Otázky neolitu a eneolitu našich zemí

Sborník referátů z 28. zasedání badatelů pro výzkum neolitu a eneolitu (nejen) Čech, Moravy a Slovenska

Mělník 28. 9. – 1. 10. 2009

Věnováno prof. PhDr. Jiřímu Slámovi, CSc.

Miroslav Popelka a Renata Šmidtová (editoři)
Ústav pro pravěk a ranou dobu dějinou Filozofické fakulty UK
(Prehistorický ústav)

Ředitel: prof. PhDr. Jan Klápště, CSc.

Redakční rada:
doc. PhDr. Miroslav Popelka, CSc., Ústav pro pravěk a ranou dobu dějinou,
Filozofická fakulta Univerzity Karlovy, Praha, CZ, předseda redakční rady
(Miroslav.Popelka@seznam.cz)
Dr. Frank Andraschko, Archäologisches Institut, Universität Hamburg, DE
(drfrank.andraschko@aol.com)
doc. PhDr. Vratislav Janák, CSc., Ústav archeologie, Slezská univerzita, Opava, CZ
(vratislav.janak@fpf.slu.cz)
ing. Renata Šmidtová, Ústav pro pravěk a ranou dobu dějinou, Filozofická
fakulta Univerzity Karlovy, Praha, CZ (Renata.Smidt@seznam.cz)
Mgr. Jana ŠutekOVá, Ph.D., Katedra archeologie, Univerzita Komenského,
Bratislava, SK (sutekova@fphil.uniba.sk)
Ao. Univ.-Prof. Dr. Gerhard Trnka, Institut für Ur- und Frühgeschichte,
Universität Wien, AT (gerhard.trnka@univie.ac.at)

Vědečtí redaktori – editori:
doc. PhDr. Miroslav Popelka, CSc.
ing. Renata Šmidtová

Recenzenti:
prof. PhDr. Vladimír Podborský, DrSc.
doc. PhDr. Ivan Pavlů, DrSc.

Realizaci pracovního setkání a vydání sborníku podpořily:
Filozofická fakulta UK
Výzkumný záměr MŠMT České země uprostřed Evropy v minulosti a dnes
Doktorandská škola archeologie II
Prahistorica et Protohistorica, o.p.s.
Zámeck Mělník

Vydání sborníku tvoří součást výzkumného záměru MŠMT 0021620827 České země uprostřed
Evropy v minulosti a dnes, jehož nositelem je Filozofická fakulta Univerzity Karlovy v Praze, jakož
i projektu Doktorandská škola archeologie II, podporovaného GA ČR (reg. č. 404/08/H026).

© Univerzita Karlova v Praze – Nakladatelství Karolinum, 2011
ISSN 0231-5432
The Trypillia culture mega-site near Nebelivka: summer 2009 season
Mega-sídliště trypilské kultury u Nebelivky: letní výzkumná sezona 2009

John Chapman – Mikhail Videiko


Již prozatímní výsledky jsou z hlediska studia mega-sídlišť trypilské kultury na Ukrajině mimořádně hodnotné, mnohé z nich jsou do literatury uváděny vůbec poprvé (systematické povrchové sběry, čtvercové sběry ve vnitřním prostoru sídliště, doklad přítomnosti rašeliny v této části Ukrajiny).

The paper describes the results of the British-Ukrainian cooperation in the framework of the project called Climax Neolithic Settlement project. Basic Plan and its objectives were met through the development of a carefully formulated methodology of dating hundreds of remains of trypillian houses on the site Nebelivka, or on other sites. This research also prevent surface survey and paleo-environmental reconstruction. Already the tentative results in terms of the study of mega-sites of Trypillian culture in Ukraine are extremely valuable, many of them are given to the literature for the first time (systematic surface survey, square surface survey in the inner area of the site, proof for the presence of the peat in this part of Ukraine).

Klíčová slova: trypilská kultura – mega-sídliště – povrchové sběry – paleo-environmentální rekonstrukce

Key words: Trypillia culture – mega-sites – surface survey – paleo-environmental reconstruction

Background

The Trypillia mega-sites in the Uman region of Western Ukraine constitute the largest sites in 4th millennium BC Europe. Investigations of the mega-sites of Trypillia Culture started in 1971 and continued for many years (for a history of investigations: Videiko 2002). This type of settlement was quite vast, occupying areas from 0.5 to as much 4 square kilometers. In the Ukraine alone, we now know nearly 40 such places. More than 90 settlements have an area between 10–40 ha. So far, we have information about 135 settlements with an area of more than 10 ha in Ukraine, constituting nearly 7% of all known Trypillia culture settlements (nearly 2,000) in this territory. In Moldova, there are 59 Cucuteni-Trypillia settlements with an area of more than 10 hectares (Videiko 2007, tabl. 1).
The best-known group of five mega-sites comprises Tallianky, at 450 ha, Maidanetskoe, at 270 ha, Dobrovody, at 250 ha, Tomashivka, at 250 ha, and Nebelivka, at 250–300 ha (Kruc et al. 2005; Videiko 2003, 2007). At the first, over 2,000 structures have been documented by geophysical prospection and limited excavation. The excavations at all mega-sites so far investigated have shown that burnt house floors have been encountered at a depth of no more than 1 m.

The settlement pattern in the Uman area appears to be based on a five-level size hierarchy (Ellis 1984), raising the possibility that smaller sites near the mega-sites were agricultural producers (Gaydarska 2003). In his book on "The limits of settlement growth", Fletcher (1995) identified the Trypillia sites as the sole major exception to his global model of constraints on agricultural settlement expansion. There is therefore a recognisable need for further research to define the internal chronology of mega-sites to permit a more accurate estimate of settlement population sizes over time, as well as the need to place the mega-sites in a more closely defined context of local and regional settlement.

The fieldwork team consisted of a total of 23 persons – ten staff and 13 students. The Ukrainian side consisted of: Mikhail Videiko (co-director), Natalia Burdo (asst. director); Nadezhda Kotova (Neolithic specialist); Edvard Ovchinnikov (Trypillia pottery); Galina Pashkevitch (archaeo-botany) Mykola Bilenko (flint, postgraduate student) Vitaly Rud, Valenys Sobchuk and Wladyslav Shulzenko (students). The British side consisted of: John Chapman (co-director); Bissarca Gaydarska (asst. director); Konstantin Krementski (palynology); Richard Villis, Natalie Swann (geophysics); Cath Reusch (postgraduate student); Ronan O'Donnell; Lisa Snape-Kennedy; Åshild Vågene, Sam Wilford, Joe Roe, Jessica Greenhalgh and Chris Charmley (students)

Methodology

Settlement belong to Nebelivka local group, stage Trypillia B-II (Ričov 1993). The overall size of the mega-site near Nebelivka has been estimated from 250 to 300 ha., based upon previous aerial photography in the 1980s (Šiskin 1973, 38; Šiskin 1985, Fig. 3: 1; Fig. 1: B) and field prospection in 1981 (Šmaglij – Videiko 1992) and 2009. The site is surrounded on three sides by gullies with streams, which form an effective outer limit to the site (Fig. 1). Fieldwalking out from the core South East field, located on GPS, revealed high surface densities of Trypillia pottery and daub, followed by a gradual reduction in finds density until there was an absence of Trypillia surface material.

The geophysical survey

The geophysical survey (GS) was carried out by Mr. Richard Villis and Ms. Natalie Swann (Durham University Archaeological Services). After half a day of testing the two machines – a Bartington Grad 601-2 gradiometer and a Geoscan FM 256 magnetometer, the team covered almost 15 ha. (165 30 x 30 m grid squares) in 5 working days. The even geomagnetic qualities of the underlying loess and the relatively shallow (< 1 m) depth of the features led to a high-resolution plot (Fig. 3), which revealed a total of over 60 burnt structures, some 10 “shadows” of the same size and shape as the burnt features tentatively interpreted as unburnt houses, some 20 dark features tentatively interpreted as pits and a circular feature representing a large shallow depression of diameter 40 m – perhaps a dew-pond (Fig. 2: a).

The burnt and unburnt features were organised in a highly structured form, with eight rows of structures, as well as six isolates. Four rows were laid out on a broadly North–South axis, the other four on an East–West axis. Geophysical plan defined more precisely planning of the mega-site than satellite image (compare Fig. 1: and Fig. 2: a). The structures in the Northern part of Row B were particularly densely packed, forming what Šmaglij – Videiko (2001–2) identified as a ‘streets’ at Maidanetskoe and Tallianky.
Three of the four North – South rows were interrupted by a gap on the same orientation, in one of which (Row B) was located the largest structures (B5) yet to be found on any Trypillia site. This structure is bipartite, with burnt walls covering almost 40 m in length and over 20 m in width, and an enclosed area of the same width and over 20 m in length (Fig. 2: b). If the dark circular features are in fact pits, it appears that the sectors of several rows have a pit adjacent to a burnt structure.

One other large construction was identified at the square or street (near 70–80 m wide) between the long rows of the houses.

The geophysical plan provides the clearest example to date of the spatial organisation of a Trypillia mega-site. There is far more detail available than on the otherwise admirable 1980–1990 s plans of Dudkin for seven mega-sites (Dudkin–Videiko 2004). In combination with the geophysical site grid, the plot provided a sound basis for the next stage of the research – coring.

**Gridded collection**

An intra-site gridded collection of surface material was made to provide a check on the distribution of magnetic anomalies in the geophysical survey. This collection took the form of a timed pick-up within 128 items of 30 x 30 m grid squares of 30 person-minutes per square. Each grid square was given a GPS point and coded for surface visibility on a scale from 1 (very poor) to 10 (excellent). The data set from this collection is very rich and will be the subject of an undergraduate dissertation by Mr. Joseph Roe. It should be noted that the total number of sherds collected was 2,373, with a total weight of 18.12 kg, while the number of daub fragments reached 6,202, weighing 128.31 kg. Almost 2/3 of the daub fragments were vitrified, confirming the burnt house interpretation.

**Coring**

The coring of 16 burnt structures and three ‘pits’ was completed in three days with a team of four led by Dr. Konstantin Kremenetski. Two members were responsible for finding the coring location with reference to the site grid, while two members used a circular gardening augur (for tree planting) to reach the top of the solid daub level before coring the daub with a hand corer of 5 cm diameter. It was a measure of the accuracy of the geophysicists’ 30 x 30 m grid and survey that every magnetic anomaly was found where expected, and with the deposits expected, whether burnt daub or pit-fill. Only one burnt feature (E1) did not reveal a solid daub layer, rather loosely packed daub in small fragments. The burnt features in the Northernmost part of the grid were located at far greater depth than those in the Southern sector – at 0.80–0.90 m rather than at 0.20–0.30 m. This indicates that the Northernmost structures – and possibly other structures North of the 2009 grid – are located deeper than the plough zone and are thus likely to enjoy better preservation than those structures in the Southern sector. By the same token, the greater depth leads to more effort for the hand coring, supporting the necessity of a mechanical corer for future seasons.

These results were promising in three respects: (a) the coring operation has proved that it is possible to locate magnetic anomalies with sufficient accuracy to extract core samples of daub; (b) the coring of burnt daub confirms the identification of burnt structures as creating the magnetic anomalies; and (c) the extraction of loose, dark, organic-rich deposits, as well as small degraded sherds, from the three anomalies tentatively interpreted as pits confirms this interpretation.

**Excavations**

The excavation of one complete and two partial burnt structures was completed in the three-week season by the team, led by Dr. Nataliya Burdo and Dr. Mykhailo Videiko. The remains of dwelling 1 (A9) were explored in the NW part of the settlement, not far from the border of the
village of Nebelivka. (Fig. 3–6). The excavation trench of 236 m² was marked out according to the GS data and confirmed their outcome. The depth of the site was from 0.25 to 0.8 m from the contemporary surface.

The size of the burnt daub remains, which were rectangular in plan and whose thickness varied from 4–5 to 30–40 cm, was nearly 18 m in length and 4.5–5.6 m in width (Fig. 4: 5). Around the dwelling, at depths of 0.25–0.8 m, small fragments of pottery and animal bone were found. Two m North of the burnt daub, and at a depth of 1.2–1.4 m, were explored two circular accumulations (D from 1.2 to 1.4 m) of bones and fragments of pottery, possibly pits with depths of 0.2–0.35 m. Here also were discovered three fragments of female fired clay figurines.

The remains of the dwelling consisted mainly of fragments of burnt clay with an admixture of plant material. On the lower part this clay were imprints of wood (Fig. 4: 5, 6). It means that the wooden floor of the upper storey was covered with clay. On this floor, 4 m from the end of the platform, remains of an open hearth were explored (Fig. 5: 5). The hearth resembles a clay platform, 2 × 2 m in size, nearly 0.2 m in thickness and without any admixture of plant materials (Fig. 5: 4). It also was erected on the wooden floor. At the base, it was supported by pillars. Imprints of these pillars on clay were also found.

The other hearth was discovered under the horizon of burnt clay. It consists of three layers of clay, the lowest placed directly on the ground surface (Fig. 5: 3). Near the hearth, two broken pots and stone tools were found. Several broken vessels and dishes, fragments of pottery (one – with painted human image, oldest at this region – Fig. 8: 1) were also found on this horizon (Fig. 6: 2, 6; Fig. 8). It means that this house had two floors. Some pottery, including fragments of three binocular vessels (Fig. 1: 3; Fig. 9: 1, 3, 4), was found on the clay floor. Six fragments of figurines were found in the middle of the remains of this dwelling (Fig. 6: 4, 5; Fig. 7).

Such a type of two-storied houses is typical for the Trypillia Culture in this area. The same constructions were explored at Volodymyrivka, Maidanetskoe and other places (Videiko 2005, 45–48; 50–63).

Lisa Snape-Kennedy supervised and recorded the excavation of two partial houses in two 1 m × 1 m trenches – House B3 in Sonda 2 and House D2 in Sonda 3. Here, the remains of solid daub floors were exposed at depths of 0.35 and 0.40 m respectively (Fig. 4: 1, 2). Daub samples were recovered from each small sonda, as well as some stratified pottery from House B3. The sample collection was divided into trench operations and off-site wet-sieving. Katherine Reusch supervised the recording and measuring-in of samples from the excavation of House A9. Four pottery samples, four daub samples and eight animal bone samples were collected from House A9 for dating this year, with several samples kept in reserve.

Ronan O’Donnell ran the wet-sieving operation to process key deposits from House A9. The method used has been developed as a standard for the water-sieving of Ukrainian samples for archaeo-botanical research by Dr. Galina Pashkevitich, who will be identifying and analysing our sieved residues. A sample of one bucket of standard size was divided into six parts, with each part washed in another bucket five or six times and the light fraction collected before the heavy fraction was retained. For time reasons, some of the samples were washed only three or four times. The results showed that the house floor had been carefully cleaned, since no weed seeds and only two cereal grain fragments – both of Triticum sp. – were recovered (identifications kindly provided by Dr. Charlotte O’Brien, DUAS).

The Nebelivka hinterland

The fieldwalking team of 6–9 walkers, led by Dr. Bisserka Gaydarska, was able to cover area of the 10 fields, located by the Tracking function of the GPS. The area fieldwalked covered cca. 55 ha in 66 person-days. The selection of ploughed fields was directly related to the question of the land use in the nearest 5km radius to the mega-site. There were far more ploughed fields available for walking than could be walked in the time available. Thus, a secondary selection criterion was to
walk at least one field in each valley segment in the first 5 km radius. Within each large field, fieldwalking proceeded by the creation of 100 m long blocks of variable width depending upon the size of the team but walked in transects at 10 m spacing. Each find was recorded as a separate GPS point, since there was an absence of scatters and monuments in the systematic fieldwalking. The hand-held GPS instruments provided an accuracy to within 4 m.

A total of four monuments and one multi-period scatter was recorded: four prehistoric barrows, three of which lay on or near the mega-site, and a hill-fort identified by one of the site workman, containing pottery dating to the Late Bronze Age, Early Iron Age and Chernyakhivska culture (coeval with the Roman period). The fieldwalking located dispersed scatters of Trypillia sherds in five fields; Late Bronze Age in 7 fields; Chernyakhivska sherds in 2 fields; daub in 6 fields; and chipped stone in 5 fields. There was a decided lack of Medieval material (only one sherd) and no material datable to earlier than the Trypillia period. Unusual finds included a macro-blade segment with sickle gloss and retouch, possibly re-use of Gravettian blade, and a fired clay bead dating of the Chernyakhivska culture and possibly deriving from a grave.

It is too early to conclude that the inner 5 km ring of land nearest to the mega-site was used for intensive agriculture on the basis of the low density of Trypillia sherds and the total absence of Trypillia scatters. Nor is it possible yet to interpret the low-density Trypillia sherds as manuring scatters: they may equally be the result of random discard or loss. But if this pattern is repeated in future fieldwalking, this may well be a sign of the concentration of population in the mega-site, with perons moving into the site from the nearest land. An analogous situation would be Adams’ data from the Uruk surveys, which how a sharp drop in settlements in the innermost ring around the city of Uruk (Adams 1965).

**Souhrn**

Přes určitá finanční omezení na začátku a konci výzkumné sezony lze hovořit o slabném startu projektu nazvaného Climax Neolithic Settlement project. Základní záměr a jeho cíle byly plněny prostřednictvím rozvoje propracované metodiky datování stavek pozůstatků trypilských domů na sídlišti Nebelivka, popřípadě i na jiných lokalitách. Tomuto výzkumu předcházely rovněž povrchové sběry a paleo-environmentální rekonstrukce.

Geofyzikální mapa, vytvořená na podkladě starších výzkumů na Ukrajině v osmdesátých letech, poskytuje nyní mnohem detailnější obraz mega-sídlišť než kdykoli dříve. Jako další zásadní přínos projektu lze uvést první intenzivní a systematické povrchové sběry na ukrajinském venkově, kolekci získanou sběrem ve stanovených čtvrcích na vnitřní ploše mega-sídliště, poprvé doložená rašelinová jádra v této části jižní Ukrajiny, identifikaci největší známé trypilské obytné struktury a teprve druhou aplikaci plavení obsahu vypáleného trypilského domu.

Britsko-ukrajinská spolupráce v rámci tohoto projektu byla dobře zorganizována, což autory vede k přesvědčení, že další terénní výzkumné sezony v Nebelivce a jejím zázemí přinesou stejně efektivní týmovou práci a stejně dramatické výsledky.

**References**


Популярні, відкриття, світовий контекст. К., 2007. 57–70.


---

**John Chapman**
Department of archaeology Durham university
South Road, UK-Durham, DH1 3LE

**Mikhail Videiko**
Institut Arkeologii Nacionalnej Akademiai Nauk Ukrainy
ul. Tovarna 6-A, UA-01103 Kyiv 103 a/s
Fig. 1 Trypillia Culture settlement near Nebelivka (after K. Shyshkin 1985) – Obr. 1 Osídlení v okolí Nebelivky (podle K. Šiškin 1985)
Fig. 2 Nebelivka, plan of the part of the settlement according to GS data – Obr. 2 Nebelivka, plan části osídlení podle GS dat
Fig. 8 Nebelivka: a – general view on place of excavations; b, c – explored area – Obr. 1 Nebelivka: a – celkový pohled na plochu výzkumu; b, c – zkoumaná plocha
Fig 4 Nebelivka, excavations: 1-2 - Sonda 2 and House D2; remains of dwelling 1 (A9); 3, 6 - impressions of constructions on clay and ground; 4, 5 - heavy burnt fragments of destroyed dwelling - Obr. 4 Nebelivka: 1-2 - sonda 2 a dům D2; požární ostatky obydlí 1 (A9); 3, 6 - otisky dřevěných konstrukcí v hlíne a podkladu; 4, 5 - pletené fragmenty zničených obydlí
Fig. 5 Nebelivka, remains of dwelling 1 (A9): 1, 2, 6 - fragments of remains, burnt clay; 3 - hearth under the horizon of burnt clay; 4, 5 - hearth on the second floor; 7 - fragments of clay with imprints of the fingers - Obr. 5 Nebelivka; pozůstatky obydlí 1 (A9): 1, 2, 6 - fragmenty pozůstatků, přepálená hlina; 3 - ohniště pod úrovní přepálené hliny; 4, 5 - ohniště ve druhém patře; 7 - fragment hliny s otisky prstů
Fig. 6 Nebelivka, excavations of the dwelling 1 (A9): 1, 3 – “binocular” vessels; 2, 6 – fragments of pottery and bones; 4, 5 – human figurines, found under the remains of the dwelling – Obr. 6 Nebeli- ka, výzkum obydlí 1 (A9): 1, 3 – „binokulární“ nádoby; 2, 6 – fragmenty keramiky a rozbitý hrncí pod úrovní pozdi- né hliny; 4, 5 – lidské plastiky, nalezené pod pozůstatky obydlí
Fig. 7 Nebelivka, dwelling 1 (A9): figurines – Obr. 7 Nebelivka, obydlí 1 (A9): plastiky
Fig. 8 Nebeřínska, dwelling 1 (A9): fragments of pottery: 1-4 – painted (1 – with human image); 5 – „kitchen“ - Obě 1
Nebeřínska, obydlí 1 (A9): fragmenty keramiky: 1-4 – zdobené (1 – s lidskou postavou); 5 – „kuchyně“
Fig. 9 Nebelivka, dwelling 1(A9): 1, 2, 4 - fragments of "binocular" vessels; 3 - fragment of zoomorphic vessel - Obr. 9
Nebelivka, obydlí 1 (A9): 1, 2, 4 - fragmenty „binokulárních“ nádob; 3 - fragment zoomorfního nástroje