ISSN 2181-3187

HERITAGE OF ABU RAYHAN BERUNI

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ANNOTATION

In this article, a famous scholar born in Khorezm, a famous scientist in Khorezm, who played an important role in the establishment of Ma'mun Academy and worked as a director in this academy for many years, mathematics, mineralogy, About Abu Rayhan Beruni, who made many discoveries in the fields of geodesy, astronomy, history and other sciences, and even wrote in his work "India" that there was land on the other side of the earth several thousand years ago, surprising the scientists of today and his legacy information is provided.

KEY WORDS AND PHRASES

Abu Rayhan Beruni, Qat, Ma'mun ibn Muhammad, Ibn Sina, Africans, Ma'munis, Abu Nasr Ibn Iraq, Abul Khair ibn Hammar, Abu Sahl Mashihi, Jawhari, Marwazi, Mahmud Ghaznavi invasion, Ghaznavis, Karakhanids, activities of the Ma'mun Academy, Ghazna.

The future of the nation whose past is buried is under the veil of darkness!

The land of Khorezm, the origin of which goes back to ancient times, is considered to have produced many scientists in its bosom. The development of science in the land of Khorezm has been progressing since time immemorial. Many scientists who grew up in the land of Khorezm made great contributions not only to our country, but also to world science. During the many years of history, Khorezm has experienced many trials. One of them is Abu Rayhan Beruni.

Ma'mun Academy was established in Khorezm in the 10th century and became a major center of science and culture. At that time Khorezm was at the center of complex political processes. Before the Ma'muni dynasty, the Anushteginis Altintash were on the throne. In 995, Ma'mun ibn Muhammad conquered the city of Kat, overthrew the Afrighi dynasty ruling Khorezm since the 4th century, and founded the Ma'muni dynasty.

Ma'mun ibn Muhammad founded the Ma'muni Academy in Khorezm. Unfortunately, Ma'mun Academy was not lucky enough to operate in Khorezm for a long time. In 1017, Mahmud Ghaznavi, a ruler of Ghaznavid origin, invaded Khorezm and occupied it. He took many scholars of the academy with him to Ghazna. Among

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them were Abu Nasr Ibn Iraq, Abul Khair Ibn Hammar, Abu Sahl Mashihi, Abu Rayhan Beruni, Abu Ali Ibn Sina and others.[1]

After Abu Nasr Farabi and at the same time as Ibn Sina, Abu Rayhan Muhammed ib Ahmed Beruni had a great impact on the development of natural and scientific knowledge in Central Asia and the entire Middle East. Abu Rayhan Beruni is a great scientist, a profound philosopher, a great genius who amazes people with the height of his intellectual flight, the richness of his scientific aspirations in all directions. He was a great encyclopedist, thinker, and humanist of the Middle Ages, who wrote more than 150 works devoted to topical issues of natural science, philosophy, history, and philology.

Abu Rayhan Beruni was born in 362 Hijri i.e. 2 Zulhijja 973 AD in the vicinity of the city of Kat, the center of Khorezm in the early feudal period. [2] Abu Rayhan Beruni's father Abdulahab was an old, uneducated man. His mother was a firewood carrier. Perhaps it is not correct to accept these qualities as they are. However, in any case, through these expressions, Beruni emphasizes that he came from an ordinary citizen and does not belong to the nobility. This idea can be felt in Beruniny's critical remarks about nobles.[3] Beruni, while earnestly affirming healthy and bold thoughts, certainly once again affirms that his descent is from an ordinary working class. Born in a poor family, the future scientist spent his childhood in the lowest circles of society, and even then he had to taste the bitter and sweet things of life. At that time, Kat was the capital of Khorezm state. In 999, the lands of the Samanid state bordering Khorezm were completely occupied by the Karakhanids who came from Kashgar and Yettisuv. The left bank of the Amudarya passed into the hands of the Ghaznavids. Khorezm remained between them.

Abu Rayhan Beruni was orphaned by his parents at a very young age and raised in an Iraqi household. Beruni received a good education in his homeland. From an early age, he was devoted to scientific work. He received his primary education at the school in his village, then he grew up under the tutelage of the great astrologer and mathematician Abu Nasr ibn Iraq. Ibn Iraq closely helped him to get education in local madrasahs in different cities of Khorezm and from famous teachers. Beruni learned most of his knowledge from the scientists who passed before him: mathematician, astrologer, and geographer Muhammad Khorezmi, geographer Abul Abbas Ahmed Farghani, Marwazi, Jawhari, philosopher and naturalist. He independently studied the works of Abu Nasr Muhammad Farabi, Abul Wafa Bozhani, Ibn Iraq, a great mathematician from Khorezm, Abu Sa'id al-Siji from Seistan, Abu Muhammad Hamid Khojandi and others, and became known as an astrologer at the age of 17.

Abu Rayhan Beruni began to learn many languages from a young age. He thoroughly studied Khorezm, Arabic, Persian, Greek, Sanskrit and Jewish languages.

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His teacher Abu Nasr Ibn Iraq gave him the name Abu Rayhan. Beruni is derived from the word "berun" - outside. It is also a sign that the young scientist is out of town.[4]

Beruni's favorite subjects from his youth were astronomy, mathematics, geodesy, geography and mineralogy. Beruni studied Euclid's geometry and Ptolemy's astronomical teachings from the great scientist Abu Nasr ibn Iraq..

In 995, Kat was conquered by the emir of Gurganj, Ma'mun ibn Muhammad. Beruni escaped from Ma'mun's anger because he belonged to the Iraqi family and came to the city of Ray near present-day Tehran. In Rai, he met the famous scientist - mathematician and astronomer al-Khojandi, physician and philosopher Ar-Razi. Beruni Rayda writes his treatise "Al-Fakhri sextant".

997 Beruni returns to Kat. During this period, there were changes in Khorezm, Ma'mun died and Ali ibn Ma'mun came to the throne in his place. However, due to the political events that took place in Khorezm at that time, he left his homeland again and lived in Jurjan on the southeastern edge of the Caspian Sea from approximately 998 to 1004. Beruni created about fifteen of his works here. For example, the scientist's work "Monuments left from ancient peoples" was written here around the year 1000. The translation of this book into Russian in 1957 and into Uzbek in 1968 was published as a separate book "Science" of the Academy of Sciences of the USSR. In the spring of 1004, Beruni returned to Khorezm and took a respectable position in the court of Khorezm Shah Abu Abbas Ma'mun.

At this time, the capital of Khorezm was Gurganj. In the spring of 1005, the famous Bukhara physician Abu Ali ibn Sina also came to Gurganj. In Gurganj, Beruni dealt with mathematics, astronomy, as well as some issues of physics and mineralogy. It was here that the idea of using specific gravities to identify minerals, systematize them, was born.

In 1017, when Mahmud of Ghaznavi conquered Khorezm, Beruni was forced to go to Ghazna along with other scholars, and he stayed there until the end of his life. In the summer of 1017, by order of Mahmud Ghaznavi, Beruni was taken to Ghazna as a prisoner. He lived there in difficult conditions and remained there until the end of his life.

The talented Karakalpak writer Orozak Bekbaulov did a very meritorious work on the life and work of Abu Rayhan Beruni and wrote a novel about the great encyclopedist. In the process of writing the novel, the writer got acquainted with many scientific and literary sources. Beruni's diaries did not escape his attention either. In the novel, special attention is paid to the socio-economic and political situation of that time. The novel contains very valuable information about the ethnography of the Khorezm people, their customs, and the way of life of that time. In this work, relying on the scientific literature on the history of Khorezm, the novel also refers to the unique lexicon of the Khorezm dialect. [5]

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One of Beruni's important works that has reached us, the manuscript of "Basic Concepts of the Art of Astrology" is kept in the manuscript fund of the Institute of Oriental Studies named after Abu Rayhan Beruni of the Academy of Sciences of the Republic of Uzbekistan. This work was written in 1029 in Ghazna. The work has reached us in Arabic and Persian languages. In 1975, B. A. Rosenfeld and A. Akhmedov published its fully annotated Russian translation. This work of Beruni is a unique textbook, dedicated to information on various sciences that astronomers and astrologers should know. Therefore, in addition to astronomy and astrology, it also contains information about mathematics, geography, chronology and the rules of using astrology. The work is written in the form of 530 questions and their short and concise answers.

After 1019, Abu Rayhan Beruni was able to engage in scientific work. In 1022-1024, Mahmud Ghaznavi took Beruni with him during his campaign to India. Even during the trip, Beruni was engaged in scientific work. He measured the longitude of one degree of the meridian of the globe near the fort of Nandna in the Punjab, and it was 110,895. found that it is km. If this information is compared with the result of modern measurements - 111.1 km, it can be seen how accurate Beruni's measurements are.

Until 995, he solved the practical problems of astronomy and geodesy, made a globe of the Earth and the sky, and wrote several books on astronomy. One such work of the scientist - "Geodesia" was completed in 1025. This work is about defining the boundaries of places to determine the distances between cities. At the end of the 4th chapter of the book, Beruni thought about measuring the magnitude of the earth's rotation.

Abu Rayhan Beruni, a famous scholar from Khorezm, the author of many works, who worked for many years as the head of Ma'mun Academy, died in Ghazna in 1048. With about 150 written works, the scientist made a unique contribution to the development of astronomy, astrology, mathematics, geodesy, geology, mineralogy, geography, arithmetic, medicine, pharmacognosy, history, philology and other sciences. Beuniy's unique work has gained special attention in his native Uzbekistan.