as an independent Eneolithic phenomenon (Dimitrijević 1961; 1979a; 1979b) for northern Croatia, Slovenia, and Bosnia. In Transdanubia in Hungary, this culture is known as Balaton-Lasinja.

Dimitrijević (1979a.146) divided this culture into three developmental phases, including the site of Vis I Modran near Derventa and some other sites in the

first phase. His II-A phase comprised the sites of Ždralovi and Velika Mlinska, as well as most other sites in Slovenia. The developed phase (phase II-B) is represented mainly by the finds from Beketinci and Pavlovac near Križevci, while the third phase consists mostly of sites in the Požega Basin and the finds from Koška, as well as from the sites in Hungary *etc.* (Dimitrijević 1979a.151–158). However, it was later established that the bulk of the Slovenian sites in fact belong to the so-called Sava group of Lengyel culture (Guštin 2005.7–22). Regardless of what one thinks about a classification of the Hungarian sites within a single phase, this division is still accepted today.

Kalicz looks for the origins of the Balaton-Lasinja culture in the Balkans (Kalicz 1995.40). Dimitrijević at first believed that the Sopot and Baden cultures formed the substrate for Lasinja culture (Dimitrijević 1979a.166), while he later suggested that the substrate consisted of the Sopot, Vinča and Lengyel cultures (Dimitrijević 1979a. 168–169). Zorko Marković proposed that the substrate for the Lasinja culture consisted of three basic elements: 1) Sopot and Lengyel cultures, 2) Vinča and Butmir cultures, 3) Hvar-Lisičići culture (Marković 1994.95). In this, one has to bear in mind that it is today generally held that all these cultures continued their existence into the Early Eneolithic, *i.e.* phases Lengyel 3, Sopot 4, Vinča D-3, Early Eneolithic phases of the Butmir and Hvar cultures (*e.g.* Kalicz 1995.Abb.2). It is also now thought that to these one should perhaps add the Krivodol-Sălčuța-Bubanj Hum complex, which certainly influenced the emergence and formation of the Lasinja culture (Kalicz 1995.40, Abb. 2).

Dimitrijević mapped Lasinja sites in Croatia, northern Bosnia, Slovenia, western Hungary and Austria (Dimitrijević 1979a.139–142). It should be emphasised that the finds from Slovenia are currently divided into those from the Lengyel culture and those attributed to Lasinja culture proper (Guštin 2005). In Hungary, the data on the Lasinja and Retz-Gajary cultures – initially considered as a single entity with three developmental stages – are likewise being continually supplemented (Kalicz 1974; 1991; Somogyi

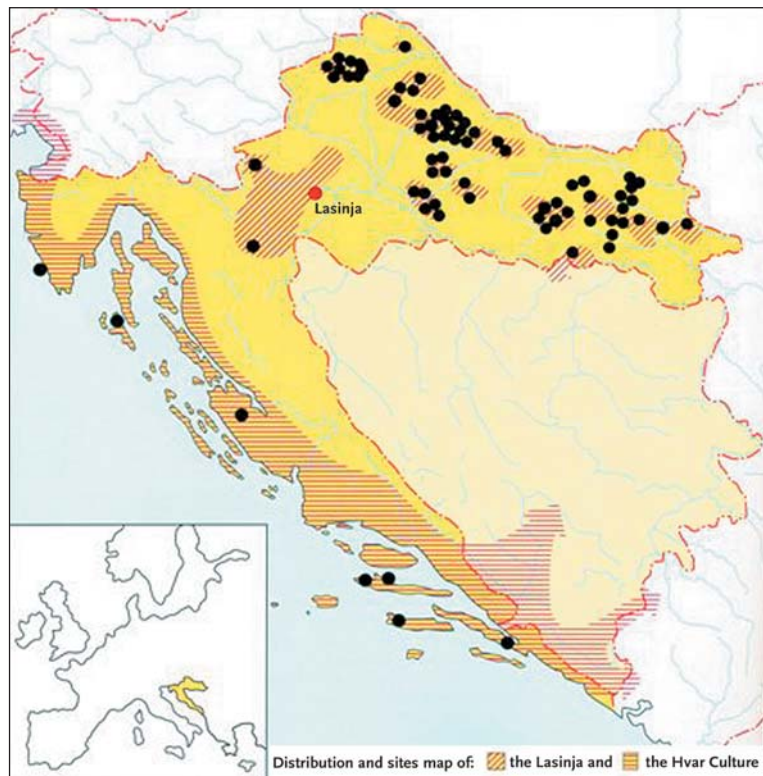


Fig. 1. Distribution map of Lasinja culture.

2000; Straub 2006 *etc.*). It should be pointed out that it is presently accepted that Lasinja culture belongs to the Middle Eneolithic, *i.e.* after phases Lengyel 3 and Sopot 4, which date to the Early Eneolithic (Marković 1994.28–29). In absolute dates, this is the period from around 4300 to 3900 BC.

The recently obtained dates for Lasinja sites in Croatia allowed a fine-tuning of the position of this culture in absolute and relative chronological schemes.

The dates for Lasinja culture in Croatia range from 4350 to 3950 BC (Balen 2010.25):

- Tomašanci, Palača 4340–3950 calBC;
- Jurjevac, Stara Vodenica 4320–3940 calBC;
- Đakovački Selci, Pajtenica 4350–3710 calBC;
- Jakšić, grave 4320–4050 calBC;
- Potočani 4250–4040 calBC.

All these dates can be attributed to the earlier phases of Lasinja culture, phases I and II:

- a Lasinja site at Čepinski Martinci, Dubrava is dated to the second quarter of the 4th millennium BC (Kalačatić 2009.22);
- a Lasinja site at Bentež near Beketinci yielded the following dates for the late phase of the Lasinja culture:
 - storage next to above-ground house 1 (pit 7183/7184), 3960–3770 calBC;

- NE foundation of house 4 (SJ 9119), 3810–3640 calBC;
- SE foundation of house 4/N foundation of house 5 (SJ 9835), 3770–3360 calBC.

Lasinja sites in central Croatia near Varaždin yielded the following dates:

- Blizna 4208 calBC (*Bekić 2006.95*);
- Gromače 4293 calBC (*Bekić 2006.22*);
- Gornji Pustakovec 3569 and 3461 calBC (*Bekić 2006.184*).

Balen (2010.26) finds the dates for Gornji Pustakovec too low, considering that they already match those for the Boleráz and Retz-Gajary cultures.

The recent dating of these Lasinja sites has contributed to a more precise fixing of this culture in the Eneolithic periodisation and ascertained the chronological priority of Lasinja culture in relation to Baden culture, proving the dating of the latter into the Early Eneolithic untenable, placing it instead in the Late Eneolithic.

Considering that the surfaces uncovered in previous archaeological investigations were very small, our

picture of Lasinja culture settlements was incomplete. In the 1950s a portion of a long house (or semi-pit-house in the opinion of S. Dimitrijević) was discovered at the site of Cerje Novo – Draguševac (NW Croatia). The house was 30–40m long, 2.28m wide, and 0.30m deep. The post-holes along the edge of the house indicated that it had a gable roof (*Dimitrijević 1979a.148*). In addition to these data on the distribution of Lasinja culture, we correct here the attribution of the horizons from the Peplana tell near Virovitica (*Minichreiter 1990.29–37*): three residential horizons attributed at first to the Retz-Gajary culture are, in fact, late Lasinja, which also features elements resembling those of Retz-Gajary culture, which was the reason for the initial inaccurate attribution. Portions of house bases were also discovered in northern Bosnia at the Vis-Modran site (*Belić 1964*).

The most recent excavations on the route of the international highway Budapest–Ploče, Osijek–Đakovo–Sredanci section have revealed – in addition to other cultures – the remains of Lasinja settlements at 10 sites. Three of these sites on which a large area of Lasinja settlements was excavated yielded pit-structures as well as above-ground houses. Absolute

dates showed that the settlements in Tomašanci, Palača and in Čepinski Martinci, Dubrava date to the middle-developed phase of Lasinja culture, while the settlement at Beketinci, Bentež dates to the late phase. These new data definitely establish that Lasinja culture employed not only pit-dwellings and working pits, but also above-ground houses for dwelling, which is a tradition that can be traced back to the Neolithic Starčevo culture (Slavonski Brod, Galovo and Vinkovci), through the Sopot and Vinča cultures to the Eneolithic. A number of investigations of prehistoric sites in eastern Slavonia have shown that the tradition of pit-house dwelling was maintained until the arrival of the Romans (Kupina, east of Slavonski Brod, a Late Iron Age – La Tène settlement).

NW CROATIA	SLAVONIA REGION (CROATIA)	SRIEM REGION (CROATIA)	DANUBE REGION (CROATIA)	
sopot III	sopot III	sopot III vinča D1-2	lengyel II	LATE NEOLITHIC
seče	sopot IV	sopot IV vinča D-3 tiszapolgar	lengyel III	EARLY ENEOLITHIC
lasinja	lasinja	lasinja	bodrogkeresztur	MIDDLE ENEOLITHIC
retz-gajary	retz-gajary	bodrogkeresztur	lasinja	LATE ENEOLITHIC
vučedol	baden kostolac vučedol	baden SALCUTZA IV: VAJSKA kostolac vučedol	retz-gajary baden baden-kostolac-vučedol	

BEKETINCI – BENTEŽ			
Z-Lab. No.	Sample description	¹⁴ C age (BP)	Calibrated age
Prehistoric settlement of Lasinja culture			
Z-4373	Pit 7183/7184, kv. a44, U-687, #1	5057±81	3960–3770 calBC (68,2%)
Z-4375	NE fondation of House 4, 9119, kv. f51, U-785, #3	4954±108	3940–3870 calBC (14,8%) 3810–3640 calBC (53,4%)
Z-4376	SE fondation of House 4, 9835, kv. e51, U-794, #4	4787±168	3770–3360 calBC (68,2%)

Fig. 2. Chronological tables of Lasinja culture.

Tomašanci, Palača

An above-ground residential structure measuring 15 x 9m, oriented NW-SE, was discovered in a part of a Lasinja settlement at the site of Tomašanci, Palača, located 12km south of the site of Beketinci, Bentež. The house had a rectangular ground plan with two rooms of different sizes. The foundation rows for the wall were reinforced by a series of uprights (perhaps a narrow porch), while a large load-bearing post stood in the centre of the larger room. Two semi-circular trenches for a fence (presumably a stock pen) abut the house on the northwest. Another room measuring 5 x 5m abuts on the house on the south. A similar arrangement was discovered at Beketinci, Bentež (house 4 and house 5). A large pit-house filled with Lasinja pottery was discovered southeast of the house. All the dates obtained from this pit-house are Late Bronze Age, suggesting that this space had served for the disposal of refuse over an extended period (*Balen 2010*).

Čepinski Martinci, Dubrava

The Lasinja settlement at Čepinski Martinci, Dubrava consisted of above-ground structures on a small elevation, while working pits and wells were located in the lower ground. This working zone (in the opinion of the director of the excavation, H. Kalafatić) points to seasonal use, considering the high groundwater level during winter. This settlement yielded a number of above-ground structures, which can be di-

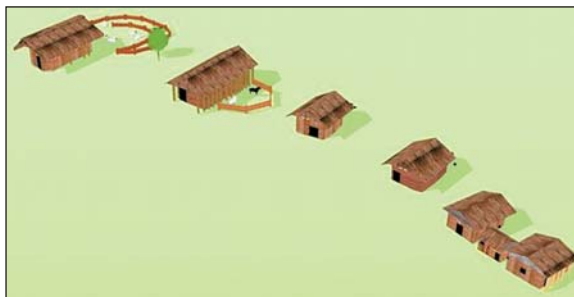


Fig. 4. Čepinski Martinci, Dubrava. Lasinja settlement.

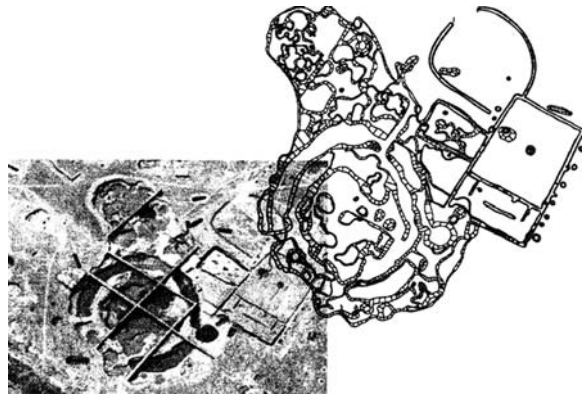


Fig. 3. Tomašanci, Palača. Lasinja settlement (after J. Balen 2008).

vided into two types. The first type (similar to Tomašanci and Beketinci) had a rectangular ground plan, a NW-SE alignment, was up to 15m long, and generally consisted of several rooms, sometimes with a porch. The second type had a square ground plan and was around 11m long. Smaller square structures were built adjacent to larger rectangular structures. It is possible that this was a combination of residential structures (larger) and smaller farm buildings (*Kalafatić 2009*).

Beketinci, Bentež

The site of Beketinci, Bentež, stands out among Lasinja settlements as the excavation site with the



Fig. 5. *Bektinci, Bentež. Plan of the Lasinja settlement (drawing: Arheo plan d.d.).*

largest uncovered surface – 30 900m² – which revealed a portion of a settlement. In its western part (24 700m²), the site contained a working area (structures of working character – pits for clay extraction, working pits, self-standing fences, pottery kilns, and wells), while the eastern part (6200m²) was residential, with 5 houses of rectangular base, 2 residential pit-dwellings and 5 residential or working pit-dwellings. Among the houses, mostly 5x10m large, house 4 (12 x 30m) stands out as the biggest above-ground structure of Lasinja culture so far discovered in Croatia. Radiocarbon dates ranging from 3900 to 3300 BC place this settlement in the late phase of the culture (Minichreiter 2009.141–148).

Above-ground house 1

Above-ground house 1 was erected in the west part of the residential area of the settlement. It had a rectangular plan with bedding-trenches with sill-beams into which vertical timber posts were recessed at regular intervals. The northern, eastern and southern walls had timber foundations, whereas the western side of the house contained only four earth-fast timber posts at uniform intervals. The house was 8.5m

long west-east, and 5.80m wide north-south. The layout of posts within the house suggests that it was divided into two rooms: the western – larger – one measuring 6 x 5.5m and the eastern – smaller – one measuring 2 x 5.5m. An entrance one metre wide opened in the centre of the south wall, protected by a small porch supported by posts recessed into a short timber beam projecting at a right-angle outward to the house foundations. Thick wooden posts, 30–40cm in diameter, were deeply sunk into the ground at all four corners of the house. Pairs of posts of similar size were set at regular intervals along the north and south walls, so that together with the corner posts on the outside of the timber foundations there were four posts in a row. In addition to several stakes within the larger room, a hole from one of the main load-bearing uprights was found in the centre of the room. Not a single pottery vessel was found within this or other above-ground houses. Movable household inventory – shards of coarse round and biconical vessels and pots, as well as fragments of fine small bowls and jugs – was found in the large circular pit (measuring 3.5 x 3m, 80cm deep) south of the house, which presumably served for storage.

Above-ground house 2

Above-ground house 2 was built around 35m south of house 1. Its alignment and ground plan were the same as those of houses 1 and 3. Compared with the other two houses, house 2 was the longest. Its rectangular plan consisted of the north and south walls, which were 11.5m long; the east wall was 5.4m long; while the west wall was 5m long. The foundations consisted of large timber sill beams (up to 40cm in diameter) on all four sides. Posts 50cm in diameter were set at all four corners of the house, with another pair of posts along each wall on the outside, set at uniform 4m intervals. These posts supported the roof, which was probably gabled. The foundation beams in the eastern side of the house were larger and sunk more deeply, suggesting that the house may have had an upper floor on that side. Unlike house 1, which had two rooms, house 2 was divided into three rooms. The largest (western) room measured 6.7 x 4.8m, the central one was very narrow with 1.20 x 4.8m (this may have been a staircase leading to the upper floor), while the eastern room was somewhat wider with 2 x 5m (possibly a storage room). There were other rows of posts within the house, and the entrance to the house – *i.e.* to the large room – opened in the west side of the house at the point where the timber foundations break off and where a massive door post was sunk into the ground. A shallow pit of irregular shape measuring 2 x 1.5m was dug in the centre of the western room. The house was discovered next to the southern boundary of the trench, so it was not possible to investigate the auxiliary features on the southern side of the house. There were indications of a pit – a storage space similar to those adjacent to house 1 and house 3 – south of the house in the form of ceramic shards in dark soil, presumably marking a peripheral segment of an uninvestigated pit in the zone south of the house.

Above-ground house 3

Above-ground house 3 was built 50m east of house 1. It had the same orientation and shape as the other two,



Fig. 6. *Beketinci, Bentež. House 1 of the Lasinja settlement (photo: J. Sudić).*

but was slightly smaller: 8 x 4.5m. Each of its four walls had timber foundations. The interior of this house was not partitioned with posts like the other two houses, but with a solid foundation – a timber beam like those of the exterior walls. There were two rooms in the house: the larger was in the west, measuring 5 x 4m, and the smaller in the east, measuring 2 x 4m. House 3 was entered from the south through the smaller eastern room. The roof was supported with timber uprights on the outside set at all four corners, with an additional post in the centre of the north and south walls. The interior of the house was reinforced with several rows of posts in the interior of the large room. A large pit of irregular cir-



Fig. 7. *Beketinci, Bentež. House 2 of the Lasinja settlement (photo: J. Sudić).*



Fig. 8. Bektež, Bentež. House 3 of the Lasinja settlement (photo: J. Sudić).

cular plan, 2m in diameter, was recessed 50cm into the virgin soil adjacent to the house on the east. It was probably used as a storage pit because it resembles the pit next to house 1 in terms of position, form and inventory. The pit yielded a number of fragments of coarse and fine pottery of different types: bowls, buckets, jugs, small pots and pots with beak-shaped handles, as well as grips and handles with small horns. The fine pottery assemblage consisted of fragments of jugs, bowls, footed cups and jugs with handles decorated with linear motifs with stabs. The pottery assemblage also included four pans and several spoons. An above-ground house with an identical ground plan and similar dimensions with two rooms was found in the neighbouring settlement of the Lasinja culture at Palača near Tomašanci (Balen 2008.29–30).

Above-ground houses 4 and 5

A compound consisting of a large house (4) with a smaller house (5) and their common courtyard – large pit-house 3 was built northeast of houses 1 and 2, and north of house 3. Taking into consideration the size and nature of these structures, it can be presumed that this was the centre of this settlement. The purpose and function of such a large structure remains unclear. Above-ground house 4, oriented west-east, with its size – 30 x 12m – is so far the largest known Eneolithic house in these

areas. The foundations, dug up to 1m deep into the virgin soil, consisted of timber beams recessed deeper on the eastern than on the western side (like the foundations in house 2). The walls were reinforced on the outside at irregular intervals with densely packed vertical posts. The interior of house 4 was partitioned with timber sill beams into three rooms with a layout identical to those of houses 1, 2 and 3. The largest room, measuring 14 x 12m, was located in the west, where one entered the house. The middle room was smaller – 10.5 x 12m – and the eastern room was the smallest of the three at 4.40 x 12m. A distinctive feature of this house was the fireplace, in a pit 1.80m in diameter situated in the centre of the middle room. It seems that fire did not burn freely in the fireplace, but that cinders were introduced and maintained, because the quantity of charcoal and ashes is relatively small, while the earth nevertheless shows signs of burning. The layer of clay and gravel below this burnt layer may have served to facilitate the preservation of warmth and prevent further burning. In certain structures, such a central recess is interpreted as the base of the upright supporting the roof. Here, however, the recess is very large, and there are no traces of a burnt or decayed post. A shallow pit of indeterminate function, measuring 5 x 3.5m, abutted on the north on the central room. On the

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Fig. 9. Bektež, Bentež. Houses 4 and 5 of the Lasinja settlement (photo: J. Sudić).

opposite, southern side, the rectangular above-ground house 5 was built adjacent to it, aligned north-south perpendicular to house 4, with which it formed a single complex. House 5, measuring 9 x 5m, was built in the same way as the remaining houses in the settlement – on timber sill beams. It was divided into two rooms: the larger, northern one, measuring 6 x 5m, and the smaller, southern one, measuring 3 x 5m. It did not have an entrance on the outside, so it could presumably be entered only from large house 4. A large – storage – pit measuring 4 x 5m was recessed 1.5m into the ground where house 5 abutted at the right angle on house 4. The interiors of houses 4 and 5, like the other houses, did not yield any pottery finds. Two smaller pits south and west of house 5 in the courtyard (pit-house 3) of this complex contained numerous fragments of coarse and fine pottery: round and biconical bowls with a tongue-shaped handle, footed bowls, pots with handles, miniature footed bowls, decorated bowls, amphorae with two handles, and spoons. A few pottery shards were found also in the shallow pits near the entrance to large house 4 on its west and north sides. A large fenced working area in the form of a shallow pit-house – which had a well on its south-eastern side – extended along the south of the large house 4 and house 5 with the storage pit. This working area – pit-house 3, sunk up to 40cm deep, 25m long and 20m wide, was fenced along its length with a double row of alternating timber stakes. This fence continued on the outside of the well, breaking off at one point to allow access to the well not only from the working area, but also from this, western (exterior) side. The well, 2.5 in diameter, was investigated to a depth of 2m, at which point ground-water appeared.

Pit-houses, bread ovens and pottery kilns

Two large pit-houses with wells were located in the eastern part of the settlement. Their function is not entirely clear, *i.e.* whether they served a residential or working purpose. There was a bread oven in the interior of pit-house 2, while there were another two bread ovens in the open



Fig. 10. Beketinci, Betež. Houses and pit-houses of the Lasinja settlement (photo: J. Sudić).

air outside pit-house 1. There were four smaller working pits, a number of smaller pits with various functions, and 12 self-standing partitions in the zone between the two large pit-houses.

Above-ground houses of rectangular plan were first built in northern Croatia in the Sopot culture, where such houses were discovered at settlements in Otok and Sopot near Vinkovci, at Hermann Vineyard in Osijek (*Dimitrijević 1979b.270; Dimitrijević, Težak Gregl and Majnarić Pandžić 1998.88, sl. 16; Krznarić-Skrivanko 2006.11–15, sl. 1 and 2*) and in Kruševica near Slavonski Šamac (*Miklik-Ložuk 2005.37–38, 2006.51–53*). The tradition of building timber above-ground houses of rectangular plan continued through the Neolithic and the Eneolithic, as corroborated by the most recent discoveries of five Lasinja settlements: Betež in Beketinci; the site of Dubrava in



Fig. 11. Beketinci, Betež. Pit-house 1 of the Lasinja settlement (photo: J. Sudić).

Čepinski Martinci, located 3km to the north (*Kalafatić 2009.21–22, sl. 5 and 6*), and Palača near Tomašanci, situated 12km to the south (*Balen 2008.29–31*); rows of posts, presumably belonging to above-ground structures, were discovered at the sites of Stara Vodenica near Jurjevac Punitovački (4km to the south) and Pajtenica near Đakovački Selci (23km south of Beketinci). Furthermore, identical rectangular above-ground houses were found at Eneolithic settlements in Hungary: Győr-Szabadrét-domb from the Balaton-Lasinja/Ludanice phase (*Virág, Figler 2007. 352, Fig. 2, 5–11*), Veszprém from phase IIb–III of the Lengyel culture (*Regenye 2007.Fig. 2, 3, 4*), Zalavár-Basasziget, a Balaton-Lasinja settlement (*Virág 2005.sl. 1*), Szombathely, a late Lengyel settlement (*Ilon, Farkas 2001.55–60, Fig. 3a, b, 4*), and Zalaegerszeg-Andráshida, Gébárti tó (II) from the Balaton-Lasinja phase (*Barna, Kreiter 2006.48–50, 61: Fig. 1, 14, 15.1, 16.1, 17.1*). In Austria, above-ground houses were found at settlements of the Bisamberg-Oberpullendorf group, which is analogous to the Lasinja culture, at Unterradlberg and Pottenbrunn (*Ruttkay 1995.125, Abb. 7*), and in Slovenia at the Lasinja settlement at Sodelok (*Kavur, Tomaž and Mileusnić 2006.122–123, sl. 3*). The only known find of an above-ground house with a fenced courtyard from the site of Wetz-

42) can be mentioned as a remote analogy for house 3 with a fenced courtyard from Beketinci.

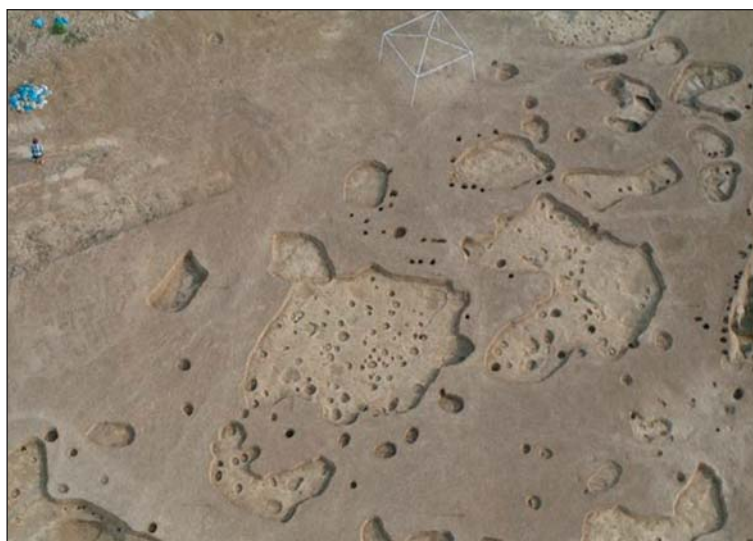


Fig. 12. *Beketinci, Bentež. Pit-houses 4 and 5 of the Lasinja settlement (photo: J. Sudić).*



Fig. 13. *Beketinci, Bentež. Pit-houses 6, 7 and 8 of the Lasinja settlement (photo: J. Sudić).*

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