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Book Review

Andrei Asăndulesei, *GIS (Geographic Information System), fotogrametrie şi geofizică în arheologie. Investigaţii non-invazive în aşezări Cucuteni din România* (*GIS (Geographic Information System), photogrammetry and geophysics in archeology. Non-invasive investigations in Cucuteni settlements in Romania*), Iaşi, ed. Universităţii "Al. I. Cuza", 2015, 274 p., ISBN 978-606-714-215-0

Andrei Asăndulesei completed his doctoral studies in 2012, in the field of History at the "Alexandru Ioan Cuza" University of Iaşi under the guidance of Prof. Univ. Dr. Nicolae Ursulescu; his doctoral thesis is the basis of this paper. He is currently a researcher in the Interdisciplinary Department of Science at the graduated university, continuing to work in the field of non-invasive research of archaeological sites in Romania and abroad.

From the title of the paper, the author outlines two main lines of study of Cucuteni settlements in the micro-region known as the Bahluieţ basin (Romania): the classical, archaeological research and an innovative, complementary, method, known generically as non-invasive research methods of a site or a complex of archaeological sites. We must mention from the beginning that the subject of the book is approached coherently throughout the work, the author opting for a theoretical approach, followed by a part of practical exemplifications. The 225 pages of text are accompanied by a rich visual material consisting of photos, drawings, tables, etc. In addition to web sources, the author used over 270 foreign or Romanian specialized works, most of them being abroad, which indicates a careful and thorough documentation of the topic.

The book is structured in five chapters, each with several subunits. The first chapter, Introduction, is dedicated to clarifying the working methodology and terminology used by the author such as: environmental and landscape archeology or geoarchaeology. As the author rightly points out, some of these concepts are more recent and specific to post-processual archeology and can be analyzed through interdisciplinary research methods due to technological development in recent decades. The next three chapters address one by one the non-invasive research methods, the Geographic Information System (GIS), aerial photography,

photogrammetry and geophysical methods, made within the archaeological sites belonging to the Cucuteni culture in the mentioned space.

In the second chapter, the author deals with the Geographic Information System (GIS) method, first presenting some theoretical aspects, followed by performing the spatial analysis of the river basin of Bahluieţ River, thus offering a unique perspective of the habitat from the Eneolithic period. In his approach, the author correlates the information obtained through non-invasive research methods with those already existing, the latter obtained from archaeological research (whether we are talking about systematic archaeological sites, surveys and rescue or surface analysis). The combination of this information resulted in the creation of an archaeological and spatial database, a true repertoire of settlements belonging to the Cucuteni culture. A number of 104 sites were indexed, out of which 62 with recorded GPS coordinates and another 33 points could be placed accurately due to analysis of topographic maps, ortho-photoplans or data obtained by the LIDAR method.

In the category of non-destructive methods of remote sensing research on an archaeological site are: aerial photography, photogrammetry and LIDAR technique (Light Detection and Ranging). Aerial photography has been successfully applied in archeology for more than a century, being used mainly for the identification of new archeological sites. This is an excellent method of monitoring archaeological sites over time, an aspect that the author emphasizes in the paper. As Mr. A. Asăndulesei states in chapter three, these research methods have their own limitations, which is why one, two or even all three methods can be applied to “scanned” the area, depending on its morphology mentioned above.

The fourth chapter is dedicated to the geophysical methods of prospecting in archeology, magnetometer prospecting, the method of electrical resistance of the ground and GPR (*Ground Penetrating Radar*). These methods have a complementary character of research of an archeological site, very efficient in obtaining information prior to the archeological research. The most used of these is magnetometry given the fact that through it you can quickly acquire data in a short time and the results are reliable. The author of the paper opted for the cross-application of these methods on three settlements from the Eneolithic period, obtaining a set of information that he interspersed by providing a rich informational material about the extent and occupation of space within them. This is essential information for future archaeological research campaigns but also an increase in knowledge about the Eneolithic habitat in Romania.

The last chapter presents the author's conclusions regarding the results obtained by applying the non-invasive methods of researching an archaeological site, more precisely those included in the Bahluieţ river basin. In addition to identifying and mapping these sites, Andrei Asăndulesei managed to enrich the level of knowledge of the habitat of settlements belonging to the Cucuteni culture by: establishing the extent and internal organization of a site, identifying structures of different shapes, sizes and different functionality based on analogies already known as well as the possible relationships between settlements but also between communities and the environment.

This paper is not just an extra knowledge for what the Eneolithic means on the territory of Romania, it shows above all how important it is to use complementary methods and at the same time preceding the archaeological research. Non-invasive research methods cannot replace archaeological research but they can give us a different set of information as well as a more complete picture of past communities.

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