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LATE HORIZON OF THE GLOBULAR AMPHORAE CULTURE VERSUS OTHER CULTURAL STRUCTURES OF THE NEOLITHIC-BRONZE AGE INTERSTAGE. PROBLEM OF SYSTEM DISINTEGRATION*

The problem mentioned in the title of this report has to be clarified by defining the meaning of two key notions: 1. the late horizon of the Globular Amphorae culture (GAC) and 2. the Neolithic-Bronze Age interstage (NBI; Czebreszuk 1987:199).

1. The notion of Late-Amphorae horizon (synonymous with "late horizon of GAC") must by approached from two perspectives: a. the autogenetic, and 2. the taxonomic.

a. In the autogenetic aspect, the Late-Amphorae horizon is taken to mean the last of the three main stages of settlement-cultural development of GAC communities (A. Kośko in this volume; L. Czerniak, M. Szmyt in this volume) marking the disintegration-transformation ("disappearance") of this culture. This stage is characterized by optimum adaptation of economic system rules to the exploitation of virtually all Kuiavian landscape types and a particular openness of the culture to influences of other traditions (A. Kośko 1979). In its late horizon, GAC enters its period of settlement optimum, occupying extensive areas with sandy and dune soils, never before inhabited by its people (cf. observations along the middle Bachorza course - J. Czebreszuk, P. Makarowicz (1990) - or along the Parchania - P. Chachlikowski, J. Czebreszuk (1990). The spreading of settlement is accompanied by an increasingly dynamic development of multidirectional cultural transformations of GAC "black-earth", "black earth-podsol", and "podsol" traditions - M. Szmyt 1992; D. Prinke, M. Szmyt 1990). The GAC inventories of those times exhibit numerous features characteristic of alien cultures (J. Bednarczyk et al. 1975).

b. The "openness" to external influences was stressed strongly in the first tentative taxonomic characteristics of the "late" assemblages in which exogenous elements dominate on the list of distinctive (phase-defining) features. These characteristics were put forward in the 1960s by Tadeusz Wiślański. His work published in 1966 contains a number of suggestions concerning the taxonomic differentiation of ceramics of GAC's "cord" phase (or phase II) into several subgroups. T. Wiślański attached chronological characteristics to some of these subgroup and these are given in Table 1.

* This work was partly based on grants from the Research Program R.P. III.35.

The order in which the various subgroups" and so called "mixed group" were arranged was based on increasing of features alien to GAC, in particular those connected with the so called Tit-Comb Ware culture" (PCWC; T. Wiślański 1966:130). In a later work, T. Wiślański already explicitly refers to phase of GAC (X Wiślański 1970-.210ff), including in it the Kuiavian finds from Złotowo, Nowiny, Zarębowo, site 1, and Przybysław, site 1. These were assemblages which in 1966 the author associated with the late "subgroup" of the "Cord" phase (phase II) of GAC (Table 1).

Table 1

Taxonomic differentation of phase II ("Cord") of GAC in Kuiavia, according to T. Wiślański (1966)

Chronology	"Subgroups" with strictly defined chronological position	"Subgroup" lacking precise chronology in phase II
Phase II ("Cord")	"classical" late "subgroup" (80 and 126) assemblages: Dobre 6, **Przybysław 1**, Stary Brześć 4 (partly) **Nowiny** 1	assemblages: **Pikutkowo 5B**, **Złotowo**, Zdrojówka (80)
	decline "subgroup" (81 and 108) assemblages: Brześć Kujawski 5, Przybysław 2,	
	"mixed group" (80 and 81) assemblages: Dęby, Krzywosądz,	

Note: the numbers in parentheses refer to pages in T. Wiślański (1966); the sites included by T. Wiślański in 1970 in phase III of GAC are underlined.

In the beginning of the 1970s T. Wislanski's work was taken by Aleksander Kośko as a reference point in concretizations of the concept of phase HI. By distinguishing two subgroups in the material assigned to this group, Kośko gave a more precise taxonomic description of the alleged subphases (IIIa and IIIb) and signalled the existence of a third one - IIIc (A. Kośko 973:24). Phase III as defined by T. Wiślański (1970) would be identified mainly with A. Kośko's phase IIIa. Moreover, in view of the stylistic connections with the tradition of the late-Beaker horizon of the Funnel Beaker culture (A. Kośko in this volume), it would belong to the Late Neolithic (A. Kośko 1979:101) and as such it would be part of the classical horizon of GAC. Phase IIIb would be characterized by the following features (J. Bednarczyk et al. 1975:285ff):

- a wide range of technological recipes in the individual assemblages;
- rough and brushed other surfaces (particularly along the shores of Lake Pakoskie);
- a general tendency to simplify the morphology of vessels (straight-walled or slightly curved forms);
- vessels on feet;
- gradual limitation of ornaments to single-element motifs;

- the limitation of ornamentation techniques to impressions (stamp or finger), and also plastic and engraved motifs (the latter particularly apparent along the shores of Lake Pakoskie).

In addition to connections with the so called "PCWC" (e.g. the treatment of outer surfaces of vessels, and some features of technology and ornamentation) this phase also displays evident connection to i-corded ware (Early Bronze Age horizon) cultural phenomena (e.g. straight-walled ceramics and vessels on legs; A. Kośko 1973; 1979:94ff; J. Bednarczyk et al. 1975:288).

Phase remains a poorly documented taxonomic proposition since the day of its distinction (A. Kośko 1973:25). It is allegedly marked by a particularly striking syncretism of technological and stylistic rules, placing the materials belonging to it on the level of "proto-Trzciniec" phenomena (J. Bednarczyk et al. 1975:285).

The picture of the outlined process was significantly enriched by the most recent studies of Marzena Szmyt who documented its multi-trend character (M. Szmyt 1992).

To conclude this brief presentation of the existing findings it must be stressed that the hitherto knowledge of the late amphorae horizon was based on a modest volume of data. Moreover, the value of these data as evidence was often hard to assess, given the state of documentation of archival studies. This sometimes forced researchers to support the analytical units distinguished for NBI, sometimes to a considerable extent, with knowledge of a more general nature (e.g. in case of phase IIIc). The awareness of these limitations affected the selection of aims for the studies reported here.

2. The notion of Neolithic-Bronze Age interstage (NBI) was introduced to underline the continuity of cultural development during the transition from the Neolithic to the Bronze Age, thus in contradictions to the point of view in which they had been considered separately- within the research projects dealing with "individual epochs".

The beginning of NBI in Kuiavia is marked by a dominance of the so called model of all-lowland ecological-cultural coherence in the local settlement which became apparent starting from around 2800 cal BC (2200 BC; A. Kośko 1979:125ff). For the first time ever, all types of landscape were occupied and exploited simultaneously. This led to a diversification of environmental adaptation types which in turn resulted in increasing cultural disintegration: either a complete "disappearance" of cultures (e.g. the Funnel Beaker culture) or their multidirectional development (e.g. GAC or Corded Ware culture - CWC). Against this background there gradually evolves in the NBI an opposite tendency, a tendency towards integration, the creation in Kuiavia (and the Lowland) of a new quality: a highly integrated cultural system capable of exploiting all types of ecological environment, a local variety of the Lusatian culture (actually a Lusatian culture tradition - LCT). The end of this process, and hence the end of NBI, takes place around 1700 cal BC (1200 BC).

NBI is among the least known periods in the prehistory of Kuiavia. Problems begin already on the level of evidence analysis. The very identification of materials remains a controversial issue, not to mention the potential groups of cooccurring features in the evidence material from the NBI period. Urgent steps must be taken to alter this situation, a task which this study is also meant to serve.

Of key importance in the present stage of research is the relation of the late horizon of GAC to NBI (e.g. the Kruszki group of CWC, Kruszki-Dobre group, Dobre type

and the I-IIa stage of Iwno culture - 1). The clarification of this issue is necessary before the cultural situation in the initial stages of NBI can be reconstructed. At present it is not possible to take up all the problems within the concept of these relations.

In this paper I wish to present some of the arguments derived from material analyses supporting the theory linking very strongly, both chronologically and culturally, the late horizon of GAC with NBI, and seeing the GAC people as one of the main culture-forming factors of the first half of the interstage. I believe that the settlement success of the model of ecological-cultural coherence is largely due to the people of the late horizon of GAC. I also believe that the importance of the GAC tradition in Kuiavia was twofold. Firstly, it was the only neolithic tradition which survived in relatively integrated form (its multidirectional cultural development notwithstanding) far into the NBI (as the late horizon) and existed until the Trzciniec horizon emerged in Kuiavia, being apparent in it as the substrate. Secondly, since the very first "Early Bronze Age" influences in Kuiavia, GAC proved to be very susceptible to them.

Today it is still impossible to tackle all the problems implied by the conception outlined above. For one taking, this would go far beyond the framework of this report, and secondly the knowledge we have is still inadequate. In what follows I intend to present arguments- derived mainly from analyses of ceramics-in support of the thesis about the contemporaneity of the late horizon of GAC and the beginning of NBI, a period which also includes the "Kuiavian Early Bronze Age" (Kruszki group of CWC, Kruszki-Dobre group, Dobre type, or phases I and IIa of the I).

An effective tackling of the outlined problem was possible thanks to studies performed in the 1980s which greatly expanded the body of evidence material. The analyses that follow are based on the most important assemblages discovered in this decade. The selection was closely limited by the problems touched upon here. In the first place those sets were chosen which had been considered to be typical of the late GAC horizon, i.e. Chlewiska, Dąbrowa Biskupia commune, site 56, GAC phase (P. Chachlikowski, J. Czebreszuk, 1990), Jezuicka Struga, Rojewo commune, site 17 (D. Prinke, M. Szmyt 1990), Liszkowice, Rojewo commune, site 24 (D. Prinke, M. Szmyt 1990) and Stara Wieś, Rojewo commune, site 9 (D. Prinke, M. Szmyt 1990) as well as those sets which were considered to be the "early bronzeones" and this classification was based on the stylistic criterion: Chlewiska, Dąbrowa Biskupia commune, site 56, Iwno phase (P. Chachlikowski, J. Czebreszuk 1990), Chlewiska, Dąbrowa Biskupia commune, site 70 (P. Chachlikowski, J. Czebreszuk 1990), Goszczewo, Aleksandrów Kujawski commune, site 14 (J. Czebreszuk 1987), Korzecznik, Kłodawa commune, site 14 (J. Czebreszuk 1988), Opoki, Aleksandrów Kujawski commune, site 7 (M. Woźniak 1988); Smarglin, Dobre commune, site 22, Smarglin, Dobre commune, site 53 (J.Czebreszuk, P. Makarowicz 1990) and Tarkowo, Nowa Wieś Wielka commune, site 23 and arising from 14C dating: Podgaj, Aleksandrów Kujawski commune, site 32 (P. Chachlikowski, J. Czebreszuk 1990) and Zarębowo, Zakrzewo commune, site 21.

The first thing to say about these materials is that they are all of settlement character. This makes Kuiavia unique among the other regions where the beginning of the Bronze Age is known prilimaril from grave finds. This situation has its drawbacks (to mention

These views are a continuation of conceptions developed by A. Kośko since the beginning of the 1970s (A. Kośko 1973; J. Bednarczyk et al. 1975; A. Kośko 1979).

but the problem of assemblage homogeneity)2 but also a number of advantages, the most important of which is the more comprehensive reflection of changes in a "living" culture from the point of view of possibilities of observation of the flow of cultural information (features) coming from various systems, thus their synchronization (for grave deposits a greater importance of "ideological factor" is assumed. This factor often "isolates" this type of sources from the fluctuation of the then cultural contacts).

I propose to pursue the outlined goal by analysing information provided by, in my opinion, the most convenient body of evidence - ceramics - and in particular its ornamentation, technology and micromorphology (the latter restricted to rim edges) . The macromorphology of bronze artifacts vessels and other artifacts is not considered because of their scarcity in settlement remains.

The analyses of ornamentation (carried out on the "classical" level of evaluation of motif kinds) and of the variability of the structure of rim edges (being based on the well known schemes proposed by A Kośko 1981:33ff) do not require much description. The results of the latter analyses are presented in Table 2 (ornamentation) and Table 3 (rim edges).

As regards technology, the methodical innovations in its presentation require a few words of introduction.

The proposed scheme of technological analysis is designed with NBI materials in mind (J. Czebreszuk 1983:26ff; 1987:205ff). Its detailed presentation cannot be attempted here for lack of space, and I will give only a general characteristic, most convenient in the case of subject matter discussed here. Following L. Czerniak's and A. Kosko's propositions, I take technological groups (tg) as analysis elements (L. Czerniak, A, Kośko 1980, p. 258). Four kinds of recipes were distinguished in Kuiavian NBI assemblages, mainly on the basis of the kind and size of mineral temper (Table 4):

Tg A is characterized by the virtual absence of mineral tempers;

Tg or "Amphorae" tg, with ceramics containing mainly coarse-grained mineral breakstone temper;

Tg C, or "Cord-forest" tg, comprises ceramics tempered to a significant extent with sand and fine-grained breakstone;

Tg D, or "Decline Neolithic" tg, is represented by ceramics tempered predominantly with medium-grained mineral breakstone and sand.

Tg A is characteristic for the Funnel Beaker culture (FBC), the cultural affinities of tg and are indicated in their alternate names, whereas tg D, tentatively described as "Decline Neolithic" is the principal object of current research. Given the aspectual nature of this report, I am entitled to omit a detailed characteristic of this genetical position. The results of technological analyses are illustrated in Fig. 1.

Of all the assemblages considered here, only that from Korzecznik, site 14, is still to be declared homogeneous (the analyses are in progress). The remaining assemblages have been tested and their homogeneity was not disproved.

3 Regarding the finish of vessel rim edges, it may be assumed without much risk of error, that the transmission and application of rules governing the process occurred unconsciously.

4 A ceramic assemblages subjected to this analytical procedure is divided into two main parts: 1) elements which may be univocally assigned to any of the tg, and 2) elements with nixed features, combining characteristics of several tg. Here, we are interested only in the former elements which have been included in the diagrams (Fig. 1). The latter elements will be considered in future studies of changes of technological recipes during the NBI in Kuiavia.

The assemblages listed at the beginning of this report may be divided into four groups according to features of the analysed types of evidence materials:

Table 2

Tentative genetical-cultural characteristic of the analysed assemblages and proposed division into groups

Groups of assemblages	Assemblage	Stylistic connotationof assemblage	Figure
I	Chlewiska 56, GAC phase	GAC, phase IIIb	L. Czerniak, M. Szmyt in this volme
	Jezuicka Struga 17	as above	D. Prinke .M. Szmyt 1990
	Liszkowice 24	as above	as above
	Stara Wieś 9	as above	as above
II	Smarglin 53	GAC, phase IIIa/ IIIb + SGC or BBC	2
III	Chlewiska 56 , IC phase	IC phase I	3
	Chlewiska 70	IC phase I	
	Korzecznik 14	so called "PCWC" + IC (early phase)	J. Czebreszuk 1988
	Podgaj 32	Epi–FBC + Epi–CWC (generally)	4:6–12
	Smarglin 22	Chłopice–Vesele culture + Epi–CWC (generally)	5
	Tarkowo 23	Kruszki group of CWC	4:1–5
	Zarębowo 21	Epi–FBC + Epi–CWC (generally)	
IV	Goszczewo 14	Trzciniec horizon, Goszczewo group	J. Czebreszuk 1987
	Opoki 7	as above	M. Woźniak 1988

Group I comprising assemblages from Chlewiska, site 56, GAC phase; Jezuicka Struga, site 17; Liszkowice, site 24; and Stara Wieś, site 9 (M. Szmyt 1992). These assemblages are characterized by features corresponding basically to these described above as diagnostic for phase IIIb of GAC, as well as in technology by the practically exclusive presence of tg (Fig. 1A) and rim edges of types la-k, 2c,e,j,k; 18-b-f,h j,k (Table 3).

Group II consisting of only one assemblage from Smarglin, site 53 (Fig.2), combining GAC features (interpreted as dating to the turn of phases and IIIb) with western cultural elements of the late Single-Grave culture (SGC) or the Bell Beaker culture (BBC) or perhaps of a tradition fusing elements of both the latter cultures. This cultural coexistence is seen primar ily ornamentation (evidently "Amphorae" motifs, such as "bird feather" impressions, and alien ones, lines made with a little toothed wheel; Fig. 2:1) and in technology (Fig. IB), and it lends the assemblage many recipes. The predominant rim edge types are lc,e, and 10a,d,e,k (Table 3). All these features

Types of vessel rim edges recorded in the analysed assemblages

Types of rim edges / Sites	1a	1b	1c	1d	1e	1f	1h	1i	1j	1k	2a	2b	2c	2e	2f	2h	2j
Chlewiska 56 GAC phase	1	1	1	4	1	1	1	1				3	2			1	1
Jeznicka Struga 17					1					1							
Liszkowice 24		1	1	1	3	1	1		1	1			4	3	4	2	1
Stara Wieś 9																	
Smarglin 53			1		2					7		1					
Podgaj 32					1												
Zarębowo 23				1	5					1			1				
Korzecznik 14	1	1	3		8		2			1							
Tarkowo 23					2												
Chlewiska 56 IC phase					2	1				1							
Chlewiska 70				3	4	1				1			1				
Smarglin 22	1	1	5		8		1			6			3				
Goszczewo 14		1	3	4	16	1	6			9	1						
Opoki 7			6	1	5	2	2	1		2					2	1	

Table 3. (continued)

Types of rim edges / Sites	2k	3c	3h	4e	9c	9d	9e	9g	9k	10a	10b	10c	10d	10e	10h	10k	11k
Chlewiska 56 GAC phase	1				1				1								
Jezuicka Struga 17			1				1							1			
Liszkowice 24	3		2				2										
Stara Wieś 9																	
Smarglin 53						3				2			2	11		3	1
Podgaj 32														1		3	
Zarębowo 23					1								1	2	2		
Korzecznik 14										2				1	1	4	
Tarkowo 23		1															
Chlewiska 56 IC phase			1											2			
Chlewiska 70			1							1	1			3			
Smarglin 22					1		1						1	5		4	
Goszczewo 14	1	1										1	3	4		4	
Opoki 7	2													2		4	

Table 3. (continued)

Types of rim edges / Sites	12h	15e	17a	17c	17d	17e	17f	17h	17j	17k	18b	18c	18d	18e	18f	18h	18j
Chlewiska 56 GAC phase	1										1	2	1	16	3	1	1
Jezuicka Struga 17												1					
Liszkowice 24						4				1			2	2	1		
Stara Wieś 9														1			
Smarglin 53										2							
Podgaj 32																	
Zarębowo 23																	
Korzecznik 14																	
Tarkowo 23																	
Chlewiska 56 IC phase												2					
Chlewiska 70										1		1					
Smarglin 22		1															
Goszczewo 14			1	3	3	6	6	10	1	8							
Opoki 7				1	3	4				1		2		2	1	1	

Table 3. (continued)

Types of rim edges / Sites	18k	19c	19d	19e	19f	19h	19k	25b	25c	25d	25e	25h	25i	25k	26f	28c	28e
Chlewiska 56 GAC phase	2													1	1		
Jezuicka Struga	1																
Liszkowice 24	1								1		1	1				1	1
Stara Wieś 9																	
Smarglin 53							3						1				
Podgaj 32,																	
Zarębowo 23																	
Korzecznik 14	1																
Tarkowo 23																	
Chlewiska 56 IC phase							1							1			
Chlewiska 70							1										
Smarglin 22		1					2							1			
Goszczewo 14			1	4		2				1							
Opoki 7	1			2	1												

Table 3. (continued)

Types of rim edges / Sites	33k	34c	41k	49c	49d	49e	49f	49h	49k	50e	51d	51e	55k	57g	57k	58a
Chlewiska 56 GAC phase																
Jezuicka Struga																1
Liszkowice 24																
Stara Wieś 9																
Smarglin 53									1							
Podgaj 32			1													1
Zarębowo 23										1						
Korzecznik 14																
Tarkowo 23																
Chlewiska 56 IC phase										1						
Chlewiska 70						1			1	1						
Smarglin 22					1	1	1	1			1		1		1	
Goszczewo 14	1					5			1	1			1			
Opoki 7		1			3	2			1							

(stylistic syncretism, many recipes in technology and rim edges of type 10) make the Smarglin assemblage similar to the most numerous category of assemblages making up group III.

Group III embraces assemblages from Chlewiska, site 56,1 phase (Fig.3), Chlewiska, site 70; Korzecznik, site 14; Podgaj, site 32 (Fig.4:l-5); Smarglin, site 22 (fig. 5); Tarkowo, site 23 (Fig. 4:6-12); Zarębowo, site 21.

Table 4

Outline characteristic of the principal ceramics recipes in NBI in Kuiavia

Symbol of tg	Principal feature of tg	Cultural connotation
A	virtual absence of mineral temper	FBC
	coarse-grained mineral breakstone	GAC
	sand and fine-grained mineral breakstone	so called "PCWC" and Epi-CWC
D	medium-grained mineral breakstone and sand	?

Judging by ornamentation (Chlewiska, site 56 and 70, Smarglin, site 22, and Tarkowo, site 23) and radiocarbon dating (Podgaj, site 32, Zarębowo, site 21) nearly all the assemblages of group date to around 2200 cal BC (1800 BC; the exception being the assemblage from Korzecznik, site 14, which is probably younger).

The distinct nature of group III is best apparent in technology, a cardinal feature of which is many recipes, or diversity of recipes, in all assemblages. This is an important novelty in the development of technology of Kuiavian communities which till then was largely with one recipe meaning that ceramics was, as a rule, manufactured according to a single recipe (e.g. in the two largest systems: FBC and GAC). The nature of "many recipes" differed in the various group I assemblages, and already at this stage the differences make possible the distinction of possible subgroups. The most apparent of these alleged subgroups would comprise assemblages from Podgaj, site 32, and Zarębowo, site 21.

Another group of features setting gr)up III clearly apart from groups I and IV pertains to the unique structure of rim edges (Table 3 - types la-h,k; 10a-e,h,k; 49c-f,h,k; 50e; 51d,e; 55k; 57g,h). Worth stressing is the fact that not only does group III as a whole differ from the other group, but its assemblages are also very similar to each other as regards rim edges.

Group IV consists of assemblages from Goszczewo, site 14, and Opoki, site 7, characterized by ornamentation styles of the Trzciniec horizon, with visible traces of influence from beyond the Carpathians (Goszczewo) and of the Tomb Culture tradition (Opoki). The technology resembles that of group ("many recipes"; Fig. 1D) while rim edge shapes reflect a rather surprising combination of features characteristic of groups II and III (Table 3).

The taxonomic identification of groups I and IV is relatively simple. As already mentioned, group I may be connected with phase IIIb of GAC while group IV represents the Trzciniec horizon in its eastern Kuiavian variant (so called Goszczewo group).

The main problem to solve is the position of group III assemblages. On the one hand, as already mentioned, group III is the most comprehensive techno-stylistic manifestation of the "Kuiavian Early Bronze Age", which is here based primarily on epi-Corded Ware tradition *sensu largo*. This tradition is present in Kuiavia in very many shades (features of concrete genetical centers) such as: late SGC (Smarglin, site 53), the Wkra group of CWC (late stage; A. Kośko 1979:63ff), BBC (K. Jaździewki 1937), the proto-Unetyce culture (A. Kośko 1979:13ff), the Chlopice-Vesele culture (assemblages from Dęby, site 29, and Smarglin, site 22; cf. also A. Kośko 1979:144), or the specifically Kuiavian so called Kruszki group of CWC (A. Kośko 1979:148ff) and the early I . On the other hand, we observe in group III (at least in its technology) a constant presence of GAC traditions, a sporadic presence of FBC traditions (Podgaj, site 32, and Zarębowo, site 21 - technology and ornamentation) and of the so called "PCWC" features (Korzecznik, site 14 - technology and ornamentation; Smarglin, site 22 - ornamentation). These are, generally speaking, "neolithic" elements, and they would justify the inclusion of group III assemblages in the category of "mixed groups" proposed by T Wiślański, or in A. Kośko's phase IIIc (see above). However, there are no material grounds for such classifications: the i-Corded Ware tradition is clearly legible in group III.

In the light of the above considerations I believe it possible to base the hypothesis of the contemporaneity of the late horizon of GAC and the "Kuiavian Early Bronze Age" on the following three tenets:

1. The assemblage from Smarglin, site 53, combining GAC features from the junction of phases IIIa and IIIb (i.e. from the junction of the classical and late horizons) with early elements of SGC or BBC, is evidence of the contemporaneity of the beginnings of the late horizon of GAC and of group III. The stylistic dating of late-CWC elements indicates that this process gained momentum around 2350-2200 cal BC (1900/1850 BC).

2. Large numbers of borrowings, both in style and technology, are evident in the two analysed groups of assemblages. Although the considered evidence material suggests mainly one direction of the flow of these borrowings, showing the presence of "late Amphorae" features in group III assemblages, previously published materials from lake Pakoskie (J. Bednarczyk et al. 1975) also document the reverse direction, namely the reception of epi-CWC features by the "late" GAC.

3. The presence of features of both groups in assemblages of the Trzciniec horizon. The numerous formal connection between groups I + III and groups IV are evident not so much in ornamentation as in technology (tg B) and particularly in micromorphology (Table 3) where the combined features of groups I and III found their way to group IV.

Therefore a question is justified of whether on the basis of the present knowledge of the subject we can speak of the existence of "mixed groups" (according to T. Wiślański), and of IIIc stage (according to A. Kośko) as a distinct taxonomic-cultural units of NBI of Kujawy?

In case of "mixed groups" we can unequivocally say that be ing - like group III - a taxonomic proposition it is clearly less exactly defined than the latter. The moment of distinction of group III removes, as a result, the need of using the concept of "mixed groups" (as a less clear-cut one).

A more complicated is the problem of the importance of consideration in this contribution for the problem of existence of stage IIIc of GAC which after all has been a proposition justified mostly by the theoretical premises (conception of cultural development of this epoch) and since the very beginning - as I have emphasized earlier - has caused a lot of taxonomic controversies. The above conducted analyses do not contain such controversies, just the opposite - on the basis of the presently available sources it is not possible to mention groups of assemblages which would be characterized by a list of GAC features later than the features considered to be essential for the IIIb stage. Obviously, it is not a premise sufficient to refute the conception of existence of stage IIIc. Theoretically, it is very probable after all that in the last - decadent stage of GAC development (the said IIIc stage) its population is characterized by a set of features so much transformed by the acculturating factor(s) (superstratum) that the GAC features are only present in it, but not dominant. However, it is not possible to solve the problem articulated in such a way in taxonomic categories which are the content of this contribution. This can only be done by using more general (theoretical) arguments. But this goes beyond the scope of the present work.

A hypothesis may be put forward that the GAC tradition had an important function in Kuiavia and that it was realized in two ways. First, it was the only neolithic tradition which in a relatively integrated form as far as culture is concerned (relatively culturally integrated form) (when taking under consideration the above mentioned state of many trends) survived until NBI (in a form of a late horizon - stage IIIb) and existed until the formation in Kuiavia of the Trzciniec horizon. Second, as early as the beginnmg of the "early bronze" influence in Kuiavia the GAC shows a considerable susceptibility to their reception being at the same time the source of attractive cultural models for the population representing in this mesoregion various types of "early bronze" (group III).

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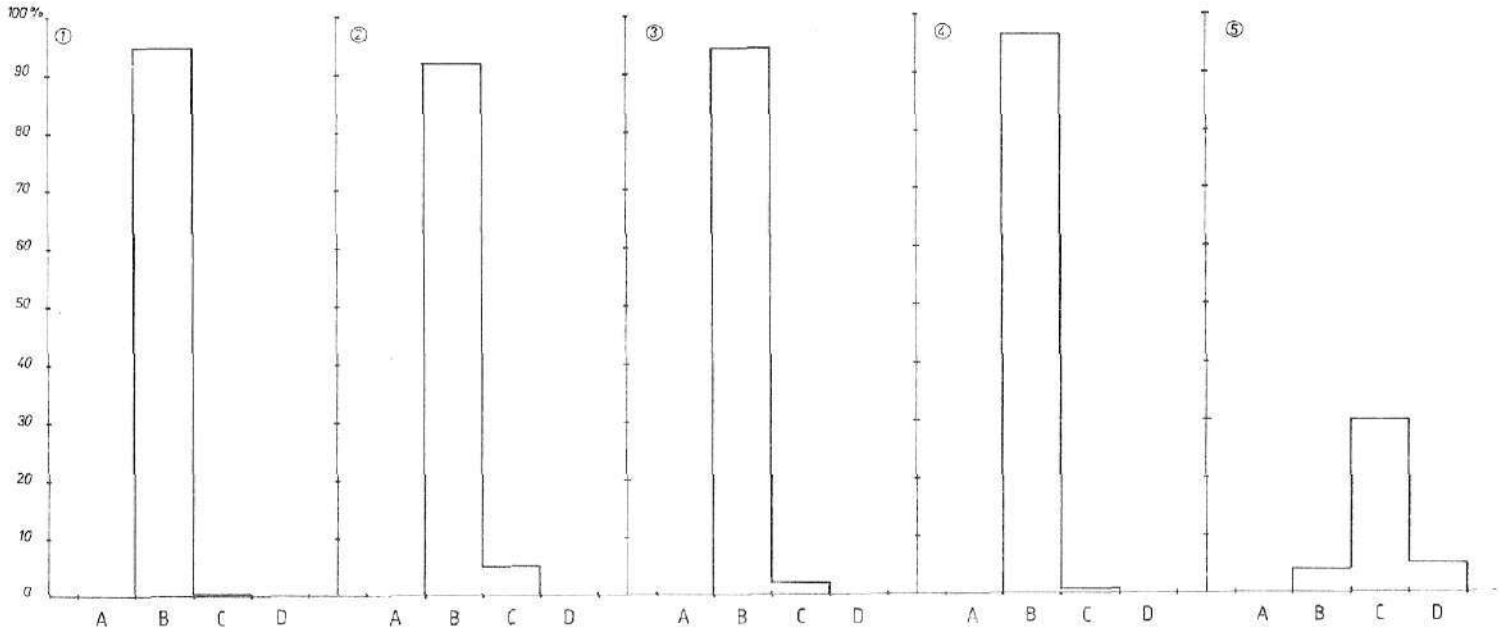

Fig. 1. . Diagram showing the shares of the basic technological recipes in ceramics of the analysed assemblages 1 - Jezuicka Struga, site 17; 2 - Stara Wieś, site 9; 3- Liszkowice, site 24; 4 - Chlewiska, site 56, GAC phase; 5 - Smarglin, site 53

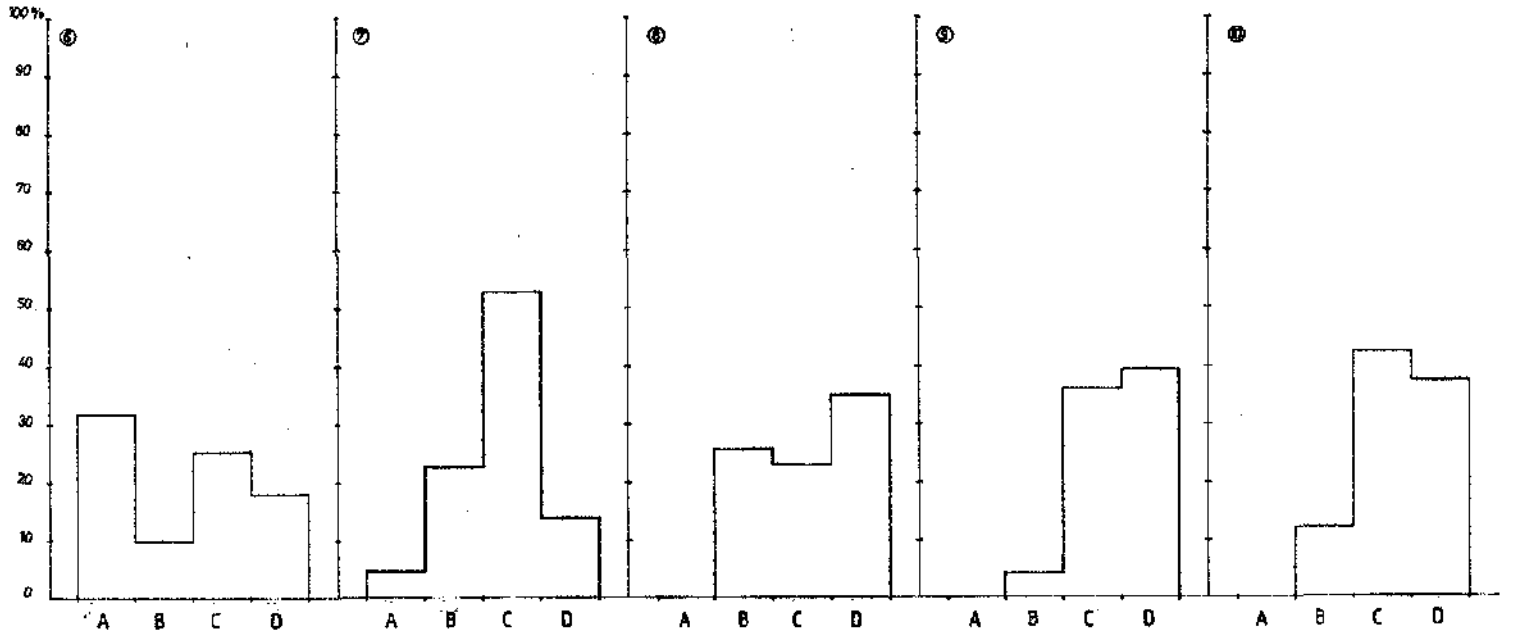

Fig. 1. . - Podgaj, **site 32;** 7 - Zarębowo, **site** 21; 8 - Smarglin, **site 22; 9** - Chlewiska, **site** 56,1 phase; **10** - Chlewiska, **site 70**

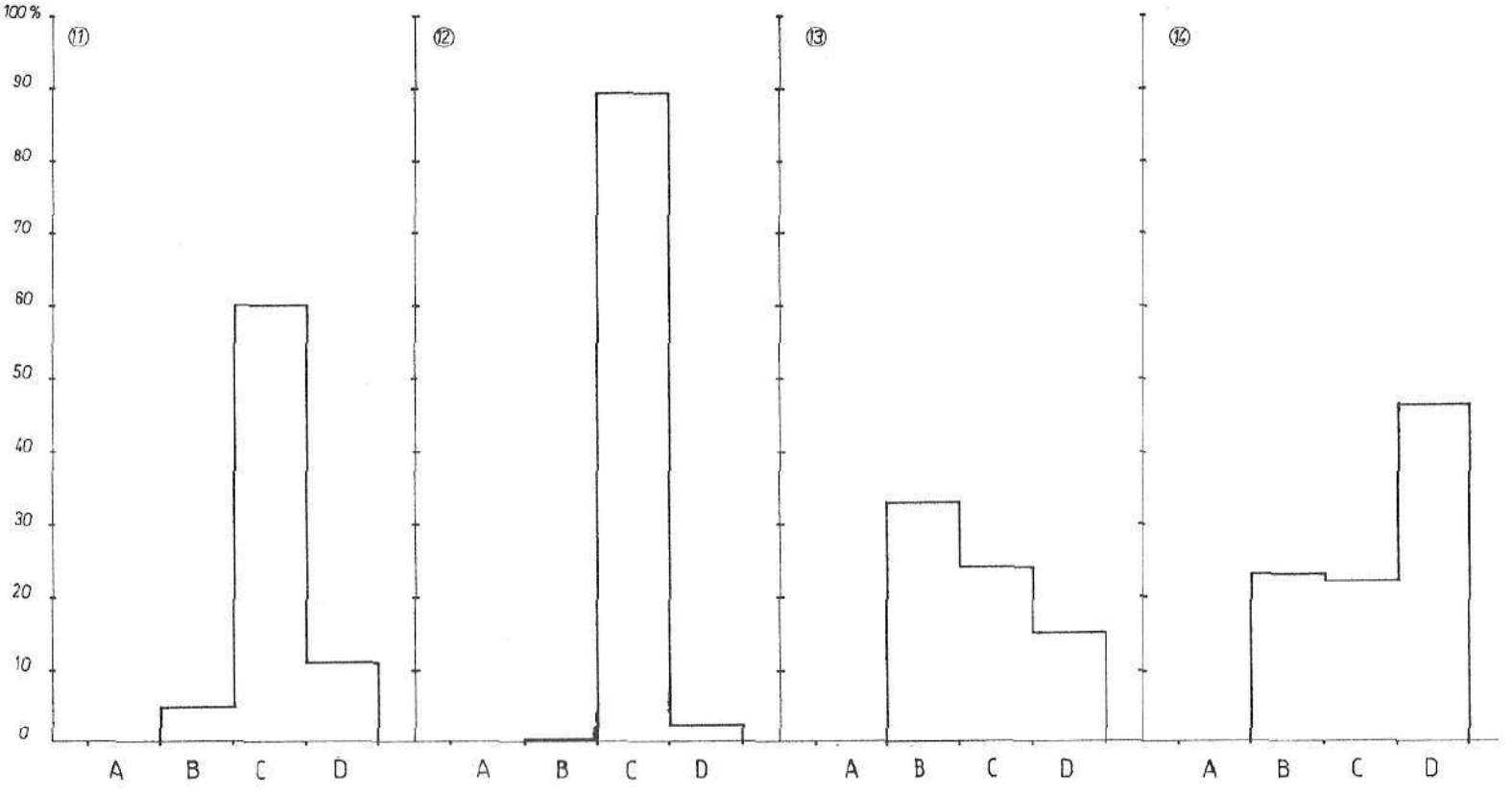

Fig. l.C. 11 -Tarkowo, site 23; 12 - Korzecznik, site 14; 13 - Goszczewo, site 14 - Opoki, site 7

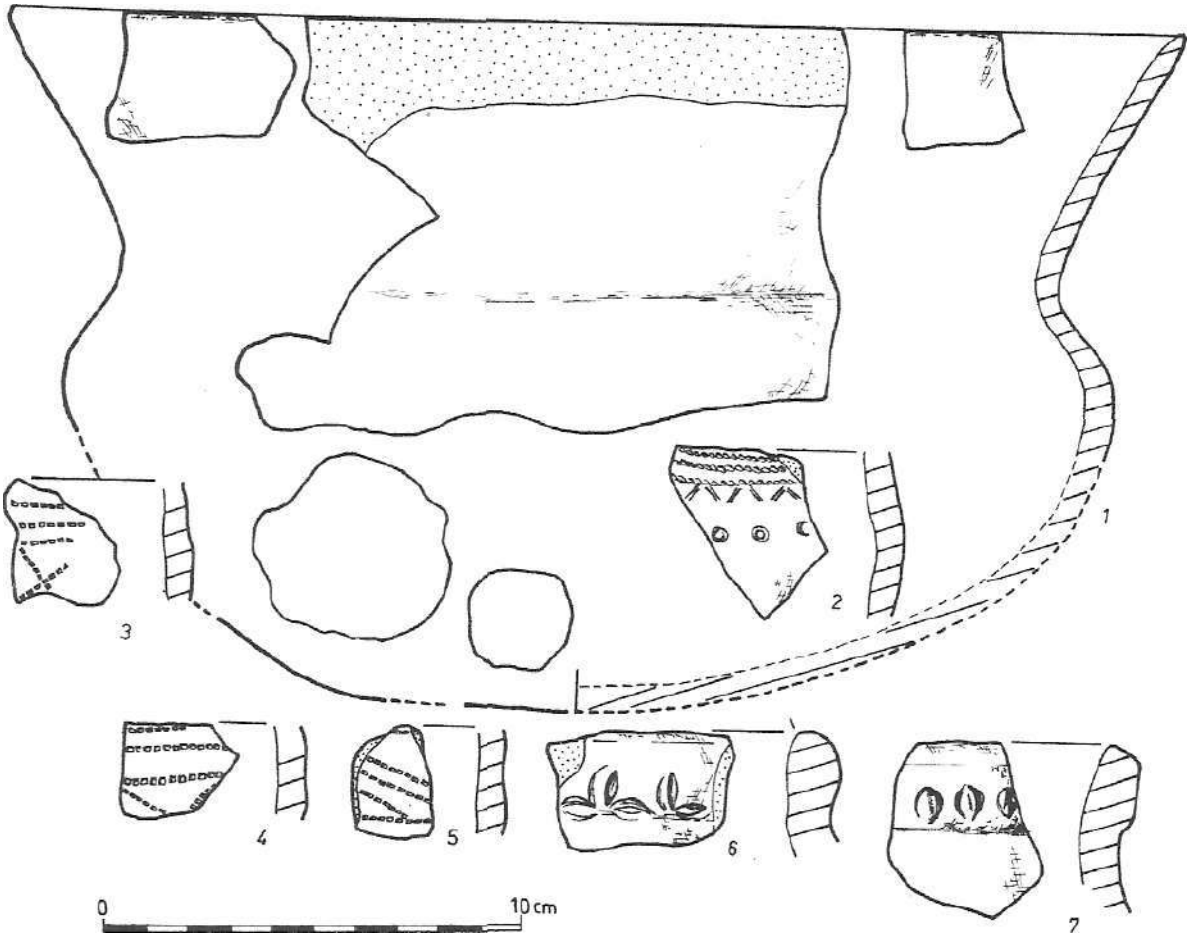

Fig.2. Smarglin, Dobre cnmmune, site 53. Selected ceramics

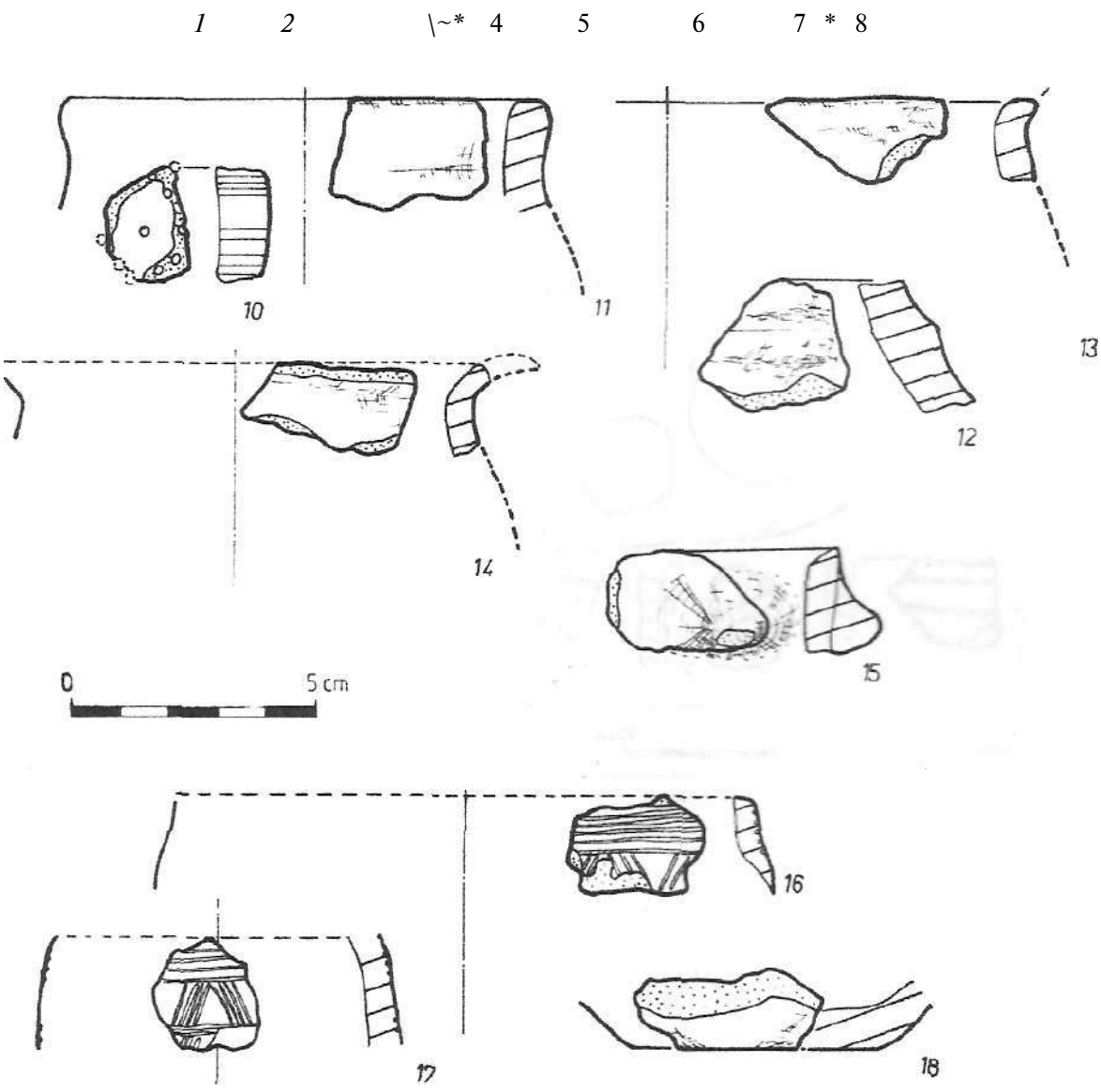

Fig.3. Chlewiska, Dąbrowa Biskupia commune, site 56. Selected ceramics

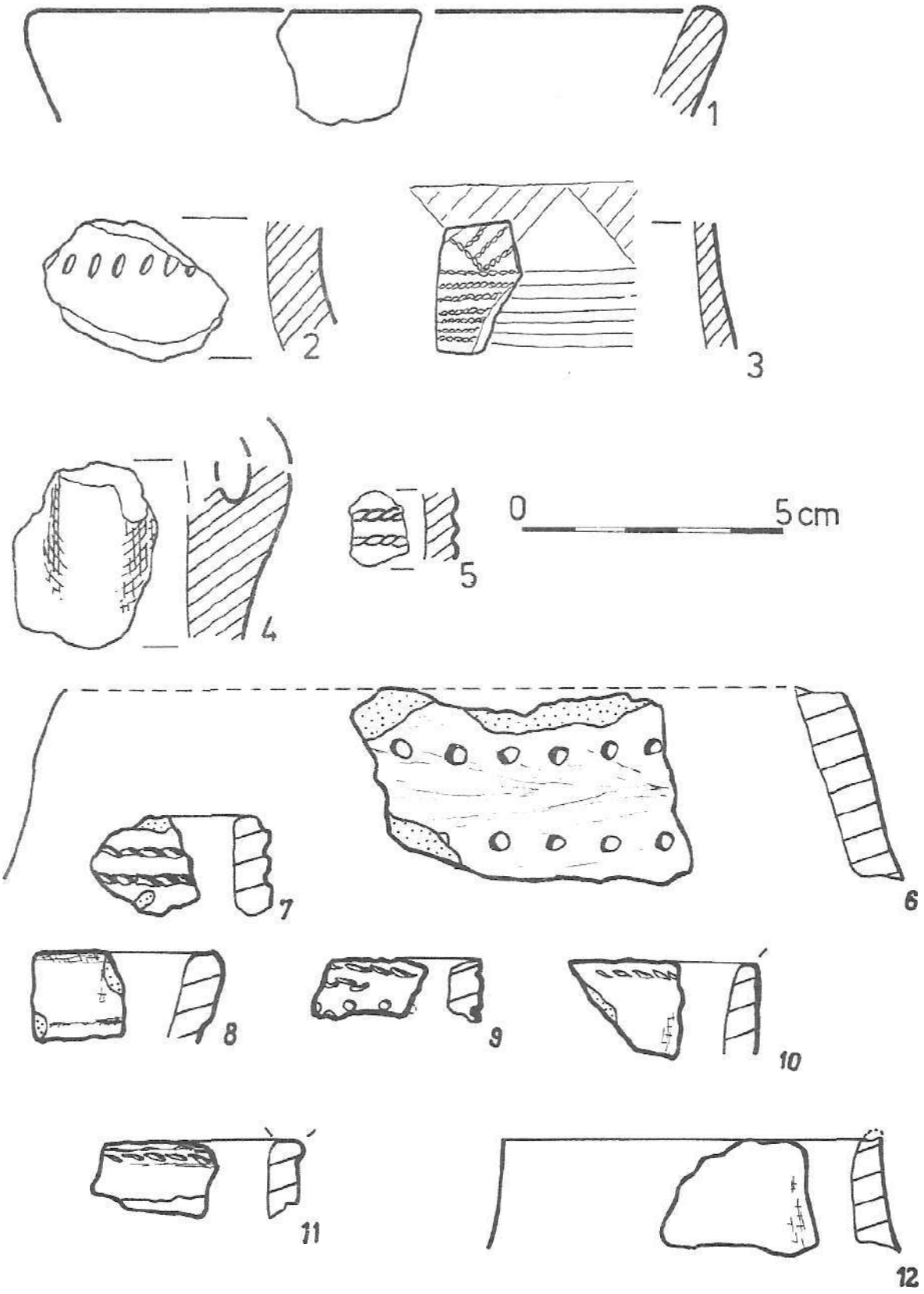

Fig. 4. Tarkowo, Nowa Wieś Wielka commune, site 23. Selected ceramics (1-5). Podgaj, Aleksandrów Kujawski commune, site 32. Selected ceramics (6-12)

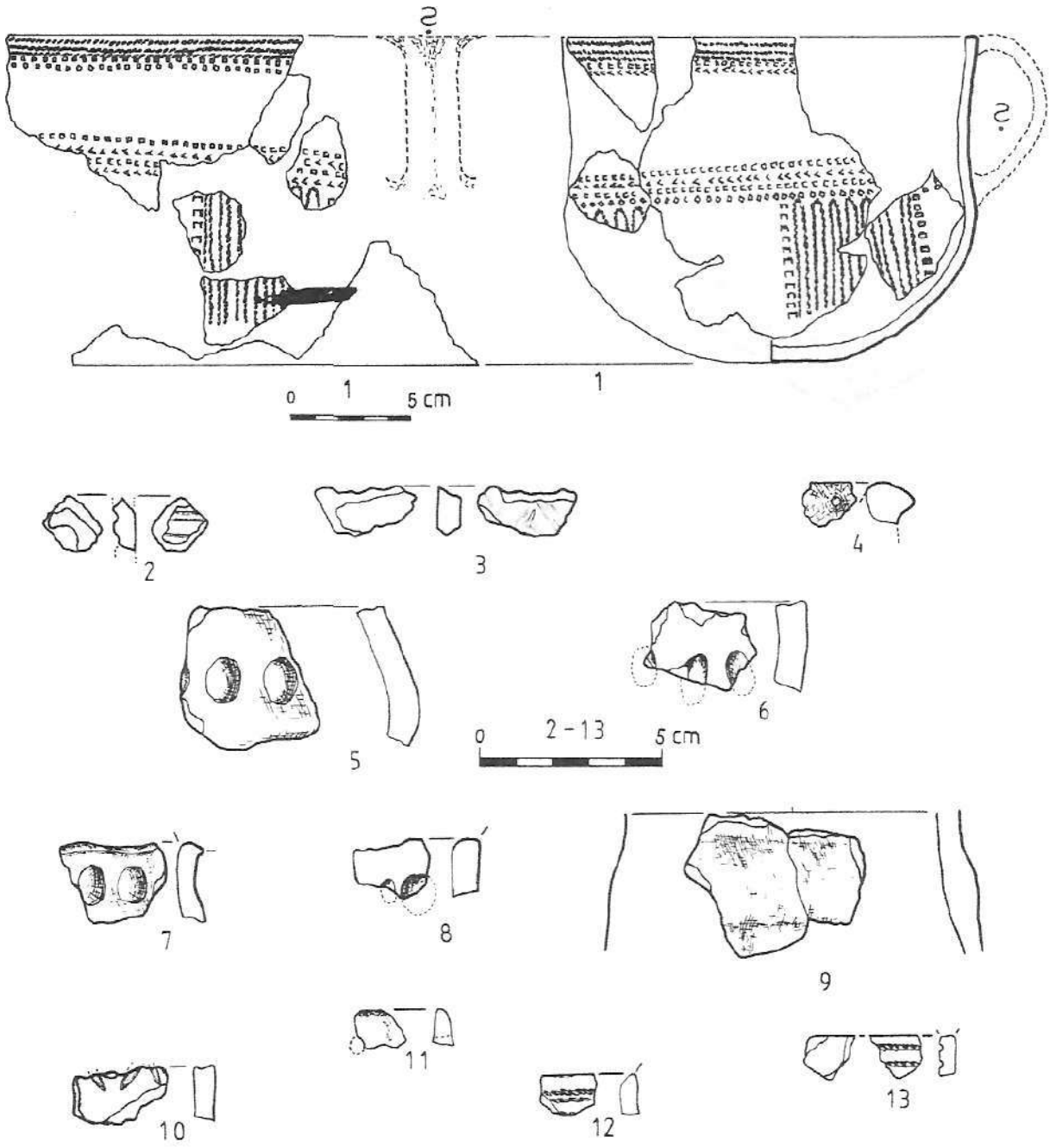

Fig.5. Smarglin, Dobre commune, site 22. Selected ceramics

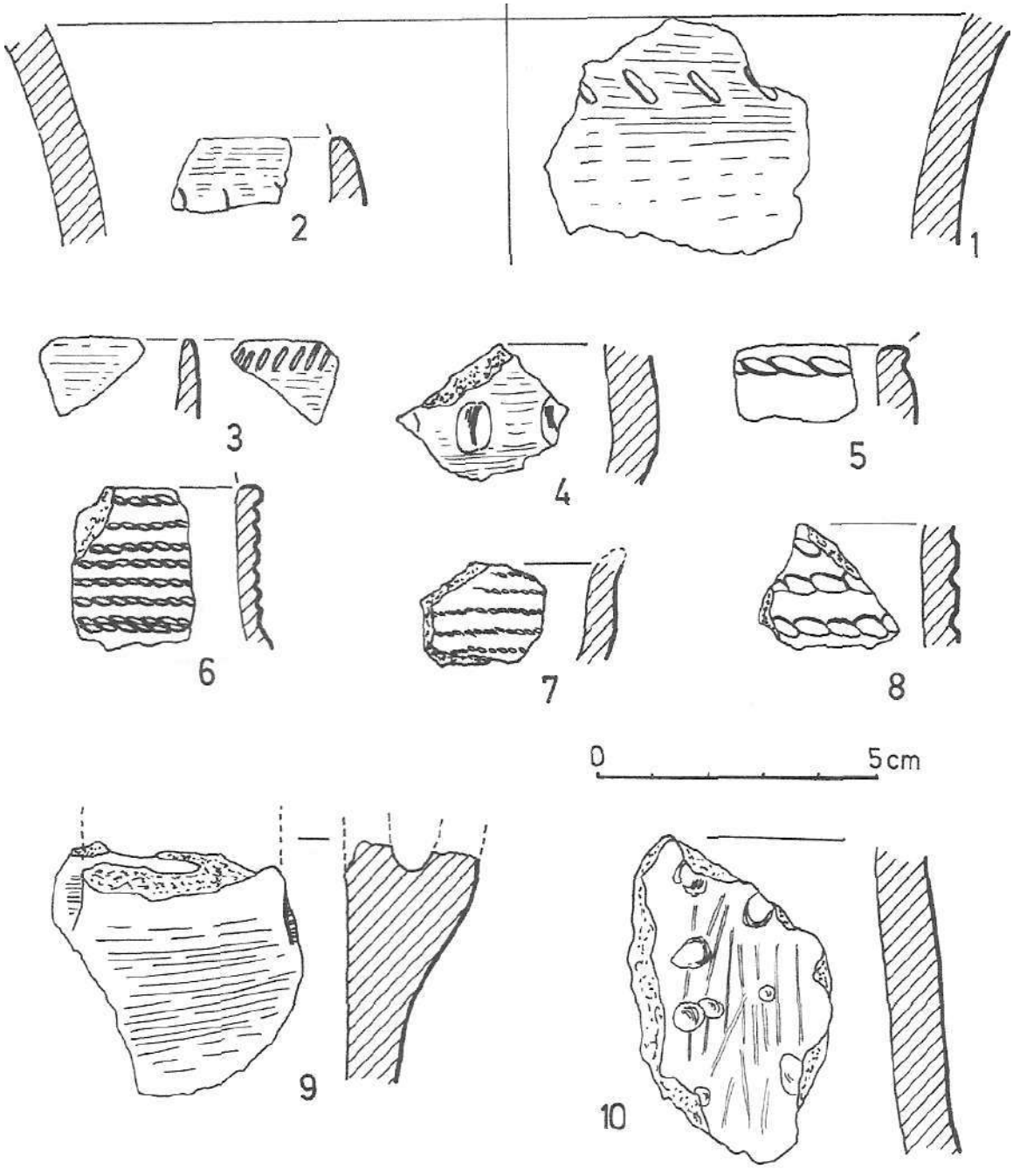

Fig. 6. Zarębowo, Zakrzewo commune, site 21. Selected ceramics

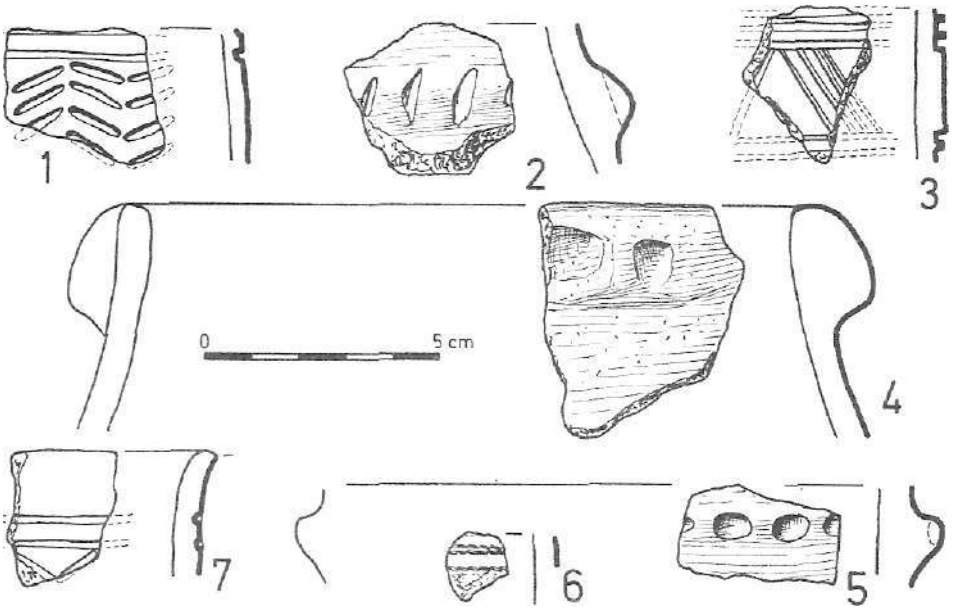

Fig. 7. Chlewiska, Dąbrowa Biskupia commune, site 70. Selected ceramics