

## **Romanchuk A.A.\* Metal works (axes and sickles) and Carpathian-Dniester – Lower Danube Cultural Relations during Ha A-Ha B1**

The Ha A – Ha B1 time (12 – 10 centuries B. C.) was a period of radical change for Carpathian-Dniester and Lower Danube regions in many ways. This is a transitional period from Late Bronze Age to Early Iron Age. This is the time of mass migrations of people. Radically new cultural entities appeared during this period in Carpathian-Dniester and Lower Danube regions.

Evidently, it draws attention of a lot of researchers. However, there are a lot of questions which have not been solved yet.

Interpretation of cultural relations between Carpathian-Dniester and Lower Danube regions during Ha A – Ha B1 is still one of the vehemently debated issues (Романчук 2003; Романчук 2009).

As was demonstrated by V. A. Dergacev, metal works were very precise and sensitive indicators of ethno-cultural processes that were going on in South-Eastern Europe during Late Bronze and Early Iron Ages (Дергачев 1997: 43-44; Dergacev 2002)<sup>†</sup>. However, interpretation of spatial distribution of some types of bronze axes (in Russian „топоры-кельты”; in German „Tüllenbeile”) and sickles of Ha A - Ha B1 period in the Carpathian-Dniester and Lower Danube regions, as well as their cultural attribution should be redefined.

The first type in question is usually named “axes with trapeziform face decorated with vertical parallel lines” (Dergacev 2002: 167-169). The main feature used for designation of this type is the mode of their decoration; so, hereinafter we refer to them as “axes with vertical lines”.

The cultural attribution of this type in Carpathian-Dniester region is controversial. Thus, an earlier idea was proposed by O. G. Levitki (Levițki 1994: 121-122). According to his opinion, in the Carpathian-Dniester region, these bronze axes were associated with people of Chisinau-Corlateni culture (it is a part of a big community of Ha A-Ha B period in South-Eastern Europe - so called "Cultures with fluted ornamentation of pottery" or “Cannelure Hallstatt”). So, this means that “axes with vertical lines” were brought into Carpathian-Dniester region by people of «cultures with fluted ornamentation of pottery» community.

Later, a number of researchers (Дергачев 1997: 58; Камыба 2000: 327; Ușurelu 2003; Ușurelu 2006) suggested that “axes with vertical lines” were a derivative of the Lower Danube tradition. And this tradition was brought into the Carpathian-Dniester Region by Saharna-Solonceni and Cozia populations – representatives of another big community of that period, the so called "Cultures with Incised and Stamped Ornamentation of Pottery" community.

V. A. Dergacev addresses this problem with more caution in some later papers (Дергачев, Бочкарев 2002: 274; Dergacev 2002: 167-169), though. But he does not reject this idea and attributes this type of axes in Northern Bulgaria to “Schtempelverzirten Keramik (nach B. Hänsel)” (Dergacev 2002: 168).

And, according to E. Ușurelu (this is his PhD thesis; his scientific supervisor was V. A. Dergacev), “axes with vertical lines” were associated in the Lower Danube area with “areas of Radovanu, Sihleanu, Tamaoani, Babadag I-II and North-Bulgarian group” (Ușurelu 2006: 21). And in early Ha B1 period “axes with vertical lines” appeared in Carpathian-Dniester region and “were

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<sup>†</sup> Some objections to V. A. Dergacev’s paper (Dergacev 2002) were done, though (see: Boroffka 2009).

associated with people of Cozia-Saharna culture” (Uşurelu 2006: 25). Sihleanu, Tamaoani and Babadag I-II belong to the "Cultures with Incised and Stamped Ornamentation of Pottery" also.

Recently some new arguments were suggested to the hypothesis that “axes with vertical lines” came into the Carpathian-Dniester region with Chisinau-Corlateni people (Романчук 2009).

Well, actually, who brought these bronze axes into Carpathian-Dniester Region?

First of all, it should be mentioned here that V. A. Dergacev proved the so called “Vyrbica center of metal production” at the Lower Danube as the original source of “axes with vertical lines” tradition (Дергачев 1997: 58; Dergacev 2002: 167-169). Then, he located the “Vyrbica center of metal-production” more precisely. According to him, it was situated at the central and western parts of Northern Bulgaria.

That is why he supposed that the so called “North-Bulgarian Groups with Incised and Stamped ornamentation of Pottery” (by B. Hansel) were the producers of “Vyrbica types” of metalware.

But, as was pointed out by I. Czyborra: “Für den nordbulgarischen Raum sah Hänsel

keine Möglichkeiten einer Gruppenbildung, weder für die frühe, noch für die klassische

Phase der stempelverzierten Keramik, zu sporadisch war der Fundstoff” (Czyborra 2005: 9).

Probably, it was the main reason for V.A. Dergacev to change his mind about the cultural attribution of some “Vyrbica types” at least: "Cultural attribution of Vyrbica bronze sickles remains unknown" (Дергачев, Бочкарев 2002: 274).

Thus, the key question is what cultures the people of “Vyrbica center of metal-production” belonged to.

To answer this question we should point out that the chronological and spatial demarcation between Vyrbica and another centre of metal-production in the Lower Danube region was done by V. A. Dergacev (partly with V. S. Bockarev).

They, indeed, suggested a more precise area of distribution of bronze sickles which were produced in Vyrbica and Dicevo metal-production centers in the Lower Danube region (Дергачев, Бочкарев 2002: 272-274). According to them, the Dicevo centre had appeared in the Late Bronze Age prior to Vyrbica and had influenced the latter; the Dicevo centre had also disappeared earlier, while Vyrbica continued its activity during the Early Iron Age (Дергачев, Бочкарев 2002: 272-274)<sup>‡</sup>. And "Dicevo sickles concentrate mainly on the right and left banks of the Lower Danube and clearly correspond to areas of late phases of Tei and Coslogeni cultures" (Дергачев, Бочкарев 2002: 273). Moreover, the Dicevo production centre was situated "particularly in the area of Coslogeni culture".

As to Vyrbica sickles, which were produced during the Ha A1, we know that their area was "clearly shifted to the west" in comparison with Dicevo types (Дергачев, Бочкарев 2002: 274). And the production centre of Vyrbica sickles was situated in Northern Bulgaria.

This conclusion is confirmed by spatial distribution of Vyrbica bronze axes (Дергачев 1997: 82-83; Dergacev 2002: 167-169, taf.123).

Based on this, V.A. Dergacev associates the area of Vyrbica centre with areas of Zimnicea-Plovdiv culture for the Late Bronze Age (Дергачев 1997: 50). There are some unsolved questions concerning this culture, though. According to R. Krauss, “the Cerkovna-group is usually named in Romanian literature as Zimnicea-Plovdiv” (Krauss 2006: 18). But some Bulgarian researchers disagree even about definition of this culture (Стоянов, Ников 2003: 34). They think that this

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<sup>‡</sup> The researchers from former Soviet Union and Eastern Europe refer to Ha A as Early Iron Age.

culture was established on the basis of some ceramic forms which are common for all territory of Bulgaria.

However, as the generally accepted date for appearance of Cozia and Saharna-Solonceni is Ha B1, the Ha A- Ha B1 time should be considered here. But this is still a problem.

As it follows from a recent study, North-Western Bulgaria remains almost “uncharted area” for so called Alada, Early and even Classical phases of “Incised and Stamped Ceramic” community in Bulgaria (Czyborra 2005: 278, map 134; 279, 281). The sources are still scarce.

Though, some steps have been undertaken in this direction. As a result, it was suggested to distinguish a new culture – Zimnicea-Novgrad (Gumă 1995: 135, pl. XVIII). The Zimnicea-Novgrad people are supposed to be the main population of North-Western Bulgaria during Ha A – Ha B1 period.

Besides, the Hinova-Mala Vrbica group should be pointed here. This group was distinguished not very long ago (Gumă 1995: 135, pl. XVIII). And it coincides partly with Vyrbica type of axes area in North-Western Bulgaria as well.

And, in my opinion, the Sboreanovo group (Czyborra 2005: 11, 173) should be considered here too. This group belongs to Classical phase of Bulgarian “Stamped Ceramic” and is dated by later time – starting with 9 century B. C. (Czyborra 2005: 123, abb. 69). Then, Sboreanovo is situated in North-Eastern Bulgaria actually (Razgrad district), in the immediate vicinity to the Vyrbica centre, though.

But, this group was mentioned concerning the problem of Saharna-Solonceni burial rite origin (Камыба 2000: 286-287). Actually, the burial rite of Sboreanovo was inhumation. This is like burial rite of Saharna-Solonceni and Zimnicea-Novgrad as well.

So, could some of these cultural groups be considered as ones which took part in the genesis of Saharna-Solonceni or Cozia cultures?

Well, the Hinova-Mala Vrbica group belongs to the “Cultures with fluted ornamentation of pottery” community. So, it is a clear question.

And what is about Zimnicea-Novgrad and Sboreanovo?

The Zimnicea-Novgrad is considered as “a totally different entity in comparison with other groups”, i. e. the “Cannelure Hallstatt” community (Gumă 1995: 109), especially for its burial rite. But, the basic type of Zimnicea-Novgrad pottery ornamentation is cannelure, or fluted ornamentation (Alexandrescu 1978: 117-119; Gumă 1995: 131, pl. XIII). According to A. Alexandrescu, “the cannelures are regular décor” of Zimnicea-Novgrad cups (Alexandrescu 1978: 117). Also, these cups (or mugs) are the basic type of Zimnicea-Novgrad pottery; they have the form of truncated cone or hemisphere. M. Guma said that “the cups with higher and flat handles (of Zimnicea-Novgrad – A. R.), decorated by longitudinal flutes are similar with those from Vajuga representing the second stage of the Hinova-Mala Vrbica group” (Gumă 1995: 110).

So, in spite of presence of some incised ornamentation, it seems more plausible that Zimnicea-Novgrad culture belonged to the “cultures with fluted ornamentation of pottery”. The first researcher of Zimnicea cemetery compared its ceramics with such cultures of “cannelure Hallstatt” as Vyrtop, Meri, Suseni (Alexandrescu 1978: 119).

But, Saharna-Solonceni culture is characterized by almost total absence of fluted ornamentation (Камыба 2000: 313). Fluted ornamentation is very rare in Cozia culture too (Laszlo 1972: 214-215; Ionomu 1996). Thus, we cannot suppose that Zimnicea-Novgrad contributed to genesis of Saharna-Solonceni or Cozia cultures.

The Sboreanovo group is defined usually as part of “Cultures with Stamped ornamentation of Pottery” of Northern Bulgaria. Fluted ornamentation of pottery, however, is also a typical or even

dominant feature for Sboreanovo group (Гоцев, Шалганова 2004: 60-61; Czyborra 2005: 173). Besides, the main type of Sboreanovo vessel (Czyborra 2005: 99-101) is the so called 'cantharos' (as well as Zimnicea-Plovdiv pottery (Alexandrescu 1973: 77-78, 81)). The 'cantharos' is a big vessel with two handles and open mouth; this kind of vessel is found neither in Cozia, nor in Saharna-Solonceni.

Evidently, it appears more likely that the Vyrbica tradition of bronze axes production was brought into the Carpathian-Dniester region by some population belonging to the "cannelure Hallstatt" community. It could be the Hinova-Mala Vrbica group. It seems to be a more preferable idea, as we see some other metalware (bracelets and fibulas) in the Carpathian-Dniester region that seem to be associated with the coming of Hinova-Mala Vrbica population. The Hinova-Mala Vrbica group made a substantial contribution to the origin of Chisinau-Corlateni culture (Gumă 1995: 108).

There is another argument to this idea. As it follows from the mapping of V. A. Dergacev, the "axes with vertical lines" were spread in three areas chiefly: in central and western parts of Northern Bulgaria, in the Carpathian-Dniester region and in Transylvania – in the area of Gava culture (Dergacev 2002: 167-169, taf.123), The Gava culture is a "culture with fluted ornamentation of pottery" too.

It is really important that "axes with vertical lines" from the Carpathian-Dniester region and Transylvania have a special ring at the back side. This distinguishes them from the "Bulgarian" variant of "axes with vertical lines". The "Bulgarian" variant of "axes with vertical lines" has no rings (as V. A. Dergacev points out, "isolated evidences" of axes "with ring" were found in Northern Bulgaria) (Dergacev 2002: 168, taf.123).

But "axes with vertical lines" from area of Hinova-Mala Vrbica group have this ring as well.

V. A. Dergacev suggested that these "axes with vertical lines and a special ring" appeared as a result of some synthesis of Transylvania and Northern Bulgaria metalwork traditions (Дергачев 1997: 58; Dergacev 2002: 168).

Where did this synthesis take place? We can suppose that it was the Hinova-Mala Vrbica area.

Thus, the "axes with vertical lines and a special ring" were spread in the "cultures with fluted ornamentation of pottery" mainly. And, as it results from the mapping (Dergacev 2002: taf. 123; Uşurelu 2003: 212, fig. 1), distribution of "axes with vertical lines" in the Carpathian-Dniester region looks more corresponding to the Chisinau-Corlateni area than Saharna-Solonceni or Cozia. Only one axe was found in the Saharna-Solonceni area (Mateutsy). Further, two finds come from Rujinoasa (Siret river valley). According to E. Uşurelu, they "were attributed to the Rujinoasa hoard by mistake" (Uşurelu 2003: 214); the Rujinoasa hoard belongs to Ha A1 (Leviţki 1994: 145).

Anyway, Rujinoasa is a site of Chisinau-Corlateni culture (Leviţki 1994: 76). There were no sites of Cozia culture around Rujinoasa (Кашуба 2000: 256, рис. III). Moreover, there were only four sites of Cozia culture found in the Siret valley, which also yielded seven axes of the type in question (Uşurelu 2003: 212, fig.1). This is nearly 30% of these axes in the Carpathian-Dniester region.

The Siret valley was more populated during the Chisinau-Corlateni time (Leviţki 1994: 177, fig.1).

Well, only four "axes with vertical lines" were found in the area of greatest concentration of Cozia sites between Byrlad and Jijia rivers. The area between Reut and Prut rivers, almost devoid of Cozia population, gave us seven finds as well.

Thereby, it really seems that "axes with vertical lines and a special ring" in the Carpathian-Dniester region should be associated just with Chisinau-Corlateni culture.

But still, we do not know precisely when “axes with vertical lines and a special ring” appear in the Carpathian-Dniester region. In the Carpathian-Dniester region, they were not found in some clear cultural context. And outside the Carpathian-Dniester region, “axes with vertical lines” are dated too widely.

Thus, “axes with vertical lines” in North-Western Bulgaria belong to Ha A1 (Dergacev 2002: 168; Uşurelu 2003: 214). The earliest “axes with vertical lines” in Transylvania, Serbia and Voevodina appeared in Ha A1 as well (Dergacev 2002: 168; Uşurelu 2003: 214-217). But this type existed during the Ha A2, Ha B1, Ha B2 and even Ha B3 in Transylvania (Dergacev 2002: 169). So, it makes difficult to precise if this type appeared in the Carpathian-Dniester region in Ha A1 as well.

Well, here we should add to our analysis bronze sickles of “Vyrbica type”. They are spread in the Carpathian-Dniester region (Дергачев, Бочкарев 2002: 272, map 31), but were too rare. However, they were rare in Vyrbica core-area too. And sickles of “Vyrbica type” are dated more precisely – Ha A1 chiefly (Дергачев, Бочкарев 2002: 274). Though in some other place they wrote that “The Vyrbica variant was mainly used during Ha A and partly Ha B periods” (Дергачев, Бочкарев 2002: 346).

But, sickles of Vyrbica type appeared in the Carpathian-Dniester region in some clear cultural context. Two sickles come from Negresti hoard, and a piece of sickle – from a Noua culture site (Дергачев, Бочкарев 2002: 268, 269). The Negresti hoard is associated with Noua culture too (Дергачев 1997: 25; Petrescu-Dîmbovița 1977: 31, 76).

Thus, a number of questions arise. Should we suppose that sickles and axes of Vyrbica tradition come in the Carpathian-Dniester region at different times? If not, should both of them be associated with Noua culture?

Some hints could be given by the composition of Negresti hoard (Petrescu-Dîmbovița 1977: 76, pl.84). According to V. A. Dergacev’s typology of axes and sickles, Negresti hoard includes: two pieces of Negresti type of axes, three pieces of Rujinoasa type of axes, two sickles of Vyrbica type and one sickle of “Ghermanesti type, Iliseni variant”.

Negresti type of axes was determined by V. A. Dergacev (Дергачев 1997: 25; Dergacev 2002: 137-138, taf. 109). This type spread in the Br D hoards in the Carpathian-Dniester region and in Ha A1 hoards in Transylvania as well. Moreover, in the Carpathian-Dniester region it was found in the Jijia hoard (Dergacev 2002: 138; Şadurschi 1989: 177, fig.4). This hoard is dated by Ha B1 (Dergacev 2002: 169; Uşurelu 2003: 214). Well, V. A. Dergacev supposes that this is an exception. And in his earlier paper he explained this axe as a later derivative from Negresti type with some analogies in the hoards of Ha A in Oltenia, Transylvania and Muntenia (Дергачев 1997: 25). E. Uşurelu pointed some analogies to this axe in Plenitsa hoard in Oltenia (Ha A2), and Cozla and Petroschnitsa hoards in Banat (Ha A1-Ha A2) as well (Uşurelu 2003: 214).

Anyway, presence of Negresti axes in Ha A1 hoards in Transylvania is undoubted.

Sickles of “Iliseni variant” is the most late from all variants of Ghermanesti type. The Iliseni variant predominates in the hoards of Ha A1 in the Carpathian-Dniester region (Дергачев, Бочкарев 2002: 226, 234-236).

Rujinoasa type of axes spread in Br D hoards mostly in the Carpathian-Dniester region. But there is a find of Rujinoasa type of axes from a Ha A1 hoard (Iliseni hoard) also. And in Transylvania this type of axes existed for a longer time – during Ha A and even Ha B partly (30 hoards with more than 90 axes of this type) (Dergacev 2002: 145).

Well, and two pieces of Vyrbica type, i. e., Ha A1 type. V. A. Dergacev and V. A. Bockarev emphasized that in comparison with earlier Dicevo sickles, “the small sickles – variant Vyrbica, come from Ha A1 hoards only” (Дергачев, Бочкарев 2002: 262).

Thus, it looks like Negresti hoard should be dated by Ha A1 as well.

I think that all these facts bring the idea that sickles and axes of Vyrbica type spread in the Carpathian-Dniester region simultaneously. It was in the first half of Ha A1, when Noua culture was replaced by Chisinau-Corlateni (see: Дергачев, Бочкарев 2002: 236). And just the Chisinau-Corlateni people brought this tradition.

Here it should be added that in Muntenia and Dobruja “axes with vertical lines” appear since Ha B1 (Uşurelu 2003: 214-217); they are very rare and belong to the variant “with a special ring” (Dergacev 2002: taf. 123); thus, not “Bulgarian variant”. Also, Vyrbica sickles are not found in Dobruja and Muntenia at all (Дергачев, Бочкарев 2002: 272, map 31). This confirms the idea of Transylvania being a way for Vyrbica tradition coming to the Carpathian-Dniester region (Дергачев 1997: 58); moreover, we can suppose that “axes with vertical lines” spread to Muntenia and Dobruja from Transylvania or even the Carpathian-Dniester region.

The last supposition requires the problem of Vyrbica centre of metal-production relations with some early groups with Incised Ornamentation of Pottery at Lower Danube to be considered as well.

It was pointed out that an axe and a piece of casting-form of Vyrbica tradition were found in the Radovanu settlement (Uşurelu 2003: 216). The “Radovanu facies” (or “Late Coslogeni culture”, as many researchers refer to it) is supposed to be the ancestor of “Cultures with Incised Ornamentation of Pottery” community in the Lower Danube and Carpathian-Dniester regions (including such early groups as Sihleanu-Rimnicele, Tamaoani, Holercani-Hansca, Balta). Thus, the axe and casting-form from Radovanu settlement are considered as evidence that early groups of “Cultures with Incised Ornamentation of Pottery” community in the Lower Danube region were a main and direct heir of the Vyrbica metalwork tradition (Uşurelu 2003: 217).

A brief digression: some other metal works were found in the Radovanu, Tamaoani and Zimnicea-Novgrad (Alexandrescu 1978: 120; Gumî 1995: 110). These are bronze knives with a curved pointed end. But, these knives evidently represent a Central-European tradition (Laszlo 1986: 76; Dergacev 2002: 178, taf. 130). So, this is an influence from third part to the Radovanu, Tamaoani and Zimnicea-Novgrad.

Well, the axe and the casting-form show that some connections between Radovanu and Vyrbica metalwork tradition did exist. The presence of some Zimnicea-Plovdiv elements at the Radovanu settlement was used by S. Morintz as a ground for establishing Radovanu as a “Coslogeni III phase” or “Late Coslogeni” (Dobrinescu 2005: 204; 2008: 10). Actually, Radovanu, as well as Cascioarele settlements of Coslogeni culture, demonstrate a strong influence from Zimnicea-Plovdiv culture (Palincaş 1997: 252). It is manifested by substantial presence of typical Zimnicea-Plovdiv “cantharos” and some other types of vessels at these sites. Moreover, N. Palincaş suggests that Cascioarele is a Zimnicea-Plovdiv settlement. And, “it could be expected that Radovanu belongs to the Zimnicea-Plovdiv culture as well” (Palincaş 1997: 252).

Thus, the Zimnicea-Plovdiv influence to Radovanu is evident. But it is evident also that Zimnicea-Plovdiv ceramic ensemble (with “cantharos” and “askos-form jug” as the basic types (Alexandrescu 1973: 77-78, 81)) substantially differs from ceramic ensemble of any early group of Incised Pottery community (see: Laszlo 1986; Leviţki 1994a; Ванчугов 1983; 1993).

So, the key question is what were the connections between Radovanu and Incised Pottery community?

The last decade brought a lot of information which confirm that Coslogeni culture had existed until Ha A2 and was partly simultaneous with Babadag culture of Incised and Stamped Pottery community (Irimia 2001; Vernescu 2004; Dobrinescu 2005; 2008). I think it requires a verification of many assumptions about the direction of cultural influences.

Thus, generally the ceramic of Coslogeni culture is non-decorated. The “Balkan elements” (“cantharos” and “askos”) in the ceramic ensemble of Coslogeni culture “differ from their prototypes by absence of decoration as well” (Dobrinescu 2008: 15). Moreover, “cantharos” or “cups with two handles” of Zimnicea-Plovdiv, “in general are not ornamented” (Alexandrescu 1973: 78). The same is true about other types of Zimnicea-Plovdiv pottery.

And in those cases, when Zimnicea-Plovdiv vessels were decorated with incised ornaments (Krauss 2006: 20, abb. 10; 22, abb. 11), these ornaments often very differ from the poor and simple style of early groups of Incised Pottery community of Carpathian-Dniester region, such as Sihleanu-Rimnicele, Tamaoani, Holercani-Hansca and Balta (Ванчугов 1983: 92-93, рис. 3, 4; Ванчугов 1993; Laszlo 1986: 90, fig. 12; Levițki 1994a: 231-232, pl.14-17).

I think it should be reminded here also that in Southern Bulgaria stamped ornamentation (“pseudocorded” ornaments), “checked hatching” and such motives as “circles with tangents” appeared during the so called Alada-Phase yet (Czyborra 2005: 109), i. e. in the 12 s. B. C. (Czyborra 2005: 123). It is important, as the tradition of “cantharos” and “askos” in the cultures of Late Bronze Age and Early Iron Age in the Lower Danube region, as it was pointed by many researchers, were a result of influence from the south (Leahu 1978: 68; Czyborra 2005: 68, abb. 14).

But on the contrary, the motives of incised ornamentation specific to Incised Pottery community appeared in the North-Pontic region on some settlements of Sabatinovka culture (Черняков 1985: 73-83; Ванчугов 1993: 29). Though rare, they are not less important.

It should be emphasized that in the Coslogeni culture some vessels with these motives of incised ornamentation were found, besides the Radovanu, on such settlements as Ulmu, Dorobantsu and Sultana. And just for these settlements the characteristic feature for the ceramic ensemble is a noticeable influence from Sabatinovka culture (Irimia 2001: 184; Dobrinescu 2008: 9).

The same is true for mugs with a tall handle; they are rare in Coslogeni culture. This type is considered specific for the so called “Sabatinovka-Coslogeni phase” (i. e., the same Ulmu, Dorobantsu and Sultana settlements); it is believed that this is a North-Pontic element (Dobrinescu 2008: 10). C. Dobrinescu explains presence of this type on some late sites of Coslogeni culture as a result of “conservation” of the population of this early “Sabatinovka-Coslogeni phase” in the periphery of Coslogeni culture.

The discoverers of Coslogeni culture saw prototypes of mugs with high handles and a small horn on the top of handles in Sabatinovka culture as well (Morintz, Angelescu 1970: 407). Indeed, these mugs were found on different sites of Sabatinovka culture (Черняков 1985: 69-83). And “in Belozzerka time their number decreased” (Ванчугов 1993: 36).

It is worth to mention here that a group of researchers had pointed out a strong influence (and even migration (Lichardus, Iliev, Christov 1999: 110)) from the North-Pontic region to the South-Eastern Bulgaria during the Sabatinovka time (Lichardus, Echt, Iliev, Christov 2003: 184). According to them, the north-pontic ceramic types of “Plovdiv-Cherkovna phase” of Late Bronze Age of Bulgaria are similar with the ceramic types of Late (!) Sabatinovka-Noua-Coslogeni (Lichardus, Echt, Iliev, Christov 2003: 150).

Thus, these features of Radovanu ceramic ensemble that are usually used as a ground to regard it as the ancestor of Incised Pottery community could be a result of direct influence from the Incised Pottery community. Or it could be resulted by influence from third part to Incised Pottery community and Radovanu both (such as it was with knives with curved pointed end).

It is worth to mention here that some ceramic types of Balta group that were used to be interpreted as a result of influence from Lower Danube and Radovanu, actually appeared in Balta group because of the influence from the Middle Danube (Levițki 2000: 182). This influence from Middle Danube to the North Pontic region started in Late Sabatinovka time yet and some “Hallstatt” ceramic types of Belozzerka culture were inherited from Sabatinovka and Late Noua

cultures actually (Levițki 2000: 183-188). As well as inherited from Sabatinovka time was the dwelling tradition of Balta group (Vancugov 1996: 290; Черниенко 1993: 40).

Returning to the metal works, we should keep in mind that “transition to the Early Iron Age resulted in almost complete rupture of connections between the Lower Danube and North-Pontic region” – neither metalware from the Lower Danube came to the North-Pontic region, nor vice versa (Дергачев 1997: 16; Dergacev 2002: taf. 101). The Dicevo centre disappeared and the Coslogeni culture as well (during the Ha A1); the Coslogeni population moved to the North-West of modern Bulgaria and had an impact on the activity of the Vyrbica centre.

But more important is the fact that in Dobruja and Muntenia "the Late Bronze Age tradition of metal production came abruptly to the end simultaneously with the end of Coslogeni culture and with penetration of Pre-Babadag or Babadag I here" (Дергачев 1997: 50).

So, it looks like the Babadag culture was a newcomer in the Lower Danube area.

Then, by including in our analysis the North-Pontic types of bronze axes (Kardasinka and Zavadovka) of that time, we can see some very important regularity in their spatial distribution. Thus, V. A. Dergacev wrote that the Kardasinka type corresponds to the area of Belozerka culture; casting-forms of this type are concentrated in the Lower Dnieper area, while bronze axes spread in the western territories of Belozerka culture and in Kiev region (Дергачев 1997: 13).

Actually, as it follows from the mapping (Дергачев 1997: 83, map 5; Dergacev 2002: taf. 101), distribution of Kardasinka type is more interesting. Kardasinka bronze axes form three main and clear clusters: the Lower Dnieper, Kiev region and the “compacted” and very small area in the Lower Dniester area (“variant B” of Kardasinka type). The Lower Dniester cluster (“on the right bank of the Dniester River” (Dergacev 2002: 118)) coincides with the area where the Belozerka culture and Holercani-Hansca group of Incised Pottery community interpenetrated (see: Levițki 1994a).

Moreover, comparing this picture with the mapping of Belozerka sites in the Carpathian-Dniester region (so called “Tudorovo variant”), we see that the overwhelming majority of Tudorovo variant sites are concentrated closer to the Lower Danube area, between the Lower Danube and Sarata River (Vancugov 1996: 289, abb.2). Another group of sites of Tudorovo-variant is situated closer to the Dniester estuary. And only six settlements and a cemetery coincide with the Lower Dniester cluster of Kardasinka type of axes. But from these six, at least such sites as Kalfa, Kosnitsa, Pogrebea 3, and Pogrebea 5 yield the Holercani-Hansca ceramic as well (Levițki 1994a: 220-221). And O. G. Levițki in his recent paper suggested attributing these sites to Holercani-Hansca group (Levițki 2000: 180).

Here we should keep in mind that Holercani-Hansca group had been thought by some researchers to be a local variant of Belozerka culture (see: Levițki 1994a: 220); and the same idea existed (or still exists) about the Balta group (Vancugov 1996). Investigation of these sites had been done before the Holercani-Hansca group was distinguished. Thus, it is really possible that some of the Belozerka sites in this area should be in fact attributed to Holercani-Hansca.

Thereby, we come to conclusion that the Lower Dniester cluster of Kardasinka type of axes correlates with Holercani-Hansca group. And in addition to Kardasinka type, another North-Pontic type of bronze axes – Zavadovka – penetrated the Holercani-Hansca area (Дергачев 1997: 14; Dergacev 2002: taf. 101).

Besides, a Kardasinka axe casting-form (“variant A” of Kardasinka type) was found on the left bank of the Dniester River (Krasnyi Maiak), we can say - towards the Balta group area.

It is important to mention that “at Krasnyi Maiak there was a workshop which belonged to the North-Moldavian metal-production centre” which was situated on the eastern periphery of Noua culture (Дергачев 1997: 47-48). The Noua and Sabatinovka cultures metalwork both were

produced at this centre. And this centre “existed during 13-12 and, probably, early 11 centuries B.C.” (Дергачев 1997: 48); that means - Ha A1 and, probably, early Ha A2 as well. According to V. P. Vanchugov, “Early Belozerka culture existed during 12 – first half of 11 centuries B.C.”; the Early Belozerka culture “should be synchronized with Late Noua and Coslogeni cultures” (Vanchugov 1996: 302). We should remember that V. P. Vanchugov meant here the Balta group as well. He supposed that Balta group appeared even earlier than Tudorovo variant of Belozerka culture (Ванчугов 1993: 38).

In the recent paper S. M. Agulnikov suggests that the first phase of Belozerka culture appeared even in late Br D and existed in the first half of Ha A1 (Агульников 2005: 89).

But there were no Belozerka sites around Krasnyi Maiak (Vanchugov 1996: 289, abb.2). The workshop of Krasnyi Maiak is situated closer to Balta area. And, the Balta area yields some finds of North-Pontic and East-Carpathian-Transylvanian types of axes and sickles (sometimes casting-forms as well) that were used during Ha A1 as well. Thus, two sickles of Heleshteni type, Cut variant were found in a hoard near Pujaikovo, Balta region (Дергачев, Бочкарев 2002: 250). The Cut variant was used during Ha A, and, possible, Ha B1 partly (Дергачев, Бочкарев 2002: 256)). Then, axes of Myndreshti type were produced at Krasnyi Maiak workshop (Dergacev 2002: 121); this type is presented in the Kuriachi Lozy hoard (Br D hoard, according to V. A. Dergacev), which is close to the Balta area as well (Dergacev 2002: taf. 100). Next, chisels of Malye Kopani type should be mentioned here (Dergacev 2002: 122, taf. 102).

Well, there are some more North-Pontic and East-Carpathian-Transylvanian types of metalworks (Dergacev 2002: tab. 106, tab. 109, tab. 110, tab. 111, tab. 112, tab. 114, tab. 118), that should be examined, at least, whether they were used by Balta people.

Anyway, I think, we can say that Holercani-Hansca and Balta people produced and used North-Pontic and East-Carpathian-Transylvanian types of axes and sickles. And, they didn't use any type of bronze axes or sickles of the Lower Danube tradition.

This observation should be completed by some research results of E.N. Chernykh. He wrote that chemical analysis of Kardasinka metalware showed that their producers did not use ore from the Lower Danube. And there is no evidence of any influence from the Lower Danube in morphology and style of Kardasinka metalwork (Черных 1976: 188), which agrees with V.A. Dergacev's conclusion (Дергачев 1997: 16).

But, "In spite of low productivity of Kardasinka centre and too weak connections with its western neighbors, we can see some penetration of Kardasinka bronze axes to the south-west, in Northern Bulgaria" (Черных 1976: 188). And there is one more find of Kardasinka bronze axes in the Carpathian-Danube region. This is a find in western Transylvania (Дергачев 1997: 13; Dergacev 2002: taf. 101).

Here it should be added that North-Pontic types of chisels demonstrate some influences from North-Pontic region to the Lower Danube in the Ha A time as well (Dergacev 2002: 122, taf. 102).

Some other facts that demonstrate the Belozerka culture influence to the Lower Danube are generalized by O. G. Levițki. The Belozerka culture ceramics are presented on the sites of Tamaoani group (Левицкий 2002: 194). Here we would like to remember, that V. P. Vanchugov supposed the presence of some Belozerka ceramic among the finds from Sihleanu (which is considered to be the earliest group of Incised Pottery at the Lower Danube) (Ванчугов 1993: 96). Quite poor material from Sihleanu does not allow proving or rejecting this idea, though.

It is worth to mention here also the fact that Belozerka culture influence is more noticeable in groups of Incised Pottery at the Lower Danube than in the groups “Cannelure Hallstatt” (Левицкий 2002: 201).

So, I think that this picture of Lower Danube – Carpathian-Dniester and North Pontic regions cultural relations during Ha A-Ha B1 does not allow us to see the Incised Pottery community of the Carpathian-Dniester and Lower Danube region as the successors of Vyrbica metalwork tradition. Actually, it seems that the Vyrbica tradition of metalwork was brought to Carpathian-Dniester region by people of “Cannelure Hallstatt”. Besides, I suppose that this conclusion confirms the hypothesis of origin and evolution of Incised Pottery community of the Carpathian-Dniester region which I suggested earlier (Романчук 2003).

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