IN THE DEVELOPMENT OF SCIENCE IN MOVAROUNNAHR THE PLACE OF IBN SINA AND BERUNI

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Annotation

This article reveals the place and role of the scientific heritage of Abu Ali ibn Sina and Abu Rayhan Beruni, who lived and worked in Movarunnahr, in the history of modern civilization. It is also analyzed that the research of scientists played the role of a bridge connecting West and East, South and North.

Key words: civilization, science, culture, spirituality, politics, economics, man, society, technology, public consciousness, marriage, family, state, information.

The information communication and information exchange of Central Asian peoples and states served to solve major economic and political problems in the regions, and served their cultural convergence and civilizational development. Inter-civilizational communication and exchange of technologies, scientific knowledge and achievements have been of great importance in mutual enrichment. In this, the Great Silk Road played the role of a bridge connecting West and East, South and North. Thanks to him, conditions were created for studying the scientific works, ideas and discoveries of Socrates, Plato, Aristotle, Ptolemy and other ancient scholars. Today, as a result of the globalization of computer technology, information-related sciences, the increasing importance of molecular biology and genetics, and science being recognized as a source of material and spiritual wealth, its importance has come to the fore. Due to the emergence of the problem of transferring the functions of human mental activity to computers, the concept of artificial intelligence was created in the epistemology of philosophy, which requires a new approach to science, man, society, technology, social consciousness and other topics.

It is known that thousands of scholars, great thinkers, poets, and saints emerged from the land of our country, which is the crossroads of ancient cultures and civilizations, in the Middle Ages. Their invaluable heritage in the field of exact sciences and religious sciences is the spiritual property of all mankind. At this point, it can be said that it is important to discuss and understand the scientific heritage of great scholars and thinkers who lived and created in Movarounnahr, to reveal its place and role in the history of modern civilization. Because, "Alomalar with their culture and science have been able to reach the front lines of the world several times in history, they have made a significant contribution to the development of world civilization." It is one of the urgent issues of today to give a new impetus to efforts aimed at further research and popularization of this priceless scientific heritage. Encyclopaedic scholars and thinkers who flourished in Movarounnahr in the early Middle Ages were convinced of the nature of philosophy, its reliance on worldly sciences, especially natural sciences, and the fact that philosophical and natural sciences cannot develop without close connection with each other, as well as those who are inclined to think logically. Also,

they called "... to coordinate the evidence of faith with the evidence of reason, to thoroughly acquire worldly and religious sciences, and to know the secrets of the universe." Abu Ali ibn Sina, known to the world as Avicenna, created more than 450 works during his lifetime, of which about 190 were devoted to philosophy, psychology, ethics, logic, chemistry, physics, astronomy, mathematics, music, literature, linguistics, and socio-political fields. however, the great scientist is known to the world primarily for having founded the science of medicine and taking it to the highest heights. His name is written in golden letters in the history of world science and culture. In the work "Hayyi ibn Yakhzon", which surprised and amazed mankind with its deep philosophical and logical content, he created a new philosophical novella, narrative, poem about the world and man, the soul and Allah, which in the future A. Dats provided inexhaustible inspiration and creativity for the work of Shota Rustaveli, Braitel for the pictorial clock of Bosch[1].

Abu Ali ibn Sina, who devoted his whole life to the path of science, was a very hardworking and enthusiastic scientist, and his incomparable scientific heritage is of great importance in the history of science and culture. He created many works on philosophy, mathematics, astronomy, chemistry, physics, medicine, medicine, geography, music and other subjects. Also, his works on logic, psychology, methods of state administration, military science, marriage, family issues, and his services in the field of literature greatly contribute to the development of the spiritual life of the society and the process of modern civilization. Abu Rayhan Beruni (974-1048) made a great contribution to the development of almost all sciences of his time, is a famous encyclopedist, a great philosopher, and his scientific legacy is eternal. With his great merits and discoveries in the field of exact sciences, he was far ahead of his time and left a unique and invaluable scientific and spiritual wealth for the development of modern science. Beruni's works in the field of natural science, history, philosophy and linguistics are a valuable source that shows the level of development of scientific understanding and thinking in the Middle Ages. English, Russian, German, Spanish, French and other scholars have devoted their large works to this source and to the topic of its great contribution to the science of the Middle Ages. "Another bright star of our national history, Abu Rayhan Beruni, gives a true assessment of Beruni's activity, American historian of science Sarton describes the 11th century as "Beruni's age". Such a high and rightful assessment is first of all explained by the incomparable contribution of our great compatriot to the development of science. Beruni's scientific-philosophical views were described in the works "Relics of Ancient Nations", "Masud's Law", "India", "Geodesy", "Minerology". G. T. Lemmlein, one of the Russian scientists who studied the mineralogical heritage of the scientist, commented on the method he used in mineralogy: "The scientific method, which requires the observation and determination of logical structures in the experiment, is also a method that meets the rules of modern science."[2] he says.

Beruni's natural-scientific heritage, the problems he raised in specific sciences had a great impact on the creation of a general picture of the world, as well as on the formation of a philosophical worldview, on the process of science becoming a value. The results of this can be clearly seen in the issues that he raised in astronomy, geology, mineralogy, and biology and based his scientific-practical solution. One of Beruni's great services to science is that he tried

[1] Салдадзе А. Ибн Сина – Авиценна. –Тошкент: Изд. им. Гафур Гуляма. 1983. С. 89

[2] Леммлейн Г.Т. Минерологические сведения, сообщаемые трактате Беруни. В. Кн. Собрание сведений для познания дрогоценностей. (Минерология). –Москва: 1963. С. 317

to cleanse science from various persecutions, fought for the purity of science. Beruni argues that the magician and the astrology based on him are far from a science. In his work "Geodesia" he wrote that "as the art of astrology has a weak foundation in general, so do the results obtained from it. The conclusions drawn from them are confusing compared to real sciences. If we talk about Beruni's work "Monuments left by ancient peoples", this historical source provides valuable information about the annals and traditions, religion, beliefs, science and history of the peoples of Central Asia and several peoples, such as Persians, Greeks, Jews, Christians, Arabs. The ideas advanced in this valuable work on the history of the peoples of the East have not lost their importance even today, including in the process of modern civilization. Also, "One of Beruni's major works is Tahqiq moli-l-hind (Researches about India) this immortal book of his gives rich information about Indian tradition, science, history, political, economic, and spiritual life of that time."

This work consists of eighty chapters, the beliefs of Indians from ancient times to the time when Beruni lived, their views on matter, God, the universe, man, soul, their religions and the history of their origin, prophets, scientific knowledge, borders of countries and cities. and included such diverse fields as legends and histories, writing and language, poetry and poetry related to them[3].

When the time comes, it should also be noted that although Beruni wrote in Arabic and Persian languages, Iranian Dr. Ismail Hokimi admits that despite the fact that his famous work "At-tafhim" was written in purely Persian astronomical and mathematical expressions: "The elegance of the sentences, the richness of the style, the beauty and clarity of words and expressions, the thoroughness and maturity of the issues, the authenticity, importance and solidity of the themes are among the advantages and unique aspects of this book."

Beruni also made a great contribution to the science of astronomy. It is recognized that he has more than 45 works related to this field. The great works of the scientist on astronomy are "Key to Astronomy" and "Kanuni Masudi" (Masud's law).

Another famous work of Beruni is Kitab al Jamahir fi Marifat al Jawahir (The Book of Knowledge of Precious Stones). In this work, the scientist provides very good sources about minerals in Central Asia and their locations. He touched on the mineral resources of Fergana and said that asphalt, oil, black wax, novjadil, totium, mercury, iron, copper and other minerals can be obtained there.

"Beruni was one of the first in world science to propose unique new ideas regarding the theory of seas and the creation of a spherical globe of the Earth. He calculated the radius of the Earth, explained the state of vacuum, i.e. space, put forward the view of the existence of a continent behind the Pacific and Atlantic oceans 450 years before the voyage of Columbus. The thinker's work "History of Ancient Nations" was written at the age of 27, and its purpose was to determine the duration of various periods (eras) in the most reliable way, his followers wrote.

Beruni was a scientist who mastered the most difficult sciences, and was deeply engaged in mathematics, astronomy, mineralogy, pharmacology, and a number of such sciences. He makes a great contribution to the development of the society by finding value in the existing knowledge and sciences with his excellent ability, sharp logic and clever mind.

[3] Журнал Сино. Идмий-адабий, фалсафий-ирфоний, маънавий-маърифий уч ойлик журнал. 2009. Б-149

Orientalist academician I.Yu. Krachkovskii admits that during Beruni's time, Europe was several times behind the Muslim East in the development of science and culture, therefore, the scientific heritage of medieval Eastern scholars shows that it has a great impact on the development of modern civilization.

The names of 152 works of the scientist have come down to us, but only 24 of them are currently serving for the development of science. However, it is not true to analyze the scientific heritage of Beruni in the same way, because this great heritage, spread over the world, serves the development of the scientific directions of the nation.

The works of thousands of scientists, scholars, poets and great thinkers, including Muhammad Musa al-Khorazmi, Abu Nasr Farabi, Abu Ali Ibn Sina, Abu Rayhan Beruni, who have emerged from our motherland, have received a worthy place among the golden treasures of world civilization and the culture of world science. Today, world scholars have realized that it left an indelible mark in history.

In conclusion, it can be said that the natural-scientific ideas put forward in Musa al-Khwarazmi's studies, the natural-scientific and philosophical views of Farabi, Ibn Sina and Beruni, new trends in science, first of all, have contributed to the development of the natural-scientific and philosophical thinking of the Muslim East and the whole world today. continues to exert its life-giving influence even today.

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