

**THE FOUNDATIONS OF RADIOCARBON
CHRONOLOGY OF CULTURES BETWEEN
THE VISTULA AND DNEIPER:
3150-1850 BC**

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Editor's Foreword

This volume of the *Baltic Pontic Studies* focuses on the results of the research carried out so far into the absolute (radiocarbon) chronology of the area lying between the Vistula and Dnieper or the bio-cultural borderland between the West and East of Europe. Absolute chronology is treated here both as a research goal and fundamental premise in the broader studies of the chronometric and development synchronization of "borderland" cultural systems. In a series of articles devoted to individual taxa a considerable number of new ^{14}C dates have been compared. The dates concern source materials that have been chosen from the point of view of their representativeness and chronometric value ("short-lived" materials were preferred to minimize a potential error). The vast majority of analyses were purposefully made in the same ^{14}C laboratory of the *State Scientific Center of Environmental Radiogeochemistry of Ukrainian Academy of Sciences* in Kiev taking advantage of funds generously provided by the *Polish Committee for Scientific Research*.

The volume devoted to the "dark" section of the "borderland" history (3150-1850 BC) is the first but not the last publication on the broader issues mentioned above that we intend to present in the near future.

Editorial comment

1. All dates in the B-PS are calibrated [see: Radiocarbon vol.28, 1986, and the next volumes]. Deviations from this rule will be point out in notes.
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).

Viktor I. Klochko, Aleksander Koško, Marzena Szmyt

PROBLEM OF TAXONOMIC LIMITATIONS IN THE SYNTHESIS OF THE HISTORY OF BALTIC-PONTIC BORDERLAND IN 3150-1850 BC

In the time interval mentioned in the title, in the physiographic borderland between the East and West of Europe, a cycle of cultural changes took place. One of their consequences was the disintegration of distinct ties joining the societies living in the drainage basins of the Baltic and Black Seas. The cycle was initiated by the disintegration of the great Eneolithic systems of the Funnel Beaker culture (FBC) and Tripolye culture (TC) of common Balkan origin. The territorial successor of the former was the Globular Amphora culture (GAC) and Corded Ware culture (CWC), while the latter was succeeded by the Yamnaya culture (YC), which was foreign to the mentioned tradition [Gimbutas 1956; 1991; Danilenko 1974; Koško 1985; Mallory 1989; - see there for more literature; cf. a different view in Videiko 1994]. The synchronization of the development of the CWC and YC, and later the assessment of genetic relationships between them - a key issue of the European prehistory of the Early Metal Age - is made considerably more difficult. In the areas of old highlands, on the forest-steppe (the most culturally creative), between the upper part of the Dniester's drainage ("limes" of Złota Lipa) [Machnik 1979b:52ff] and the Dnieper basin, a taxonomic "no-man's land" appears, i.e. an area lacking any complexes of sources that could reveal the forms of ties between characteristics of both circles - the CWC and YC. Only in its borderlands - the northern, forest one and the southern, steppe one - do we find poorly explored manifestations of the synthesis of both circles (within the Middle Dnieper culture (MDC) and the Budzhak group of the YC) [Artemenko 1967; 1985; Yarovoy 1985]. A less acute case of the situation can also be found in the relationships holding between the GAC and YC [Szmyt 1996b; 1999b].

It is hard to determine now to what extent this picture is real, i.e. how serious is the deformation caused by the current state of research. Taking notice of the urgent need to verify this doubt, it must be said that the state of "disintegration of ties" should be perceived for the time being as an assessment of a real difficulty in the systematization of the cultural phenomena between the Vistula and Dnieper.

The best way to clear up the doubt would be to undertake field explorations in selected test areas located in the zone under discussion, for instance, in the vicinity of Zhytomyr.

The process continues after the decline of the “proper” CWC and YC, at the stage of late or epi-corded cultures and the Catacomb culture (CC). Its end is ushered only by the emergence of cultures related to the Trzcinniec horizon and the Mnogovalikovoi Pottery culture (MPC) [Koško, Klochko 1998; Czebreszuk 1998].

With respect to the period from 3150 to 1850 BC, archaeology based on typochronology experiences a state of “analytical atrophy” between the Vistula and Dnieper. Systems of taxa in the basin of the Baltic and Black Seas are synchronized with respect to one another with little accuracy (“roughly”) making it impossible to place them in the sequences of historical events. This is why even when one records, for instance, “pit-grave” (YC) or “catacomb” traits in the Vistula drainage, it is difficult to venture to assess in greater detail their taxonomic position, not speaking of the qualification of their historical purport.

In consequence of this, several negative attitudes can be observed. One of them is avoiding “inconvenient” issues, another one is interpreting “contrariwise”, i.e. reversing the directions in the circulation of specific patterns (cf. the problem of the origins of Małopolska catacomb graves [Klejn 1964]).

1. THE MOTIVATION AND METHODOLOGICAL ASSUMPTIONS OF THE RESEARCH PROGRAM INTO THE COMPARATIVE CHRONOLOGY OF THE AREA BETWEEN THE VISTULA AND DNIEPER FROM 3150 TO 1850 BC

Drafted several years ago, the program of research into the comparative chronology of the area between the Vistula and Dnieper between 3150 and 1850 BC took for granted the results of many years' work on the absolute dating of prehistoric cultural structures in the said area carried out earlier. These studies were conducted by many scholars in several academic centers [cf. e.g. aspect summaries by Dolukhanov, Timofeev 1972; Mallory 1977; Telegin 1977; 1985; Patokova et al. 1989; Wechler 1994]. Apart from clear advantages like, in the first place, the very fact of gradual building the foundations of the absolute chronology, the efforts also brought about effects that were not entirely satisfying and - in many instances - that were not expected by the scholars.

a. A major shortcoming was an asystematic choice of samples:

- joint discussion of datings referring to different regions of the oecumene, often entirely dissimilar as far as autogenesis is concerned, of a given cultural unit in the study of the radiocarbon dating chronology, and
- a lack of series of datings for sites with a well preserved stratigraphy, of which

there are quite a few in this part of Europe (e.g. *kurgans* with a stratigraphic arrangement of burials belonging to different archaeological cultures).

As a result, the grid of comparative chronology built in this way gave rise to numerous interpretation disputes making obvious the need for organizational work using the so-called microgeographic method [Cofta-Broniewska 1989, see there for older literature], i.e. choosing:

- diagnostic surfaces representative of individual taxa, i.e. regions of a specific position (within the current synthesis) in the history of development of individual societies, and
- source data relating to these analytical units, i.e. records of taxonomically valuable assemblages for which there would be organic materials suitable from the point of view of the ^{14}C method.

Created along these assumptions, the outline of potential openings for a systematic study of the chronometry between the Vistula and Dnieper was a new quality being, however, only a point of departure. We were aware that taking advantage of them in a methodologically satisfying manner called for coordinated field work (cf. the above-mentioned question of the “noman’s land” or areas deprived of any significant sets of chronologically valuable assemblage series [e.g. area of the Budzhak group of the YC - Yarovoy 1985]).

b. Doubts were also raised by the preferences shown in the ^{14}C dating of charcoal and wood, i.e.

- sending for radiocarbon analyses so-called long-lived materials, which could (and in many instances, did!) cause interpretation complications, and
- frequent dating taxonomically dubious sources by this method, if one considers the fact that charcoals are often elements of the natural contents of layers/filling material of features or cultural material older than the investigated feature (effect of digging-in into an older set of sources).

c. It is worth mentioning about incomplete publications of the source contexts of dated samples or even about failures to report information on more detailed taxonomic identifications. Moreover, the available literature provided us with the picture of comparative chronology based on datings made from various materials, at different times and with the use of different technologies of radiocarbon chronometry.

All these reasons (and many other less important but troublesome ones) have given rise to the situation which may be perceived as chaotic: hundreds of datings have been made but there are no satisfactory absolute chronologies in respect of both individual cultures and regions. There are also clear data gaps, e.g. a virtual lack of datings for the GAC [see Szmyt 1996b] and MDC.

The situation presented above was a point of departure for a program of research coordinated by a Polish-Ukrainian research team of scholars from the Adam Mickiewicz University in Poznań (Institute of Prehistory and Institute of Eastern Studies) and the Ukrainian Academy of Sciences in Kiev (Institute of Archaeology

and State Scientific Center of Environmental Radiogeochemistry). The financing for the program was generously provided, for the most part, by the Polish Committee for Scientific Research in a number of individual grants.

The program is based on the following principles:

- most of the radiocarbon analyses are performed in the ^{14}C laboratory of the State Scientific Center of Environmental Radiogeochemistry of the Ukrainian Academy of Sciences in Kiev with the results being randomly verified in other laboratories by “cross-dating” [see Kovalyukh, Nazarov, Radiocarbon. . . ; Skripkin, Kovalyukh, Radiocarbon. . . , in this volume];
- analyses are primarily made of samples of bones or other short-lived materials (e.g. reeds, etc.) and only when these cannot be found, charcoal and wood are used; in this way we avoid undue controversies connected with the “old-wood effect”.
- priority is given to these samples which come from features with preserved stratigraphy; thus it is possible to verify an obtained series with independent data;
- the archaeological context of each dating should be clear; it should be published first in the *Baltic-Pontic Studies* or in another scholarly journal; in this way we avoid “empty” datings, the interpretation of which is practically impossible.

The implementation of these principles has encountered certain complications. We are fully aware of the controversies that may be aroused by the first principle. It has been adopted, nevertheless, as a consequence of the chosen organizational and financial structure. Significant effects are brought about by the choice of bones as the basic material for radiocarbon analyses [cf. methodological problems: Skripkin, Kovalyukh, Radiocarbon. . . , in this volume]. The interpretation of datings of burnt bones, which were the main material for the analyses in the case of the Sofievka group of the TC, presents a particular difficulty [Kovalyukh, Videiko, Skripkin 1995]. Furthermore, in certain situations, as for instance in the dating of materials from old archaeological excavations, it was not always possible to determine with certainty the archaeological context of the sample (the case of several datings for stage CII of the TC and GAC). The use of such uncertain sources, as far as their informative value is concerned, has been forced upon us because of the limited scope of exploration works carried out in Ukraine at present [see also Szmyt, Chernyakov, Radiocarbon. . . , in this volume].

Taking into account all pros and cons, we believe that our approach has turned out to be highly effective. So far, as a result of the program, radiocarbon dates have been obtained in respect of cultural units from Belarus, Poland and Ukraine. The program enlisted the cooperation of a number of people whose earlier contributions to the taxonomic exploration of the area between the Vistula and Dnieper together with collections of sources currently at their disposal guaranteed a high quality of cooperation results. New series of datings, meeting current methodological require-

ments, have been obtained for the following cultures: TC, stage CII (35 datings), MDC (17 datings), YC (45 datings), Kemi-Oba (5 datings), and - for the first time in the literature - for the eastern group of the GAC (12 datings) [see Kadrow, Szmyt 1996b], the CWC with references to the MDC (5 datings), the Kujawy groups of the FBC and CWC (or possibly from the “borderland” of the FBC and the CWC) with “eastern” traits (4 datings), as well as the GAC in Kujawy with “eastern” elements (7 datings). Additionally, in respect of younger cultural groups (the Trzciniec Horizon culture and MPC) samples were examined which were presented in one of the earlier volumes of the *Baltic-Pontic Studies* [Makarowicz 1998; Kovalyukh et al. 1998]. It is worth mentioning that a methodologically similar program was independently implemented also in respect of the CC (24 datings) [Kaiser, Radiocarbon. . . ; Nikolova, Radiocarbon dating. . . , in this volume].

Geographically speaking, the discussed sources come from the right-bank (i.e. western) part of the Middle Dnieper area, the Lower Dniester, Volhynia, Podolia, Małopolska and Kujawy.

2. RESEARCH POTENTIAL

The obtained body of data makes it possible to analyze from various aspects the chronological and cultural situation between the Vistula and Dnieper from 3150 to 1850 BC. In the conclusion of the present volume [Klochko, Koško, Szmyt, A Comparative. . . , in this volume], we outline two aspects of the situation. One of them is the chronology of selected cultural units in different zones of the territory they occupy. This, in turn, allows us to trace out the current foundations of the comparative chronology in the overall “interfluvial” territory.

At the same time, we regard this state of exploration as a register of future research tasks. One of the issues which still remains unclear is the polylinearism of development of cultural systems which for the time being are treated as “blocks”. Similarly inspiring is the verification of the principle of “peripheral survivals” [cf. e.g. the chronology of the decline of the TC Sofievka group: Kovalyukh, Videiko, Skripkin 1995]. The borderland of the East and West of Europe in the said period when agrarian and “pastoral” cultures met continues to be one of the most important research areas in the building of a synthesis of European prehistory.

Any further research shall be recorded in the next volumes of the *Baltic-Pontic Studies*.

Translated by Piotr T. Żebrowski

ABBREVIATIONS

AO	– Arkheologicheskiye otkrytya, Moskva.
AJA	– American Journal of Archaeology, New York.
BPS	– Baltic-Pontic Studies, Poznań.
EA	– Eurasia Antiqua, Berlin.
FPP	– Folia Praehistorica Posnaniensia, Poznań.
KSIA	– Kratkiye soobshcheniya Instituta Arkheologii, Moskva.
KSIA AN USSR	– Kratkiye soobshcheniya Instituta Arkheologii AN USSR, Kiev.
KSIIIMK	– Kratkiye soobshcheniya Instituta Istorii Materialnoy kultury, Moskva.
KSOGAM	– Kratkie Soobshcheniya Odesskogo Gosudarstvennogo Arkheologicheskogo Muzeya, Odessa.
MIA	– Materialy i issledovaniya po arkheologii, Moskva.
NA IA NANU	– Naukovy Arkhiv Instituta Arkheologii Nacionalnoi Akademii Nauk Ukrainu, Kiev.
SA	– Sovetskaya Arkheologia, Moskva.
SpA	– Sprawozdania Archeologiczne, Kraków.
ZFA	– Zeitschrift für Archäologie, Berlin.

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