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**LIPTOVSKÉ MATIAŠOVCE-BOCHNÍČKY SITE:
A NEW NEOLITHIC SETTLEMENT IN THE REGION
OF LIPTOV (CENTRAL SLOVAKIA)**

Abstract: In 2017, a new neolithic site was discovered south of the village of Liptovské Matiašovce, on the elevated ridge of the Bochníčky site. Numerous finds of sherds, daub and chipped lithic industry from dominant Jurassic sub-Kraków flint were obtained by a primary survey and a succeeding small evaluation excavation in form of three trenches. Decoration of the thin-walled neolithic pottery of mostly semiglobular shapes points to presence of the younger Linear (musical note) Pottery culture, Želiezovce and rarely the Bükk culture. Unique chipped artifacts made of obsidian are also associated with the last mentioned culture. Part of the chipped lithic industry from the survey belongs to the late Paleolithic and Mesolithic. Among the previously documented rare neolithic settlements from the region of Liptov, the newly discovered site represents the richest neolithic settlement which should be complexly studied. It is being destroyed by ploughing every year.

Key words: northern Slovakia – Liptov, Middle Neolithic, Late Linear Pottery culture, Želiezovce and Bükk cultures

I. INTRODUCTION

The region of Central Liptov, mainly the area of the southern spurs of the Chočské pohorie hills north of Liptovské Matiašovce has recently brought new information on the settlement from Prehistory to the Middle Ages (Benediková, Pieta 2018; Furman, Šimková, in press). South-southeastwards of the village of Liptovské Matiašovce, approx. 3.5 km as the crow flies from the village, a new site from the Middle Neolithic was discovered at the site of Bochníčky in March 2017. Chipped lithic industry and pottery fragments were found during a surface survey by

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amateur collaborant Tatiana Marušiaková, who later informed the co-author of the submitted article, a representative of the Regional Monuments Board in Žilina (Furman, in press). Surface prospecting and a non-extensive investigation in form of trenches for scientific and documentation purposes, which followed after the primary information on the new site, brought a rich collection of chipped artifacts and sherds.² The aim of the submitted contribution is to present preliminary results of the analysis of the obtained archaeological material from this investigation.

II. DESCRIPTION OF THE SITE AND CHARACTER OF INVESTIGATION

The cadastral area of the village of Liptovské Matiašovce is situated north of the River Váh, in the geomorphological unit of Fatra-Tatra, in the unit of Podtatranská kotlina basin, sub-unit of Liptovská kotlina basin and in Matiašovské háje suburb. The studied archaeological site is located south of the above mentioned village (altitude 648.1 m a.s.l.), on an elevated site called Bochničky with slightly sloping terrain near a water source (Fig. 1). It is the western spur of the mountain ridge of Slatvina, slowly transferring to the Chočské pohorie mountains in the north. Today, the site is agriculturally used and represents an open-air site unprotected from unfavourable weather conditions.³

The geological bedrock of the studied site contains rocks of the Late Cretaceous and Paleogene on the Inner Carpathians with quaternary sediments of the Middle Pleistocene.⁴ From the aspect of pedology, the studied area belongs to the territory with dominant saturated pseudogley cambisols (soil type H6).⁵

The site survey was carried out within a few days by means of a surface collection and a following one-day trench excavations. One day of surface prospecting was carried out in form of geodetic measuring of each discovered prehistoric artifact (sherd and chipped industry) with the aim to detect an approximate size of the settled area (Fig. 2). Regardless of the rare settlement from the Late and Final Bronze Age and finds from the Middle Ages to Postmedieval period, neolithic finds occurred over the area of approx. 1 ha. Three archaeological trenches were located in places with the most frequent occurrence of archaeological material detected during the survey (Fig. 3; 4).

² The archaeological investigation for scientific and documentation purposes was carried out by Archeovýskum, s. r. o. company and led by L. Záhorec in cooperation with the Regional Monuments Board in Žilina and SEPTENTRIO Society. The investigation was based on the decision of the Regional Monuments Board in Žilina no. KPUZA-2017/9586-2/24845/FUR of 3 April 2017 (*Záhorec, Furman 2017*).

³ The unprotected location of the site is documented by the fact that during the surveys and trench excavation, an unbelievably strong wind was blowing. (Note by the authors).

⁴ Source: <http://apl.geology.sk/gm50js/> (as of 14 March 2019).

⁵ Source: <http://www.podnemapy.sk/poda400/viewer.htm> (as of 14 March 2019).



Fig. 1. Liptovské Matiašovce, Bochničky. View of the site from southwest with indicated approximate size of the site (Photo by M. Furman)

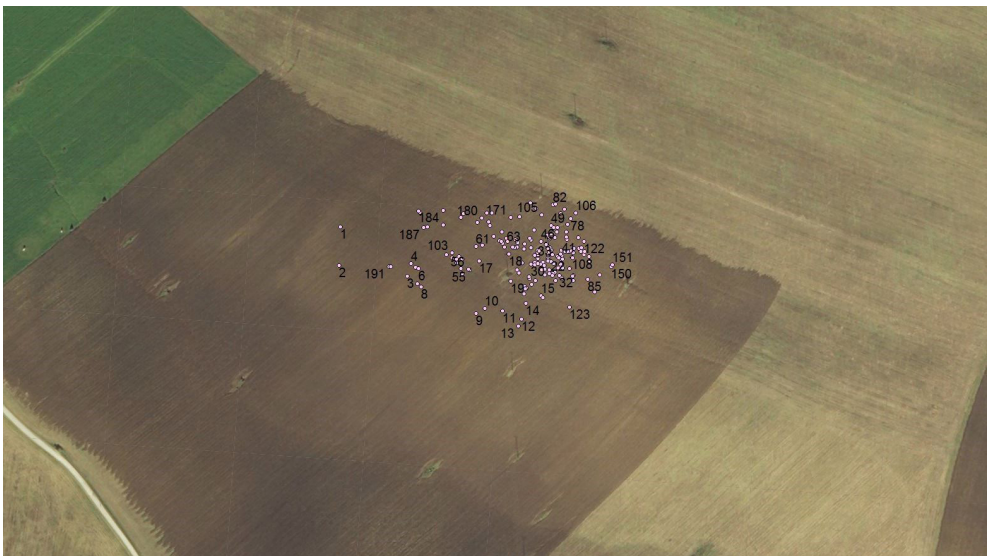


Fig. 2. Liptovské Matiašovce, Bochničky. GPS spatial measuring of neolithic finds (Processed by M. Furman)



Fig. 3. Liptovské Matiašovce, Bochničky. Southeast view of trenches I-III (Photo by L. Záhorec)

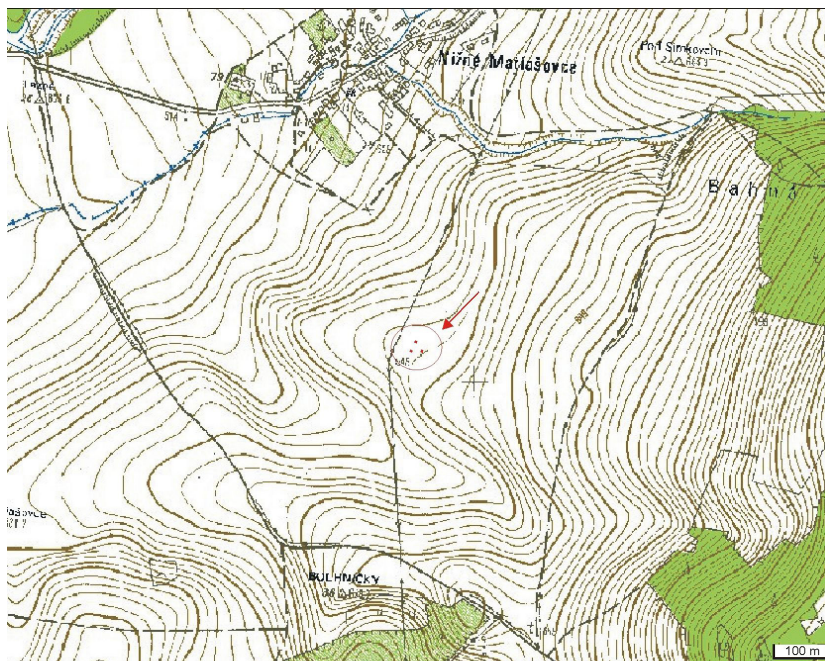


Fig. 4. Liptovské Matiašovce, Bochničky. Location of the studied site and archaeological trenches I-III/2017 on a map segment with scale of 1:10000 (Processed by L. Záhorec)

III. BRIEF RESULTS OF THE INVESTIGATION

Three small trenches of 2 x 2 m were excavated altogether. Three features were identified in them. In trench III, under the topsoil, a shallow feature with an irregular groundplan and filling of black-brown soil layer, with rare occurrence of chipped lithic industry and sherds of the Late Linear Pottery culture, was detected. A similar character of the feature was detected in trench II, where – besides finds of chipped lithic industry and pottery – miniature fragments of daub were obtained. Both “features” were detected in evaluation trenches only partly, thus, we cannot comment on their specific function by now. We cannot exclude the possibility that they were remains of shallow exploitation pits (clay pits) or just relatively thin remains of a cultural layer. The layer was severely damaged as a result of solifluction and agricultural activity (ploughing). In trench II, under the level of the cultural layer or a shallowly preserved feature, a pole pit was detected. The pit has diameter of 20 cm and flat bottom detected only 20 cm from the bottom of the cultural layer (Fig. 5). None of the documented features contained a remarkable concentration of movable archaeological finds. The not very extensive archaeological survey, however, confirmed presence of assumed sunken features associated with the neolithic settlement.



Fig. 5. Liptovské Matiašovce, Bochničky. Trench II/2017, feature 3 – cross-section
(Photo by L. Záhorec)

IV. POTTERY

Pottery has been preserved mostly in small fragments and not a single type of vessel can be complexly restored. The character of the used pottery material enables identification of two pottery types. First group contains fine thin-walled pottery without admixtures whose decoration is a typical expression of the Late Linear (musical note) Pottery culture and mainly its younger expression – the Želiezovce culture (or group). Decoration of two small sherds reveals expression of the Bükk culture (Pl. II: 1, 2). Fine grey, grey-brown or creamy coloured pottery belongs predominantly to the group of small semiglobular vessels with more or less inverted rims; bowl shapes with slightly everted mouths are less frequent. There is also a vessel on a high and conically flared hollow stem (Pl. IV: 8) and vessels with handles – one with a horizontal and another with a vertical handle with lifted rims (Pl. III: 2; IV: 11).

The second group of pottery belongs to the range of utility ware with organic and anorganic admixtures. The first type of admixture is characterized by remains of husk, grass, stalks and maybe imprints of grown cereals (grains); the second group contained admixture of sand with small stones and grains of muscovite (common mica) as well as crushed sherds. Typologically, mainly semiglobular and bowl-shaped vessel forms prevail, some with suggested necks. The utility ware contains mainly middle-thick and thick-walled forms; significantly thin-walled shapes also occur rather frequently (Pl. II: 10). The ornaments are limited mainly to plastic cordons with scratches or finger imprints, plastic protuberances of various forms or the surface of the vessel is covered with simple horizontal or vertical nail scratches. Surface of some vessels is finished/polished probably with straw, however, it is not typical brushing as known in the Late Eneolithic or the Bronze Age cultures. The plastic protuberances are lingulate, breast-shaped, but mainly stopper-shaped – straight and more or less deflected in the middle (Pl. II: 8, 10; IV: 9). Decoration of the surface by a row of larger and smaller finger-pressed dimples (Pl. III: 3, 8) is not rare either. Combination of plastic and impressed decoration also occurs (Pl. II: 8, 11).

Decoration on the fine tableware is significant for dating of the neolithic settlement. Simple engraved lines interrupted or filled with noteheads/dimples occur. Individual notes without accompanying engraved decoration are common. In the engraved ornament, simple, double and triple lines occur. They run parallelly and are made with a single, double and triple comb-like and definitely bone tool without any traces of painting or roughening of the surface between those engraved lines. Triple lines are sometimes crossed by an elongated note-shaped dimple, which has typical classical Želiezovce expression only in one exemplar (Pl. I: 9). On the basis of typology and chronology of the neolithic pottery, it is obvious (Pavúk 1969; 1994), that the pottery from Liptovské Matiašovce can be classified in the

classical and late decoration styles of the Late Linear Pottery culture (LPC II, III). The decoration which can be classified in the early and classical phases of the Želiezovce culture (ŽC I, II) is also significant. Typical late Želiezovce pottery, e. g. pyriform vessels, long scratches interrupting multiple engraved lines or individual Želiezovce scratches (Cheben 2000) did not occur.

The Bükk pottery, which is unfortunately represented only by indistinct small sherds (Pl. II: 1, 2), is also foreign in the local environment. Although the preserved decoration does not allow its precise classification in one of the identified stages, it seems that it belongs to its classical Bükk style. It cannot be definitely decided whether it is a direct import of vessels of the above mentioned culture (or their unknown content) from its expansion to Spiš and Liptov and further to Poland, or whether it is pottery imitating the Bükk style in a form previously used in the Tiszadob group in Spiš (Soják 1998, 108 f.).

The category of other clay products includes a single fragment of a fine creamy-grey sherd with a secondarily drilled perforation. Functional interpretation of this object can consider two alternatives. We cannot exclude the possibility that this find documents repairing of an original damaged vessel or it was a ring made from a sherd with a central opening (Pl. II: 3). The category also contains an uncertain fragment of a figurine resembling a leg from an independent zoomorphic or anthropomorphic statue or from a vessel or a base on stems. The inventory is completed with rare lumps of daub with organic remains, without documented impressions of wattle, stake wood or poles.

V. CHIPPED LITHIC INDUSTRY

After pottery, it is the second most numerous group of obtained finds. Almost 500 exemplars of chipped artifacts come from surveys and the small-scale investigation. Before their prepared complex analysis, we can state that they do not belong to a single chronological horizon, although finds from the Neolithic clearly prevail. A minimum part belongs to the Epipaleolithic and Mesolithic, probably also Eneolithic. The present non-numerous pottery from the Late and Final Bronze Age (Lusatian culture?) reveals, that a small percentage can belong to this prehistoric horizon.

Two artifacts in particular have late paleolithic character. First one is a backed blade with a utility retouch of highlighted right side of a chocolate flint (Fig. 6: 2). The second artifact is an obsidian burin on truncation.

On the other hand, at least four exemplars are undoubtedly mesolithic. A small flake with raclette retouch made of Cracow jurassic flint (Fig. 7: 1) is remarkable. There is also a micro end-scraprer on truncation of a miniature slightly burnt flake (chocolate flint?; Fig. 7: 2), as well as two radiolarite flakes from microcores with negatives of micro-bladelets (Fig. 7: 3, 4).

However, all non-neolithic finds of chipped lithic industry are indistinct, so the preliminary results have their information value. From the total number of artifacts, Cracow jurassic flint (also called silicite of the Kraków-Częstochowa Jura) is absolutely predominant, representing more than 80 %. It is followed

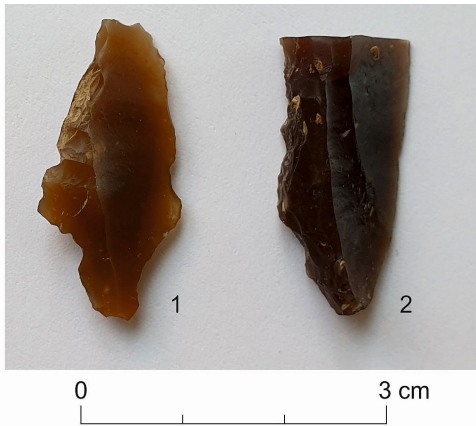


Fig. 6. Liptovské Matiašovce, Bochničky, survey. 1 – neolithic perforator of Vedrovice type resembling an epipaleolithic tanged point of the Ahrensburg culture, Jurassic sub-Kraków flint; 2 – epipaleolithic backed blade made from chocolate flint.

(Photo by M. Soják)

by burnt silicite making up almost 8 %. We can assume that most burnt exemplars are also made from the above mentioned flint from the region of Kraków. The third most common raw material is east Slovak obsidian undoubtedly from Zemplín (approx. 4.5 %), followed by chocolate flint (almost 4 %). As for the number of exemplars, it is the same for Volhynian flint, Jurassic flint – type G (from supposed Eneolithic) and radiolarite from the territory of the Pieniny mountains (all three raw materials make up approx. 0.8 %). Only one exemplar is made of creamy-grey silicite originally from either central Slovak (Žiarska kotlina basin) or east Slovak territory. From the aspect of typology, flakes making up more than 70 % of the collection predominate. There is also a high proportion (approx. 20 %) of blades and



Fig. 7. Liptovské Matiašovce, Bochničky. Mesolithic chipped lithic industry from the survey. 1 – raclette; 2 – micro end-scraper; 3, 4 – flakes from micro cores. 1 – Jurassic sub-Kraków flint; 2 – burnt flint; 3, 4 – radiolarite. (Photo by M. Soják)

their flakes; more than half of them were retouched (Fig. 8). Several exemplars with one glossy edge (caused by acids from grass) were used as sickle blades. Other blades – with truncations – could have been used as parts of sickles as well. Simple blades with retouched notches had a specific use (wood and bone processing). A relatively significant group of tools contains end-scrapers – with the share of more than 4 % (Fig. 9). Simple end-scrapers on blades are predominant, one of them is double. Two others are made from Volhynian flint – first is an initial flake, the second one is nail-shaped, on a short blade. Other two end-scrapers made of Cracow jurassic flint are on massive flakes. Perforators are a characteristic type of neolithic artifacts in the analyzed collection. In Slovak terminology, they are often wrongly typologically identified as drills (Fig. 10). We come across several types of this non-numerous group of this kind of perforating tools (approx. 5 exemplars). Exemplars with continually steeply retouched sides ending in a point or exemplars with bifacially retouched point in the distal parts of blades are predominant. An artifact made of Cracow jurassic flint is interesting; it is remarkably similar to epipaleolithic tanged point. However, typologically it is most probably a perforator of Vedrovice type (Fig. 6: 1). In general, these tools are characterized by elongated, steeply retouched and well emphasized tip on truncation and mostly with unretouched spatula in the terminal part of the blade. The spatula is usually wider and thinner than the retouched thicker part and does not make up more than 1/3 of the tool (Kaczanowska 1985, 14, 44; Dryja 1998, 146, Ryc.1; Strykowska 2010, 30, 33, Tabl. V: 1, 3; Soják 2006, 33). The exemplar from the site of Bochnický has all the above mentioned attributes, with the exception of an unusually short tang which is also situated on the base of the original bladelet.

Among other chipped lithic artifacts, we should mention cores, mainly amorphous blade-flake and flake exemplars, one is almost pyramidal. Several crushers/percussors for rough processing of nodular stones or used for grinding of cereal grains or colouring substances were also preserved. Some of them are made from original cores with negatives of blades and flakes and have partly knapped extremities (Fig. 11).

VI. CONCLUSION

The latest discovery of the neolithic settlement in Liptovské Matiašovce shows use of a typical neolithic settlement site on a low long ridge; a stream flows around it on two sides. Analogous sites are typical for mountainous and sub-mountainous regions of Spiš (Soják 2000) and the adjacent northern part of the Carpathians at the Wiśnicz Foothills between the rivers of Dunajec and Uszwica (cluster of Łoniowa – Żerków – Besiadki; Valde-Nowak 2009). Documents of the settlement in Liptov by bearers of the Late Linear Pottery culture are rather poor so far and

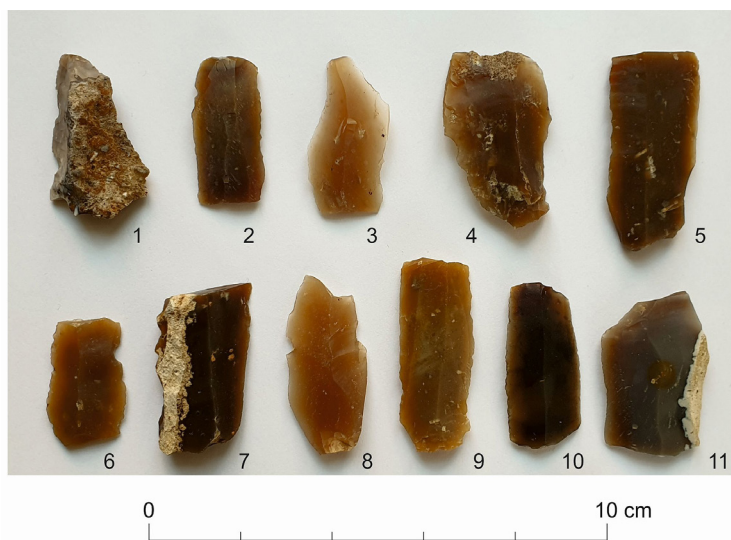


Fig. 8. Liptovské Matiašovce, Bochníčky. Sample of blades from the survey (2, 5 – sickle blades).
 1 – burnt flint; 2-9 – Cracow jurassic flint; 10, 11 – Volhynian flint. (Photo by M. Soják)

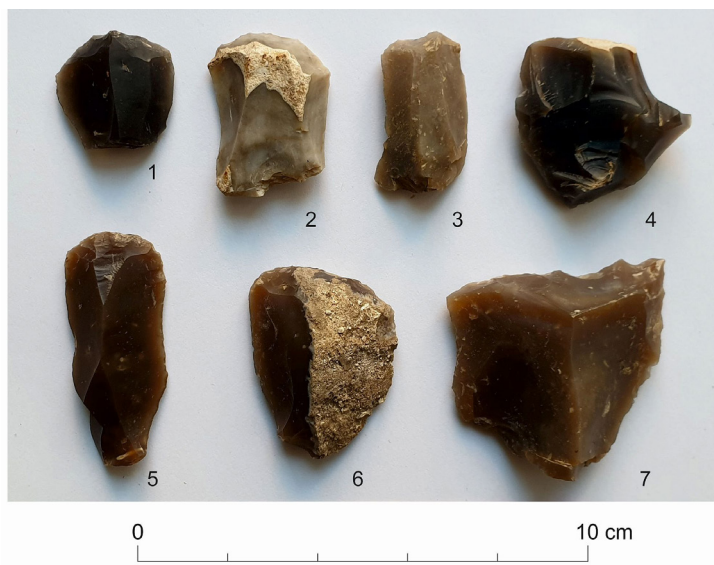


Fig. 9. Liptovské Matiašovce, Bochníčky. Samples of end-scrapers. 1, 4 – Volhynian flint;
 2 – Cracow jurassic flint?; 3, 5, 7 – Cracow jurassic flint (3 – double end-scraper)
 (Photo by M. Soják)



Fig. 10. Liptovské Matiašovce, Bochničky. Perforators from the survey, Cracow jurassic flint
(Photo by M. Soják)

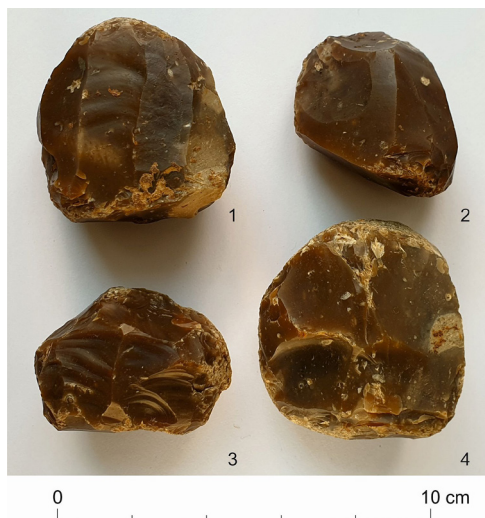


Fig. 11. Liptovské Matiašovce, Bochničky. Crushers/percussors/spreaders from the survey,
Cracow jurassic flint (Photo by M. Soják)

are associated with the sites of Bešeňová, Kvačany, Liptovský Mikuláš, Liptovská Sielnica-Liptovská Mara (Benediková, Pieta 2018, 171 – bibliography here). After sporadic finds from the Old Eneolithic, the more intense settlement of Liptov is associated with the Middle, but mainly Late to Final Eneolithic – the Baden culture (Struhár 2009, 55 f). Material finds from the Middle Neolithic are predominant at the newly discovered site. The analysis of pottery pointed to the presence of the Late Linear Pottery culture, the Želiezovce culture and – rarely – the Bükk culture. Before a systematic investigation, we cannot definitely decide whether we are dealing with a single-phase neolithic settlement dated to this horizon in accordance with the classical Želiezovce decoration and with surviving decorative elements of musical note pottery or whether the finds from several development stages of the Linear and Želiezovce cultures indicate multiple settlement. We must bear in mind possible mixed Linear-Želiezovce-Bükk settlement documented mainly in Spiš (Soják 2000), but also in other regions of Slovakia, especially in Central Hron river basin and it seems that we can include Liptov as well (Beljak Pažinová, Javorek 2018, 203 f.).

The locality of the site of Bochničky is probably polycultural, which is documented by finds of not numerous sherds from the Late and Final Bronze Age, from an unspecified period of prehistory, from the Middle Ages and Postmedieval period. The preliminary analysis of the chipped lithic industry indicates use of the site for at least sporadic settlement in the Late Paleolithic and Mesolithic. Presence of Jurassic flint – G type also suggests presence of rare traces of eneolithic settlement (by the Baden culture?). The obtained neolithic finds are limited to considerably corroded and splintered sherds and chipped lithic industry which is accumulated in the topsoil over an area of approx. 1 ha. Thus, it is a rather large settlement area, in which we can assume max. three typical large space houses with pole construction in one phase of settlement. One pole pit documented by investigation and two assumed remains of settlement features (exploitation pits – clay pits?) are evidence of presence of features situated shallowly below the current terrain surface, which suggests a settlement considerably damaged by solifluction, weather conditions (extremely strong winds) and regular farming. We suppose that the climate and local conditions of the Atlantic period were much more favourable to the neolithic settlers, compared to this day. It would take mainly stronger tree vegetation on the long elevated ridge which could have protected the area of the settlement from the strong western winds prevailing in the whole Podtatranská kotlina basin. With regard to the openness of the whole basin divided into the Liptovská kotlina and Popradská kotlina basins, the progress of the neolithic societies from Spiš to Liptov is most probable. Nevertheless, in the future it will be necessary to study – despite unfavourable natural barriers (the Veľká Fatra, Nízke Tatry, Kremnické vrchy mountain ranges) – connection between Liptov and the Central Hron river basin, with a significant settlement agglomeration near

Zvolen, where a settlement of the Late Linear Pottery culture was lately studied at the site of Podborová (Beljak Pažinová, Javorek 2018). When solving the question of the road connection from SW to NE, a systematic research is needed in the Detvianska, Pliešovská and Breznianska kotlina basins and particularly in the Horehronské podolie valley, where neolithic settlement has been absent so far. With regard to the mutual contacts of neolithic communities, the occurrence of the predominant raw material from the region of Kraków-Częstochowa Jura – i. e. Cracow jurassic flint at neolithical sites in Spiš as well as Liptov and the Central Hron river basin – is remarkable.⁶ Along with the route of this raw material's travel from Lesser Poland, gradual settlement of Spiš (Soják 1999; 2000) and Liptov sites in Neolithic was spread. The finds from Liptov show that it is necessary to complexly study the whole Liptovská kotlina basin from the aspect of neolithic settlement. They include mostly previously known finds from the travertine terrace in Bešeňová (Lichardus 1962; Neustupný 1937), but particularly the latest discovery of the studied settlement in Liptovské Matiašovce situated on the old road between Liptov and Orava regions (Furman, in press). Thus, the goal of further investigation is to follow also a potential connection between the last mentioned areas, probably also in the direction from Poland to Orava and Liptov.

The high proportion of quality Cracow jurassic flint illustrates active direct or indirect contacts of the settlement with the territory of primary occurrence of this raw material. Comparing the percentages of Jurassic sub-Kraków flint with selected sites e. g. in Spiš, their similarity is obvious (Soják 2018); this imported raw material is the leading component in both regions. Further to the southwest of Slovakia, the frequency of occurrence of this high quality raw material clearly decreases (Beljak Pažinová, Javorek 2018, 203; Cheben et al. 2018). With regard to the above mentioned information, we consider the regions of Spiš and Liptov as regions with the same neolithic societies originating in Lesser Poland. A complex archaeological investigation of the newly discovered neolithic settlement at the site of Bochničky appears to be necessary.

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⁶ Probably by mistake, the authors of the study wrongly mention Jurassic flint – G type in Zvolen-Podborová instead of the prevailing Jurassic sub-Kraków flint (Beljak Pažinová, Javorek 2018, 200).

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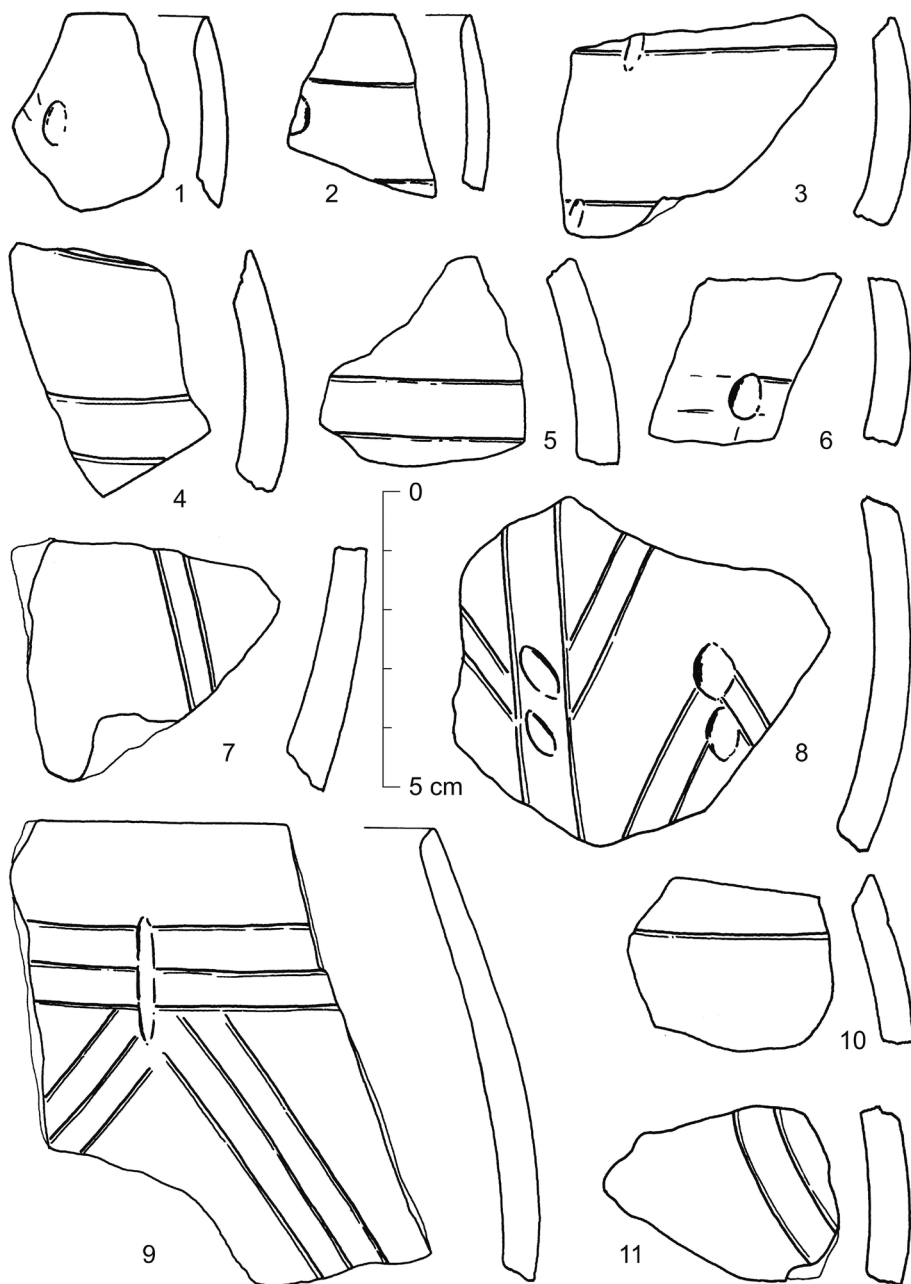
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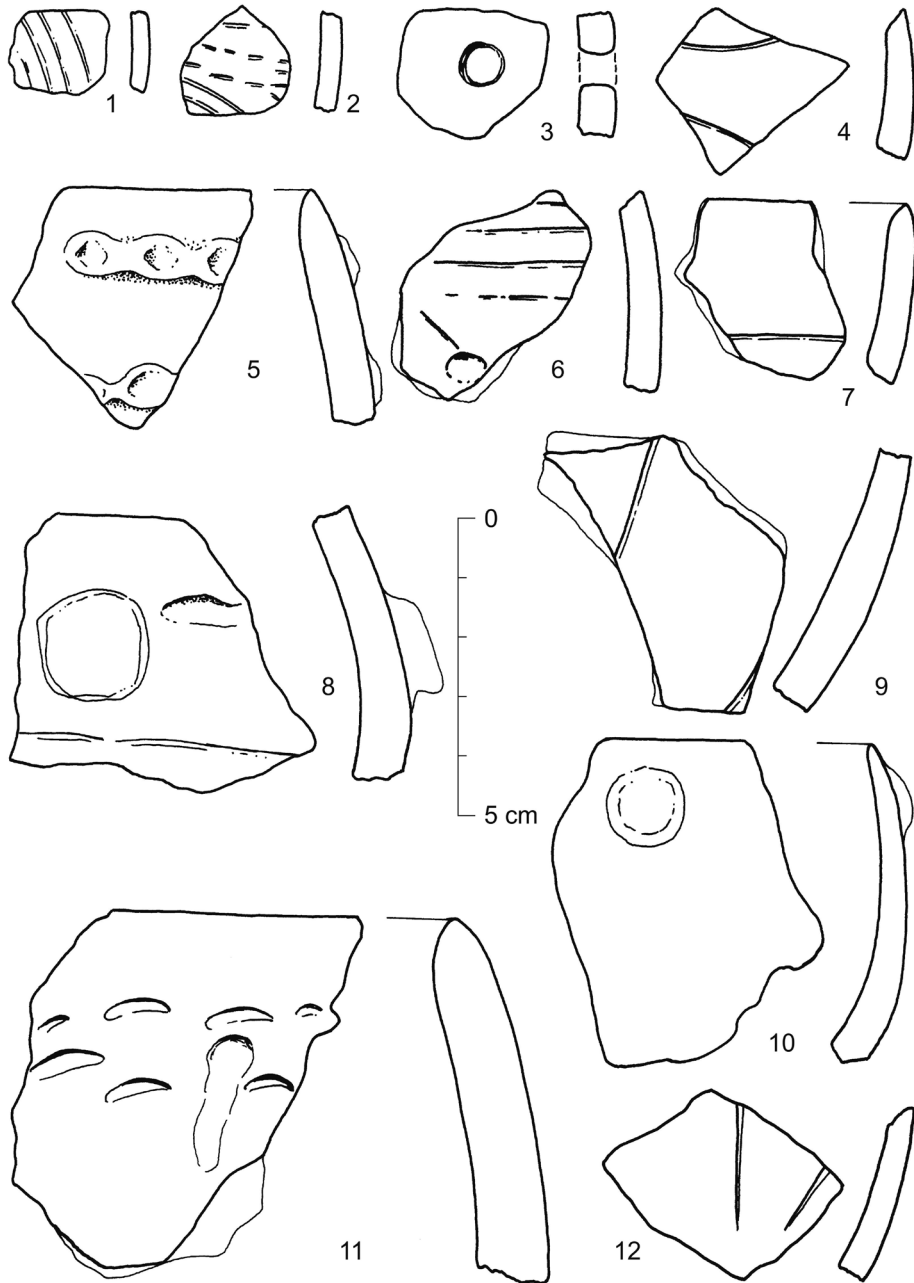
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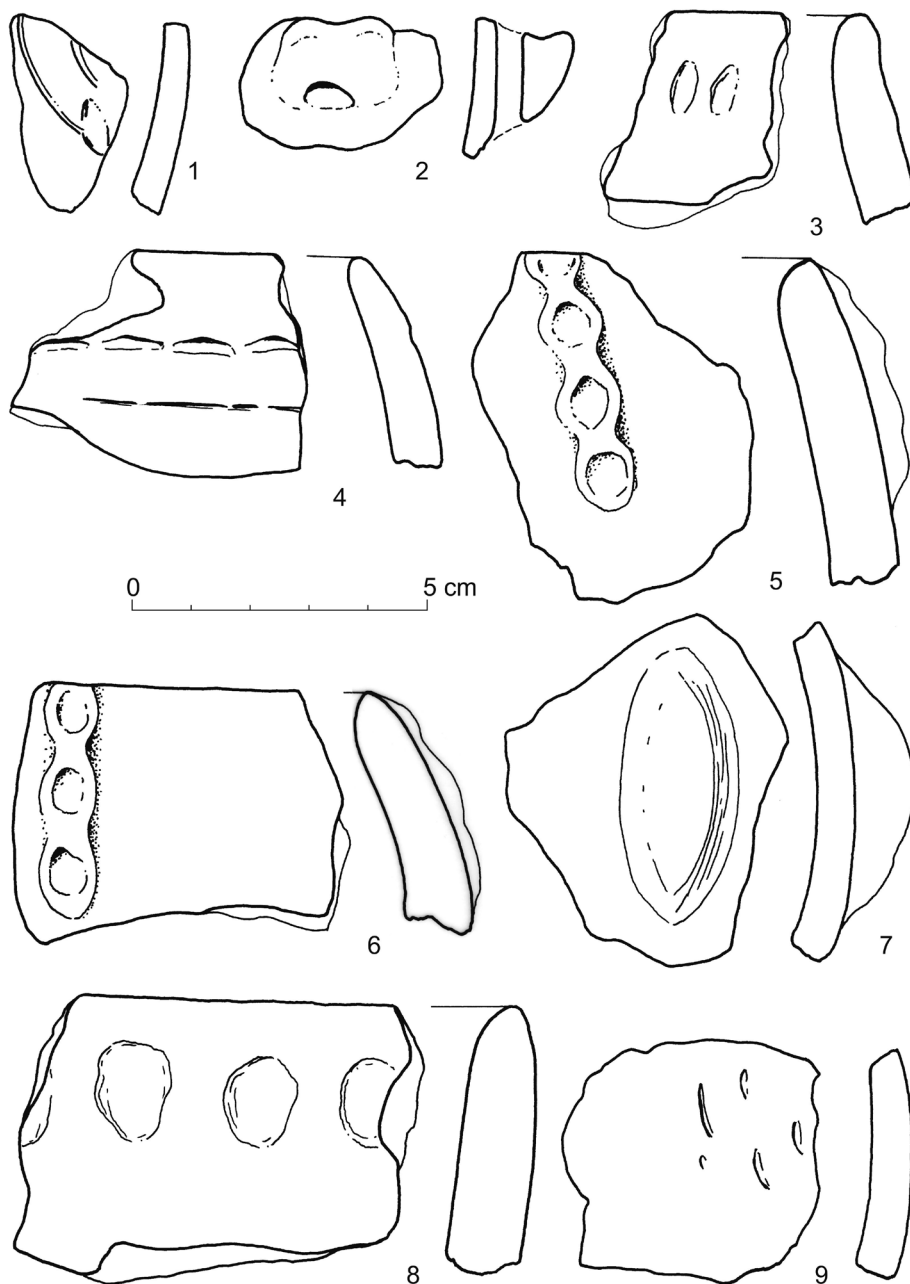
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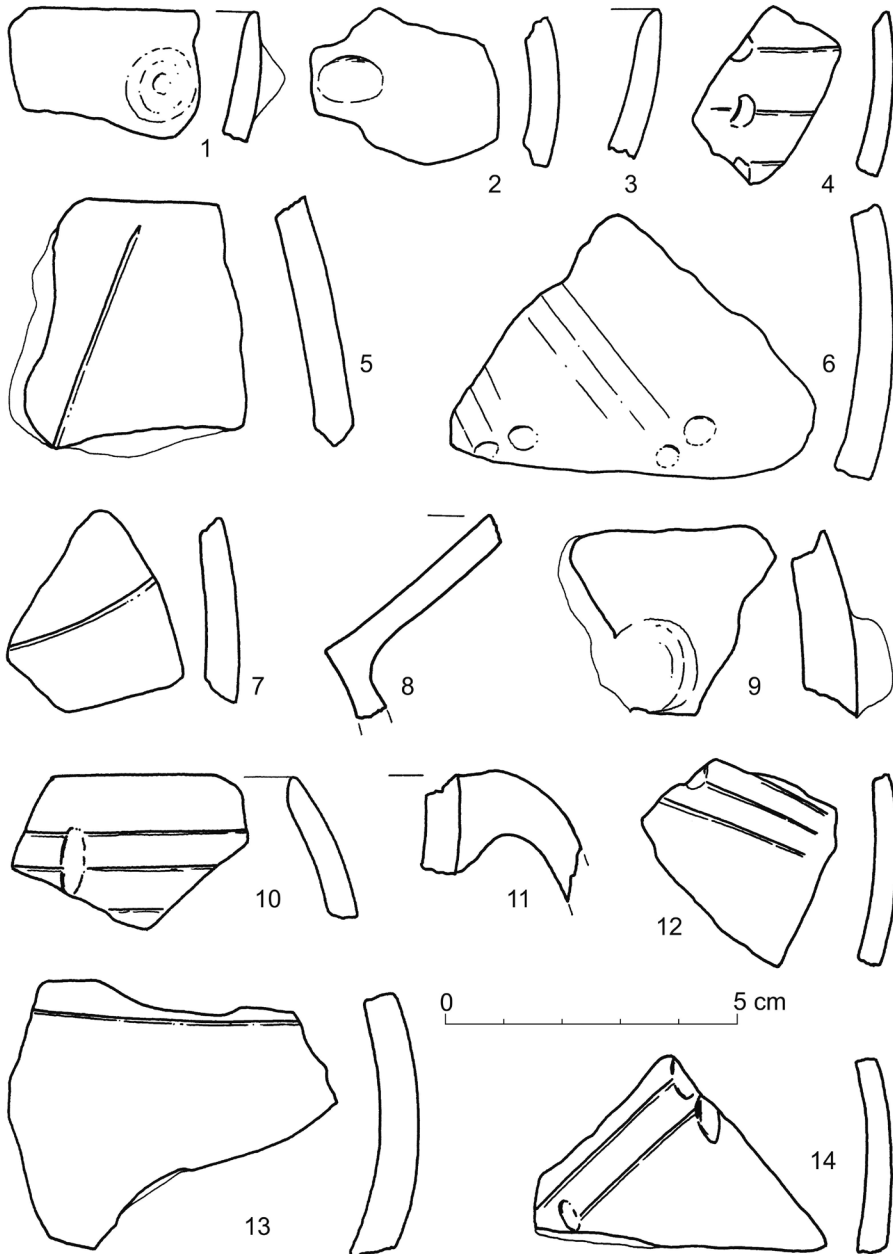
Pl. I. Liptovské Matiašovce, Bochničky. Selected pottery fragments with musical note and Želiezovce style of decoration from the survey (Drawing by: M. Soják)



Pl. II. Liptovské Matiašovce, Bochničky. Selected neolithic pottery fragments from the survey (1, 2 – Bükk culture) (Drawing by: M. Soják)



Pl. III. Liptovské Matiašovce, Bochníčky. Selected neolithic pottery fragments from the survey (1, 2 – Bükk culture) (Drawing by: M. Soják)



Pl. IV. Liptovské Matiašovce, Bochničky. Selected neolithic pottery fragments from the survey (1-8, 11), from trench III/2017 – layers 0-30 cm (10, 13) and from trench III/2017 – feature 1 (9, 12, 14) (Drawing by: M. Soják)