Radosław Czerniak¹, Barbara Drobiewicz², Ryszard Naglik³

Trzciniec culture settlement in the Bochnia Foothills (Jasień, site no. 38, com. Brzesko)

Abstract: Archaeological research in Jasień site no. 38 was conducted in 2013. The site was discovered and excavated during construction of a road junction and exit on the A4 motorway towards Brzesko. It is located on the western verge of the culmination of a dune, within the ridges of the marshy valley of the Uszewka River. As a result of the investigation, fourteen archaeological features were discovered, and 357 artefacts were obtained from features and layers. Most of them were fragments of vessels and flint artefacts. Based on the analysis of the materials, several phases of human activity were identified. The oldest artefacts can be linked with two Mesolithic cultural units, namely the Komornica culture with post-Maglemosian elements, and the Janisławice culture (?). Other archaeological materials dated to younger phases are equally scarce in terms of their quantity and are represented by pottery fragments associated with the Mierzanowice and Lusatian cultures. Amongst the artefacts from Jasień, materials referring to the Trzciniec culture are predominant. In terms of style and formal and technological characteristics they are extremely uniform, and they reveal features typical of the classical phase of the Trzciniec culture development.

Keywords: Sandomierz Basin, Szczepanów Plateau, Trzciniec culture settlement

1. Introduction

In terms of the physico-geographical division of Poland, site no. 38 in Jasień, com. Brzesko (AZP 104-62/124 – in English: *Polish Archaeological Record*) is located within the Bochnia Foothills (512.42 acc. to Kondracki 2001, 307, 308). With regard to its geomorphological division, it belongs to the Szczepanów Plateau, being a part of the Sandomierz Basin (Klimek, Starkel 1972, 145). This site is situated on the western verge of the culmination of a dune, within the ridges of the marshy valley of the Uszewka River (Fig. 1). It was discovered in 2012 by E. Dworaczyński from Pracownia Archeologiczno-Konserwatorska PKZ in Tarnów while

¹ Institute of Geography, Jan Kochanowski University, Kielce, Poland; insitu@archeolog.pro

² Institute of Archaeology, Jagiellonian University; 11 Gołębia St., 31-007 Kraków, Poland; barbara.drobiewicz@gmail.com

³ Archaeological Museum in Kraków; 3 Senacka St., 31-002 Kraków, Poland; naglikryszard@gmail.com

digging out a trench for the foundations of a stone cross moved to this location. In the following year, due to prospective construction of a road junction associated with the A4 motorway, rescue excavations at the site commenced. These investigations were headed by Radosław Czerniak, acting on behalf of the general partnership, *The Cracow Team for Archaeological Supervision of Motorway Construction*.

In the first stage of the excavations the topmost layers of mixed soils, being a result of grubbing and successive levelling of the ground, were removed manually. This was necessary due to the great variability in their thickness (10 cm in the central part of the site, and 20–40 cm in the western part), and the distribution of a large number of artefacts lying within the intersection zone between this layer and the undisturbed lower part of the eluviation layer (layer no. 4).

Exploration was performed within the mechanically distinguished levels, and the artefacts obtained were documented in three-dimensional space (or within quarters, with regard to materials coming from the mixed layers). Each exploration level was captured with the use of photographs and drawings. Analogical methodology was applied in reference to the investigated features. Amongst the numerous hollows made by fallen trees only a few were subject to exploration, to ensure that their interpretation was correct.

The extent of the site was marked based on the distribution of pottery found on its surface. Its area reached almost 15 ares, among which 9.36 ares were investigated. The exploration of the remaining part was hindered by technical installations associated with the construction of the road.

Fig. 1. Jasień, com. Brzesko, site no. 38. Location of the site

2. Features and cultural layers

In the course of exploration, outlines of numerous hollows were uncovered below the disturbed, mixed soil layers formed during grubbing, the depth of which ranged between 10 and 40 cm (Fig. 2). In most of the cases they were remains of hollows made by fallen trees with partly preserved root systems. Only a few archaeological features became visible at this depth. Others were captured at lower levels. The latter were hardly legible against the background of sandy undisturbed subsoil, visible as oval-shaped or irregular discolouration of sand of rusty or brownish grey colour (Fig. 3). An ultimate verification of the nature of these hollows was not possible until the soil profiles and the fills of the hollows were analysed. Amongst the 26 hollows considered to be archaeological features in the primary stage of archaeological exploration (features 1–24, 26, 27), fourteen were positively verified (features 1, 6, 7, 9, 11, 12, 17, 19, 20, 21, 22, 23, 26 and 27, comp. Catalogue of features and Figs 4, 5–8, 9, 10, 11). Thirteen of those were pits (features 1, 6, 7, 9, 12, 17, 19, 20, 21, 22, 23, 26 and 27), usually oval in shape (features 1, 7, 9, 12, 20, 21, 23, 26, 27), less frequently round in shape (features 6 and 22), or in one case with an irregular outline (feature 17). The diameter of the smallest pit amounted to 0.5 m, while the largest was 2.5 m long. The cross-sections of all of these features were trough-like and relatively shallow, ranging from 20 cm (feature 12) to 82 cm (feature 23). Their fills consisted of one layer (features 9, 12, 19, 23; Figs 6, 9), two layers (features 1, 6, 17, 21, 22, 26, 27; Figs 5, 6, 8, 9) or three layers (feature 20; Fig. 7), with only small admixtures of organic matter. In terms of their colours they were barely distinguishable from the surrounding natural

Fig. 2. Jasień, site no. 38. View of the cleaning surface in the SW part of the site

Fig. 3. Jasień, site no. 38. View of the cleaning surface in the centre of the site

sandy subsoil (Figs 2, 3). Only six pits (features 6, 17, 19, 20, 22, 26) contained archaeological materials, including 85 fragments of clay vessels and two flint artefacts.

Feature 9 can be interpreted as a posthole due to its small dimensions and relatively steep walls (Fig. 6). Traces of posts were also legible within features 1 and 7 (Figs 5, 6). Nevertheless, it is difficult to determine whether they were postholes with exceptionally large near-post pits, or small storage pits with roofing supported by one post. The existence of such constructions can be also suspected with regard to feature 23, where below the pit bottom a barely visible outline of a small hole was recorded, most likely the remains of a posthole (Fig. 9). Other pits should be interpreted as storage pits. Certainly, similarly to most trough-like, shallow pits encountered at various archaeological sites, natural origins of some of them cannot be entirely excluded in this case as well. However, most of them can surely be considered as archaeological features. This is supported by conjoining pottery shards within particular features and the existence of concentrations of pits in zones of artefact occurrence within the cultural layer.

One of the discovered features was a narrow (20–40 cm wide) and relatively shallow groove with a rectangular cross-section, with its bottom captured at a depth of 5–20 cm below the level of its discovery (feature 11; comp. Fig. 4). Its fill significantly differed from the fills of pits – it was much darker, brownish grey. This groove was wavy and meander-like in shape, running obliquely across the site, starting from the embankment of a rainwater ditch and ending at the southern edge of the investigated area. Unfortunately, the middle section was not recorded due to damage caused by grubbing.

Localisation of the trenches with artefacts and features arrangement

Fig. 4. Jasień, site no. 38. Plan of the excavation trenches with the arrangement of artefacts and features

On the culmination, i. e. in the zone of feature occurrence, four concentrations of pottery were also encountered (concentrations B, C, D and G – comp. Fig. 4). Artefacts (in total 65 specimens) were found at the intersection of the preserved lower part of the eluviation layer (layer 4) and the mixed layer (layer 2). Fragments of pottery discovered in each of these concentrations came from one or two vessels, at most. Therefore, it can be assumed that they were remains of shallow features destroyed during grubbing rather than local deepening of the cultural layer.

Cultural layers and concentrations delivered 194 fragments of clay vessels and 11 flint artefacts. These artefacts were recorded within layer 2, formed during grubbing, through mixing of the topmost soil layers with forest litter. A great majority of those lay within the lower part of this layer, at its intersection with undisturbed fragments of the eluviation layer (layer 4). At the stage of field investigations (excavation) the level of their occurrence was linked with layer 4. However, a closer analysis performed afterwards indicated that only materials constituting the above-mentioned concentrations, B, C, D and G, were actually deposited *in situ* within layer 4. Other materials encountered outside the fills of features should be associated with layer 2, which covered the entire investigated area, and its thickness reached up to 40 cm, particularly along the western and eastern boundaries of the excavated site. During field investigations materials gathered from this stratigraphic unit and its intersection with layer 4 were considered to be remains of a cultural layer damaged by construction works. However, upon analysing their distribution it seems more probable that these artefacts came

from features partly destroyed due to human activity. This is first supported by the lack of any correlation between the thickness of the layer under scrutiny and the number of archaeological materials found within it – this layer reached its greatest thickness in the western part, where artefacts were encountered only sporadically (comp. Fig. 4). However, there is a clearly visible connection between the amount of pottery lying within this layer and the frequency of occurrence of features (comp. Fig. 4). Significant premises supporting the

Fig. 5. Jasień, site no. 38. Trzciniec culture features 1 and 6 with characteristic fragments of pottery

above hypothesis are conjoining fragments coming from features with those lying within the cultural layer, as well as the occurrence of concentrations of archaeological materials indicating a primary existence of a group of shallow features.

3. Objects

In the course of excavations carried out at site Jasień 38, 357 artefacts were obtained, including 344 fragments of pottery and 13 flint artefacts. Only 85 fragments of clay vessels and two

Fig. 6. Jasień, site no. 38. Trzciniec culture features 7, 9, 12, 17 and 19 with characteristic fragment of pottery

flint specimens came from features. Another 65 fragments of clay vessels were gathered in concentrations that might have been remains of shallow, damaged features. However, a great majority of the artefacts, namely 194 fragments of vessels and 11 flint artefacts, were found within cultural layers. Detailed characteristics of these two groups of artefacts are presented in two separate catalogues.

Fig. 7. Jasień, site no. 38. Trzciniec culture feature 20 with characteristic fragments of pottery.

4. Pottery

Fragments of clay vessels were the most numerous category of artefacts discovered during the excavations carried out at site 38 in Jasień. Amongst them, the largest assemblage of 332 fragments was ascribed to the Trzciniec culture. Another nine artefacts were classified as specimens coming from the Early or Older Bronze Age, two fragments were dated to the Early Bronze

Fig. 8. Jasień, site no. 38. Trzciniec culture features 21 and 22 with characteristic fragments of pottery

Age, and only one specimen was linked with the Lusatian culture. This identification was based on both macroscopic observation of technology of execution of vessels as well as the results of analysis of their forms and ornamentation.

Amongst 344 fragments of vessels, 284 were subjected to technological analysis, which was performed only for specimens having surfaces at least preserved partially, and exceeding 1 cm² in size.

The descriptions of the technology of the pottery process are based on a list of technological and utilitarian actions taken by prehistoric potters during manufacturing of vessels, which can be presently subject to macroscopic observation (Czerniak, Koško 1980, 253; Kadrow 2003, 205).

Fig. 9. Jasiień, site 38. Trzciniec culture features 23, 26 and 27

Fig. 10. Jasień, site 38. Cross-section of the feature 20

Fig. 11. Jasień, site 38. Cross-section of the feature 22

The production process of clay objects was divided into three stages: a) preparing of clay mass, b) forming of vessel walls, c) firing of vessels.

For stage a) the following parameters were determined: aa) type of admixture, ab) admixture granulometry, ac) admixture quantity, and ad) stratification of vessel walls. For stage b) the following parameters were determined: ba) thickness of vessel walls, bb) manner of vessel surface treatment. For stage c) the following parameters were determined: ca) colour of wall cross-section, and cb) colour of vessel surface.

For determining the granulometry of admixture the authors used ranges of grain size employed for description of materials from Jakuszowice dated to the Bronze Age, although with slight modifications (Górski 1991, 24; Czerniak 2007, 67). According to these modifications, fine-grained admixture refers to grain sizes up to 2 mm, medium-grained admixture contains grains with sizes ranging between 3 and 4 mm, while coarse-grained admixture is that with grain sizes exceeding 4 mm. The quantity of admixture was determined based on the percentage of the total area of all grains observable within the cross-section in relation to the area of the entire vessel cross-section (small quantity – up to 10% of the cross-section area, medium – between 10 and 30%, and large quantity – above 30%).

4.1. Pottery of the Early Bronze Age

Materials dated to the Early Bronze Age were distinguished mainly based on technological criteria. They were characterised by a specific manner of surface elaboration, differing from other specimens. These surfaces were uneven and coarse. Ceramic mass was tempered with a large quantity of fine-grained admixture containing crushed granite stones and sand, and a small amount of chamotte. Thickness of fragments ranged between 7 and 15 mm. These traits were recorded for two artefacts, namely a fragment of the upper part of a belly, and a bottom part of a vessel, both discovered in the eastern part of the site. The Early Bronze Age date cannot be ruled out for another nine specimens, partly damaged, which were tiny fragments of vessels made from a ceramic mass of a similar structure. The latter were encountered as single finds in various parts of the site, including a feature of the Trzciniec culture (feature 22). Due to the state of preservation of these artefacts (damaged surfaces, charring, and small sizes of fragments below 2 cm²), their characteristics cannot be plainly explicit, and it is possible that they should be associated with the Trzciniec culture (in the catalogues their cultural affiliation was determined as KM/KT – the Mierzanowice or Trzciniec culture).

4.2. Pottery of the Older Bronze Age

Amongst 332 fragments of vessels ascribed to the Trzciniec culture only 83 came from fills of features, 65 were encountered in four concentrations of archaeological materials, while 184 lay within the cultural layer.

4.2.a. Analysis of technological parameters of pottery

In terms of the type of admixture used for tempering of clay mass, the pottery obtained from site Jasień 38 was very uniform. Potters of this chronological unit always added crushed minerals into the clay mass, and merely 6% of all specimens contained an admixture of sand. Mica was recorded in 87% of all the pottery, while 51% contained chamotte as well. Medium-sized grains were predominant (54%); however, in most of the investigated cases grain sizes were

close to 4 mm, which is the upper limit for the value assumed for medium-grained admixture. Large-sized grains constituted approx. 30% of the admixture, and small-sized grains were less frequent (16%) – comp. Fig. 12.

In pottery production a medium quantity of admixture was usually used for tempering of clay mass (77%). Significantly less numerous were vessel fragments containing large quantities of admixture (21%) – comp. Fig. 13.

Layered cross-sections prevailed (81%), whereas compact (11%) and granulated (8%) ones were in a minority – comp. Fig. 14.

On one of the fragments with a damaged outer surface a specific manner of forming vessel walls was observed, namely through “pulling upward” successive thin layers of clay, constituting a characteristic “tiling” alignment (Fig. 15).

A predominant group of ceramic materials was represented by fragments of vessels with walls of medium thickness ranging from 7 to 10 mm (45%) – comp. Fig. 16. They were followed by thick-walled vessels (38%). Vessels with thin walls were in the minority (15%). The group in question contained only a few fragments of pottery over 13 mm thick, and they usually came from the bottom part of S-shaped pots or large bowls.

With regard to colours of vessel cross-sections, monochromatic and tricolour sharp prevailed (comp. Fig. 17). Sections with gently graduated colours were encountered sporadically.

The most numerous were vessels with smooth but uneven surfaces (comp. Figs 18 and 19), with grains of admixture protruding above the vessel surface (Fig. 20). Definitely less frequent were fragments of vessels with smooth, even, and in particular shiny polished surfaces. They came exclusively from thin-walled vessels.

Amongst the pottery partly damaged due to post-depositional processes, the authors distinguished fragments with even and presently coarse (most likely originally they were even and smooth) or uneven surfaces (resulting from damage of even and smoothed pottery).

Colours of vessel walls within the group under scrutiny were very uniform. Light orange/brown colour was predominant, described in the existing literature as skin-like colour. Only a few fragments of the thin-walled pottery were light brown.

Fig. 12. Jasień, site 38. Granulation of temper within the pottery

Fig. 13. Jasień, site 38. Quantity of temper within the clay mass

Fig. 14. Jasień, site 38. Stratification of vessel walls

Based on the variability in the above-mentioned attributes, the collection of vessels under study was divided into three technological groups. These groups were distinguished mainly based on differences in granulation of admixture used for tempering the clay mass. All other attributes seem to be of secondary importance since they were determined by the function played by a particular vessel or could have changed depending on which parts of the vessel the fragments actually came from. For instance, a fragment coming from a bottom part of a vessel would be characterised by a specific colour of its cross-section and a greater thickness as compared with those coming from the neck or belly of the very same vessel.

Technological group A – characterised by the occurrence of fine-grained admixture, usually with compact, uniform, or layered cross-sections. The prevailing group of fragments was represented by fragments of thin or medium wall thickness, with smoothed surfaces, which were sometimes additionally polished, and monochromatic or tricolour sharp cross-sections.

Technological group B – characterised by occurrence of medium-grained admixture. Fragments with layered cross-sections, medium- and thick-walled, with uneven smoothed surfaces (with protruding grains of admixture) were predominant.

Technological group C – characterised by occurrence of coarse-grained admixture. Fragments with layered cross-sections, thick- and medium-walled, with smoothed surfaces and protruding grains of admixture prevailed.

The collection of vessels under analysis was very uniform in terms of technology of their execution. Most of them belonged to technological group B (54%). The authors observed

Fig. 15. Jasień, site 38. Fragment of clay vessel from feature 22

Fig. 16. Jasień, site 38. Thickness of vessel walls

Fig. 17. Jasień, site 38. Colour of pottery fractures

Fig. 18. Jasień, site 38. Outer surfaces of vessels

Fig. 19. Jasień, site 38. Inner surfaces of vessels

Legend for Figure 18 and 19: 1 – uneven coarse, 2 – uneven smooth, 3 – even coarse, 4 – damaged coarse, 5 – damaged, 6 – smoothed, 7 – smoothed, shiny polished, 8 – charred

that in production of pottery a medium quantity of medium-grained crushed granite stones with high content of mica were used, supplemented by crushed ceramics. Ceramic mass prepared in this manner served mainly for manufacturing medium- and thick-walled vessels with layered cross-sections. Outer and inner surfaces were finely elaborated, wearing traces of bathing of formed vessels in diluted clay, often with grains protruding above the vessel surface (Fig. 20). The vessels under study, fired in an oxidising atmosphere, were uniform in terms of their colour, usually light orange.

4.2.b. Analysis of forms and ornamentation of vessels

Strong fragmentation of materials hindered comprehensive interpretation and indisputable interpretation of vessel forms. Amongst the entire assemblage under analysis merely 28 artefacts were distinctive features, i. e. preserved rims or ornamentation. They came from 28 vessels, 21 of which have survived in a state allowing the authors to identify particular types or sub-types of vessels.

For analysing the Trzciniec pottery from site no. 38 in Jasień, a division scheme used for a similar set of forms obtained from site no. 1 in Zakrzowiec was employed (Przybyła, Chudzińska 2009, 10). In accordance with this scheme, two general groups were distinguished: non-profiled vessels (group A) and profiled forms (group B).

The first group comprised semi-spherical and conical bowls referring to one-piece non-profiled forms of types 2.1 and 2.2 according

Fig. 20. Jasień, site 38. The upper part of clay vessel from concentration D

to J. Górski (2007, fig. 14). The other group included all profiled vessels, such as gently profiled pots, vases, bowls, mugs or beakers (Górski 2007, figs 7–13, 15 and 16).

Within the investigated materials one-piece bowls were represented by seven specimens. Four of them (Figs 5: 1, 3; 8: 1; 22: 6), found in features 6 and 22, came from semi-spherical bowls of type 2.1 acc. to J. Górski (2007, fig. 14). Two of these fragments had non-thickened rounded rims (Figs 5: 1; 22: 6), one had a thickened rim, obliquely trimmed outward (Fig. 8: 1), and the other had its rim thickened on the inside (Fig. 5: 3). Vessels of type 2.2 acc. to J. Górski (2007, fig. 14) were represented by three bowls. One of them (Fig. 23: 3 – feature 22) had a rim thickened on both sides, obliquely trimmed outward. Two others, representing variant "a" of type 2.2, were bowls with their rims thickened on the inside (Fig. 21: 8).

Thickness of walls of non-profiled bowls ranged between 7 and 13 mm. Reconstruction of the rim diameter was possible for merely two artefacts, where it amounted to 26 and 31 cm (Figs 8: 1; 21: 8). It was not possible to reconstruct the entire forms of vessels, only their upper parts. Therefore, the division of non-profiled bowls presented in this paper cannot be considered absolutely certain because it is impossible to analyse the entire vessel profile.

Bowls of the above-mentioned type are frequently encountered in assemblages of the Trzciniec culture. Among others, they were discovered in features at site 4 in Kraków-Wzgórza Krzesławickie (Kogus 1967, pl. I: 7, Górski 1997, fig. 12), and Jakuszowice, site 2 (Górski 1991, e.g. plates. II, III, IV; Czerniak 2000, e.g. plates. VI, VII). They are also known from archaeological sites located to the south of the Vistula River, namely site 1 in Zakrzów (Przybyła, Chudzińska 2009, e.g. plates. 2; 5; 7), and site 15 in Kraków-Bieżanów (Przybyła, Byrska-Fudali 2012, plates. 1: 4; 3: 1, 2, 4).

Other distinctive artefacts came from the group of profiled vessels (group B). In the assemblage under scrutiny the authors distinguished gently profiled pots. The most completely reconstructed forms were represented by gently profiled pots (Fig. 7: 1; 23: 1) of type 1.1.1 acc. to J. Górski (2007, fig. 10). They were characterised by a rim diameter smaller than the greatest diameter of the belly, a gentle profile and an occurrence of obliquely trimmed, thickened rims, as well as ornamentation in the form of plastic bands running around the neck and upper part of the belly. The form obtained from feature 20 had only one horizontal plastic band (Fig. 7: 1), while the specimen from feature 22 was decorated with a double plastic band, and its rim was thickened, obliquely trimmed, and distinguished also on the inside (Fig. 23: 1). The thickness of walls of gently profiled pots ranged from 10 to 13 mm. The reconstructed diameters of rims for both of these specimens amounted to 23 cm.

Four other fragments can be possibly included in this type of vessel, namely the upper parts of vessels decorated with horizontal plastic bands, located analogically as in the case of gently profiled pots (Figs 5: 2; 6: 1; 8: 3, 4). However, their identification cannot be considered certain due to the small sizes of the sherds.

Gently profiled vessels are commonly encountered in pottery assemblages of the Trzciniec culture. They occurred at archaeological sites in Kraków-Nowa Huta and Wzgórza Krzesławickie (Kogus 1967, fig. 1; Górski 1997, fig. 12), loess areas of the Nida Basin in Jakuszowice (Górski 1991, e.g. plates XLI: 2, XLXX: 1; Czerniak 2000, pl. XVIII: 4), as well as sites located to the south of the Vistula River, such as Kraków-Bieżanów, site 15 (Przybyła, Byrska-Fudali 2012, figs. 27: 2; 97: 1; 98: 3; 207: 1) or Zakrzów, site 1 (Przybyła, Chudzińska 2009, e.g. figs. 6: 6, 11; 7: 4; 9: 6, 8; 19: 1; 20: 1, 6, 7; 23: 1; 26: 3).

Another three fragments of pottery found at site 38 in Jasień were most likely remains of vases (Figs 5: 2; 21: 2; 23: 2), i. e. wide-mouthed vessels with rim diameters exceeding or equal to the greatest diameter of a belly, and more "squat", so to speak, than pots. Specimens

from Jasień had their rims thickened, and obliquely trimmed edges. The form obtained from the fill of feature 22 had a rim thickened on the inside and a horizontal plastic band attached to the neck (Fig. 23: 2). Reconstruction of rim diameters was possible for two artefacts, where they amounted to 25 and 26 cm. The thickness of the walls ranged between 10 and 13 mm. The ceramic mass of two fragments contained medium-grained admixture, while the admixture in the third specimen was coarse-grained. There was one more sherd that could have come from a vase of this type, namely a fragment of the upper part of a vessel found in feature 20

Fig. 21. Jasień, site 38. Characteristic fragments of pottery from concentrations: D (1, 2), G (3) and layer no. 4 (5–8)

(Fig. 7: 3), with an obliquely trimmed rim, thickened on the inside, and strongly profiled neck. Most likely, the above-mentioned forms represent type 2 distinguished by J. Górski (2007, fig. 16). However, they could not be classed any closer since the assemblage under study contained only upper parts of vessels.

Vases occur in almost every type of assemblage distinguished by J. Górski (2007), and vases of group A2 are decorated with a horizontal plastic band (Górski 2007, 79). This type of form does not occur in the A3 and C/D assemblages only.

Another category of profiled vessels recorded in the materials under scrutiny is represented by mugs and cups (Figs 21: 5, 6; 23: 4, 5). Four fragments of this type found in Jasień were

Fig. 22. Jasień, site 38. Flint artefacts from layer no. 4 (1-5) and characteristic fragments of pottery from layer no. 2 (6), loose finds (7, 8)

characterised by smoothened and shiny polished surfaces, fine-grained admixtures and thin walls, with their thicknesses ranging between 4 and 5 mm. Three of them came from the upper parts of vessels, including two specimens with obliquely trimmed and slightly thickened rims (Fig. 21: 5, 6), while the third one had a non-thickened rounded rim (Fig. 23: 4). The fourth sherd was a relic of the lower part of a vessel, enclosing a shoulder of a belly (Fig. 23: 5). Most probably, the above-mentioned artefacts came from mugs of type 2.2 acc. to J. Górski (2007,

Fig. 23. Jasień, site 38. Characteristic fragments of pottery (1–5) and flint artefact (6) from feature 22

fig. 12). These forms are rarely encountered within the assemblages of the Trzciniec culture, which can be partly due to difficulties in their identification among strongly fragmented ceramic materials (Górski 2007, 77).

Within the ceramic materials obtained from site 38 in Jasień, 28 fragments of rims were identified (Table 1), amongst which 22, in a better state of preservation, are illustrated in figures.

Obliquely trimmed rims, thickened on the outside, prevailed (Figs 5: 3; 7: 2; 8: 2; 21: 1, 5, 6 and 22: 7). They were followed by obliquely trimmed rims thickened on both sides (Figs 21: 2; 23: 1, 3), or obliquely trimmed rims thickened on the inside (Figs 7: 3; 21: 8; 23: 2). There were also non-thickened rounded rims, sometimes obliquely trimmed or straight (Figs 5: 1; 8: 1; 21: 7; 23: 4).

The only manner of ornamentation recorded on the Trzciniec culture vessels from Jasień was a decoration in the form of a horizontal band attached to the neck or the upper part of the belly. Such ornamented forms were discovered in the fills of features 6 (Fig. 5: 2), 19 (Fig. 7: 3), 20 (Fig. 7: 1), 22 (Figs 5: 2; 8: 3, 4; 23: 1, 2), and within the foundation trench of the Caravaca cross (Fig. 22: 8). Only once, on a vessel fragment from feature 22, was a motif of a double band recorded (Fig. 23: 1).

4.3. Pottery of the Middle Bronze Age

Within layer 4, in the central part of the site, an ornamented fragment of a vessel of the Lusatian culture was discovered. This was a partly preserved rim gently passing into a handle protruding above its edge. The vessel was decorated on the greatest diameter of its belly with fingernail impressions (Fig. 21: 4). Most likely this fragment came from a slightly profiled small bowl or a ladle. Such forms found in the region of Cracow refer to phase Iwanowice-Wysyłek, corresponding with phase Kietrz IIb and IIc (Gedl 1982, 22, fig. 7). In western Little Poland such forms are commonly encountered at the Lusatian culture sites on the left bank of the Vistula River, e.g.: settlement in Kraków-Nowa Huta Mogiła, site 55, feature 66 (Rachwaniec 1985, pl. VI), as well as on the right bank of this river, e.g. site 7 in Zakrzowiec (Pilarski, Czerniak 2012, pl. CLXII: 2, 12).

5. Flint artefacts

In the course of rescue excavations carried out in 2013 at multicultural site 38 in Jasień there were 11 flint artefacts discovered lying within various stratigraphic levels, and two others were obtained from features 22 and 26 (Table 2).

The small fragment of the original site that was excavated in Jasień was inhabited from the Mesolithic to the Older Bronze Age. The above-mentioned investigations delivered a small flint assemblage, non-homogenous in terms of raw materials they were made of, and in typology and technology of their execution; therefore, establishing chronological and cultural affiliations of some of the specimens was not possible. Typological and

Table 1. Jasień, site 38. Frequency of rim types within the ceramic material

RIM TYPE	QUANTITY
Thickened on the outside	10
Thickened on the inside	5
Thickened on both sides	6
Non-thickened	7
In total	28
Rounded edges	9
Sharp ended edges	19
In total	28
Bent outward	21
Straight	7
In total	28

Table 2. Jasień, site 38. List of flint artefacts

JASIEŃ, SITE 38	FEATURE 22	FEATURE 26	CULTURAL LAYER	QUANTITY
Mesolithic (Komornica/post-Maglemose cultures [?])	1		3	4
Flint materials of ambiguous cultural affiliation (Trzciniec culture?)			5	5
Flint materials of undetermined chronology		1	3	4
In total	1	1	11	13

stylistic features of four artefacts allowed the authors to ascribe them to the Mesolithic. Another five artefacts were conditionally associated with the Trzciniec culture. Four more specimens, including one obtained from feature 26, were described as undetermined in terms of their chronology and cultural affiliation.

5.1. Analysis of distribution of flint artefacts

Two specimens were discovered within features: 22 and 26, on are 140/110 (Fig. 4). Others were encountered within mixed, partly at least, layers. Except for one artefact coming from are 120/120, all the others “concentrated” within three ares, namely 130–150/110, on a culmination of a small hill. Presently it is difficult to establish to what extent this reflects the primary range of flint material distribution, since the upper parts of features and the cultural layer were destroyed during the construction works.

5.2. Raw material structure of the flint assemblage

Most of the artefacts under scrutiny were made of Cracow Jurassic flint (10 specimens), one of erratic Cretaceous flint, while two others were made of chocolate flint (comp. Catalogue). Artefacts made of Cracow Jurassic and Cretaceous flints were characterised by a uniform siliceous substance, beige, light brown, brown or ash in colour, as well as various degrees of splitting capacity and transparency. Specimens made of chocolate flint represented two variants of this raw material. One of them had an orange-brown colour and granular siliceous substance. The other was greenish, which is considered to be a secondary feature (Budziszewski 2008, 47), and its siliceous substance was uniform, with slightly granular suspension inside.

It seems that one of the sources of raw material in both the Mesolithic and the Early Bronze Ages was the moraines situated within a dozen or so kilometres to the NW of the site, in Niepołomice Forest. These moraines were localised by Dr habil. Bogdana Izmailow (oral information), who reported an occurrence of erratic and chocolate concretions within them. This location of the extraction point of raw materials utilised in Jasień is supported by traces of long transportation preserved on the cortex of two artefacts. Raw materials could have also been obtained from the nearby Jurassic flint outcrops located in the region of Cracow.

5.3. Mesolithic flint materials

Amongst the flint artefacts obtained so far, four specimens could be linked with the Mesolithic based on their typological features. They occurred within ares 130/110–150/110. A core, as well as fragments of an overpassed blade and a crested blade were found within the mixed

cultural layer, while another blade was obtained from feature 22. These included a single platform core for blades and flakes (Fig. 22: 1), a fragment of an overpassed blade wearing scars of a flaking surface in its distal part (Fig. 22: 3), and a mesial part of a single-sided crested blade (Fig. 22: 2). They were made of Cracow Jurassic flint (core and crested blade), and most likely, erratic Cretaceous flint (overpassed blade). The blade was made of chocolate flint and was detached by means of the direct percussion method (Fig. 23: 6).

Preparation of the core was very spare, limited exclusively to preparation of the striking platform. The first flaking surface was situated on a narrow side of the flint concretion, and the striking platform was prepared with blows from the side of the flaking surface. Exploitation of this flaking surface was unsuccessful, ending with detachment of a few tiny blades with hinges, which stimulated a decision to move the flaking surface onto the wider side of the flint concretion. The striking platform was rejuvenated with blows from the side of the flaking surface situated on a wider side of the core. After detaching a blade, a single-sided crest was formed on one of the sides of the core, preparing it for further exploitation. The angles of exploitation were close to right angles. A very "elegant" blade with parallel edges was made of chocolate flint. An occurrence of an overpassed blade and a single-sided crested blade prove that at site 38 in Jasień exploitation of cores was performed, which is inseparably accompanied by rejuvenation treatments. The so-called overpassed blade was detached in order to even the plane of the flaking surface. Once this had been done, the core was exploited as a single platform core. The secondary single-sided crested blade can be associated with a treatment aimed at widening a flaking surface.

There is a certain difficulty in determining the chronological and cultural affiliations of the above-mentioned specimens due to a lack of any tools, in particular. The technique of preparation and exploitation of the core, based on adjusting the manner of these treatments to its size and shape, should be considered distinctive and typical of the Komornica culture (Kozłowski 1972, 70). Similar cores have been encountered at archaeological sites in Lesser Poland (Chochorowska 2001; Dagnan-Ginter, Drobniiewicz 1974; Kozłowski 1968a; Kozłowski 1968b) and Greater Poland (Trzeciakowski 1968). The above-mentioned blade with parallel edges, made of chocolate flint of greenish colour, was detached from a core with a very regular flaking surface. Such a thorough preparation of cores is typical of the Janisławice culture (Kozłowski 1972, 138, 140, Wąs 2005).

The scarce flint assemblage under analysis can be most likely linked with two Mesolithic episodes of the settlement. The first one referred to the phase of the Komornica culture, with readable traces of post-Maglemosian influences, dated to the decline of the Boreal Period. The other might have been associated with the Janisławice culture (?), dated mainly to the Atlantic Period.

5.4. Flint materials having ambiguous affiliation to the Trzciniec culture

Ceramic materials discovered at the site in Jasień were almost exclusively ascribed to the Trzciniec culture. Only a few could have been connected with the Mierzanowice and Lusatian cultures. Therefore, one can expect that at least some of the flint artefacts were produced by settlers inhabiting this site in the Older Bronze Age.

Nevertheless, the state of knowledge on flint assemblages of the Trzciniec culture is far from satisfactory, and the basic source of knowledge on this cultural unit remains pottery coming from assemblages obtained from settlements, graves, and deposits, while its relative dating is based on chronology of bronze artefacts (Górski 2004, 155). Serious difficulties in defining the flint tradition of the Trzciniec culture, or more precisely distinguishing it from assemblages of the Mierzanowice culture, stem from the lack of available explicit sources.

One of the major reasons for these difficulties is the common exploration of the same areas by communities of both the Trzciniec and Mierzanowice cultures (Rydzewski 1986, 145; Górski 2012a; Górski 2012b). Site 38 was inhabited mainly by the Trzciniec societies. However, the presence of Mierzanowice settlers cannot be excluded either, which is supported by the results of analyses of pottery. Technical and technological aspects of flint materials of the Trzciniec culture have been paid more attention in the literature. These issues were raised, among others, by J. Kopacz (1987), who studied selected assemblages from the region of Kraków-Nowa Huta. H. Więckowska (1971, 140–145, pls XXV, XXVI) described flint and stone materials obtained from nine features discovered at the settlement of the Trzciniec culture in Opatów, situated on loess soils. Finally, A. Gardawski (1951, pl. VI: fig. 42) published flint artefacts from a cemetery in Łubna, dist. Sieradz. Nevertheless, there are still serious doubts concerning the homogeneity of the above assemblages. With regard to the first publication, reservations were expressed concerning the possibility of occurrence of a Neolithic admixture. The assemblage from Opatów was suspected of containing “intrusions” from features of the Linear Pottery culture. While in the last case a major concern was raised by the presence of elements typical of the Corded Ware culture. At the end of the 1990s the flint tradition of the Trzciniec culture was most comprehensively summarised by J. Budziszewski (1998). The issues of raw material acquisition and occurrence of bifacial forms at archaeological sites of the Eastern Lesser Poland and Western Volhynian Uplands, as well as western Polesie, were addressed by H. Taras (1997). Settlement of the Trzciniec culture in the territory between the Vistula, Bug, and San Rivers was described from the viewpoint of the geographical environment by H. Wróbel, who presented a selection of pottery and bronze artefacts (1991, 237–252). P. Valde-Nowak is the author of a study dedicated to a single artefact of the Trzciniec culture, namely a backed knife discovered in Gabułów (Valde-Nowak 2006), for which he found some analogues at sites ascribed to the Trzciniec culture in Jakuszowice, Kraków-Nowa Huta, Żerniki, and Opatów.

The flint tradition of the Mierzanowice culture is far better recognised, and more thoroughly. Therefore, the authors decided to quote only a few studies addressing this issue, among many others that have emerged thus far. A necessity to classify flint materials from the Early Bronze Age was pointed out by B. Balcer at the beginning of the 1970s (1971). Typological and technical characteristics of flint materials obtained in the course of excavations at the Mierzanowice site “Babia Góra” in Iwanowice were published by J. Kopacz (1976, 90–105). The raw material base of this flint industry was addressed by J. Budziszewski (1991, 192–206). A full picture of the flint tradition of the Mierzanowice culture was most comprehensively presented in a publication dedicated to flint materials from Opatkowice, com. Proszowice, by P. Valde-Nowak (2000).

Therefore, the greatest obstacle hindering analyses of cultural affiliation of flint materials from site 38 in Jasień is the insufficient number of studies of “pure” flint assemblages of the Trzciniec culture. Amongst the nine artefacts four flint artefacts have not been classified. They represent a category of specimens equally fitting to both the Stone Age and the younger chronological periods. These include the following:

- a small flake with a damaged tip and scars running parallel and perpendicular to the flake axis, with a prepared butt, coming most likely from preparation of a flaking surface (Cracow Jurassic flint of light brown colour and transparent siliceous substance);
- a mesial fragment of a partly cortical blade (Cracow Jurassic flint of brown colour, with a smooth cortical layer and transparent siliceous substance);
- a distal fragment of a blade (Cracow Jurassic flint of brown colour and transparent siliceous substance) obtained from feature no. 26;
- a scaled piece (Cracow Jurassic flint).

Another five artefacts were found within ares 120–140/110. These include:

- a massive flake detached with a hard hammer, with an edge butt; during detachment, the force of percussion shaped the tip of the flake, being held against a slab (?), in a form of a large full cone (flint of ashen colour and non-transparent siliceous substance, with non-uniform degree of silica crystallisation);
- a proximal fragment of a blade with a natural butt and an acute butt angle, detached by means of the punch technique (chocolate flint of light brown-rusty colour and transparent siliceous substance);
- a backed piece made on a blade with a convex back and edge butt (Cracow Jurassic flint of brown colour, with irregular suspension inside and transparent siliceous substance) – Fig. 22: 5;
- an ogival endscraper made on a flake with a regular abrupt retouch on the dorsal side (Cracow Jurassic flint of beige colour and non-transparent siliceous substance) – Fig. 22: 4;
- chunk from a splintered piece wearing traces of pounding (Cracow Jurassic flint of brown colour, with slightly transparent siliceous substance and irregular suspension inside).

The massive flake and the chunk from a splintered piece are within the range of variability of forms known from both the Trzciniec and the Mierzanowice cultures. With regard to the blade, its cultural range is wider because such forms are known from the Stone Age. For the two distinguished tools no analogues in the existing literature, referring to both cultural units, have been found. Nevertheless, due to an almost absolute predominance of the Trzciniec pottery forms, linking this group of artefacts with the Trzciniec culture seems to be well-justified.

The collection of flint materials obtained from the site under scrutiny is very scarce. Characteristics of the core and two technical blades correspond, in terms of stylistics, with artefacts ascribed to the post-Maglemose units (Ginter 1972, 70; Kozłowski 1989, 138–148). Therefore, the first settlers who arrived at this area and established a camp were representatives of the Mesolithic at the decline of the Boreal Period. Unfortunately, the state of research on flint traditions of the Older Bronze Age remains unsatisfactory. Although there are studies dedicated to selected artefacts, publications summarising the so-called late flint tradition are still lacking. Each attempt to differentiate a dozen or so flint artefacts obtained from a multi-cultural site in terms of their chronological and cultural affiliation is imperfect and burdened with the risk of creating pseudo-artefacts. Nevertheless, the finds of fragments of clay vessels from Jasień are almost exclusively associated with the Trzciniec culture. Therefore, an assumption that at least a few flint artefacts should also be linked with the Trzciniec culture seems reasonable. This mostly concerns the ogival endscraper and the backed piece, representing forms having no analogues in far better-recognised and better-defined assemblages of the Mierzanowice culture.

6. Chronology and settlement phases

The earliest traces of settlement encountered at site 38 in Jasień are evidenced by a few flint artefacts that can be linked with two Mesolithic cultural units, namely the Komornica culture with post-Maglemosian elements, and the Janisławice culture (?). Other archaeological materials dated to younger settlement phases are equally scarce and are represented by pottery fragments associated with the Mierzanowice and Lusatian cultures. Moreover, there are no premises to link these cultural units with any of the features uncovered at the site under scrutiny.

Amongst the artefacts from Jasień, materials referring to the Trzciniec culture are predominant. In terms of style and formal and technological characteristics they are extremely uniform.

They reveal traits typical of the classical phase of the Trzciniec culture development. With regard to distinguished forms, one-piece, non-profiled bowls corresponding with bowls of types 2.1 and 2.2 acc. to J. Górski (2007, fig. 14) and gently profiled pots of type 1.1.1 (Górski 2007, fig. 10) prevail. They are complemented by vases of type 2 acc. to the typology of J. Górski (2007, fig. 16) and mugs. These forms were decorated with horizontal bands, and a great majority of preserved rim fragments had their edges thickened and obliquely trimmed. Archaeological materials encountered at site 38 in Jasień reveal a close resemblance to assemblages of the classical phase of the Trzciniec culture from western Lesser Poland. The above-mentioned forms have been recorded in all assemblages of type A (Górski 2007, 75–81). The absence of any other ornamentation motifs, such as incised decoration, and the lack of amphorae allowed the authors to classify the set under analysis as subtype A2. Therefore, the settlement can be dated to 1600–1400 BC, i. e. period B of the Bronze Age acc. to the scheme of P. Reinecke (Górski 2007, 56–62, 85–91, 94–95).

All of the features discovered at the site were associated with the Trzciniec culture, although most of them were lacking any archaeological materials. This interpretation is supported by a scarce contribution of pottery ascribed to other cultural units, as well as the compact extent of these features overlapping with the distribution of the Trzciniec artefacts found within the cultural layer (comp. Fig. 4).

The relatively small quantity of ceramic materials and their “narrow” chorological frames, as well as the lack of deep pits, trapezoidal in shape, so typical of long-term settlements of the Trzciniec culture, prompted the authors to assume that this was most likely a single-phase settlement.

Apart from archaeological materials discovered at the site under analysis, a shallow groove was also encountered in the southern part of the investigated area. Its fill, containing a large amount of humus with no artefacts at all, and its meandering shape allowed the authors to assume that this could have been a sort of a drainage ditch or the remains of a shallow trench.

7. Conclusions

To determine the nature of the discovered scarce relics of the Komornica and Janisławice (?) cultures from the Mesolithic period, and the cultural units of the Bronze Age, namely Mierzanowice, Lusatian and Trzciniec cultures (the latter represented most numerous), one should take into account the original relief of this terrain. Rescue excavations covered the entire extent of the site with preserved cultural sediments or archaeological features. However, the original extent of the sandy culmination had been significantly greater (comp. Fig. 1). Its north-eastern part has been destroyed in recent times due to construction of a road and extraction of sand. This means that the actual extent of the site must have been much greater than that presently recorded (by several times even). This is also indicated by an evident concentration of preserved features along the existing road. Therefore, both the small area of the site and chronological uniformity of the remains of the Trzciniec culture settlement may be apparent, especially if we assume that a significantly greater area of the site in its eastern part has not been subject to investigation. This interpretation is also supported by the occurrence of only a few artefacts associated with other cultural units.

Undoubtedly, the most significant outcome of the excavations in question was the discovery of a settlement of the Trzciniec culture within the zone situated to the south of the Vistula River. The existing subject literature presents this river as a well-documented southern boundary of the Trzciniec culture ecumene (Górski 1997; 2007). Until the 1960s, to the south of the Vistula River only single finds of this cultural unit had been recorded, such as artefacts from Kraków-Wola

Duchacka (Jamka 1946, 122–125) and Zakrzów, dist. Wieliczka (Gromnicki 1961, 43). Systematic field surveys carried out in this region in successive years (Polish Archaeological Record) resulted in the discovery of another five sites, namely Podłęże 12, Zagórze 12, Zabłocie 6, Dziewin 1 and Wiatowice 4. This picture has been significantly modified due to findings made during rescue excavations conducted within the past dozen or so years along the route of the A4 motorway. In the regions located to the south of the Vistula River and to the north and north-west of Wieliczka, 12 settlements of the Trzciniec culture were identified and explored, at least partly (Fig. 24). These included: Kraków-Biezanów, sites 8 (Wójcik 2012), 15 (Przybyła, Byrska-Fudali 2012), 11 (Mazur 2012), 21 (Poleska 2012) and 30 (Górski 2012a); Kokotów, sites 13 (Rodak 2012), 19 (Górski 2012c; Górski, Matoga 2017) and 20 (Józwiak 2011); Podłęże, site 17 (Dzięgielewski, Szczerba, Chudzińska 2011, 315–348); Zakrzów, site 1 (Przybyła, Chudzińska 2009); Brzezie, site 37 (Józwiak, Domaradzka 2011); Kłaj, site 36 (E. Włodarczak, P. Włodarczak 2011); and finally, Targowisko, sites 10, 11 (Górski 2015, 55, 57, 60). At most of these sites, small quantities of artefacts and single features were recorded. More numerous assemblages were only obtained from sites 13 and 19 in Kokotów, site 1 in Zakrzów, and most importantly, site no. 15 in Kraków-Biezanów. The last site delivered not only a great number of the Trzciniec features (including those interpreted as salt production-related hearths) but also more than a hundred thousand pottery fragments. Within the vessel inventory one-piece non-profiled bowls of types 2.1 and 2.2 prevailed, constituting over 50% of all distinguished types of vessels, and were represented mostly by the subtype “b” with little holes under their rims (Przybyła 2010; 2015; 2017). The characteristics of this category of vessels, interpreted by M. M. Przybyła as salt vessels, were presented in a series of articles referring to the possibility of salt production by communities of the Trzciniec culture (among others: Przybyła 2010, 399 ff.; 2015; 2017). This hypothesis would also indicate a reason why the Trzciniec culture settlement emerged in this region. It would not have been a manifestation of a tendency to expand and take over new territories to the south of the Vistula River; instead this should be considered a piece of evidence to support pursuing control of the brine-rich areas. The latter possibility would explain the relatively small number of settlements concentrated over a small territory. The region in question was a zone with numerous brine springs (Jodłowski 1969; 1976), and salt production is well-documented at numerous sites dated from the Neolithic until the Hallstatt period (Jodłowski 1969; 1976; Przybyła 2010; 2015; 2017).

Nevertheless, one should stress certain difficulties with the indisputable association of some of the discovered settlements with salt production activity. In contrast to younger salt vessels of the Lusatian culture, significantly differing from other pottery forms of this cultural unit in terms of technology of their execution, vessels of the Trzciniec culture do not reveal any differentiation in this respect. This causes difficulty in identification of small assemblages of artefacts, constituted only by tiny fragments that cannot be univocally ascribed to particular types of bowls. This is the situation we are dealing with not only with regard to settlements distinguished exclusively based on field surveys. Most of the above-mentioned excavated settlements of the Trzciniec culture were identified based on a relatively scarce and strongly fragmented ceramic material as well as a few storage pits. However, it seems not to be due to the nature of these settlements themselves. Possibly, in most of these cases only small peripheral parts of larger settlements have been identified. The state of research does not allow determining the scale of salt production carried out by societies of the Trzciniec culture. Determining the location of settlements based on field survey results is not very effective (only four sites recorded) since tiny and damaged sherds hinder undisputable identification of pottery of this cultural unit. Well-known agglomerations of settlements cannot be considered as certain premises to

evaluate the frequency of their occurrence in general. Their band-shaped alignment, visible on a map (Fig. 24), is due to the fact that they were usually discovered during rescue excavations conducted along the route of a prospective motorway running latitudinally.

With regard to the materials from Jasień, their true nature is difficult to determine. Site 38 is situated over 20 km to the east of the agglomeration of settlements of the Trzciniec culture in the region of Wieliczka (Fig. 24). Due to certain similarities of this ceramic inventory to other Trzciniec assemblages, the site in Jasień can be considered the southern- and easternmost “out-post” occupied by communities of the Trzciniec culture that had migrated there from the Nida Basin. Although the ceramic inventory contained non-profiled bowls, it still lacked salt vessels with holes under their rims. However, one must take into account the fact that the investigated area was most likely only a part of a larger settlement. Moreover, it should be stressed that just like sites from the region of Wieliczka, Jasień is located within the band of occurrence of brine springs, indirectly proved by local names referring to salt production (Jodłowski 1969, fig. 1; Kadrow, Nowak-Włodarczak 2003, fig. 9). Unfortunately, to this day, no direct evidence of prehistoric salt production in this region has been identified (Jodłowski 1976, fig. 51; Kadrow, Nowak-Włodarczak 2003, fig. 9).

Fig. 24. Location of Trzciniec culture sites south of the Vistula in western part of the Sandomierz Basin (1 – Kraków-Biechanów, site 8; 2 – Kraków-Biechanów, site 15; 3 – Kraków-Biechanów, site 11; 4 – Kraków-Biechanów, site 30; 5 – Kraków-Biechanów, site 21; 6 – Kokotów, site 21; 7 – Kokotów, site 13; 8 – Kokotów, site 19; 9 – Zakrzów, site 1; 10 – Podłęże, site 17; 11 – Brzezie, site 37; 12 – Kłaj, site 36; 13 – Jasień, site 38; 14 – Wieliczka, site 121; 15 – Zagórze, site 12; 16 – Zabłocie, site 6; 17 – Wiatowice, site 4; 18 – Podłęże, site 12, 19 – Dziwin, site 1; 20 – Targowisko, site 10, 11)

Osada kultury trzcinieckiej na Podgórzu Bocheńskim (Jasień, stan. 38, gm. Brzesko)

W 2013 roku przeprowadzono ratownicze badania wykopaliskowe na stanowisku 38 w Jasieniu, gm. Brzesko. Powodem była budowa zjazdu z autostrady A4. Z ramienia spółki jawnej "Instytut Archeologii i Etnologii PAN, Muzeum Archeologiczne w Krakowie i Uniwersytet Jagielloński – Krakowski Zespół do Badań Autostrad" badaniami kierował Radosław Czerniak z Archeologicznej Pracowni „IN SITU”.

Stanowisko położone jest na obszarze Wysoczyzny Szczepanowskiej będącej częścią Kotliny Sandomierskiej. Usytuowane jest na zachodniej krawędzi kulminacji wydmy, mocno zniszczonej w wyniku eksploatacji piasku i podczas budowy autostrady. Są to obrzeża podmokłej doliny Uszewki. Przebadano ostatni zachowany fragment stanowiska (9,36 ara) odkrywając 14 obiektów archeologicznych. Większość to jamy osadowe kultury trzcinieckiej. Najstarsze ślady osadnictwa, poświadczone tylko przez pojedyncze wyroby krzemienne, wiązać można z dwoma mezolitycznymi kulturami – komornicką z elementami postmaglemoskimi i janisławicką (?). Z innych faz osadniczych pochodzą nieliczne fragmenty ceramiki kultur mierzanowickiej i łużyckiej. Brak jest natomiast tak datowanych obiektów. Wśród zabytków z Jasienia dominują materiały związane z kulturą trzciniecką. Pod względem stylistycznym, formalnym i technologicznym są one bardzo jednolite. Wykazują cechy typowe dla klasycznej fazy kultury trzcinieckiej. Wśród wyróżnionych form naczyń najczęściej występują misy jednoczęściowe, nieprofilowane, odpowiadające misom typu 2.1 i 2.2 wg J. Górskiego (2007, ryc. 14) i garnki łagodnie profilowane typu 1.1.1 (Górski 2007, ryc. 10). Uzupełniają je wazy typu 2 wg typologii J. Górskiego (2007, ryc. 16) oraz kubki. Naczynia te zdobione były poziomymi listwami plastycznymi, a zachowane fragmenty brzegowe przeważnie były pogrubione i skośnie ścięte. Materiał z Jasienia wykazuje duże podobieństwa do zespołów klasycznej fazy kultury trzcinieckiej z zachodniej Małopolski. Wymienione formy występują we wszystkich zespołach typu A (Górski 2007, 75–81). Brak innych wątków ornamentacyjnych takich jak dekoracja ryta, czy nieobecność amfor pozwala zaklasyfikować ten materiał do podtypu A2. Osadę można więc datować na lata 1600–1400 BC, czyli okres B epoki brązu wg podziału P. Reineckego (Górski 2007, 56–62, 85–91, 94–95).

Z kulturą trzciniecką powiązano także jamy pozbawione zabytków oraz jamy zawierające materiały o nieokreślonej chronologii. Za taką interpretacją przemawia znikoma reprezentacja w analizowanych inwentarzach ceramiki innych kultur. Wskazuje na to także lokalizacja jam. Zarówno te z ceramiką kultury trzcinieckiej, jak i te pozbawione artefaktów, zgrupowane są w strefie występowania zabytków kultury trzcinieckiej w nawarstwieniach poza obiektami (por. Ryc. 4). Stosunkowo niewielka ilość zabytków ceramicznych i ich „wąskie” ramy chronologiczne oraz brak głębokich, trapezowatych jam osadowych, charakterystycznych dla długotrwałych osad kultury trzcinieckiej, pozwalają przypuszczać, że była to zapewne osada jednofazowa.

Najistotniejszym rezultatem omawianych badań jest niewątpliwie odkrycie osady kultury trzcinieckiej w strefie na południe od Wisły. W literaturze przedmiotu Wisła jest bowiem traktowana, jako dobrze udokumentowana południowa granica ekumeny ludności kultury trzcinieckiej (Górski 1997; 2007).

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