

**‘CORD’ ORNAMENTS ON POTTERY
IN THE VISTULA AND DNIEPER
INTERFLUVIAL REGION:
5TH – 4TH MILL. BC**

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Editor's Foreword

The issues outlined in the above volume of *Baltic-Pontic Studies* (BPS) presented here, can be said to generate several important and complex questions among which, one relating to the topogenesis of 'corded' ornamentation on the bio-cultural borderlands of east and west Europe, gave birth to an innovative research project. In this respect, specialist researchers of the Pontic-Baltic Eneolithic (from Middle and Late Neolithic contexts) chose 45 vessels (mostly fragments) originating from the Dnieper-Southern Bug drainage area and Vistula, dated to the 5th - 4th/3rd mill. BC for the purposes of microscopic analyses conducted with the aim of identifying 'corded' patterns of ornamentation. These laboratory tests were led by an archaeologist specialising in microscopic analysis to identify interdisciplinary, pre-historic and archaic techniques in the textile crafts.

The implications of the above tests would seem to warrant a manifold approach to possible conclusions on the basis of specialist (microscopic) criteria of differentiated - previously identified as macroscopic - in general terms as 'corded' motifs of ceramic ware ornamentation (part 1). This also concerns an outline of investigation drawn from hermeneutics, prompted by various contexts such as historical and cultural assessment of bio-cultural communities and related findings as well as attempts to generate a coherent framework of linguistic and cultural research for 'corded ornamentation on ceramic ware' (part 2).

In discussing further the 'main issues' presented in this publication of BPS 15 in respect to the hand manufacture of ceramic ware of the Vistula and Dnieper interfluvial region and its peoples, a *modus operandi* of investigation in the context of region has been proposed whereby researchers of this particular project have been given a free hand, as it were, in respect to the degree and forms of application in microscopic analyses and their findings. A series of commentaries has therefore arisen, from various points of view in so far as reflections on research conducted - possible future strategies for vital questions in this matter that are yet to be answered (part 3).

It is assumed therefore that this volume has in some measure initiated a process of the highest consequence, one introducing a new level of off-site investigation into the genesis of corded ornamentation development, which deserves to be supported in addition through a personal engagement in this research field.

Editorial comment

1. All dates in the B-PS are calibrated [BC; see: Radiocarbon vol. 28, 1986, and the next volumes]. Deviations from this rule will be point out in notes [bc].
2. The names of the archaeological cultures and sites are standarized to the English literature on the subject (e.g. M. Gimbutas, J.P. Mallory). In the case of a new term, the author's original name has been retained.
3. The spelling of names of localities having the rank of administrative centres follows official, state, English language cartographic publications (e.g. *Ukraine, scale 1 : 2 000 000*, Kiev: Mapa LTD, edition of 1996; *Rèspublika BELARUS', REVIEW-TOPOGRAPHIC MAP*, scale 1:1 000 000, Minsk: *BYELORUSSIAN CARTOGRAPHIC AN GEODETIC ENTERPISE*, edition 1993).

Nadezhda S. Kotova

THE FIRST 'CORDED' CERAMICS ORNAMENTATION OF ENEOLITHIC STEPPE AND NEOLITHIC FOREST-STEPPE CULTURES¹

Corded ornamentation was observed for the first time in the steppe area between the Dnieper and the Don rivers in the Sredniy Stog culture monuments of the early Eneolithic Age. Artefact ornamentation was represented by imprints of a coiled cord [Kotova 2008]. Classic 'corded' ornamentation appeared in the Middle Eneolithic in the monuments of the Dereivka culture and the lower layer of the Mykhailivka settlement. In this context, corded ceramics were most prolific in the steppe monuments of the Late Eneolithic, represented by the Rogachyk culture settlements in the Dnieper steppe and the Konstantinovka culture of the Don steppe area.

Dmitriy Telegin identified two periods of the Sredniy Stog culture and named the second period 'corded', thus having noted the emergence of classical corded ornamentation on ceramics produced in Dereivka and Molyukhov Buhor settlements. He assumed that those monuments had marked Europe's most ancient horizon of cord-ornamented monuments [Telegin 1973:155-156]. At present, however, the 'corded'-period monuments are viewed as a separate Dereivka culture [Ras-samakin 1994; 1999; 2004; Videiko, Kotova 2004; Kotova 2008].

When dealing with the issue of the emergence of corded ornamentation in the Ukrainian steppe monuments, one should note that its various types emerged at different times. The earliest were the imprints of a twisted cord, i.e., a cord coiled over another cord or a stick, which first appeared in the steppe in the Early Eneolithic in Sredniy Stog ceramics.

¹ In this article the original version of town names etc. have been retained as per the author's wishes.

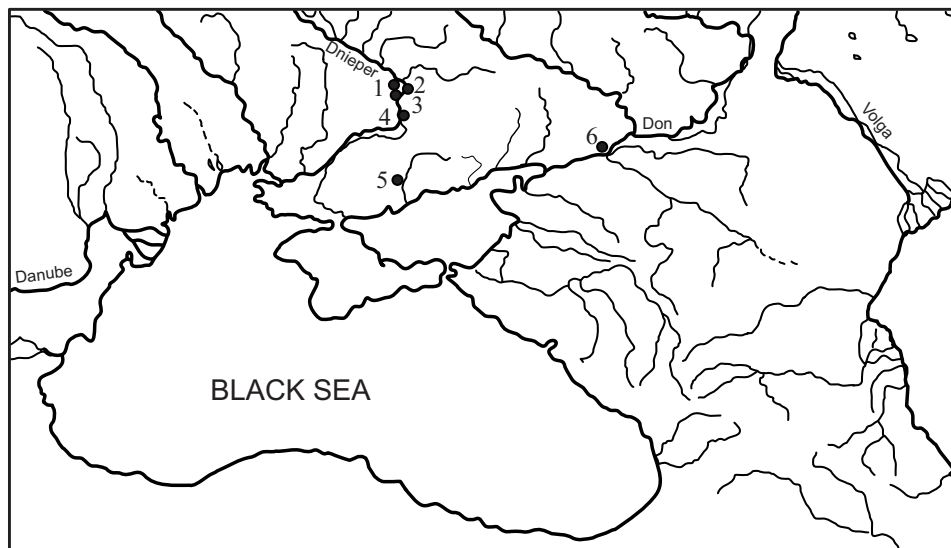


Fig. 1. Map of Sredniy Stog monuments containing cord-ornamented ceramics: 1 – Igrena burial site; 2 – Strilcha Skelya; 3 – Kodachok Island; 4 – Sredniy Stog Island; 5 – Semenovka 1; 6 – Razdorskoe 1 settlement

1. CORDED ORNAMENTATION OF THE SREDNIY STOG CULTURE

Monuments of that culture have been studied in the steppe area from the Lower Don to the Dnieper. As of today, 25 settlements have been registered. In the Lower Don area where Sredniy Stog materials have been found in the fourth and fifth layers of Razdorskoe 1 settlement, Samsonovka, and Tsimlyanskoe. The settlements, studied in the Siversky Donets basin, include Oleksandriya, Serebryanskoe, and Chernikovo Ozero 1. The Razdolnoe settlement was explored in the Kalmius River basin, and Semenovka 1 and Kamyana Mohyla 1 were explored in the Molochna River basin. The Sredniy Stog materials found in the Dnieper area include the materials from Zolota Balka, Igrena 8, Sobachky, as well as the finds from the Vinogradnyi, Sredniy Stog, Kizlevyi, Kodachok, Pokhylnyi, Strilcha Skelya, and Khortytsya Islands [Kotova 2008].

The oldest ceramics decorated with coiled cord imprints were found in the monuments of the second period of the Sredniy Stog culture in the upper layer of Semenovka 1, the lower horizon of the fifth layer of the Razdorskoe 1 settlement, and in grave 15 of the Igrena burial site (Fig. 2:1-5). Generally, monuments of the second period of the Sredniy Stog culture date back to 4800-4350/4300 BC [Kotova 2008]. However, the emergence of a coiled cord-like ornament can be

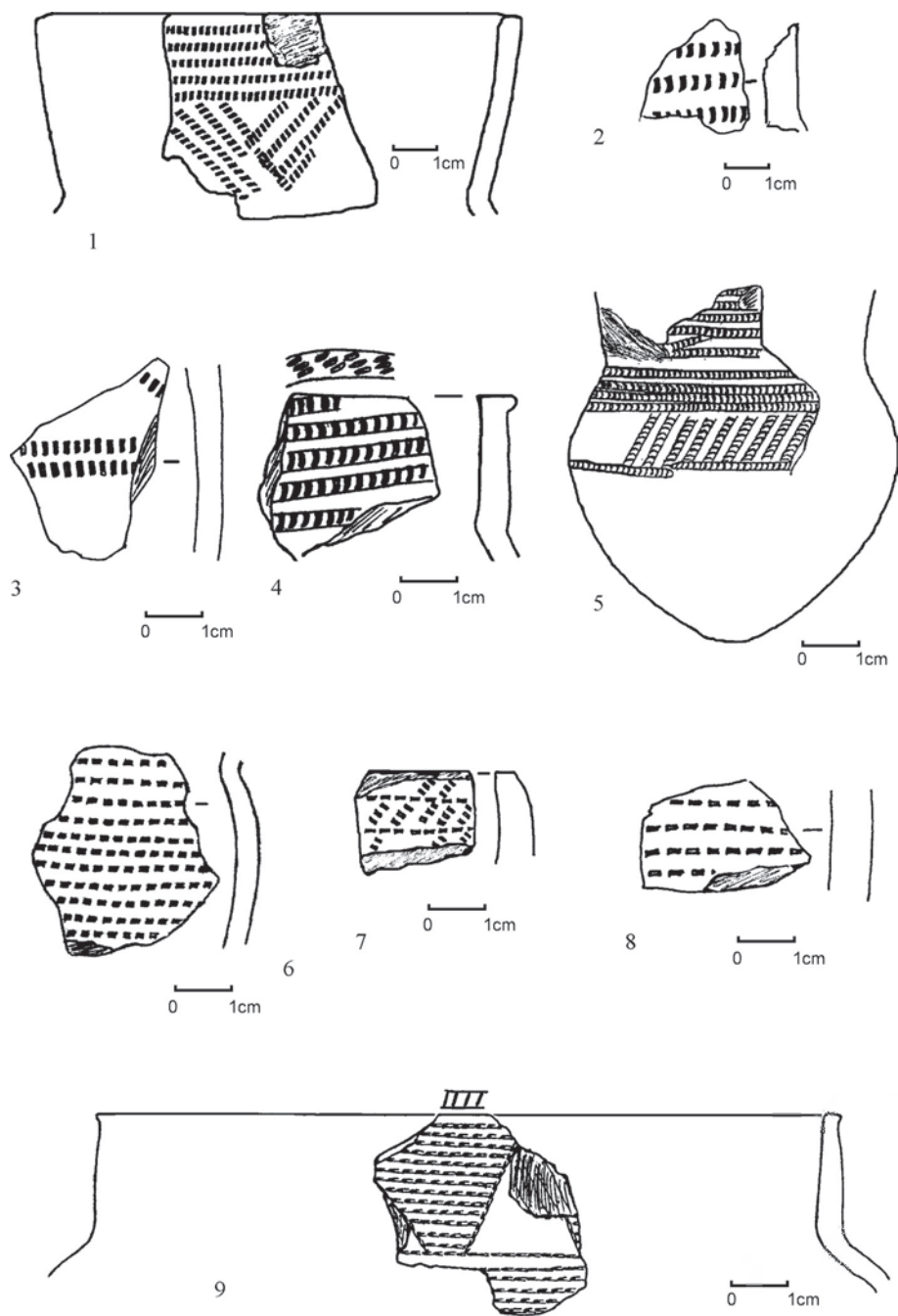


Fig. 2. Ceramics of the second period of the Sredniy Stog culture: 1 – 3, 7 – 9 – Semenovka 1; 4, 6 – Razdorskoe 1; 5 – grave 15 of the Igren burial site

Table 1

Radiocarbon dates of corded-ornament monuments: Sredniy Stog culture, western variant.

Monument, material	Lab. Index	BP	calBC [Weninger <i>et al.</i> 2005]
Second Period			
Igren burial site, grave 15	Ki-8304	5745±60	4595±74
Semenovka, trench 2, sq.6, depth 100-120, animal bone	Ki-7674	5655±60	4484±72
Semenovka, trench 2, sq.4, depth 90-115, animal bone	Ki-7673	5525±70	4371±69
Semenovka, trench 2, sq.1, depth 90-100, animal bone	Ki-7672	5440±60	4277±59
Strilcha Skelya, sq.8, horizon 6, animal bone	Ki-8173	5630±70	4464±73
Third Period			
Strilcha Skelya, sq.6, horizon 5, animal bone	Ki-8172	5480±70	4325±72

probably linked to the middle of the second period. Its timing can be defined by the dates of the upper layer of Semenovka 1 and grave 15 of the Igren burial site at about 4600-4500 BC (Table 1).

Unfortunately, the Razdorskoe 1 materials have not been published in full, and one's judgement on the scope of dissemination of corded ornamentation at that time can be based only on the materials of the Semenovka 1 settlement. The third layer of that monument contained fragments of some 14 vessels. Only two or three had been decorated with imprints of a twisted cord (Fig. 2:1-3) where it consisted of one thread tightly coiled on a rod.

The predominant patterns of the time were prick marks, drawn lines and comb-shaped imprints. The only definitely recorded case is the use of long marks of a coiled cord. The imprints resemble the ornament made with a long 'comb' cliché, placed athwart the vessel's surface (Fig. 2:6-7). The ornamental compositions made with the cord are similar to compositions made with imprints and pricks, which consist of horizontal lines, or a combination of horizontal and diagonal lines, or horizontal lines and upside-down triangles (Fig. 2).

This kind of ornament was more commonly used in the third period of the Sredniy Stog culture about 4350/4300-4200 BC [Kotova 2008]. The vessels, decorated with coiled cord, were found in the second layer of Sredniy Stog, the fourth layer of Strilcha Skelya, and on the Kodachok Island.

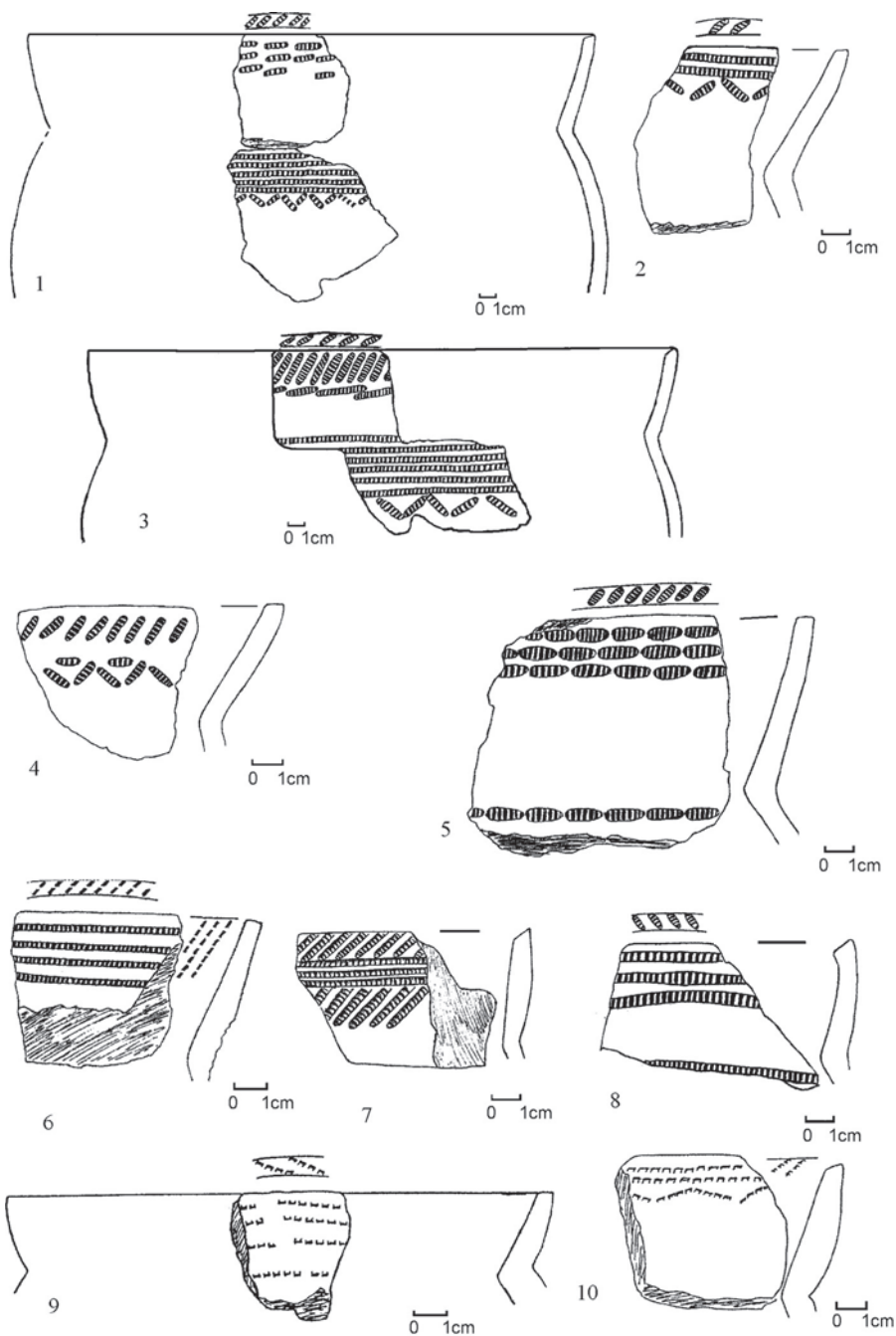


Fig. 3. Ceramics of the third period of the Sredniy Stog culture: 1 – 7, 9, 10 – Sredniy Stog; 9 – Kodachok Island

The preserved part of the second layer of the **Sredniy Stog** collection includes remainders of 45 vessels, seven of which were decorated with imprints of a ‘caterpillar’ and coiled cord. A. Dobrovolsky noted that coiled-cord pots had been found in the upper horizon of the second culture layer only [Dobrovolsky 1929:134]. Unfortunately, when registered the vessels were marked in a way that made it impossible to relate them to the lower or upper horizon.

The collection of the fourth layer of **Strilcha Skelya** included fragments of 19 vessels, of which three rims and two sides were decorated with imprints of a coiled cord (Fig. 4:1-5).

The third layer of a settlement located on the **Kodachok** Island produced fragments of eight pots, one of which had been decorated with coiled cord imprints (Fig. 3:8).

A vast variety of patterns was known as common for that period. While long imprints remain (Fig. 3, Fig. 4:1-5), short imprints appear, including those with a wider middle part and narrower ends, the so-called ‘caterpillar’ or ‘plait’ twisted cord pattern (‘gusenichka’) (Fig. 3:1-5; Fig. 4:3, 5).

As during the second period of the Sredniy Stog culture, ceramics of the third period with elements of ‘corded’ ornamental compositions coincide with elements made with ‘comb’ clichés. The cord and comb imprints make horizontal lines or horizontal lines with short diagonal imprints in the space between the lines or horizontal lines with zigzags or triangles, filled with horizontal lines (Fig. 3; Fig. 4).

2. CORDED ORNAMENTATION OF THE DEREIVKA CULTURE

The Dereivka culture was formed about 4300 BC in the southern part of the present-day forest-steppe Dnieper, based on traditions of the late Sredniy Stog people who had migrated from the South in the climate aridization period, and the local population that left the Kyiv-Cherkasy Neolithic monuments [Sanzharov *et al.* 2000; Kotova 2008]. Today, about 25 settlements that date back to about 4200-3800 BC (Table 2) can be referred to the Dereivka culture. Excavations have been performed on twenty of the settlements. The settlements studied in the Siversky Donets include Oleksandriya, Chernikovo Ozero 1, 2, 3; Serebryanskoe, and Minevskiy Yar. The studied sites in the Dnieper area include Vinogradnyi Island, Zolota Balka, Igren 8, the right-bank and left-bank settlements of Vovnyhy, Pokhylyi Island, Sobachky, Zolota Balka, Solovyina Roshcha, Molyukhov Buhor, Dereivka, and Uspenka. Individual monuments have been found in the western upper Azov area (Kamyana Mohyla 1) and the Southern Bug River (Novorozanovka). The explorations resulted in studies of the Kamyani

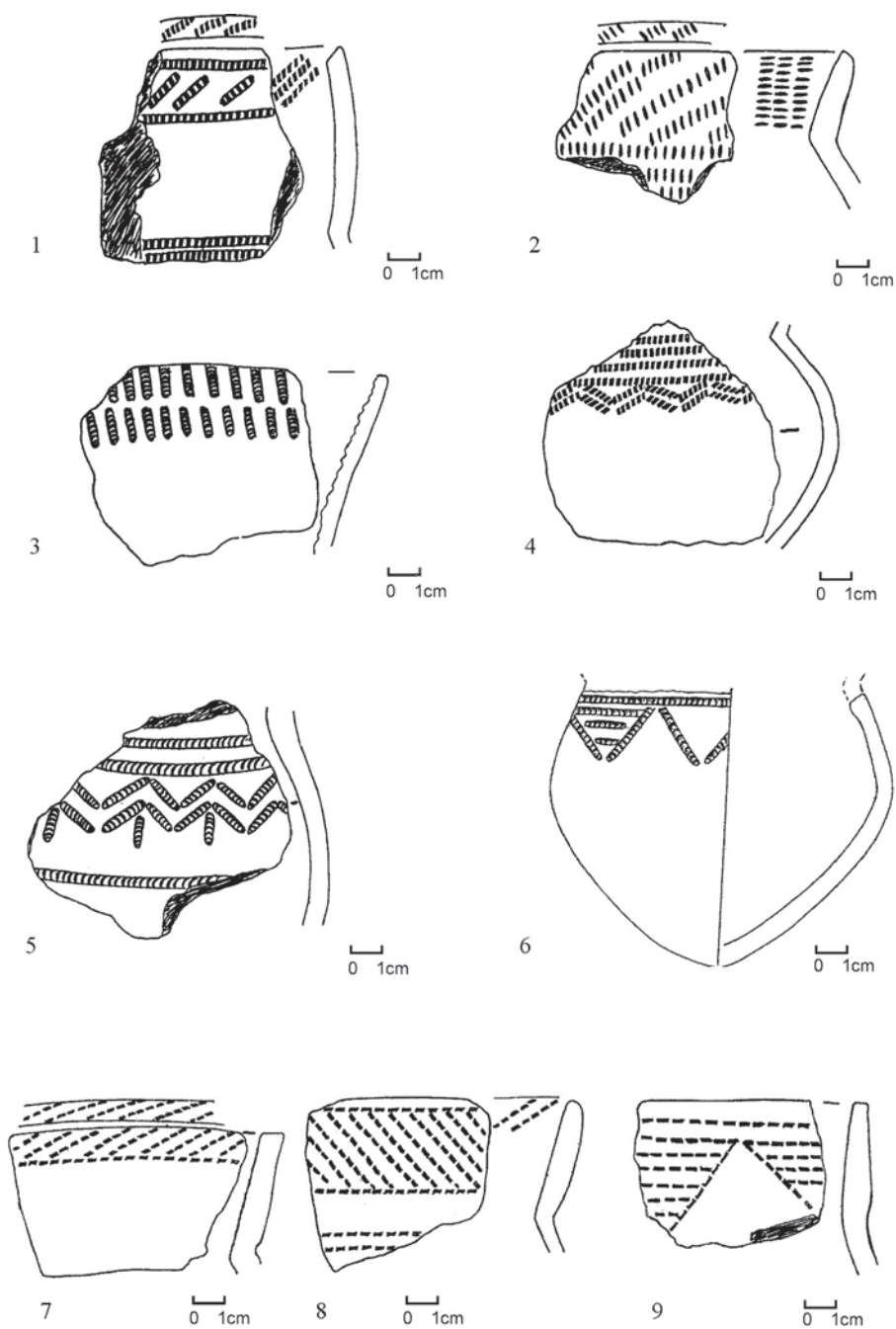


Fig. 4. Ceramics of the third period of the Sredniy Stog culture: 1 – 5, 7, 8 – Strilcha Skelya; 6 – grave 1 of the Igren burial site (excavations of 1930s); 9 – Sredniy Stog

Table 2

Radiocarbon dates of corded-ornament monuments of the Dereivka culture.

Monument	Lab. Index	BP	calBC [Weninger <i>et al.</i> 2005]
Dereivka 1, animal bone	Ucla-1466	5515±90	4354±91
Dereivka 1, animal bone	Ki-6966	5370±70	4195±103
Dereivka 1, animal bone	Ki-6960	5330±60	4158±85
Dereivka 1, animal bone	Ki-6964	5260±75	4104±100
Dereivka 1, animal bone	Ki-6965	5210±70	4056±91
Dereivka 1, animal bone	Ucla-1671	4900±100	3697±124
Molyukhov Buhor, trench 1, sq. 2a, depth 40-50, animal bone	Ki-7993	5330±80	4163±102
Molyukhov Buhor, trench 1, sq. 2a, depth.40-50, animal bone	Ki-7994	5270±80	4110±102
Buhayevo, sq. 15, depth 0-20, animal bone	Ki-8074	5320±60	4149±83

Potoky settlement and earlier destroyed settlements on the Khortytsya Island in the Dnieper area, encampments in the upper Sivash area, and Verevkine hamlets 14 in the Siversky Donest basin.

The most prolific materials came from Oleksandriya, Dereivka, Uspenka and Molyukhov Buhor only. The other monuments had been short-term encampments and produced scarce fragments of ceramics. Corded ornamentation was not found in all of the monuments and had been most commonly used by the population of Dereivka 1 and Molyukhov Buhor settlements in the southern part of the present-day forest-steppe Dnieper area. In the Siversky Donets basin, vessels with such ornament had been scarce and were found only in Oleksandriya, Serebryanske and Chernikovo Ozero 1 settlements.

The Eneolithic settlement of **Dereivka 1** is part of a complex monument excavated by D. Telegin in 1960-1967 near Dereivka village, Onufriev district of the Kirovohrad region [Telegin 1986]. The monument comprised an Eneolithic burial site, individual graves of other epochs and a multi-layered settlement. The studied culture layers of the settlement are those of the Middle Ages, the Bronze Age, the Eneolithic, and the Neolithic.

The Eneolithic settlement consisted of a large yard, two huts and a barn. There were seven hearths, eight household pits and a cult complex around the yard [Telegin 1986:5-70]. The huts were dug in the soil 30 cm deep, were of

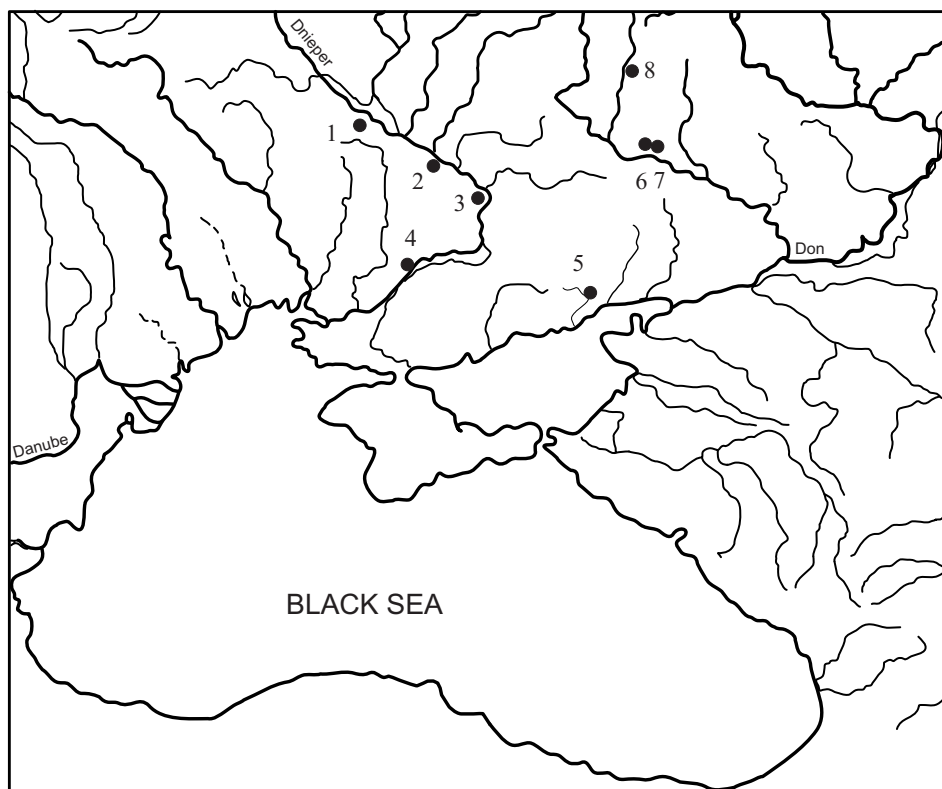


Fig. 5. Map of Dereivka culture monuments and the type of Mikhailovka lower layer, containing cord-ornamented ceramics: 1 – Molyukhov Buhor; 2 – Dereivka; 3 – Igren burial site; 4 – Mykhailivka; 5 – Buhayevo; 6 – Chernikovo Ozero 1-3; 7 – Serebryanskoe; 8 – Oleksandriya

rectangular shape and based on pile constructions. There has been a view that the Eneolithic layer of Dereivka consisted of two chronological horizons, the younger of which contained cord-ornamented ceramics [Movsha 1998]. That view has not been supported with any stratigraphic observations. When excavating and studying the materials, Telegin did not differentiate the Eneolithic materials either by the depth at which they lay or by their planigraphy. On studying the data from the collection and reports, the author did not manage to identify any stratigraphic horizons or observe specific pottery of specific construction objects and sectors of the settlement. These Eneolithic ceramics were found at different depths (from 0-30 to 120 cm); over the shell layer, within the layer and under it.

Researching the monument was made more complicated by the fact that it had multiple populations (Bronze Age, Early Iron Age and the Middle Ages), which had involved the construction of a variety of structures. As a result, the archaeological material in the culture layer is substantially mixed. In most of

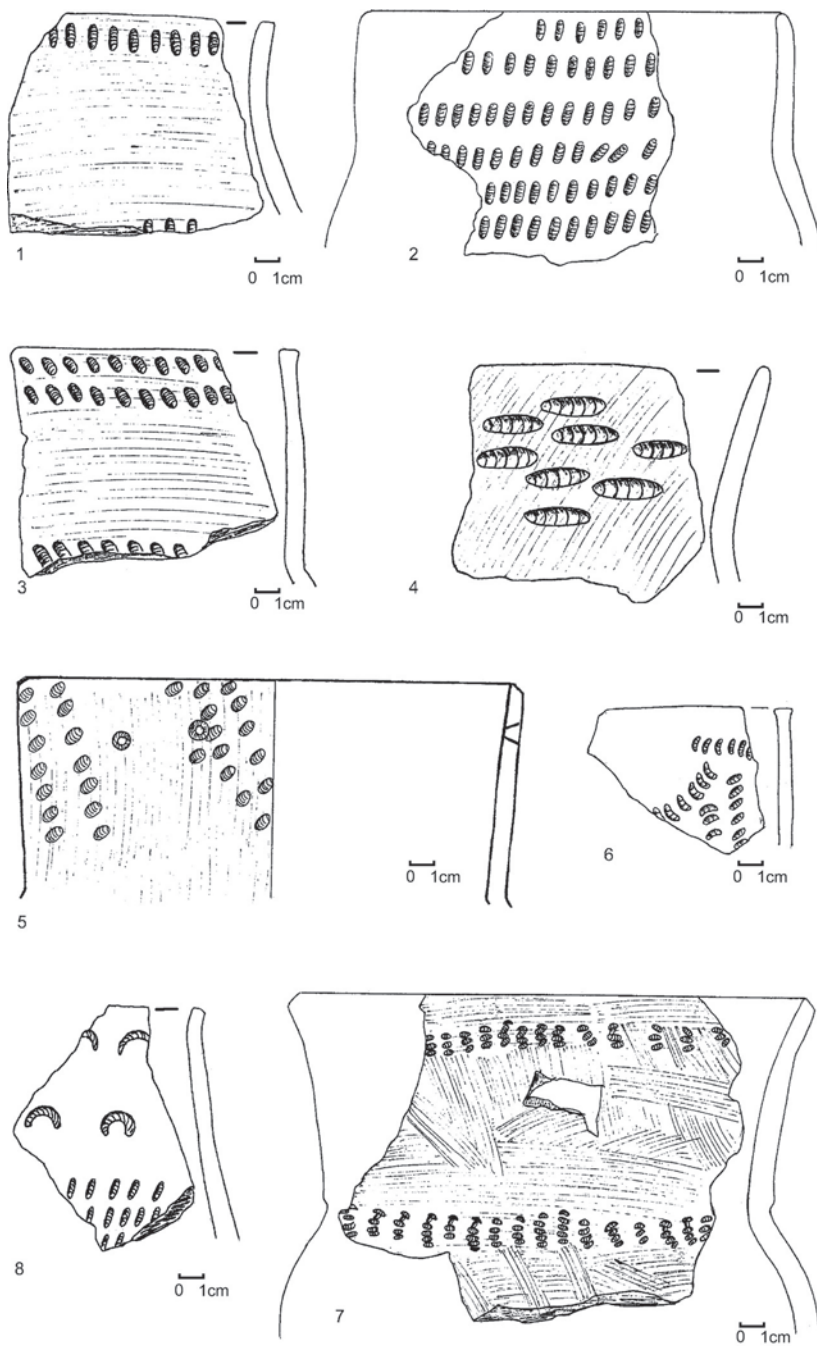


Fig. 6. Ceramics of the Dereivka settlement

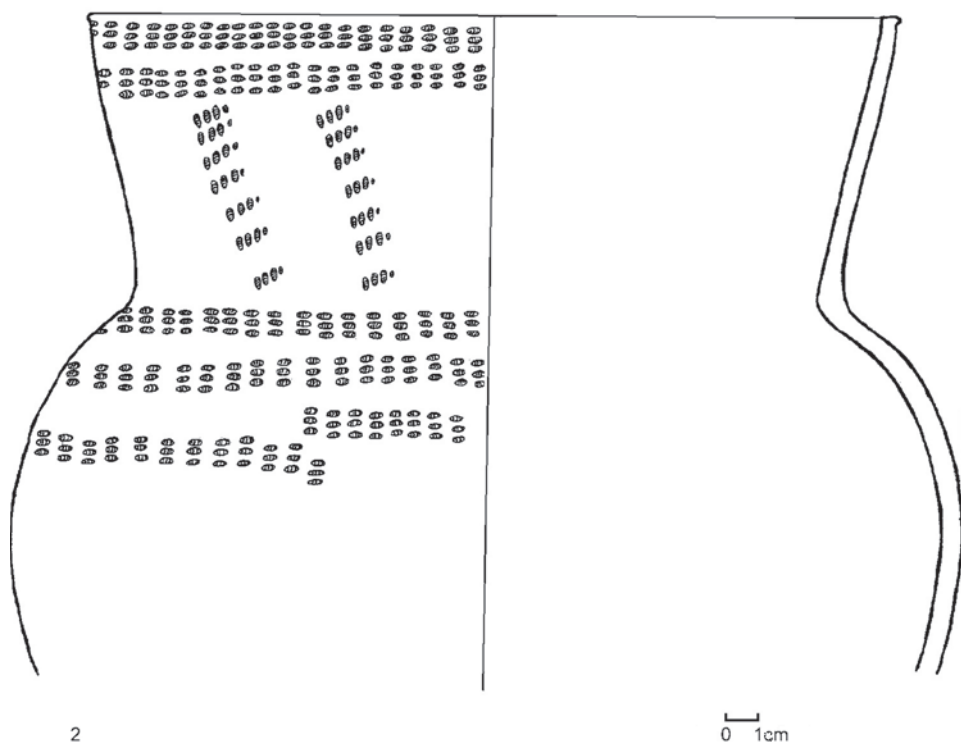
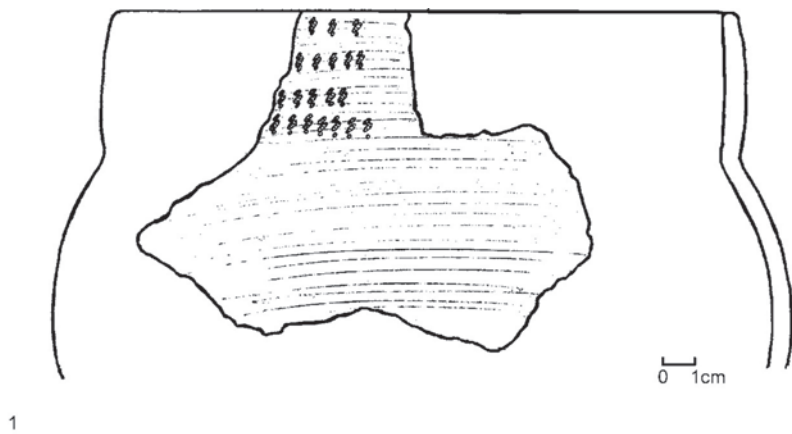


Fig. 7. Ceramics of the Dereivka settlement

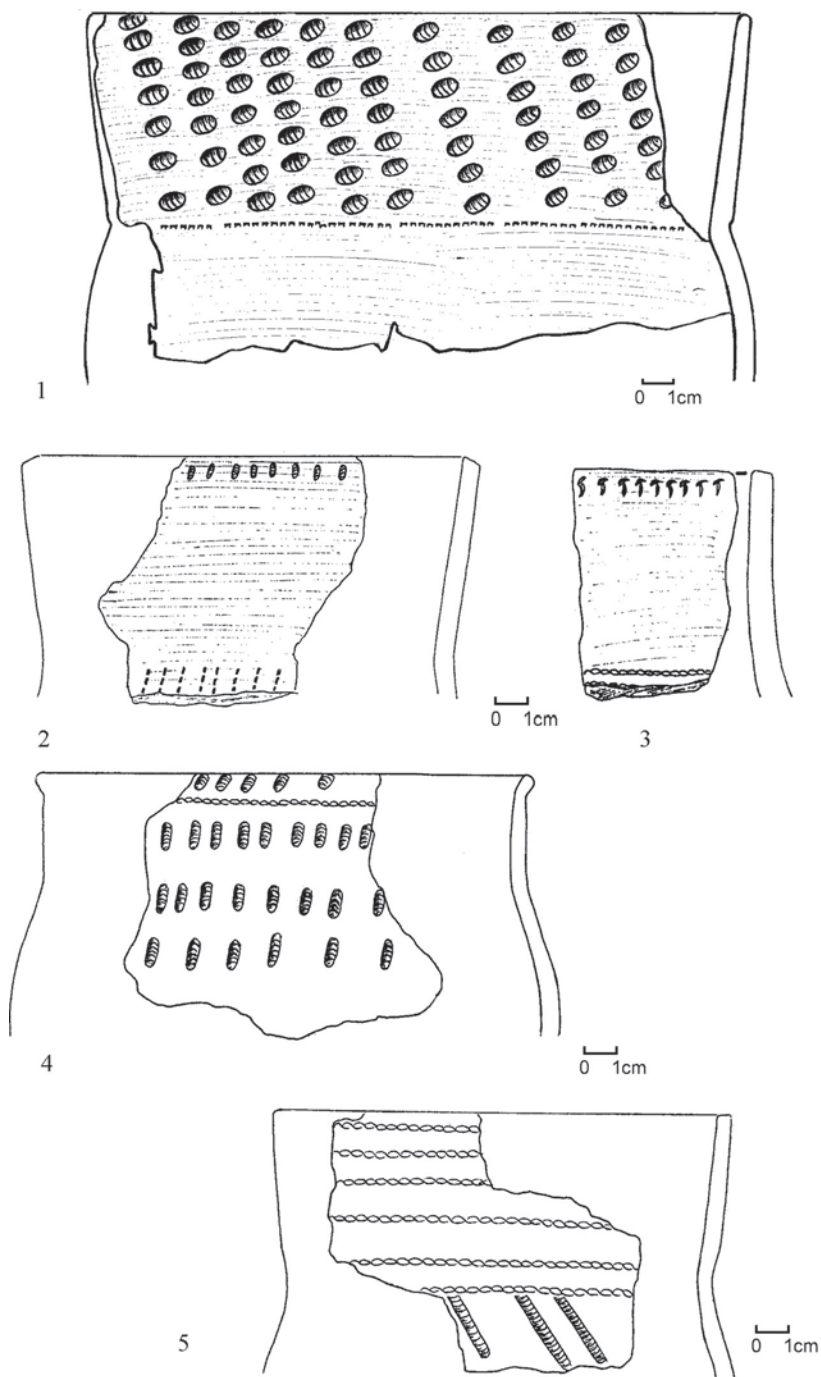


Fig. 8. Ceramics of the Dereivka settlement

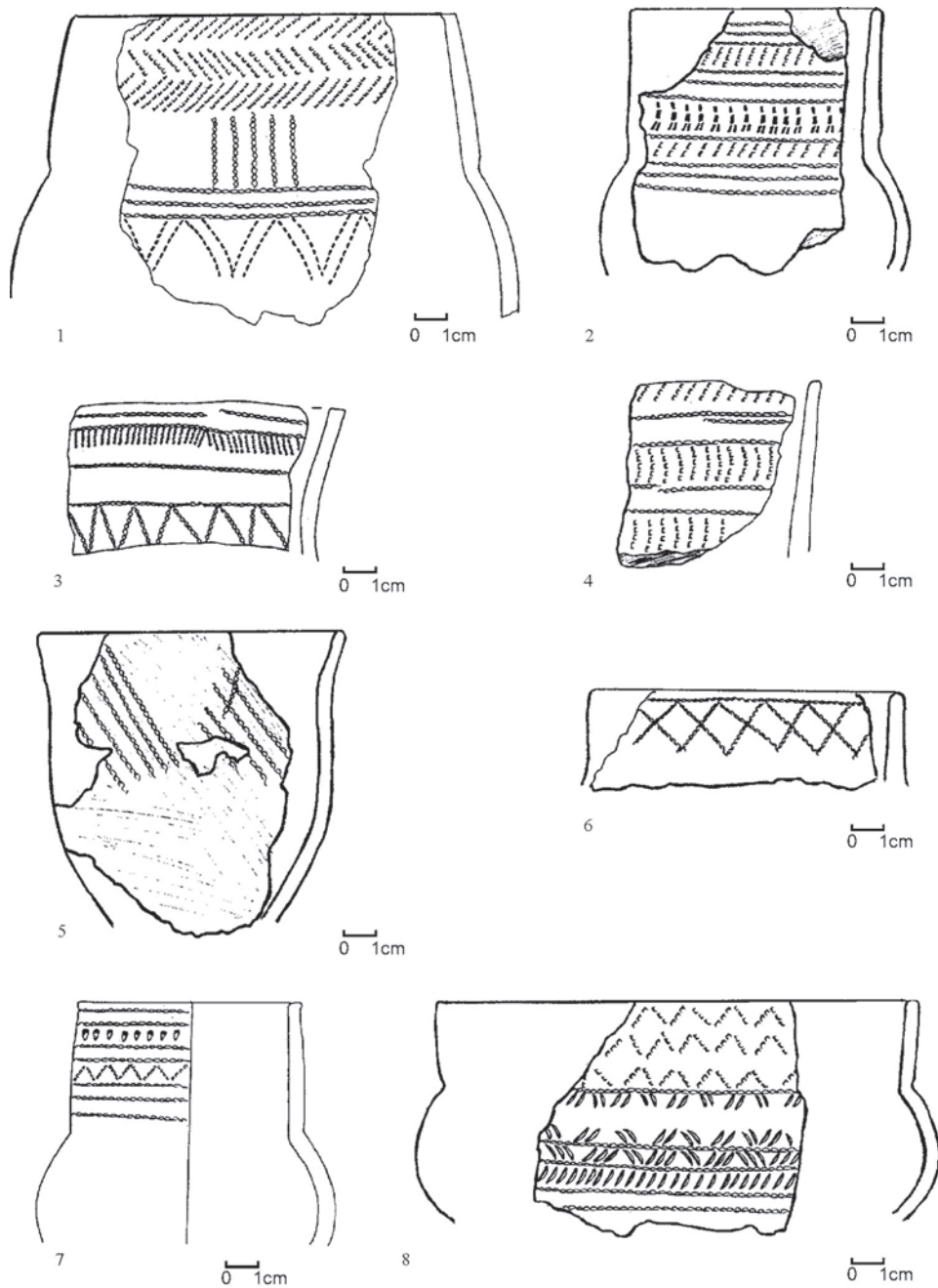


Fig. 9. Ceramics of the Dereivka settlement

the squares, the Late Bronze and Middle Ages ceramics occurred throughout the cultural layer. Ceramics were also found in the shell layer, which was probably related to the Eneolithic, and under that layer too.

The lower horizons of individual squares did not contain any late ceramics, which allows an assumption that their cultural layer had not been mixed (sq.129, 129, 133-136, 143, 146, 614, 621, 623, 624 etc.). However, those squares, too, contained corded Eneolithic ceramics together with those decorated with 'combed' and 'pricked' patterns in the lower horizon of the culture layer (under the shell layer), as well as under the shell layer and over it. The whole Eneolithic layer was probably about 30 cm thick. Meanwhile, regardless of these facts, a possibility that various chronological horizons exist within the Eneolithic layer but cannot be identified (based on the available material finds) should not be excluded.

The Dereivka 1 collection includes remainders of about 600 best-preserved vessels. The variety of the pottery is rather vast: bowls, cups, goblets, pots and jars. Pots and goblets refer to the profiled-top vessels; the goblets are between 6 and 12 cm in diameter; the diameter of the pots is over 12 cm. The non-profiled-top vessels, which are higher than their diameter, are referred to as jars.

The main kinds of ornament of the Dereivka ceramics were various-length imprints of 'comb' clichés. The second most commonly used ornament was the 'pricked' pattern. Combinations of 'comb' imprints and 'pricked' patterns were also widely used. Other kinds of ornamentation, including the cord, were scarce. Various kinds of cord ornamentation decorated one of the bowls (Fig. 10:5), a cup (Fig. 9:8), seven goblets (Fig. 9:1-7), and 25 pots.

Nine vessels were decorated with imprints of a coiled cord that differed in size and displayed two versions of the imprints. The first version featured short marks made with a tightly coiled thin or thick single-thread cord (Fig. 6:1-7; Fig. 21:1, 2). Such imprints are identical to those found on Sredniy Stog ceramics.

The second version featured marks of a loosely coiled cord with gaps between the coils (Fig. 6:8; Fig. 7; Fig. 21:3, 4). This version had not been known in the more ancient Sredniy Stog culture.

Ornamentation of two pots combines a coiled cord of the first version with the comb imprints (Fig. 8:1, 2). Another object was decorated with a combination of the first version of coiled cord imprints with a regular corded ornament (Fig. 8:4). Ornamentation of only one of the vessels features long imprints of a coiled cord, known by the ceramics of the third period of the Sredniy Stog culture (Fig. 8:5), combined with ordinary cord marks.

Part of the Dereivka ceramics was ornamented with imprints of an ordinary cord, which formed horizontal and vertical lines, a fishbone pattern, zigzags and grids (Fig. 9:5, 6; Fig. 10; Fig. 11). The imprints were of various lengths.

Some of the vessels were decorated with ornaments that combined cord imprints with comb marks (Fig. 9:1-4; Fig. 11:6), as well as with *pearls* (Fig. 11:1), holes or prick marks (Fig. 12:2-5).

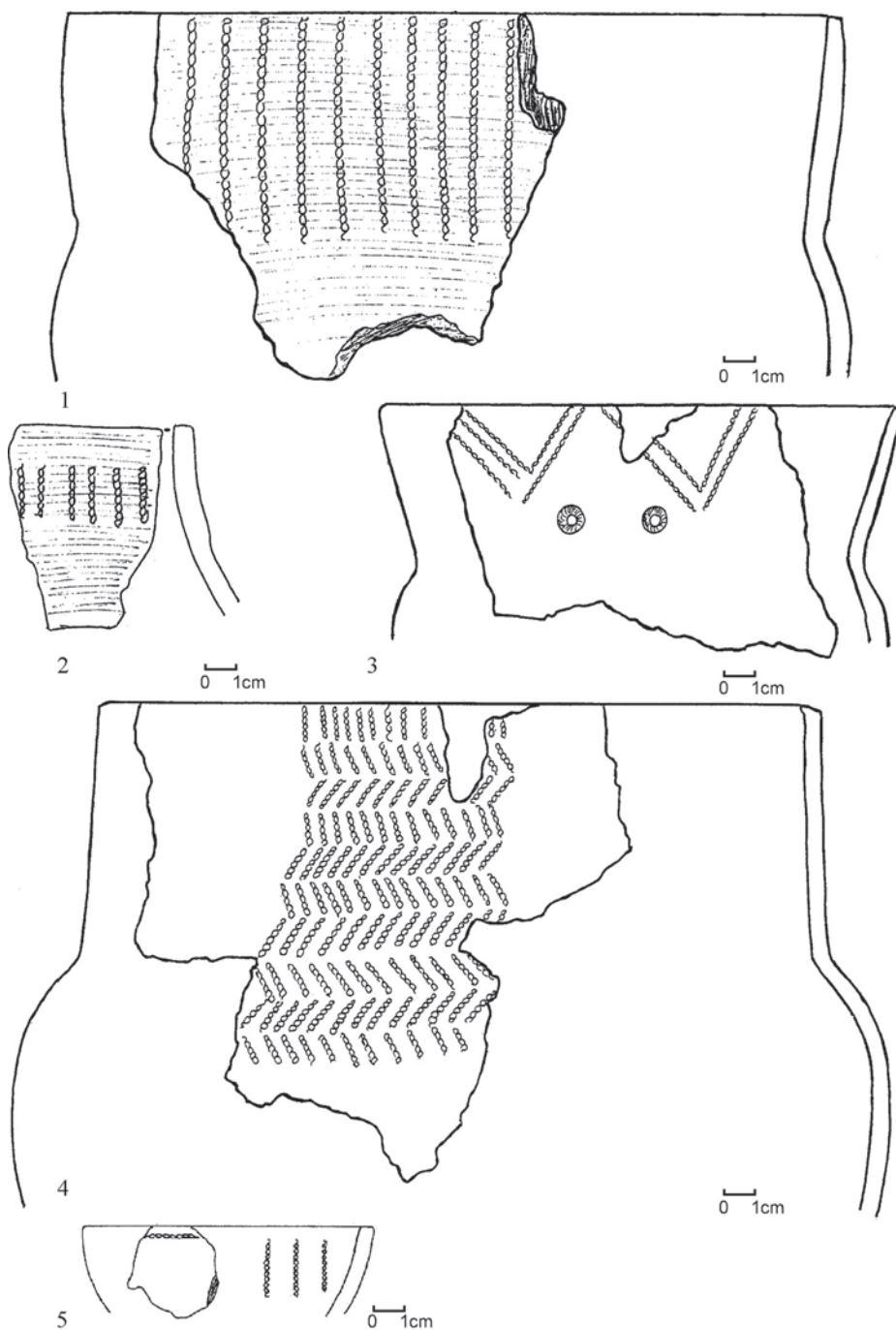


Fig. 10. Ceramics of the Dereivka settlement

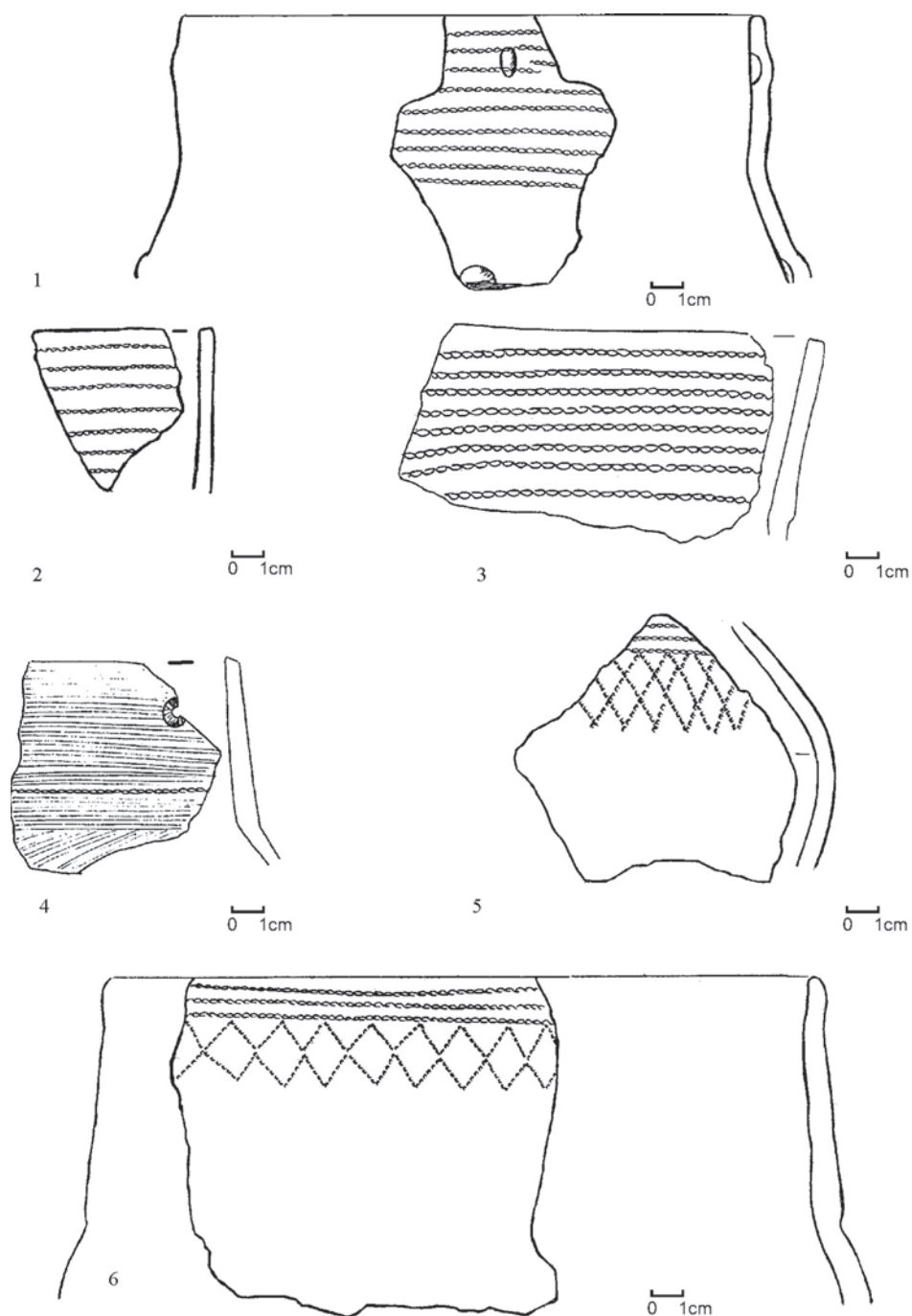


Fig. 11. Ceramics of the Dereivka settlement

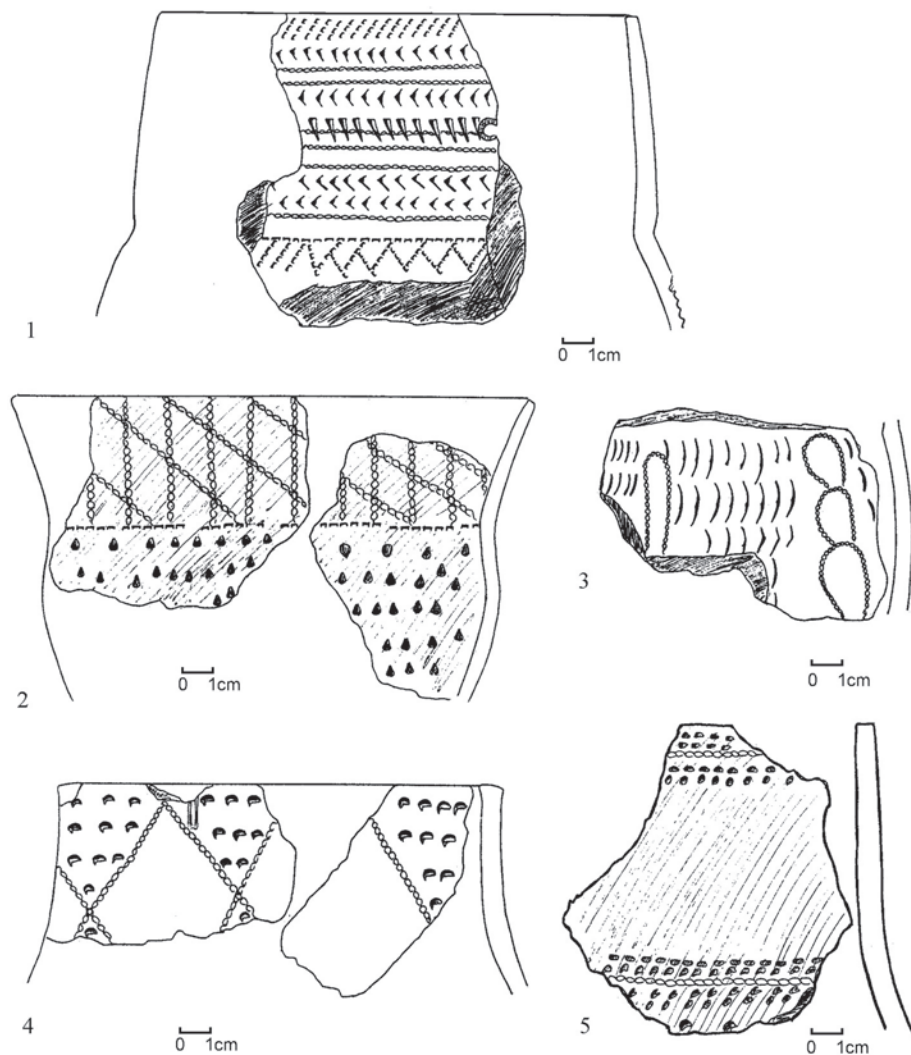


Fig. 12. Ceramics of the Dereivka settlement

Less often, ornamentation combines these elements, one of which is represented by cord imprints. Such a sophisticated ornamentation occurs on a goblet and a cup (Fig. 9:7, 8), as well as on a small pot (Fig. 12:1). The corded ornament on those vessels was combined with comb marks and various-shaped imprints.

Some of the Dereivka ceramics were decorated with a combination of cord and hole ornament (Fig. 12:2, 4). Alongside with the Dereivka culture ceramics, the same layer of that settlement contained pottery of the Pit-and-Comb Pottery culture [Kotova 2003b] that shares common features with the Eneolithic pottery,

i.e., the admixture of shell in the clay, a high chamfered neck, often with a 'collar' on it. Those features allow an assumption about co-existence of the populations of the two cultures in the same site, and dissemination of the 'hole' ornamentation under the influence of the Pit-and-Comb Pottery culture.

D. Telegin referred the Dereivka settlement to the early second period of the Dnieper version of the Sredniy Stog culture, and also synchronized it with the lower layer of Mykhailivka and Trypillia C1 [Telegin 1986:74, 107]. In this context, V. Danilenko argued that Dereivka had existed simultaneously with the B II Trypillia monuments [Danilenko 1974:76].

Based on animal bones, a series of radiocarbon dates have been obtained for Dereivka. Out of them, the ones to be used are probably the dates obtained by the California Laboratory and the new methodology-based dates of the Kyiv Laboratory (Table 2). The oldest of the dates, 5515 ± 90 BP (Ucla-1466), most probably refers to the Neolithic layer of the monument. Other dates indicate that an Eneolithic settlement existed on the site about 4230-3700 BC. The large time interval suggests that the main part of the settlement, including the constructions, existed within the period from 4150 to 4050 BC. At other times the ancient population might have occasionally visited the site, using it for temporary encampment.

As part of the project of corded ornamentation study, dating was performed on a cord-ornamented fragment of ceramics from the Dereivka settlement collection. This produced a very young date of 4330 ± 80 BP (Ki-14870), which does not correspond with the dates taken from the animal bones. Hence, two assumptions can be made. First, the experience of dating ceramics at the Kyiv Laboratory demonstrates that rather often, dates obtained can be made substantially 'newer' compared to the dates taken from the bone or coal. Sometimes the dates may be as much as 1000-1500 years 'younger'. It was due to such cases that it was necessary to stop using the radiocarbon dates obtained from ceramics in that laboratory.

On the other hand, one may try and explain that a specific date was obtained for the cord-ornamented piece of ceramics. The dating was performed on a fragment of a vessel (Fig. 22), which was somewhat different from the rest of the cord-decorated pottery. Most of the pottery from the Dereivka collection, adorned with a cord, resembles in its ornamental compositions, the 'combed' or 'pricked' ceramics. These share a common vessel shape with a high neck and a 'collar' on the rim, the positioning of the imprints of a comb or a cord in the herringbone pattern, horizontal rows, zigzag, a combination of comb and cord imprints, as well as the prick marks in one of the vessel ornaments (Fig. 8, 9, 11, 12). However, some of the vessels decorated with cord imprints have low necks (Fig. 9:5, 6; Fig. 11:4) and on one of the vessels the cord ornament is combined with pearls, which is not typical for Middle Eneolithic ceramics (Fig. 11:1) where a wall of one of the vessels is decorated with loop-shaped cord imprints (Fig. 12:3). The presence of such fragments of ceramics and the 'young' date of the cord-ornamented ceramic

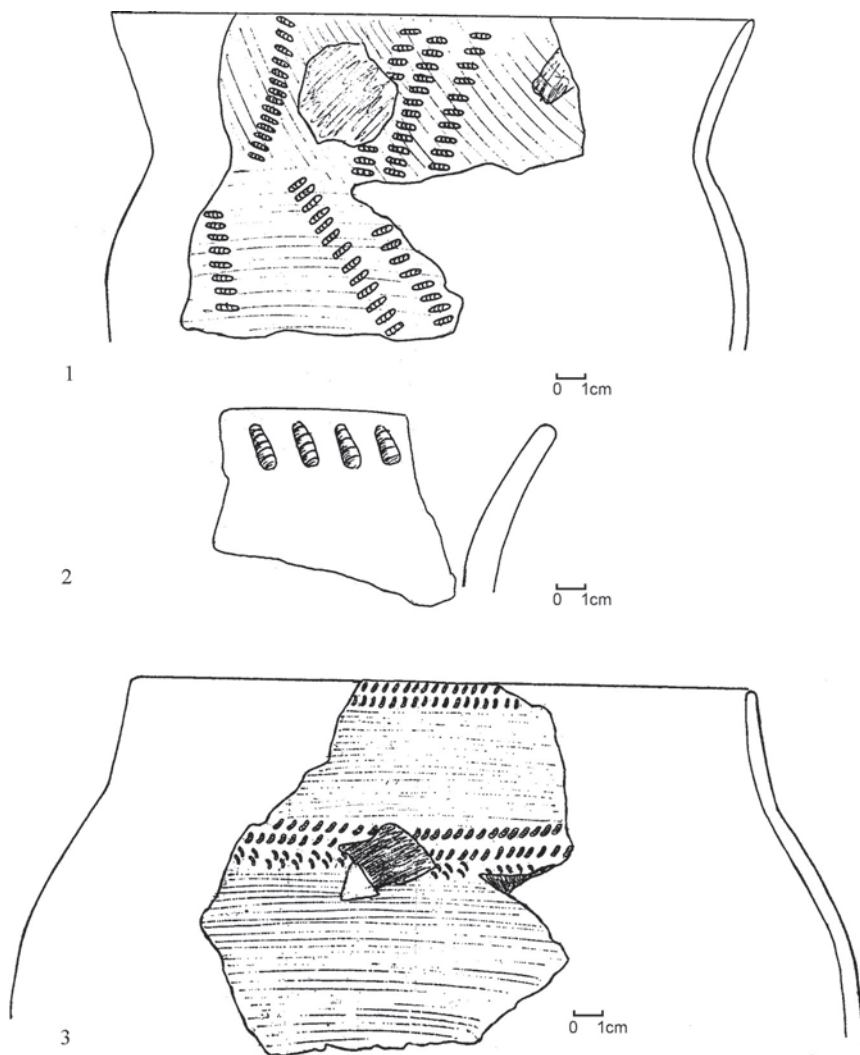


Fig. 13. Ceramics of the Dereivka settlement

fragment allow to assume that the Dereivka collection contains scarce materials of the Late Eneolithic – Early Bronze Age. Unfortunately, monuments of that period included by a number of researchers of the Pivikha culture, have been poorly studied and incompletely published, which complicates identification of that culture's materials in collections of such multi-layer settlements as Dereivka.

A rather prolific cord-ornamented pottery occurs in the **Molyukhov Buhor** settlement – excavated by Danilenko near Novoselytsa village, Chyhyryn district of the Cherkasy region in 1955-1956 [Danilenko 1974]. For several years, his ex-

cavation has been continued by T. Neradenko [Neradenko 1995]. This article uses only the materials from the excavation performed by Danilenko, who researched 100 sq. m and identified two Eneolithic layers, the lower of which contained a 6 m x 2 m construction without a hearth. Its floor had been dug in the ancient ground surface, probably 50 cm deep. The upper Eneolithic layer comprised the traces of a 15 m x 12 m rectangular spot with three hearths, which had been dug 15-20 cm deep in the ground.

The research of the archaeological collection showed all of the Eneolithic pottery to be homogenous. Its production technique, shape and ornamentation do not allow splitting it into two groups. Unfortunately, the insufficiently informative report and poorly preserved codes on the ceramics preclude relating the vessels to individual constructions. It is worth noting that the excavation performed by Neradenko at the remaining segment of the settlement proved the existence of only one Eneolithic layer in the settlement. Judging by the number of rims, fragments of about 60 Eneolithic vessels were found there in 1955-1956. The best preserved were fragments of 45 pots, which had been made of clay with an admixture of ground shells. Their inner and often outer surfaces had been smoothed with comb clichés horizontally and vertically. These vessels had sharp, slightly flattened or flat bottoms.

The highest proportion of ceramics ornamented with cord imprints has been registered in that particular settlement's collection. Eight pots were decorated with short imprints of coiled cord (Fig. 13; Fig. 14), seven pots with imprints of a plain cord (Fig. 15:2; Fig. 16:1-5, 7). Ornaments of four pots combined cord imprints with other imprints of various shapes (Fig. 15:1, 3; Fig. 16:7, 8).

Unlike in Dereivka, only one version of a single-thread twisted cord, coiled tightly on a flexible or straight base, was found in the site (Fig. 13; Fig. 14), which produced short imprints form horizontal and diagonal lines (Fig. 13; Fig. 14:1,2), and a herringbone pattern (Fig. 14:3-5).

Only one of the vessels displayed imprints of a long coiled cord in combination with ordinary cord imprints (Fig. 15:4).

The classical cord imprints formed horizontal lines and zigzags (Fig. 16:1-5, 6) and vertical lines of short imprints (Fig. 15:2; Fig. 16:7).

The three dates, obtained at the Kyiv Radiocarbon Laboratory from the animal bones taken from the Eneolithic layer at the settlement segment, excavated by Neradenko, indicate that the Eneolithic settlement had existed there about 4200-4050 BC (Table 2).

Cord-ornamented vessels also occurred in two Dereivka culture settlements of the **Igren burial site**. That earth burial mound in the vicinity of Dnipropetrovsk consisted of graves of different times, including the Sredniy Stog and the Dereivka culture [Kotova 2005].

One small flat-bottomed vessel from a washed-away grave was decorated with imprints of a coiled cord of the first version (Fig. 17:5). The second vessel was

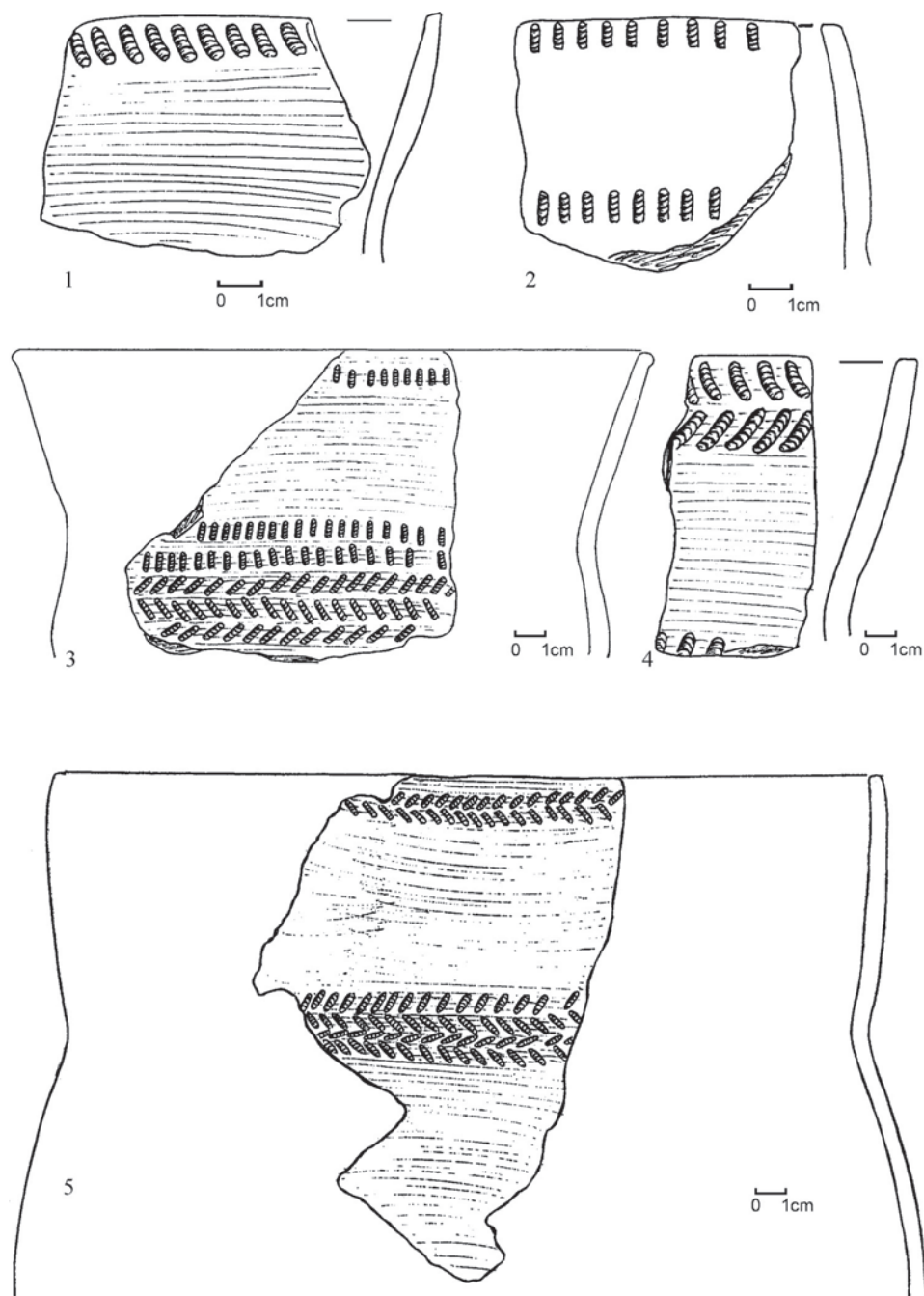


Fig. 14. Ceramics of the Dereivka settlement

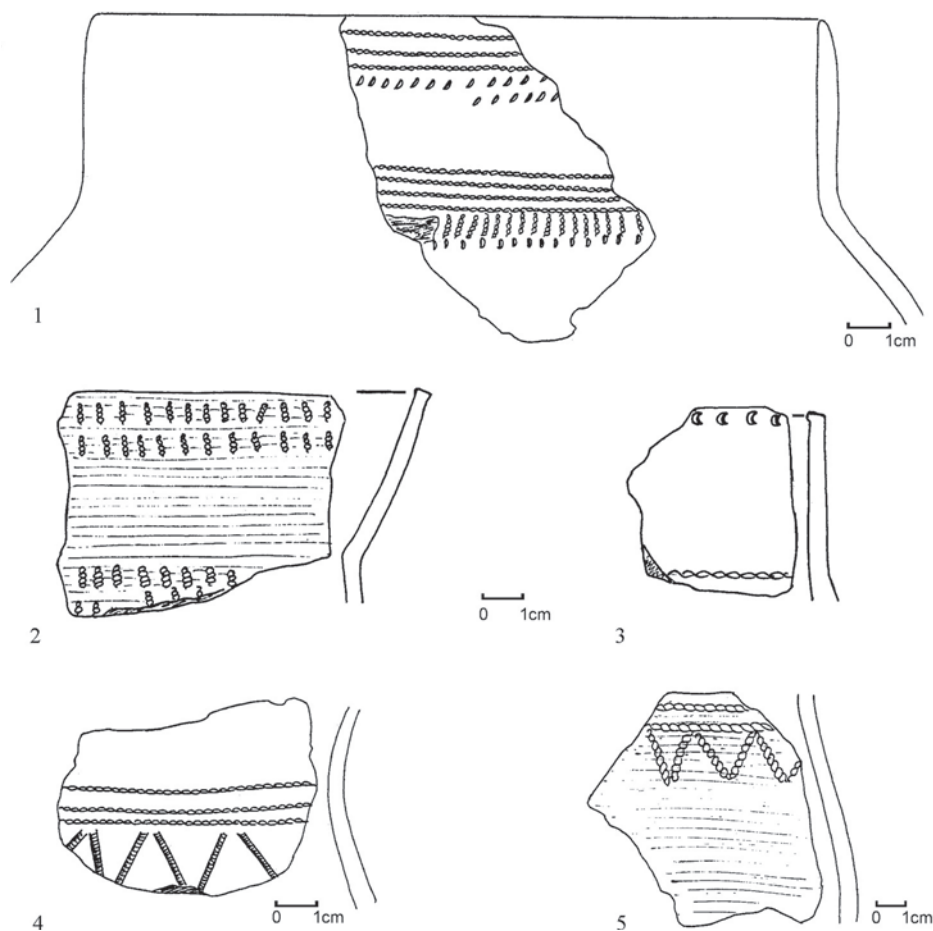


Fig. 15. Ceramics of the Dereivka settlement

found next to a skeleton, stretched on its back in grave 1 from the excavation of 1986. Its ornamentation contained lines of imprints of a classical cord with diagonal lines of short imprints of a coiled cord (Fig. 17:4).

One of the three vessels found in the **Buhayevo** encampment near Cheresheve of the Kuibysheve district of Zaporizhzhya region was also decorated with imprints of a coiled cord (Fig. 15:4). The animal bones from the 1999 digging were used to obtain the radiocarbon dates (Table 2), determining the age of the monument as ca. 4250-3980 BC.

A complex monument, which included a multi-layered settlement and a burial site, was located at **Oleksandriya** of the Kupyansk district of the Kharkiv region,

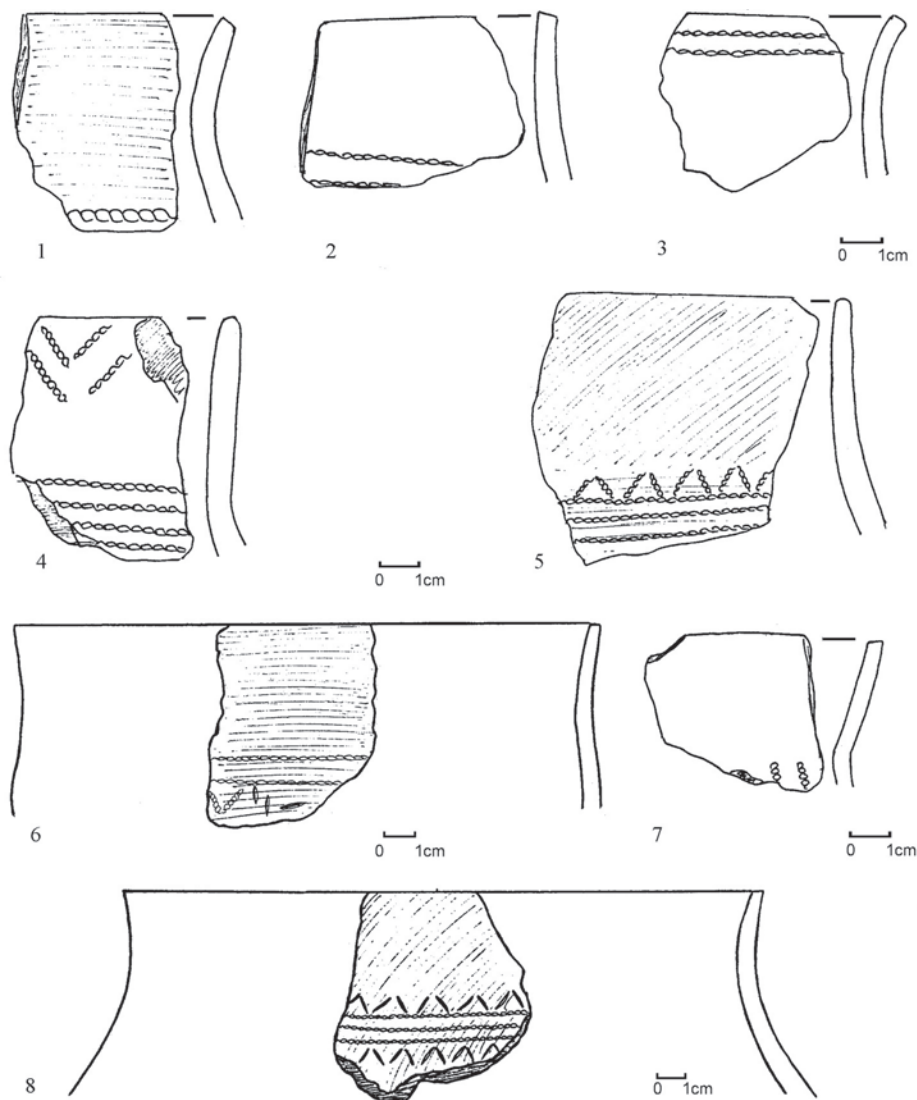


Fig. 16. Ceramics of the Molyukhov Buhor settlement

which D. Telegin studied in 1955-1957 [Telegin 1959]. Twenty pots, a bowl and eleven fragments of rims from his collection belong to the Dereivka culture [Kotova 2003a]. The predominant patterns in the ornamentation were comb imprints, and only one of the vessel walls was decorated with imprints of a coiled cord (Fig. 17:2, 4). These formed horizontal lines in the rim, lined with short diagonal rows from the bottom. The fragment from the shoulder of one vessel displayed

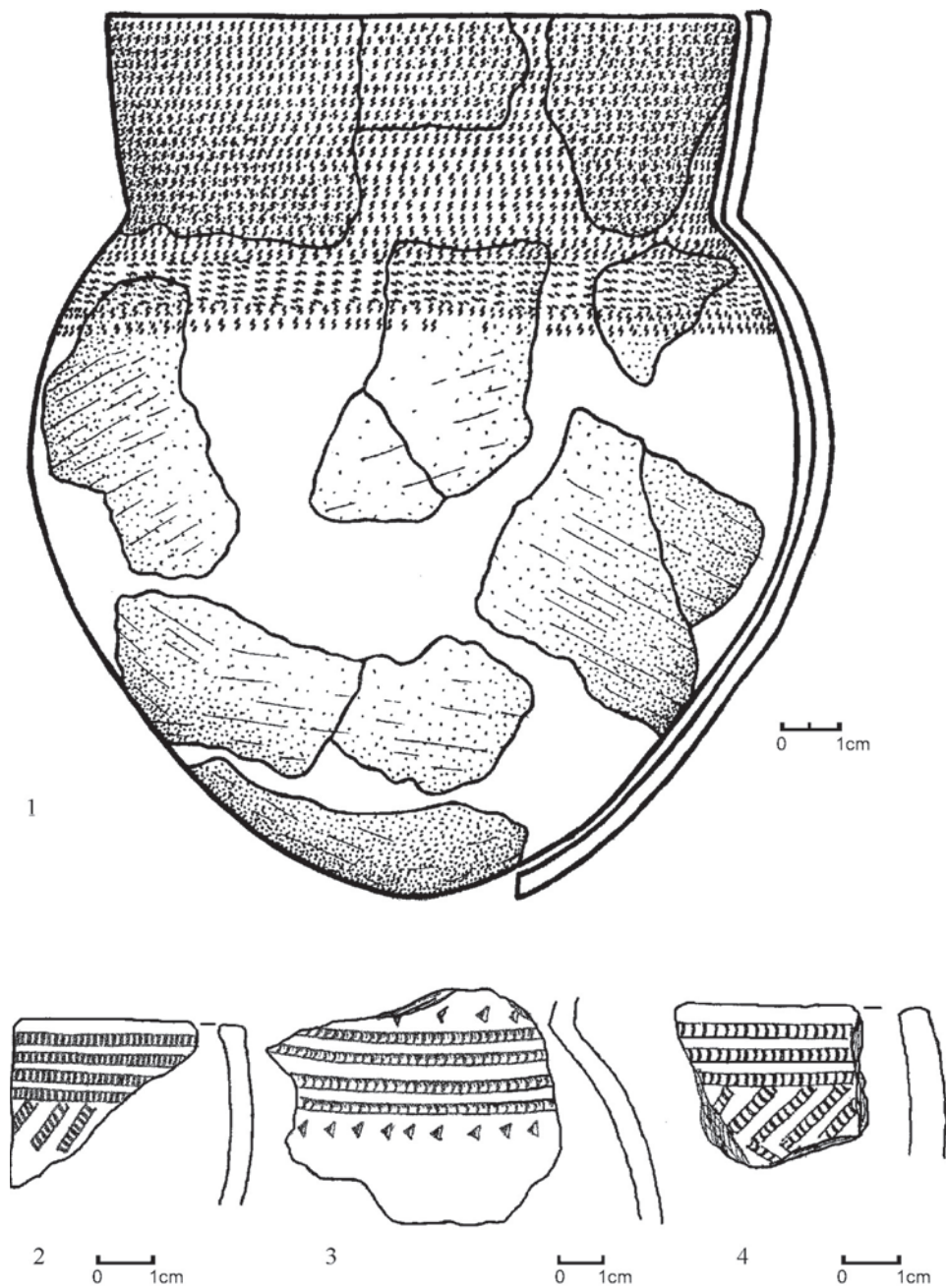


Fig. 17. Ceramics of the Dereivka culture: 1 – Serebryanskoe; 2, 3 – Oleksandriya; 4 – Buhayevo

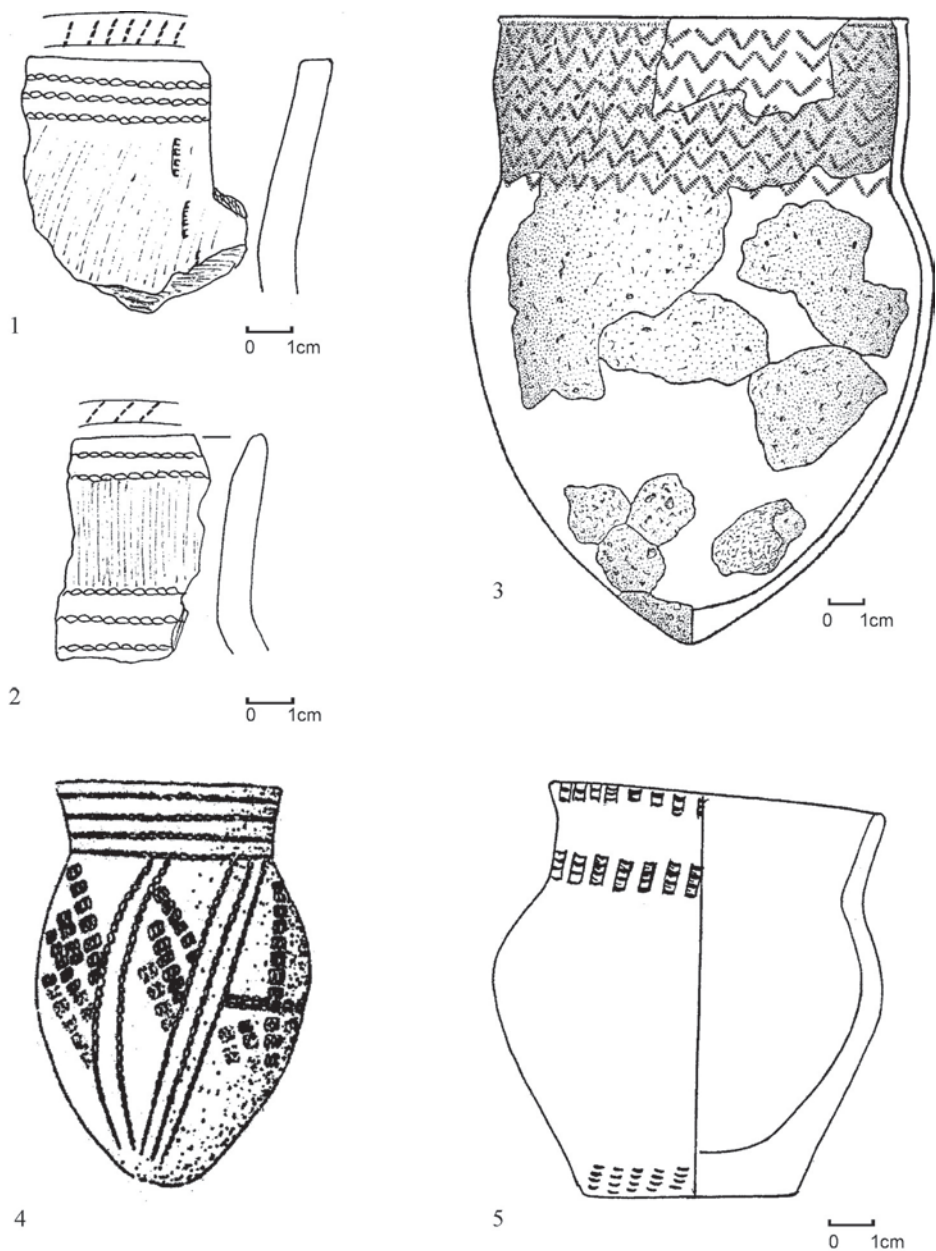


Fig. 18. Ceramics of the Dereivka culture: 1 – Chernikovo Ozero 1; 2 – Chernikovo Ozero 3; 3 – Chernikovo Ozero 2; 4 – grave 1 (1986) of the Igren burial site; 5 – washed-away grave of the Igren burial site

horizontal lines of long imprints of a coiled cord of the first version, framed with triangular prick marks.

The multi-layered **Serebryansko** settlement was located on a sand cape between the lakes of Chernikovo and Kleshnya, the latter 3.5 km from the village of Serebryanka, Kremensky district of the Luhansk region, which was studied by S. Sanzharov in 1997 [Sanzharov *et al.* 2000]. The finds in the settlement included the Bronze Age, Eneolithic and Neolithic materials, including five vessels of the Dereivka culture, which had been made of clay with a shell admixture.

Four of the vessels had been decorated with comb imprints. The ornament on one of the vessels included coiled cord imprints which decorated the neck and the shoulders. At the neck and upper parts of the shoulders they were organized in horizontal lines; below there were vertical lines, which were limited by two horizontal lines from the bottom (Fig. 17:1). Interestingly, the long imprints of the coiled cord on that vessel resembled short imprints of the second version. Apparently, the cord had been coiled loosely, there had been intervals between the coils, and the imprints of each of the coils displayed traces of a two-thread twisted cord.

In 1996-1997, S. Sanzharov studied three multi-layered settlements in the sand dunes near the Chernikove Island in the flood-lands of the left bank of the Siversky Donets River [Sanzharov *et al.* 2000]. Their collections include the Neolithic, Eneolithic and Bronze Age materials, including the Dereivka culture.

The **Chernikove Ozero 1** settlement contained five pots of that culture, one of which had been ornamented at the upper rim with three horizontal lines of cord imprints and vertical lines of short comb imprints (Fig. 18:1).

The **Chernikove Ozero 2** settlement also included a pot of the Dereivka culture, which had a high chamfer mouth, decorated with short coiled cord imprints of the first version that had formed zigzags (Fig. 18:3).

The **Chernikove Ozero 3** settlement produced fragments of three Dereivka vessels, one of which was decorated with horizontal lines of cord imprints below the rim, in the lower part of the neck and on the shoulders (Fig. 18:2). Other Eneolithic pottery of those monuments was decorated with comb imprints.

3. CORDED ORNAMENTATION OF THE MYKHAILIVKA LOWER LAYER TYPE MONUMENTS

The settlement is located 4 km to the south of the village of Mykhailivka, Novovorontsove district of the Kherson region and occupies a hill of the second terrace over the flood-lands of the right bank of the Pidpilna River, a right tributary of the Dnieper. That large settlement is unique for the steppe zone

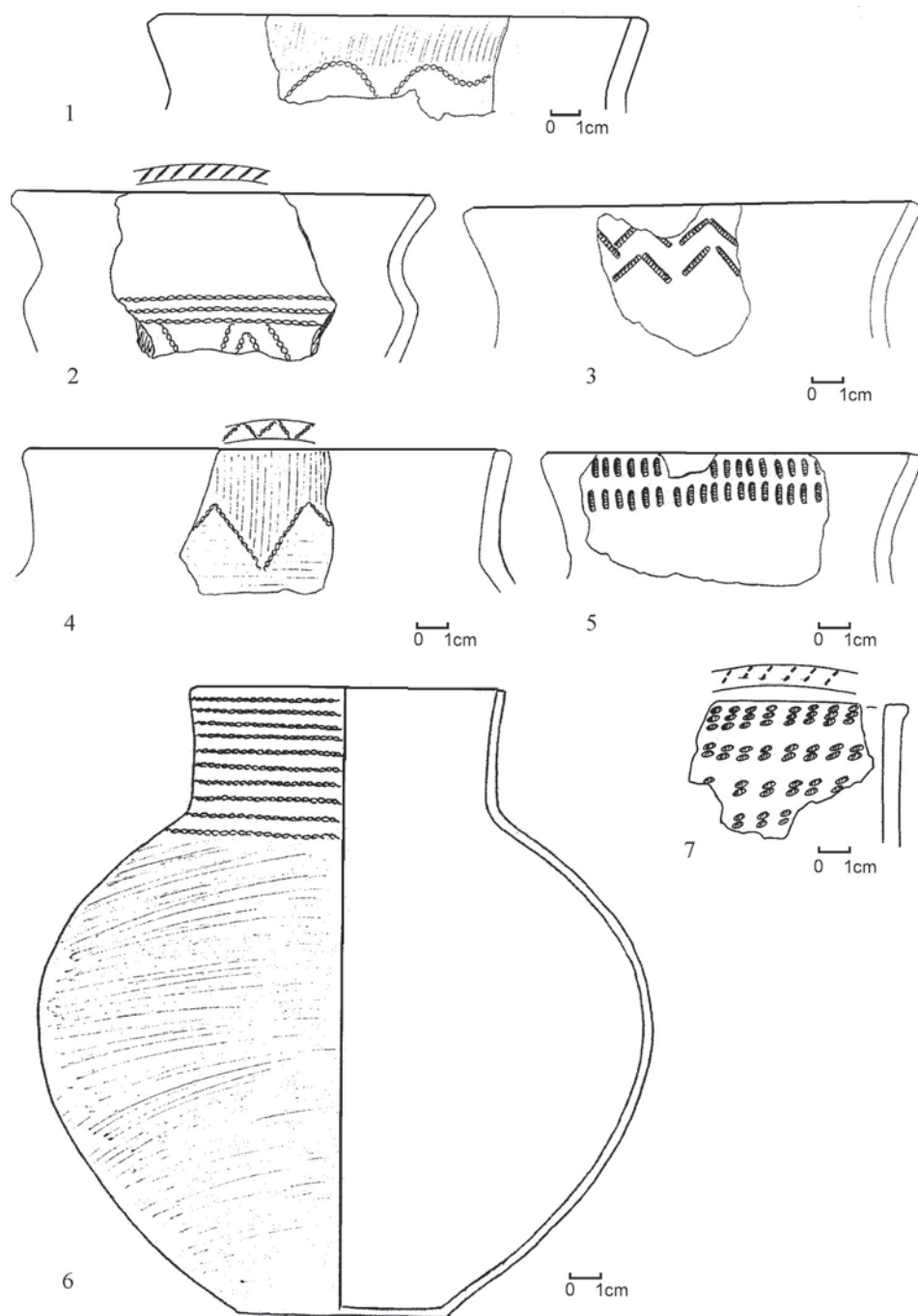


Fig. 19. Ceramics of the lower layer of the Mykhailivka settlement

and includes thick cultural layers of the Eneolithic and the Bronze Age. Unfortunately, over 50 years have passed since the end of the large-scale excavation of that monument, but the publication of its materials has not been completed yet. The excavation authors only managed to produce a preliminary publication [Lagodovska, Shaposhnikova, Markevych 1962] that indicated the existence of an original culture group in the Ukraine steppe, which had been most evidently represented by the monument's lower layer. The authors of the book on the Mykhailivka settlement believed that its lower layer belonged to a different archaeological culture, which had been based and developed on the traditions of the population that had come to the Lower Dnieper area from the Northern Caucasus, and of local tribes related to the Usatovo culture [Lagodovska, Shaposhnikova, Markevych 1962:201-202].

In the early 1970s, V. Danilenko identified monuments of the so-called Azov – Black Sea development line of the Steppe Eneolithic, to which he also included Mykhailivka's lower layer [Danilenko 1974]. However, when describing the layer's pottery, he noted its similarity with Dereivka ceramics. The common features included the same upper surface finishing technique, morphological similarity of upper parts of the vessels, as well as technical and compositional likeness of the ornament.

The originality of Mykhailivka's lower layer ceramics and the lack of a full publication of the settlement's materials led to a very broad search for analogues among the Eneolithic and Bronze Age monuments of the Eastern European steppes. The key features by which researchers related different materials to those of Mykhailivka's lower level were, first of all, their difference from rather well-known materials of the Sredniy Stog and the Trypillia circles, as well as the absence of ornament on the ceramics and their smoothly finished surfaces. The use of those features resulted in substantial expansion of the circle of monuments of the Lower Mykhailivka type [Telegin 1971; Shaposhnikova 1987; Rassamakin 1999; 2004].

The studied area of the lower layer of Mykhailivka settlement measures 500 sq km where four dug-in dwellings have been found. Fragments of some 50 vessels have been found inside the dwellings and next to them. The pottery was made of clay with an admixture of shell, which included pots and bowls. More than half of the ceramics had no ornament; other vessels were decorated with comb imprints, 'pricks', scratched lines, and combinations of those elements.

Seven of the pots were decorated with cord imprints, three of which were ornamented with short imprints of a coiled cord. The imprints on two of the pots belong to version 1 (Fig. 19:4, 5), forming a zigzag and horizontal rows.

A piece of a high rim was decorated with horizontal rows of imprints of a coiled cord of version 2: a coiled cord of several threads had been rolled onto the base of a stamp, and coiled threads were visible in imprints of each coil (Fig. 19:7).

Table 3

Radiocarbon dates for the lower layer of Mykhailivka settlement.

Monument	Material	Lab. Index	BP	calBC [Weninger <i>et al.</i> 2005]
Mykhailivka, dwelling 3	bone	Ki-8012	4890±80	3676±94
Mykhailivka, dwelling 4	ceramics	Ki-14869	4740±70	3511±100
Mykhailivka, dwelling 4	bone	Ki-9487	5260±60	4102±94

Four vessels were decorated with classical cord imprints (Fig. 19:1, 2, 4, 6), forming horizontal rows and a zigzag.

A fragment of ceramics from dwelling 4 of Mykhailivka's lower layer was dated (Table 3), which proved to be younger than a bone from the same dwelling. This fact confirms the above suggestion about the need to improve the ceramics dating methodology.

4. CORDED ORNAMENTATION OF VESSELS: PIT-AND-COMB POTTERY CULTURE

The cord was used for ornamentation of ceramics in the latest settlements of that Neolithic culture. The best-studied among them are the settlements of Hryshivka, Skunsovo-Rudoho and Pohorelovka-Kosa (Fig. 20).

The multi-layer Hryshivka settlement was studied by S. Berezanskaya in the 1970s near Hryshivka, Borzna district of the Chernihiv region [Berezanskaya 1975]. It was located on the bank of the Trubyn Lake and consisted of three layers containing materials of the Pit-and-Comb Pottery culture, and the Bronze Age upper layer. There, cord-ornamented ceramics were found in the second and third layers.

The second layer consisted of three horizons to which three dwellings had been linked that had existed for a short period of time and may be viewed within one cultural layer. The age of the lower dwelling can be defined by the radiocarbon date as ca. 3700 BC (4930±80 BP, Ki-8085). This date has been also confirmed by the find of a Trypillia C I imported bowl in this layer.

The kitchenware from the middle and upper dwellings had thick walls and had been well-baked – its entire surface decorated with holes. The hole sectors were divided with areas of comb imprints, holes of a different shape or parts without any ornamentation. The upper dwelling of the second layer contained vessels decorated with cord imprints [Neprina 1976:71].

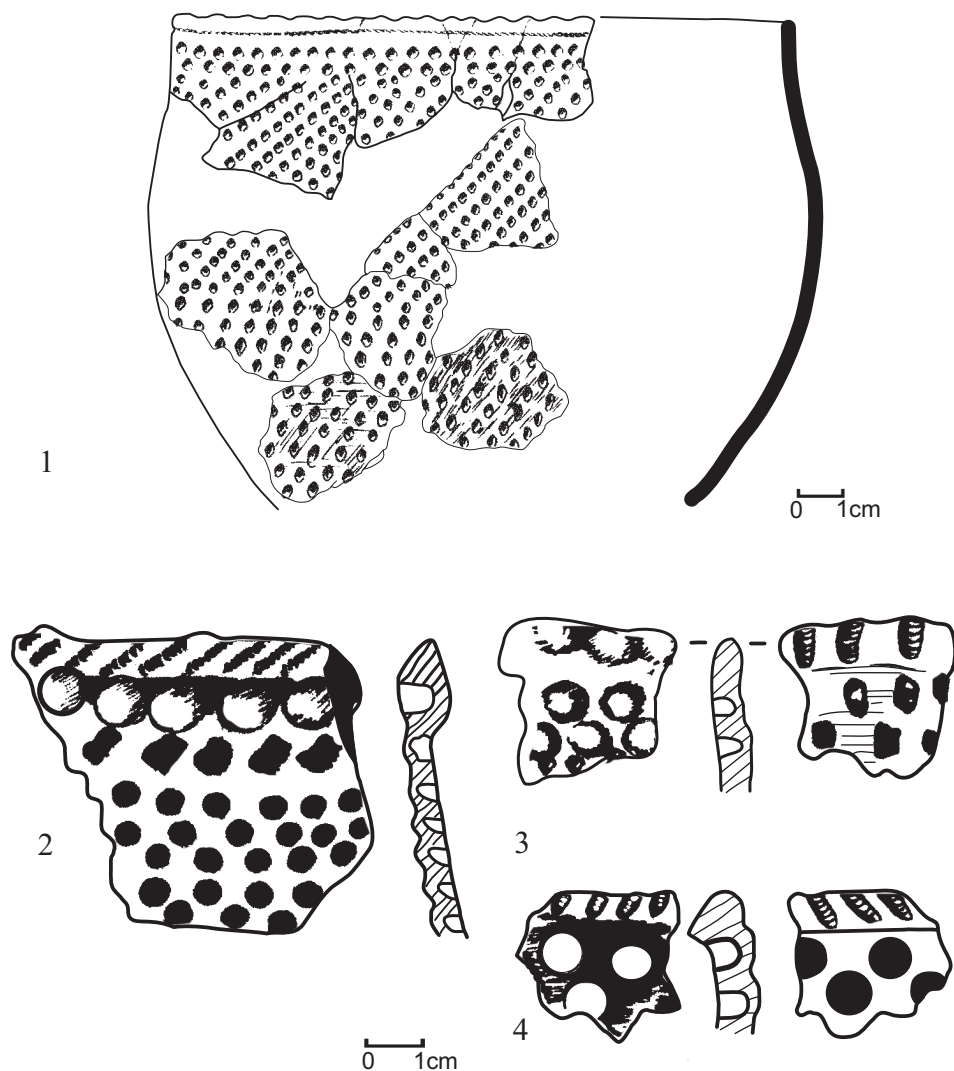


Fig. 20. Ceramics of the Pit-and-Comb Pottery culture: 1 – the third layer of Hryshivka; 2 – Pohorelovka-Kosa; 3, 4 – Skunsovo-Rudoho

The third layer of the monument also contained occasional cord-ornamented kitchenware; however, most of the ceramics were decorated with rhombic and round holes and rectangular stamps (Fig. 20:1).



Fig. 21. Pottery with the two types of turned cord: 1,2 – the first type – needle stitch twine cord; 3,4 – the second type – plaited cord. 1,2 – the lower layer of Mikhailovka; 3,4 – Dereivka

5. THE PROCESS OF CORD ORNAMENTATION AND ITS PROLIFERATION

Available materials demonstrate that the earliest kind of cord ornament was made with coiled cord imprints. Long cord imprints first appeared in the monuments of the second period of the Sredniy Stog culture about 4600-4500 BC. Those imprints resembled marks made with a large-teeth comb-like cliché perpendicular to the vessel's surface. The cord imprints formed ornamental compositions traditional for the Sredniy Stog culture. These two facts allow an assumption that the idea to make a long form for ornamentation, with a cord coiled on it, emerged subsequently to long comb-like clichés.



Fig. 22. Dated sherd from the Dereivka site, square 339, depth 40-60cm, No 10126

The monuments of the third period of the Sredniy Stog culture, dating back to about 4350/4300-4200 BC, contain short imprints of a coiled cord, in addition to long imprints. Often they are the widest in their middle part and narrow down to the ends. It may be assumed that such imprints were made with a cord that had been coiled on a flexible base, probably another piece of cord. Those imprints no longer resembled marks made by a comb stamp, but looked like a caterpillar, which is why they are often referred to as a 'caterpillar' pattern.

As before, the patterns made with a coiled cord throughout the third period of the Sredniy Stog culture, followed traditional ornamental compositions made by the comb stamps.

Probably, under the influence of the Sredniy Stog population, this kind of ornamentation proliferated in the Trypillia culture at its B I-II stage, which is synchronous with monuments of the third period of the Sredniy Stog culture [Kotova 2008]. Imprints of a coiled cord were found in the latest monuments of that period, for example, in ceramics of the Myropillia settlement [Kotova 2008: Fig. 130,1].

The ornamentation made with coiled cord imprints was further developed in the Middle Eneolithic ca. 4200-3800 BC in the monuments of the lower layer of Mykhailivka and the Dereivka culture. Both the Dereivka settlement

and Mykhailivka's lower layer contained finds with two versions of twisted cord imprints. The second version can be viewed as a Middle Eneolithic innovation.

Nowadays it is hard to identify, with a high degree of certainty, the first culture whose population started using 'classic' cord imprints for decorating their ceramics. Apparently, the most plausible hypothesis is that the first corded ornamentation was produced by the population of the TC. The earliest and single corded ornament currently known is the one on kitchenware ceramics from Veselyi Kut settlement (Trypillia B I-II, information by O. Tsvek).

The ornamentation made with coiled cord imprints was further developed in the Middle Eneolithic ca. 4200-3800 BC in the Trypillia B II monuments, e.g., the lower layer of Mykhailivka and the Dereivka culture type. It is noteworthy that in the Dereivka culture it was the most widely spread in the settlements on the right bank of the Dnieper (Molyukhov Buhor and Dereivka), located in the south of the present-day Dnieper forest-steppe in the immediate proximity of the territory that had been occupied by the Trypillia population. In other monuments, the pattern most commonly used was the coiled cord ornament that remained as a heritage of traditions of the ancestors, the Sredniy Stog population.

In addition to the presence of rather numerous cord-ornamented pottery, both Dereivka and Molyukhov Buhor contained a wide variety of bowls as well as anthropomorphous and zoomorphous modelled figurines, practically unknown in other monuments of that culture. Presumably, the Dereivka population of the right-bank Dnieper area had developed these kinds of ceramics, as well as the corded ornament, under the influence of the Trypillia.

The proliferation of corded ornamentation in the south of the Dnieper steppe in Mykhailivka's lower layer ceramics is linked to the influence of the Dereivka culture. This is proved by the similarity of ornamental compositions and the use of the second version of the coiled cord, present only in that settlement and the Dereivka settlement. Nowadays, there are found only occasional settlements of the lower layer Mykhailivka type that are represented by eponymic monuments and, possibly, by a short-term settlement near Novorozanovka village in the Southern Bug basin. Generally, the scarce monuments of that group represented a local phenomenon of the Lower Dnieper area in the Middle Eneolithic ca. 4150-3600 BC, which were synchronous with Trypillia B II settlements and the Dereivka culture. D. Telegin and V. Danilenko noted the similarity of the lower layer Mykhailivka and Dereivka ceramics in their works [Danilenko 1974:76], having synchronized those monuments. Moreover, D. Telegin considered part of the Mykhailivka lower layer ceramics to be imports from Dereivka [Telegin 1973:127]. Such similarity of kitchenware can be also traced through the corded ornamentation.

As part of a project designed to study the most ancient corded ornamentation, Andrzej Sikorski studied, under a microscope, eight samples of ceramics of the Middle Eneolithic steppe cultures from the Dereivka settlement and lower layer Mykhailivka, aiming to identify the type of tool or tools used for making the

cord imprints on the ceramics. This study of cord imprints under the microscope allowed to identify several kinds of cord ornamentation.

Hence, judging by the five samples taken for analysis from the Dereivka settlement collection, ornamentation of the Dereivka culture ceramics of the Middle Eneolithic had been made with the use of a grid pattern, a needle stitch and a woven cord, as well as a coiled cord. Only one of the fragments was ornamented with a woven pattern and macramé net.

In the lower layer of the Mykhailivka settlement, synchronous with that of Dereivka, the ornament was made with a wicker pattern, a net-like and composite cord, and coiled cord.

It is noteworthy that without a microscope it is impossible to make a distinction between the kinds of cord imprints, identified by A. Sikorski. These are perceived as imprints of a 'classic' cord that can be distinguished only by the length and width of the imprints.

Scarce kitchenware with corded ornamentation has been found in monuments of the Pit-and-Comb Pottery culture in the north-east of Ukraine. This belongs to a major cultural – historic area of cultures sharing similar pottery ornamentation, which occupies vast forest spaces and part of the forest-steppe areas of Eastern Europe [Neprina 1976]. The most ancient settlements of Ukraine have been united by V. Neprina into the Vyrchischa type group of monuments [Neprina 1990], which occupy the Desna River basin and are close to the archaic and early Lyalov culture. Ornamentation of that group's pottery was dominated by alternating rows of comb imprints and lines of holes. In this context, cord imprints have not been found. The radiocarbon dates indicate that the settlements of that type existed ca. 4900-4200 BC [Kotova 2003b].

The second group of monuments includes settlements of the Cherkasy Dnieper area: Dereivka, Uspenka, and Buzky, which existed ca. 4300-3800 BC [Kotova 2003b]. Their typical kind of ceramics was ornamented with staggered holes where the hole ornament zones were separated with a few belts of comb marks. Materials of those monuments are similar to those of the developed stage of the Lyalov culture. In Dereivka, those ceramics lay together with the Dereivka pottery, and there were syncretic forms. However, no cord marks have been found on the kitchenware of the Pit-and-Comb Pottery culture.

The cord emerged in ornamentation of monuments of the third group, the Skunsovo type, dated ca. 3700-3200 BC [Kotova 2003b], which are located in the north-east of Ukraine in the Seim and Desna River basin (e.g., the second and third layers of Hryshivka, Pohorelovka-Kosa, Skunsovo, etc.) and were probably left by the migrant populations of the late Lyalov and Desna cultures, which had assimilated the previous Pit-and-Comb pottery population. Their ceramics were decorated with hole, pit-and-comb, or pit-and-prick ornaments, and holes made with a stick with a cord coiled onto it (the so-called 'lapchatyi' ornament), as well as imprints of a coiled cord on the rim. So far, only the ornaments made by

the coiled cord of the first version have been found with some vessels displaying imprints of a 'classic' cord.

That population had maintained contacts with the people of the TC of the Dnieper area, which had left monuments of the C I period. The evidence of that can be seen in the find of a Trypillia bowl in a dwelling of the Hryshivka settlement. Probably, it was under the influence of the Trypillia culture where imprints of coiled and regular cords spread among that Neolithic population [Smirnov 1991:78; Kotova 2003b]. Those residents of the Desna basin began to use cord imprints to replace, in a number of cases, the comb marks they had used for decoration of rims and necks.

6. CONCLUSION

From the above discussion it is clear that the earliest kind of cord ornament was made with coiled cord imprints, which were represented by long cord imprints and first appeared in the monuments of the second period of the Sredniy Stog culture about 4600-4500 BC. The ornamentation made with coiled cord imprints was further developed in the Middle Eneolithic ca. 4200-3800 BC in the monuments of the lower layer of Mykhailivka and the Dereivka culture. Scarce findings of pottery with corded ornamentation have been also found in monuments of the Pit-and-Comb Pottery culture (Skunsovo type), which are dated ca. 3700-3200 BC and located in the Seim and Desna River basin in the north-east of Ukraine. Further, there is some likelihood the imprints of coiled and regular cords spread among that Neolithic population under the influence of the Trypillia culture.

Translated by Inna Pidluska

ABBREVIATIONS

- AP USSR – Arkheologiczni pamiatky Ukrainskoyi Radianskoyi Sotsialisticheskoi Respubliki. Kiev.
- BPS – Baltic-Pontic Studies. Poznań.
- KSIA – Kratkiye Soobshcheniya Instituta Arkheologii. Moskva.
- KSIA AN USSR – Kratkiye Soobshcheniya Instituta Arkheologii Akademiyi Nauk Ukrainskoy Sovetskoy Sotsialisticheskoy Respubliki. Kiev.
- MIA – Materialy i Issledovaniya po Arkheologii USSR. Moskva. Leningrad.
- SA – Sovetskaya Arkheologiya. Moskva.

REFERENCES

- Adovasio M.J., Soffer O., Hyland D.C.
2005 Textiles and Cordage. In: J.A. Svoboda (Ed.) *Pavlow I – Southeast. A Window Into the Gravettian Lifestyles*, 432-443. Brno.
- Alexiadou A.
2001 *Funcional Structure in Nominals. Nominalisation and Ergativity*. Amsterdam, Philadelphia.
- Awesta
1892-1893 *Le Zend-Avesta*, vol. 1-3, translation par J. Darmesteter. Paris.
- Bammesberger A.
1989 L'origine de vieil-irlandais BÉS. *Revue Celtique* 26:69-71.
- Barber E.J.W.
1975 The PIE Notion of Cloth and Clothing. *The Journal of Indo-European Studies* 3(4):294-320.
1991 *Prehistoric Textiles: The Development of Cloth in Neolithic and Bronze Ages*. Princeton.
- Belanovskaya T.D., Shmagliy N.M.
1959 Pozdnetripolskoe poselenie y s. Troyanova Zhitomirskoy oblasti. *KSIA AN USSR* 8:125-128.
- Berezanskaya S.S.
1975 Neoliticheskaya stoyanka u khutora Grishevka na Sredney Desne *Sovetskaya archeologia*. 2:148-167.

Bibikova V.I.

- 1986 A study of the earliest domestic horses of Eastern Europe. In: D.Y. Telegin Dereivka. A Settlement and Cemetery of Copper Age Horse Keepers on the Middle Dnieper. *BAR International Series* 287:135-182.

Broholm H.C., Hald M.

- 1940 *Costumes of the Bronze Age in Denmark*, Copenhagen.

Bronicki A., Kadrow S.

- 1988 Osada neolityczna w Majdanie Nowym, woj. Chełm. *Sprawozdania Archeologiczne* 39:89-129.

Bronicki A., Kadrow S., Zakościelna A.

- 2003 Radiocarbon Dating of the Neolithic Settlement in Zimne, Volhynia, in Light of the Chronology of the Lublin-Volhynia Culture and the South-Eastern Group of the Funnel Beaker Culture. *BPS* 12:22-66.

- 2004 Uwagi na temat wzajemnych relacji chronologicznych późnej fazy kultury lubelsko-wołyńskiej oraz kultury pucharów lejkowatych z uwzględnieniem najnowszych wyników badań w Zimnie. In: J. Libera, A. Zakościelna (Eds) *Przez pradzieje i wczesne średniowiecze. Księga jubileuszowa na siedemdziesiąte piąte urodziny docenta doktora Jana Gurby*, 101-125. Lublin.

Buchvaldek M., Strahm C.

- 1992 (Eds) Die kontinentaleuropäischen Gruppen der Kultur mit Schnurkeramik. Schnurkeramik Symposium 1990. *Praehistorica* 19. Praha.

Burchard B., Jastrzębski S., Kruk J.

- 1991 Some Questions at Funnel Beaker Culture South-Eastern Group – an Outline. In: D. Jankowska (Ed.) *Die Trichterbecherkultur. Neue Forschung und Hypothesen*, 95-101. Poznań.

Burdo N.B.

- 2004a Vyazannya. In: *Entsyklopedia Trypilskoï Tsyvilizatsii*, Vol.2, 111. Kiev.
 2004b Tekstylne vyrobnytstvo. In: *Entsyklopedia Trypilskoï Tsyvilizatsii*, Vol.2, 516. Kiev.
 2004c Pryadynnya. In: *Entsyklopedia Trypilskoï Tsyvilizatsii*, Vol.2, 436-437. Kiev.

Chachlikowski P.

- 1994 *Osada kultury pucharów lejkowatych w Podgaju woj. wrocławskie stanowisko 6A*. Poznań.

Cheung J.

- 2007 *Etymological Dictionary of the Iranian Verb*. Leiden – Boston.

Chmielewski T.J.

- 2009 *Po nitce do kłębka. O przędzalnictwie i tkactwie młodszej epoki kamienia w Europie Środkowej*. Warszawa.

Chmielewski T., Gardyński L.

- 2009 Włókno – nić – wrzeciono. Z metodyki badań przęślików na przykładzie znalezisk ze stanowiska 1 C w Gródku. In: H. Taras, A. Zakościelna (Eds) *Hereditas praeteriti. Addimenta archaeologica et historica dedicata Ioanni Gurba Octogesimo Anno Nascendi*, 145-156. Lublin.

Chmielewski W.

- 1952 *Zagadnienie grobowców kujawskich w świetle ostatnich badań*. Łódź.

Collins D.

- 2008 *Magic in the Ancient Greek World*. Blackwell Publishing.

Czebreszuk J., Koško A., Makarowicz P., Szmyt M.

- 2000 Podsumowanie. In: A.Koško (Ed) *Archeologiczne badania ratownicze wzdłuż trasy gazociągu tranzytowego. Vol. III, Kujawy. Part 4, Osadnictwo kultur późnoneolitycznych oraz interstadium epok neolitu i brązu: 3900-1400/1300 przed Chr.*, 539-572. Poznań.

Danilenko V.N.

- 1959 Archeologicheskie issledovania 1960 g. v Chigirinskom raione. *KSIA* 8: 13-21. Kiev.
1974 *Eneolit Ukrainy*. Kiev.

Dergachev V.A.

- 1999 Osobennosti kulturno-istoricheskogo razvitiya Karpato-Podnestrovyia. K probleme vzaimodeystviya drevnikh obshchestv Sredney, Yugo-Vostochnoy i Vostochnoy Evropy. *Stratum plus* 2:169-221.

Dobrovolsky A.V.

- 1929 Zvit za dslidzhennyamy terytorii Dniprelstanu. In: *Zbirnyk DKIAM*. Vol. 1, 130-140. Dnipropetrovsk.

Donald M.

- 1991 *Origins of the Modern Mind. Three Stages in the Evolution of Culture and Cognition*. Cambridge.

Douglas M.

- 2004 *Symbole naturalne. Rozważania o kosmologii*. Kraków.

Dumézil G.

- 1952 *Les dieux des Indo-Européens*. Paris.

Eliade M.

- 1960 Spiritual Thread, Sutratman, Catena Aurea. In: *Festgabe für H. Lommel*, 47-56. Wiesbaden.
1998 *Obrazy i symbole. Szkice o symbolizmie magiczno-religijnym*. Warszawa.

Furholt M.

- 2003 Die absolutchronologische Datierung der Schnurkeramik in Mitteleuropa und Südsandinavien. *Universitätsforschungen zur prähistorischen Archäologie* 101. Bonn.

- 2009 Die nördlichen Badener Keramikstile im Kontext des mitteleuropäischen Spätneolithikums (3650-2900 v.Chr.). *Studien zur Archäologie in Ostmitteleuropa* 3. Bonn.
- Furholt M., Machnik J.
 2006 Iwanowice Babia Góra I and the Settlements with Baden Ceramics in Little Poland. Questions Concerning their Duration. *Sprawozdania Archeologiczne* 58:325-354.
- Galiński T.
 2005 Nowe materiały tzw. fazy wczesnopucharowej osadnictwa protoneolitycznego na Pomorzu. *Folia Praehistorica Posnaniensia* XIII/XIV:71-90.
- Gamkrelidze T.V.
 1991 Lingvisticheskiye aspekty rekonstrukcii indoevropeyskoy protokultury. In: *Mirovaya kultura: tradicii i sovremennost*, 9-15. Moskva.
- Gamkrelidze T.V., Ivanov V.V.
 1984 *Indoevropeiskiy yazyk i indoevropeitsy. Rekonstruktsiya i istorikotopologicheskij analiz prayazyka i protokultury*. Tbilisi.
- Götze A.
 1891 *Die Gefäßformen und Ornamente der neolithischen schnurverzierten Keramik im Flussgebiete der Saale*. Jena.
- Grygiel R.
 2008 *Neolit i początki epoki brązu w rejonie Brzeźcia Kujawskiego i Ostonek, t. II: Środkowy neolit grupa brzesko-kujawska kultury lendzielskiej*, cz. 3. Łódź.
- Hald A.
 1950 *Olddanske tekstiler. Komparative tekstil- og dragthistoriske studier paa grundlag af Mosefund og gravfund fra Jernalderen*, København.
- Hensel W.
 1980 *Polska starożytna* Wrocław-Warszawa-Kraków-Gdańsk.
- Hoernes M.
 1898 *Urgeschichte der bildenden Kunst*. Wien.
- Hultkrantz A.
 1983 The Concept of the Supernatural in Primal Religion. *History of Religion* 22(3):231-253.
- Izak K.
 1994 Średniowieczna ceramika z regionu Goundam w Mali, *Materiały Zachodniopomorskie*, vol. XL, 413-500.
- Jastrzębski S.
 1985 Imports of the Trypole Culture Pottery in the South-Eastern Group of the Funnel Beaker Culture. In: A. Kokowski (Ed.) *Memoires Archeologiques*, 71-92. Lublin.

- 1991 The Settlement of the Funnel Beaker Culture at Gródek Nadbużny, the Zamość District, Serie 1 C – Brief Characteristics. In: D. Jankowska (Ed.) *Die Trichterbecherkultur. Neue Forschung und Hypothesen*, 189-196. Poznań.
- Jażdżewski K.
- 1932 Zusammenfassender Überblick über die Trichterbecherkultur. *Praehistorische Zeitschrift* 23:77-110.
- 1936 *Kultura puharów lejkowatych z Polsce Zachodniej i Środkowej*, Poznań.
- Kaczmarek W.
- 1960 Technika powroźnicza i sieciarska na podstawie zabytków Muzeum Pomorza Zachodniego, *Materiały Zachodniopomorskie*, vol. VI, 455-498.
- Kadrow S.
- 2005 Związki kultury trypolskiej z kulturami Środkowej i Południowo-Wschodniej Europy – wybrane zagadnienia. In: A. Garbacz, M. Kuraś (Eds) *Kultura trypolska – wybrane problemy. Materiały z polsko-ukraińskiego seminarium naukowego; Muzeum Regionalne w Stalowej Woli, 7 października 2005*, 7-31. Stalowa Wola.
- 2009 Uwagi o grupie południowo-wschodniej kultury puharów lejkowatych. In: H. Taras, A. Zakościelna (Eds) *Hereditas praeteriti. Addimenta archaeologica et historia dedicata Ioanni Gurba Octogesimo Anno Nascendi*, 137-144. Lublin.
- Kadrow S., Sokhachiy M., Tkachuk T., Trela E.
- 2003 Sprawozdanie ze studiów i wyniki analiz materiałów zabytkowych kultury trypolskiej z Bilcza Złotego znajdujących się w zbiorach Muzeum Archeologicznego w Krakowie. *Materiały Archeologiczne* 34:53-143.
- Kamińska J., Nahlik A.
- 1958 *Włókiennictwo gdańskie w X-XIII wieku*. Łódź.
- Klochko V.I., Koško A., Szmyt M.
- 2003 Chronology of the prehistory of the area between the Vistula and Dnieper: 4000-1000 BC. *BPS* 12:396-414.
- Kloekhorst A.
- 2008 *Etymological Dictionary of the Hittite Inherited Lexicon*. Leiden–Boston.
- Kondracki J.
- 1967 *Geografia fizyczna Polski*. Warszawa.
- 1978 *Geografia fizyczna Polski (wydanie III)*. Warszawa.
- Kosakivskyi V.O.
- 1998 Vidbytky tkanyny na keramitsi z pizniotrypilskohoho poselennya Bershanivka na Podilli. In: *Trypilske poselennya Koshylivtsi-Oboz (do 120-richya vidkryttya)*. *Naukovi materialy Mizhnarodnoyi arkheolohichnoyi konferentsiyi*, 41-43. Zalishchyky.

- 2001 Trypilski tkaniny. In: *Trypilskiyi svit i ioho susidy: Tezy dopovidey nauko-vo-praktychnoi konferentsiyi*, 17-19. Zbarazh.
- Kosakivskiyi V.O., Ocheretnyi V.V., Prylypko V.P.
- 1998 Vidbytky tkanyny na keramitsi z pizniotrypilskoho poselennya Yaltushkiv na Podilli. In: *Podilska starovyna*, 29-40. Vinnytsia.
- Koszałka J.
- 2007 Odciski roślin na ceramice i polepie kultury pucharów lejkowatych oraz kultury amfor kulistych. In: A. Koško, M. Szmyt (Eds) *Opatowice-Wzgórze Prokopiaka. Studia i materiały do badań nad późnym neolitem Wysoczyzny Kujawskiej*. Tom III, 363-369. Poznań.
- Koško A.
- 1981 *Udział południowo-wschodnioeuropejskich wzorców kulturowych w rozwoju niżowych społeczeństw kultury pucharów lejkowatych*. Poznań.
- 1984 Łojewo, gm. Inowrocław, woj. Bydgoszcz, stan. 4, osada z fazy późnolubońskiej (V) kultury pucharów lejkowatych. *Sprawozdania Archeologiczne XXXV*:23-50.
- 1987 Papros, woj. Bydgoszcz, gm. Dąbrowa Biskupia, stan. 6A, 6B, 6G. Obowiziska z fazy lubońskiej (IV) kultury pucharów lejkowatych. *Folia Praehistorica Posnaniensia II*: 35-67.
- 1988 *Osady kultury pucharów lejkowatych w Inowrocławiu-Mątwach woj. Bydgoszcz, stanowisko 1*. Inowrocław.
- 2006 Ceramika kultury pucharów lejkowatych. In: A. Koško, M. Szmyt (Eds) *Opatowice – Wzgórze Prokopiaka. Studia i materiały do badań nad późnym neolitem Wysoczyzny Kujawskiej*, 139-194. Poznań.
- 2007 Pontyjskie tło genetyczne ornamentyki sznurowej grupy wschodniej kultury pucharów lejkowatych. In: *Materiały ta doslidzhennya z arkheolohiyi Shkhidnoyi Ukrayiny 7*:61-64.
- Koško A., Łuksza A.
- 2007 Ceramika naczyniowa kultury pucharów lejkowatych. In: A. Kosko, M. Szmyt (Eds) *Opatowice – Wzgórze Prokopiaka. Studia i materiały do badań nad późnym neolitem Wysoczyzny Kujawskiej*. Tom II, 69-133. Poznań.
- Koško A. Szmyt M.
- 2004 Hodowla w systemach gospodarki na Niżu: IV-III tys. przed Chr. (kultury: pucharów lejkowatych i amfor kulistych). In: A. Kosko, M. Szmyt (Eds) *Nomadyzm a pastoralizm w międzyrzeczu Wisły i Dniepru (neolit, eneolit, epoka brązu)*, 103-115. Poznań.
- 2007 Ceramika nienaczyniowa kultury pucharów lejkowatych. In: A. Koško, M. Szmyt (Eds) *Opatowice – Wzgórze Prokopiaka. Studia i materiały do badań nad późnym neolitem Wysoczyzny Kujawskiej*. Tom III, 247-254. Poznań.

Kotova N.S.

- 2003a Eneolithicheskiye materialy poseleniya i mogilnika u khutora Oleksandriya na reke Oskol. *Materialy i issledovania po archeologii Vostochnoy Ukrainy* 1:78-94.
- 2003b Neolithization in Ukraine. *BAR International Series 1109*. Oxford.
- 2005 Igrenskiy eneoliticheskij mogilnik. In: *Zbirka na poshanu S.S. Berezanskoyi*: 88-103. Kiev.
- 2008 Early Eneolithic in the Pontic Steppes. *BAR International Series 1735*. Oxford.

Kowalski A.P.

- 1998 Wstęga i sznur. Ornament na ceramice neolitycznej w perspektywie tradycji indoeuropejskiej. *Przegląd Archeologiczny* 46:23-36.

Kowalski A.P., Witczak K.T.

- 2003 Wytwórczość naczyń w dobie preceramicznej. Między archeologią a lingwistyką. *Pomorania Antiqua* XIX:63-74.

Kovaljuch M.M., Skripkin V.

- 2007 Specyfika datowania radiowęglowego ceramiki pradziejowej. In: A. Kośko, M. Szmyt (Eds) *Opatowice – Wzgórze Prokopiaka. Studia i materiały do badań nad późnym neolitem Wysoczyzny Kujawskiej*. Tom II, 19-21. Poznań.

Kruk J., Milisauskas S.

- 1981 Wyżynne osiedle neolityczne w Bronocicach, woj. kieleckie. *Archeologia Polski* 26:65-114.
- 1983 Chronologia absolutna osadnictwa neolitycznego z Bronocic, woj. kieleckie. *Archeologia Polski* 28:257-320.
- 1990 Radiocarbon Dating of Neolithic assemblages from Bronocice. *Przegląd Archeologiczny* 37:195-228.
- 1999 *Rozkwit i upadek społeczeństw rolniczych neolitu*. Poznań.

Kruts V.A.

- 1977 *Pozdnetripolskie plemena Srednego Podneprovja*. Kiev.

Kruts V.A., Ryzhov S.M.

- 2000 Tripolye culture in Volhynia (Gorodsk-Volhynian group). *BPS* 9:86-110.

Krzyszowski A.

- 1997 Osada z fazy II (wczesnowiőreckiej) ludności kultury pucharów lejkowatych w miejscowości Pszczew (stanowisko 160), woj. Gorzów Wielkopolski. *Folia Praehistorica Posnaniensia* VIII:33-67.

Kuzmin Y.V.

- 2002 The Earliest Centres of Pottery Origin in the Russian Far East and Siberia: Review of Chronology for the Oldest Neolithic Cultures. *Documenta Praehistorica* XXIX:37-46.

- Lagodovskaya E.F.
 1953 Tripolskoe poselenie v s. Sandraky Vinnitskoy oblasti i nekotorye vo-
 prosy pozdnego Tripolia. *KSIA AN USSR* 2:76-77.
 1956 Pizdnyotrypilske poselennya u s. Sandraky. *AP URSS* 6:118-129.
- Lagodovska O.F., Shaposhnikova O.G., Markevych M.L.
 1962 *Mykhailivske poselennya*. Kiev.
- Langer J.J., Koško A.
 1999 Z badań nad zastosowaniem dziegiu w ornamentyce ceramiki neolity-
 cznej. Perspektywa Niżu Polski. *Folia Praehistorica Posnaniensia* IX:63-
 77.
- van der Leeuw G.
 1997 *Fenomenologia religii*. Warszawa.
- Lehmann W.P.
 1986 *A Gothic Etymological Dictionary*. Leiden.
- Levi-Strauss C.
 2001 *Myśl nieoswojona*. Warszawa.
- Lipińska A.
 1963 Ślady osadnictwa kultury pucharów lejkowatych w Kotowie, pow. Nowy
 Tomyśl. *Fontes Archaeologici Posnanienses* XIII (1962):303-310.
- Łaszczyńska T.
 1966 Pradzieje włókiennictwa. In: J. Kamińska, I. Turnau (Eds) *Zarys his-
 torii włókiennictwa na ziemiach polskich do końca XVIII wieku*, 21-53.
 Wrocław-Warszawa-Kraków.
- Maik J.
 1988 *Wyroby włókiennicze na Pomorzu z okresu rzymskiego i ze średniowiecza*.
 Wrocław-Warszawa-Kraków-Gdańsk-Łódź.
- Makohonienko M.
 2009 Natural scientific aspects of prehistoric and early historic transit routes
 in the Baltic-Pontic cultural area. *BPS* 14:19-71.
- Matasović R.
 2009 *Etymological Dictionary of Proto-Celtic*. Leiden – Boston.
- Mayrhofer M.
 1964 *Kurzgefasstes etymologisches Woerterbuch des Altindischen*, vol. III.
 Heidelberg.
- Michałowska M.
 1995 *Słownik terminologiczny włókiennictwa*. Warszawa.
- Michałowski A., Sikorski A.
 2005 Ornament sznurowy na ceramice ludności kultury amfor kulistych z Poz-
 nania-Nowego Miasta (stan. 314). *Folia Paehistorica Posnaniensia* XIII/
 XIV:175-214.

Mogielnicka-Urban M.

- 2002 Cmentarzysko w Maciejowicach, pow. Garwolin, woj. mazowieckie, stanowisko 1. Przedstawienie problematyki związanej z badaniami specjalistycznymi. In: M. Gedl (Ed.) *Wielkie cmentarzyska z epoki brązu i wczesnej epoki żelaza*, 19-38. Warszawa.

Montaut A.

- 1997 L'ergativité en Indo-aryen. *Faits de langues* 5(10):57-64.

Moszyński K.

- 1967 *Kultura ludowa Słowian, t. I: Kultura Materialna*. Warszawa.

Movsha T.G.

- 1970 Pizniotrypilske zhytlo – maisternya v s. Tsviklivtsi. *Arkheologia* 23:129-141.
- 1971 O severnoy gruppe pozdnetripolskikh pamyatnikov. *Sovetskaya Arkheologia* 1:31-54.
- 1998 Zvyazky Trypillia – Kukuteni zi stepovymy eneolitychnymy kulturamy. *Zapysky naukovohto tovarystva imeni Shevchenka* 235:111-153.

Nahlik A.

- 1958 Tkaniny z XIII-XIV-wiecznego cmentarzyska w miejscowości Równina Dolna, pow. Kętrzyn. *Rocznik Olsztyński* 1:171-191.

Némejcová-Pavúková V.

- 1999 Bemerkungen zur Frühbronzezeit in Westbulgarien und Nordgriechenland (im Licht der "Importe" aus dem Karpatenbecken). *Slovenská Archeológia* 47:41-65.

Neprina V.I.

- 1976 *Neolit yamochno-grebenchatoy keramiki na Ukraine*. Kiev.
- 1990 Neoliticheskie traditsii v kulture ranney bronzy na severo-vostoke Ukrainy. In: *Kamennyi vek na territorii Ukrainy* (17-28) Kiev.

Neradenko T.N.

- 1995 Keramika Molyukhova Buhora. In: *Archeologichni doslidzhennya na Cherkashchyni*, 33-43. Cherkasy.

Neustupny E.

- 1965 Hrob z Tušimic a některe problémy kultur ze šňůrovou keramikou. *Pa-matky archeologicke* 56:392-456.

Nogaj-Chachaj J.

- 1991 The stone-packed graves of the Funnel Beaker culture in Karmanowice site 35. *Antiquity* 65:628-639.

Novitska M.A. (=Novitskaya M.A.)

- 1960 Uzornye tkani tripolskoy kultury. *KSIA AN USSR* 10:33-35.

- Nowak M.
2009 *Drugi etap neolityzacji ziem polskich*. Kraków.
- Oettinger N.
1976 Die Militärischen Eide der Hethiter. *Studien zu den Bogazköy-Texten* XXII. Mainz.
- Orel V.
2003 *A Handbook of Germanic Etymology*. Leiden – Boston.
- Passek T.
1949 Periodizatsiya tripolskikh poseleniy. *MIA* 10. Moskva, Leningrad.
1951 Tripolskoe poselenie Polivanov Yar. *KSIM* 37:54-57.
- Pentelia M.
1993 Spinnig and Weaving: Ideas of Domestic Order in Homer. *The American Journal of Philology* 114 (4):493-501.
- Petrenko V.G
2003 Eponimne Usatove ta problema henezysu usativskoyi kultury. In: *Trypilska tsyvilizatsiya u spadschyni Ukrayiny*, 135-143. Kiev.
- Petrenko V.H., Patokova E.F., Petrenko V.H., Burdo N.B., Polishchuk L.Yu.
1984 *Pamiatniki tripolskoy kultury Severo-Zapadnogo Prichernomoria*. Kiev.
- Petrun V.F.
2000 O belykh inkrustatsionnykh pastakh keramiki tripolskikh i nekotorykh drugikh pamiatnikov territorii Ukrainy i sopredelnykh stran. *Stratum plus* 2:474-482.
2004 Pasta. In: *Entsyklopedia Trypilskoï Tsyvilizatsii*, vol. 2, 400. Kiev.
- Pietrzak S.
2010 *Zastosowanie i technologia wytwarzana dziegciu wśród społeczności międzyrzecza Dniepru i Łaby od VII do II tys. BC*. Poznań.
- Podlewski O.
1960 Plecionkarstwo. In: J. Burszta (Ed.) *Kultura ludowa Wielkopolski*, t. I, 471-496. Poznań.
- Pokorny J.
1959 *Indogermanisches etymologisches Woerterbuch*. Bern.
- Przybył A.
2008 The Badenisation of the Late Neolithic Funnel Beaker Culture Communities between the Oder and Vistula River Basins in the Light of 14C-Datings. In: M. Furholt, M. Szmyt, A. Zastawny (Eds) *The Baden Complex and the Outside World. Studien zur Archäologie in Ostmitteleuropa* 4:189-204.
2009 *Społeczności późnoneolitycznej kultury pucharów lejkowatych. Problem wpływów z kręgu kultury badeńskiej*. Poznań.

Puhvel J.

1977 'Basket' in Greek and Hittite. *The American Journal of Philology* 98 (2):150-152.

1984 *Hittite Etymological Dictionary*. Berlin – New York.

Raczky P.

1991 New Data on the Southern Connections and Relative Chronology of the "Bodrogkeresztúr-Hunyadi halom" Complex. In: J. Lichardus (Ed.) *Die Kupferzeit als historische Epoche*, 329-345. Bonn.

Rassamakin Y.

1994 The main directions of the development of Early pastoral societies of the Northern Pontic zone: 4500-2450 BC (Pre-Yamnaya culture and Yamnaya culture). *BPS* 2:29-70.

1999 The Eneolithic of the Black Sea Steppe: Dynamics of Cultural and Economic Development 4500-2300 BC. In: *Late prehistoric exploitation of the Eurasian steppe*, 59-182. Cambridge.

2004 Die nordpontische Steppe in der Kupferzeit. *Archäologie in Eurasien* 17. Mainz.

Rigweda

1982 *The Rig Veda, an Anthology: One Hundred and Eight Hymns, translated and annotated by W.D. O'Flaherty*. New York.

Rix H.

2001 (Ed.) *Lexikon der indogermanischen Verben*. Wiesbaden.

Roman P., Dodd-Oprîtescu A., János P.

1992 *Beiträge zur Problematik der schnurverzierten Keramik Südosteuropas. Heidelberger Akademie der Wissenschaften. Internationale Interakademische Kommission für die Erforschung der Vorgeschichte des Balkan* 3. Heidelberg.

Rybicka M.

1991 Materiały kultury pucharów lejkowatych ze stanowiska 1 w Radziejowie Kujawskim, woj. Włocławek. *Sprawozdania Archeologiczne* XLIII:39-74.

1995 *Przemiany kulturowe i osadnicze w III tys. przed Chr. na Kujawach*. Łódź.

Rzepecki S.

2004 *Spółeczności środkowoneolitycznej kultury pucharów lejkowatych na Kujawach*. Poznań.

Sanzharov S.N., Britiuk A.A., Kotova S.N., Chernykh E.A.

2000 *Poselenia neolita – ranney bronzy Severskogo Donsa*. Luhansk.

Schlabow K.

1960 Abdrücke von Textilien an Tongefäßen der Jungsteinzeit. *Jahresschrift für mitteldeutsche Vorgeschichte* 44:51-56.

- 1976 *Textilfunde der Eisenzeit in Norddeutschland*. Neumünster.
- Schuchhardt C.
1909 Das technische Ornament in den Anfängen der Kunst, t. II: Buckelkeramik *Prähistorische Zeitschrift* I:351-367.
- Seebold E.
1970 *Vergleichendes und etymologisches Woerterbuch der germanischen starken Verben*. Hague – Paris.
- Seiler-Baldinger A.
1994 *Textiles. A classification of techniques*. Bathurst.
- Seyers W.
1990 Images of enchainment in the Hisperica Famina and vernacular irish texts. *Revue celtique* 27:221-234.
- Shaposhnikova O.G.
1987 Epokha rannego metalla v stepnoy polose Ukrainy. In: *Drevneishyie skotovody stepey yuga Ukrainy*, 3-16. Kiev.
- Shishlina N.I., Orfinskaya O.V., Golikov V.P.
2003 Bronze Age Textiles from the North Caucasus: New Evidence of Fourth Millennium BC Fibres and Fabrics. *Oxford Journal of Archaeology* 22(4):331-344.
- Shmagliy M.M.
1970 Trypilske poselennya bilya s. Hryhorivka na Dnipro (Cherkas. obl.). *Arkheolohiya* 24:119-122.
- Sikorski A.
1998 Wyniki analiz fragmentów tkanin odcisniętych na ceramice z osady wczesnośredniowiecznej w Nowej Wsi, st. 12 (43a). In: R. Mazurowski (Ed.) *Archeologiczne badania ratownicze wzdłuż trasy gazociągu tranzytowego. Tom I. Ziemia Lubuska*, 119-195. Poznań.
2000 Odciski tkanin na renesansowym kaflu z Łekna. *Archaeologia Historica Polona* 8:143-152.
2003 Nie tylko o tekstyliach wykopaliskowych z Wielkopolski. *Wielkopolski Biuletyn Konserwatorski* II:123-142. Poznań.
- Składankowa M.
1963 *Zoroaster i magowie*. Warszawa.
- Smirnov A.S.
1991 *Neolit Verkhney i Sredney Desny*. Moskva.
- Soudský B., Pavlů I.
1966 Interprétation historique de l'ornement linéaire. *Památky Archeologické* 57:91-125.

Szmyt M.

1996 *Społeczności kultury amfor kulistych na Kujawach*. Poznań.

Telegin D.Ya.

1959 Eneolitiesheskoe poselenie i mogilnik u khutora Oleksandriya. *KSIA AN USSR* 9:10-20.

1971 Eneolitychni stely i pamyatky nyzhniomykhailivskoho typu. *Archeologia* 4:3-17.

1973 Serednyostogivska kultura epokhy midi. Kiev.

1986 Dereivka. In: *BAR International Series* 287. Oxford.

Telegin D.Ya., Nechitaylo A.L., Potekhina I.D., Panchenko Yu.V.

2001 *Srednestogovskaya i novodanilovskaya kultury eneolita azowo-chernomorskogo regiona. Arkheologo-antropologicheskiiy analiz materialov i katalog pamyatnikov*. Lugansk.

Toporov V.N.

1989 Mif o Tantale (Ob odnoy pozdney versii-tragedii V. Ivanova). In: *Paleobalkanistika i antichnost*, 61-110. Moskva.

Tsvek O.V.

2000 The eastern Tripolye culture and its contacts with the eneolithic tribes of Europe. *BPS* 9:111-132.

Turnau I.

1978 Ludowe dziewiarstwo europejskie XVII-XIX wieku. *Lud* 62: 85-108.

1979 *Historia dziewiarstwa europejskiego do początku XIX wieku*. Wrocław-Warszawa-Kraków-Gdańsk.

Wagenvoort G.

1947 *Roman Dynamism. Studies in Ancient Roman Thought, Language and Custom*. Oxford.

Weninger B., Joris V., Danzeglocke U.

2005 CalPal r. 2005. Köln (www.calpal.de)

West M.L.

2007 *Indo-European Poetry and Myth*. Oxford.

Wierzbicki J.

1999 *Lupawski mikroregion osadniczy ludności kultury pucharów lejkowatych*. Poznań.

2008 *Neolit Wielkopolski w świetle ostatnich badań*. In: H. Machajewski (Ed.) *Wielkopolska w dziejach. Archeologia o regionie*, 31-55. Poznań.

Wilke G.

1906 Zur Entstehung der Spiraldekorationen. *Zeitschrift für Ethnologie* XXXVIII:1-33.

1910 Spiral-Mäander-Keramik und Gefäßmalerei Hellenen und Thraker. *Manus Bibliothek* 1. Würzburg.

- 1923 Die Religion der Indogermanen in archäologischer Betrachtung. *Mannus Bibliothek* 31. Leipzig.
- Wiślański T.
- 1979 Kształtowanie się miejscowych kultur rolniczo-hodowlanych. Plemiona kultury pucharów lejkowatych. In: W. Hensel, T. Wiślański (Eds) *Prahistoria ziem polskich. Neolit*, 165-260. Wrocław-Warszawa-Kraków-Gdańsk.
- Wiślański T., Czarnecki M.
- 1973 Osada kultury pucharów lejkowatych w Kosinie, pow. Pyrzyce (stanowisko 6). *Materiały Zachodniopomorskie* XVI:73-105.
- Włodarczak P.
- 2006 Chronologia grupy południowo-wschodniej kultury pucharów lejkowatych w świetle dat radiowęglowych. In: J. Libera, K. Tunia (Eds) *Idea megalityczna w obrządku pogrzebowym kultury pucharów lejkowatych*, 27-66. Lublin-Kraków.
- 2007 Problem chronologii radiowęglowej kultury ceramiki sznurowej w świetle dendrochronologicznych datowań późnoneolitycznych osad palafitowych ze Szwajcarii. *Archeologia Polski* 52:35-80.
- 2008 Corded Ware and Baden Cultures. In: M. Furholt, M. Szmyt, A. Zastawny (Eds) *The Baden Complex and the Outside World. Studien zur Archäologie in Ostmitteleuropa* 4, 247-261. Bonn.
- Wyszomirska B.
- 1990 Early Neolithic TRB-Settlement Complex at Nymölla. In: D. Jankowska (Ed.) *Die Trichterbecherkultur. Neue Forschungen und Hypothesen*, 103-115. Poznań.
- Videiko M.Y.
- 2000 Tripolye and the cultures of Central Europe: facts and character of interactions: 4200-2750 BC. *BPS* 9:13-68.
- 2002 *Trypilska tsivilizatsiya*. Kiev.
- Videiko M.Y., Burdo N.B.
- 1997 Rozkopky trypilskohoho poselennya Ihnatenkova Hora bilya s. Hryhorivka na Dnipri. In: *Archeologichni doslidzhennya v Ukraini 1993 roku*, 23-26. Kiev.
- Videiko M.Y., Kotova N.S.
- 2004 The absolute chronology of Ukraine in Eneolithic. In: *Zwischen Karpaten und Aegaeis. Neolithikum und aeltere Bronzezeit. Gedenkschrift fuer Viera Nemejcova-Pavukova. Internationale Archaeologie. – Studia honoraria* 21:121-134. Rahden, Westfalen.
- Yasuda Y. (Ed.)
- 2002 *The Origins of Pottery and Agriculture*. New Delhi.

Zastawny A.

- 2008 The Baden and the Funnel Beaker-Baden Settlement in Lesser Poland. In: M. Furholt, M. Szmyt, A. Zastawny (Eds) *The Baden Complex and the Outside World. Studien zur Archäologie in Ostmitteleuropa* 4, 177-188. Bonn.

Zbenovich V.G.

- 1974 *Pozdnetripolskie plemena Severnogo Prichernomoria*. Kiev.

Zhuravliov O.P.

- 2004 Tvarynnystvo ta myslyvstvo u trypilskykh plemen na terytoriyi Ukrayiny. In: *Entsyklopedia Trypilskoï Tsyvilizatsii*. Vol. 1, 151-183. Kiev.

Zhushichikhovskaya I.

- 2007 Jomon Pottery: Cord-Imitating Decoration. *Documenta Praehistorica* XXXIV:21-29.

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