

**THE FOUNDATIONS OF RADIOCARBON
CHRONOLOGY OF CULTURES BETWEEN
THE VISTULA AND DNEIPER:
4000-1000 BC**

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BALTIC-PONTIC STUDIES

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Editor's Foreword

This volume of the *Baltic-Pontic Studies* is a record of investigations carried out under the research project begun earlier in vol. 7 ("The Foundations of radio-carbon chronology of cultures between the Vistula and Dnieper: 3150-1850 BC", Poznań 1999). Here, the approach is broader in terms of chronology and culture. Our purpose has been to fill taxonomic gaps hitherto present in the discussion (supplementing the dating of cultures, groups or phases) or reanalyze the grounds for findings considered particularly controversial. In the latter case, a very enlightening debate was provoked by the comparative chronology of the Yamnaya and Catacomb cultures presented by A.N. Nikolova. We hope that a large series of ^{14}C dates and a revision of the foundations of "archaeological knowledge" (stratigraphy, typochronology and groups of co-occurrence of traits), brought together in the paper by D.Y. Telegin, S.Z. Pustovalov, N. Kovalyukh, lay the ground for a stabilization of views on this important dividing line in the chronology of the Bronze Age in the Pontic zone.

A vast majority of the new ^{14}C dates have been obtained under an international research project financed by the Polish Committee for Scientific Research.

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).

Viktor I. Klochko, Aleksander Koško, Marzena Szmyt

**A COMPARATIVE CHRONOLOGY OF THE PREHISTORY
OF THE AREA BETWEEN THE VISTULA AND DNIEPER:
4000-1000 BC**

The papers included in this volume of the *BPS* are a continuation of the subject that has already been addressed in our series, in particular in volume 7 [Koško (ed.) 1999], namely, the study of comparative chronology of cultural phenomena in the borderland between eastern and western Europe. The present volume is, therefore, another step in the long-term project to build a scheme of comparative chronology relying on absolute (radiocarbon) dating [Klochko, Koško, Szmyt 1999a:8-11]. In this case, however, the time brackets are broader to cover the period from the beginning of the 4th to the turn of the 2nd millennium BC. The discussion concerns the archaeological units that have been insufficiently or controversially treated in the studies carried out so far. In particular those of them which gave a chance of obtaining good quality samples (for ^{14}C measurements) or broadening the cultural background thus being an inspiration for further research. As previously, the papers focus on the presentation and interpretation of new series of radiocarbon dates. Use has been made of data collected in volumes 8 and 9 of the *BPS* [Szmyt 1999; Koško (ed.) 2000].

In this summary we shall critically review the obtained results by concentrating on the identification of both undisputable achievements and the most controversial (“dark”) issues. We shall also make another attempt to correlate cultural units distinguished between the Vistula and Dnieper in the 4th, 3rd and 2nd millennia BC, with the point of departure being the state diagnosed in 1999 [see earlier: Klochko, Koško, Szmyt 1999b].

1. BALKAN CULTURAL CIRCLE IN THE NORTHERN PONTIC AREA

From a broad spectrum of issues relating to the communities of the Balkan cultural circle that can be identified in the Northern Pontic Area, new information concerns the absolute (radiocarbon) chronology of the following four units: (1.1.) Tripolye culture (TC), (1.2) Lublin-Volhynian culture (LVC), (1.3) Funnel Beaker culture (FBC) Volhynian concentration and (1.4) Globular Amphora culture (GAC) Moldavian (Siret) subgroup.

1.1. TRIPOLYE CULTURE

Earlier publications presented a long series of radiocarbon dates relating to the decline stage (CII) of the TC [Videiko 1999; Szmyt, Chernyakov 1999]. Their analysis allowed us to set absolute time brackets of the CII stage at ca. 3300-2700 BC. However, the youngest dates for the southwestern branch of the late TC indicated a possibility that it could have survived until the second half of the 3rd millennium BC (until 2400/2300 BC at the latest) [Klochko, Koško, Szmyt 1999b:265-270].

In the present volume, an analysis of new dates was carried out for the TC of the following stages: BII-CI [Videiko, Radiocarbon. . . , in this volume; see also Burdo, Videiko 1998] and CII [see Videiko, Petrenko, Radiocarbon. . . , in this volume]. They concern the following groups/regions: (a) Middle Dnieper and (b) Usatovo.

a. New data concern two stages: (aa) BII and (ab) CI.

aa. Four new dates have been obtained for the Kaniv group (the Khatyshche settlement) that represents a version of the BII stage on the middle Dnieper. With high probability, all the four dates mark a single settlement phase lasting from ca. 3700 to 3400 BC (within this bracket, the most probable is the 3590-3520 BC interval). This dating marks the decline of the BII stage on the Dnieper, whereas its beginning is determined by the chronology of the settlement in Chapaevka connected with an earlier segment of the BII stage [Videiko, Radiocarbon. . . , in this volume]. Further research should necessarily focus on increasing the number of dates for the assemblages of the BII stage and confirming the dates obtained for Chapaevka with measurements made on short-lived materials, e.g. bones (Fig. 1).

ab. Seven new ¹⁴C dates have been obtained for the Hryhorivka group (four for the settlement in Ihnatenkova Gora and three from the settlement in Khomyne), which is a local variety within the CI stage later than Lukashi type materials. The ¹⁴C chronology of both source assemblages situates them in the period from ca. 3450 to 3000 BC; however, if narrowed down to 3400-3200 BC, the bracket would be more probable. An emerging sequence of sites of the middle Dnieper TC of the CI phase

(Evminka — Ihnatenkova Gora — Khomyne), nevertheless, needs corroborating by a larger number of dates (Fig. 1).

b. The dating was performed on a number of bone samples from five graves and one feature that had been identified as representing the Usatovo group [Videiko, Petrenko, Radiocarbon. . . , in this volume]. In several cases the obtained dates were too early and as such did not meet the expectations. Two of such dates concern grave 1/10 from Katarzhyno (Ki-9523) and grave 35 from Sadove (Ki-9529), dated at ca. 3700 BC, that can be hypothetically related to the period preceding the formation of the Usatovo group (i.e. the pre-Usatovo stage). Among the acceptable ^{14}C measurements, graves 22 and 35 from Oleksandrivka (Ki-9524 and Ki-9525) may be called early Usatovo, though they can just as well represent pre-Usatovo groups. It is to be regretted that it was not possible now to publish source materials accompanying the measurements. A date consistent with the expectations was obtained for feature 1/1990 from Mayaki (Ki-9527). The date fits into the series of measurements obtained so far for this site [Videiko 1999: Table 10]. Also, grave 17 from Oleksandrivka (Ki-9526) may represent a decline phase of the Usatovo group similarly to materials from the Akkembetskiy kurgan [Szmyt, Chernyakov 1999]. In sum, new ^{14}C dates seem to supply more information on the origins of the Usatovo group than on its absolute chronology (Fig. 1).

1.2. LUBLIN-VOLHYNIAN CULTURE

The latest studies of the LVC chronology [Kadrow, Zakościelna 2000; Bronicki, Kadrow, Zakościelna, Radiocarbon. . . , in this volume] place this unit of the Danube circle in the maximum period of 4200-3400 BC. However, a vast majority of late-phase (III) complexes survived only until 3600 BC. Notice must be taken of two important observations here. The first concerns a recessive and enclave character of the late phase of the LVC which developed alongside phases I and II of the FBC (see 1.3). The second is about superseding LVC settlements by those of the FBC ca. 3650 not only on the Vistula (example: Bronocice) but also on the Bug River (key sites: Gródek Nadbużny and Zimne) [Bronicki, Kadrow, Zakościelna, Radiocarbon. . . , in this volume] (Fig. 1)

1.3. FUNNEL BEAKER CULTURE

Presented in this volume, the re-analysis of ^{14}C dates for Gródek Nadbużny and the analysis of a series of 14 dates from the settlement in Zimne [Bronicki, Kadrow, Zakościelna, Radiocarbon. . . , in this volume] made it possible to introduce

substantial corrections to the existing chronological scheme of the southeastern group of the FBC or rather its “Pontic segment” connected to the West Volhynia Upland. On the West Volhynia Upland, the classic phase of the FBC can be dated at 3650 BC at the earliest. The same dividing line marks the beginning of large and long-lasting FBC settlements in Gródek Nadbużny and Zimne. In both cases, two phases can be justifiably distinguished: a classic one and a late one. The former should be dated in Gródek at 3650-3500 BC (Gródek I), while the latter has broad time brackets of 3500-2600 BC (Gródek II). In Zimne, the classic phase (Zimne I) is dated at 3650-3400 BC, while the late one (Zimne II) falls between 3050 and 2600 BC. It is unclear whether the gap between the two phases in Zimne merely reflects current research capability or mirrors an actual lack of continuity. It is worth paying attention to the high rank of the 3500 BC dividing line in the process of regionalization within the southeastern group of the FBC (Fig. 1).

1.4. GLOBULAR AMPHORA CULTURE

Series of ^{14}C dates for the features of the eastern group of the GAC [Kadrow, Szmyt 1996; Szmyt 1999] made it possible to determine the chronological brackets of GAC settlements in Volhynia and Podolia. In the case of the Volhynia subgroup the brackets fit into the period of 3000/2950-2400/2350 BC, while in the case of the Podolia subgroup they cover the period from 2900 to 2400 BC [Szmyt 1999: 68-82]. In this volume, the first dates are presented which refer to the third link of the eastern group of the GAC, namely, the Moldavian (Siret) subgroup. The series is made up of ^{14}C measurements made on samples of human bones coming from GAC graves in Basarabi, Bârgauani, Piatra Neamț and from grave 2 in Dolheștii Mari. After rejecting two erroneous dates from the last mentioned feature, the three remaining ones were subjected to analysis. They fit into the period from 2995 ± 25 BC (Basarabi) to 2717 ± 43 BC (Piatra Neamț). However, this is not a complete time bracket in which the Siret subgroup developed. There are grounds to believe that it declined in the middle of the 3rd millennium BC. The oldest quoted date (Basarabi) suggests also a possibility of correcting (making it older by moving until 3000 BC) the beginnings of GAC settlement in Podolia. To settle this issue, it is necessary to obtain more ^{14}C measurements (Fig. 1).

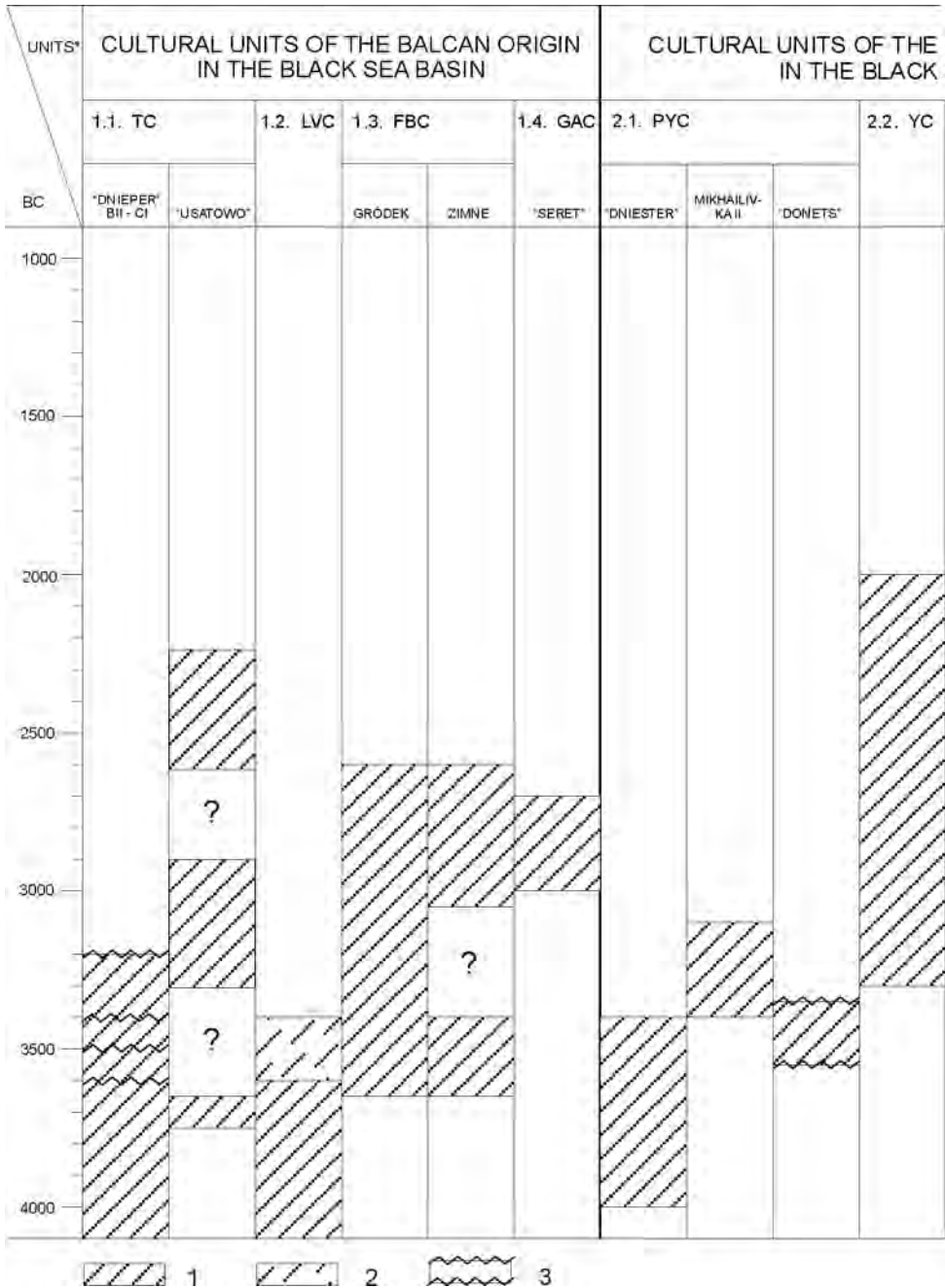


Fig. 1. Synchronization of cultural units between the Vistula nad Dnieper from 4000-1000 BC based on radiocarbon dates

2. ENDOGENOUS UNITS OF THE NORTHERN PONTIC AREA

The data gathered in this volume concern: (2.1) the so-called Eneolithic (Pre-Yamnaya) communities (PYC) from the steppe zone, (2.2) Yamnaya culture (YC), (2.3) Catacomb culture (CC), (2.4) Srubnaya culture (SC), (2.5) Hordeevka cemetery and (2.6) Bilozerka culture (BzC).

2.1. ENEOLITHIC (PRE-YAMNAYA) COMMUNITIES FROM THE STEPPE ZONE

The new data shed light on some aspects of the chronology of cultural phenomena preceding the formation of the YC on the steppes of eastern Europe [recently: Rassamakin 1999; Telegin 2001]. These phenomena are known by the names of steppe Eneolithic or Pre-Yamnaya groups. Until recently their chronology has almost exclusively been based on typhochronological analyses, in particular, on references to the TC periodization. The radiocarbon dates included in this volume concern (a) the lower Dniester area, (b) the middle (II) stratum of an important site at Mikhailivka (so-called Mikhailivka II), and (c) the area of the Northern Donets (Fig.1).

a. The set of data from the mouth of the Dniester [Videiko, Petrenko, Radiocarbon... , in this volume] includes measurements made on bone samples collected in five graves in Koshary 1 and a grave in Khadzhide 1 as well as the already mentioned dates concerning graves originally associated with the Usatovo group (see 1.1. above): grave 35 in Sadove (Ki-9529) and graves 22 and 35 in Oleksandrivka (Ki-9524 and Ki-9525). It must be made clear, however, that the graves from Oleksandrivka may just as well represent the early Usatovo phase. Materials from Koshary and Khadzhide, distinguished as the Khadzhide type, may be dated at 4100-3300 BC, although owing to TC sources accompanying them and indicating to stages BII and CI, it seems to be more credible to narrow down the period when they were used to 4000-3400 BC [Videiko, Petrenko, Radiocarbon... , in this volume]. This interval encompasses the other, less certain dates as well (Fig. 1).

b. In light of the reanalysis of sources from the middle (II) layer of the Mikhailivka settlement [Kotova, Spitsyna, Radiocarbon... , in this volume], they should be treated as representing another cultural tradition than the contemporaneous phenomena of the Repin Khutor (Repin culture) type. It follows that combining materials from both sites is unfounded nor is it justified to call them by the common appellation of "early stage of the YC". Three measurements made on bones found in the lower horizon (Ki-8012) and in the upper horizon (Ki-8010 and Ki-8186) of

the middle layer set the interval of 3600-3050 BC. Using *wiggle matching*, we can narrow down the interval to 3400-3100 BC. Such a chronology together with the diagnosed uniformity of ceramic materials in the whole middle layer testify to the longevity of the cultural phenomenon. Identified in the sources from the middle layer, the traits of the Repin culture, the Maykop culture and the TC of the CI stage (and not, as it was believed until now, of the CII stage) support the suggested chronology.

The chronology of the middle layer of the Mikhailivka site has also far-reaching consequences for the time position of the lower layer at this site (so-called Mikhailivka I or Lower Mikhailivka) [Lagodovska, Shaposhnikova, Makarevich 1962]. For this level has to be older than the overlying middle layer, which means that its chronology would be earlier than 3600-3400 BC, whereas the dates that have been published so far — by the way controversial — for Mikhailivka I are much younger [Szmyt 1999:105]. To settle these controversies, it is necessary to expand the set of sources and process them well in terms of stratigraphy, taxonomy and radiocarbon dating (Fig. 1).

c. A single date was obtained for grave 12/1 in Svatove thanks to the re-dating of a series of wood samples from that cemetery [Bratchenko, Radiocarbon. . . , in this volume]. Regardless of methodological problems following from undertaking such a reanalysis (see part 2.3), it is worth mentioning that the new date (Ki-9856) fits into the interval of 3575-3375 BC, i.e. it matches the period when the Pre-Yamnaya horizon continued on the lower Dnieper and Dniester rivers (Fig. 1).

2.2. YAMNAYA CULTURE

One of the key issues of the archaeology of the borderland between western and eastern Europe is the chronology of the YC. This volume, besides (a) a review of the state of research [Telegin, Pustovalov, Kovalyukh, Relative. . . , in this volume] presents (b) new data from the Northern Donets region [Bratchenko, Radiocarbon. . . , in this volume; Klochko, Sanzharov, Radiocarbon. . . , in this volume].

a. A critical review of the studies of YC absolute chronology combined with a discussion of the strategy of further research into the subject seems to be absolutely necessary at the moment. The YC is, as it were, a textbook example of the fact that a large amount of data does not automatically push our knowledge forward. After all, this is a cultural unit for which we have the largest set of ¹⁴C dates of all eastern European cultures [over 200 dates - see Telegin, Pustovalov, Kovalyukh, Relative. . . , Table 1]. However, to correctly analyze and credibly interpret them

is not easy, which is caused by a number of reasons. The most important are: selection of materials for dating (in most cases it was timber from grave structures and bones, however, much less frequently), low precision of a considerable number of dates (29% of BP dates have been made with a standard error of over 70 years), prevalence of single measurements (which prevents any control if they are correct using stratigraphy, for instance), and lastly but probably most importantly, a lack of full publications of dated assemblages. All this makes the work on the rich series of radiocarbon dates concerning the YC exceedingly difficult. In a paper included in this volume, D. Y. Telegin argues in favour of a return to the two-stage version of YC periodization. The older stage can be dated between 3300/3100 BC and 3000/2700 BC, whereas the younger stage can be assigned the period of 3000/2700-2100/2000 BC [see Telegin, Pustovalov, Kovalyukh, *Relative...*, in this volume]. The quoted author stresses the fact that YC societies subsisted in periods that differed widely from region to region. Specifically, the earliest YC assemblages are found on the northwestern coast of the Black Sea (already in ca. 3300-3100 BC), slightly later they are encountered on the Dnieper, the Sea of Azov and the Volga River, while on the steppes northwest of the Caspian Sea, the beginnings of the YC fall only after 2500 BC. It must be stressed that D. Y. Telegin, in his analysis of the oldest dates, uses new series of measurements obtained for sequences of grave assemblages, the stratigraphic relationships of which (i.e. relative chronology) are known (cf., for instance, dates for Kremnivka and Volonterivka).

b. Three new measurements of samples from Raygorodok, grave 1/10 i 1/9, and Krugloe fit into the maximum interval of 2550-2250 BC [Klochko, Sanzharov, *Radiocarbon...*, in this volume]. However, repeated ¹⁴C measurements made on wood samples from Svatove yielded results between 2850 and 2500 BC [Bratchenko, *Radiocarbon...*, in this volume]. The dates are consistent with stratigraphic observations and general typological assessments. In both cases, we deal with materials representing a later development stage of the YC in its Don-Donets version. It is unclear, however, why both sets of dates differ. The differences may reflect dissimilarities in the dated material (bones / wood) but they may also be a manifestation of actual variations in chronological positions of the YC on a local scale.

2.3. CATACOMB CULTURE

This volume publishes (a) new results of analyses of a series of ¹⁴C dates concerning the Eastern (Donets) Catacomb culture [Bratchenko, *Radiocarbon...*, in this volume; Klochko, Sanzharov, *Radiocarbon...*, in this volume] and (b) a reanalysis of typonchronological and radiocarbon foundations of distinguishing between

the initial “stages” of the Pontic Bronze Age, namely, the Yamnaya and Catacomb stages [Telegin, Pustovalov, Kovalyukh, Relative. . . , in this volume].

a. All new ^{14}C dates come from the drainage of the northern Donets river (Luhansk region). Extending the research project to cover this area (i.e., enlarging the area studied in this volume) was justified by the topogenesis of some of the studied taxa.

A series of dates from the cemetery in Svatove [Bratchenko, Radiocarbon. . . , in this volume], made to verify earlier measurements from this site [see Telegin 1992], marks the interval of 2850-2250 BC. The interval matches typological assessments better according to which the graves in question date back to the middle phase of the Donets Catacomb culture.

We also have four new measurements from the “Luhansk region”. After an obviously wrong date is eliminated (Ki-9513), they mark the interval of 2400-1825 BC [Klochko, Sanzharov, Radiocarbon. . . , in this volume]. Of particular importance seem to be three dates from the cemetery in Nevskoe related to the materials of the late phase of the Donets Catacomb culture that are dated between ca. 2135 and 1820 BP.

In sum, it can be thus concluded that the time bracket when the Eastern (Donets) Catacomb culture subsisted covered roughly the period of 2850-1820 BC, which is corroborated by S. Pustovalov’s studies discussed below (Fig. 1).

b. The question of CC chronology is a key point of a broader discussion of the continuity of cultures of the Pontic Bronze Age in the steppe/forest-steppe zone, in this case the YC and CC. It is from this point of view that the problem was approached by S. Pustovalov [Telegin, Pustovalov, Kovalyukh, Relative. . . , in this volume], who attempted to critically reanalyze an earlier “continuous chronometry” by A.V. Nikolova [Nikolova 1999a; 1999b]. The main contention of the cited paper can be summarized as follows: there are both ^{14}C dates referring to locations outside the area covered by A.V. Nikolova’s investigations as well as a set of stratigraphic and typo-chronological observations that justify a counter-hypothesis about the parallel existence of the YC and CC in the period of 2850-2000 BC. Hence, S. Pustovalov suggests to move significantly backward the beginnings of the CC. Such a correction removes several contradictions in the picture of development relationships holding between the cultures of the east and west of Europe in the 3rd millennium BC. The most glaring contradiction concerned too early a chronology of niche graves of the Corded Ware culture (CWC) in Małopolska (dated between 2750 and 2200 BC [Włodarczak 1998:Fig.3]) in respect of the beginnings of occurrence of their assumed prototypes — i.e., catacomb graves — in the Pontic zone (in the previous approach: 2350/2250 BC [Nikolova 1999b:Fig. 11]). The contradiction has been exposed earlier making it an important research aim [Klochko, Koško, Szmyt 1999:282].

The great range of the Srubnaya culture (SC) is inversely proportional to the number of ^{14}C dates available for it. In this volume, we present measurements for two varieties of the culture: (a) Pokrovsk SC and (b) Berezhnovka-Maevka SC.

a. Of the measurements made for the Luhansk region [Klochko, Sanzharov, Radiocarbon. . . , in this volume], to the Pokrovsk SC refers a single date (Shmelevoe — Ki-9519), while the measurement results of the other samples are either wrong or attributable to other prehistoric societies. After calibration, the date fits between 1530 and 1380 BC, which is consistent with the chronology arrived at by comparative analyses (Fig. 1).

b. The series of dates for the Berezhnovka-Maevka SC is made up of six measurements made on bone samples from graves investigated in a cemetery in the vicinity of Ordzhonikidze [Chernykh, Polin, Otroshchenko, Radiocarbon. . . , in this volume]. They fit into (after eliminating two dates erroneously ascribed to the unit in hand - Ki-9631 i Ki-9632) the time interval of 1600-1050 BC (Fig. 1). In terms of ty-pochronology, materials from the cemetery represent the middle (II) development stage of the unit in question. Unexpectedly late dates for two graves (Ki-9627 i Ki-9630) suggest a possibility that the cemetery may have continued to be used in the late phase. Keeping in mind that the dynamics of transformations of the Berezhnovka-Maevka SC has been explored only preliminarily, one cannot exclude a possibility that the foundations of its periodization are not known well enough yet. Attention must be drawn to yet two more issues: first, relatively high values of standard errors of the analyzed ^{14}C dates (a consequence of the poor state of preservation of bone sources at the site) and, second, some dates fell on a plateau of the calibration curve, which greatly restricted the possibilities of analysis. It is highly recommended that more intensive work be done on the absolute chronology of the SC.

2.5. HORDEEVKA CEMETERY

Since its discovery, the cemetery in Hordeevka, in the middle part of the Southern Bug basin, has been a key site for exploring far-reaching cultural relations in the borderland between the eastern European forest-steppe and steppe. Controversies have been aroused by the issues of its relation to the Tumulus culture circle and absolute chronology [e.g. Górski, Kadrow 2001:134]. Until now, chronological

assessments have relied on five ^{14}C measurements made on bone samples. In the present volume seven new dates, made on samples of wood from grave structures, are presented [Ślusarska-Michalik, Radiocarbon. . . , in this volume]. The new series has verified, among others, the controversial date. Worth mentioning is the subcalibration procedure (a variety of *wiggle matching*) applied to two features (tumuli nos. 26 and 31) and enabling a precise determination of their chronology [Kovalyukh, Nazarov 1999]. The analysis of both series of ^{14}C measurements, in the context of accompanying grave goods, led to a conclusion that distinguishing two phases of cemetery use was most reasonable at present. The older phase (I) covers the period of ca. 1500/1400-1200 BC, while the younger one (II) fits into the interval of 1200-1000 BC (Fig. 1).

2.6. BILOZERKA CULTURE

The Late Bronze Age Bilozerka culture (BzC) has few radiocarbon dates referring to it. Among the most important, one should count measurements made on the “Stepnoy” cemetery. The present volume provides [Otroshchenko, Radiocarbon. . . , in this volume] an analysis of new dates and a reanalysis of old measurements. In their light, it seems that the most credible BzC time brackets span the period from 1150 to 850 BC (Fig. 1). In its late stage of development, the culture smoothly transformed in the direction of a Cimmerian period culture.

3. SYNCRETIC UNITS IN THE BORDERLAND OF BALTIC AND PONTIC REGIONS

In light of information collected in this volume, it is possible to make the chronological positions of several units of a different taxonomic rank more precise. These are: (1) the Mątwy group of the Funnel Beaker culture (FBC), (2) the Sokal group of the Corded Ware culture (CWC), (3) the Middle Dnieper culture (MDC), (4) the Trzcinec cultural circle (TCC). Special attention was given to the problem of (5) time relationships of the Lusatian culture (LC) and BzC.

3.1. FUNNEL BEAKER CULTURE — THE MAŁTYWY GROUP

The Małtowy group was distinguished as a syncretic unit resulting from the adaptation of eastern European patterns, or rather those related to the borderland between the forest and forest-steppe zones, by the environment of the eastern group of the FBC. Now, its description and chronological position arouse controversy [Koško 1981; 1988; Kukawka 1991; 2001; Daszkiewicz, Prinke 1999; 2001]. This volume of the *BPS* contains new sources for the study of the radiocarbon chronology of the Małtowy group (seven new measurements made on bone samples) and gives its current periodization [Koško, Radiocarbon. . . , in this volume]. It consists in distinguishing three stages in the spread of “Małtowy” traits; the oldest (I) stage is dated at ca. 4050-3850 BC, the middle one (II) covers the period of 3500-3150 BC, while the late one (III) coincides with 3150-3000 BC (Fig. 1).

3.2. CORDED WARE CULTURE — THE SOKAL GROUP

Identifying evident ties of the “western” CWC and MDC, and distinguishing within the former the Sokal group, which is defined in taxonomic terms by the said ties [Machnik 1999], are some of the greatest new developments in the study of corded groups. In this volume, a series of sources concerning the Sokal group published earlier together with related radiocarbon dates [Machnik 1999] is supplemented by next grave assemblages [Machnik, An Interrupted Process. . . , in this volume]. Most importantly, however, the studies of the subject have resulted in the building of a periodization and the precise determining of the absolute chronology of the phenomenon in question [Machnik, An Interrupted Process. . . , in this volume; Kadrow, Absolute. . . , in this volume]. In light of the latest analyses, the Sokal group was a product of integration of MDC populations coming in from the northeast into the local population substrate, which represented a late version of the CWC. The group subsisted in the period of ca. 2540-2400 BC with the region of Grzęda Sokalska being infiltrated by MDC societies in the second half of the 26th century or at the turn of the same century BC (Fig. 1).

3.3. MIDDLE DNEIPER CULTURE

Published in 1999 [Kryvaltsevich, Kovalyukh 1999], the first series of ^{14}C measurements for MDC features from the region of the Middle Dnieper, Desna and Pripets rivers consisted of dates for 15 samples from graves and 2 samples from settlements. Considered jointly, they fit into the period of 2530-2790 BC. In this volume, we present two dates referring to hypothetically early traits of the western CWC, namely, the beaker with short-wave moulding from a settlement on site Prorva 4 [Yazepenka, Koško, Radiocarbon. . . , in this volume]. The dated samples contained carbon deposit (organic substance) covering the surface of vessels (the already mentioned beaker and an MDC “settlement” vessel). Because of the kind of material and its small amount, ^{14}C measurements have high standard errors and set the interval of 2450-2100 BC. Since both vessels should refer to the same settlement episode, it is justified to narrow down the interval by jointly calibrating both dates. The result is ca. 2291 BC. All calibration results fit into the middle period of MDC populations subsisting on the middle Dnieper [Klochko, Koško, Szmyt 1999b:276] and correspond to the late Corded Ware culture and the beginnings of epi-Corded groups (Mierzanowice culture) in the drainages of the Vistula and Oder rivers. The measurements make it possible to determine the chronology of infiltration of the “forest” environments of eastern Europe by western Corded Ware elements at ca. 2400-2300 BC.

3.4. TRZCINIEC CULTURAL CIRCLE

The issues related to the Trzciniec phenomenon have witnessed a true revival of interest in the last decades [see e.g. Czebreszuk, Koško (ed.) 1998; Koško (ed.) 1998]. In the aspects of chronological studies and comparative analyses of interest to us here, it is for phenomena known as Trzciniec (Trzciniec culture, Trzciniec horizon — TH or Trzciniec cultural circle — TCC) that we record the largest growth in the number of sources on the scale of the Bronze Age. In the case of ^{14}C dates the growth is rapid, indeed [e.g. Grossman 1998; Kovalyukh, Skripkin, Klochko, Lysenko 1998; Makarowicz 1998; Włodarczak 1998]. Consequently, the phenomenon is one of the best dated cultural phenomena of the Bronze Age.

The analysis of a rich series of ^{14}C measurements (almost 190 dates!) concerning Trzciniec features [Górski, Makarowicz, Lysenko, Radiocarbon. . . , in this volume] confirmed an earlier hypothesis about a gradual spreading of Trzciniec traits from the west toward the east and from the north to the south [Czebreszuk

1998]. The period when fully developed Trzciniec groups lived in the drainages of the Vistula and Oder rivers (so-called western province) can be set at 1900-1100 BC, whereas in the east (in the drainages of the Pripets, Southern Bug and middle Dnieper rivers as well as in Volhynia and Carpathian Foothills) it covers the period of 1650/1600-1000 BC. It must be noted, however, that there are no ^{14}C dates available for several regions playing a special role in the development of the Trzciniec phenomenon, including Mazowsze. Now, we shall focus on the most significant results of the new analyses concerning Trzciniec phenomena in individual regions: (a) on the Polish Lowlands, (b) on the uplands of southern Poland, (c) in Polesie, Volhynia and on the Dniester, (d) on the Southern Bug River and (e) on the middle Dnieper and Desna rivers.

a. On the Polish Lowlands, Kujawy is the most thoroughly investigated region [Makarowicz 1998]. A rich series of ^{14}C dates, critically commented in this volume [see Górski, Makarowicz, Lysenko, Radiocarbon. . . , in this volume], justifies placing the local version of the Trzciniec horizon between 1950/1800 and 1300/1200 BC. As the cited authors write, the transformation of Iwno structures into Trzciniec ones took place between 1950/1900 and 1800 BC, while the disintegration of the latter occurred in 1300-1200 BC.

b. On the uplands, Trzciniec phenomena developed along different lines in individual regions. On loess uplands of western Poland (Kraków region), Trzciniec traits appeared in the form of a fully developed Trzciniec culture about 1700-1600 BC (possibly a century earlier), while in the Lublin region they emerged much earlier. The decline of the culture in the Kraków region took place ca. 1300-1200 BC, and on Sandomierz loess soils it demised after 1050 BC.

c. Trzciniec circle groups in Polesie can be currently dated at 1700-1600 BC at the earliest, while their decline can be similarly dated at 1200 BC. In Volhynia a small number of ^{14}C dates prevents us from establishing the chronology of local Trzciniec structures with any greater precision (Komarov and Volhynia groups). The presented analyses suggest that after 1300 BC the Komarov group was replaced by the Noua culture on the Dniester.

d. The chronology of Trzciniec circle groups (the Komarov group) on the forest-steppe on the Southern Bug can be determined by referring to the cemetery in Hordeevka which is dated well at 1500/1400-1000 BC [Ślusarska-Michalik, Radiocarbon. . . , in this volume]; however, one should assume that Trzciniec structures appeared in this region slightly earlier.

e. Similarly, the period of development of Trzciniec structures on the middle Dnieper can be determined, relying on rich ^{14}C evidence from the Malopolovetske site, at 1800-1000 BC.

We attach great importance to the findings that in the western part of the Trzciniec circle, assemblages combining IC and TH traits appeared in 1950/1900-1800 BC, while “purely” Trzciniec ones started appearing ca. 1800 BC [see Czebreszuk

1998]. Meanwhile, in the eastern part of the TCC, assemblages combining Mno-govalikovoy Pottery culture and TCC traits may be dated to 1800-1600 BC, while “purely” Trzciniec assemblages began appearing there ca. 1650-1600 BC [Górski, Lysenko, Makarowicz, Radiocarbon. . . , in this volume] (Fig. 1).

3.5. THE LUSATIAN CULTURE AND THE NORTHERN PONTIC CULTURAL CIRCLE — A QUESTION OF TIME CORRELATION

The current efforts to revise the absolute chronology of the LC using radiocarbon dating methods [Ignaczak 2002] bring home a need to reanalyze the context of “neighbouring cultures”. This especially applies to the Northern Pontic cultural circle. In this case (when the use of western Bronze “dating stamps” is restricted), ¹⁴C dates lay the major ground for comparative analyses. Bringing alongside dates for the LC and such Pontic cultures as Biligrudowka (BgC), Chornoles (ChC) and BzC sets the framework for the assessment of their mutual ties in the period from 1500 to 800 BC. More precisely, the research concentrates now on the chronological and cultural identification of “eastern traits” in the LC development, specifically in the Bronze Age IV and V and in Hallstatt C/D periods. Attention is drawn prompting to undertake a detailed research project by the evidence of the scale of pre-Scythian influence: the cycle of BgC → ChC [Ignaczak, Ślusarska-Michalik, Radiocarbon. . . , in this volume] (Fig.1).

4. CULTURAL UNITS IN THE AREA BETWEEN THE VISTULA AND DNIEPER: 4000-1000 BC. POSSIBILITIES OF HISTORICAL (CALENDAR) CORRELATION

Presented in BPS vols. 7 and 12, ¹⁴C dates encourage to make a comparison of the “classic” periodization of the North Pontic Eneolithic and the Bronze Age from 4000 to 1000 BC. At present, the following chronological brackets can be adopted for its individual stages:

(MEA) Middle Eneolithic Age (TC - phase B) = 4500-3500 BC

(LEA) Late Eneolithic Age (TC - phase C) = 3600-2300 BC

(EBA) Early Bronze Age (YC, MDC. . .) = 3300-2000 BC

(MBA) Middle Bronze Age (CC. . .) = 2800-1600 BC

(LBA) Late Bronze Age (SC. . .) = 1600-850 BC

The analysis of the “radiocarbon” divisions brings corrections to the contention about the general northern Pontic dimension of the LEA/EBA/MBA stages

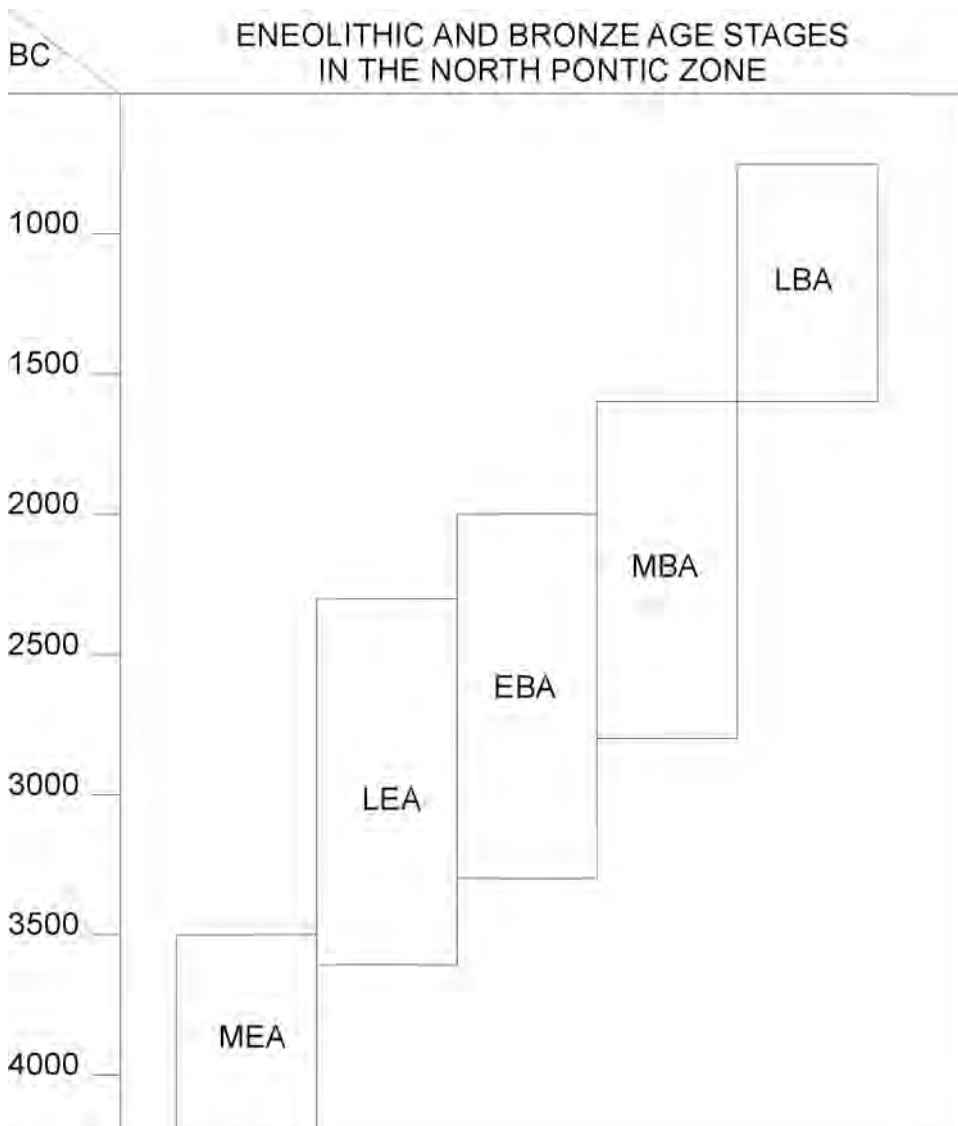


Fig. 2. Radiocarbon chronology of Eneolithic and Bronze Age stages in the North Pontic Zone

(3600-1600 BC), in the case of which we actually deal with three parallel and to some extent separate trends of cultural development (Fig. 2).

The tentative chronological scheme of the series of Pontic time divisions makes one revise their western references. This applies to the taxa in the Vistula drainage from the period of 4000-1000 BC having clear eastern connotations: LVC,

FBC, GAC, CWC, TCC i LC. The Baltic-Pontic development relationships in the 4000-1000 BC period can be now expressed as follows:

MEA (4100-3500 BC)

- Transmission of TC patterns (“Tripolization”) to LVC [Bronicki, Kadrow, Zakościelna, Radiocarbon. . ., in this volume] and FBC environments = early (I) stage of the Mątwy cultural component [Koško, Radiocarbon. . ., in this volume],
- Transmission of LVC patterns to the TC zone on the Dniester [Tkachuk 2000],

LEA (3600-2300 BC, TC trend)

- Transmission of TC patterns (“Tripolization”) to FBC environments = classic (II) and late (III) stages of the Mątwy cultural component, phases I and II (or better: mainly II) of great settlements on the Bug River [Koško, Radiocarbon. . ., in this volume; Bronicki, Kadrow, Zakościelna, Radiocarbon. . ., in this volume]

EBA (3300-2000 BC, YC-MDC trend)

- Migration of the societies of the central group of the GAC towards the drainage of the Black Sea = the eastern group of the GAC and the Budzhak group of the YC [Szmyt 1999]
- Migration of YC societies to the western CWC zone = phase I of the Wielkopolska-Kujawy group of the CWC [Koško 1999].
- Migration of MDC societies to the western CWC zone = the Sokal group of the CWC [Machnik 1999; An Interrupted. . ., in this volume]
- Transmission of western CWC patterns (Wielkopolska-Kujawy group) to the MDC zone = late phase of the MDC [Yazepenka, Koško, Radiocarbon. . ., in this volume]

MBA (2800-1600, CC trend)

- Migration of CC societies to the region of the western CWC = the niche-grave horizon of the Kraków-Sandomierz group of the CWC [Włodarczak 1998]
- Migration of the societies of the western branch of the TCC towards the Dnieper drainage = eastern branch of the TCC [Górski, Lysenko, Makarowicz, Radiocarbon. . ., in this volume]
- The beginnings of stabilization of interregional trails joining the Black Sea and the Baltic Sea [Koško 2002]

LBA (1600-850 BC)

- Transmission of LC patterns toward the Black Sea drainage = Vysotsko culture, among others
- Transmission of ChC patterns to the LC zone [Ignaczak, Ślusarska-Michalik, Radiocarbon. . ., in this volume]

The above outline defines the limits of study of the cycle of Baltic-Pontic development relationships. Further research should make the above findings more specific by broadening their taxonomic record, chronology, topogenesis and historical interpretation.

Therefore, we recommend that continuity studies be carried on taking the experience of *BPS* vols 7 and 12 as an inspiration, but not relying on it directly, within the framework of five subprogrammes outlined already earlier.

Translated by Piotr T. Żebrowski

ABBREVIATIONS

AAC	– Acta Archaeologica Carpathica, Kraków
Annales UMCS	– Annales Universitatis Mariae Skłodowska-Curie, Lublin
AP	– Archeologia Polski, Warszawa
APŚ	– Archeologia Polski Środkowoschodniej, Lublin
BerRGK	– Bericht der Römisch-Germanischen Kommission, Mainz
BPS	– Baltic-Pontic Studies, Poznań
BSA	– Annales of the British School of Archaeology at Athens
JIES	– The Journal of the Indo-European Studies, Washington D.C.
KSIA	– Kratkiye soobshcheniya Instituta Archeologii, Moskva
MANH	– Materiały Archeologiczne Nowej Huty, Kraków
NA IA NAN	– Nauchnyy Arkhiv Instituta Arkheologii Natsionalnoy Akademii Nauk Ukrainy, Kiev
PA	– Przegląd Archeologiczny, Wrocław
PBF	– Prähistorische Bronzefunde, München
PZP	– Prahistoria ziem polskich, Wrocław-Warszawa-Kraków-Gdańsk
RA	– Rossiyskaya Arkheologiya, Moskwa
SA	– Sovetskaya Arkheologiya, Moskwa
SIA	– Slovenska Archeologia, Bratislava
SPA	– Sprawozdania Archeologiczne, Kraków
WA	– Wiadomości Archeologiczne, Warszawa

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