HISTORY OF GEOGRAPHICAL EXPLORATION OF THE KYZYLKUM DESERT

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Abstract: This article provides general information about the history of the study of the Kyzylkum desert located in the territory of the Republic of Uzbekistan, the scientists who conducted research in this area.

Key words: paleontological research, Kyzylkum natural geographical district, Lower Zarafshan, geological research, geomorphological research.

Kyzylkum desert is a large desert located between Amudarya and Syrdarya rivers. Its area is 300,000 km², and it is the 15th largest in the world (after the Sonoran Desert). A little smaller than the Karakum desert in Central Asia. The average height of Kyzylkum desert above sea level is about 300 meters. The climate in the desert region is extremely continental, and the climate typical of the summer season prevails in May-September. In summer, the air temperature can reach +52C° (July 1983 data from a meteorological station near the city of Kerki, Turkmenistan). [3] Kyzylkum toponym is a Turkic word, and there is a possibility that it is derived from the name of the Cretaceous reddish sands that are widespread in this area. Yellow and gray sands are distributed in areas where river beds are widespread. The surface of Kyzylkum sand is characterized by cracks, barrens and consolidated sand, and the surface of the sand becomes very hot in the summer. Scientists who study the past and present of the Kyzylkum desert have always talked about this land with great interest.

The territory of the Kyzylkum desert, which was an important transmission network of the Great Silk Road in its time, has been thoroughly studied since ancient times. Ibn Battuta, one of the scholars of the Islamic renaissance era, traveled to China along the Great Silk Road, traveled to Khorezm via Ustyurt, and from there

to Bukhara and Samarkand via Qizilqum. As a result, he writes down valuable information about the areas he has traveled. Another Arab traveler, Ibn Havqal, was in Central Asia in 976 and wrote the "Book of Distances (Roads) and Countries". This book describes in detail the sand deserts and oases of Central Asia. Also, great scholars such as Muhammad ibn Musa al-Khwarazmi, Ahmad al-Farghani, Abu Abdullah Muhammad ibn atTirmizi, Abu Nasr Farabi, Abu Bakr Narshahi, Abu Rayhan Beruni, Abu Ali ibn Sina, Mahmud Kashgari wrote about the large desert that separates the territory of Bukhara and Khorezm in a series of works on geography. Qizilqum, which was considered a simple and huge desert in the past, has become a real "jewel" for today's New Uzbekistan with its geological resources.

As a result of geological research, it became known that Kyzylkum region has an ancient history. In the middle of the Cambrian period, the desert area consisted of a shallow sea, and it was during this period that limestone layers were formed. In the Ordovician and Silurian periods, terrigenous, terrigenous-effusive, carbonate formations were accumulated. In the Lower Silurian period, low-mountain islands were formed. In Wenlock and Ludlov arses, the sea recedes and mountain areas in the center of Kyzylkum turn into large land as a result of fold movements (Bokantov, Ovminzatov, Aristantov). By the time of the Lower Devonian, the process of sea invasion takes place. As a result, island-mountain landscapes will continue to form on the basis of the current remnant mountains. The surface layer of the mountains undergoes a process of rapid erosion. By the Upper Devonian age, the Kyzylkum region became dry land without sea water. But in this century, the phenomenon of sea invasion will happen again. The mountains return to the island view. During the Middle Carboniferous period, continental deposits began to form in the desert regions due to the retreat of the sea. From the Upper Carboniferous period to the Triassic period, Kyzylkum region consisted of a denudation area. All areas of the future desert will have a kaolin weathering crust. In the Lower Cretaceous period (Alpine age), the coast of the sea basin existed in the southern region (Kuljuktov).

But at the beginning of the Cenomanian age, marine transgression intensified in the southern regions, and greenish-gray clay and sandstones were formed in shallow basins. During the Lower and Upper Turonian periods, the phenomenon of sea invasion and retreat took place, and continental deposits began to accumulate in the area. In the Middle Eocene, the transgression of the sea increased again, and marl, clay, and conglomerate deposits were formed. The tectonic movements of the Oligocene and Neogene periods greatly rejuvenated the mountains in the Kyzylkum region. The present-day low mountains in the Kyzylkum desert area are located horizontally (latitudinally) corresponding to the Nurota, Turkestan and Zarafshan mountain ranges, which are the continuation of the Tianshan mountain range. Markuz Low Mountains turn north through the Sultan Uwais Mountains and connect with the Ural Mountains in the submeridional direction. The history of the geological structure and development of Central Kyzylkum was written by H.M. Abdullayev, I.Kh. Hamroboyev, K.K. Pyatkov and A.K. The Bukharins learned. [1; 311– 312 b] The residual mountains in Kyzylkum are distinguished by their wealth of mineral and ore mineral resources. The Muruntov gold mine (depth 650 meters, length 4.3 km, width 3.2 km, 2020) launched in 1970 is the "gold chest" of our country. The mine produced 57 tons of high-quality gold in 2020, leading the world ranking compiled by Kitco experts.

Until the 60s of the 20th century, there was a long-term dispute among scientists about the origin of aeolian sands in the Kyzylkum desert. Later, the formation of eolian sands as a result of deflation of Pliocene sandstones and sands under the influence of wind was substantiated mechanically, mineralogically, paleogeographically. It has been found through research that the desert is dominated by the most varied sand formations. As a result of human activity, moving dunes have appeared around wells, artesians, near settlements. As a result of unplanned grazing of cattle and sheep, semi-consolidated sands are left without vegetation and

create shifting dunes. This process is gaining momentum. Almost all wells located in the Kyzylkum desert are surrounded by well dunes at a distance of 0.5-1 km.

As a natural geographical district, Kyzylkum has a special place in the natural geography of Uzbekistan. This area was particularly intensively used in the 19th and 20th centuries. Paleontologically, the desert region was studied by J. David Archibald, Alexander Averianov, Sergey Kurzanov, Lev Nesov, Anatoly Ryabinin, Anatoly Rozhdestvensky, and Hans-Dieter-Zuslar.[3] Also, the spy of the Russian Empire, Philip Yefremov, who was captured by the Bukhara Emirate, wrote down valuable information about the nature, flora and fauna, and inhabitants of the Kyzylkum and Karakum deserts in his work "9-year journey" in 1774-1782. Some time later, in 1794, T.S. Burnashev, A. Negri in 1820-1821, in their expeditions to Kyzylkum and Lower Zarafshon, deeply studied the flora, nature, and ethnography of the regions. Of course, the main purpose of these expeditions was to gather information about the military-economic capacity of the central states of Central Asia, namely the Bukhara Emirate, Khiva and Kokan Khanates, that is, spying. . However, the initial scientific study of the Kyzylkum region was accelerated by the Russians in the 19th century. For example, K.F. Butenev (in 1841-1842), N.A. Seversev (in 1857), A.P. Fedchenko (1868-1871), I.V. The expeditions led by Mushketov (in 1874) and V.A. Obruchev (in 1886-1888) studied not only the flora and fauna and nature of the Kyzylkum desert, but also the hydrological objects, climate, population, and geological resources of the desert. studied. With the establishment of the former Union (in the 20s-30s of the 20th century), the geological and geomorphological study of Kyzylkum and the exploitation of its minerals were started. In this, D.N. Nalivkin, K.K. Marvok, I.P. Gerasimov, H.M. Abdullayev, I. Hamroboyev, O. Akramkho'dzhayev and A. A. Grigoryev have great services. L.N. Babushkin, N.A. Kogai, N.A. Korzhenevsky, V.I. Cheterkin, A. Rafikov, P. Baratov, A. Abulqosimov, L. Alibekov, and P. Ghulomov's invaluable services have been the main foundation in the study of the Kyzylkum desert and its

application today. After all, 29 million hectares of the Kyzylkum desert are not fully explored. It is necessary to comprehensively study these areas and implement measures for their effective use.

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