Novensia 35
ISSN 0860-5777; e-ISSN 2720-2941
DOI: 10.59587/2720-2941.35.7

Karolina Trusz

ISLAND BISERICUȚA REVISITED—UNDERWATER SURVEY AROUND THE ISLAND

Abstract: The island of Bisericuța, situated in the southern part of Lake Razim approximately 2.5 kilometers east of the ancient city of Argamum in present-day Romania, presents distinctive geological and archaeological features. Archaeological investigations, notably by Paul Nicorescu in 1926, have uncovered remnants such as pottery, kiln and walls of the outpost dating back to the Neolithic, Hellenistic, or Roman periods.

Previous underwater research efforts, including aerial surveys conducted by Michai Severus Ionescu and Efim Gămureac, have identified potential underwater walls in the northern part of Bisericuța (around 10 meters from the shore), speculated to constitute part of a small harbour. Subsequent non-invasive underwater surveys conducted by archaeologists from the Bayerischen Gesellschaft für Unterwasserarchäologie revealed the presence of double-wall, long for over 300 meters structures, possibly associated with a pier or breakwater.

Subsequent underwater surveys with use of non-invasive methods of research in 2017 and 2023 as part of the Archaeology of the Limes Maritimus Scythicus (ArchLiMar) project led by Polish-Georgian team aimed to further explore the island's surroundings. Detailed examination of the underwater terrain, including a limestone plateau provided insights into the island's geological evolution and its impact on the archaeological remnants of the past.

Overall, ongoing research efforts continue to shed light on the historical aspects of island Bisericuța, contributing to a deeper understanding of its past significance and environmental dynamics.

Keywords: underwater archaeology, island, lakebed, side scan sonar, Black Sea, island Bisericuța

Introduction

Island Bisericuța is located in the southern part of Lake Razim, approximately 2.5 km east from the ancient city Argamum, in todays Romania (Fig. 1). In the western part of the island, which measures about 380 meters in length and 58 meters in width, a limestone hill with nearly vertical edges is observable. To the east, the island slopes gently down to the lake, where it is densely covered with reeds. Based on data gathered from the 1953–2000 survey, it was observed that Bisericuța transitioned from a peninsula to an island within a span of 50 years.[1] The archaeological

[1] Growth of water is visibile on aerial photos, see:
Ionescu, Gămureac 2006, p. 376, Pl. 1.

Fig. 1. Map with location of the island Bisericuța in Razim Lake (prepared by K. Trusz, base map from © 2014 Esri).

research on the island was conducted by Paul Nicorescu in 1926. Nicorescu mentioned that the island in north part was wider, but due to the strong north-eastern winds it eroded due to the time.[2] Despite the presence of archaeological remains like pottery and walls dating back to the Neolithic, Hellenistic or Roman period on the site, there is an absence of mention regarding the island's/peninsula's existence in ancient literary sources.[3] However, there was a small outpost on the island, commanding a view over the tributary of the Danube.

History of underwater research around the island: previous research

Over the years, research on the island has been primarily focused on land surveys aiming to identify archaeological remains. In 2002 during excavations Michai Severus Ionescu and Efim Gămureac also conducted aerial surveys around the island. In the aerial photographs, researchers identified two potential underwater walls situated roughly 8–10 meters from the shoreline in the northern part of Bisericuța. Ionescu and Gămureac speculated that the walls,

[2] Nicorescu 1944, p. 97.

[3] To read more about the island's history check among others: Nicorescu 1944; Ionescu, Gămureac 2006; Coja 1977, pp. 165–166.

oriented east-west, might constitute part of a small port.[4] Regrettably, the aerial photographs accompanying the survey report do not allow any verification.[5] With this hypothesis, a first non-invasive underwater survey was conducted in 2016 by archaeologists from the Bayerischen Gesellschaft für Unterwasserarchäologie.[6] According to research conducted by a German team, the two walls discovered in 2002 do indeed exist, but they run in a north-west and south-east direction. A double-wall structure was associated with either a pier or possibly a breakwater.[7] Noteworthy is information that these walls were a total of approximately 380 m long, and at least 10 m wide.[8] However, due to poor visibility conditions, no diving verification was conducted.[9] This summarizes the underwater research conducted around the island thus far.

Underwater survey around the island: seasons 2017 and 2023

In 2017, cooperation commenced between the on the Antiquity of Southeastern Europe Research Center at the University of Warsaw and the Eco-Museum Research Institute "Gavrila Simion" in Tulcea (ICEM Tulcea), initiating the Danube Underwater Heritage Project. The primary objective of this project was to systematically investigate and evaluate archaeological remains within Lake Razim, Lake Sinoe, Danube Delta and selected points sites along the Romanian Black Sea coastline.[10] One of the tasks of the first research season was to verify the bottom of Lake Razim between the ancient city of Argamum and the island Bisericuța. During the underwater non-invasive investigation several anomalies were identified for further research.[11]

Underwater surveys around the island and the area between Bisericuța and the mainland were reinstated in 2023 as a part of the Archaeology of the Limes Maritimus Scythicus (ArchLiMar) project, previously known as Danube Underwater Heritage Project.[12] Season 2023 encompassed conducting surveys across the entirety of the island's surrounding area, verification of anomalies found during the 2017 season, and examining the potential walls discovered by researchers from Romania and Germany in 2002 and 2016.

By employing side scan sonar, the seafloor surrounding the island underwent scanning to generate a bathymetric map and a photomosaic of its substrate. The anomalies which were recorded in 2017 occurred to be single finds connected to modern fishing traps. Through the sonar survey and subsequent data analysis, it was determined that the underwater region constitutes a natural rock formation—a limestone plateau extending. Overlaying the photomosaic onto island photography reveals the natural expansion of the island westward (i.e. to Argamum). The geological formation visible underwater bears resemblance to an island in shape. The plateau widens closer to the island, reaching a width of approximately 105 meters, and narrows towards the west, spanning a length of about 160 meters (Fig. 2).

[4] Ionescu, Gămureac 2006, p. 380.

[5] Ionescu, Gămureac 2006, Pl. 1.

[6] As a part of the project "Underwater Archaeology of Lower Danube and Western Black Sea: Exploring Ancient Harbours and Shipwrecks in Northern Dobrudja Coastline" between Bayerischen Gesellschaft für Unterwasserarchäologie and ICEM Tulcea, Fiederling *et alii* 2023, p. 379.

[7] Fiederling *et alii* 2023, p. 391.

[8] Fiederling *et alii* 2023, p. 389.

[9] Fiederling *et alii* 2023, p. 389; Abb. 17.

[10] Lemke *et alii* 2018, p. 87.

[11] Lemke *et alii* 2018: pp. 94–95, Fig. 8/b.

[12] Project Limes Maritimus Scythicus (ArchLiMar) is a cooperation between Faculty of Archaeology, University of Warsaw and ICEM Tulcea. The underwater research in 2023 was part of the project coordinated by Martin Lemke *Preliminary research of the Argamum and the interior of Dobrudja towards the borders of the Roman Empire* funded by the programme "Initiative of Excellence – Research University", PSP 501-D115-20-004316; Lemke *et alii* 2018, p. 94.

Fig. 2. Photomosaic of the lakebed around the north-western part of the island. Rocky formation with its natural expansion westward (prepared by K.Trusz/Foundation for Underwater Archaeology).

During the research, participating archaeologists methodically traversed the rocky formation,[13] meticulously scrutinizing the submerged stones to discern potential architectural remnants. The limestone plateau is located shallowly underwater, with a depth of about 0.4 meters in the central part. It slopes gently towards the north, south and west, where the stone structures naturally curve to a depth of 1.5 meters before disappearing and the bottom becomes covered with sand mixed with silt (Fig. 3). Despite underwater visibility limited to around 5 centimetres, individual stones potentially indicative of structural elements were carefully examined through tactile inspection. This meticulous examination extended to stones in water encircling the island, spanning from the shoreline to an expanse of around 200 meters into the bay. Notably, none of the examined stones exhibited indications of intentional shaping or the remains of presence of dovetail clamps typical for interlocking masonry.[14] It is worth noting that the rock on the island undergoes characteristic changes, with weathering processes leading to the formation of stone flakes. These formations can be observed both in the water along the island's shore and underwater (Fig. 4).

On the southern part of the island's hill are visible traces of the late fortification wall, therefore on this side are visible in water few, but always, fragments of pottery and bricks. No pottery fragments are visible on the northern side of the island. Southern part of the island is also more suitable for mooring small ships or vessels due to lack of strong winds and currents which occur on the northern and western part of the Bisericuța island. A potential mooring, sheltered from strong winds by a hill, could only consist of a quay located closer to the south-eastern part of the island—allowing easier transportation of various commodities to the military outpost on top of the hill.

Additionally, aerial photographs were taken of the north-western section of the island, revealing the significantly murky water. Stones underwater are only visible near the island, further to the lake the water gets less transparent. Having in mind information about the potential walls found underwater on aerial photographs back in 2002 around 8–10 meters from the island, researchers might have been dealing with natural rocks imitating walls which can be seen on the aerial photography (Fig. 4).

[13] Team members were walking in line, the distance between people was 2 metres.

[14] The way breakwaters were built in antiquity, see e.g. Blackman 1982, p. 197.

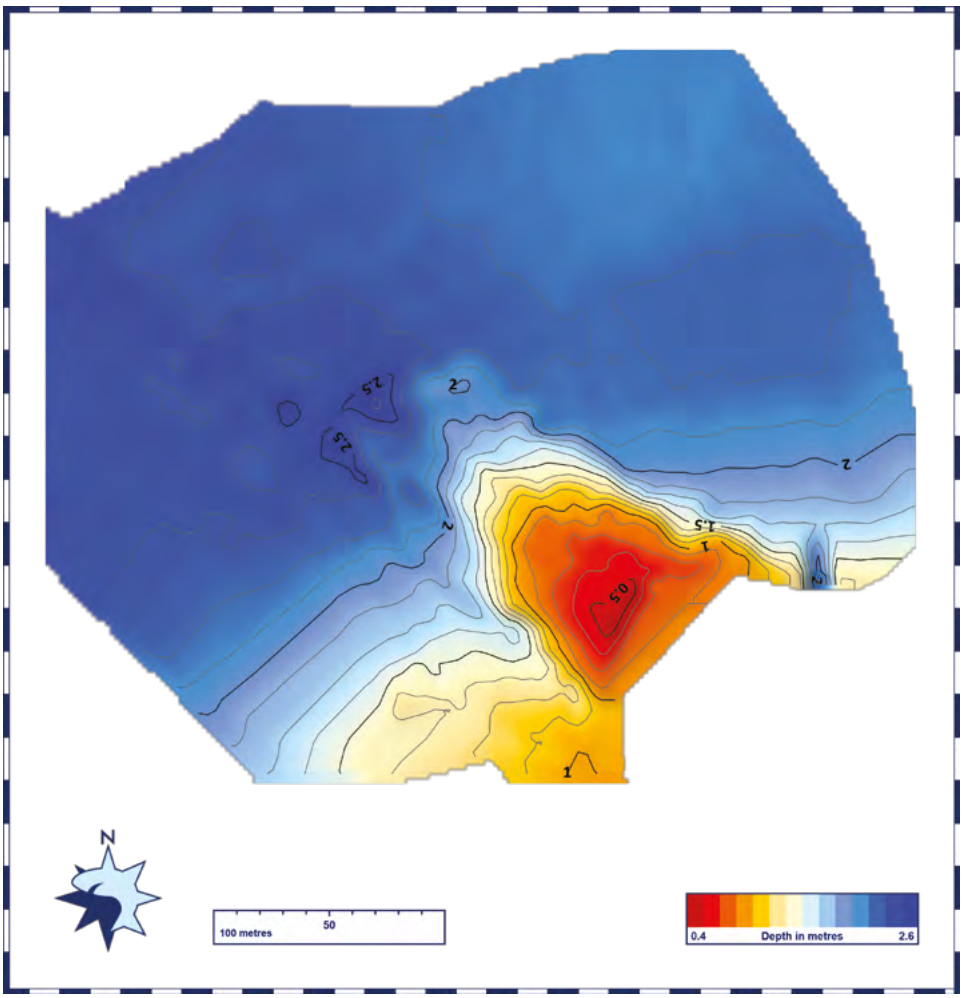

Fig. 3. Bathymetry map of the rocky formation around the north-western part of the island Bisericuț (prepared by K. Trusz/Foundation for Underwater Archaeology, University of Warsaw).

Fig. 4. Aerial photography of the north-western part of island with visible stones under water (prepared by Foundation for Underwater Archaeology, University of Warsaw).

Conclusions

P. Nicorescu mentioned after his research on the island in 1926, that the Bisericuța was wider and more elongated in the north-western part in the past.[15] This theory aligns with the observation of the lakebed in this part of the island. Side-scan sonar data reveals the shape of a raised rocky bottom indicating that these formations are most likely an extension of island that has eroded over time. This is influenced by the strong winds from the north-west and the currents circulating within the vicinity of the island, which can be seen in the drone photographs.

Although there is no concrete evidence, we can assume that some parts of the buildings on the island were destroyed and submerged in Lake Razim. However, it is challenging to confirm existence of the walls found underwater and that they were 380 meters long, especially considering that the rocky formation is only approximately 160 meters in length. Furthermore, after the formation descends to the lakebed, there is no further evidence of potential archaeological objects.

The waters surrounding the island of Bisericuţa are worth further investigation to enhance comprehension of the dynamics within a system of lakes semi-open to the sea. Moreover, such examination would contribute to a deeper understanding of the island's significance as a pivotal location overseeing the estuary of a tributary of the Danube into the Black Sea.

Bibliography

Blackman 1982 — D. J. Blackman, "Ancient harbours in the Mediterranean. Part 2", *International Journal of Nautical Archaeology*, 11:3, pp. 185–211.

Coja 1977 — M. Coja "Cuptoare antice descoperite in raza cetatii de pe caput Dolojman" [Ancient ovens discovered within the fortress on Cape Dolojman], *Peuce* 6, pp. 163–179.

Fiederling *et alii* 2023 — M. Fiederling, G. Nuțu, B. Päffgen, T. Pflederer, "Der Hafen von Argamum und die Insel Bisericuţa", [in:] *Unterwasserarchäologie in Bayern und im Ausland, Berichte zur Tagung in Bernried am Stanberger See, 13. bis 14. Juli 2019*, eds. B. Päffgen, T. Pflederer, W. Irlinger, *Universitätforschungen zur prähistorischen Archäologie Band* 389, Bonn, pp. 379–391.

Ionescu, Gămureac 2006 — M. S. Ionescu, E. Gămureac, "The Bisericuta Island: Aerial and Terrestrial Researches", [in:] *Orgame/Argamum. Supplementa 1. À la recherche d'une colonie. Actes du Colloque International 40 ans de recherche archéologique à Orgamè/Argamum*, ed. M. Mănucu-Adameșteanu, Bucarest–Tulcea–Jurilovca, pp. 375–395.

Nicorescu 1944 — P. Nicorescu, *Buletinul Societatii Historice*, Bucuresti.

Nuţu *et alii* 2023 — G. Nuţu, M. Lemke, K. Trusz "*All Quiet In The East? An Overview of the Underwater Surveys off North Dobruja Coastline"*, [in:] *HERi-PRENEURSHIP. Proceedings of the Tulcea International Conference*, eds. G. Nuţu, S. Ailincăi, A. Ţârlea, E. Ștefan, Tulcea, pp. 293–310.

Lemke *et alii* 2008 — M. Lemke, G. Nuţu, M. Bajtler, K. Trusz "*The Danube Underwater Heritage Project—First Steps"*, *Novensia* 29, pp. 87–101.

Karolina Trusz
Independent researcher
karolina.torusu@gmail.com
orcid.org/0000-0002-5812-1126

[15] Nicorescu 1944, p. 97