

## A DACIAN SACRED ENCLOSURE IN THE CARPATHIAN MOUNTAINS - PIETROASELE - GRUIU DARIU (ROMANIA)

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ABSTRACT

The archaeological inventory discovered is from Eneolithic, Bronze Age and La Tène period.

The essential question is - what type of monument is Gruiu Darii: a settlement, a fortress, a necropolis or a sacred enclosure?

The methods used in the research of this enclosure were the following: a) Digital archives from excavation and fieldwork; b) Mapping the past - binding cartography and archaeological databases using GIS; c) Digital Photography and Video recording; d) Interpretation of imagery using Photogrammetry corrections; e) Virtual Reconstruction of the Past using 3D Virtual Reality.

Given its truncated form, with three abrupt sides, the plateau (534 m high, situated in the Buzaului Subcarpathians) was easy to defend and fortify, it provided great visibility over the hills and the plain and was surrounded by high mountains from West, North and East.

### ENCLOSURE

The fortification includes an enclosure approximately 2,500 sq. meters wide today and at least 3,500 sq. meters in the Dacian era. A total of 1,000 sq. meters of the site have been excavated, mostly the Dacian layer. The 140 meters in length of vestiges of the fortifications are still impressive, as the ruin at the base was 8 -10 meters wide and 3-4 meters high in the central area. In the last stage in the use of the enclosure (1st century A.D.), the wall, made of two faces and emblecton was 2 - 2.20 m large; today, this wall is 1.10 -1.20 m high. On the Southern and Eastern sides, the wall and a part of the enclosure have been destroyed over the centuries by the limestone quarries (Dupoi and Sîrbu 2001:13-15).

### THE VOTIVE DEPOSITS

In practice only two types of complexes were discovered in situ in the Dacian layer:

- a) the votive deposits, mostly with rings and fireplaces at the bottoms
- b) isolated fireplaces.

The votive deposits consist of agglomerations of archaeological materials and soil with a semi-oval profile, marked at the bottom by round or oval rings. Sometimes, the rings are extremely well outlined, with one or two lines of stones on top of one another. In other cases though, the stones are much more scattered, but one can make out their round or oval trajectory. Sometimes, stones cover the entire surface of the rings. There is a great variety of situations insofar as the shape, size and position of the rings are concerned: round or

oval, ranging in diameter from 1 to 2 meters. There are also concentric rings, "mother" rings with smaller ones beside them, compact surfaces of stones (Dupoi and Sîrbu 2001:18-20). In the most part of the rings the deposits seem to be the remains of dwellings and their inventories, but we could not say why they did it that way. Some of the objects found here may have come from remote places, which leads us to the conclusion that communities living on a very wide geographical area had brought offerings. There are significant differences between the inventories of the complexes - some are "richer", others are "poorer".

### ARCHAEOLOGICAL MATERIAL

Since numerous items - mostly ceramic vessels, in one piece or broken in situ - were found in the complexes, it is obvious that they did not get there by accident, but they were put on purpose (Dupoi and Sîrbu 2001:20-46). As we are dealing with items in one piece, sometimes of a high inner or utilitarian value, it is clear that the Dacians would not have given them up but for strong reason, of a cult nature.

How can we find an explanation for the great variety of the inventory found here? It could be the consequence of varied offerings requested by gods, as well as of the depositors' different professions, given that they asked for protection and wealth for their trades.

It is obvious that there is a certain chronological sequence of the votive deposits - emphasized by the vertical and horizontal stratigraphy - but their dynamics will be clear only after detailed analysis of the inventories in all the area. Dating the complexes with votive deposits in the 1st century B.C. - 1st century A.D. relies on various categories of objects: coins, fibulae, Hellenistic imports, tools, weapons and adornments, Dacian vases etc. When the Romans conquered the Dacia, in 101/102 or 105/106 A.D., the enclosure has been destroyed; after this date there is no other proof of its sacred function.

MODERN TECHNIQUES USED AT PIETROASELE - GRUIU DARIU

The research of the Dacian sacred enclosure of Pietroasele - Gruiu Darii has been taking advantage of the modern technologies only since last two years. The main goal of using new technology in support of traditional archaeological research was Mapping and Recreating the Past.

Our first objective was the development of a good digital model, not only for the plateau where the site is located, but also for the surrounding landscape. The spatial (geographical) data and the information obtained during the research and digging campaigns were integrated using the GIS technology connected with a data base engine. The objective we aimed for was to develop a complex set of tools. This approach provided the necessary support for the integration of all relevant data in archaeological research of the Dacian sacred enclosure of Pietroasele - Gruiu Darii.

The need to collect spatial information from vast geographical areas (25 sq. km. or more) and the requirement that the data collected should be as accurate as possible, at least for those locations where the research takes place, forced us to use a differentiated approach, with the use of different equipment for different situations.

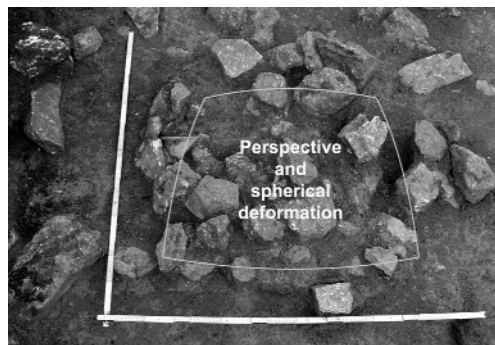


Figure 3

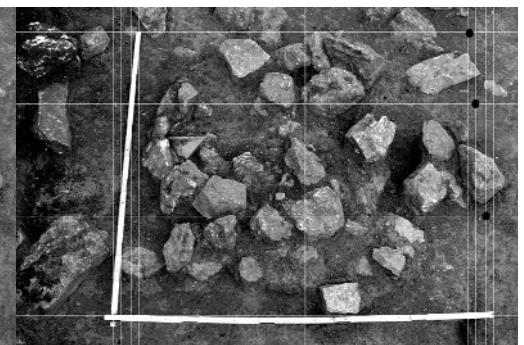


Figure 4

For the general recording of the landscape we chose the GPS technology. After the elimination of the Selective Availability by Department of Defense of USA (DoD) inserted in the system for the civilian application, a precision of 4-6 m for surfaces and 10-15 m for altitudes become possible even using standard GPS equipment, on sale for just a few hundred dollars. Using an altimetry barometer connected with the GPS equipment and by making use of the differential corrections provided by the WAAS-EGNOS technology, the precision can be further improved up to 2 m both in plan and elevation axes. We have used Garmin eTrex Vista GPSs with altimetry barometers and a WAAS-EGNOS correction technology: (Fig.1, Fig.2)

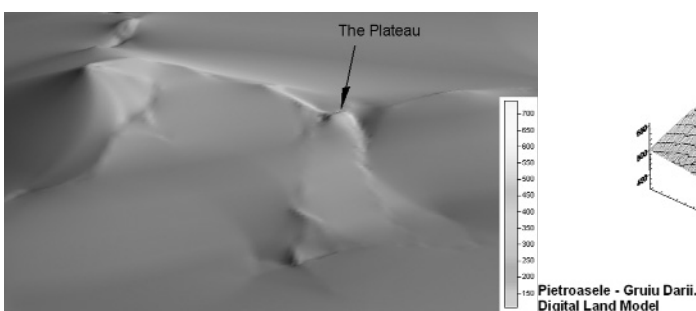


Figure 1

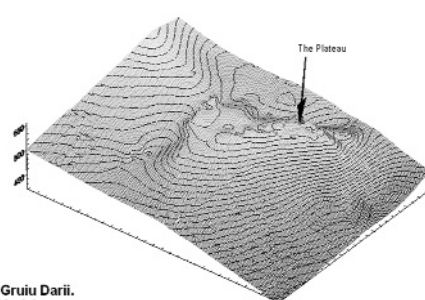


Figure 2

For the topographical measurements made in the close proximity of the plateau where the sacred enclosure is located, traditional topographical equipment was used, e.g. theodolite and total station. The error of the determinations in this area was under 3 cm. For special points (landmarks, measurement axes, and so on) the measurements were compensated for the elimination of errors, and the accuracy obtained was of 1-2 mm.

Although the classical topographical equipment gives us high precision measurements, in some situations the use of other methods was required. Photogrammetry was the method that allowed us extremely efficient data collection, using digital photography, obtaining at the same time a good accuracy for complex situation recordings. The precision of these determinations was in all cases better than 1/20,000. This becomes an efficient work rule in case the team deals with complex spatial situations like object contours and structure traces, when recording only the points location, even if very accurate, is not sufficient. This is such an example: (Fig.3)

Here we needed a top drawing for the complex 25, but a usual photograph distorts the reality due to perspective and spherical deformation. Applying the necessary corrections, we obtained a good image for the drawing. (Fig.4, Fig.5)

The use of digital photography corrected by photogrammetry is well suited for complex situation recording but only for extremely small areas (typically a few square meters). Creating execution plans and drawings becomes very easy. The digital land model was created using AutoDesk applications (AutoDesk Map and AutoDesk Land Desktop) and animations and renderings were made using AutoDesk Viz. We combined traditional cartographic instruments with modern tools like total station and GPS to collect data while in the lab all of these were computed using GIS technology and a lot of companion tools. The geographical information was completed using also old drawings and maps which were computed and digitized with Auto Desk Raster Design. The space information was

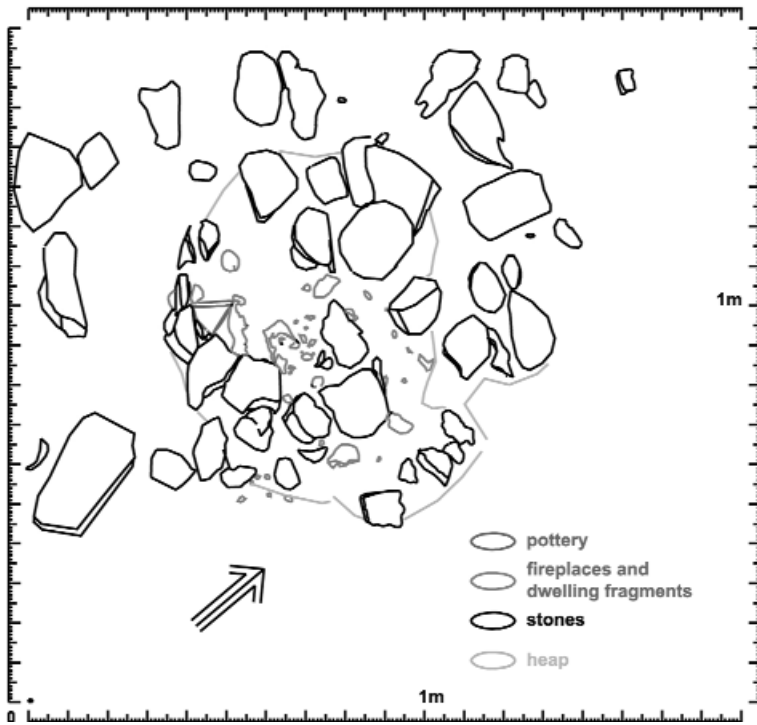


Figure 5

connected with the inventory databases and many other records and can be queried using a powerful search engine, Inter base SQL Server. The front-end was developed in Borland Delphi.

With the help of Virtual Reality technology we tried to recreate some aspects from the past of the Dacian sacred enclosure. Renderings and animations were made in AutoDesk Viz. while 3D objects were exported to Macromedia Flash to minimize the size of the files and making them accessible in Multimedia Presentations and on the Internet.

The discoveries made so far could let us imagine the following sequence of the rituals for the complexes with ring and fireplace. First, they made stone rings and lighted fire in the fireplaces inside them, thus marking and consecrating that space by certain rituals. Then, they put in the rings fragments of dwelling walls, complete vases, vases broken in situ and a lot of vases fragments that cannot be completed, tools and utensils, jewellery and clothing accessories, weaponry and coins, anthropomorphic and zoomorphic figurines, toiletries and harness gear etc. In the end, the mound type deposit was covered, more or less compactly, with stones and soil. It is

also obvious that depositing entire items - vases, tools, weapons and adornments etc. - namely giving up useful goods, sometimes with an intrinsic value, cannot be explained without a cult motivation.(Fig.6)

#### FINAL CONSIDERATIONS

The essential question is - what type of a monument is Gruiu Darii: is it a settlement, a fortress, a necropolis or even a sacred enclosure? We will start with what the site of Gruiu Darii could not be.

It is not a fortress with a strictly military function because these ones had totally different features. It is not a fortified settlement, as no dwelling complexes, no household annexes, no workshops were identified. Why it is not a necropolis? Because: a) non-cremated human bones have been found only in 4 of the 170 complexes (some of these findings may suggest human sacrifices); b) neither cremated human bones, nor cremation pyres have been identified; c) in some vases with a lid there were only fragments of fired clay walls or some remains that could suggest some food offerings food, drinks, boneless meat). Consequently, we couldn't consider them to form a necropolis (Sirbu 1993:39-40).

On the contrary, the votive deposits and the inventory discovered here let us assume that we are dealing here with a sacred enclosure.

What reasons made them act like this? Which deities were invoked? Who were the deposits' "recipients"? Was the entire enclosure meant for votive deposits or only a part of it? What are the dynamics of the deposits? What was the ceremonies scenario? There are a lot of questions here that cannot be answered until the entire enclosure is excavated and more written information is found. Doing otherwise is over-speculating.

What is also beyond any doubt is that, given its monumentality and the richness of the votive deposits, Gruiu Darii was an important sacred centre (Sirbu 1995:313-330) and that analyzing and interpreting the vestiges will substantially enrich our knowledge about the spiritual life of the Getae-Dacians (Crisan 1986, Sirbu and Florea 2000).

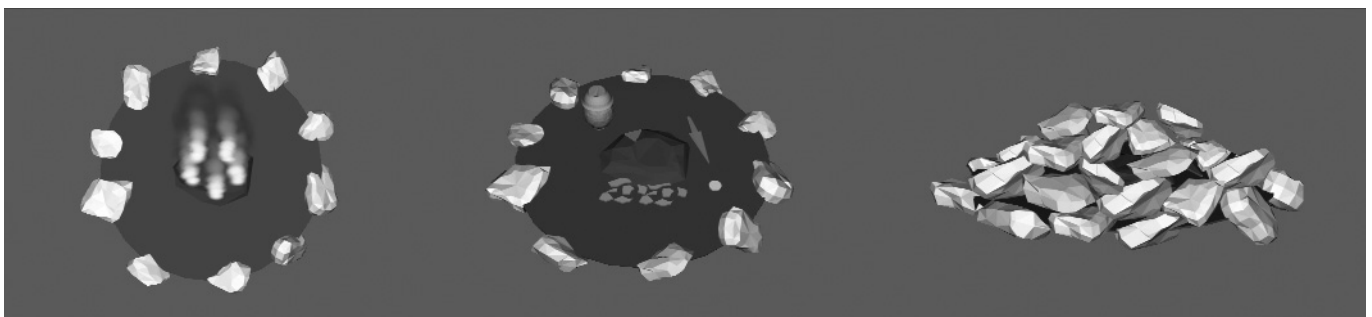


Figure 6

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