The spatial byzantium culture in the North-East Black Sea coastal area fortification architecture

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Abstract. The article is dedicated to the early medieval North-East Black Sea coastal area fortification objects systematization. As a result of the research we have revealed three types of fortress according to their spatial culture and the belonging of its components to the Byzantium culture: the classical type of fortress, the contaminated type of fortress, the guarded fortress. We have also marked architectural and compositional peculiarities of each type taking into consideration their territorial and spatial location, extensional and planning solutions, decorations and building technique. We have assumed that all the examined early medieval fortification objects belonged to the Byzantine culture.

Introduction
The problem of studying the North-East Black Sea coastal area fortification carcass is connected with the necessity to restore and adjust the region historical and cultural legacy objects as a whole, fortification architecture as the most preserved architectural element and ecologic carcass, recreational and tourist territories creation and with the region historical intercultural contacts study - its architectural culture peculiarity origin.

Discussion and results
The Byzantine fortresses in North-East Black Sea coastal differ from the Roman period buildings and are closer to the Abkhazia Kingdom early periods fortification objects. When contrasting the Roman and Byzantine fortresses extensional and planning solutions we revealed the general tendency towards shifting away from straight lines with well-defined angles. The numerous towers and several entrance gates presence is also connected with the Roman military tactics. The Byzantines used the Roman military achievements on the coast and since the VI century they went deeper into the North-East Black Sea coastal area territory. The mountain relief of the area together with inhabited valleys with traditional communications defined the new fortification construction topography. According to the written sources the fortresses of Pityus, Sevastopolis, Phasis, Apsar – were the Byzantine military bases in the VI century. [1]. Researches V. G. Lekvinadze [2], Y. N. Voronov [3] and others consider them a part of Pontic limes appeared during the Roman period. These objects were the background for the main extensional, planning and compositional solutions for the Byzantine period fortification objects.

The preliminary analysis of the main early medieval fortification structures of North-East Black Sea coastal area (in the territory of Abkhazia – the fortresses of New Athos (Anacopia), Bzyb,
Gerzeul, Narchkhou, Tsebelda, Hashups, Kodori, Kaldahvar, Mushbam Abgarhuk, Uazabaa; in the territory of Big Sochi in Russia – the fortresses of Mamayka, Godlik, Achipce, Khosta; in the territory of Georgia – the fortresses of Petr, Shkhpepi, Likhuari, Skanda, Arcaepolis, Rodopol, Sarapanis) made it possible to reveal the certain peculiarities typical of all the examined objects and of certain groups of objects. These objects were studied and dated by archaeologists O. H. Bgazhba [4], L. G. Khrushkova [5], M. M. Trapsh [6]. Y. N. Voronov [3], N. G. Chubinashvili [7], D. E. Vasilinenko [8], V. G. Lekvinadze [2], A. V. Argun, V. V. Pishchulina [9].

We discovered that in the VI-X cc. in North-East Black Sea coastal area together with the “classical” type of fortresses appeared the contaminated type, which combined both classical and “folk” architecture features. At the same time, basing on archeological data, compositional peculiarities and building fortifications technique, we cannot conclude that “classical” fortresses appeared earlier than contaminated.

The features of a “classical” Byzantine fortress are:

• The fortresses are big and are situated on open natural lifts in mountain ranges at the main transport hubs, near strategic sea and land roads within one-day march of an army or a loaded transport, at the entrances to important canyons; together with natural barriers they formed a single defense system, which also protected the settlements from invasion in river-valleys.
• A fortress is not disguised in the natural landscape, it dominates over the canyon and the sea, it has a complete fortification system which provided and demonstrated its greatness and inaccessibility.
• A fortress is situated near a source of drinking water or had cisterns which were used during the long sieges; the fortresses were capable to meet attacks and stand a long siege with the use of machines.
• The fortress plan configuration is close to circular, rectangular or triangular shape. Fortresses had long walls protecting a significant territory and round or square battle towers projecting from the walls. The towers could have levels or only the upper ground – it was conditioned by the natural fortress territory shape (in case of a high steep-sided mountain plateau there was no access to the towers, and they did not need the layered fortification).
• The defense system of this fortresses group is represented mainly by the continued perimetral walls, armed towers or tower-like offsets – depending on the territorial topography.
• Two or three-part vertical or horizontal planning structure with a fortified part (probably, a citadel) and the rest of the territory.
• The Christian temple location in the fortress center on the commanding eminence.
• The presence of an entrance hub with a broad gate and, maybe, a tower near the gate: parallel inner-side of the gates, blocking with a beam, additional barriers in front of the gates (a moat, raising gangplanks, a raising bar). In front of the gates the road always makes a sharp turn to the right. The gate openings are covered with brick arches, inside the walls there are arrow-slits, broad windows- embrasures to install the espringals, the presence of a battle path and merlons.
• Compositional and building-technological solutions of fortresses are made according to the Vitruvius’s rules (a way that a tower has an unprotected right side, the corners are anchored with the help of lateral and transverse wooden backings, the wall are shored with artificial or natural barriers, the way to the gate is flanked with towers or additional offsets rising above the road, massive walls and the setting monumentality in the most important places of the defense lines, prevalence of round towers in the places where it is possible to use a ram, the use of burnt wooden floor battens in the walls setting both in longitudinal and cross sections, the presence of arrow-slits).
• High-quality building technique demonstrating the commission by the ruler and engaging the masters form the Byzantine center.
• A fortress became a city or could become it.
The classical Byzantine fortresses are: Anacopia (pic. 1 A), Petra, Archaeopolis, Rodopol, Godlik, Mamayka, Tsibil, the fortresses of Achipse and Bzyb.

Also, we should mention the brick use in the walls setting; also, the intel arches which is a feature a
an exact building school which could originate from Constantinople were used. For the objects in the
territory of historical Abkhazia the brick use can be considered a dating characteristic. These fortress
structures are dated to the VI c.: Tsibilium, the second defense line of the Anacopian fortress,
Sevastopolis. According to this criterion, we can date back to the VI-VII cc. the several objects that
had been dated back to a later period: the fortresses of Gerzeul, Narchkhou, Mamayka, Godlik,
Achipse. The Constantinople school methods return to the North-East Black Sea region architecture
can be traced since the IX-X cc. when closer contacts between the Abkhazia kingdom ruling houses
and Byzantium took place. At this stage brick was used in the new type (cross-domed composition
churches building) mainly to build wall arches for this difficult construction. Such brick use we can
see in the temples of Abkhazian building school of church architecture, situated in the modern
Abkhazia territory, western areas of Georgia, Krasnodar region. The use of brick in this period
fortification structures erection was limited and, as a rule, has secondary character. Also, according
to this feature, we can date a big number of fortification objects in historical Abkhazia back to the VII-X
cc.: the fortresses of Khashupse, Khosta, Bzyb, Kaldakhvar and Kodori, Uazabaa. By the end of the X
c. they had stopped using brick in architecture of such objects.

The contaminated type fortress planning structure peculiarities which differ it from the classical
Byzantine type are:

- The domination of natural fortifications over artificial – the defensive structure was represented
  by the walls which had curvilinear configuration and were not continuous – it was conditioned by
  the natural inaccessible barriers’ presence combined with artificially protected areas.

- The planning structure non-linear development, the plan irregularity.

- Absence of a tendency towards emphasizing the center of the fortress with a church.

- The fortress church architecture diversity (its difference in some features from the “classical”
  pattern from confessional centers).

- The battle towers number reduction, sometimes down to two – at the beginning and at the end of
  a fortress.

- Not only churches construction but also rectangular towers with orientation on cardinal points
  (west-east).

- Frontal entrance hub composition from the side of the only possible way towards it, usually along
  the mountain edge with its maximal strengthening.

- Mixed building technique.

- Partial realization of Vitruvius’s fortification rules.

To the contaminated type we refer: the fortresses of Khosta, Khashupse, Narchkhou, Gerzeul (Fig.
1, B) Shkhepim, Skanda, Sarapanis.

The classic and the contaminated types of fortresses were fortified, but had different fortification
qualities. So, we can single out on more group of fortification structures, mainly, early medieval,
which we can call – guarded fortresses. They did not have a complete defense system, but were
situated in guarded gorges, in the places which had objects of sacral importance, for instance, caves –
they had a status of extra veneration and significance. The fortresses were situated beyond the main
strategic roads, access to which was controlled by the fortresses of the first and second groups. Their
fortifications, represented by walls, were of minimal length and often had breaches near mountain
faces. There were no temples in these fortresses. We can assume that these objects were militarized
administrative centers, situated near roads. Into this group we can put the fortresses in Likhauri,
Kaldakhvar, Kodori, Uazabaa (Fig. 1, B), Mushba, Abgarkhuk.

These objects are located above the rivers and streams canyons for easy access. In the case of the
Kodori, Kaldakhvar and Achipse fortresses, it can be assumed that they controlled the river crossing of
the Kodori, Bzyb, Mzymta rivers - the main river arteries of medieval Abkhazia. Uazaaba and
Abgarhuk were built over the large caves in which water was always available and controlled secondary passages.

Along with the distinctive features in the fortification of the two types of fortresses, it is possible to identify a number of general patterns, the presence of which is due to the Byzantine spatial culture influence. Special attention was paid to the arrangement and spatial organization of the fortification’s three components. It is a system of defensive walls, towers and fortifications, the entrance gate and the temple.

**Figure 1.** Types of Abazgian fortresses
The defensive walls construction was in close relationship with the original fortifications nature, since the natural and artificial fortifications as a whole constituted an integral defense system of a fortress or settlement. Traditionally, the walls appeared in the places not reinforced by nature itself. As the Constantinople fortress triangular building is inscribed in the limits of the cape, from the north bounded by the Golden Horn, from the south by the Marmara Sea, so are the North-East Black Sea coastal area “classical” fortresses in landscape conditions. Sometimes the citadel, which was the symbolic settlement center was a part of the fortification system. It was traditionally located in its highest part, from where the maximum visibility of the surrounding territory was provided. To the device and the location of the gate the requirements ensuring their inaccessibility were made, as the gate was the most vulnerable link in the defense complex. Particular attention was paid to the locking gate devices, ladders, gratings.

The temples were a composite dominant of the spatial-planning structure of any Byzantine Christian city or settlement. The principles of placing the temple directly in the fortress, the center, the organization of the path to it, its composition and spatial organization are a manifestation of Byzantine spatial culture. We still leave the question about the influence of specific confessional centers on the North-East Black Sea coastal area temple construction, assuming, according to historical data, active influence in the VI and early VII c. - the center of Byzantium, in the VII-IX c. Antioch, later Trebizond. Fig. 1, B

According to the temple compositional type, a preliminary dating of the fortress itself can be carried out. Thus, a three-church basilica type temple with a seven-sided central apsis in the territory of the Bzyb fortress, measured by us, makes it possible to attribute it and the adjacent buildings of the first period to the VI-VII cc. A three-church basilica dating from the VI c. has been preserved in the territory of Abkhazia, in Lykhny, in the fortress of Aba-Anta (Fig. 1, D). This temple composition was formed in Armenia in V c. [10]. The penetration questions of this composition into Abkhazia will be left outside this article.

Analysis of the composition of the temple, presumably also a three-church basilica, in the Gerzeul fortress, with a large crosswise baptistery-cistern under the altar, also suggests its early dating (Fig. 1, D). The temples with a font in the altar were built during the Christianization periods in the territories. So, the temples of V-VI cc. with a font in the altar were located in Chersonesus (the basilica of 1887 and the “Temple with the arc.” Christianization period. On the territory of Abkhazia, the baptisteries in the altar can be seen in the temple of the Tsebeldi fortress, attributed by researchers to the VI c. Cross-like shape of the baptistery in Gerzeul church evokes associations with the crosswise cisterns in the fortresses of Derbent and Machi which also have different dating. Probably, taking into consideration the fact that a contaminated fortress was built at the local population initiative by their own building forces, such a form of baptistery-cistern is due to the location of Gerzeul on one of the Great silk way main branches.

Summary
A new Christian picture of the world was introduced with the fortification sites and temples samples in the North-East Black Sea coastal area. At the same time, the old system of world understanding was not rejected, but rethought with the help of Christian doctrine. In the early Middle Ages, an interesting process of creating its versions of fortification culture took place by concretizing the Byzantine rules in accordance with the actual natural conditions and peculiarities of thinking. The ideological and spiritual orientation of people, the self-awareness of their belonging to one or another ethnic community against the worldview contributed individual spheres integrity and incomprehension background to the formation of all these fortification culture complex simultaneous versions in the Byzantine culture context. This allows to consider the fortification architecture of the North-East Black Sea coastal area of the VI - X cc. as a set of Byzantine fortification architectural regional variants. The space exploration nature and traditional nature management that formed at the time of the arrival of Byzantium is one of the components of the common culture of all the North-East Black Sea coastal area peoples, therefore the fortification architecture regional features and fortress Christian
churches as a whole were most clearly manifested in the fortification objects location and their relationship with the landscape and natural environment. Throughout the period under review, each fortress was built as a kind of “microcosm”, an ideological model reflecting the basic foundations interaction of traditional spatial culture, which implies an inseparable connection with nature, and introduced techniques of Byzantine culture, which presumably followed mainly urban development.

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