Acta Scientifica Naturalis

Former Annual of Konstantin Preslavsky University of Shumen: Chemistry, Physics, Biology, Geography

Journal homepage: <https://content.sciendo.com/view/journals/asn/asn-overview.xml>

Editorial Note: Black Sea - a pearl in the crown of Bulgaria. Part I. History

Dimcho Zahariev

Department of Plant Protection, Botany and Zoology, Faculty of Natural Sciences, Konstantin Preslavsky University of Shumen, 9700 Shumen, Bulgaria

The Black Sea is charming and scary at the same time. It has a rich and glorious history. It is considered the heir to more ancient seas and even one of the ancient oceans. In a series of three notes by the editor, we will look briefly at its history, present and future.

Over the years, the Black Sea has been called by different names. In his work *Geographica*, the ancient Greek and Roman geographer, historian and traveler Strabo reported that in ancient times the Black Sea was often referred to simply as the "Sea" (ὁ πόντος). He points out that before the Greek colonization, the Black Sea was called "inhospitable" because of its difficult navigation and hostile locals. After the Greeks colonized its southern coast and it became part of Greek civilization, the name was changed to "hospitable". One of the best explanations is that its name is related to the system for indicating the main geographical directions with colored symbols. In it, black means north, red - south, white - west, and green or light blue - east. Therefore, the Black Sea means "North Sea", the White Sea means "West Sea" and the Red Sea means "South Sea". In the world of the ancient Greeks, this gave a very good orientation. So good that it has survived to this day.

Geographically, the Black Sea is an inland sea located between Southeast Europe and Asia Minor (Figure 1). It has an area of about 423,000 km² and a volume of about 547,000 km³. Its average depth is about 1,240 m and its maximum depth reaches 2,212 m. The total length of its coastline is about 4,340 km.

From a paleogeographical point of view, the origin of the Black Sea is explained in very different ways. There are two main theories, each with its own evidence.

I

Figure 1. Geographical location of the Black Sea

According to the most popular theory, the Black Sea was formed on the site of the ancient Tethys Ocean. Tethys is the name of an ocean during the Mesozoic era, located between the ancient supercontinents Laurasia (in the northern hemisphere) and Gondwana (in the southern hemisphere), formed after the division of a single land called Pangea. As the location of the continents changes, the ocean's waters recede and its area decreases greatly. In place of Tethys appears the Sarmatian Sea. This process continues and the declining waters give new borders and new names to the seas - the Meotian Sea, the Pontic Sea and finally the Black Sea. During this time, the salinity of the water changes - in some periods to sweeter, and in others - to saltier.

According to another theory, the Black Sea is one of the youngest seas on Earth. It happened after a huge freshwater lake was flooded with salt water. The Black Sea began to turn from a freshwater lake into a salt sea at the end of the last ice age about 7,000 years ago, when melting ice raised Mediterranean waters by about 100 meters and entered it through the Bosphorus. Despite the serious rise in water, even today the depth of the Bosphorus is only 36 meters, which means that it was a high and safe barrier before the rise of the water level after the last glaciation.

The Black Sea waters are composed of two layers. In the upper layer - from 0 to 120-200 m (10-13% of the water volume) there is oxygen, and in the lower - at a depth of less than 120-200 m (the remaining 87-90% of the water volume) oxygen is not enough, for to maintain aerobic life forms. On the other hand, in the deeper parts of the Black Sea, the water has a high content of hydrogen sulfide. This is considered one of the proofs of the transformation of fresh water into salt water. The thriving rich life of the freshwater lake has

become a tomb for living organisms after the entry of salt water. Hydrogen sulfide is also found in some parts of the Arabian Sea, in some Norwegian fjords, in the Karnko Depression in the Caribbean Sea and others. But the Black Sea is the only large basin in the world where hydrogen sulfide is found in very large quantities.

Whatever the history of the origin of the Black Sea, it has an important place in the history of mankind. It is an important water crossroads in the ancient world, connecting the Balkans to the west, the Eurasian steppes to the north, the Caucasus and Central Asia to the east, Asia Minor, Mesopotamia and Greece to the south. Greek mythology tells of Argonauts searching for the golden fleece, sailing a ship on the Black Sea. Their target is the land at the eastern end of the Black Sea, called Colchis (in present-day Georgia). From the point of view of the knowledge of that time, Colchis is at the end of the world, ie. at the end of the world known to the Greeks.

But this is far from the most impressive. On the western shores of the Black Sea, which today are located on the territory of the Republic of Bulgaria, in 1972 a gold treasure was discovered with the oldest processed gold in the world (Figure 2). It was found near the famous tourist city of Varna in Northeastern Bulgaria and today is exhibited in the halls of the Historical Museum in Varna.

Figure 2. Part of the Varna golden treasure

Varna's golden treasure is becoming a scientific sensation because it surprises archaeologists with several unique things at the same time: It is the oldest processed gold in the world. It is at least 1,000 years older than the civilizations of Mycenae, Sumer, Mesopotamia, and Egypt. Parallel studies using radiocarbon

III

analysis in scientific laboratories and institutes in Japan, West Germany, Britain and Russia in the mid-1970s found that the objects were made between 4600 and 4200 BC. Later research on the dating of the finds, including those conducted in the 21st century, proves this period. It also turns out that this is the largest group of gold objects of such a large age found so far in the world: on an area of about 7500 square meters, more than 3000 gold objects with a total weight of over 6 kilograms were found. This is the purest processed gold: the content of the precious metal in jewelry is unique - over 23.5 carats. According to historians, it shows an extremely thorough knowledge of metalworking techniques, which have not been recorded so far in any other find from the time of the Chalcolithic.

Until then, historians believe that the first processed gold appeared in Europe only 2000 years before Christ. That is why only a few years after its discovery the Varna Golden Treasure was declared an archeological sensation of the 20th century.

According to one of the Bulgarian researchers, the treasure once again amazes us with the knowledge of the ancient people. The sacred measure of Ancient Egypt is the so-called royal elbow, which is equal to 52 cm. Its prototype was found near Varna. The two golden bull figurines are amazing because they are made on the principle of the golden section, on which Leonardo da Vinci worked centuries later. Along the outer perimeter of Stonehenge (one of the oldest megalithic complexes, built around 2965 BC) are 56 round holes known as the "Orby's holes". Exactly 56 are the "buds" along the contour of the larger golden bull from the Varna treasure. Whether this is just a coincidence or not is a question that will continue to be answered.

Recognition of the historical significance of the discovery near Varna is the exhibition of the oldest processed gold in different countries around the world. A year after its opening, the Varna Golden Treasure was exhibited in almost all world cultural centers as part of the exhibition "Gold of the Thracians". In 1982, the treasure was displayed for seven months in Japan under the name "The oldest gold in the world. The first European civilization - Varna - Bulgaria. In 1985 and 1988 it was exhibited in Germany. In 1989 it was exhibited in France, in 1994 - in Israel, and later - in Florence. In the 21st century, the Varna treasure is presented in the USA, again in Japan, the Netherlands and the capital of Europe - Brussels.

Front Cover

The Black Sea coast, south of the village of Sinemorets, Bulgaria

Photo by Prof. Dimcho Zahariev

Date of photo: September 11, 2020