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ARCHAEOLOGICAL AND ARCHAEOBOTANICAL RESEARCH AT AN EARLY MEDIEVAL SITE IN WILDNO, KUJAWSKO-POMORSKIE VOIVODESHIP

Abstract: The paper presents the results of the archaeological excavation of the Early Medieval site at Wildno (site 10) and the initial results of ongoing archaeobotanical analysis of plant macro-remains from the same site. During rescue excavation many archaeological features were found. Among them a few probable huts, smokehouses and tar pits were discovered. Inside them, plant macro-remains were found. Analyses showed remains of cultivated plant and weed species, which provides evidence of farming practice during early medieval times. The cultivated plants were *Linum usitatissimum, Panicum miliaceum* and *Triticum aestivum.*

Key words: Archaeobotany, Early Medieval Settlement, cultivated plants, weeds

Introduction

Recently, cooperation between archaeologists and other specialists, especially archaeobotanists, is very common (Gackowski 2000; Chudziak 2004; Latałowa, Pińska 2010; Pińska 2010; Badura 2011). The archaeological excavation in Wildno, Chrostkowo commune, in the Kujawsko-Pomorskie voivodeship is an example of just such a multidisciplinary work. The small village Wildno is located in north-central Poland, about 50 km from Toruń (Fig. 1).

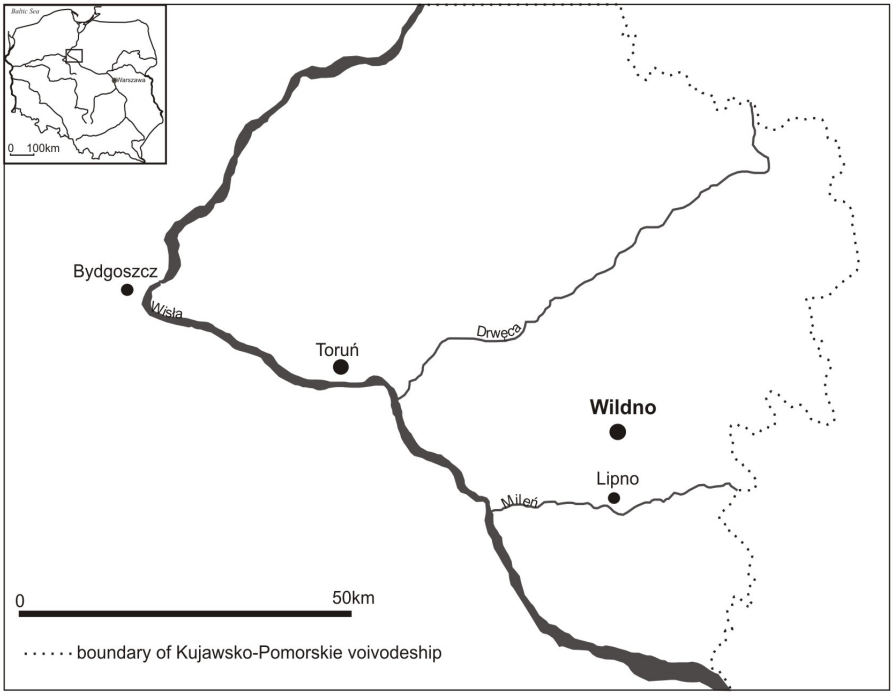

Fig. 1. Wildno, site 10, Chrostkowo commune, Kujawsko-Pomorskie voivodeship. Location on the map of Poland

The archaeological site is located in an agricultural and undeveloped area. It is situated on the Vistula glacial moraine plateau (check Marszelewski 2001, Fig. 3). At the north edge of the site is Wildno Lake (Fig. 2).

Fig. 2. Wildno, site 10, Chrostkowo commune, Kujawsko-Pomorskie voivodeship. View from archaeological site towards North (Photo A.Wiktor)

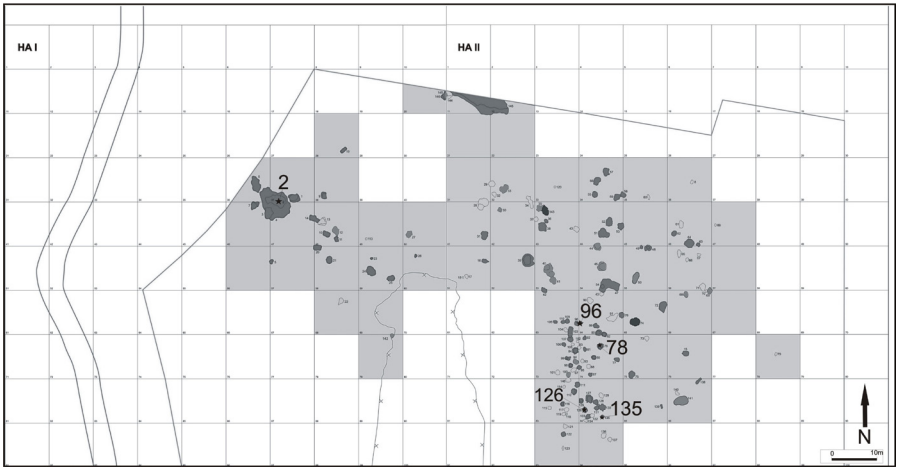

Fig. 3. Wildno, site 10, Chrostkowo commune, Kujawsko-Pomorskie voivodeship. General plan of archaeological site (★ Archaeological features from which soil samples have already been collected and analysed)

In April 2010 rescue excavation was carried out by two private archaeological companies - Archaeological Research Workshop THOR from Niechanowo and Archaeological and Archaeobotanical Workshop Arkadiusz Wiktor from Skulsk. The archaeological site was located on a moraine hill at the Wildno Lake. This area has been designated for quarrying, and an archaeological excavation had to be done before quarrying could start. We knew that archaeological monitoring in the 1980s discovered some archaeological evidence of settlement here, so we were expecting to discover the remains of huts or storage and waste pits, which are often recorded on early medieval sites. During a few weeks' fieldwork, nearly 2 hectares were investigated. The aim of this article is to report new finds, both archaeological and botanical, from the Kujawsko-Pomorskie voivodeship. Plant remains recorded in samples might be of particular interest, as analysis of this kind of material has not been done so far for this part of the Kujawsko-Pomorskie voivodeship.

Materials and method

In the investigated area, over 140 archaeological features were discovered. They were concentrated in two particular places (Fig. 3). One of the places consisted mainly of probable huts (dwellings) and postholes. The second consisted of the remains of smokehouses, storage pits and tar pits. Based on pottery and other finds typical for early medieval times (Fig. 4, Fig. 5) we identified that the settlement originated during the period from the 8th to the 12th century. The most intensive development of this

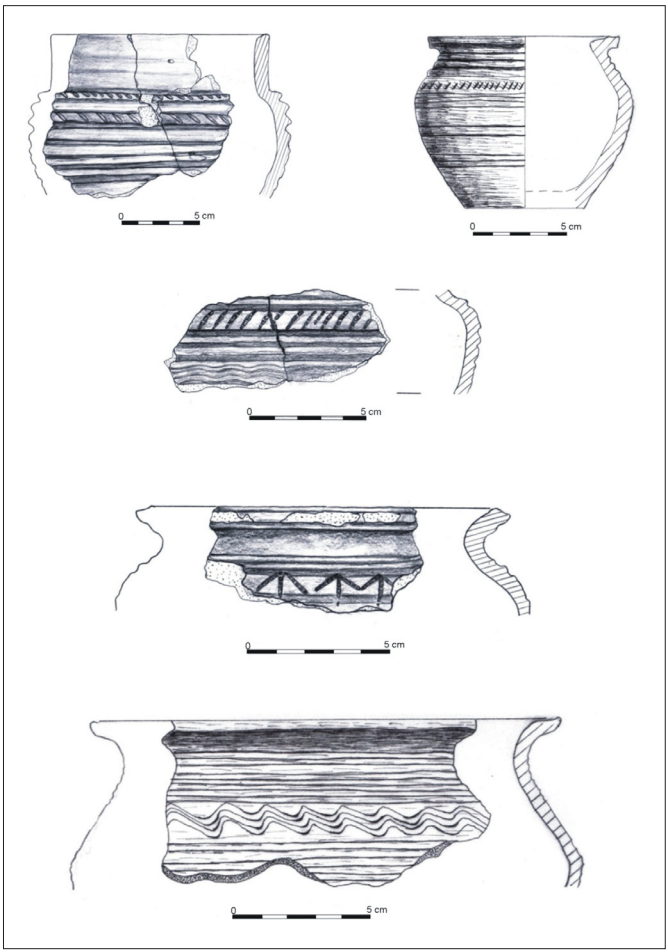

Fig. 4. Wildno site 10. Chrostkowo commune, Kujawsko-Pomorskie voivodeships. Selected pottery discoverd on site (Drawn by M. Lizoń, A. Zięba).

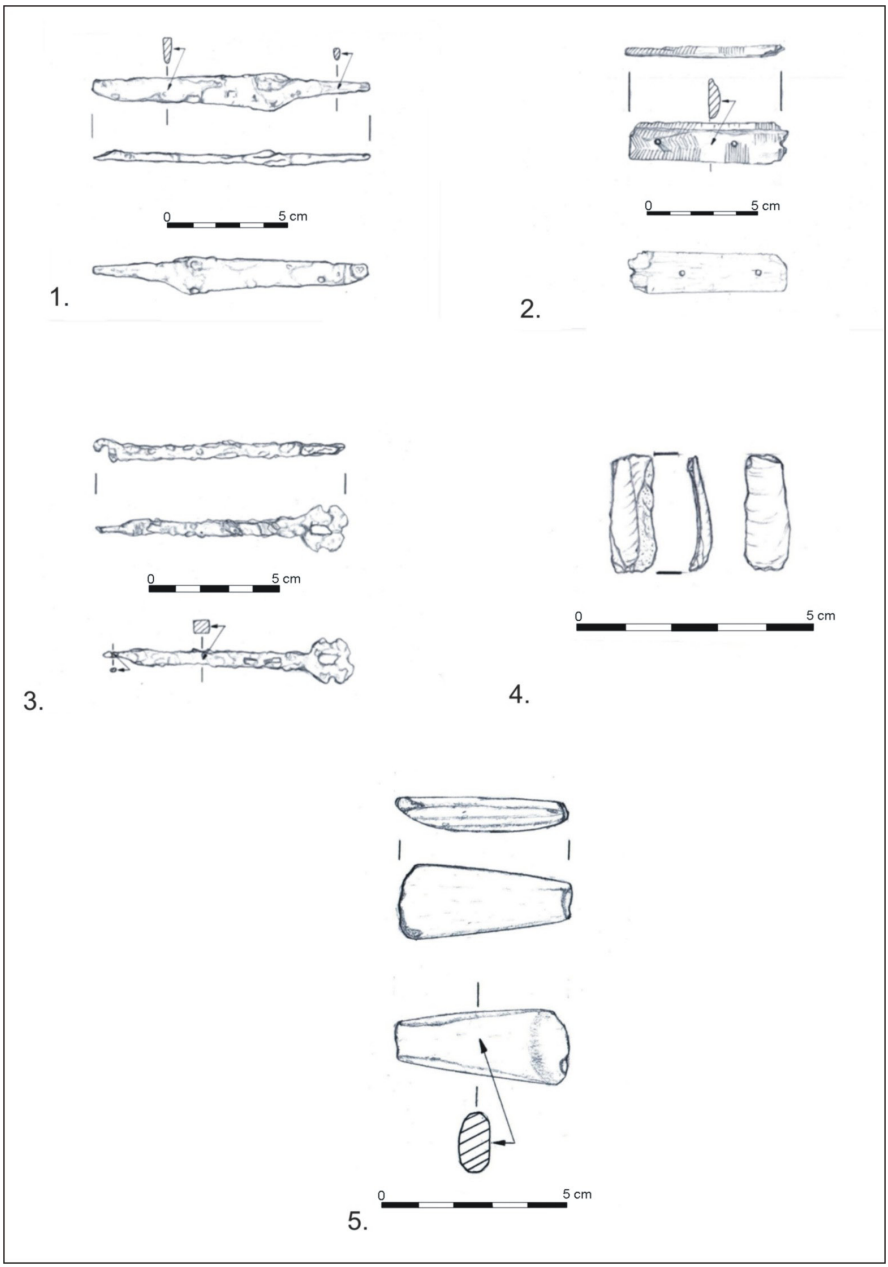

Fig. 5. Wildno site 10. Chrostkowo commune, Kujawsko-Pomorskie voivodeships. Selected finds discovered on site. 1 – an iron knife, 2 – a piece of comb, 3 – an iron key, 4 – a flint, 5 – a small axe (Drawn by A. Zięba).

area probably took place during the 11th and 12th centuries[1]. Because the archaeological features were very distinctive, over 190 soil samples were collected. The main purpose of the archaeobotanical analysis was to complete our knowledge of this place and its role in the structure of early medieval settlement. In this paper we present the very first results of the analysis of plant macro-remains.

The collected soil samples were all 5 litres in volume. They were sieved in the field on meshes of 2.0, 0.5 and 0.2 mm. The whole botanical material was analysed using an Olympus SZ-61 stereoscopic microscope. The botanical nomenclature follows *Vascular Plants of Poland – a check list* (Mirek et al. 2002).

Results

The first ten previously analysed samples were collected from five archaeological features (see Fig. 3 and Tab. 1). From each feature two samples have been examined so far. Those archaeological features were identified as: a hearth discovered inside the hut (Feature No.2); a tar pit (Feature No.76); a probable storage pit (Feature No. 96) and two smokehouses (Features No. 126 and 135). The archaeological material which was found in those features, consist mainly of pottery fragments and a small number of animal bone fragments (see tab.2). There were no other objects which indicated early settlement. Technological analysis of the pottery dates it to the 11th/12th century. Objects such as knives, nails and slugs were also discovered inside other archaeological features during excavation.

Analyses revealed the remains of cultivated plants. Samples also contained the seeds of weeds. The plant material was preserved mainly in a carbonized state. Beside the carbonized remains, mineralized seeds were found (Fig. 6). The list of taxa is twenty items long. Thirteen of them were determined to the genus level, while four could be described to species level, and two to family level. Some items remain unidentified (Tab. 2).

[1] Nearly 3000 pieces of pottery was discovered on site, majority of it has been determined as Early Medieval, mainly from 11th and 12th century. Just a few pieces were described as prehistoric type.

Tab. 1. Wildno, site 10. Chrostkowo commune, Kujawsko-Pomorskie voivodeship. List of archaeological features and samples presented in paper. State of preservation - key: ch – charred, f – fragment, fr – fruit, g – grain(s), m – mineralized, n – nutlet, s – seed(s)

Feature				Botanical finds			
Number	**Location [Ha/Ar/Ćw.]**	**Function**	**Archaeological finds**	**Sample Inv.No.**	**Taxa**	**Number of specimens**	**State of preservation**
2	I/36,37,46,47/ D,C,B,A	hearth inside hut	279 fragments of pottery 17 fragments of animal bones	3/10	*Chenopodium album*	4	ch,s
					Indeterminata	2	ch,f
					Panicum miliaceum	1	ch, g
					Polygonum minus	3	ch, n
					Rumex acetosa	1	ch, n
				4/10	*Chenopodium album*	3	ch, s
					Panicum miliaceum	6	ch, g
					Rumex acetosella	1	ch, n

Tab. 1. cont.

					Setaria viridis/ S. verticilata	1	ch, g
78	II/74/AB	tar pit	66 fragments of pottery 13 fragment of animal bones	67/10	Cerealia indet.	3	ch, g, f
					Chenopodium sp.	1	ch, s, f
					Galium spurium	2	ch, fr
					Indetrminata	2	ch, f
					Plantago lanceolata	1	ch, s
					Polygonum lapathifolium	1	ch, n
					Rumex acetosa	1	ch, n
				71/10	*Polygonum lapathifolium*	1	
					cf. *Polygonum lapathifolium*	1	m, n
					Stachys sp.	1	m

Tab. 1. cont.

96	II/63,64/D,C	storage pit (?)	2 fragments of pottery 10 fragments of animal bones	121/10	*Galium* sp.	1	ch, fr, f
					Indeterminata	2	ch, f
				122/10	*Panicum miliaceum*	1	ch, g
					Poaceae	1	ch, g, f
					Polygonum sp.	1	ch, n
126	II/84/C	smokehouse	21 fragments of pottery 5 fragments of animal bones	147/10	*Panicum miliaceum*	1	ch, g
					Polygonum lapathifolium	1	ch, n
				152/10	*Chenopodium album*	4	ch, s
					Galium aparine	1	ch, fr
					Galium spurium	1	ch, fr
					Indetrminata	6	ch, f
					Polygonum lapathifolium	7	ch, n

Tab. 1. cont.

					Rumex crispus	1	ch, n
					Setaria viridis/ S. verticilata	1	ch, gr
					Triticum aestivum	1	ch. g
135	II/84/C,D	smokehouse	49 fragments of pottery	180/10	*Chenopodium album*	1	ch, s
				182/10	*Linum usitatissimum*	1	m, s

Tab. 2. Wildno, site 10, Chrostkowo commune, Kujawsko-Pomorskie voviodeship. List of taxa

Taxa	Number of finds
Cerealia indet.	3
Chenopodium album	12
Chenopodium sp.	1
Galium aparine	1
Galium sp.	1
Galium spurium	3
Indeterminate	12
Linum usitatissimum	1
Panicum miliaceum	9
Plantago lanceolata	1
Poaceae	1
Polygonum lapathifolium	10
cf. *Polygonum lapathifolium*	1
Polygonum minus	3
Polygonum sp.	1
Rumex acetosa	2
Rumex acetosella	1
Rumex crispus	1
Setaria viridis/ S. verticilata	2
Stachys sp.	1
Triticum aestivum	2
Sum	**69**

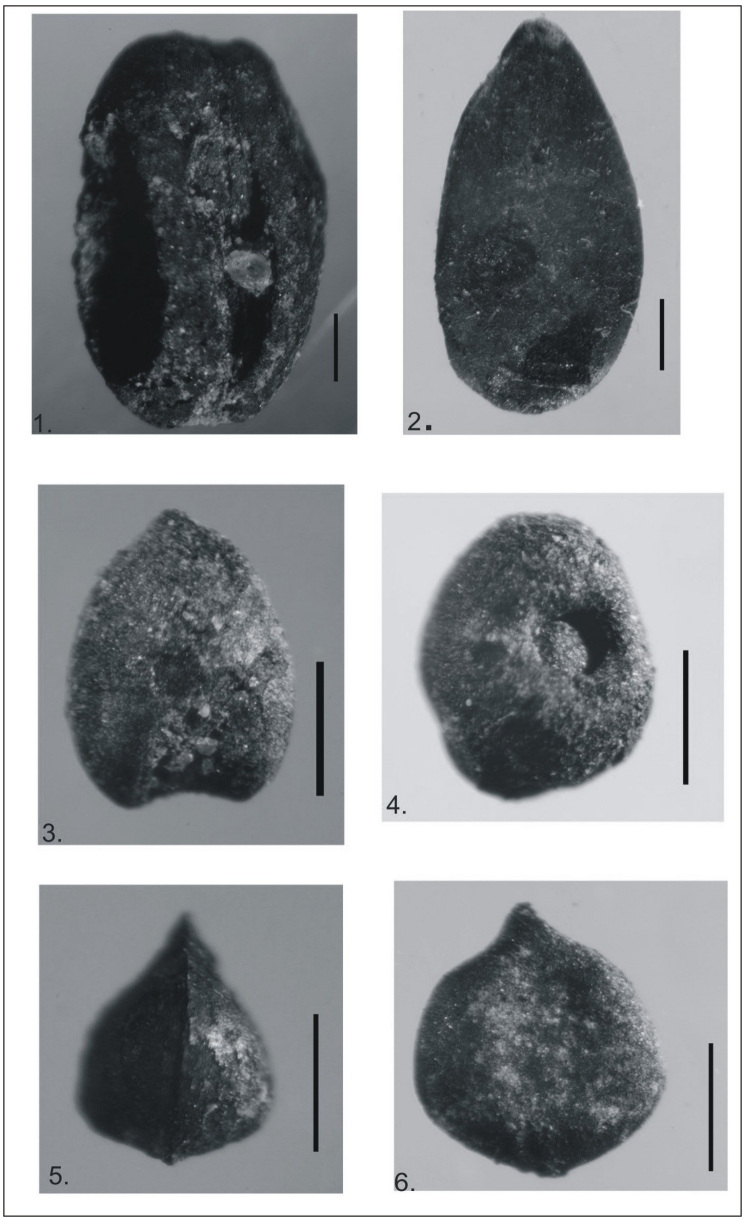

Fig. 6. Wildno, site 10, Chrostkowo commune, Kujawsko-Pomorskie voivodeship. Selected macrofossil remains: 1 – *Triticum aestivum*; 2 – *Linum usitatissimum*; 3 – *Panicum miliaceum*; 4 – *Galium spurium*; 5 – *Rumex crispus*; 6 – *Polygonum lapathifolium*. Scale bar equals 1mm (Photo J. Abramów)

Cereals dominate the cultivated plant finds. Their remains were present in six samples subjected to archaebotanical analysis. They are preserved as carbonized grains. The extent of preservation permitted the description of nine grains as *Panicum miliaceum* and two grains as *Triticum aestivum*. The rest of the grain remains are still unidentified. Grains of *Panicum miliaceum* were discovered in samples from the hearth, the storage pit and one of the smokehouses. Remains of *Triticum aestivum* came from both smokehouses. Unidentified fragments of cereals were present in one sample from a tar pit.

Besides cereals, other cultivated plants were found. Among the seeds one mineralized seed of *Linum usitatissimum* was discovered. It came from one of the smokehouses.

In addition to cultivated plants, seeds of weeds were observed. Finds of field weeds and plants from ruderal habitats were confirmed. Among them such species as *Chenopodium album, Galium aparine, Galium spurium, Plantago lanceolata, Polygonum lapathifolium, Rumex acetosa, Rumex acetosella, Rumex crispus* and *Setaria viridis/S. verticilata* were identified. As one can see, there are species which grow in fertile soil, rich in nitrogen compounds (e.g. *Chenopodium album, Polygonum lapathifolium*). Among the weed seeds some species distinguished for particular cultivation were present such as *Setaria viridis/S. verticilata* (which is associated with the cultivation of millet) or *Galium spurium* connected with *Linum usitatissimum* (Matuszkiewicz 2008; Tymrakiewicz 1976). The remains of some taxa (*Plantago lanceolata* and nutlets of *Rumex acetosella)* may confirm the previous existance of meadows and pastures (Bieniek 1999; Latałowa, Pińska 2010) they may also suggest that people who lived in this area in the past did not only rely on cultivation. Wild plants, such as *Rumex* sp., *Polygonum* sp. or *Setaria* sp., very often complemented the human diet (Maurizio 1926; Henslowa 1962; Łuczaj 2004). At this stage of botanical analysis it is hard to clearly decide the origin and use of the identified taxa. The analysed samples also contained charcoals. The identification of charcoals[2] may suggest the exploitation of forest resources, especially if we take into account the many tar pits discovered at the site. We might have a chance to determine what kind of wood was in particular demand in the past.

[2] It will be done after completing the analysis of plant macro-remains.

During wet sieving, small pieces of animal bones and fish remains were observed. Additional analysis of 397 animal bone remains[3] collected from archaeological features indicated the presence of mammals (98,8%) and birds (1,1%). The domestic mammal remains were predominantly cattle (over 50%). In the faunal remains, pigs, sheep/goats, horses and dog bones were also noticed. Beside domestic animals a few mammal remains belonged to wild beasts, namely roe-deer.

Discussion

The archaeological evidence found at the site (archaeological features, pottery and other finds) allowed us to define this place as an early medieval settlement. The technological and stylistic type of pottery clearly showed that the most intensive development at this area took place in 12th century. This fact might also be confirmed by other settlement points from the early middle ages, which were excavated last century (Chudziak 1991, 1996, 1997). Upon analysis, similarities can be observed in the types of location of settlements. Namely, at that time, it was typical for settlements to be located near lakes or rivers (Chudziak 1996). Based on the types of features present, we could qualify this site as an early medieval settlement focused mainly on tar production: such a concentration of smokehouses and tar pits has not confirmed at other archaeological sites from this period.

Analyses of botanical remains also displayed similarities to other early medieval settlements. The remains of *Panicum miliaceum*, *Triticum aestivum* and *Linum usitatissimum* were also confirmed among the macrofossils from 12th-century features discovered in Kałdus in the Kujawsko-Pomorskie voivodeship (Polcyn, Abramów 2007). The presence of thesecereals was also observed in samples from early medieval sites from Grążawy and Gutowo (Badura 2009), both located in the Kujawsko-Pomorskie voivodeship.

I'd like to emphasize the fact that the botanical analyses from Wildno, site 10 are still in progress, so for a final result and conclusions we will have to wait. However, initial data give us hope that samples from this site will contain many interesting plant remains.

[3] The analysis of animal bone remains was made by PhD K.Waszczuk.

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