



МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
МАРИУПОЛЬСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ

АКТУАЛЬНІ ПРОБЛЕМИ НАУКИ ТА ОСВІТИ

Збірник матеріалів

**XXVI підсумкової науково-практичної
конференції викладачів**

22 лютого 2024

Київ 2024

УДК 061.3(063)

АКТУАЛЬНІ ПРОБЛЕМИ НАУКИ ТА ОСВІТИ: Збірник матеріалів XXVI підсумкової науково-практичної конференції викладачів МДУ / За заг. ред. М.В. Трофименка. Київ: МДУ, 2024. 406 с.

Рекомендовано до друку та поширення через мережу Інтернет вченою радою Маріупольського державного університету (протокол № 11 від 22.04.2024)

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ІСТОРИЧНИЙ ФАКУЛЬТЕТ

СЕКЦІЯ «ІСТОРІЯ УКРАЇНИ: СУЧАСНЕ БАЧЕННЯ»

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BILOSARAY LIGHTHOUSE – A GUIDING LIGHT FOR SHIPS IN THE AZOV SEA

The shores of the Sea of Azov are mostly low-lying in the west, north and east, being steep in the south. A characteristic feature of the northern shores of the Sea of Azov is a large number of long alluvial sand spits that separate a number of shallow bays and estuaries from the sea. These spits are narrow sandy peninsulas that are up to several kilometres long and extend far into the sea; the fact has traditionally posed a great danger to navigation [9, p. 89]. One of these sandy spits is the Bilosaray Spit, where the oldest lighthouse on the Azov Sea coast has been preserved. It is located on the south-western edge of the sand spit, which stretches out to sea southwest of the port of Mariupol. The light of this navigational structure has been showing sailors the safe way to the shore for almost two centuries.

¹ This work was supported by the Institute of Archaeology, SAS and Recovery plan Slovakia, call code 09/03-03-V01 and by the grant project VEGA 2/0017/24.

² The conference paper was written within the project “Becoming Greek South of Ukraine, 1774-2021: The History of Ukraine through its Greek Minority Between Local and Transnational Contexts (UAGREEKS)”, project number 1233124, has received funding through the MSCA4Ukraine project, which is funded by the European Union.

The first lighthouses in the Sea of Azov were built in the early 18th century. They were no more than 10 metres high, constructed of stone, clay and sand. A metal lattice bowl was placed on top, firewood was lit inside at night only for the time when ships were to pass through the area or it was expected that a ship might pass through a dangerous fairway. The lighthouses of the 19th century were over 30 metres high and used oil lamps with reflectors for lighting. The spread of merchant shipping in the Sea of Azov in the early 19th century and the transformation of Mariupol into a trading city influenced the development of port infrastructure, pilotage and the modernisation of lighthouses. In 1808, an imperial decree established the port authority and the quarantine outpost in Mariupol. In the same year, a decree was signed on the duties of the manager of the Mariupol wharf, whose responsibilities, among other things, included the management of the lighthouse on the Bilosaray Spit [10, p. 195].

According to the current data of the State Hydrographic Service of Ukraine of the State Service for Maritime, Inland Waterway Transport and Shipping of Ukraine, the Bilosaray Lighthouse (latitude 46° 52.9' N; longitude 37° 19.5' E) has a tower height from the base and a fire height from sea level of 21 m and a fire visibility range of 14 miles [11]. While studying the archival sources and hydrographic documentation, it is possible to trace the history and certain dynamics of the technical characteristics and parameters of this navigation structure.

The first Bilosaray lighthouse was built in 1811. Like its predecessors, it was a wooden tower about 19 m high located 10.5 km northeast of the modern lighthouse, near the village of Melekine at an altitude of about 35 m. The light of this lighthouse was visible at a distance of up to 16-20 miles. Linseed oil was used as an illuminant in lighthouse lamps [7, p. 51; 10, p. 195; 6, p. 215]

The development of agriculture and the cultivation of high-quality wheat, the trade activity of the Greek minority in Mariupol and cooperation with foreign entrepreneurs led to an increase in export trade through the port of Mariupol, which required the improvement of port infrastructure. Construction of the stone Bilosaray Lighthouse began in 1835, and it could operate in 1836 (Fig.1). The lighthouse was built on a foundation of piles driven to a great depth. Kerch white stone was used as a building material. The tower had 5 floors, on the top there was a lantern with a catoptric lighting apparatus of 14 lamps and reflectors. The lighthouse shone with white light, providing a range of visibility of up to 9.8 miles [11, p. 107].

Navigational guidelines and hydrographic literature from the mid-19th century state that beyond Mariupol the shore extends southwest for 9 miles, with a low sandy point 7 miles further in the same direction. The depths along the shore are 16 and 18 feet. Several fishermen's huts are located on this sandy point, and the current lighthouse is located near its edge, with its light visible at a distance of 16 miles, and the old lighthouse tower is located approximately 7 miles to the

northeast. To the west of the old lighthouse, you can see the gorge in which the village of Alti (Yalta) stands; and two other villages further west [5, p. 49]. From Mariupol to Cape Bilosaray, the depth is 14 feet at a distance of about one mile from the shore. The same depth is observed along a sandy strip half a mile from the eastern shore. The lighthouse is 72 feet high and is located 81 feet above sea level. The light of the lighthouse is fixed and can be seen from a distance of 14 miles. The stone lighthouse was built to replace the old one at Cape Bilosaray (Balestra), which was demolished about twenty-one years ago (approximately 1833) [3, p. 72]. From the north-west of the lighthouse along the coast, which stretches to the west, the sea becomes deeper and at a distance of a mile the depth becomes 16 feet [4].

It is noted that the depths and soil near the lighthouse are favourable for fishing and anchoring [8, p. 90]. At the same time, however, there is a warning that special care should be taken when approaching low spits in the Sea of Azov, especially at night, as they are almost indistinguishable. There are many cases when several ships got stuck on the Bilosaray Spit while leaving the bay due to the lack of proper precautions [9, p. 89].

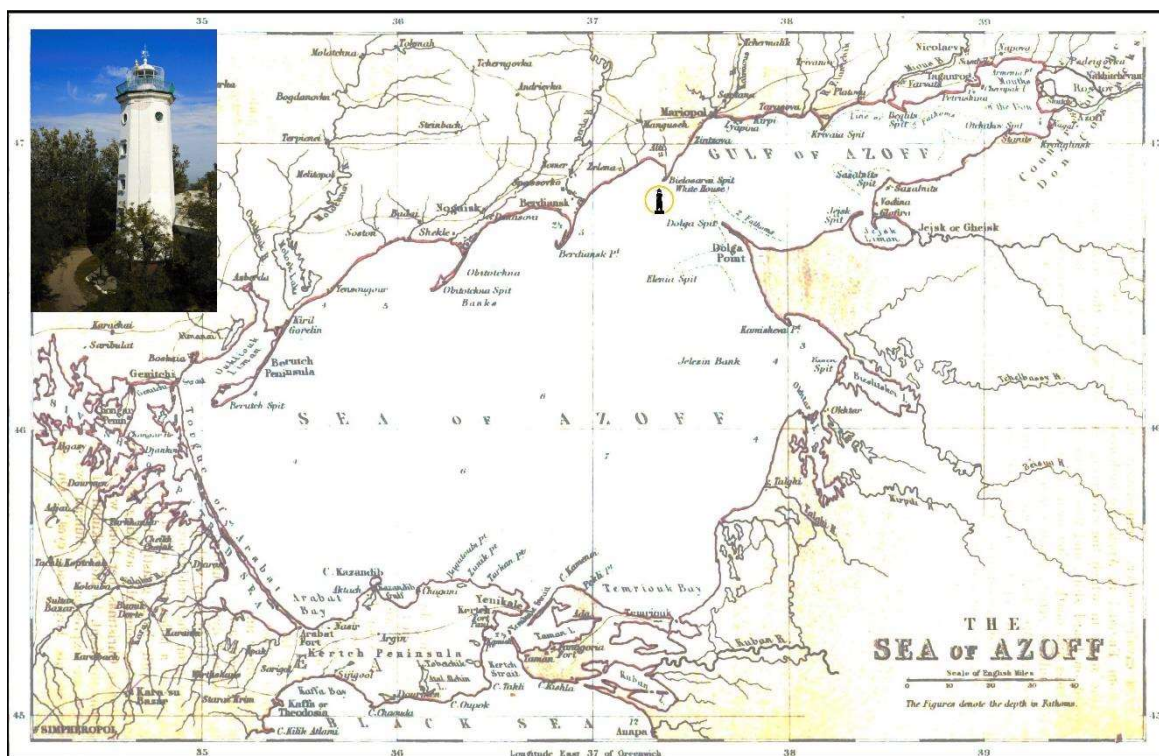


Fig. 1. Bilosaray Lighthouse (modern photo by [1]) on the map of the Crimean War by [2, p. 288]. The location of the lighthouse is marked on the map by the authors.

Over the course of its almost two-century history, the new Bilosaray Lighthouse has been modernised and renovated many times. In the late 19th century and early 20th century, a steam siren was installed at the lighthouse as well as a new diopter light-optical apparatus with an incandescent lamp powered by kerosene. Moreover, a power station was built, which significantly increased the

brightness of the light [11, p. 109]. During the 20th century, the lighthouse equipment was updated several times. During the Second World War, the lighthouse suffered significant damage. In 1955 the structure was restored and the outdated navigation equipment was replaced. In the 1970s and 1980s, the lighthouse was further modernised. A nauphone, a diesel generator and an automated navigation beacon were installed. The lighthouse was also equipped with a group of passive radar reflectors and a radar beacon-responder [1].

The Bilosaray Lighthouse survived the fighting of the Crimean War, World War I, the Civil War and World War II. Today, the national cultural heritage of Ukraine, including navigational monuments, is suffering from the enormous challenges posed by the Russian-Ukrainian war that has been going on since 2014. From the very beginning of the war, the historical monuments of eastern Ukraine were the first to experience the destructive power of Russian aggression. The Bilosaray Lighthouse is no exception.

Thus, the fire of the Bilosaray Lighthouse served as a guide for peaceful merchant ships, helped them avoid dangerous places at sea, and provided a reliable reference point for determining their location and direction of travel. Despite the fact that modern mariners have reliable space and radio navigation aids at their disposal, lighthouses continue to play an important role in maritime navigation and safety.

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**ARCHAEOLOGICAL COMPLEX OF THE ENEOLITHIC PERIOD
FROM THE MOUND NEAR THE VILLAGE OF VYSOKE IN DONETSK REGION:
CENOTAPH OR SANCTUARY?**

At the beginning of the Early Metal Age, the tradition of burials under mounds appeared and spread in the Azov-Black Sea steppes. The funerary rites of a number of archaeological cultures of the Eneolithic and Bronze Age (IV - II millennium BC) had both their own peculiarities and common phenomena. The latter include the tradition of creating symbolic cenotaph graves and using fire in funeral rites. In this regard, the complex investigated in the mound near the village of Vysoke in the Makiivka urban community of the Donetsk region of Ukraine is noteworthy.

Barrow 1 near the village of Vysoke was investigated by the Mariupol archaeological expedition led by Volodymyr Kulbaka in 1988. To this day, the materials of this mound have not been fully introduced into scientific circulation. The investigated complex was partially published and was of interest to the author of the excavations as a vivid example of one of the oldest kurgan

³ This work was supported by the Institute of Archaeology, SAS and Recovery plan Slovakia, call code 09/03-03-V01 and by the grant project VEGA 2/0017/24