



MILAN LIČKA

HOUSES FROM MŠENO (CENTRAL BOHEMIA) IN THE CONTEXT OF THE DEVELOPMENT OF THE STROKED POTTERY CULTURE

ABSTRACT: *In the settlement of Mšeno (Central Bohemia), ground plans from the Stroked Pottery Culture (SPC) were discovered. They are made up of individual postholes or foundation trenches. There was one ground plan of nearly rectangular shape, with a slight narrowing of the northern part. In other cases, the ground plans have a slight to pronounced trapezoidal shape and their longitudinal walls are predominantly convex, very occasionally straight. They consist of one or two rows of construction elements. There is great variety in the ground plans; no two are the same. Some houses show great similarity with houses from Bohemia and Moravia, but even more so with houses from the area of Dresden and Leipzig. Any relationship to the cultural environment of today's Bavaria is only to a lesser extent. The construction of houses in the settlement of Mšeno is rare. A total of six ground plans create three tight, apparently discontinuous lines and nearby there are a pair of ground plans. Only these are arranged in one line. The question, by the way, of the contemporaneity or not of the houses in separate pairs, as well as the issues of the gradual development of a family, as is evidenced archaeologically with the construction of other homes is also discussed.*

KEY WORDS: *Neolithic - Stroked Pottery Culture - Longhouse - Typology - Mšeno site - Central Bohemia*

INTRODUCTION

The long-term archaeological excavation in Mšeno in Central Bohemia (*Figure 1*) has successfully uncovered features and structures from various periods of prehistory, mainly the period of the Stroked Pottery Culture (more details about location, field excavations

and other factors in: Lička 2016). As a result of this predominantly cultural uniformity, the temporal and cultural determinations of some finds from the otherwise undated settlement structures were made much easier (*Figure 2*). In this text specific attention is given to the foundation trenches and postholes from the period of the Stroked Pottery Culture (SPC), which

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creates a regular picture, interpretable as evidence from the lower parts of the elements of the above ground construction, wood – clay and wooden structures, such as houses, farm buildings, walls, fences, palisades and so on. (For more detailed terminology regarding the evidence of construction elements and about building and joinery techniques see Bláhová-Sklenářová 2012: 20). In Mšeno, in a relatively small area, there are nearly two dozen of these structures and their parts were identified (*Figure 3*). These appear to be complete or to varying degrees fragmented. Constructions of this type can be formally divided into various types (e.g. Hampel 1989, Coudart 1998, Wolf-Schuler 2009, Ganslmeier 2010). Of course, the formal variety of the ground plan can be affected (in some cases) by the varying states of identifiability or preservation (e.g. Riedhammer 2003, 472). Given that some of the construction elements can't be clearly associated with a so-called logical whole, e.g. a ground plan, we sometimes propose alternative possibilities.

The analogies listed below for the individual houses of Mšeno rely on the presence of characteristic attributes, often appearing in one building entity. The occurrence of only one identifier, extracted from the context of a building entity, doesn't mean a connection only with houses from the Stroked Pottery Culture. For example, the trapezoidal shape of the northern side is seen in the late Linear Pottery Culture (e.g. Modderman 1970, 103, 119), just as with the doubled walls (Modderman 1970, 107, see Link 2014b), or even exceptionally in specific doubled walls, from which the outer part is formed by bigger postholes and with bigger gaps between them and smaller inner postholes with a tighter distribution (e.g. Campen *et al.* 1996, Abb. 2). We did not consider ground plans that were too fragmented or incomplete suitable for investigation (e.g. see ground plans from Hrbovice-Chabařovice, Hrdlovka, Nové Dvory, Pavlov, Roztoky u Prahy, Stará Kounice, Stvolínky, Úhřetice, Vínov).

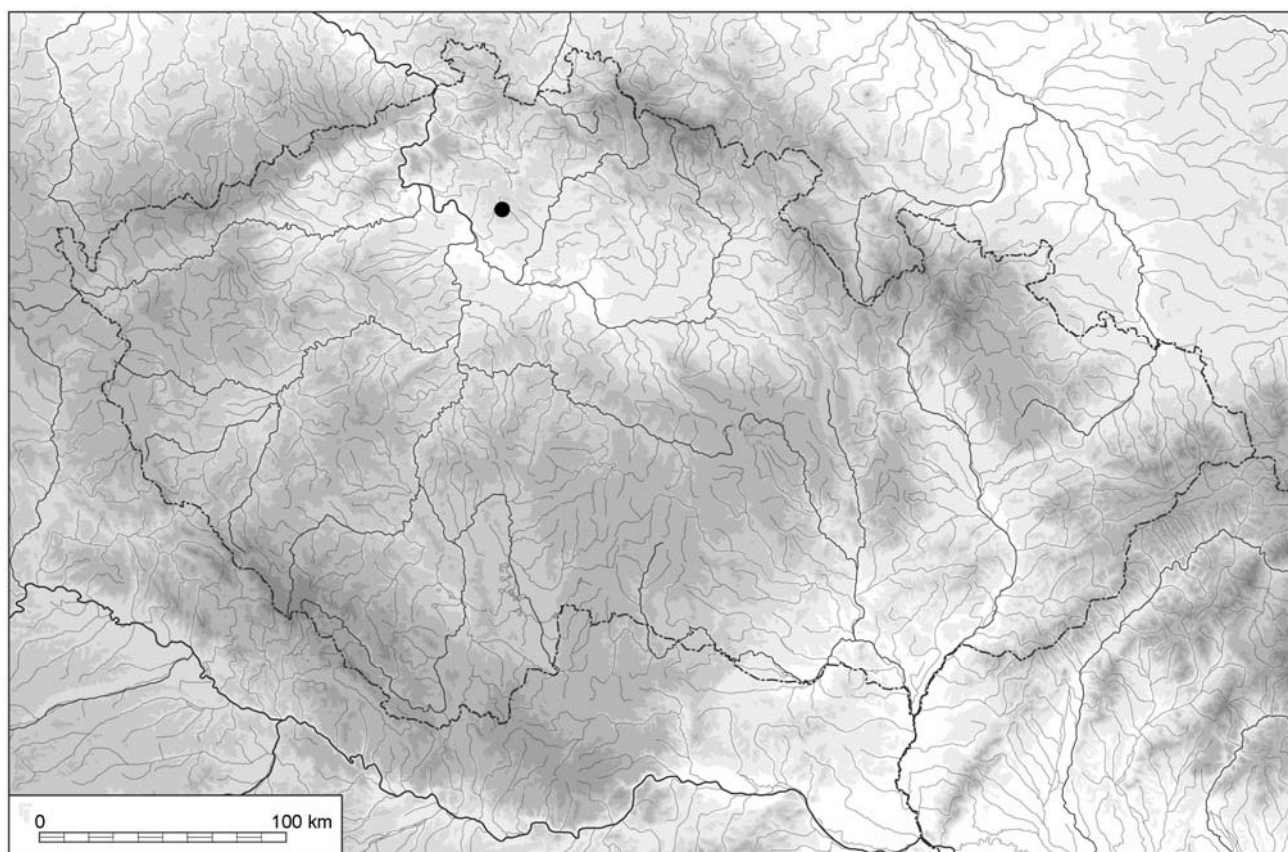


FIGURE 1: Map of the Czech Republic highlighting the site of Mšeno, Mělník District.

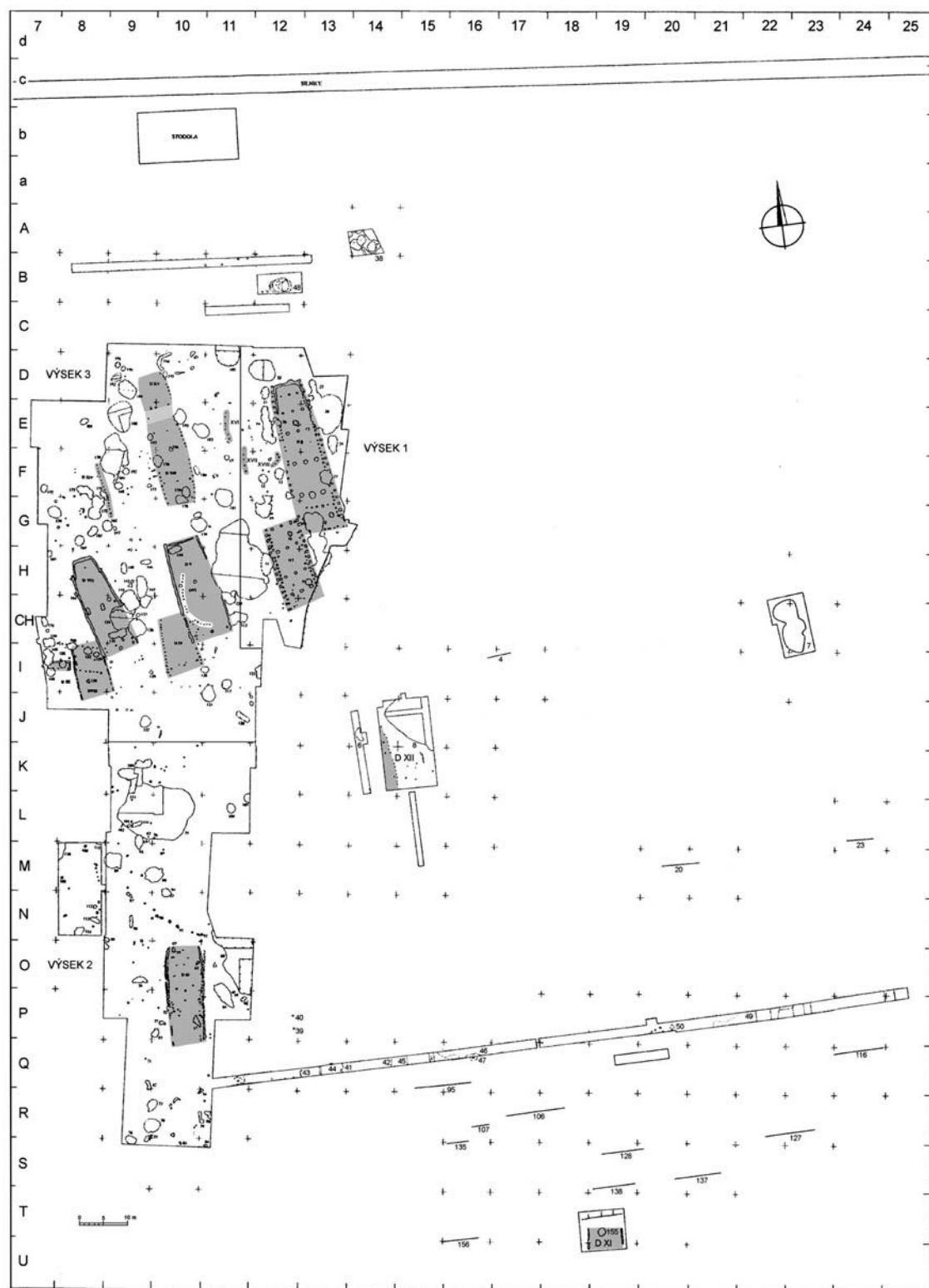


FIGURE 2: Mšeno, Mělník District. Base area of excavation with features. Houses and other building structures are numbered and highlighted in gray.

DESCRIPTION OF HOUSE GROUND PLANS AND COMPARISONS WITH SIMILAR STRUCTURES

House I (Figures 3, 4: 1). An almost-complete ground plan with construction elements in a near rectangular shape, with a slight narrowing particularly on the west side of the northern part (the ground plan is pseudo right-angled to slightly trapezoidal). It is made up of postholes. The longer axis is north-south, with a 9° deviation to the west. The longer side of the ground plan is marked out by a twinned row of postholes, from which the outer row contains deeper post holes, bigger and further apart, while the inner

row has shallower, small holes, which are closer together. This is a type of ground plan with so-called antae. Other than this, southern "anta" of the west wall with several smaller postholes, which make up the ground plan of a small rectangular area, the north side is open to the inside of the ground plan. The so-called construction pits align the longer walls of the house (Lička 1990a, 34). The ground plan has at least one posthole from the north end of the eastern wall, which touches a posthole from the southern end of the west wall of the construction structure II (*Figure 4: 1+2*). An integral part of the interior of the house seems to be a hoard of a polished stone industry (perhaps a building sacrificial offering – Lička 1981), found in

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
D I	a	1,740		a	a	a	b	a	+	+	DI + DII	G12-13, H12-13, CH12	4	
D II	a	2,960	3,140	a	c	b	c	a	?	+	DII + DI	D12-13, E12-13, F12-13, G12-13	4	
D III	a	1,990		c	b	b	f	c				O10-11, P10-11, Q10	4	
D IV	a	1,175		b	a	b	d	b	+		DIV + DV	CH10, I10	4	
D V	a	2,120		b	b	b	e	b	+		DV + DIV	G10, H10-11, CH10-11	4	
D VI	b	800	1,150	b	a	b	g?	c				H10, CH10-11	4	
D VII	a	2,090	2,400	b	b	b	e	b	+		DVII + DVIII	H8-9, CH8-9, I8-9	4	
D VIII	a	1,030		b	b	b	e	c			DVIII + DVII	I8-9, J8	4	
D IX	b	130		b	b	b		d				I7-8	4	
D X	b	1,250		b	a		a	d				I7-8	4	post-neolithic
D XI	b	425		b	b		e?	d				T19, U19	4	
D XII	b	1,300		b	a		f?	d				J14, K14	4	
D XIII	b	1,800	2,700	b	a	b?	f	b			DXV?	E9-10, F10, G10	4	
XIV	b	1,100		b	a			d				F8, G8-9		
D XV	b	700		b	a		f	d			DXIII?	D10, E9-10	4	
XVI	b	640		b	a			d				E11		
XVII	b	500		b	a			d				E11, F11		
XVIII	b	170		b	a			d				F12		

FIGURE 3: Mšeno, Mělník District. Basic data on ground plans and building structures in general. 1, House (D) or building structure in general; 2, Preservation: a, whole; b, part; 3, Length in cm, variant a); 4, Length in cm, variant b); 5, Longitudinal walls: a, double; b, single; c, combined; 6, Structure of longitudinal walls: a, postholes; b, foundation trench; c, combination of both elements; 7, Narrowed north side: a, gently; b, significantly; 8, Types of ground plans: a, rectangular; b, pseudo-right-angled to lightly trapezoidal; c, trapezoidal; d, strongly trapezoidal; e, trapezoidal-boat-shaped; f, boat-shaped; g, oval; 9, Triplet of postholes inside the ground plan: a, relatively numerous; b, sporadic; c, missing; d, undetectable; 10, The so-called antae +, yes; 11, The elongated pit along the side walls of the ground plan: + yes; 12, Double ground plan; 13, Location of ground plan by sector; 14, Figure no; 15, Note.

one of the inner postholes and in its immediate vicinity, and probably also a cellar in the shape of a smaller circular pit (No. 9) containing a complete large storage vessel and several whole vessels or large parts of the so-called table pottery goods (Lička 2016, 66).

The analogy represents, for example, a partially preserved ground plan from the Plotiště nad Labem site, with the difference that at one point one row of double walls from the postholes passes into the foundation trench (Vokolek, Zápotocká 1997, 46, Abb. 4, 8, ground plan is marked 227, Fig. 217, Wolf-Schuler 2009, Taf. 126, ground plan 1). In addition, the ground plan of Geithain (Steinmann 2009, 20, Abb. 5, the southernmost ground plan), ground plans from Zwenkau-Harth (Tackenberg 1937, 219, Abb. 1, Quitta 1958, 74, Abb. 1, ground plans 5 and 4, both are overlapping and the other is put in contrast to the above mentioned in the late Linear Pottery Culture). The partially preserved ground plan from Böhlen-Zeschwitz (Hoffmann 1957, 86, 90–91, Abb. 21) relates to either ground plan I or II from Mšeno.

House II (Figures 3, 4: 2). From the front view, the ground plan in a slightly trapezoidal shape defined by postholes and partly by the foundation trenches. Its longest parts consist predominantly of a double row of postholes, the outer part of which consists of

postholes, which are generally larger, deeper and further apart from the postholes of the inner part of the walls (Lička 1990b, 35). At the north end, the inner row of posts is replaced by a foundation trench, which carries on uninterrupted perpendicular to the north wall of the ground plan. The area between the second last and the last (southern) interior triplets of posts is divided by a perpendicular row of smaller postholes. A similar transverse oriented group of postholes is located a little further under the southern end of the east wall of the ground plan. The ground plan is aligned with construction pits. The south end of the west wall touches the east wall of house I (*Figure 4: 1+2*).

There are similar structures from a number of settlements. Among them are the largely preserved ground plans of houses from Chodouň II (Stolz *et al.* 2006, 77, 220, Fig. 29), Obříství (Davidová, Fleková 2014, 19, 24–25, Table 15), Olomouc-Slavonín (Kazdová *et al.* 1999, 30–32, Fig. 4, 6, house B/95), perhaps Plotiště nad Labem (Vokolek, Zápotocká 1997, Abb. 3, position cca x/115-y/90, Wolf-Schuler 2009, Taf. 126, ground plan 1), less so also Kolín (Končelová, Květina 2015, 435, Fig. 3, e.g. house "I", although in this case the double wall is very different from the double wall of house II at Mšeno). The

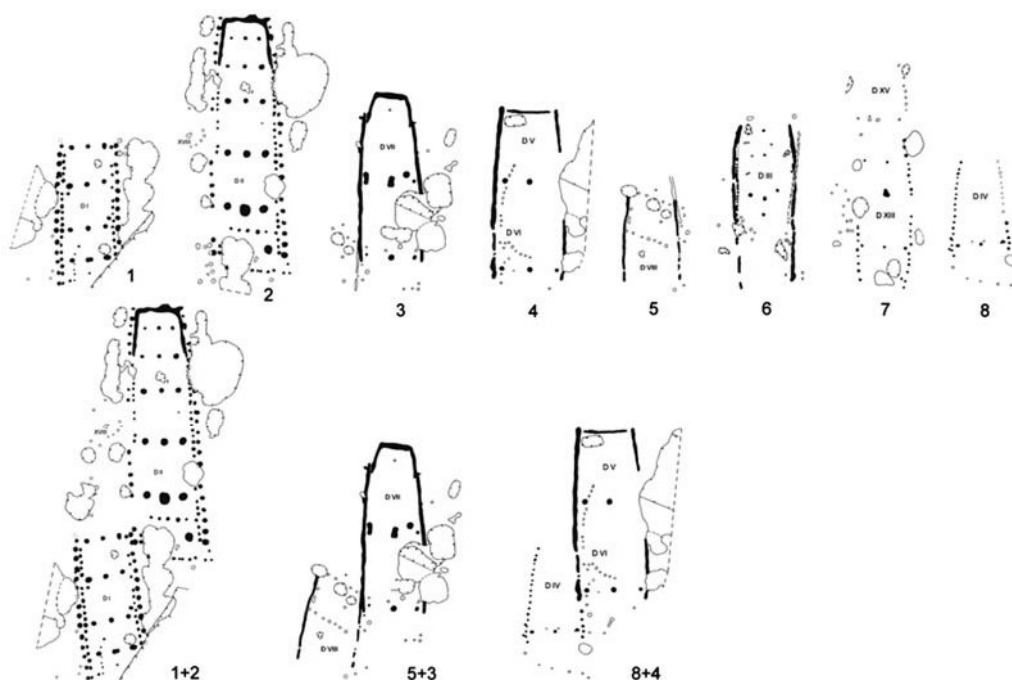


FIGURE 4: Mšeno, Mělník District. Basic types of ground plans.

ground plan from the Jaroměř site, which gives the impression that some of its details have not been preserved, coincides in one significant structural detail, in the duplication of the postholes in a very short section of the western wall (Burgert 2015, Fig. 1, left). Outside of the Czech lands, analogies can be found in Zwenkau-Harth (Quitta 1958, 69, Abb. 1: 1) and Essleben (Müller 1995, Abb. 1). In the Eythra ground plan, the inner postholes in the longitudinal double walls appear to be smaller and more dense (Firdich *et al.*, 2015, 452, Fig. 4, Type *b*, Cladders 2016, 43, Abb. 4.6, 5.1., building category *c*). It is different in that a small part of the inner row of the longitudinal wall is formed by a foundation trench. The northern branch of the trench closure is out of place in one place (unless it is a separate feature), which is a detail that appears in house II of Mšeno. The ground plan of Geithain (Steinmann 2009, 20, Abb. 5, above) partly coincides with the detail - a transverse three of the noticeably smaller postholes, a short distance ahead of the end of the longitudinal walls on the SE side. On the other hand, the postholes are not associated with the longitudinal sides of the trench closure. In the Gniechowice ground plan (Romanow 1977, 31–33, Fig. 2b, house 1) it cannot be estimated whether the original doubling of the longitudinal walls of the individual postholes was symmetrical or asymmetrical. With a certain degree of probability, the incomplete ground plan can also be attached to them Harting-Nord (Bavaria, SOB IIa), which, besides the weak trapezoidal trench closure on the north side, also have longitudinal double walls made of asymmetrically located postholes (the inner part seems more densely arranged – Herren 2003, 228, ground plan 54). Probably the closest similarity for many reasons is the building structure from the locality of Stary Zamek. It is a nearly completely preserved ground plan of a slightly trapezoidal shape, formed on the long sides by a double row of postholes, the outer ones being larger in relation to the inner ones and less numerous (Romanow 1977, Fig. 9). The northern part is defined by a continuous foundation trench, which is approximately rectangular in the shape of a trapezoid. On the other hand, we exclude the ground plan from the Welbsleben site (Kubenz 2016, 117, Abb. 11), because it is presented, inter alia, by an interpretative drawing which has no support in the archaeological situation with respect to the double longitudinal walls of the asymmetrically located postholes.

House III (Figures 3, 4: 6). Slightly trapezoidal ground plan of the house's foundation trench

construction, on both longer sides with curved walls, from which the western one is doubled from half its length. From a typological point of view it is closest to a boat-shaped or naviform type.

A similar shape can be observed from the ground plan of the house from Příšovice, which is on both long sides defined by a double, outwardly convex foundation trench, passing in the individual postholes, the distance of the two parallel lines being relatively large (Brestovanský 2009, Table 4: 13, house 13).

House IV (Figures 3, 4: 8). The ground plan of a substantially trapezoidal shape, one of its longitudinal sides is formed by postholes, the opposite side of a partial posthole / partial foundation trench. The south end of the longer wall with the triplet of interior postholes forms the shape of very short "antae". Part of the east wall forms a non-continuous foundation trench, which is alone part of the west wall of the neighbouring ground plan No. V. Both ground plans create the impression of the existence of a single construction with two units (Figure 4: 8+4). South of the ground plan, there is a row of postholes. Whether it is connected or not, isn't clear. *Note:* The structure described above as a separate unit can be interpreted as being created only from postholes (see Figure 4: 8). The fact that part of its eastern wall is formed by a foundation trench has specific causes (see above).

An analogous structure comes from Plotiště nad Labem. Only the northern end of the western wall has a similar short foundation trench (Vokolek, Zápotocká 1997, 50, building 191, Abb. 4, position cca x/10-y/35, Wolf-Schuler 2009, Taf. 126, ground plan 11). From this settlement comes the larger, but worse preserved trapezoidal ground plan, similar to previous cases with long walls from postholes but not so densely positioned (Vokolek, Zápotocká 1997, Abb. 3, position cca x/10-y/20, Wolf-Schuler 2009, Taf. 126, ground plan 9). Also the line of its western wall is somewhat different, showing a slightly convex shape. *Note:* Both of these ground plans, by their location and shape, tend to reflect on their arrangement in pairs. Their remote resemblance to the pair of tight ground plans from Mšeno lies mainly in the fact that the smaller one with its northern part is located in the immediate vicinity of the southern end of the larger ground plan. Other similar ground plan structures are known from Jaroměř (Burgert 2015, 475, Fig. 2, 4), Vchynice (Řídký *et al.* 2013, 239, Fig. 3). Concerning the ground plans of the houses, Březno has the closest ground plan to Mšeno, the incomplete ground plan of house 71 (Pleinerová 1984, 9-12, Abb. 2, 3). Of similar structures outside of

the Czech lands, the closest analogy is the ground plan from Stary Zamek, position 2a (Romanow 1977, 33, Fig. 6).

House V (Figures 3, 4: 4). Ground plan of trapezoidal shape with slightly convex curved long walls. It is formed on both long sides and on the north side by the foundation trench. Inside the ground plan it is located next to other postholes as part of the discontinuous building structure VI (see below). The southern ends of the longitudinal walls slightly extend over the plane of the inner triplet of postholes (ground plan with so called antae). From a typological point of view, this is a ground plan of a trapezoidal-boat-shaped type. The western foundation trench goes illogically to the south in the form of a row of several postholes. It forms part of the eastern wall of the neighboring house IV. Both ground plans (V and IV) create the impression of the existence of a single construction with two units (Figure 4: 8+4).

House V is similar to the ground plans of the "F" and "G" houses of Kolín (Končelová, Květina 2015, Fig. 3), only the overall shape and foundation trench definition of all sides except the south, not the internal partition in the form of a transverse trench.

House VII (Figures 3, 4: 3). The ground plan is of an irregular trapezoidal-boat-shaped shape. It is formed on both long sides and on the north side by the foundation trench. The line of the foundation trench on the longer sides in the northern part is strikingly offset, in one case in addition, a narrow gap is interrupted. The southern ends of the longitudinal walls slightly extend over the plane of the inner triplet of postholes (ground plan with so called antae). Part of the southern end of the western wall of the ground plan coincides and overlaps with the foundation trench, which is part of the neighboring ground plan of the house VIII. The location of several holes south of the foundation ends of the longer walls may give the impression that they are part of a single building structure. We see the same situation as the pair of ground plans IV and V (see above). Both ground plans (VII and VIII) create the impression of the existence of a single construction with two units (Figure 4: 5+3).

An almost ideal analogy is represented by the ground plan of the house from the Central Bohemian polycultural site Chotýš (Dobeš, Beneš 2018, 110, Fig. 2), both in its overall shape and the continuous foundation trenches on three sides and in some building details. Similar structures to house VII can be partly seen in the ground plans of "F" and "G" houses of Kolín (Končelová, Květina 2015, Fig. 3), only the

overall shape and foundation trench definition of all sides except the south, not the internal partition in the form of a transverse trench. The construction element of the offset and narrowing of the northern trapezoidal part of the ground plan itself is also known from an extraordinarily large structure defined by the foundation trench, originating from the settlement Hostivice-Palouka (Figure 5: d). Its purpose is to increase the resilience and stability of the house (Pleinerová 2009, 547, Fig. 1–3).

House VIII (Figures 3, 4: 5). A trapezoidal-boat-shaped ground plan, on both long sides it is marked with a slightly curved foundation trench. The northern section of the eastern wall merges with the south section of the western wall of the neighboring ground plan VII. Most of the inside of the postholes belong to another, post-Neolithic ground plan X (see below). *Note:* The relationship of the ground plan VIII to the ground plan VII (Figure 4: 5+3) with the position appears to be identical to the relationship of the plan IV and V (see above).

Analogical examples are known, for example, from the Příšovice site. The ground plans of houses 7 and 11 have slightly convex lateral foundation trenches, slightly outwardly bulging, sometimes passing through individual postholes (Brestovansky 2009, Tab. 4: 7, 11). Also partly from Jaroměř. For example, the ground plan of house no. 7 (Burgert 2015, Fig. 2) also has a slightly trapezoidal shape and slightly convex longitudinal walls, but they differ in the existence of internal posts. A similar plan was discovered in Zwenkau-Harth (Quitta 1958, 70–71, Abb. 1: 3, ground plan 3). Similarly, the Geiselhörling-Süd ground plan is primarily a general shape with slightly curved walls, not the layout of the inner triplet of postholes (Riedhammer 2015, Abb. 3, SOB III).

House XIII (Figures 3, 4: 7). A partial boat-shaped ground plan, whose two longitudinal, slightly convex walls consist of a simple row of postholes. Analogic structures are located outside of the Czech territory. For example, in the Hienheim site (Modderman 1977, 22, Abb. 6, partially preserved house plan 9), Hambach 260 (Dohrn-Ihmig 1983b, Abb. 16, House IV) and Geiselhörling-Süd (Riedhammer, Engelhardt *et al.* 2006, Fig. 26, SOB III). There is also a less likely possibility that part of the ground plan could be part of 2f ground plan XV, located to the north (Figure 4: 7, see below). The reason is that its eastern, slightly convex side is located just a little further north and shows the same N-S orientation. In that case, the total length of the "extended" ground plan would be 2,700 cm. Similarly

large or larger ground plans of this type are known, for example, from the early Rössen Culture (Dohrn-Ihmig 1983, 27–28, Abb. 16: IV, 17: VI).

OTHER BUILDING STRUCTURES

In addition to the above-described complete or almost complete structures, which can be interpreted as ground plans of Stroked Pottery Culture houses, there has also been a small number of structures whose original shape and hence function and date classification are more difficult to determine. For this reason, we are only going to list them here. We also include one larger group of post-Neolithic age.

A small part of *structure IX* (Figure 2, sector I7-8) probably represents the northern part of the house B / 96 defined by the foundation trench, comparable, for example, to the partial house from the Stroked Pottery Culture from Olomouc-Slavoňín (Kazdová *et al.* 1999: 33, 36, Fig. 5, 6: 3). The foundation trench, defined by the longitudinal walls of the house, perhaps trapezoidal-boat-shaped shape, can be identified in the partial *structure XI* (Figure 2, sector T19).

The remaining partial structures consist of individual postholes arranged in a straight or curved line. Apparently, the eastern part of the boat-shaped ground plan of the house refers to a number of tiny postholes arranged in a moderate arc (*structure XII*, Figure 2, sector K14). *Note:* The structure of the overall line of a series of postholes, its shape in elevation, orientation, size of the postholes, but also by the existence of internal postholes strongly resembles the partial ground plans (XIII, XIV, XV), located about 70 m to the north. *Structure XIV* (Figure 2, sector F8) seems to have one of the longitudinal walls of a more indefinite ground plan of a house.

The definite curved nature of the postholes defines the structure. Primarily *structure VI* (Figure 4: 4, sector H10), which is located inside the discontinuous ground plan of house V and is therefore in a negative relationship. It is also interesting because there are relevant analogies to it. These include the oval ground plan from Hambach 260 (Dohrn-Ihmig 1983a, Abb. 27), from Plotišť nad Labem (at least one substantially convex curved row of postholes as a probable part of the ground plan of the building, based only on the overall plan, in: Vokolek, Zápotocká 1997, Abb. 3, position x/122-y/57). From a typological point of view, it could be, for example, a partial ground plan of a longer western wall of a smaller building similar to that found in Bylany

(ground plan of house 500 with a so-called apseid closure of the late Lengyel period, Soudský 1966, 71, interpretative drawing in Fig. 19, initial drawing in Pavlů *et al.* 1987, 11). Regardless of the fact that one of its possible structural elements, a short, obtuse angled grooved formation, located near its northern end, is very unlikely to be connected with the construction (Hampel 1989, Catalog No. 126, based on oral information from I. Pavlů). The mentioned grooved, somewhat irregular formation may also represent an unintentional feature (for the information, my thanks to I. Pavlů, *in litt.*, November 24, 2017).

The greatest difficulty in joining the postholes with some regular building structure was found in the area between houses II and XIII. Conscious of the fact that the boundary between what corresponds to the regular building structure on the one hand and the speculative connection of any postholes on the other hand is quite blurred. In all cases, small curved formations are made from small postholes, namely structures XVI, XVII and XVIII (Figure 2, sectors E11, F12). Their interpretation, dating, and possible links with other structures would be purely speculative. I evoke, that similar formations are found in other Neolithic settlements – e.g. Plotišť nad Labem (only on the basis of the overall plan, Vokolek, Zápotocká 1997, Abb. 3), Dresden-Prohlis (Link 2014, 183, Abb. 219), Wahlitz (Kaufmann 2017, 122, Appendix 1, especially in the quadrants G, H), Deiringsen/Ruploh (Günther 1976, 23, Abb. 7 – here in direct connection to house II), Dortmund-Oespel/Marten (Brink-Kloke, Schneider 2013, 112, Abb. 10 – here also in direct connection to house VI).

At the end of this section, we mention the building structure X (Figure 2, sector I7-8). It is an incomplete plan of a rectangular shape, consisting mainly of two parallel rows of postholes, a longer axis oriented east-west, with a deviation of about 17° to the south, that is, quite different than virtually all previous structures with a north-south orientation. The ground plan overlaps with the ground plan of the houses VII, VIII and IX. It is probably a partial ground plan of a rectangular type from the post-Neolithic age. The narrow rectangular shape, orientation and other features coincide with the ground plans of the Únětická Culture (Pleinerová 1992, 388–389, Figs. 7–8).

DOUBLE GROUND PLANS OF HOUSES

A total of six ground plans, made up of three pairs, deserve special attention (Lička 1990a). In the sphere

of expanding Neolithic cultures, the so-called complex of Bandkeramik, and not only within them, there are well-known cases, where the ground plans of houses are clearly connected to other ground plans of construction structures, by shape, size or overall character, there are differences (individual, that is nearby structures are a different category of structures). Together, however, they can form one compound entity. While the first (house) is attributed primarily to residential functions, the other is attributed either to the mere extension of the existing living space (e.g. as an annex), or to a predominantly economic significance, such as a barn for cattle, a palisade fence defining a field, garden, yard or space for other economic activities. Compare, for example, the settlement of Bylany (Pavlů *et al.* 1985, Tab. 17), Inden (Kuper 1968, 443, Kuper, Lüning 1975, 94, 96, Abb. 6, Dohrn-Ihmig 1983b 41-42, Abb. 26), Jülich-Welldorf (Dohrn-Ihmig 1983a, 238, Abb. 1), Deiringsen/Ruploh (Günther 1976, 23, Abb. 12), Dortmund-Oespel/Marten (Brink-Kloke, Schneider 2013, Abb. 10), Atting-Rinkam (Riedhammer 2003, Abb. 2), Wetzleinsdorf (Urban 1980, 11, Taf. 1-4).

There will also be a combination of two types and thus apparently functionally the same or very similar ground plans of houses, through the system of foundation trenches and palisade lines. It is possible to take an example from the Western European later Bandkeramik culture from the Vaux-et-Borset site (Hauzeur 2010, 222, Fig. 5) and from its Eastern part

from the Targowisko settlement (Czerniak 2016, 38, Fig. 2.3), from the Stroked Pottery Culture in Bohemia from Jaroměř (Figure 5: c; Burgert 2015: Fig. 2, 5) and Kolín (Končelová – Květina 2015, Fig. 2, 3). Such a bounded free space between houses, without knowing what it was specifically used for, symbolizes, together with the construction, a more complex, higher economic and residential entity reminiscent of a homestead. It can be imagined that, like the houses with an enclosure, these could also belong to families with an important social status (Pavlů 2000, 226).

In addition, ground plans of houses of the same or similar type are known, which form conspicuous pairs on the area of the exposed settlements, without being joined together by means of an added construction element. The distance between these pairs is larger or smaller, as is the distance between houses within a pair. From the study of the cultures of the late Neolithic period, for example, two pairs of ground plans of roughly the same building culture type from the beginning of the Stroked Pottery Culture (SOB I) at the Straubing-Lerchenheid settlement (Brink-Kloke 1992, 100, Abb. 8.3, Riedhammer 2003, 476). A similar situation is found in Geiselhöring-Süd (1 pair, Engelhardt *et al.* 2006, 72, Abb. 38) and especially in the late Lengyel settlement in Březno at Louny (Pleinerová 1984). In the last mentioned locality, a total of 3 pairs of ground plans of trapezoid-shaped houses were basically side by side, with the left-hand plan always wider and larger. (Pleinerová 1984, Abb.

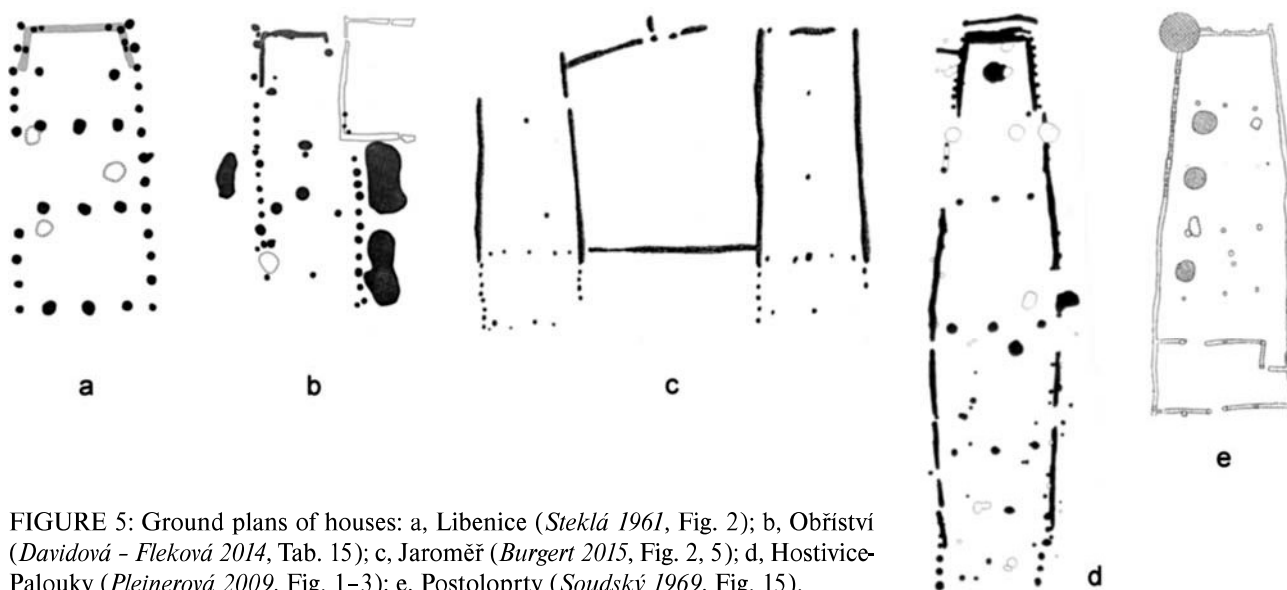


FIGURE 5: Ground plans of houses: a, Libenice (Steklá 1961, Fig. 2); b, Obříství (Davidová – Fleková 2014, Tab. 15); c, Jaroměř (Burgert 2015, Fig. 2, 5); d, Hostivice-Palouky (Pleinerová 2009, Fig. 1-3); e, Postoloprty (Soudský 1969, Fig. 15).

2, Wolf-Schuler 2009, Taf. 122) Whether houses in pairs were constructed simultaneously, at different times or at a certain time, but that they were standing and used for a while, is not obvious. However, even in this case, two interpretations may be preferred: the houses in the pair stood at the time of their existence at the same time (as a consequence, one of them could fulfill an economic function) or stood and operated at the same time only partly with the result that they only fulfilled the residential function, while the inhabitants of both units were connected by close family ties (Pleinerová 1984, 33).

Sometimes, quite rarely, the ground plans within a pair are close to each other (at least a small part touches) or are directly interconnected in such a way that a part of the wall of one ground plan is common to the part of the wall of the second ground plan. The latter variants of ground plan pairs were found at the Mšeno site. On the one hand, a pair of houses I-II (*Figure 4: 1+2*), on the other side of a house IV-V (*Figure 4: 8+4*) and VII-VIII (*Figure 4: 5+3*). In all of these pairs, the western structure is smaller and is situated somewhat to the south of the south end of the greater building. The robustness, so to say, is the same for the pair of houses I and II (both have double longitudinal walls). In the two remaining pairs, the smaller ground plan appears to be more subtle (the foundation trench of a smaller width or the place of the groove wall forms a simple row of small postholes). The ground plan I has at least one posthole from the north end of the eastern wall, which touches a posthole from the southern end of the west wall of house II and at the same time the construction pit 3 of house I is covered by part of the southern area of house II. Both houses should therefore be regarded as non-contemporary.

On the other hand, the other two pairs are different. First, a part of the east wall of house IV merges with a part of the western wall of house V, and there are two different building elements (partly postholes, partly base foundation trenches). For the next pair (houses VII and VIII), the situation is analogous, except that both houses are defined by a single construction element, a foundation trench. Secondly, neither of these houses is bordered on the sides by characteristic building pits and therefore none of them can be dated directly. Although the latter two pairs of ground plans created two organic units in the field, the chronological position of the ground plan in the double ground plans cannot be clearly determined. Either they were present for some or all of their existence, or they were non-

contemporary, each house in the pair was created after the extinction or non-use of the second house. To interpret the mutual disparity of the houses in these pairs, one could look at the apparent non-contemporary nature of houses I and II. Regardless of the close relationship described above with the other ground plans, and their mutual respect in the pairs, there may have been deeper ideological reasons. From one point of view, it is not as important whether the newly-emerging building was linked to an existing building, its ruin or just some traces of it in the field. In any case, it can symbolize the continuity of the place and perhaps the conscious admittance of the relatives of the inhabitants, as in similar cases (for example, in Vochov a house of late Linear Pottery Culture could be built on the ruins of the older house: Pavlů – Metlička 2013: 126–127). We have no support to suppose that the smaller houses in the pairs could have only a different function than residential, e.g. economic, even in the form of an indication.

All three double ground plans were located at a very close distance from each other along one line following the northeast – southwest axis. (See similarly, see Miskovice 2: Pavlů 1998: 75–76, Fig. 3, Pavlů 2000: 238, Jaroměř: Burgert 2015: 475, Kolín: Květinová – Končelová 2015: 442, Cuiry-lès-Chaudardes: Illet *et al.* 1982: 57, Fig. 5, Schwanfeld: Lüning 2005: 54, Abb. 4, 9–11.) From preliminary findings, we can say that from the three pairs of ground plans, in a given location there only existed one at a time. The oldest one (houses I and II) is well-dated to a later phase of an early stage of Stroke Pottery Culture. The remaining two pairs, both by typology and by the settlement material in their vicinity, correspond to the late stage of the SPC. There is a legitimate impression that one family has grown over time, the new generation has always moved repeatedly (and the original houses have been dilapidated and destroyed), and has built its new dwellings not far from the double ground plan houses I and II. At the same time with this long-term process, according to one possible interpretation, a similar partial process was carried out within each double ground plan: in line with what was said above, a ground plan (house) could have been built first, then the other, without being able to determine whether it was the smaller or larger house which was first, unless the process was much more complicated. At the core, it reminds us of a similar sequence of events as reconstructed at the treasury of the arrangement of houses in one row and other facts at the Schwanfeld site from the time of the oldest Neolithic (Lüning 2005: 54 ad.).

DISCUSSIONS AND CONCLUSIONS

The *overall shape* of the ground plans was rectangular with a slight narrowing particularly on the west side of the northern section (the ground plan is pseudo right-angled to slightly trapezoidal). In all other cases the ground plan has a slightly or heavily trapezoidal shape, always narrowed to the north side. (To a certain extent, we leave a few structures in the form of an extremely pronounced curve formed by postholes – in particular the structure VI, partly XVI, XVII, XVIII – because of their rudimentary nature and thus the impossibility of interpreting them credibly.) The ground plan of the houses is formed on two longitudinal sides (house I, III, IV, VIII, XIII) or on two parallel sides and on the north side (house II, V, VII). The longitudinal walls are simple, i.e. they consist of a series of construction elements (house IV, V, VI, VII, VIII, XI, XII, XIII, XIV, XV and the above-mentioned arched structure), or twinned (house I, II), exceptionally, they form one row on one side, and on the other, partly two rows (house III). The line of the longitudinal walls is usually slightly to gently convex (in the case of a possible ground plan of the structure VI extremely curved), sometimes with straight sections or along the length of the arched and straight sections (house I, II, III); only once the longitudinal walls were almost straight along the side (house IV). The *interior* of the ground plan is set up by the triplets of postholes with smaller (house I, II) or larger distances between

them (house V, VII, probably house XIII). Some were without transverse triplets of postholes (house VIII, house IV has a transverse triplet of postholes only at the southern end), others have another arrangement of postholes (house III). In several ground plans the longitudinal walls, at the southern end, go beyond the plane of the nearest triplet of postholes, leaving a so-called antae (house I, IV, V, VII). Other than this, the southern "anta" of the west wall with several smaller postholes make up the ground plan of a small rectangular area, the north side is open to the inside of the ground plan (house I). We did not notice such a ground plan detail in any other ground plan in the field of expanding the Stroked Pottery Culture. Only two ground plans are lined on the longer sides with elongated so-called building pits containing the dating material (house I, II). The *orientation* of the houses of the SPC are aligned north-south, with a slight variation mostly to the west (4° – 9°), exceptionally to the east (5° – 9° , house III and perhaps XI).

The above-described ground plans of the houses and other building structures show unusually large variability. Strictly speaking, no two of them can be said to repeat all the essential characters; no two are identical. This variety of houses, including their size, depends on many circumstances, including the time of their origin, the local tradition, the number of their users, the professional building skills, the building materials used, the time of the building, the climate and, last but not least, whether they are preserved to date or in whole,

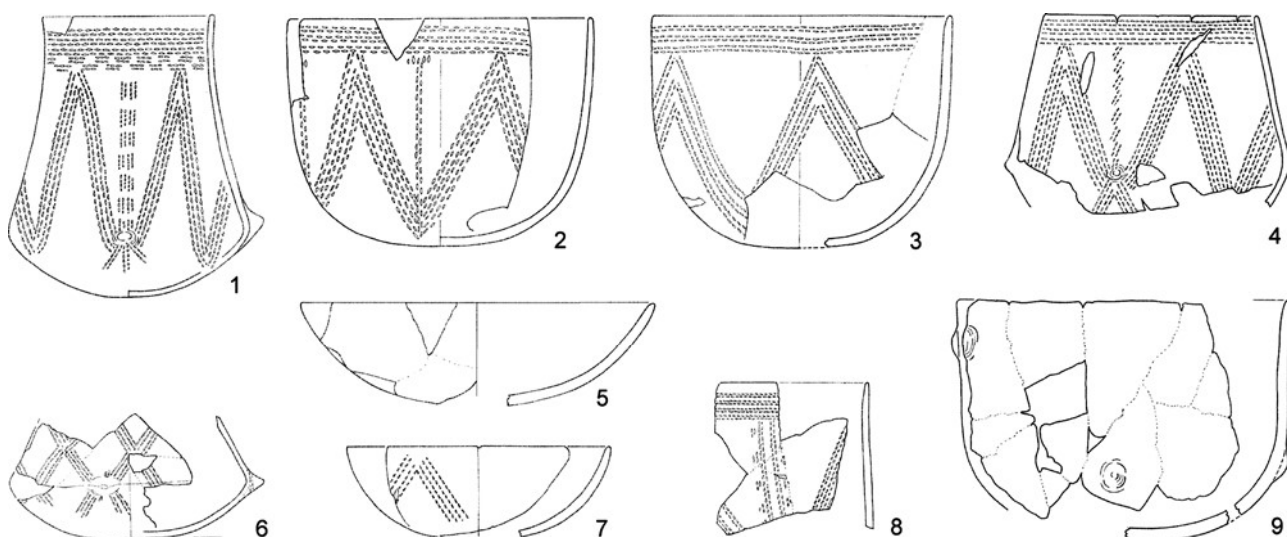


FIGURE 6: Mšeno, Mělník District. Selection of pottery from the later phase of the early stage of Stroked Pottery Culture. Feature 3: 2, 8. Feature 9: 1, 3, 7. Feature 11: 6. Feature 13: 4, 9. Feature 24: 5.

and finally whether or not they have been able to uncover them in the archaeological excavation. However, despite the above-mentioned typological diversity, they have some ground plans closer to each other and are therefore comparable with one another if we place some emphasis on some of their construction elements. They can then be divided into groups and, if necessary, made into a more or less logical order, especially when we take into account other circumstances (structures dated directly against undisturbed ones and observations based on horizontal stratigraphy).

The first group consists of ground plans with double longitudinal walls, lined with building pits (houses I and II, *Figure 4: 1+2*). They are datable to the later phase of an early stage of Stroked Pottery Culture. All others, which can be identified with the Stroked Pottery Culture, correspond to their late stage (*Figure 4: 4-8*). In the second group, we can include ground plans V, VII (with a very probable time sequence) and perhaps IX, the next group of houses III and VIII (ground plans defined only on the longitudinal sides, namely the foundation trench, ground plan III on the

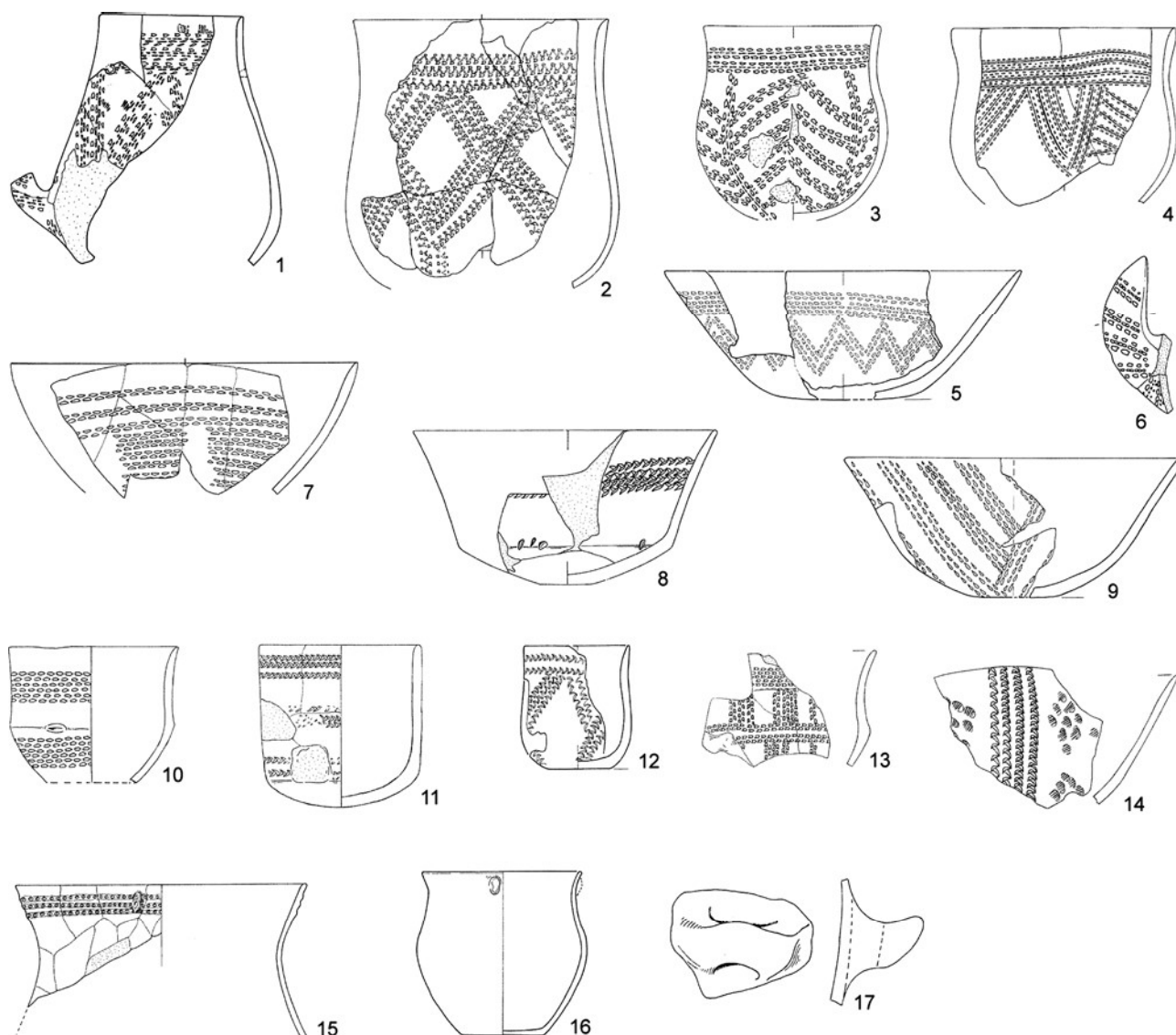


FIGURE 7: Mšeno, Mělník District. Selection of pottery from the later stage of Stroked Pottery Culture. Feature 7: 5, 9, 12, 16. Feature 10: 2, 4, 6, 7, 11, 13, 15, 17. Feature 14: 1, 3, 8, 10, 14.

one side doubled by a row of postholes). Up to now, the ground plans above, except for house III, are close to each other in their north-south orientation, with a slight variation to the west. The fourth group is represented by house IV (it has a distinctive trapezoidal shape and is defined by a longitudinal single row of postholes). Finally, it is possible to incorporate houses XIII, XV and possibly XII. They are also defined only on the longitudinal sides by a simple row of postholes, in this case arranged in a moderate curve. In addition, from the point of view of mere orientation, houses III and XI differ from each other by showing a slight deviation from the basic north-south direction to the east.

The sequence of selected ground plans at different levels and in different planes indicates a purely typological and also partial chronological sequence (houses I and II of the early Stroked Pottery Culture stage and all other houses of the late Stroked Pottery Culture, double longitudinal walls from the postholes against the walls of the foundation trenches or simple rows of postholes, the shape of the ground plan from slightly trapezoidal to markedly trapezoidal, the presence or absence of the inner triplets of the postholes, or the degree of their density). It is understood that the relative time of the ground plan (from the third group above) within the late Stroked Pottery Culture cannot be clearly determined. Some houses show a strong resemblance not only to houses in Bohemia and Moravia, but also to houses from the Dresden and Leipzig basins, that is the territory connected with today's Bohemia by a natural way of communication in the form of the river Elbe and its tributaries. Any relationship to the cultural environment of today's Bavaria is only to a lesser extent (see above given analogy).

Of all the houses and structures of Mšeno, however, on a relatively small area, it can be said that they were predominantly in one area, in the belt between the sectors D and I. The distances between individual contemporary houses seem to be large, the built-up area in the settlement in Mšeno was therefore very thin. (This is valid assuming that the finding situation in the unexcavated part of the settlement was similar to that in the excavated part.) The ground plans in the space, unlike the double-ground plans (see above), did not show any special arrangements. Houses in the Mšeno settlement do not cover the entire development of the Stroked Pottery Culture, but only the larger part of it, from the late phase of the early stage to the apparently full level of the Stroked Pottery Culture. The clearly

defined building structures from the early phase of the early Stroked Pottery Culture (Lička 2016: 99) are not yet known in the Czech Republic. Whether it is possible to assign ground plans from Libenice (*Figure 5: a*; Steklá 1961: 85–87, Fig. 2) and Obříství (Tab. 5: b, Davidová – Fleková 2014: 19, 24–25, Tab. 15), or it should be perceived as another regional, not time-dependent, architectural type of the later phase of the early Stroked Pottery Culture stage, is not obvious. The small plan of a slightly trapezoidal shape from Libenice forms on the long sides only a simple row of postholes, in the northern part but with a double continuous foundation trench, which also represents a northern closure. It is also similar to the ground plan of the Obříství house. In both cases, there are suspicions or indications that the long walls were originally double postholes along their entire length, and that their inner row (or, in general, one of the two rows) was not maintained (see Lička 2019). The same question is discussed for other sites by other authors (Hampel 1989: 6, Atting-Rinkam, SOB I – Riedhammer 2003: 472, Fig. 2, 3, Goseck, SPC – Bertemes – Northe 2011: 24).

For completion we also show, that the end of the Neolithic development, the post-Stroked Pottery Culture with the later Lengyel pottery in Bohemia, are characterized by a house from Postoloprty (*Figure 5: e*; Soudský 1969: Fig. 15), formally the clear mirroring tradition of the building of the Lengyel Culture.

Finally, we have to ask the question, whether there was another architectural type of ground plan, which from a purely typological point of view, immediately pre-dated the types of houses such as houses I and II from Mšeno. More specifically, we mean, above all, the construction of longer double walls consisting of asymmetrically located postholes. It could be the slightly boat-shaped ground plans from the early Stroked Pottery Culture from the Straubing-Lerchenhaid area (house 6) with one-sided trapezoidal foundation trenches on the north side and with a slight convex shape to the longitudinal walls partially making up strict pairs and partially asymmetrically placed (more densely in the interior) postholes (Brink-Kloke 1992: 58–59, Fig. 10). On the other hand, the asymmetry in the location of the postholes in double walls cannot always be associated only with cultures using double and multiple strokes for ceramic decoration (see, for example, the ground plan of the Linear Pottery Culture house from Eythra – Campen 1996 *et al.*: Abb. 2, Cladders 2016: 44, Abb. 5.1b).

In the possible development of ground plans of houses in the Stroked Pottery Culture and related to it

the cultures of the late Neolithic, one can observe strong common tendencies, leading from almost a rectangular shape, over the ground plan, partly lightly trapezoidal with slightly convex walls, to the boat-shaped and markedly trapezoidal ground plans. At the same time at the beginning of the development of SPC, the type with double longitudinal walls consisting of individual, asymmetric postholes predominates. It is possible that it was preceded by a shape with longitudinal walls made up of one row of postholes (reservations were made above). Later, in the later stage of SPC development, the longitudinal walls are simple. They consist of a foundation trench or a single row of postholes. This dynamic phenomenon is associated with the gradual waning of the supporting posts within the ground plan. To determine which of the characteristic and secondary design features are associated with regional development or with other possible (economic) functions of the construction, is almost impossible given the relatively small number of relevant cases.

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Milan Lička*

Španielova 1254

163 00 Prague 5-Řepy

E-mail: milan.licka234@seznam.cz

*Corresponding author.