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# CASPIAN ROUTE OF THE SILK ROAD

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**ABSTRACT:** *The article covers geological and historical basis of existence of land isthmus in the Caspian Sea connecting the territory of present Azerbaijan with the coast of Turkmenistan in ancient times (before the VII century AD). Along this isthmus could pass the unknown in the history the route of the Great Silk Road, which was the shortest and most convenient way of delivery of goods from China and countries of Asia to Europe and the Middle East via the Caspian Sea.*

**KEYWORDS:** The Great Silk Road, Caspian Sea, Caspian route,

## INTRODUCTION

For the first time in-depth historical analysis of the formation of the Great Silk Road, is disclosed in the scientific work " Historical Records " of the ancient Chinese historian Ssu-ma Ch'ien, which is an outstanding monument of Chinese historiography. It describes the legendary abundance during the Han Dynasty, when China first implemented its expansion to the West and to the South and built a trade route known as the Silk Road, stretching from the ancient capital of Xi'an up to Rome[1].

The term Great Silk Road (GSR) was first introduced in 1877 by the great German geographer Ferdinand von Richthofen. Under GSR is mean the caravan way on which, from the 2nd century BC until the middle of the 2nd millennium BC, there were the historic trade routes from Europe and the Middle East to Asia, crossing the territory of the present: Turkey, Georgia, Azerbaijan, Iran, Turkmenistan, Uzbekistan, Tajikistan, Mongolia, China, India, and other countries[2]. At different historical times the GSR routes were changed, stopped functioning, and there appeared the new ones. Many things depended on the development of countries and peoples in these ways, on wars, climate changes and other environmental conditions. According to authors one of such natural factors could be the appearance of the Isthmus on the Caspian Sea as a result of lowering the water level in it and tectonic processes. Historical sources and geological data testify the presence of the isthmus on which there were the caravan routes connecting the Caucasus and Turkmenistan.

### Historical and geological aspects confirming the presence of the Caspian route of the Great Silk Road.

The first information about the Caspian Sea and its shores has been found in the writings of ancient Greek and Roman scholars. Herodotus (who lived approximately in the years of 484-425 BC) made the first maps of designation of the Caspian Sea isolated from the ocean.



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Aristotle (the years of 384-322 BC) confirmed the opinion of Herodotus. At the same time, the Caspian Sea images are significantly different from the modern ones in the ancient maps. In general geography of Claudius Ptolemy, which was the travelers' handbook up to the XVII century, the Aral Sea is not mentioned at all[3].

Many ancient scientists showed the Caspian Sea in the form of the northern gulf of the ocean that surrounded (in their opinion) all well-known land that time. Ptolemy[4] (the years of 90-168 BC), like Herodotus[5], considered the Caspian Sea the closed one. In many ancient maps the Caspian Sea is shown in the form of an oval elongated from east to west, not from north to south. Modern historians interpret this fact as a mistake and inaccuracy in the image[3]. We think that this opinion cannot be considered convincing, and the Caspian Sea image, elongated in the latitudinal direction cannot be a mistake, as such outline of the Caspian Sea is shown in the most maps of the ancient world by different authors. And the form of the Black Sea and other geographic features, in general, corresponds to the modern view. For example, the vast majority of maps[4,5,6] the Greater Caucasus limits the Caspian Sea in the north. And the names of countries, ancient cities, rivers and mountains are shown in detail.

At the same time, the analysis of ancient maps allows to establish some regularity in the dynamic form of the Caspian Sea. For example, in the maps of Herodotus (450 BC), the sea is shown in the form of an oval, and in the map of Pasidoniy[7] (the years of 150-130 BC) the Caspian Sea consists of two parts – the south part which is wider in latitudinal direction and the north part which is highly elongated in the meridional direction. The area between the southern and northern parts of the Caspian Sea is narrowed a lot. The question is whether such a big mistake is possible in the image of the Caspian Sea and can its shape change due to geological factors?

Analyzing the modern bathymetric map of the Caspian Sea[8] in Figure1 is seen that between the southern and central parts of the Caspian Sea, which are deep valleys, there is a narrow high isthmus, which geologists call the Absheron threshold, which clearly shows that along the line of LMN and the MK, limiting the South Caspian Basin in the north there is a narrow zone of small depths of the sea from 5 to 100 meters. Meanwhile, to the north and south of this narrow isthmus, the sea depth sharply increases to 800 - 1000 meters. This isthmus is a geological continuation of the Greater Caucasus Mountain range, which extends across the Caspian Sea and further in the east it is manifested in the form of the Kopet Dag mountain range.

In the geological aspect, the Caucasus - Kopetdag mountain belt is the southern border of the geological Scythian-Turan continental plate, which separates it from the South Caspian microplate that have oceanic structure[9]. In general, these mountain ridges are the segments of the Alpine-Himalayan fold belt, the area of which is a relic of the ancient Tethys Ocean, which existed here 150-200 million years ago. On the border of the Scythian-Turan South Caspian lithospheric plates there take place the active tectonic processes leading to permanent vertical and horizontal movements of tectonic blocks of the Earth's crust. This is evidenced by the high seismic activity of this territory[9,10]. As a result of these movements, the relief of the Caspian Sea and adjacent areas changes its shape that leads to the overflow of water from one area to the other without substantial changes in water volume. Significant effects of tectonic movements on the dynamics of shape and size of the Caspian Sea area is also indicated in the works of other researchers[11,12,13].



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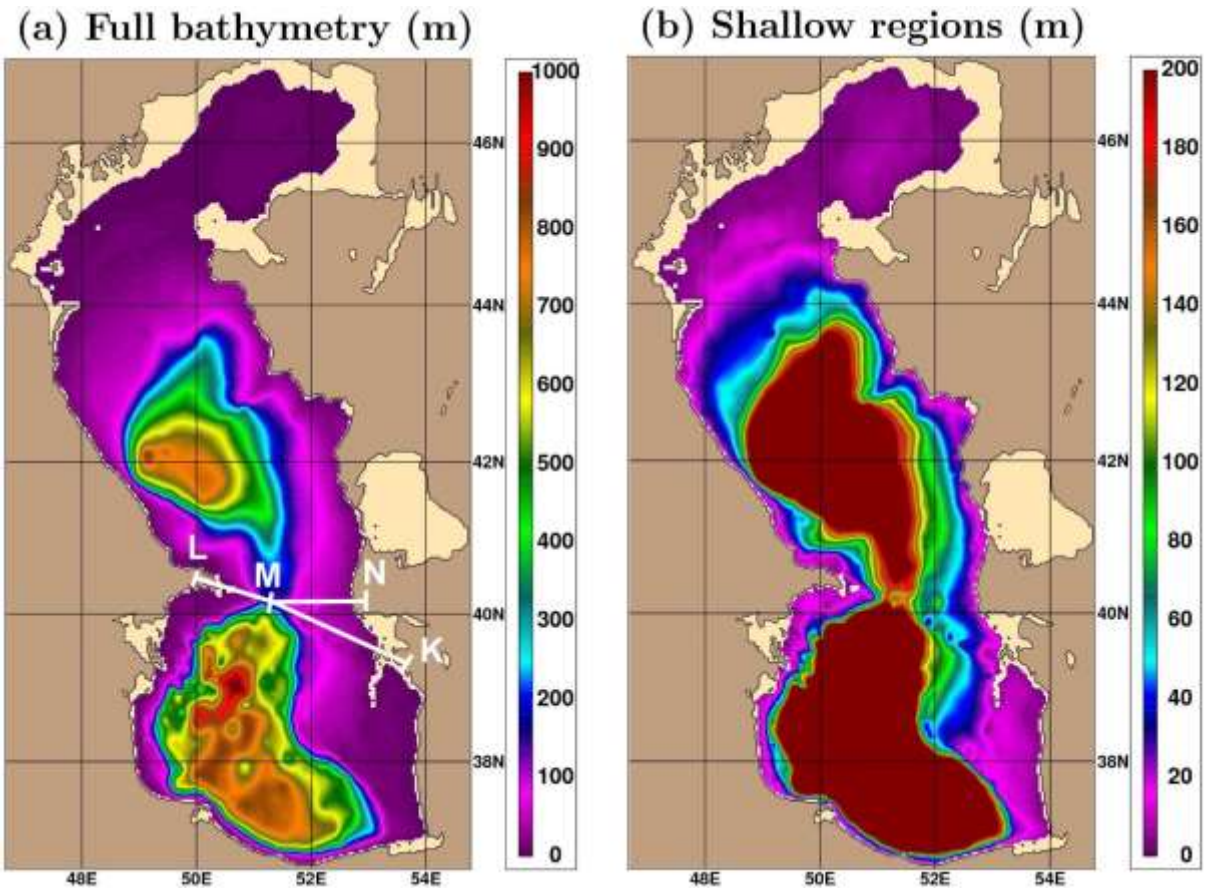


**Figure.1. Bathymetric map of the Caspian Sea. L-M-N and the MK is the trajectory of the shallowest parts of the Caspian Sea (28). The trajectory line was added by the authors.**

Analysis of the relief of the Caspian sea bottom using bathymetric studies allowed determining the location of a possible ancient isthmus connecting the territory of modern Azerbaijan and Turkmenistan. Using the dynamic forms of ancient maps, particularly the geological structure of this territory and the historical facts we have tried to restore the historic picture of changes in the shape and square of the Caspian Sea from ancient times to the present.



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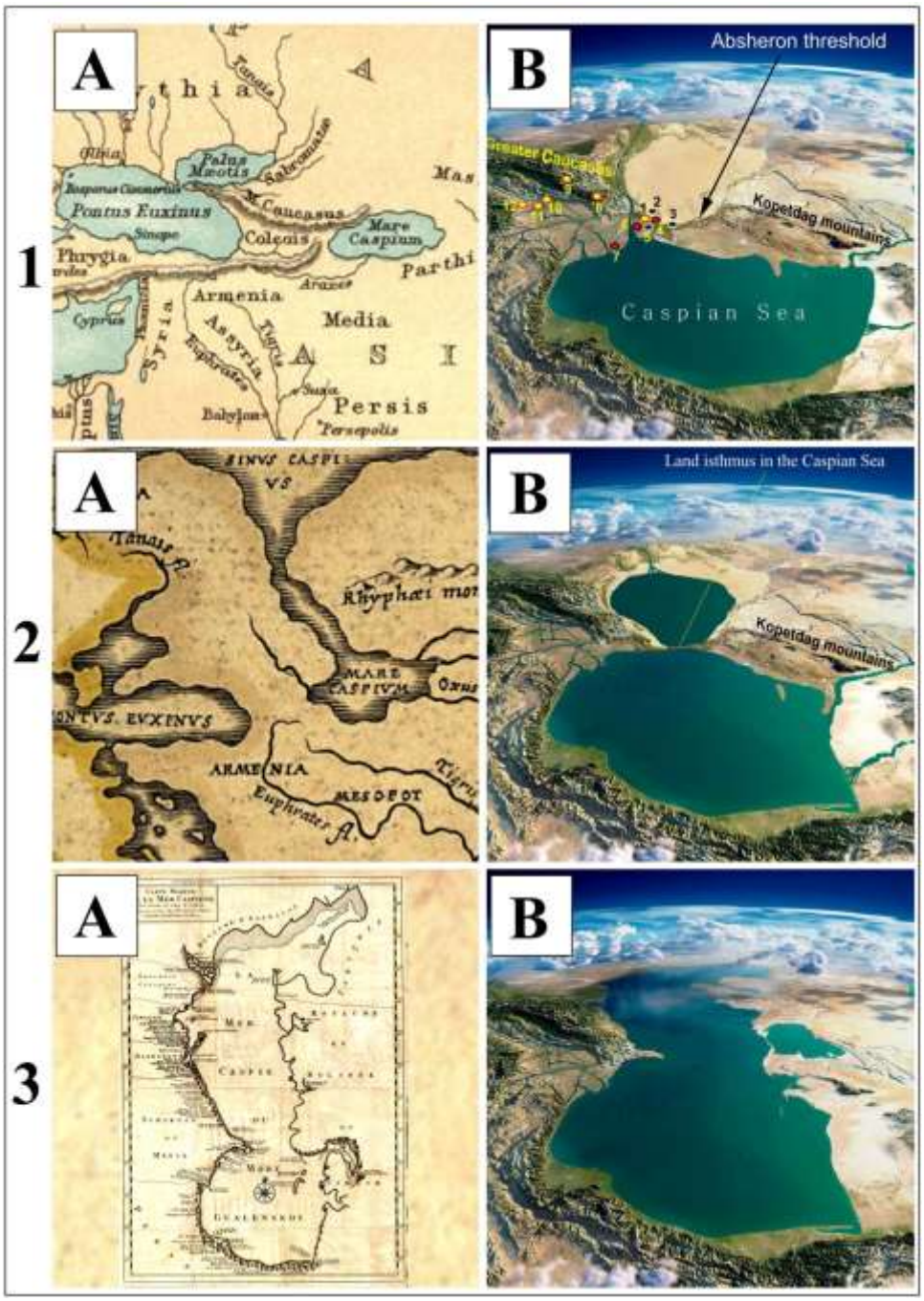


**Figure 2. Historical and artistic reconstruction of the dynamics of the shape and area of the Caspian Sea in the period of the V century BC to the present day on basis of NASA satellite image[14]. 1- Baku; 2 – Pirallahi island; 3 – Chilov island; 5 - Boyuk Zira island; 6 – Sabayil (Who it is under water); 7 – Bandovan (Who it is under water); 8 – Shamakha; 9 – Gabala; 10 – Mingechevir; 11 – Barda; 12 – Ganja.**

On basis of NASA satellite image[14] we compiled our art-historical reconstruction of the shape of the Caspian Sea and the geomorphology of the surrounding areas since the 5th century BC to the present day. Figure 2 (1A) shows an ancient map fragment with the image of the Caspian Sea, compiled by Herodotus[5] (the year of 450 BC), and Figure 2 (1B) shows a historical reconstruction of the area. As it is shown in Figure 2 (1B) the territory of the South Caspian



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Basin is separated with the mountain ridge from the cavity, located on the territory of modern middle and north Caspian Sea, which is a continuation of the Greater Caucasus, which on the East is connected to the mountain ridge of the Kopetdag. Part of the mountain ridge extending from the northern part of the Caspian Sea has a geological name - the Absheron threshold. Figure 2 (2A) shows the map of Pasidoniy[7] (the years of 150-130 BC), where can be seen a narrow part elongated to the north of the Caspian Sea, which is narrowed in the joint area with the South Caspian cavity.

Figure 2. (2B) shows the artistic reconstruction of the Caspian Sea forms indicating a very narrow overland isthmus formed by the mountain ridge – Absheron threshold. As a result of subsidence due to tectonic processes of the central part of the Absheron threshold the water could flow through the crevices of the isthmus into the cavity located to the north of it and fill it.

The Absheron threshold, situated above the water level, was forming an overland isthmus connecting the Absheron Peninsula to the coast of western Turkmenistan and periodically could sink under the water and jut over the water as a result of both tectonic movements of the Caspian seabed, and tectonic processes. Figure 2 (3A) shows the map[15] published in 1725, in which the shape and size of the Caspian Sea surface are very similar to the modern, Figure 2 (3B), and only the area of the Gulf of Kara-Bogaz-Gel in the Middle Ages was significantly less than the modern one, that confirms the essential dynamics of the water level in the Caspian Sea. If the isthmus did exist really, then this information should be remained in the annals.

Abbas Gulu Bakikhanov wrote in his work about the disappeared towns, traces of carts going to the sea, and about the fact that, in ancient times, from Baku to the Turkmen coast there was the land isthmus through which the Turkmen came here on horses with caravans [16]. In his work, the academician Lenz writes that he heard from locals of Absheron in 1830, that a long time ago, the sea was 20 miles farther than the islands Boyuk Dash and Zira are now, as well as Pirallahi and Chilov were the solid part of the continent; Once the sea suddenly went far ahead and gave the coast the look that it has today [17]. According to the academician S. Ashurbeyli "a track of two-wheeled carts in the stone body of Boyuk Zira island, disappearing in the sea can be the proof of flooding of the zone between Baku and Boyuk Zira island many centuries ago". According to the direction of the track this path was leading along the island to the village of Shah and Shah Spit, the end point of the southern coast of Baku bay [18].

The results of space researches are evidence of the fact that in ancient times on the territory of Absheron peninsula and the surrounding Caspian shelf, which was the land in ancient times, there were large settlements. Using the satellite image analysis there were found out the traces of an ancient fortress under water near the east coast of the Absheron Peninsula[19]. Similar centers of ancient civilization usually occur on trade caravan routes, and the ancient coastal town with a fortress could be one of the staging posts and shopping centers of caravan routes from China.

Fluctuations of the Caspian Sea level were marked by many archaeological facts and have been described in historical chronicles, and confirmed with the geological data[20]. In the last two thousand years, the minimum water level in the Caspian Sea was observed from IV to VII century AD (-32 m)[21] and from IV to III century BC (-58m)[22]. Currently the Caspian Sea level is at around - 27 m. Thus, from IV to VII century AD the sea level was 5 m lower than at present and from IV to III century BC the sea level was 31 m lower than at present. Of course, the rise in sea level connected with an increase in rainfall and inflows of water from the rivers



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flowing into it, led to the flooding of large areas of the Caspian Sea shelf. But the rise in water level is a gradual process that takes many years. However, historical sources indicate[17] that the sea level suddenly rose quickly and flooded many cities giving to the coast the today's view. This rapid sea-level change cannot be connected with changes in the volume of water in the Caspian Sea. Such a sharp decrease of the sea level and the appearance of narrow isthmus, and as a consequence, its rapid settling down in the VII century AD can only be explained with tectonic processes - deformation of the sea bottom. This isthmus divided the Caspian Sea into two parts - the South Caspian Basin, is a relic of the ancient Tethys Ocean and the central part of the Caspian Sea, having a continental geological structure. Fluctuations of the Caspian Sea level in conjunction with the tectonic processes which have also cyclic character[12], led to periodic flooding of land isthmus. Meanwhile, its most probable existence can be timed to the period of IV-VII centuries AD, when the sea level was minimal, and the trade routes of the Silk Road were the most active. The route of the Silk Road through the territory of ancient Albania is confirmed with archaeological excavations. Thus, the archaeological excavations in the city of Mingechevir (Azerbaijan) have allowed revealing the silk cloth from China[23] that can be another evidence of the passage through the territory of one of the routes of the Silk Road. Yampolsky Z.I. (based on the study of Tabula Peutingeriana) concluded that in Transcaucasia (present territory of Azerbaijan) there were bases of the Silk Road in the towns in Mingechevir and Barda, which was passing further to the west through the present territory of Georgia to the Black Sea[24]. In the work of Aliyev K. it is said that the territory of ancient Albania (present Azerbaijan) served as a transit of goods from India and China to the shores of the Atlantic[25].

Thus, according to the authors, one of the main routes of the GSR was the route across the Caspian Sea unknown in the history. Further, this route could pass through territory of the Caucasus and Turkey to the countries of Europe, the Near and the Middle East, as it is shown in the map of the ancient Silk Road route[26] in Figure 3.



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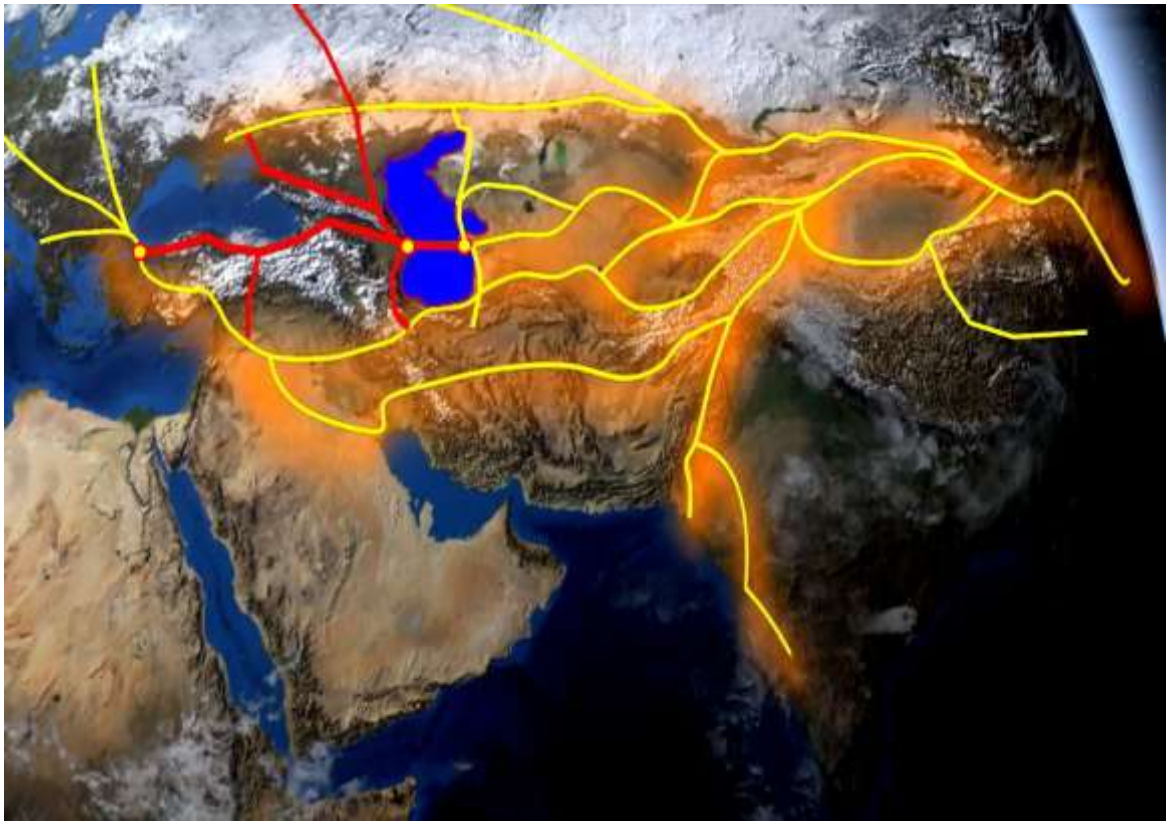

**Figure 3. Extent of Silk Route/Silk Road.**

**The unknown route of the Silk Road was further added by the authors and shown in red.**

## SUMMARY AND CONCLUSION

In all historical maps of ancient routes of the Silk Road they extend from China to Europe bypassing the Caspian Sea to the south. This research covers geological and historical basis of existence of land isthmus in the Caspian Sea connecting the territory of present Azerbaijan with the coast of Turkmenistan in ancient times (before the VII century AD). Along this isthmus, according to the authors, could pass the unknown in the history the route of the Great Silk Road, which was the shortest and most convenient way of delivery of goods from China and countries of Asia to Europe and the Middle East via the Caspian Sea. As a result of tectonic processes the isthmus in the Caspian Sea submerged. Meanwhile, at the bottom of the sea there is still this ancient natural bridge between Asia and Europe, the surface of which runs at a shallow depth.

Modern processes of integration of Europe and Asia and the formation of economic belt of the Great Silk Road are based on historical data about existing ancient routes of the Silk Road. Therefore, the discovery of the shortest route of the Silk Road unknown to science, can play an important role in formation of the strategy of geopolitical, cultural and economical cooperation of the countries of West and East[27].

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Highly detailed fragments of the planet Earth with exaggerated relief, translucent ocean and clouds, illuminated by the morning sun. Caspian Sea. Elements of this image furnished by NASA. http://www.fotosearch.com/CSP324/k19149467/

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