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THE SCIENTIFIC HERITAGE OF THE CENTRAL ASIAN THINKERS OF THE FIRST RENAISSANCE AND ITS SIGNIFICANCE

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Annotation: In the Middle Ages (9th-15th centuries), a rich scientific and philosophical thought was formed in the Arabic language on the basis of the fusion of cultures of many peoples in Central Asia, in which representatives of different countries actively participated: Khorezm, Ferghani, Al-Farabi, Marvazi, Ibn Sina, Al-Biruni, Muqaffa, Rawandi, Nizami, Zakariyya Razi, Al-Kindi, Jahid, Ibn Rushd, Ibn Boja, Ibn Tufail and many others. These were encyclopedic scholars who made a great contribution to various fields of science.
Key words: central Asian thinkers, philosophers of central Asia, medieval Islamic science, history of science in central Asia, cultural and intellectual history of central Asia

Introduction. The process of independent development of the peoples of Central Asia, socio-economic changes associated with the further strengthening of feudalism, led to the growth of productive forces and cultural uplift in Central Asia. As a result, Central Asia became one of the major centers of culture, its representatives made their worthy scientific and intellectual contribution to world civilization.

Muhammad al-Khwarizmi (780-850) was a mathematician, astronomer, geographer, and educator of Khorezmian origin. His works are devoted to the development of natural and scientific knowledge and the knowledge of nature through experience.

The experimental study of nature and the formulation of major theoretical problems related to the natural sciences, especially astronomy and mathematics, led to their playing a major role in making natural scientific discoveries, which later became another impetus for Middle Eastern scientists to develop epistemological principles based on the knowledge of the universe itself.

Al-Khwarizmi's scientific works also served to change the religious-mystical views of the world around him. Al-Khwarizmi successfully developed mathematical knowledge. The concept of "algorithm" comes from the word "Al-Khwarizmi" and has taken on various forms over the course of twelve centuries. Al-Khwarizmi's discovery of algebra was the result of thinking about two opposing quantities: "known" and "unknown". Any equation is a unity of such mutually exclusive concepts. The unity of the opposition of the known and the unknown is the problem, and the resolution of this opposition is the solution to the problem.

Khorezmii's main works are: "Zij", "Making a Clock on a Sundial Board", "Book on Indian Calculation", "Treatise on Music" and others.

Shahobiddin Ahmad ibn Muhammad Farghani (797-865) was a native of Fergana, an astronomer, mathematician, and geographer. Farghani developed mathematical sciences as a result of his scientific research. He proved that the dimensions of the Earth are insignificant compared to the diameter of the sky. According to Farghani, the sky is in two types of motion: this is the motion of the entire celestial sphere and the motion of the planets; they move in opposite directions to

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each other; in this case, their axes of rotation (and poles) do not coincide with each other. The scientist classified all stars according to their magnitude.

Ferghani introduces readers to the structure of the universe, the movement of luminaries, calendars and geography. He begins the study of the movement of celestial bodies with units, days (day and night), months, years and eras. Ferghani's main works are: "Kitab fi san'a al-asturlab" ("Book on the Making of Astronomy"), "Jadwal al-Farghani" ("Farghani's Table"), "Kitab fi usul ilm an-nujum" ("Book on the Elements of Astrological Sciences"), "Hisab al-aqalim as-sab'a" ("Account of the Seven Climates") and others.

Abu Nasr ibn Muhammad al-Farabi (873-950) was an encyclopedist and philosopher. He was well versed in Greek philosophy. Al-Farabi wrote about 160 works, which can be divided into two groups. These are: commentaries on the scientific works of ancient Greek scholars, and original studies devoted to the development of topical problems of natural science and socio-philosophical thought of his time.

Al-Farabi defined God as the primary cause and the first being. According to Al-Farabi's pantheistic concept, matter emanates from God through a series of causes, then gradually acquires various signs and properties, while God becomes a being that does not have its own specific qualities and definitions. All spheres (spheres) on earth and in the sky have a material, that is, material, nature. From this position, Al-Farabi writes: "The common essence of all things is the world", which consists of simple bodies, "there is nothing outside the world". He founded an independent method of knowledge based on human reason and rationalism. Man receives all his knowledge from outside, he says.

In his works, Al-Farabi paid great attention to the issues of improving social life. This can be seen from the doctrine he developed about the ideal, virtuous city-state based on mutual assistance and well-being of people. His social utopia played a huge role in the further development of socio-moral ideas.

His main works are: “On the Origin of the Sciences”, “Civil Policy”, “Thoughts of the Residents of the Virtuous City”, “On the Name and Origin of Philosophy”, “The Essence of Matters”, “On the Importance of Reason”, “Treatise on the Ways to Achieving Happiness” and others.

Abu Rayhan Muhammad ibn Ahmad Beruni (973-1048) – encyclopedist, thinker and humanist, author of more than 150 works. Born in Khorezm. Formed as a scientist at a very young age. At the age of 16, he was the first in Central Asia to draw a globe with great accuracy. In his correspondence with Ibn Sina, Beruni considered very important problems of natural science, philosophy, cosmology and others.

Biruni considered nature as a real phenomenon, endowed with “natural power” and constantly in motion and change. In this, Biruni recognized that the basis of the surrounding world is formed by material principles, namely, “water, fire, air, earth.” According to Biruni, nature acts according to its own laws, while matter, changing its form, remains as it is. However, Biruni, a deist, believes that matter and nature were created by a supreme being, that is, the “Creator”.

In his scientific works, Beruni paid special attention to the doctrine of nature. In his opinion, the basis of knowledge is sensory knowledge. For example, Beruni wrote: “He distinguished from him (from man - F.F.) two senses: hearing and sight. These served him as a transition stage from sensory perception to judgment”. In this, he combined experimental and scientific emphasized the importance of method development.

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Biruni was a great internationalist and humanist. He believed that reason, labor, and free choice determine a person's life and social status. Biruni was an ardent fighter for peace and friendship between nations. He condemned the destruction of culture and science during wars. In his work "India", he writes with sorrow that internal conflicts and massacres are destroying (all) nations. Biruni critically studied the teachings of the Indians and compared them with the scientific achievements of other nations.

Beruni's main works are: "Monuments of Ancient Peoples", "Geodesy", "India", "Qanuni Masudi", "Mineralogy", "Book on Medicinal Plants", "Elementary Concepts of the Art of Astrology" and others.

Abu Ali ibn Sina (980-1037) is a philosopher, judge, scientist3. He was born in the village of Afshona near Bukhara. He served as a hakim (physician) and minister under various rulers in Central Asia and Iran.

Ibn Sina's work "Al-Qanun fit-tib" contains materials that he collected and systematized over a period of twenty years. This work, in fact, was a unique encyclopedia of medical knowledge of that time. This work examines the methods and techniques for preparing simple and complex medicines, describes the basic principles of pharmacology, the essence and content of diseases, their general causes and manifestations, and defines medical concepts such as "disease", "cause", "manifestation", etc.

In his works, Ibn Sina, identifying and developing the idea of the eternity and uncreation of the real world, notes that matter, which is the essence (essence) of all concrete things, exists eternally and manifests itself in various forms. According to his point of view, matter has cause and effect. Bodies and their forms are inseparable. Just as there is no physical form without matter, there is no matter without physical form. In this regard, Ibn Sina writes: “The form of an element is its nature, which can be known not by the senses, but by the mind. This nature has a great influence on this element,” which “produces in each body a separate quality and a separate quantity.” According to Ibn Sina, a person perceives external influences that exist in reality with the help of his five sense organs and fixes the result of this influence in his memory. Based on the scientific knowledge of his time, Ibn Sina explains the meaning of such very important concepts in medicine and philosophy as imagination, memory, reason, intelligence, intuition, and others.

More than 250 works of Ibn Sina have reached us. These are, for example, 5 books "Al Qanun fit-tib" ("The Laws of Medicine"), "The Book of Spiritual Treatment", "Kitab al-Shifa", "Kitab an-Najat", "The Book of Justice" (20 volumes), "Donishnama", "Solomon and Ibsol" and others.

Conclusion. Thus, our ancestors made a great contribution to the development of various fields of science and society. It is the duty of every citizen of the Republic of Uzbekistan to remember this and know the history of their country. The spiritual and material wealth created by our ancestors is an important factor in the formation and development of historical consciousness and historical memory in young people. During the years of independence, the leadership of the republic and its scientists carried out a great deal of work to reconstruct historical truth in order to form and develop historical consciousness and historical memory among young people: new aspects of the scientific and social activities of our great ancestors - Khorezm, Ferghani, Farabi, Beruni, Ibn Sina and many others - were identified.

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