RECEPTION ZONES OF ‘EARLY BRONZE AGE’ PONTIC CULTURE TRADITIONS:
BALTIC BASIN – BALTIC AND BLACK SEA DRAINAGE BORDERLANDS,
4/3 mil. TO FIRST HALF 2 mil. BC

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Editor’s Foreword

The articles presented in vol. 19 Baltic-Pontic Studies (BPS) continue the discussion on ‘Pontic Early Bronze Age Civilisations’ and their role in the cultural development of prehistoric communities in the Baltic drainage basin or more broadly speaking, present-day central-eastern Europe at the turn of the 3rd mill. through to the 2nd mill. BC. Related issues have been examined in depth in previous BPS volumes, notably 11, 14 and 18 respectively.

The scholarly discussion that constitutes this publication can be divided into two major research questions:

1) evidence of hypothetical markers of Pontic cultures and their attempts at an autogenetic interpretation:

Late Eneolithic and Early Bronze Age taxa for Tripolie culture, Phase CII and Early Bronze Age cultures such as Pit Grave, Catacomb and Babyno in the Baltic basin. These in turn may be divided geographically: physiographic-cultural, Old Upland (Piotr Włodarczak) and Lowland — Silva (Aleksander Kośko)

2) the adaptation of Pontic cultural models in terms of differentiated forms of ‘neighbours’ cohabitation’:

 taxonomically differentiated communities from the Baltic and Black Sea borderlands (Jerzy Libera, Jan Machnik, Marzena Szmyt, Halina Taras, Stanislaw Wilk and Anna Zakościelna).

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Professors Viktor I. Klochko and Przemysław Makarowicz kindly reviewed this publication.
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 standardized 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*, Kyiv: Mapa LTD, edition of 1996; *Réspublika BELARUS’, REVIEW-TOPOGRAPHIC MAP*, scale 1:1 000 000, Minsk: *BYELORUSSIAN CARTOGRAPHIC AND GEODETIC ENTERPRISE*, edition 1993).
In Małopolska (south-eastern Poland)\(^1\), Final Neolithic finds (Fig. 1) illustrate a rich and unique set of funerary rites unknown in any other region of the south-eastern branch of the Corded Ware culture complex (CWC)\(^2\). Moreover, the finds from cemeteries are numerous and meaningful enough to allow their correlation with the rites of Early Bronze communities, settling the steppes and forest-steppes north of the Black Sea in the 3rd millennium BC. More such comparisons were made prior to the Second World War when archaeologists often conducted excavations both in Małopolska and on the Podolia forest-steppe without drawing any significant distinctions between prehistoric societies settling these two areas [e.g. Antoniewicz 1925]. Beginning with the middle of the 20th century, publications on the Małopolska Final Neolithic chiefly focused on the dynamics of internal processes, leaving relations with distant regions aside [Machnik 1966; 1979b; Kempisty 1978; Wlodarczak 2006]. Over a decade ago, this perspective was changed by Jan Machnik’s studies that stressed the presence of grave assemblages with pottery displaying traits characteristic of the Middle Dnieper culture in Małopolska [Machnik 1999; Machnik et al. 2009]. The monographs drew attention to the possibility of long-distance migrations of groups of humans from

\(^1\) The terms ‘south-eastern Poland’ and ‘Małopolska’ are used interchangeably. The area is also held to include east-central Poland, in particular the Lublin Upland. The consideration of these regions as a single unit, in conformity with many traditional historical divisions, is justified with respect to Late Neolithic finds.

\(^2\) Abbreviations used in this paper: GAC – Globular Amphora culture, CWC – Corded Ware culture, FBC – Funnel Beaker culture, YC – Yamnaya culture, CC – Catacomb culture, ZC – Złota culture.
the middle Dnieper drainage basin to the uplands of south-eastern Poland. Further studies aimed at determining the relationships holding between central European and northern Pontic communities are currently justified by a general accretion of knowledge on the prehistory of these regions (see part 2), including the discovery of new, intriguing sources (see part 3).

In the last several decades, the studies of the Final Neolithic as a rule have not covered all of south-eastern Poland. Separate studies were devoted to loess uplands west of the Vistula River [Kempisty 1978; Włodarczak 2006]. In the late 20th century, the view prevailed that cultural development there clearly differed from the situation recorded in Sub-Carpathia and on the Lublin Upland. The differences supposedly reflected discrepancies in settlement and economic systems adopted by the communities settling these regions [Machnik 1994; 1997a]. This thesis underscored the respective separateness of the phenomena of niche and barrow graves, with the former representing the younger period of CWC development only on the
Vistula’s left bank [Kempisty 1978; Machnik 1998]. The model of funerary behaviour shared by the Kraków-Sandomierz group was considered local at that time and clearly different from patterns recorded in eastern Małopolska. In the discussion below, all CWC materials from south-eastern Poland were considered together – as a group of finds standing out from adjacent regions and comparable to the model shared by the YC and CC. The main reason behind this approach was the significance of new discoveries made in the Carpathian foothills [Machnik 2011] and on the Lublin Upland, but especially on the Sokal Ridge (Grzęda Sokalska) [Machnik et al. 2009] and the Nałęczów Plateau. These allow a more comprehensive and slightly modified view of the Final Neolithic societies in Małopolska. Currently, it can be held that individual local find clusters from this area make up a group whose cultural character differs from the picture recorded for adjacent areas. Interestingly enough, the dissemination limits of the Małopolska CWC variety are more clearly marked in the north, south and west, while they are harder to delineate in the east. The reason behind this is the very distribution itself of the known sites of this culture: clusters in the eastern fringes of Małopolska continue further east, into western Ukraine. This can be seen in the similar character of the Final Neolithic barrow funeral rite there [Sulimirski 1968; Machnik 1979a; 1979b; Włodarczak 2014].

Złota-type grave finds – so far known only from the Sandomierz Upland and the east of the Nida Basin (Niecka Nidziańska) [Krzak 1976; Machnik 1979b; recently: Witkowska 2013] – are considered here a manifestation of the transformation of the Late Neolithic system (GAC) into the Final Neolithic one (CWC) in agreement with the pattern outlined earlier [Włodarczak 2008a]. The rite components finding analogies in the phenomenon of Final Neolithic CWC communities include above all: (a) new grave-good rules, (b) typological traits of some grave goods, corresponding to examples known from the CWC circle, and (c) arrangement of some bodies, emphasizing the individual character of a burial in a peculiar way.

Materials from cemeteries are primary sources for the study of Final Neolithic communities in Małopolska. Any information on settlements continues to be scarce, although some more has become recently available, owing to large rescue excavations preceding the construction of motorways. What emerges is the connection between CWC settlement and large river valleys such as the Vistula, Raba and Dunajec [summary: Włodarczak 2013b]. However, no traces of settlements have been found on the uplands (apart from a few flint-working workshops), from where most grave finds originate.

Comparisons drawn here refer to YC and CC rite traits. Comparative materials come from western groups located in the North Pontic Area. They represent south-western and south-eastern varieties of the YC distinguished by N.Ya. Merpert [1968; quoted after Rassamakin 2013]. In addition, comparative materials

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3 The discussed group of materials includes also finds collected from sites in the border zone, located already in western Ukraine, northwest of the upper Dniester (e.g. barrows from Balice, Mirzyniec and Nowosiółki).
come also from the western portion of the CC complex range [Toschev 1991]. Among them, a prominent position is occupied by relatively rich YC finds, coming from the area between the Dniester and Danube rivers, sometimes referred to as the ‘Budzhak culture’ [Ivanova 2013]. The area is worthy of note because of its tradition of contacts with lands lying further west (Carpathian and north Balkan zones) and north of it (area occupied by GAC settlement). These extraneous ties and connections to the patterns of the late phase of the Tripolie culture (mainly to
the Usatovo group) have produced a peculiar model of cultural behaviour, different from that observable in YC groups lying further east.

The major emerging question therefore is the permanence and significance of communication with CWC communities, settling the Podolia Upland and lands lying further west (including Małopolska discussed here). In turn, the north-western, ‘forest-steppe’ YC variety appears to be an inspiring object of comparison because of its relation to Middle Dnieper culture communities neighbouring on it in the north. In recent years, the traits of the last-mentioned culture have been revealed in Final Neolithic assemblages in Małopolska [Machnik 1999; Machnik et al. 2009]. The emerging, ever stronger, ties between the communities of the CWC circle (inclusive of the Middle Dnieper culture), settling the eastern and western portions of the Volhynia Upland as well as Małopolska Sub-Carpathia, help take a different view of the ties with the cultural groups known from the steppes and forest-steppes north of the Black Sea. The question of these ties must be viewed in a broad perspective; from the middle Dnieper area as far as Podolia on the Dniester. Furthermore, it is important to observe that the ties extended along two major directions (in other words: two communication routes – Koško, Kłócko 2011: 14-16): (a) latitudinal – from the middle Dnieper area across Volhynia to Małopolska and (b) southeast – northwest, following the convenient arteries of the Boh, Dniester, Prut and Seret rivers (Fig. 2). A separate question, which is not discussed here, concerns the longitudinal ties related to the presence of YC communities on the upper Tisza [Wlodarczak 2010] and Prut rivers [see comments on the relations between the Podolia CWC and finds from northern Moldavia: Burtănescu 2002a: 205-212].

2. COMPARISON OF FUNERARY RITES

In Małopolska, the Final Neolithic (ca. 2800-2300 BC) is associated with the domination of the ‘Beaker culture’ model (CWC and Bell Beaker culture). A clear change in belief systems taking place at that time can be seen above all in a new funerary rite. The question of its connection with the spreading of the ideology of steppe communities has been discussed in European archaeology for many years [e.g. Häusler 1981; 1992]. The resultant comparisons point to both similarities and differences, while conclusions derived from them are a recurrent subject of debates. In the on-going discussion, Małopolska merits attention because of its relative proximity to lands settled by steppe circle communities. Materials originating from there are included in the south-eastern part of the complex of cultures with cored ware, forming a relatively well-explored group of finds among them. Moreover, the peculiarities of funerary rites recorded there differ from patterns
found in other CWC regions, while some elements (e.g. catacomb grave structure) find close analogies in YC and CC materials. Hence, a comparison with the North Pontic cultural circle may prove to be an inspiring endeavour. From this perspective, the following seem important: (a) nature of the barrow, (b) grave structure traits, (c) burial arrangement, (d) quality of grave goods, and (e) selected artefacts discovered in CWC features (with special prominence given to new discoveries).

Idea of the barrow

In the Late and Final Neolithic in Małopolska, barrows were part of the CWC funerary ritual. So far, no connection has been found, linking them to GAC and ZC rites. Barrows are not known from the period immediately preceding the rise of the CWC model, either, i.e. a period dominated by the Baden cultural model (ca. 3300-2800 BC). However, a few circular mounds are documented for the Middle Neolithic and, being a component of the FBC ritual, are dated to ca. 3650-3350 BC [Tunia, Włodarczak 2011: 209, 210]. Tracing the concept of the CWC barrow to that tradition which is older by several hundred years can by no means be corroborated at present. The Final Neolithic ritual in south-eastern Poland is, therefore, a new phenomenon whose allochthonous origin is very likely as is its association with the North Pontic ritual. In a similar time horizon (perhaps a little older than the rise of the CWC complex), in central Europe north of the Carpathians, the concept of the barrow was to a limited degree adopted only in the ritual of the Polish GAC group [Wisłański 1966: 56; Szymt 2011]. It cannot be ruled out that this was also an effect of new ‘eastern European’ traditions spreading into central European cultural complexes. Around 2800-2700 BC, the dissemination of the barrow ritual marks a clear dividing line in the whole region, while the customs of Małopolska communities illustrate a marked change in funerary rites.

The cycles of barrow cemetery use in Małopolska and the North Pontic Area follow a similar rhythm. In the latter area, an increased activity of building tombs with circular mounds is dated to the first half of the 3rd millennium BC (to be more specific: 2900-2600 BC) and associated with the older phase of the YC and the older development stage of Małopolska CWC. The mounds built at that time formed clusters – ceremonial centres. In successive centuries, the number of new barrows dropped dramatically and burials were instead dug into mounds built earlier. Moreover, flat cemeteries are also recorded in Małopolska. The trend to reuse tombs built earlier was strong enough to make the name ‘barrow communities’ adequate for population groups settling Małopolska until the end of the Final Neolithic, that is to about 2400/2300 BC [Włodarczak 2013b]. As in the North Pontic Area, in south-eastern Poland, burials were sunk also into tombs dating back to the older periods of prehistory (FBC megalithic features). However, any attempts to remodel such older structures by adding earth and building circular mounds have as yet not been documented well. That such attempts could have been made is attested by investigation results in Malice Kościelne and Zagaje Stradowskie [Włodarczak 2008c: 158]. These are, however, rare instances – unlike in the North Pontic Area.
Fig. 3. Examples of multi-phase barrows from Grzęda Sokalska [Machnik et al. 2009]: 1 – Wierszczyca, site 31, barrows 1, 2 – Wierszczyca, site 30, barrow 1, 3 – Wierszczyca, site 1, barrow 1
where the incavation of YC graves was often accompanied by the enlarging of older Eneolithic barrows.

As a rule, a 3rd millennium BC barrow was built over a single grave pit holding a single burial. Exceptions to this rule (mounds over a pair of graves) are rare (none has been recorded so far in Małopolska). In the case of the CWC, a barrow is usually a one-off structure if one ignores the fact – hard to prove – that the mound over the central grave could have been raised in stages. Sometimes this can be seen in hearths found on various barrow levels. With the YC, it was a frequent practice to expand a tomb when secondary burials were dug in. Hence, special attention is merited by few multi-stage Małopolska barrows. Examples include some barrows from the Sokal Ridge [Fig. 3; Machnik et al. 2009: 74, Fig. 53:1; 140, Fig. 110:1] and barrow 2, Miernów, western Małopolska [Kempisty 1978: 10]. In these cases, barrows were expanded when successive burials were incavated.

CWC barrows had become a distinct and significant landscape element in Małopolska and were used for burial purposes by various communities for centuries. In no case, however, did they start any larger cemeteries. The number of Final Neolithic and Early Bronze graves sunk into barrows is smaller than in the North Pontic Area. Also east of Małopolska, in western Ukrainian CWC barrows, only single secondary burials are recorded. The custom of digging successive burials into existing mounds is closely associated in the case of the YC with the North Pontic Area though (in particular its steppe part), while in the Danube groups of this culture, the number of secondary burials is considerably lower. On the Tisza River, as a rule no such features are recorded [Ecsedy 1979]. Interestingly enough, in the contact zone with the CWC complex, namely in Podolia and on the middle Prut River, the number of secondary burials is much lower than on the Budzhak steppe [Dergachev 1982; Włodarczak 2014]. It can be assumed, therefore, that the idea of using barrow cemeteries by CWC communities and by the adjacent groups of YC populations was similar. Its detailed rules (above all connections between individuals buried in particular barrows) have not been traced yet. What seems established is the fact that barrows were not regularly used as multi-generation burial places in which all family members were buried. Selection is observable in the case of both graves under barrows (in Małopolska, exclusively male burials have been unearthed so far) and secondary graves.

In the regions compared here, there were rules for digging secondary burials into mounds and their rims. Secondary burials form arches or rings surrounding the central grave. In Małopolska, as a rule they were placed in the eastern or south-eastern parts of the mound (Fig. 4). This rule is less clear in the North Pontic Area where a considerable number of YC graves are found also in other

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4 The only larger cemetery – in Żerniki Gorne – in the opinion of the author of excavations – was a flat feature located underneath a Trzciniec culture barrow [Kempisty 1978]. A definitive assessment of its nature is prevented by modern damage to the central part of the mound and dense clusters of features from various periods of prehistory.
Fig. 4. Position of secondary burials relative to barrow centre in western Małopolska (1), on Lublin Upland (2) and in western stretches of the Catacomb culture. [3-6; after Kaiser 2003]
Fig. 5. Examples of Małopolska barrow constructions: 1 – Nedeźów, site 22, barrow 2, 2 – Niepla, 3 – Krajowice. [after Machnik et al. 2009, Gancarski, Valde-Nowak 2011]
portions of the mound. What draws attention, however, is a similarity in placing CWC catacomb graves and CC features within mounds. In the case of the latter, the similarity holds in most of its regional groups, including the north-westernmost cluster in northern Moldavia [Kaiser 2003: 36, 37, Fig. 5, 6].

The details of barrow design differ between Małopolska and the North Pontic Area. First, in south-eastern Poland, no large barrows have been identified so far, i.e. ones with a diameter of more than 30 m. All barrows known from the region are small and very small when compared to YC features. Second, the traces of borrow pits show that the features were of different construction. In Małopolska, regular extensive ring-shaped depressions encircling the barrow (typical of YC cemeteries) are very rare (Fig. 3:2; 5:1). They were encountered only when investigating some barrows from the Sokal Ridge [Nedeźów, site 20, barrow 1; Wierszczycza, site 30, barrow 1; Machnik et al. 2009, Fig. 95:A; 151, Fig. 119:1]. By contrast, CWC borrow pits were crescent-shaped (Fig. 3:1), irregular (Fig. 5:2, 3) or no traces of them have been recorded in the immediate vicinity of the barrow. Furthermore, Małopolska sites lack another element characteristic of most YC barrows: embankments encircling central graves, consisting of the earth excavated while digging these features. The only instance of such an embankment comes from the site in Nyzhni Hayi, near Drohobych, Ukraine [Machnik et al. 2011: 39, Fig. 5].

A frequent element of the Małopolska barrow design, a narrow circular ditch, usually ran along the mound rim (Fig. 3:1-3; 5: 2, 3). The idea of hemming in the barrow perimeter in this way can also be seen on YC sites, although less often than around central-European barrows [Ivanova 2001: 26, 30]. Besides ditches, there were also stone structures used for this purpose on YC sites (cromlechs) – a legacy of the preceding Eneolithic period – which are absent from Małopolska CWC sites. In the case of the YC, the purpose of enclosing the barrow space could have been served by the ring-shaped ditches mentioned earlier.

In terms of design therefore, barrows from south-eastern Poland resemble much more closely the contemporary structures found in the adjacent regions of central Europe (Polish Lowland or Moravia) than North Pontic Area mounds. If their ‘eastern’ origins were assumed, it would have to be accepted that Małopolska became home to a model selected from a much broader cultural assortment. The overall design of barrow structures in the two areas under comparison is, however, the same. Considering the contrast with earlier, Late Neolithic funerary rites, it is possible to better appreciate the role of YC models in the emergence of a new central European ritual.

Idea of the grave

Any discussion of the nature of the grave shared by the North Pontic Area communities in the 3rd millennium BC (YC and CC) necessarily concentrates on its permanent element: the burial is not placed in a filled pit to be subsequently buried but in an empty chamber where the walls, floor and ceiling are variously
Fig. 6. Chronological sequence of Corded Ware culture graves from barrow 1 in Gabultów [Górski, Jarosz 2006]: 1 – grave 1 (central, pit), 2 – grave 2 (secondary, catacomb)
fashioned. This shows an effort to make the grave a chamber – a house for the deceased. Leaving aside semiotic interpretations, such a design fits into a broader trend of changes in the funerary ritual, emphasizing the unique nature of an individual; each deceased has the right to an appropriately refined burial with appropriately designed surroundings and body arrangement. In the case of Małopolska, this type of behaviour is observed too; it can be seen in central barrow and niche graves.

So far, no discovery has been made in Małopolska of a barrow grave whose design would have a close analogy in the North Pontic Area. Similarities are only general and concern the nature of the chamber itself and the use of timber elements to enclose it. However, the very manner of its construction is clearly different. In addition, floor structures and horizontal roofing are not known either (although it is very likely that grave chambers were covered in one way or another). No record has been made, either, of any traces of lining grave bottoms with mats, bark or other organic materials, so characteristic of YC graves. In Małopolska in this context, rectangular or sub-rectangular features dominate. There are both simple pits and more complex structures. To build the latter, timber elements were used, forming chest-like structures. One recurrent procedure involves fitting a large wooden chest into a clearly larger pit. Graves of this type were recorded in various parts of Małopolska (e.g. Gabultów, Kocmyrzów, barrow B in Bierówka, Niepla – see Figs. 5:2, 3; 6:1), and other regions of central and northern Europe lying further west.

The above-specified complex structures have not been recorded so far in the case of graves dug into barrows and flat cemetery features. They are, therefore, a characteristic of central graves only. This is a different situation than in the North Pontic Area where analogous or sometimes identical structures could be part of both central graves and others secondarily incavated into barrows. The difference between central graves and ones of secondary graves, observable on Małopolska sites, is therefore a sign of discontinuity caused in all probability, by chronological differences. It is plausible to assume that between the time of barrow construction and that of secondary burials usually a noticeable hiatus interposed. At present, it is hard to verify this observation by using absolute dating methods – due to the absence of appropriate data and the insufficient accuracy of radiocarbon dating. A model example confirming the existence of such a hiatus is offered by the results of the dating of graves from a barrow in Gabultów [Fig. 6; Jarosz, Włodarczak 2007: 83, Fig. 5]. Hence, in the course of the first one or two centuries, Małopolska witnessed the rise of ceremonial zones, consisting of barrows, holding, for the most part, single burials. In contrast, such a phase is not observable in the North Pontic Area where a continuity of barrow use, involving secondary graves, is recorded from the very beginning.

One point of similarity in the funerary rites between the systems under comparison, however, is that both orientate central graves mostly along the W-E axis. This principle firmly holds in the group of finds included in the oldest
Fig. 7. Corded Ware culture catacomb graves from western Małopolska (1-3) and the Lublin Upland (4-6): 1-3 – Żerniki Górne (1 – grave 15, 2 – grave 93, 3 – grave 97); 4, 5 – Łąbcze, site 25, barrow 2, graves 3 (4) and 4 (5); 6 – Hubinek, site 4, barrow 1, feature 2. [after Kempisty 1978, Machnik et al. 2009]
CWC horizon in Małopolska and with respect to the central graves of the Dniester-Danube YC. In the case of the CWC, this orientation is connected with the laying of the body on an appropriate side – depending on the sex of the deceased – discussed below. The principle of E-W orientation, however, does not apply to ZC graves contemporary with the older CWC phase.

A special variety of the ‘chamber’ grave is a niche (catacomb) feature. In the 3rd millennium BC, it became a permanent element of the funerary rites of Małopolska Final Neolithic communities (Fig. 7) and could be said to be a dominant grave type among both graves incavated into barrows and others located in flat CWC and ZC cemeteries. So far, only in two confirmed cases was a feature of this type the central grave (Miernów, barrow 2 and Pałczynica, barrow 2).⁵ Now, niche structures are known from three parts of Małopolska. The most numerous cluster and one explored the earliest is located on the left bank of the Vistula River, on the loess soils of western Małopolska and the Sandomierz Upland, which is associated with ZC rituals and those followed by the Kraków-Sandomierz group of the CWC. The second cluster is made up of CWC sites known from the Lublin Upland: from the Sokal Ridge [Fig. 7:4-6; Machnik et al. 2009: 244],⁶ as well as from the eastern part of the Nałęczów Plateau [Lublin-Sławinek: Rejniwicz 2009]. The third cluster was identified only in recent years; it comprises sites from eastern Sub-Carpathia, especially from the Rzeszów Foothills [for instance sites in Mirosin, Święte and Szczytna; Machnik 2011]. In the light of these new discoveries, it can be concluded that also some graves discovered in Sub-Carpathia in previous years had been most likely designed in the manner discussed here (for instance features from Przemyśl and Siedliska), which means that the concept of the catacomb grave – analogous to North Pontic Area features – was adapted to the funerary rites observed in the vast area of south-eastern Poland. This was not – as believed earlier – a local variety, used by Final Neolithic communities only on the left bank of the Vistula, but a more widespread model and a dominating design type in the Late and Final Neolithic.

In spite of these new discoveries, Małopolska is still separated by several hundred kilometres from North Pontic Area sites with catacomb graves, lying further southeast. The closest cluster, a small one though, is found on the middle Prut River. Considering this, two genetic hypotheses have been discussed for a long

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⁵ In terms of design, an analogous feature is also grave 42 from Żerniki Górne [Kempisty 1978: 50, 51]. The similarity here suggests that it was a central barrow grave, too [Włodarczak 2011: 224]. Another central barrow grave was possibly the one from Zielona, designated as feature 2 [see comments below].

⁶ The authors of the publication have identified seven niche features [Machnik et al. 2009: 244]. A review of the published documentation justifies the belief that other graves were designed in the same way, too. Telling examples are offered by graves from barrow 1, Hubinek, site 3 and barrow 2, Łubcz, site 2 [Machnik et al. 2009: 11, 12, 48, Figs. 2:5, 3:1, 34:1]. Hence, on the sites from the Sokal Ridge, the catacomb design was often used and perhaps was the basic type in the case of graves dug into barrows.
Fig. 8. Two generalized conceptions of catacomb graves in Małopolska: older Złota Culture (A, B) and younger Corded Ware culture (C, D). B – Książnice, grave 2/06 [Wilk 2013], D – Malżyce, barrow 1, grave 7. Photo: S. Wilk, P. Włodarczak

time. One assumes a connection to the North Pontic Area, while the other provides for independent local origins of the grave type under discussion. This could have taken place by convergence, with the new general concept of the grave, as an empty chamber holding a dead body, spreading across central Europe. The form of catacomb grave, typical of the younger CWC phases in Małopolska, bears much semblance to features from the North Pontic Area. This is particularly true for the general shape (a clear predominance of oval chambers), position of the entrance pit with respect to the niche (T-shaped layouts clearly dominate) and manner of use (most features hold single burials; only rarely are secondary intrusions into the grave chambers recorded). Similar structures are also characteristic of the CC [Kaiser 2003: 43-45; Ślusarska 2006: 68-71]. What else attracts attention is the

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7 The third hypothesis, tentatively tracing niche graves to the northern Balkans (see unique discoveries of graves in Vučedol), appears rather implausible – at least at the current state of knowledge [Kempisty 1978: 394].
Fig. 9. Corded Ware culture barrow catacomb grave: feature 1 from barrow 2 in Pałecznica [Liguzińska-Kruk 1989]; outline modified according to field documentation kept in the archives, Centre for the Archaeology of Mountains and Uplands IAE PAN, Igloemia
Fig. 10. Grave 2, site 3, Zielona [Włodarczak 2004] – probably a central barrow grave. 1 – fragment of the investigated part of the site with the approximate barrow range; 2, 5 – burial level; 3, 4 – artefacts found at the grave bottom
analogous diversification of catacomb graves in Małopolska and the North Pontic Area, including, for instance, rectangular or oval entrance pits, presence or absence of an entrance corridor and various means of blocking the entrance to the catacomb.

Various types of catacomb features are found in ZC graves [Włodarczak 2008a: 563-566; Witkowska 2013], as well as few known CWC barrow graves. In the case of the former, the difference concerns the very shape of graves (subrectangular chambers dominate), relative orientation of particular structural elements, scale and manner of the use of stones, and, finally, number of bodies and their arrangement (Fig. 8:A, B).

A chronological analysis of Małopolska assemblages indicates that Złota-type catacomb structures are older, which had been part of the funerary rites of Małopolska communities since ca. 2900-2800 BC. Only few CWC graves could be contemporaneous, including the barrow graves mentioned above. Catacomb grave shapes and the manner of their use must have undergone changes in the successive centuries of the 3rd millennium BC. Only after ca. 2600 BC did the classic CWC catacomb grave come to dominate. This already well-established dating of Małopolska grave structures poses difficulties for attempts to genetically trace them to the North Pontic Area. The first problem involves the chronology of peculiar Złota-type structures dated to ca. 2900/2800-2600 BC. For on steppes and forest-steppes, the concept of a YC grave gained popularity at that time. Although analogies between the catacomb graves of the North Pontic Eneolithic and of the ZC are quite close at times (the presence of multiple burials and the orientation of bodies with respect to the chamber entrance), at least a majority of east European features are dated to a considerably earlier period than that to which Małopolska structures are [second half of the 4th millennium BC – Rassamakin 2004]. Hence, it is hard to find good antecedents of Złota graves dated to the early centuries of the 3rd millennium BC.

CWC barrow catacomb graves in their design point to connections with ZC features. Their characteristic element, a long entrance corridor is either horizontal or slightly inclined (Fig. 9). Moreover, the dead buried in barrow graves were not orientated perpendicularly to the principal axis of the feature, as is the case with features dating to the younger CWC phases. It is likely that, apart from Mierńów and Pałecznica, also in Zielona a catacomb grave was discovered which had been covered with a mound [feature 2 – Fig. 10; Włodarczak 2004] of which only a shadow on the ground has been left. In favour of this thesis would argue the grave design and body arrangement. Thus, in the first half of the 3rd millennium BC, most likely ca. 2800-2600 BC, in western Małopolska, two parallel trends in the

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8 In the monograph of the Zielona cemetery, no central grave was identified [Włodarczak 2004]. The barrow, however, was documented as a distinct circular shadow and was the reason for starting rescue investigations on this site. In the light of comparative analyses, it appears reasonable to amend earlier assessments and consider catacomb grave 2 as a central barrow grave.
Fig. 11. Characteristic body arrangements in Corded Ware culture catacomb graves from Małopolska: 1 – Małżyce, barrow 1, grave 7; 2 – Małżyce, barrow 2, grave 12; 3 – Małżyce, barrow 1, grave 4; 4 – Smroków, grave 1. Photo: P. Włodarczak
funerary rites can be observed, both making use of catacomb graves: one derived from the Zloty culture and the other which can be called ‘old cored’. In both cases, the design of features differed from the design of catacomb graves from the younger CWC phases.

*Idea of the burial*

In comparison to the earlier period of the Neolithic, the funerary rites of the Małopolska CWC witnessed a far-reaching unification of burial arrangement as was the case with the YC [Rassamakin 2013]. The unification concerned body arrangement conventions and grave goods. Across south-eastern Poland, as a rule inhumation prevailed. The rite of cremation, recorded in various regions south of the Carpathians [Koško 2001], was adopted also by some CWC groups, for instance, in Bohemia and Moravia [Peška 2004; Šebela 2006: 101-103]. In Małopolska, no clear traces of this new ideology have been found; nor have they been found in any YC and CC cemeteries. In the late 4th and early 3rd millennia BC, in both the North Pontic Area and in the southern part of central Europe, cremation appeared to gain popularity (see Late- and Post-Baden circle as well as Sofievka group). In subsequent centuries, however, a clear turn towards consistent use of inhumation can be observed.

A distinct trait, visible in both regions under comparison, is the care shown in the arrangement of the body with special attention paid to the specific positions of the head, trunk and limbs. When compared to the earlier period, the respective conventions became more uniform, which is seen in clearly fewer recorded alternatives. In Małopolska, the binding rule was to place the corpse in a crouched position (with lower limbs bent at the hip, forming a right or an obtuse angle with the trunk, and at the knee, forming an acute angle with thighs). The supine position dominates (Fig. 11:1, 2, 4) with lower limbs and the head turned to the side. The arrangement of the upper limbs follows consistently specific patterns (Fig. 11:1-4) – usually patterns A-C according to Häusler [1974: 11, Fig. 1; Włodarczak 2006: 61]. A similar trend is also recorded in the North Pontic Area where, in comparison to the earlier Eneolithic period, we witness a considerable reduction of possible variations in rite conventions and the rise of strongly dominant corpse arrangements [Rassamakin 2013: 127-130]. The dead were laid in a crouched position on their back (noticeably more often) or their side (more rarely), i.e. similarly to the Małopolska CWC model. A clear difference, though, is the popularity of the arrangement with flexed lower limbs and knees not directed to the side but up. Furthermore, this burial type is closely associated with the older YC phase and recorded particularly often in central barrow burials. In Małopolska, in contrast, it is practically unknown. The only example of such an arrangement (probably) is grave 2 in Zielona – presumably a central barrow feature [Fig. 10; Włodarczak 2004: 312, Fig. 4].

The arrangement of upper limbs differs between the groups of finds compared here as well. For YC burials, the most characteristic arrangement is type F, fol-
Fig. 12. A burial from catacomb grave 21, site 8, Rudno Górne (unpublished investigations by Krzysztof Tunia). Photo: P. Włodarczak
lowed by types G and I; these arrangements involve the stretching of straight or slightly flexed limbs along the trunk. Such arrangements are only rarely recorded in Małopolska.

A special type of burial in Final Neolithic central European cemeteries is one in which a corpse lies with its knees drawn wide apart – in the so-called ‘frog-like’ arrangement (Fig. 12). Their examples are but few in particular regions; in south-eastern Poland, we know of only five such graves (four are associated with the CWC\(^9\) and one with the Bell Beaker culture; all are located on the left bank of the Vistula). It is difficult to ascertain for certain if the dead buried in these features had their knees pointed up, after bending their legs, or if they were originally drawn apart. Whatever the answer is, the arrangement obviously differed from the pattern followed by local communities. Its uniqueness is supported by the arrangement of upper limbs (type I according to Häusler) – strongly departing from patterns followed in Małopolska. Hence, it is justified to search for any connection between these burials and the customs of YC communities, including the North Pontic Area where many analogies can be found.

The peculiar body arrangement mentioned above is related to the male sex and adulthood of the deceased. This is borne out by finds from other CWC groups [Chochorowski 1976; Schmidt-Thielber 1955]. In terms of orientation with respect to the points of the compass, and the characteristics of grave goods, the Małopolska graves discussed here can be considered local. They are included in the group of well-appointed male burials. Thus, it can be concluded that the peculiar body arrangement, associated with YC environment, had been incorporated into the funerary rites of the Małopolska CWC as an element emphasizing the status of the deceased. As of now, no results of specialist analyses are available that would help determine the origins of the individuals honoured in this way. A similar context is shared by an incidental occurrence of the ‘frog-like arrangement’ in a Bell Beaker culture grave from Samborzec on the Sandomierz Upland [Włodarczak 2008b]. In this feature, only the body arrangement indicates connections to the YC rites. The other characteristics are typical of burials assigned to the eastern branch of the Bell Beaker culture in central Europe.

With the domination of crouched burials, an interesting exception is offered by the central grave (no. 1) in barrow 2, Pałecznica [Liguzińska-Kruk 1989: 117-119]. In a catacomb feature, in a relatively large chamber in comparison to other Małopolska graves (3.7 × 2.9 m), an extended skeleton of an adult man was discovered (Fig. 9:1). This burial is noticeably different from standard Małopolska burials in the catacomb size and body arrangement. For these reasons it is believed to be allochthonous; it has been suggested to be of eastern origin [Kločko, Kośko 2011: 279, 280]. Into the Pałecznica barrow, there were incavated CWC graves that

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\(^9\) Only one of these graves (Żuków, feature 1(2)) has been described in any detail so far [Marciniak 1961]. The others (two niche graves from Rudno Górne and one central barrow grave from Kokmierzów) have been revealed by investigations conducted on western Małopolska loess uplands by K. Tunia but have not been published yet.
referred to the older phase of the Kraków-Sandomierz group [IIIA – Włodarczak
2006], i.e. still to the first half of the 3rd millennium BC.\textsuperscript{10} This narrows the possible chronology of the central grave: it can be associated only with older CWC horizons as well as the phase of Złota-type cemeteries. The body arrangement departs from standards known from Małopolska; the burial was placed at a chamber wall and orientated in the direction marked by the grave entrance. This practice finds analogies in ZC cemeteries where spacious niches were also discovered and gave an impression of being only partially used [Wilk 2013, Fig. 39]. The extended position of the deceased, however, is unique. In the CWC complex, there is only one known region of the concentration of graves (also barrow ones) with a similar arrangement of bodies: between the upper Boh and middle Dnieper rivers [Artemenko 1967: 60–64; Krywalcewicz 2007: 192, Plate 62].

Suggested by Artemenko, the chronological position of these burials was criticised by both Polish and Ukrainian researchers [Bunyatyan 2005: 27-34]. Its principal underpinning was the dating of a group of features with extended burials to the initial stage of the Middle Dnieper culture. With suitable data lacking, it is now difficult to determine the time range when the discussed body arrangement was practised. What seems important, though, is the suggestion that some materials of the Middle Dnieper culture mentioned here point to connections to the Inhul CC. The suggestion is supported by analogies in the style of artefacts [Bratchenko 2001: 49; Bunyatyan 2005: 34]. Absolute age determinations date Inhul CC finds to 2400-2200 BC [Kaiser 2009: 66], i.e. slightly later than the Palecznica feature. Assuming that there is a connection between the Małopolska grave and graves on the steppes of the right-bank Ukraine, we encounter a difficulty in synchronizing the phenomena under discussion. It must be observed, however, in this context that the problem of the inconsistency of absolute dating with the time when Inhul CC traits appeared in other cultural groups is encountered in other analyses, too [Gey 2011: 7]. Perhaps, this might be a result of the absence of the absolute age determinations of Inhul graves, assigned to the early CC phase [Telegin et al. 2003: 163-166].

Sprinkling bodies with ochre, a practice characteristic of the rites of North Pontic Early Bronze cultures, is found in Małopolska in single features only. Only once was it observed on the left bank of the Vistula: Koniusza, site 1, grave 3 [Tunia 1979: 50]. It has not been recorded in ZC cemeteries yet, while on the Lublin Upland the sprinkling of bodies with ochre has been recorded recently in the course of the investigations of a barrow on site 2, Hubinek, the Sokal Ridge.\textsuperscript{11} Especially large amounts of ochre covered the skeleton from feature 9, encircled by a ditch. More often than in Małopolska, ochre was found in CWC graves in western

\textsuperscript{10} Recently, for grave 7 from this barrow, a radiocarbon date has been obtained: 4005±43 BP (Ua-48900), or 2571-2475 BC (1σ; calibrated using OxCal software v4.2.4.)

\textsuperscript{11} Unpublished investigations by J. Bagińska and J. Libera.
Ukraine, i.e. areas closer to the North Pontic Area [Machnik 1979a: 55, 60]. Still more numerous, graves with ochre are found in Middle Dnieper culture cemeteries [Artemenko 1967: 61, 82]. In Małopolska, therefore, instances of its use merit special attention – as a distinctly foreign element in the local ritual.

**Idea of grave goods**

Most Małopolska CWC and ZC graves had goods found in them – contrary to the North Pontic YC where the incidence of graves with goods is distinctly lower. This fact alone indicates a clear difference between the systems of funerary behaviour under comparison. In addition, differences concern also typical grave goods (principal types of pottery). With the lapse of centuries, however, customs in both zones grew alike to a degree. This is shown by the qualitative description of goods in the graves of the CC, late (‘Budzhak’) phase of the YC in the Dniester-Danube zone and late phase of the CWC in Małopolska (Kraków-Sandomierz group). The convergence is also visible in graves stressing selected crafts connected probably with the chosen dead. Such graves began to emerge since about the middle of the 3rd millennium BC. In particular, inventories comprising weapons (including battle-axes and arrowheads) and tool kits merit attention. Such graves rich in goods represent only a small share. Important comparisons with the North Pontic Area are drawn, using categories of goods, newly appeared in the Final Neolithic, included in grave inventories such as (a) ceramic vessels, (b) stone battle-axes, (c) metal artefacts, (d) bone ornaments, and (e) flint artefacts. Only single artefacts from Małopolska graves, however, can be viewed as originating with the YC/CC circle.

What attracts particular attention in the case of CWC barrow graves in Małopolska is the high incidence of two kinds of grave goods: ceramic amphorae and flint blade knives. Relatively frequent goods include also beakers and stone battle-axes. In this respect, the situation is analogous to that in barrows in western Ukraine [Sulimirski 1968; Machnik 1979a] and at the same time different from the picture recorded in many other regions of the CWC complex (including in the Middle Dnieper culture). The foremost difference is the significant role played by amphorae in funerary rites. Amphorae are often the only kind of pottery found in graves or they form assemblages together with beakers. Their presence in funerary rites in this area is not an absolute novelty – considering the role of similar vessels in the GAC burial custom. Nevertheless, attention is drawn by the barrow context of burials with amphorae, lacking any older antecedents in central Europe. Such a context, however, is recorded in the North Pontic Area: in western Late Tripolie groups, especially in the Usatovo group [see Dergachev, Manzura 1991, examples in plates] and – slightly later – in the YC, too [Ivanova et al. 2014].

Squat amphorae with two handles on the maximum protrusion of the belly appear also in ZC graves and some display the traits of ‘type A vessels’ associated with the oldest CWC horizon [Machnik 1966; Krzak 1976]. Their size varies although medium and large ones dominate. In terms of style, too, they find good equivalents in the Dniester-Danube zone, dated to the late 4th and early 3rd millennia BC.
Fig. 13. Selection of Małopolska Corded Ware culture stone battle-axes: 1 – Tarnawce; 2 – Sierakosć; 3 – Wójeczka, grave 2; 4 – Smroków, grave 1; 5 – Miernów, barrow 2, grave 2; 6 – Wygnańce; 7 – Wierszczycza, site 1, barrow 1, grave 2; 8 – Chutecz; 9 – Kichary Nowe, grave 26; 10 – Malice Kościelne, grave 30; 11 – Zielona, grave 3; 12 – Harta; 13 – Klekacz, site 10, barrow 1, grave 1. [after various authors]
As with amphorae, also other artefact categories found in Małopolska CWC graves may testify to a typological connection with goods from the North Pontic Area. The connection lies above all in a similar concept without documenting closer relationships by imports from areas settled by YC-CC communities. The relationships, however, merit attention because they are more numerous and closer than those with CWC groups located further west. A good example is offered by stone battle-axes, that is insignia-type objects, found in burials of men in central Europe. Taking into account the propositions of the chronology of the stylistic-typological changes of such goods in Małopolska [Machnik 1966; Włodarczak 2006]\textsuperscript{12}, it can be seen that the concept of type A battle-axe and its modifications were soon abandoned. The path of typological development is thus less smooth than, for example, is the case with battle-axes in northern Europe. There emerge distinctly different forms such as Ślęża type battle-axes or specimens of type H, the most characteristic of Małopolska [Włodarczak 2006: 35, 36; these are at the same time type II battle-axes according to Machnik 1966: 42]. About the middle of the 3rd millennium BC, the vast majority of these artefacts are made up of stocky forms with a poorly marked or entirely unmarked butt (Fig. 13:1-6). In terms of general proportions, they are close to battle-axes known from the late YC phase but above all from the CC. A special aspect of this connotation is Inhul-type battle-axes recently identified in the Vistula drainage basin and in south-eastern Poland as well [Klośko, Kośko 2011: 270-273].

In the descriptions of the changeability of Małopolska battle-axes, a conception of linear typological development has dominated so far whereby general European type A was claimed to be its initial link [Machnik 1966; Valde-Nowak 1988; Bronicki 1991; Włodarczak 2006]. Moreover, as a factor inducing changes was considered an effort to utilize older damaged forms [Bronicki, Kadrow 1998], producing less refined, short and stocky specimens. A significant, perhaps decisive cause of changes in the appearance of battle-axes could have been new inspirations from neighbouring cultural environments.

Raw-material analyses showed that many Małopolska artefacts had been distributed over long distances (serpentinite and basalt goods). Battle-axes were made according to prescribed styles, which differed in particular regions of the CWC complex (for instance, distribution of faceted specimens or Ślęża type battle-axes). The described distinct stylistic change in the shape of Małopolska battle-axes may testify to the rise in the importance of relations with eastern European communities, without being a simple effect of the typological evolution of older forms. Considering the role of battle-axes as insignia-type objects (for which the context

\textsuperscript{12} These propositions are still not supported by any strong evidence in the form of accurately dated assemblages or suggestive stratigraphic sequences. Only the dating of type A battle-axes to the development of the ZC and an older CWC phase is well-grounded. The time when other types emerged is still hard to precisely determine; this concerns \textit{inter alia} Ślęża type battle-axes and those of types D, F and H characteristic of Małopolska [Włodarczak 2006].
of their deposition in graves argues), one can assume that the choice of form and raw material of which they were made did matter as well. The growing popularity of squat forms (including Inhul-style battle-axes) may be a sign of the importance of contacts with eastern European communities for changes in stylistic preferences shared by Małopolska CWC populations. An interesting corroboration of the stylistic relationship is provided by the results of petrographic analyses of battle-axes from eastern Małopolska. The results show that for the most part they come from Volhynia [Gazda 2009].

Squat type-H battle-axes are known mostly from niche graves dated to about the middle of the 3rd millennium BC. In earlier assemblages, including barrow graves, larger and more slender forms are more numerous. There are also specimens resembling forms known from YC graves [Fig. 13:13; Subbotin 2003, Plate 11-14]. Thus, between the North Pontic Area and Małopolska, there is some parallelism in the chronology of stylistic changes affecting stone battle-axes. Specifically, at the younger stage of the CWC development, these tools take on shapes similar to the artefacts known from CC graves.

A separate question concerns the presence of Ślęża type battle-axes in Małopolska CWC graves. They are encountered chiefly in the assemblages of the Kraków-Sandomierz CWC group (8 graves), while only a single specimen comes from the east (Siedliska, Przemysł District). Raw-material analyses show that these artefacts were made of rocks originating from Silesia, mainly serpentinite [Wojciechowski 1988]. Although it is possible to point to stylistic connections between these goods and the output of eastern European communities [including copper axes; Włodarczak 2010: 311, 315], the location of their manufacture rules out any direct relations with the North Pontic Area. One of the leading types of Małopolska battle-axes demonstrates, therefore, a different direction of relations. Consequently, it can be assumed that ca. 2600-2400 BC, Małopolska stone battle-axes had two major models: Ślęża type and squat type H (with eastern European connections suggested here). The North Pontic model, of interest here, is thus an alternative of increasing popularity and dominant in the Early Bronze Age in Małopolska (to which Mierzanowice culture battle-axes testify).

Compared to other central European regions, Małopolska, in terms of composition of CWC grave assemblages, has the highest share of metal artefacts. These are mostly ornaments (chiefly earrings and copper wire necklaces) and rare tools as well (awl, copper punches and in a single instance – a shaft-hole axe). Metal goods are found in all Małopolska local groups, with their highest share in grave inventories being recorded in the Kraków-Sandomierz group (14.1%). The scale of the phenomenon, as well as typological assessments of finds, points clearly to connections with eastern Europe, including above all areas settled by the Middle Dnieper culture and the YC. Nevertheless, the local character of metalworking is emphasized as well. It is noticeable in the only more numerous group of finds: spiral earrings. In south-eastern Poland, a dominant position is held by objects made
of thin wire, with three or four coils, one end flattened and the other sharpened [Fig. 14:1-11; Kempisty 1982: 68; Włodarczak 2006: 40, 41]. These are made mostly of copper and in one case of gold (Kichary Nowe, grave 29) and differ from ornaments found in the graves of the North Pontic YC [Subbotin 2003: 227-229, Plate 44-46], and the Middle Dnieper culture as well [Artemenko 1967: 37]. Still different are also earrings discovered in YC graves in the southern Carpathians and northern Balkans [Nikolova 1999: 306, 307].

What needs to be emphasized, however, is the consistency of the overall concept of this special kind of ornaments and the way they were deposited in graves
(above all male but female as well). Compared to single assemblages known from other CWC regions, a large number of graves with earrings found in south-eastern Poland stands out (42 ornaments in 24 graves). Hence, it seems justified to point to a stylistic inspiration with regard to body ornamentation taken from YC communities by the groups of the south-eastern branch of the CWC complex. In the category of ornaments, this relationship is corroborated by the presence of analogous bone goods in the Małopolska CWC and in YC and CC graves, including mainly oval beads made from red-deer teeth (including so-called ‘butterfly pendants’) and pendants made from dog, wolf or fox teeth [Kaiser 2003: 209, Fig. 76:2-10; Subbotin 2003: 221, 222, Plate 38 and 39; Włodarczak 2006, Plate XXVII:10-16]. Such ornaments are also found in ZC graves [Krzak 1976: 148, Fig. 70:b, d], which have not yielded so far any analogous copper earrings discussed above. In terms of chronology, a conclusion can be drawn that from ca. 2600 to 2400 BC, when cemeteries with niche graves dominated, there were similarities in ornament kinds between the YC, CC and CWC, with metal earrings being the most telling example.

Other forms of metal artefacts also resemble goods known from the North Pontic Area and areas settled by Middle Dnieper culture communities. These are for instance: necklaces [Fig. 14:12, 13; four examples from Małopolska; Artemenko 1967: 33, Fig. 22:3-6; Subbotin 2003: 226, Plate 43:21, 23], a diadem of bent plates unearthed in unpublished grave 5, Kocmyrzów, Kraków District [Subbotin 2003: 231, Plate 48:38-50], and a small knife-like form from grave 138, Żerniki Górne [Włodarczak 2006, Plate XCI: 6]. Moreover, as in YC-CC graves, also in Final Neolithic Małopolska graves holding male burials, there were copper awls/punches/fabricators discovered (7 instances – Fig. 14:14-16).

In the late 4th and early 3rd millennia BC, noticeable standardization of metal goods manufacturing took place in the North Pontic Area and the Carpathian Basin and Balkans, which has found expression in the conception of a ‘Circum-Pontic metallurgical province’ [Chernykh 1978b]. The presence of similar artefacts both east and south of Małopolska makes it difficult to trace how metal goods circulated in the area under discussion. A related problem involves the role of migrating YC communities and the Pre-Yamnaya phase in the spreading of new goods in the drainage basin of the middle and lower Danube. Assuming that their role was decisive and adopting the dating of these processes which makes them precede the rise of the CWC [prior to ca. 2800 BC; Horváth et al. 2013: 166, Tab. 4], it is plausible to claim that the style of particular Małopolska Final Neolithic goods (dated to ca. 2600-2400 BC) could have been inspired by various neighbouring cultural circles from both the south (primarily from the Carpathian Basin) and the east. Observing the multi-directional relations of Final Neolithic CWC communities, it cannot be ruled out that particular metal goods had different origins. Taking the set of Małopolska artefacts as a single whole, one may note that the traits closest to it

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13 Investigations by K. Tunia.
are shown by finds from the circle of the Middle Dnieper culture. This assessment helps to include the metalworking of south-eastern Poland in a broader complex together with the North Pontic Area.

In the context of connections with Early Bronze Pontic Area cultures, questions of flint working appear to be significant, too. In Małopolska, the share of flint artefacts in grave inventories is high when compared to that in other regions and what attracts attention is the diversity of recorded categories (axes, arrowheads, various blade and flake tools, blanks). The foremost position in grave goods is held by stone axes, especially numerous in the assemblages belonging to CWC younger phases. Many finds are made of regular knife insets fashioned from blades or slender flakes. Neither of these artefacts is found often among goods in YC and CC graves; if they are, they are taken to be evidence of relations with GAC/CWC communities [Razumov 2011: 145-147]. Of primary importance in this context was the fact that North Pontic Area communities used high quality flint materials from Volhynia and western Podolia, i.e. regions settled by the two last-named cultural groups.

In Final Neolithic grave inventories from Małopolska, flint arrowheads are found. In the first half of the 3rd millennium BC, they are recorded in CWC barrow graves (rarely) and also in ZC cemeteries [quite often: 162 items from 48 graves – Witkowska 2013]. Their incidence grows around 2600/2500 BC. The same period witnesses also rich sets of points (the largest – from grave 15; Wilczyce – comprises 30 items). The latter are related to the burials of adult men; as a rule they are a component of rich and varied inventories. Equipping the dead with archer’s gear is a new tradition in Małopolska – graves with arrowheads are not encountered either in the GAC circle or in the Baden culture. Likewise, the tradition is not observed either in western or northern CWC regions (from there, we know only of single features with arrowheads). In these areas, archer’s equipment became a frequent component of grave inventories only after ca. 2400 BC and is associated with assemblages displaying the tradition of the Bell Beaker culture. Thus, Małopolska inventories with arrowheads are older than such assemblages by about 200-300 years.

In the early centuries of the 3rd millennium BC, Małopolska grave assemblages are dominated by triangular bifacial arrowheads (Fig. 15:1-3, 6-10, 12-16, 20, 21). They absolutely dominate in ZC inventories [82%; Witkowska 2013]. Next to them, there are also shallow-hollow-based arrowheads (Fig. 15:4, 5, 11, 17, 19, 22-33). The latter dominate in a small group of arrowheads coming from barrow graves [Niezabitowska-Wiśniewska, Wiśniewski 2011: 341, Fig. 11:1-6]. Whereas in ca. 2600-2400 BC, domination is won by deep-hollow-based arrowheads with the hollows being either triangular or arched-rounded (Fig. 15:34-68; 19:6-15). It is this type of artefacts that are part of rich assemblages (of 6-30 items). Shallow-hollow-based arrowheads are few while triangular ones are encountered only incidentally. Only a small portion of CWC arrowheads was found in the midst of
Fig. 15. Arrowheads from Małopolska Decline Neolithic graves: 1 – Sandomierz; 2-6 – Zlota, “Nad Wawrem”, grave 9; 7-9 – Zlota, “Nad Wawrem”, grave 28; 10-13, 17-21 – Zlota, “Nad Wawrem”, grave 97; 14-16 – Samborzec, grave 12; 22-27 – Ułów, barrow 1, grave 95/1; 28-33 – Bierówka, barrow B, feature 4a; 34-59 – Mydlów, grave 2; 60-68 – Zielona, grave 3. [after various authors]
skeleton bones, which could be evidence of injuries they inflicted. Points which caused the death or injury of buried individuals represent a considerably higher percentage in the case of YC graves [Razumow 2011: 77]. Such points are also often found in ZC graves, but in this case the nature of the funerary ritual (frequent bone redepositions) prevents certain identification. Assemblages appearing at CWC burials after ca. 2600 BC, found in the greatest number in the Kraków-Sandomierz group, are thus of a clearly different nature: they are grave goods of the deceased. Furthermore, a high share of graves with projectile-point assemblages in the group of male burials testifies to the great importance attached to archer’s equipment in the rituals of Małopolska communities, representing a younger phase of the Final Neolithic (CWC but also the Bell Beaker culture).

While graves with projectile-point assemblages are very rare in the YC, they are encountered much more often in CC features [Razumov 2011: 78-82]. They represent rich grave goods deposited in adult-male graves together with other weapons (above all battle-axes), tools and blanks. There is a clear analogy observable here with rich inventories known from the Kraków-Sandomierz group and with newly discovered burials from the vicinity of Jarosław (Mirocin, Szczytyna). Małopolska CWC assemblages with projectile-point sets are at the same time similar to Dnieper culture finds. Specifically, a striking typological similarity is observed in the case of points forming part of the richest grave goods [Artemenko 1967: 85, Fig. 47]. A corroborate of this observation comes from an analogous type of arrowheads recorded in a Małopolska Middle Dnieper culture grave in Młodów-Zakącie (Fig. 19:6-15). After ca. 2600 BC, arrowheads from rich inventories show technological advancement and are aesthetically refined. An analogous change takes place in the North Pontic Area as well.

The changes of Małopolska projectile-point forms (from triangular to hollow-based) are a consequence of the increasing effectiveness of archer’s equipment. A similar evolution affected points recorded in the Balkans and the Aegean [Ivanova 2008: 54, 55]. What is more, it can be assumed that the spreading of new models of weapons both north and south of the Carpathians is related to the ties with North Pontic Area communities. What set Małopolska apart was a rather early inclusion of arrowheads in the group of principal male-grave goods – ca. 2800 BC for ZC graves. Their incidence grew after ca. 2600 BC in the assemblages of younger CWC phases and in the Middle Dnieper culture. Similarly – in a younger YC phase – assemblages with sets of arrowheads appeared in the YC [Razumow 2011: 77].

An issue concerning relations with the North Pontic Area is the emergence of graves of specialists – ‘craftsmen’ [ Bátor 2006: 55-120]. Features suggestive of specialized activity by the deceased are above all related to the end of the Final Neolithic (Bell Beaker culture) and the beginnings of the Bronze Age in central Europe. In the case of Małopolska CWC, there is only one type of inventory suggestive of specialized manufacturing. Niche graves have yielded sets of bone,
Fig. 16. A typical richly-appointed burial of a male adult from a Malopolska Corded Ware culture catacomb grave: Malżyce, barrow 2, grave 10. [Jarosz et al. 2009]
antler and copper tools, most likely used in flint working, which are sometimes accompanied by depots of flakes and splintered pieces. A subgroup that stands out consists of graves of arrowhead makers [Budziszewski, Tunia 2000]. A constant trait observed in these features is the co-occurrence of tools and weapons (arrowheads and battle-axes) with other grave goods (vessels and ornaments) present as well. Elements of tool kits therefore are present in the graves of the GAC, ZC, and older, ‘barrow’ phase of the CWC already in the first half of the 3rd millennium BC. In the younger phase of the CWC importantly, the kits are visibly enriched and standardized. Inventories associated with specialists – flint workers are also known in the YC and CC [Razumov 2011: 121-128]. While in comparison with Małopolska assemblages their composition is sometimes different [Razumov 2011: 147, 148], the overall principle is similar. In the North Pontic Area, there are also sets of artefacts indicating other specializations.

Hence, an impression is conveyed that the ritual of Małopolska CWC is more about stressing the ‘male’ attributes of the deceased and less about indicating specific spheres of their earthly activity (Fig. 16). The graves of specialists-craftsmen in YC-CC barrow cemeteries are, however, exceptional and represent a small percentage of all features. More often – as is the case in Małopolska – there are graves equipped in weapons (male goods). The qualitative analysis of grave goods does not, therefore, argue in favour of any clear ideological differences between the systems of the Małopolska CWC and YC-CC. A similar accent – distinguishing a special class of male graves with weapons and tool kits – indicates the possibility of a common inspiration of belief systems in both cultural environments.

3. NEW DISCOVERIES

A new contribution to the discussion of relations with YC-CC communities has been made by recent discoveries in the vicinity of Jarosław, Rzeszów Foothills, in the course of rescue investigations preceding the construction of a motorway. In the area of the culmination of local uplands, a discovery was made of a group of CWC cemeteries; the most important are: Mirocin, sites 24 and 26, Szczytna, sites 5 and 6, and Święte, sites 11 and 15. The cemeteries have not been fully published yet – we know only their preliminary and catalogue descriptions [Czopek 2011; Machnik 2011]. A more detailed description has been published only of a grave especially interesting for the questions discussed here, namely feature 1149B, site 11, Święte [Kośko et al. 2012].

Święte, site 11, grave 1149 and feature 1149B

Grave 1149 in Święte was a classic Małopolska niche feature with the de-
Fig. 17. Artefacts showing Yarmaya culture traits retrieved from Corded Ware culture cemeteries. 1 – Koniusza, site 1, from a destroyed grave; 2 – Balice; 3 – Święte, site 11, feature 1149B. [after Jarosz, Machnik 2000; Kośko et al. 2012; Tunia 1979]
ceased (an adult man) arranged and orientated in a manner typical of local customs and grave goods having a typical qualitative composition. Above the niche, a pointed-base pot was found, connected without doubt with North Pontic Area communities (Fig. 17:3). According to a probable interpretation offered by the authors of the publication, the pot was found in a small pit of a sacrificial nature (feature 1149B) connected to the grave (i.e. from a so-called trizna or funeral festivity). In the immediate neighbourhood of the feature, no traces of a barrow have been found, nor any finds related to other prehistoric periods. The potential presence of a barrow is not supported by the location of three CWC graves, making up a rather loose cluster [Kośko et al. 2012: 69, Fig. 2]. There is no feature showing the characteristics of a barrow grave either.

Sacrificial deposits located outside a feature holding the body are only rarely found in south-eastern Poland. Finds of single vessels in small pits were recorded in several western Malopolska barrows (Koniusza, Malżyce and Palecznica). Whereas in Carpathian Foothill barrows, vessels were recorded above the burial level [in graves in Średnia, Dynowskie Foothills – Machnik, Sosnowska 1996; 1998]. Moreover, in CWC cemeteries, besides graves, there are also other structures (including hearths and simple furnaces), related to some unspecified funerary rites. The complex of features 1149A and 1149B in Święte is thus a manifestation of a more common custom of carrying out manipulations not only at the very burial but also in the immediate surroundings of its deposition. This is also a reflection of the inventory of funerary behaviour of YC-CC communities.

The vessel from feature 1149B shows stylistic and technological connections to pottery recorded in the north-western YC variety and finds best analogies on sites located between the Boh and Dnieper rivers, including above all the forest-steppe [Kośko et al. 2012: 68-73] and the north of the steppe. Good examples are finds from the vicinity of Uman [Bunyatyan, Nikolova 2010: 39-42], from the middle Inhulets River [Melnik, Steblyna 2013: 45, Fig. 30:1-3, 5, 19] or from Kirovohrad [Nikolova 2012: 22, Fig. 11:2]. A particularly interesting situation is implied by the presence of pots having similar typological and technological traits in a cluster of barrows in the Lypovets Region, on the left bank of the middle Boh River, including Jackowica [actually Dolinka; Bydłowski 1905, Plate V] and Nowosiółki [Głosik 1962, Plate XXV: 2]. The cluster was found to hold graves displaying the traits of both the YC and Middle Dnieper culture. Although the question of chronological relationships between the features as well as entire barrows associated with the cultures named here still remain underspecified, it is very likely that there was a zone within the CWC complex (together with the Middle Dnieper ‘branch’) where contacts with YC/CC communities were particularly intensive. The contacts are borne out by the discoveries of many goods (including pottery), associated with the last-mentioned cultural environments.

The pot from Święte is an exceptional find. In the group of ZC and CWC finds under discussion, there are only two other vessels showing traits strongly indica-
Fig. 18. Koniusza, Proszowice District, site 1. Bowl from a destroyed grave. Photo: E. Włodarczak
tive of their origin from the YC-CC circle. One of them was retrieved from barrow VII in Balice. It is a type of small incense burner with horizontally cut-off and thickened lip, found in an unclear stratigraphic contest [Fig. 17:2; Jarosz, Machnik 2000: 114, Fig. 4:a]. Similar forms are present in YC assemblages from the North Pontic Area; they differ, however, from typical CC censers [Kaiser 2013: 145-148]. The other artefact is a bowl with a thickened rim recovered from a destroyed grave in Koniusza [Fig. 17:1; Tunia 1979: 72, Fig. 20]. It has already been associated with the North Pontic Area [Machnik 1997b: 163, 164].

No vessel showing YC/CC traits has been found so far in a definitive assemblage together with ZC or CWC artefacts. It can only be presumed that the context of their deposition was analogous to that of GAC and CWC vessels discovered in the North Pontic Area [Ivanova et al. 2014] – meaning they were incorporated into local rituals.

**Szczytna, site 6, grave 4**

A key feature for the present discussion, niche grave 4, site 6, Szczytna, has rich grave goods [Czopek 2011: 243-251; not been fully published yet]. Typological assessments help date it to the middle of the 3rd millennium BC. Its exceptionally rich inventory comprises a set of copper goods, including a necklace, shaft-hole axe with a one-sided cutting edge, two punches and three earrings. These artefacts for the most part have no close analogies in CWC materials from Małopolska. Only the necklace represents a type of ornament known from several other graves on the Małopolska Upland and the Sokal Ridge. The other objects have better counterparts in adjacent lands, including the North Pontic Area. A type of copper earring is a case in point [Czopek 2011: 251, Fig. 64.18]. It differs from forms characteristic of Małopolska assemblages, ones made of thin wire with one end flattened and the other sharpened. Whereas, ornaments in the type of Szczytna earrings, relatively thick in cross-section and made of various non-ferrous metals are often found in YC graves both on the Black Sea and in the Carpathian Basin, but are not particularly characteristic of this culture [Nikolova 1999: 305-307, Fig. 15.7]. Neither the copper punches of the Szczytna tool type have been known from Małopolska CWC graves so far. A similar category of goods comprises pointed tools (‘awls’), retrieved from two graves in western Małopolska [Włodarczak 2006: 40].

A unique component of the Szczytna grave goods, a copper shaft-hole axe is an exceptional find on the scale of central Europe. Some of its traits (a flat upper surface and only a slightly marked proximal part) point to a similarity with some artefacts discovered in the well-known deposit from Válcele (Baniabíc), Transylvania [Bátora 2003: 14, Fig. 11]. Above all, however, the shaft-hole axe shows affinities with forms included by V.I. Klochkov in the Podlissja type [2001b: 247] to which he also classified two other Sub-Carpathian shaft-hole axes: from Munina and Rudna Mała [Gedl 2000]. Typologically close forms are encountered in western Ukraine, in areas settled by the CWC, including the Middle Dnieper culture. Some specimens have fluted butts, which suggests that they ought to be dated to
Fig. 19. Młodów-Zakącie. Inventory of a damaged grave [Machnik, Pilch 1997]
a later period than the beginning of the 3rd millennium BC [Klochko 2001b: 248, Fig. 5:6, 7; 256, Fig. 10:7].

In the Szczytna grave, the copper shaft-hole axe was deposited in a manner analogous to that of stone battle-axes. Interestingly enough, copper one-sided cutting-edge shaft-hole axes are found in a funeral context in the North Pontic Area, unlike south of the Carpathians where most artefacts of this type are deposits (‘hoards’) and stray finds [Bátora 2003: 2, Fig. 1; Hansen 2009: 149-155; Szeverényi 2013: 666, 667]. The finds of metal shaft-hole axes in the CWC circle – as shown by the case of Szczytna – are related to the funeral context, too. A corroboration comes from the find of this type of artefact in grave 1, barrow 10, in a Middle Dnieper culture cemetery, Khodosovich, ‘Moshka’ [Artemenko 1967: 30].

The Szczytna assemblage of metal goods indicates, thus, a connection with eastern Europe, perhaps with the North Pontic Area. Although at that time (around the middle of the 3rd millennium BC) similar types of goods were already present south of the Carpathians, the best counterparts and closer analogous contexts of discoveries are found in the circle of ‘steppe’ cultures, especially in the Middle Dnieper culture. This connection is not accompanied by other clearly extraneous traits. On the contrary, grave design, body arrangement, and pottery and flint grave goods are typical of the Sub-Carpathian CWC. The Szczytna find considerably expands the scope of connections with eastern Europe described in the preceding section and those concerning the assortment of metal goods in Małopolska graves.

4. QUESTION OF CHRONOLOGY

In the last twenty years, owing to obtained radiocarbon dates, important findings have been made, concerning the chronology of Małopolska Late and Final Neolithic cemeteries. The time frame of assemblages associated with the CWC circle has been set with utmost probability at ca. 2800/2700-2400/2300 BC [Włodarczak 2013a: 381]. To the period of 2600-2400 BC, Kraków-Sandomierz group assemblages were dated, which corresponds to the time when the classic Małopolska catacomb design was used in the CWC funerary ritual. In an earlier period (ca. 2800/2700-2600 BC), a dominant ritual provided for the construction and secondary use of barrows [Jarosz, Włodarczak 2007] and Złota-type niche graves. ZC cemeteries are dated to ca. 2900/2800-2600 BC [Włodarczak 2008a; 2013; Wilk 2013]. Hence, their age corresponds to both the oldest CWC barrows (and in general to the older phase of this culture) and the younger phase of the Małopolska GAC [Włodarczak, Przybyła 2013: 235-240].
A still difficult problem is posed by the possibility of dating the youngest CWC barrows to the 2nd half of the 3rd millennium BC. This age bracket is indicated by single radiocarbon determinations, for instance, for barrows in Krajowice, Łukawica [Machnik, Ścibior 1991: 50, Fig. 2] or Bykiv, Ukraine [Machnik et al. 2006a: 222, Fig. 21]. This possibility must be verified by obtaining new data, corroborating the results that have been produced so far.

The suggested dating of CWC assemblages relies above all on determinations supplied, using the AMS, by the Poznań Radiocarbon Laboratory in recent years. The acceptance of all determinations obtained earlier [Machnik, Ścibior 1991; Włodarczak 2001] produced the conceptions of an early dating of the oldest CWC stage (to the late 4th and early 3rd millennia BC) and the suggestions that some graves bearing the classic Małopolska CWC niche design were of an early date [Furholt 2003]. The acceptance of all determinations in order to mark divisions in the development of the cultural phenomena under discussion is, on the one hand, controversial and, on the other, does not yield easily to objective criticism. At present, the only way to solve the problem is to attempt to verify controversial radiocarbon age determinations [Goslar, Kośko 2011; Włodarczak 2009]. The same problems plague the determinations of absolute age, concerning materials from the North Pontic Area [Rassamakin, Nikolova 2008: 60-67].

The dating proposal mentioned above would mean that Małopolska ZC assemblages and those belonging to the older phase of the CWC are contemporary with the early and classic stages of YC varieties distinguished earlier (north-western and south-western) – in agreement with the latest proposals of Ukrainian researchers [Rassamakin, Nikolova 2008; Buniatian, Nikolova 2010; Ivanova 2013]. In this period, most of the barrow cemeteries were built in south-eastern Poland. Whereas, the younger CWC phase (after ca. 2600/2500 BC) corresponds to the late YC phase (‘Budzhal’ phase in the case of the south-western variety of this culture) and the assemblages of the early CC phase [Kaiser 2009: 65]. The oldest stage of this last-mentioned culture, however, continues to pose difficulties in its timing in the western portion of its range, in particular west of the Inhul cluster, i.e. in the neighbourhood of the CWC settlement.

Attempts to synchronize central European and North Pontic chronologies encounter difficulties around 2600-2400 BC, i.e. when younger CWC groups were developing, including the Kraków-Sandomierz group. The moment of a major change in the funerary rituals and a number of innovations in material culture were synchronized above with analogous changes in North Pontic Area communities and with the origins of the CC complex. However, the proposals of this culture’s chronology have tentatively dated it to ca. 2400-2000 BC – at least with respect to most regional groups on the right bank of the Dnieper [Kaiser 2009: 66]. Although there are older age determinations for the Inhul CC, corresponding to the age of CWC catacomb graves [Telegin et al. 2003, Tab. 2], the data available now do not support building a credible sequence. Here, the main obstacle is the unavailability
of absolute age determinations mentioned earlier for graves associated with the older phases of the Inhul CC. Hence, it cannot be ruled out that the inception of this group falls on the years close to or even slightly earlier than the younger CWC phase in Małopolska (ca. 2600-2500 BC).

5. MAŁOPOLSKA – VOLHYNIA – DNIEPER AREA RELATION

The discovery of a grave in Młodów-Zakącie [Fig. 19, Machnik, Pilch 1997] and the investigations of barrows on the Sokal Ridge have induced Jan Machnik to suggest thesis providing for the migrations of small Middle Dnieper culture population groups. Supposedly, this was the reason for the ‘syncretisation’ of material culture in south-eastern Poland [Machnik 1999; Machnik et al. 2001; 2009]. Pottery showing traits of this culture has been documented recently also in assemblages from Sub-Carpathia [Machnik 2011: 63]. The first results of radiocarbon dating obtained for graves with ‘Middle Dnieper’ pottery underlay an interpretation, assuming a relatively short phase of infiltration by eastern European populations [2540-2490 BC; Kudrow 2003: 243]. The accumulating pool of references recorded throughout Małopolska and ever more numerous discoveries in Volhynia [Bunyatyan, Samolyuk 2009] may, however, indicate a slightly longer period of contacts and underscore the significance of cultural ties between south-eastern Poland and the Middle Dnieper Area, including western Ukraine lying in between. Both pottery and other artefacts that may be related to the Middle Dnieper culture environment (metal and stone goods as well as ornaments described above) were deposited in graves arranged according to the rites of the Małopolska CWC. Besides the case of grave 1 in Palecznica, described above, no burials have been recorded that would obviously breach local rituals. Hence, it can be concluded that CWC groups in south-eastern Poland entered a phase of the same stylistic inspirations that guided communities settling Volhynia and the Middle Dnieper Area. A factor conducive to this unification was certainly the import of major raw materials from the last-mentioned areas (metals, rocks for making battle-axes, flints).

Relying solely on the presence of Middle Dnieper beakers in Małopolska graves, it is not feasible to assess the scale of population movements from Ukraine to Małopolska. For such vessels have never been found in the context of a funerary ritual different from the model followed by the local communities of the Final Neolithic CWC. Even the Młodów-Zakącie inventory cited above in terms of quality is characteristic of the Małopolska CWC and could have come from a destroyed grave showing local traits.
Although the Małopolska-Volhynia-Dnieper area relation is a significant cultural connection around the middle of the 3rd millennium BC, it does not help to explain the rise of the niche grave design, an important element of funerary rites, in Małopolska. Both graves representing the older stage of the use of this design (ZC, barrow graves) and features from a younger stage (ca. 2600-2400 BC), assuming their North Pontic origin, can bear out the relation only as far as the area lying to the south of the lands settled by Middle Dnieper culture populations (in which no catacomb graves have been found so far). First of all, one should consider a relation to northern Moldavia (on the upper Prut River), Budzhak and the lands on the lower Boh, Inhul and lower Dnieper rivers.

6. CONCLUSION

The question of a possible relation to North-Pontic Early-Bronze cultures has a direct bearing on the origins of the CWC in central Europe. The findings in this respect, related to Final Neolithic cemeteries in Małopolska, can be summed up as follows:

A. In the funerary rites of communities settling south-eastern Poland in the early centuries of the 3rd millennium BC, deep ideological changes can be observed, taking place in stages as can be seen from the ZC ritual, one of an intermediate character, combining rites known from the Late Neolithic GAC with elements typical of the Final Neolithic CWC ritual. An attempt to explain these changes refers to the role of communication between communities settling Małopolska and the North Pontic Area. A stimulus intensifying this connection came from the arrival of central European GAC communities in the forest-steppe zone in the late 4th and early 3rd millennia BC and their contact with local Eneolithic and Early Bronze systems [Szmyt 1999; 2000]. According to a thesis suggested elsewhere, this was the beginning of the disintegration of the GAC ideological system, resulting in the rise of new funerary rituals of the ZC and CWC [Wlodarczak 2008a]. Similar rules of the new ritual soon crystallised across the vast expanses of Europe. Against this background, however, CWC grave finds in Małopolska can be viewed as having a special quality imparted to them by the relation with the North Pontic Area. This relation does not bear out a genetic difference between the group of finds under discussion and other local CWC groups in central Europe. On the contrary, all elements having eastern European origin suggested here were incorporated without obstacles into the sphere of cultural behaviour, becoming an alternative for (niche graves, new types of stone battle-axes) or an enrichment (archer’s equipment, metal earrings) of central European funerary rites.
B. The proposal to consider Małopolska finds as a special enclave joined by intensive relations to the North Pontic Area is not the best solution. Małopolska is the western frontier of a vast zone, comprising CWC groups from Podolia, Volhynia and the Middle Dnieper Area. A special trait of communities settling this zone was the maintaining of permanent relations with other population groups, occupying the neighbouring expanses of forest-steppe and steppe. It should be expected that the crucial contact area was the eastern frontier of the CWC complex (i.e. the area occupied by the Middle Dnieper culture) where the ranges of this culture’s and YC’s finds noticeably overlap. The latitudinal ties between CWC groups (in Volhynia and Podolia) were probably the chief reason behind the adaptation of various funerary rites of steppe communities, especially at the younger stages of the Final Neolithic.

C. Grave goods indicate that Małopolska CWC communities shared a desire to possess objects of specific and frequently prestige stylistic-technological connotations (see metallurgy) and raw-material ones (see flint working and stone battle-axes). This desire sustained long-distance ties to procure such goods. One of such major ties joined Małopolska to eastern European communities, including the North Pontic Area. Its importance for the ideological sphere may also suggest that North Pontic models were followed not only in funerary rites but also in other spheres. This could be true for the economy, providing a stimulus for destabilizing the settlement network to a greater extent than in western CWC groups and pushing it towards a clear domination of herding in agriculture [Machnik 1966; Kruk 1973].

D. The study of funeral rites and the traits of artefacts from Małopolska CWC graves suggests that there were two communication lines with the North Pontic Area: (a) Podolian and (b) Volhynian (Fig. 2). The first is more important at the older stage of the Final Neolithic (ca. 2900-2600 BC), whereas the second gained in significance at a later period (ca. 2600-2400 BC). Both functioned until the beginnings of the Bronze Age. The first can be considered an important factor in creating a new system of funeral behaviour in the upper Vistula drainage basin (GAC-ZC-older CWC phase). The second had a decisive impact on the considerable standardization of the rites and caused greater similarity of material culture products between the drainage basins of the Vistula and Dnieper (younger CWC phase).

E. In Małopolska, no graves associated with YC-CC populations have been unearthed so far. Not a single feature has been discovered that would be in line with the North Pontic models in terms of the entire set of traits (grave design, including the use of wooden covers, body arrangement, presence of mats, use of ochre, appropriate grave goods). Only single artefacts may come from the area occupied by the communities of the above-named cultures. Thus, the Małopolska – North Pontic Area relation is considered primarily in the context of the network of long-distance communication between CWC groups, resulting in the adaptation of models from the world of ‘steppe’ communities. The need for such a communication, stemming
no doubt from the social organization of central European Final Neolithic groups, was the principal reason behind cultural changes, leading towards the Early Bronze Age. The absence of any evidence of the physical presence of YC-CC representatives in Małopolska does not detract from the role the ties between this region and the North Pontic Area could have played.

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