

THE POTTERY FROM THE RITUAL COMPLEX OF THE WIETENBERG CULTURE IN CLUJ-NAPOCA, ROMANIA

1. Introduction

In late 1998 a ritual complex from the Bronze Age was excavated in Cluj-Napoca in Transylvania, Romania¹. The place was well known, as a settlement and a necropolis were discovered in the area already in the 1930s. The structures have according to the find material been dated to the middle of the Bronze Age, to the Wietenberg culture.

Especially one pit, containing among other things burnt seeds and pottery, attracted great attention. The archaeologists in charge argued that they were dealing with an offering pit dedicated to a fertility goddess.

A great amount of complete and probably deliberately broken vessels were discovered inside the pit. The ceramics contained of at least 25 vessels with a great wealth of variety in vessel shapes and ornamentation. There are not two identical vessels and the phenomena to put complete and broken vessels in the same pit is unusual. It has earlier been noticed that the vessels deserve a more careful investigation concerning the decoration.

Pottery is much more than vessel shapes and decoration. The ware is also an important part. It is possible to do a general investigation of the ware with the naked eye but analyse it is much more detailed and reliable. Thanks to a co-operation project between the National History Museum of Transylvania, Romania and the Laboratory for Ceramic Research at Lund university, Sweden have 5 pottery sherds and 1 piece of adobe from Cluj-Napoca and 3 sherds from the rural settlement Derșida, about 100 km north of Cluj-Napoca been analysed. The analyses involve investigations of thin sections under the microscope and firing tests.

The firing tests may tell us about the original firing temperature of the pottery and the adobe. The analyses of the thin sections gives information about the clay and temper used in the pottery. The vessels shape and the decoration of the pottery from the pit in Cluj-Napoca shows a great variation and the question is if the pottery ware also gives the same result. Was the same type of clay and temper used in the vessels? The ware can also give us information about the function of the vessels, which may be important in discussions concerning ritual aspects. The pottery from Cluj-Napoca has in due to investigations with the naked eye been divided in two groups, called coarse and fine.

The aim of the analyses of the pottery from Cluj-Napoca and Derșida is to describe the ceramic craft at the two different places. The sample consists of 9 thin sections. In due to the small amount of analysed sherds may the results only be interpreted as preliminary, but it is despite the problem possible to discuss differences and similarities between the pottery, e. g. the groups fine and coarse. The analyses under the microscope may put a light on the relation between the ritual complex at Cluj-Napoca and the rural settlement at Derșida. The firing tests gives information about the original firing temperature which may be an important contribution to the discussing about secondarily burning in the pit from Cluj-Napoca.

¹M. Rotea, M. Wittenberger, *The ritual complex of the Wietenberg Culture, Cluj-Napoca (Transylvania)*, AMN 36/1, 1999, 7-28.

2. Methods

Analyses under the microscope

The analyses have been carried out under the microscope. A thin section (0.03 mm thick) was made out of every sherd. Under the microscope it is possible to see different structures in the ware. Among other things it is possible to identify clay type, temper material and amount, grain size, accessory minerals and organic material such as diatoms and plant material. Sherds with the same type of clay and temper are most likely from the same production area. Analysing thin sections gain more accurate information about the means of temper. An example is the difficulties in identifying grog tempering. Tests made with clays tempered with grog showed that the pieces of old pottery are almost impossible to spot in the new pottery. Only approximately 7% of the original 25% of the grog could be observed under the microscope after the re-firing².

The investigation of the thin sections was carried out in a polarisation microscope at magnifications between 25x and 1000x, in both parallel and polarised light.

Thermal Colour Test

Apart from the analyses of thin sections a Thermal Colour Test (TCT) was performed. TCT is a method based on colour changes of clay during firing³. The Munsell Color Chart system is used as a standard colour reference⁴. The colour of the clay does not start changing until the original firing temperature has been exceeded. The firing was carried out at intervals of 100°C until a temperature of 1000°C was reached.

3. The archaeological contexts

The ritual complex at Cluj-Napoca

Cluj-Napoca is the capital of the Cluj-district in Transylvania in north-western Romania. The city lies next to the river Someş. During the modernisation of Banat Street in Cluj-Napoca in 1998 the remains of large archaeological complex were discovered and investigated by the Rescue Excavation Department from the National History Museum of Transylvania. The site was well known from excavations in the 1930's, when a site consisting of a settlement and a necropolis was investigated⁵.

The complex consisting of several structures was dated its pottery to the middle of the Bronze Age. As mentioned above this article focus on one of the structures, pit G1. The pit measured 2.10 m in the top, 4.1 m in the bottom and was 1.65 m deep (fig. 2). The profile was cone shaped. The top layers consisted of the same yellow clay that surrounded the pit. Under the top layers a thin layer consisting of clay mixed with mollusc, lamellibranch, and fragments of a gastropod was found. The next layers consisted of soot and charcoal. The bottom layer contained burned seeds, a large amount of pottery and three fragments of animal bones. Both the layers under the shell layer showed evident marks of fire⁶.

The pit was dated to the 3rd phase of the Wietenberg culture. Some of the vessels seem to have been deposited as intact vessels and some only as single sherds. The

² A. Lindahl, *Skärvor blir kärl – simulerad tillverkning av keramik*, in Levandegöra arkeologi. Rapport RAA 1990, 3, Stockholm 1990, p. 50 f.

³ B. Hulthén, *On Thermal Colour Test*, Norwegian Archaeological Review 9, 1976, 1.

⁴ Munsell Soil Colour Charts, Baltimore 1971.

⁵ M. Rotea, M. Wittenberger (n. 1), p. 7.

⁶ Ibidem.

pottery was deposited upside down, on the vessel's edge or in normal position. All vessels contained burned seeds. The decoration of the pottery was arranged in symmetrical patterns in a way that led to the interpretation that the pottery had been manufactured for a specific purpose⁷. It is also noteworthy that there was not two identical vessels among the at least 25 vessels in the pit.

Similar pits with pottery deposited upside down in pits have been found on other places in Romania. At a settlement in Valea lui Mihai 28 whole vessels were disposed with their mouth down in a pile, surrounded by animal bones and a large amount of ashes. In Albești several pits from the Wietenberg period has been inquired and at Șimleu Silvaniei in the Sălaj district a cone-shaped pit containing bronze drops, pottery, stone, coal and ash was found and investigated. At a Hallstatt settlement in Teleac another pit containing vessels disposed upside down with evidence of fire and burned seeds is to be found. All mentioned pits are interpreted as having a ritual purpose⁸ (fig. 2).

The rural settlement at Derșida

The rural settlement at Derșida, situated in Sălaj in northern Romania is of great importance to its region and to the Wietenberg culture. Derșida is situated on a hill, called Balota Hill just next to the Crasna River. The hill is dominating the big Crasna Valley and is strategically situated near the main road from Transylvania to the Tisza plateau.

Archaeological excavations have been carried out in Derșida between 1963 and 1969⁹. An extensive cultural layer containing stratigraphical separately contexts were investigated. The cultural layer was between 150 and 170 cm thick and was divided into 5 different levels. Derșida is unique because of it is the only settlement where all three phases of the Wietenberg culture have been discovered. According to the pottery from Derșida it has been suggested that the culture also had a fourth phase¹⁰.

The investigations have made it possible to follow and discuss the development and the change in the pottery. The pottery ware, decoration and shape were registrated with interesting results. Nicolae Chidioșan who worked with the settlement interpreted the pottery as more complex during the third phase of the Wietenberg culture than the first. During the late phase contained the pottery rich abundant in shapes. The ware was coarser during the first phase of Wietenberg culture at Derșida than the last. The rest of the elements of the pottery show minor differences.

As a contribution to the discussion of the development of the pottery during the Wietenberg culture has analyses been carried out on 3 sherds from different phases at Derșida.

4. The analysed pottery

Material

The analysed pottery consisted of totally eight sherds of pottery and one piece of adobe. The adobe and five of the sherds were taken from the pit in Cluj-Napoca, in the Cluj district. Three sherds were taken from the rural settlement at Derșida, in the Sălaj province (tab. 1).

⁷Op. cit., p. 10-11.

⁸Op. cit., p. 11-12.

⁹N. Chidioșan, Contribuții la istoria tracilor din nord-vestul României. Așezarea Wietenberg de la Derșida, Oradea 1980.

¹⁰Ibidem, p. 131.

The sherds from Cluj-Napoca were selected for the purpose to investigate the clay and the temper material more closely and to see whether the initial description of gross and fine pottery could be confirmed or not. For comparing purpose, a thin section was prepared from a piece of adobe, presuming that this artefact was of local origin.

The reason why one sherd from each faze of the settlement at Derşida was picked for thin-sections was to investigate if the tradition of making pottery changed during time or was more depending on the specific site were it was manufactured. The pottery from Derşida was also used as a comparative material to the sherds from Cluj-Napoca.

Sherd No.	Thin section No.	Registration No.	Site	Phase	Culture	Description
C1	1	P. 167921	Cluj-Napoca, Cluj	III	Wietenberg	Gross pottery
C2	2	P. 167978	Cluj-Napoca, Cluj	III	Wietenberg	Gross pottery
C3	3	P. 176907	Cluj-Napoca, Cluj	III	Wietenberg	Fine pottery
C4	4	P. 167925	Cluj-Napoca, Cluj	III	Wietenberg	Fine pottery
C5	5	P. 168049	Cluj-Napoca, Cluj	III	Wietenberg	Fine pottery
C6	6	P. 167980	Cluj-Napoca, Cluj	III	Wietenberg	Adobe
D1	7		Derşida, Sălaj	I	Wietenberg	Fine pottery
D2	8		Derşida, Sălaj	II	Wietenberg	Fine pottery
D3	9		Derşida, Sălaj	III	Wietenberg	Fine pottery

Table.1. The analysed material from Cluj-Napoca and Derşida.

The analyses under the microscope

Cluj-Napoca

Sherd No. C1, thin section 1

The vessel was made out of sorted coarse sandy clay. The clay was very poor in iron oxide but was rich in mica. Sand had been added as temper in amounts of 13%. Largest grain in the ware has been measured to 2.5 mm.

Sherd No. C2, thin section 2

The vessel was made out of sorted, fine, clay. The clay was very rich in iron oxide but poor in mica. The clay was tempered with sand in amounts of 12%. Largest grain in the ware has been measured to 3.5 mm.

Sherd No C3, Thin section 3

The clay used for manufacturing the vessel, was a sorted coarse clay. It was tempered with a minimum of 6 % of grog. Largest mineral grain in the ware has been measured to 3.0 mm.

Sherd No. C4, thin section 4

The vessel was made out of sorted coarse clay. It was rich in iron oxide but poor in mica. The clay had been tempered with grog and sand (8%). Largest grain in the ware has been measured to 3.5 mm.

Sherd No. C5, thin section 5

Sherd C5 was made out of sorted coarse clay. It was poor in iron oxide and contained some mica. Sand in amounts of 14% had been added to the clay. Largest grain in the ware has been measured to 3.0 mm.

The adobe

Sherd No. C6, thin section 6

The clay in the adobe was a sorted medium fine. It was rich in iron oxide and very rich in mica. Largest grain in the adobe has been measured to 0.5 mm. There was no temper in the clay.

Impressions on the surface of the adobe and impressions seen in the thin section showed, traces after organic material in the clay. Organic material in the clay used for making clay walls for constructions are common. The organic material in the clay most likely indicates that the clay originates from some kind of construction.

SHERD ID.		CLAY					TEMPER							Notes*	
Thin section No.	Sherd No./Faze	Reg. No.	sorted/unordered	coarse/fine	silt	sand	iron oxide	ore	mica	diatoms	sand	grog	min. content [%]		max. grain size [mm]
1	P167921	1	s	c			- -		+	n.o.	X		13	2.5	Sand
2	P167978	2	s	f			++		-	n.o.	X		12	3.5	
3	P167907	3	s	c			-		•	n.o.		X	6	3.0	
4	P167925	4	s	c			+		-	n.o.	X	X	8*	3.5	Adobe
5	P168049	7	s	c			-		•	n.o.	X		14	3.0	
6	P167980	9	s	m			+		++	n.o.				0.5	
7	I	2	u	c		X	-		+	n.o.	X	X	7*	2.0	Sand
8	II	4	u	c	X		- -		•	n.o.		X		1.0	
9	III	7	u	c	X	X	•		+	n.o.		X	5	1.0	

Table 2: Results of microscopy of thin sections of test sherds and clay. 1-6 from Cluj-Napoca, Cluj, and 7-9 from Derşida, Sălaj, Romania

Abbreviations: f = fine, c = coarse, m = medium, s = sorted, u = unordered, n. o. = not observed
Symbols: • = occurrence, - = sparse, + = abundant. * = refer to notes

Derşida, Sălaj

Sherd No. D1, thin section 7

The vessel was made out of unordered sandy coarse clay, which was poor in iron oxide but rich in mica. The clay had been tempered with sand (5%) and grog. Largest grain in the ware has been measured to 2.0 mm.

Sherd No. D2, thin section 8

The vessel was made of unordered coarse silty clay. It contained a small amount of iron oxide and some mica. The clay was tempered with grog. Largest grain in the ware has been measured to 1.0 mm.

Sherd No. D3, thin section 9

Sherd No. D3 was made out of unordered coarse silty and sandy clay containing some iron oxide and a rich amount of mica. The vessel had been tempered with a minimum 5% of grog with a maximum grain size of 1.0 mm.

Thermal Colour Test (TCT)

The results of the thermal colour test are presented in fig. 3. The pottery sherds and the adobe from Cluj-Napoca have been previously heated up till approximately 700° to 800°C.

Two of the sherds from Derşida have been previously been exposed to temperatures between 600° and 700°C. Pottery sherd No. D3 have been exposed to higher temperatures, between 800° and 900°C.

It is noteworthy that the TCT-analysis indicate that the adobe had been heated up to approximately 700°-800°C. This relatively high temperature indicate that the adobe wasn't just sun dried but has been in some kind of fire. 700°-800°C is the highest temperature that can be reached in an open fire¹¹. The piece of adobe was not sintered, i. e. it had not reached the point where it started to melt¹². The adobe was not oxidised all through, something indicating that it had not been heated more then one or possibly two times.

Results

The pottery from the ritual pit at Cluj-Napoca is in several aspects complex and miscellaneous. In the bottom of the pit 25 complete or deliberately broken vessels have been discovered. There are not two identical vessels in the material. Some of the vessels have been placed up side down. The varied pottery, the shape of the pit and the occurrence of burnt seed in the vessels indicate that the pit was used as a ritual purpose. The investigation of the pottery carried out with the naked eye has been complemented by analyses of the pottery ware.

The material from Cluj-Napoca has been compared with ceramics from the partly contemporary settlement Derşida. The main reason is that grave- or ritual pottery often differs from pottery used in the household. Pottery that was placed in graves or ritual contexts could be more aesthetic. However several separately analyses have showed that this pottery often was of a poor quality and should have cracked if they were used in the household as cooking pots. The pottery was produced for one purpose, to be placed in the grave or in the ritual context.

Two different clay types are represented among the 5 analysed pottery sherds from Cluj-Napoca. The adobe from the same site makes an own group. The vessels have either been tempered with grog or sand. The adobe is untempered.

The clays are quite similar, which may indicate a common way in making the pottery. The potters used coarse clays and added temper in small amounts. Though four out of five clays are coarse it must be pointed out that the clays are not identical. The clays were most likely not taken from the same clay pit. This could be a deliberate choice from the ceramists or be due to the fact that several ceramists are represented in the material. Every ceramist is particular about his or her clay pits, and once found it will be used for as long as possible.

The analyses also show that there is no difference in the clays in what was interpreted with the naked eye as fine and coarse pottery. Sherd C1 and C2 illustrate this. Both were interpreted as coarse, but they were in fact made out of either sorted fine or coarse clays with added temper.

The firing tests show that all vessels except for No. C5 have been exposed to temperatures about 800°C. The adobe has been exposed to the same high

¹¹ O. Stilborg, *En ugn är en ugn är en ugn. Om ugnar i allmänhet och en ugn från Skummeslöv, Halland i synnerhet*, META 95, 1995, 4, p. 42.

¹² This happened at 1200°C according to the re-heating of the adobe.

temperature. Sherd No. C5 was burned in temperatures between 600° and 700°C. If the pottery were burned a second time or not is uncertain. The reason is that the measured temperature probably is the primary, which was reached during the vessel burning. The vessels have smooth surface in general, which indicates that they not have been exposed to secondary burning. Something that also could speak against the idea of re-heating of the pottery is the way sherd No. C5 behave during the TCT-test. The reduced furnished, black surface of the vessel would have turned brown or red if the sherd had been re-heated, instead of remaining black. The adobe, which normally is exposed only to lower temperatures, might have been burnt secondarily, or have been a piece of a construction such as an oven.

The analyses of pottery from the three phases of Wietenberg culture in Derşida, reveals interesting results. The vessels contain of similar clays, unsorted coarse clays, tempered with grog and in one case with grog and sand (tab. 2). The three sherds are too few to make certain conclusions, but tendencies can be seen. They show no large technical changes in making the pottery at Derşida during the Wietenberg culture.

The fire tests shows that vessels from the first and second phase of Wietenberg culture have been exposed to temperatures between 600° and 700°C. The vessel from the third phase has been exposed to a somewhat higher temperature, between 800° and 900°C.

Analyses of pottery shows that clays of smaller grain size have been used to the vessels in Derşida than the ones found in Cluj-Napoca (tab. 2). This probably depends on local differences in the clay pits. There is no sign in the analyses of imported pottery, and it is likely to believe that all the vessels were made locally.

The small variation in the ware from Cluj-Napoca is probably due to a deliberate choice of the clay. The clay type does not seem to have any special characteristic but did probably worked well for both cooking and storing purposes. The different types of clays from the settlement at Derşida and the pit at Cluj-Napoca have been worked out in similar ways and burnt at about the same temperatures.

The adobe differs from the other clays but has probably been well suited for its purpose. The clay has among other things due to the organic contents been less suited for vessel making.

Summary and conclusion

The analyses of the pottery from the ritual complex in Cluj-Napoca and the settlement in Derşida show a homogenate and specialised handcraft. There are few differences between the pottery from de two places. The choice of different clays for the vessels from Cluj-Napoca confirms the discrepancy in the pottery from the scene. It has probably been a deliberate choice from the people who deposited the pottery that different clays would be represented. This might in its turn mean that several different ceramists would be represented. This interpretation may be extended to the fact that 25 totally individual vessels were deposited in the pit.

An interesting thought is that every family in the village sacrificed a vessel of seed into the pit, as a common act perhaps in order to conciliate the gods for better harvest.

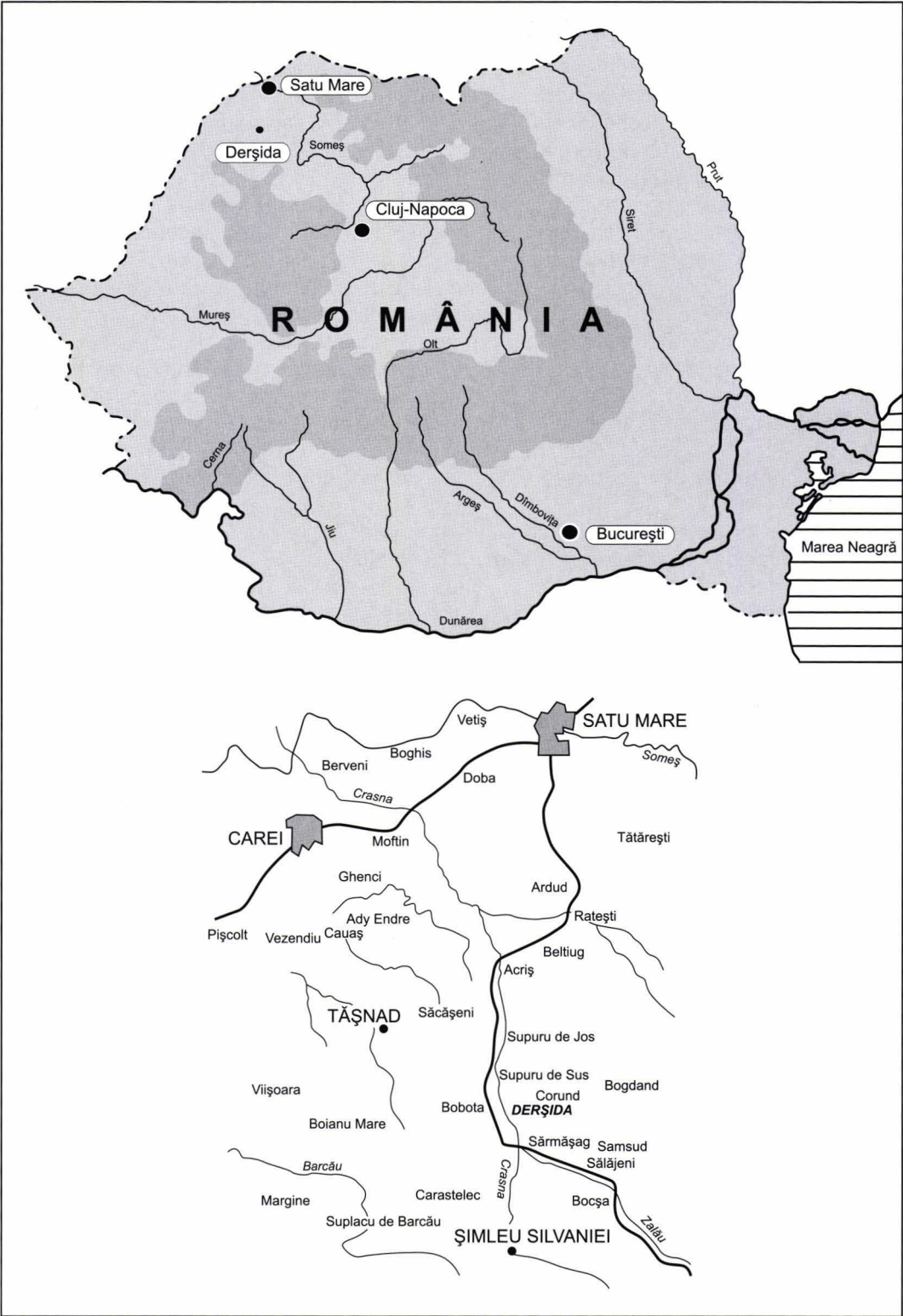


Fig. 1. Map showing the localities Cluj-Napoca and Derșida

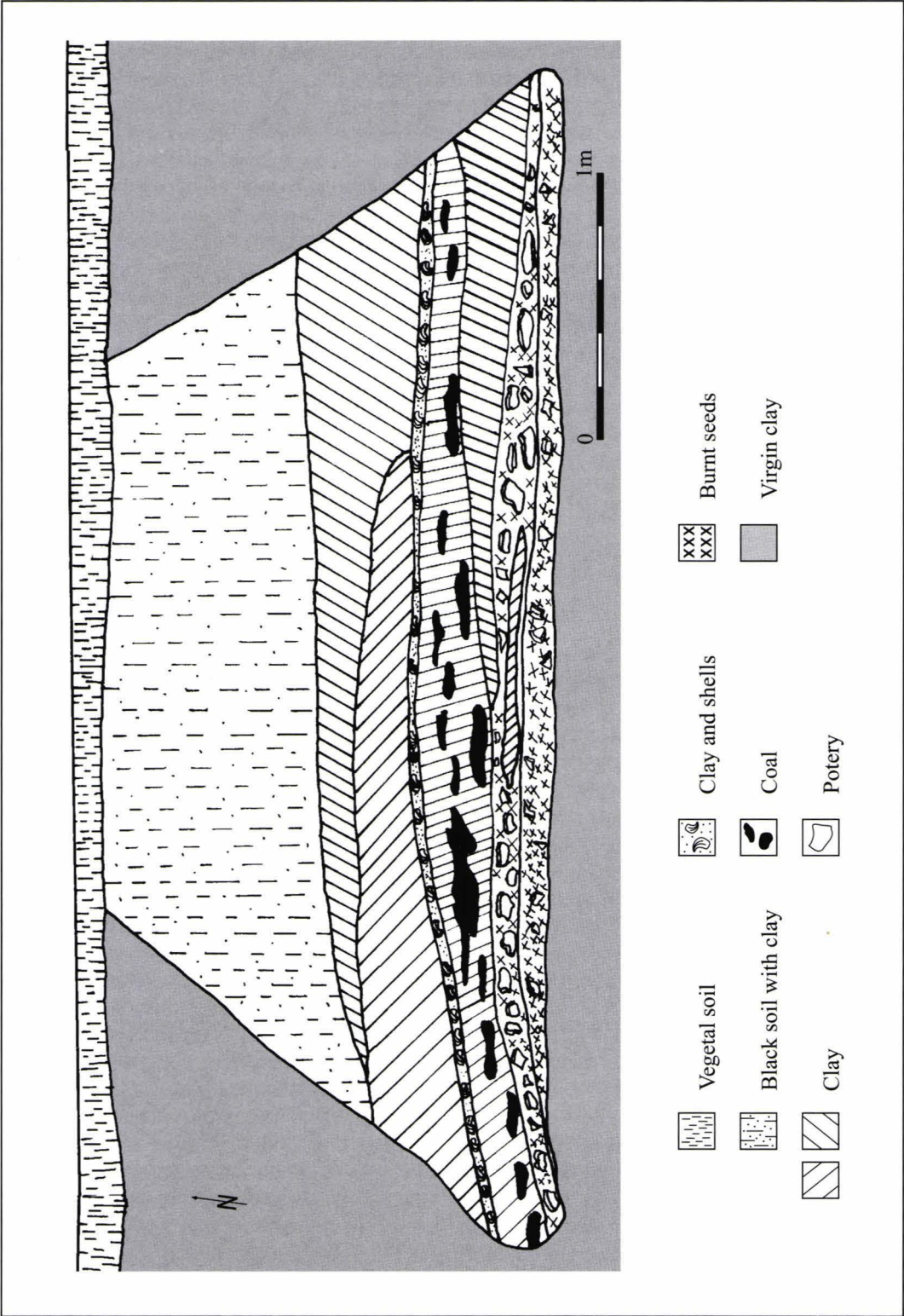


Fig. 2. Profile of the ritual pit discovered in Cluj-Napoca

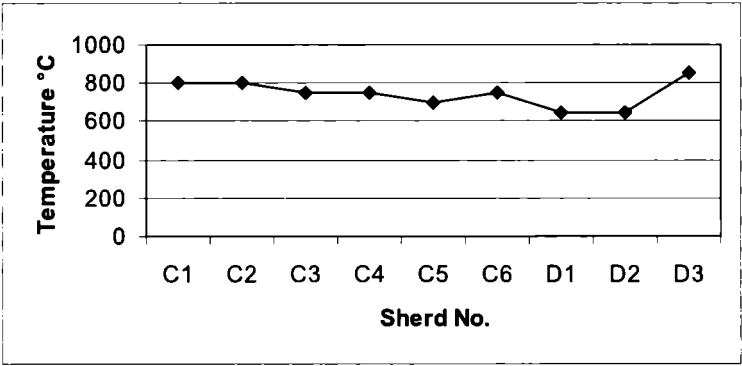


Fig. 3. Approximately original firing temperature of sherds and adobe from Cluj-Napoca and Derşida.