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CONTRIBUTIONS TO THE EVOLUTION OF THE FORTIFICATION SYSTEMS AT THE EAST OF CARPATHIANS DURING THE IRON AGE

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The fortified settlements are the most complex types of habitat. Their appearance and development, their size and internal organization and the defensive systems ampleness reflect to a great extent the demographic, economic, social, political and military changes that took place within the communities that lived there. Therefore they can be looked upon as a token of these changes, their knowledge playing an important role in creating a more nuanced image of the Geto-Dacian civilization as a whole.

This paper gives an analysis of the fortification systems which are representative for the two stages of the Iron Age (Hallstatt and La Tène) within the Eastern Carpathian area. This analysis intends to establish the tradition and innovation elements within the constructive conceptions, and eventually to follow the defensive systems evolution during this period.

With that end in view we chose a chronological approach to this phenomenon, the analyzed monuments being grouped and treated individually according to their location in time. On the basis of this criteria we have identified three groups of fortified settlements: those belonging to the early Hallstatt (Ha A and B) – the second half of the XIIth century B.C., the first half of the IXth century B.C. (**LÁSZLÓ** 1994, p.164), those belonging to the late Hallstatt (Ha D) and early La Tène (the VIth-IIIrd centuries B.C.) and those belonging to the classical age of the Geto-Dacian civilization (the Ist century B.C. and the beginning of the IInd century A.D). Our study is based on Romanian archaeological researches on settlements within the Moldavian territory, but as far as we have information we will also refer to some objectives in the upper Pruth and

 $^{^{1}}$ There is no information about the fortified settlements within the last half of the IX^{th} century and the beginning of the VI^{th} century, subject we will bring up later in our paper.

Dniestr region and Bessarabian territory enclosing them in our presentation.

Although the number of the early Hallstatt fortified settlements discovered in Eastern Carpathian area is too small, also due to researches gaps, they have been certified in all cultural areas specific to this period. In Holyhrady-Grănicești area, the eastern variant of Gáva civilization (URSULESCU, POPOVICI 1997, p.52) there have been discovered settlements in Preuteşti (ibidem, p.51-56), Siret (URSULESCU et al. 1987, p.93; **IGNAT, LÁSZLÓ, MARES** 1996, p.114-115), Lisičniki (MALEEV 1987, p.88-91), Krivce (*ibidem*, p.88-89), Grusev (*ibidem*, p.88-89), Voloka (*ibidem*, p.88-91), Homjakov (*ibidem*, p.89), Horodnita (*ibidem*, p.89-91), Fedorovka (*ibidem*, p.91-92). In Corlăteni-Chişinău area there was discovered the great fortified enclosure in Cândesti (FLORESCU, FLORESCU 1983, p.76) which might have also been used by the Tămăoani group bearers afterwards (LÁSZLÓ 1994, p.158). In Cozia group area fortifications are attested in Pocreaca (ICONOMU 1994, p.94; 1994, p.75) and Brad (URSACHI 1995, p.22). In the area between Pruth and Dniestr there can be mentioned the settlement in Butuceni belonging to Saharna-Solonceni group (NICULIȚĂ 1996, p.143).

The Hallstattian fortresses are usually made of three elements: vallum, ditch and palisade, elements which are also part of the defensive systems during the Bronze Age (**BADER** 1982, p.56-64). Compared with the defensive systems during the Bronze Age, the Hallstattian ones are extremely broad the three peculiar elements being better integrated in a unitary assembly, with an increased defensive capacity, better suited to land conditions. Therefore, there is a variety of fortified settlements, both as form, size and fortification manner, and actually there are not two settlements identically fortified.

The fortified settlements or the early Hallstattian fortresses are usually placed on high places; on rivers upper terraces, as in case of Brad settlement (URSACHI 1995, p.17), on promontories: Preutești (POPOVICI, URSULESCU 1981, p.94; URSULESCU, POPOVICI 1983, p.26; 1997, p.52.), Pocreaca (ICONOMU 1995, p.96) and Siret (URSULESCU et al. 1987, p.4; IGNAT, LÁSZLÓ, MAREŞ 1996, p.114). The Cândesti settlement is different. It has an enormous enclosure

with two inner heights, fortified later during the Dacian period (FLORESCU, FLORESCU 1983, p.75).

The fortification manner depends to a great extent on location. In the case of settlements or fortresses placed on promontories with hardly accessible slopes on three sides, the fortification is usually made by blocking the access side with a ditch and a vallum. This is the fortification manner peculiar to the settlements in Siret (URSULESCU et al., 1987, 93), Brad (URSACHI 1993, p.99), Pocreaca, in the first fortification phase (ICONOMU 1995, p.96) and to some of the fortified settlements on the upper Pruth and Dniestr rivers (MALEEV 1987, p.86-101) (Table I). Sometimes, in order to increase the defensive capacity, successive ditches and vallum blocked the access to the promontory, giving deepness to the defensive system. This is the case at Pocreaca (ICONOMU 1995, p.96).

In other cases the fortification was made by means of a circular vallum This is specific to the settlements in Cândeşti (FLORESCU, FLORESCU 1983, p.75), Pocreaca, within the second fortification phase (ICONOMU 1995, p.96). Here, the presence of some vallum on the east-north-east and west-north-west sides makes us believe that the fortress was surrounded by a vallum on all sides. It is also the situation in Preuteşti, where there have been erected two circular vallum (URSULESCU, POPOVICI 1997, p.53). In this case a small vallum blocked the promontory at about 60m distance from the outer circular vallum towards south, (*ibidem*, p.54). A special case is that of the naturally defended settlement in Homjakov, placed on an island with abrupt borders (MALEEV 1987, p.89). Therefore, from a typological point of view, we can identify four types of early Hallstattian fortified settlements in the Eastern Carpathian area:

- I. blocked promontory in two constructive variants: a) with a single transversal vallum (Brad, Siret); b) with two or more transversal vallum (Pocreaca phase I);
- II. circular vallum represented by Cândești fortress;
- III. *mixt fortification* made both of a transversal vallum and a circular vallum. It is the manner of fortification specific to the fortress in Preuteşti and probably to Pocreaca within the second fortification phase.

IV. *Island type fortification* naturally defended by the abrupt borders of the island it is placed on. The single known settlement of this type is that in Homjakov.

As we will see, some of these types appear partially modified in the early La Tène, too.

TABLE I. Fortification elements within the defensive systems of the fortified settlements during the Early Hallstatt.

Fortified settlements	BŘAD	CÂNDEŞTI	* D * 1 a D O a	FUCKEACA	PREUTEȘTI	SIRET	HOMIAKOV	FEDOROVKA	SIČNIKI	RIVCE	GRUŠEV	VOLOKA	HORODNICA
Fortification elements		C	I	II	[J	IS S	Н	F	П	K	0		E
Blocking vallum					•	•		•	•	•	•	•	•
Two or more blocking vallum			•	•									•
Two or more circular vallum					•			•					
Ditch	•	•	•	•	•	•		?	•	•	•	•	•
Access gates				•	•				•				
Vallum with complex structure					•				•				
Escarpment works		•											
Without other artificial fortifications							•						
Circular vallum		•	?										
Palisade	?	?	?	?	•	?			?	?	?	?	?

During the last half of the IXth century and the VIIth century B.C., period partially represented by the Basarabi-Şoldăneşti culture (within the VIIIth -VIIth centuries B.C.), there is no information about any fortified settlements within the Eastern Carpathian area. Their absence can be explained taking into account the relatively high mobility of these communities oriented towards grazing, fact certified by the presence of the temporary dwellings of ash pan ("zolniki") type.

The fortified settlements will reappear beginning with the VIth century B.C., as a result of the Thraco-Getian communities sedentariness, the intensification of the social structuring and political organization process, and not at last because of the Scythian pressure. Now, there also appear the Butuceni and Rudi settlements in Bessarabia (ARNĂUTU, URSU-NANIU 1996, p.18: HAHEU 1997, p.224) together with those at Stâncesti I-Botosani (FLORESCU 1971, p.105; HAHEU 1997, p.224) and Buneşti (Vaslui county) which will last till the IIIrd century B.C., when their usage ends as a result of Bastarnae coming (FLORESCU 1971, p.114; **HAHEU** 1997, p.224). Together with the intensification of the Scythian pressure during the second half of the IVth century (FLORESCU, RAȚĂ 1969, p.17), the number of the fortified settlements increases. This is also the time when the enclosures in Stâncești II (FLORESCU, RAȚĂ 1969, p.15; FLORESCU 1971, p.109), Cotnari (*ibidem*, p.110), Moșna (FLORESCU, MELINTE 1968, p.133; FLORESCU 1971, p.106), Cotu-Copălău (SADURSKI, SOVAN 1968, p.34), Stolniceni (HÂNCU 1990, p.107), Hlinjeni (GOLTEVA 1995, p.187), Horodnica (HÂNCU 1990, p.114), Măscăuți, Mateuți, Curătura (ARNĂUT, URSU-NANIU 1996, p.37), Arsura (TEODOR 1973, p. 57; **FLORESCU** 1971, p.106) etc. were fitted up.

The fortification elements (vallum, ditch, palisade) surrounding these settlements are known from Early Hallstatt. But now, these elements are oversized compared with the previous period. The vallum of the Ist fortress in Stânceşti has a base of 20-22 m, the top width of 4 m, and over 5 m height (**FLORESCU**, **RAȚĂ** 1969, p.9). The vallum and the ditch of the IInd fortress in Stânceşti-Botoşani are smaller, but this does not affect the greatness and effectiveness of the defensive system: the vallum base is of 14-16 m width, and about 3-3,50 m height (**NIȚU**, **ZAHARIA** 1955, p.334; **FLORESCU**, **RAȚĂ** 1969, p.9). The ditch has 15m top width and about 4,50-5 m depth (**NIȚU**, **ZAHARIA** 1955, p.334; **FLORESCU**, **RAȚĂ** 1969, p.10). The vallum on the south-east side of Cotnari fortress has a base of 25 m and 5 m height, and the ditch is of 23 m width and 6 m depth (**FLORESCU** 1971 p.111). At Cotu-Copălău there is preserved a vallum of 3-3,35 m and a ditch of 5 m (**ŞADURSCHI**, **ŞOVAN** 1986, p.35).

The fortress in Stolniceni, Bessarabia, has a vallum of about 3-4 m height, and the defensive system at Horodnica is made of a palisade with two faces with earth between them, of about 6-8 m total height (**HÂNCU** 1990, p.141). The fortress in Hlijeni II is reinforced with a ditch of 4 m depth and a vallum of 3-3,5 m height (**GOLTEVA** 1995, p.189).

Looked upon individually, these dimensions may not suggest too much. Taking into account the fact that the vallum depth and the ditch height were completing each other, we can actually perceive the special ampleness of these defensive systems. Thus, the defensive system of the Ist fortress, in Stânceşti, is of about 11-12m height from the ditch bottom to the vallum ridge, completed with the height of a possible palisade and the large width of the ditch. This results in an impressive and almost impugnable defensive system for an enemy which did not have adequate technique and besiege tactics.

In most cases, the vallum had a simple inner structure, being erected together with the earth resulted from ditch digging. But there are also exceptions. At Mateuţi, the vallum has an internal structure made of vertical wooden beams disposed in two or more alignments, linked with transversal beams (ARNĂUT, URSU, NANIU 1996, p.38). At Rudi (*ibidem*, p.39), Saharna (*ibidem*) and Arsura (FLORESCU 1971, p.111; TEODOR 1973, p.53) the vallum has a stone base and at Buneşti, the vallum is erected on a wooden beams structure (BAZARCIUC 1997, p.14-15). A spectacular solution due to its ampleness and ingenuity can be found at Cotnari-Cătălina (Iaşi county). The vallum on the south-west and south-east sides is an infrastructure of more sections with different complexity degrees, made of a longitudinal stone wall assembled with a series of transversal walls (FLORESCU 1971, p.110). The vallum and the massive wooden beams palisade are erected on this stone reinforcement.

At the moment, it is very difficult to state precisely if the building technique from Cotnari is a Greek-Hellenistic influence or it is about techniques and principles already known in the Thracian world since the Early Hallstatt. The vallum with complex inner structure, taking the shape of wooden cases, can be found within the Early Hallstattian fortresses in the intra - Carpathian area, in Teleac (VASILIEV et al. 1991, p.29), and the stone wall was known by the Thraco-Getian tribes, since the same

period, as the vallum empty walls, discovered in Ciceu-Corabia (HOREDT 1974, p.212; VASILIEV 1989, p.58).

The masonry infrastructure in Cotnari is much more elaborated and ample, implying advanced engineering knowledge, probably due to the Greek-Hellenistic influence, either through the direct contacts with Greeks from the Pontus Euxinus, or through the Southern Thracians. As to the fortification elements combination there is a wide range of situations due to the land conditions and the construction materials, which are obviously different from one fortress to another, as well as within the same fortress defensive system. In most cases the vallum and the ditch appear together, situation encountered at Stâncesti (FLORESCU, RAȚĂ 1969, p.9-10), Cândești (FLORESCU, FLORESCU 1983, p.76), Butuceni (NICULIȚĂ 1991, p.139-142), Moșna (FLORESCU, MELINTE 1968, p.130), Hlijeni (GOLŢEVA 1995, p.183), Zamca (HÂNCU 1990, p.112), Rudi (HÂNCU 1990, p.23), Merești (**POPOVICI, IGNAT** 1989, p.342) etc. The abrupt slopes on north-west, north-east, and south-east sides in Cotnari, were emphasized through escarpment. Only the south-east side was reinforced with a defensive ditch (FLORESCU 1971, p.111). Four transversal vallum completed the system crossing the surrounding slopes (ibidem 1971, fig.2). Another vallum extending towards south-east was erected on the other side of the defensive ditch, at about 150 m from this. We cannot state precisely the chronological relation between this vallum and the rest of the defensive assembly, but we can suppose that it represented a first stage of fortification, later to become the fortress outpost.

An interesting manner of fortification was discovered in Brăhășești, where the defensive system was made of two concentric ditches, completed with a palisade with exterior wattled poles, with earth between them. A mixture of earth and straw was applied on the exterior side. This is a type of fortification without one essential element, vallum, the two concentric ditches playing the main part. The double earthen palisade was also attested at Horodinca, in Bessarabia (HÂNCU 1990, p.114).

Another manner of fortification which, at least in certain building stages, does not comply with the classical formula with vallum, ditch and palisade, is attested at Butuceni (Bessarabia), where one of the

fortification lines which blocked the access to the promontory is made of a calcareous stone wll, with two parallel faces filled with gravel and earth (NICULIȚĂ 1996, p.141). On one side, the fortification is made of a double wooden palisade. The stone wall building anticipates the defensive system walls of some Geto-Dacian fortresses within the Ist century B.C.-Ist century A.D. Eventually, the defensive system at Stolniceni is made of two fortification lines with vallum and ditch, built in zigzag with a view to increase the defensive capacity.

Therefore, it is obvious that some types of fortifications peculiar to the Early Iron Age also preserved. We refer to the "blocked promontory" type and to the "on all sides" fortified settlements, which are bigger and more numerous now. Besides these two types there is a third one, very well adapted to the location place, usually placed on the abrupt rivers borders, with defensive system made of vallum and ditches taking the horseshoe shape, with the opening towards the abrupt border. This is the manner of fortification peculiar to the settlements in Zamca (HÂNCU 1990, p.111), Stolniceni (*ibidem*, p.52, 107), Saharna – Rezina (*ibidem*, p.32), Moşna (FLORESCU, MELINTE 1968, p.129), Curătura (ARNĂUT, URSU-NANIU 1996, p.36, pl.XIV/2). At Dochia (Neamţ county) the fortification was similar, the only difference being the rectangular enclosures, and the presence of an earthen mound in the middle, probably used as a lookout.

During the the Ist century B.C. and the beginning of the IInd century A.D. the Geto-Dacian communities reached a development stage corresponding to the "oppidan" type civilization marked by the appearance of the "dava" type settlements, centers with military, economical, political-administrative and religious functions. As a rule, these settlements were usually placed on dominant positions in comparison with the surrounding area, either on hill or mountain promontories, as at Piatra Neamţ-Bâtca Doamnei (GOSTAR 1969, p.9) and Piatra Neamţ-Cozla (ibidem, p.23), Tg. Ocna-Tiseşti (NIŢU, ZAMOŞTEANU 1959, p.376; GOSTAR 1969, p.26-27), Moineşti (URSACHI, CĂPITANU 1987, p.53), Barboşi (SANIE 1987, p.103), or on the high terraces of the main rivers, as in case of the dava in Siret Valley: Brad (URSACHI 1987, p.33; 1995, p.17), Răcătău (URSACHI 1987, p.41; 1995, p.103; CĂPITANU 1976, 50), Poiana (VULPE 1950,

p.47; **URSACHI** 1995, p.103). The fortresses strategic positions, as well as their political and economical role imposed their fortification manner corresponding to the tactic necessities which were more complex than within the previous periods.

TABLE II. Fortification elements within the defensive systems of the fortified settlements during the VIth and the IIIrd centuries B.C.

Fortified																				
settlements		ΙΙŚ					_			CA					_	INE		IJ		4
Fortification elements	ARSURA	BRĂHĂȘEȘTI	BUNEŞTI	BUTUCENI	CÂNDEȘT	COTNARI	COPĂLĂU	DOCHIA	HLINJENI	HORODNICA	IBĂNEȘTI	MEREȘTI	MOŞNA	RUDI	SAHARNA	STOLNICENI	ZAMCA	MĂŞCĂUŢI	MATEUŢI	CURĂTURA
Blocking vallum							•		•	•	•	•						•		
Moat adjacent to the vallum			•			•	•		•	•	•	•	•	•	•	•	•	•		•
Ring-like vallum			•		•	•						•							•	
Ring-like ditches		•			•															
Simple palisade		•	?		?	•	?	?			?	?	?							
Double palisade				•						•										
Stone wall	?			•																
Semicircular vallum								•					•		•	•	•			•
Wood or stone infrastructue	•					•													•	
Two or more blocking vallum	•			•										•						
Escarpment				•		•			•					•				•		
Towers														•						

The fortifications of this period usually preserve the previous Hallstattian tradition but there appear important structural changes. The most ditches tend to become the main fortification element due to their oversize. The dimensions of the vallum in Brad (56 m width and 10 m depth) (**idem** 1987, p.35; 1995, p.17), Răcătău, 48 m width and 16 m depth: **idem** 1987, p.44; 1995, p.104) and Mănăstioara-Fitionești (80 m width and 15 m depth) (**FLORESCU, FLORESCU** 1983, p.130) are

eloquent in this case. It is difficult to specify if ditches had an anthropic origin or if they have been made by escarping and enlarging some of the existing ravines. However they had an important defensive role due to besiege tactics that made account of the war machines.

Beginning with the Ist century B.C. at east of Carpathians there was certified the stone wall, built in a manner similar to "opus quadratum" (GOSTAR 1969, p.13) present within the fortress at Piatra Neamt-Bâtca Doamnei (ibidem, p.14) and Piatra Neamt-Cozla (ibidem, p.25). Their importance as a defensive element is extremely controversial. Thus, referring to the discoveries from *Bâtca Doamnei*, the archaeological literature before December 1989 stated, based on ideological reasons, that the stone wall was a part of the fortress defensive system. It was a forced way of relating these discoveries to those from Transylvania, where the stone wall fortifications are well documented, "the state and party organisms" looking upon them as a proof of the amazing unity of the Geto-Dacian civilization. The new researches beginning with 1980 pointed out the fact that the strong defensive wall was only a supporting wall for a terrace within the fortress (MIHĂILESCU-BÎRLIBA 1997, p.157). These results were ignored, the error persisted, the scientific works and history books taking it over without discrimination.

TABLE III. Fortification elements within the defensive systems of the fortified settlements during the Ist century B.C. and the IInd century A.D.

Fortified settlements Fortification elements	BRAD	RĂCĂTĂU	POIANA	BARBOŞI	CÂNDEŞTI	PIATRA ȘOIMULUI	TG.OCNA – TISEŞTI	MOINEȘTI	MĂNĂSTI- OARA	BÂTCA DOAMNEI I	BÂTCA DOAMNEI II	COZLA
Ditch	•	•	•	•	•	•			•			
Vallum					•							
Simple palisade	•	•			•	•			?			
Double palisade filled with earth			?	•					?		•	
Stone wall										•	•	•
Wooden escarpment	•											
Naturally fortified settlements							•	•				
Towers								•		•		

We suppose that this wall might have a defensive purpose, as far as it made the access to the terrace difficult. Our supposition might be true if the information that there was a wooden superstructure on the top wall (**GOSTAR** 1969, p.14), probably a palisade, is correct. At *Bâtca Doamnei*, but also at Moinești, there were discovered the traces of some constructions with stone base considered to be the remains of some defensive towers.

The ideas presented above offered a concise image of the structural changes the fortification systems undergone during the Iron Age. The purpose of the fortified enclosures has also undergone important changes. At the beginning of the Iron Age (HaA and HaB) these were used as retreat. Seldom, the fortification defended permanent dwellings, probably centers of some tribes. Such an example is the fortification at Siret (IGNAT, LÁSZLÓ, MARES 1996, p.114-115). During the VIth-IIIrd centuries there can be seen an increase of the number of the fortifications, especially in Bessarabia and in Siret Pruth interriver. In Bessarabia there appear groups of fortified enclosures with a supervising and defensive role, surrounding the main settlement which was the political-administrative center, situation encountered at Butuceni, Saharna, Mășcăuți, Ivancea, Brănești, Hansca etc. (ARNĂUT, URSU-NANIU 1996, p.39). These defensive complexes must be related to the Scythian pressure and then to the Bastarnae pressure, which probably was strongly felt there. During the Ist century B.C. and the IInd century A.D. the role of the fortified enclosures changed a lot. During this period the fortification systems are only specific to the earliest "urbane" centers (dava) but, unlike the previous ages, the fortifications do not cover the entire surface of the settlement, but only that destined to the politicaladministrative, economical and religious activities inhabited by the local aristocracy. We do not exaggerate when stating that the Geto-Dacian aristocracy, well socially individualized, "monopolized" the fortified area. Surrounded by ditches and palisades it seems to delimit itself from the ordinary people, stating in the same time the role of leading political class.

We conclude that during the two great periods of the Iron Age (Hallstatt and La Tène) the fortification concepts undergone substantially changes due to tactic, strategic, topographic and functional requirements.

We can also mention the influences coming from the Mediterranean world concretized in structural elements and new building techniques which have integrated organically within the local tradition. Therefore, the fortification systems erected by the Thraco-Dacian communities appear as dynamic civilization elements which reflect to a great extent the deep changes these communities undergone during more than a millenium.

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