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THE GREAT SCHOLARS OF IX-XII CENTURIES IN MOVAROUNNAHR AND KHURASAN AND THEIR CONTRIBUTIONS

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Annotation: This article provides an in-depth exploration of the intellectual achievements and cultural contributions of the great scholars who emerged during the 9th to 12th centuries in Movarounnahr and Khurasan, regions that were central to the flourishing of Islamic civilization. It examines the diverse array of disciplines in which these scholars excelled, including mathematics, astronomy, medicine, philosophy, theology, literature, and Islamic jurisprudence. Through meticulous research and analysis, the article sheds light on the innovative ideas, groundbreaking discoveries, and enduring legacies of figures such as Al-Farabi, Avicenna (Ibn Sina), Al-Biruni, Al-Khwarizmi, and Omar Khayyam, among others. Moreover, it explores the socio-cultural contexts and intellectual exchanges that facilitated the flourishing of knowledge and scholarship in Movarounnahr and Khurasan during this Golden Age of Islamic civilization, highlighting the pivotal role of these regions in the transmission of knowledge between East and West.

Key words: Great scholars,IX-XII centuries, intellectual achievements,cultural contributions, Movarounnahr, Khurasan,islamic civilization, east-west transmission of knowledge,astronomy,medicine,Al-Farabi, Avicenna (Ibn Sina)

IX-XII and XIV-XV centuries are important in the history of cultural development of the Muslim world. In particular, these periods were characterized by the rise of science and cultural life and made an invaluable contribution to the world civilization. Also, the achievements achieved in the early Middle Ages, that is, in the IX-XII centuries, created wide opportunities for the developments of the next period."...the Central Asian region is considered the source of two powerful scientific and cultural booms that erupted in the 9th-12th and 14th-15th centuries, and is rightfully recognized by the world scientific community as the Eastern Renaissance-Eastern Renaissance, which had a positive impact on the Renaissance processes in other regions of the world ".

Research scientists say that "the culture of the early Renaissance period (IX-XII) in the East, in turn, had a great impact on cultural developments in other countries, including the Movarounnahr region." In this sense, such a great scientific potential that has arisen in Movarounnahr did not appear by itself. In the lands of Movarounnahr and Khurasan, there have been centuries-old scientific traditions and conditions that have attracted people of the world with their discoveries and philosophical and mystical teachings. Since the 9th-12th centuries were a period of great achievements and important scientific discoveries in the history of Muslim science and culture, some researchers recognize this period as the "golden age" of Eastern science and culture. At that time, the Movarounnahr and Khurasan region, which was part of the Arab Caliphate, was one of the main sources of nourishment and movement of the cultural and educational upsurges that took place.

During the 9th to 12th centuries, Movarounnahr and Khurasan were vibrant centers of intercultural exchange and intellectual achievement within the Islamic civilization. Scholars from diverse backgrounds and ethnicities converged in these regions, leading to a rich tapestry of cultural contributions that shaped the development of Islamic thought, science, and art.

Intercultural Achievement: Movarounnahr and Khurasan served as crossroads of civilizations, where ideas from Persia, Greece, India, and other cultures intersected and

merged with Islamic scholarship. This intercultural exchange facilitated the translation of classical Greek and Indian texts into Arabic, contributing to the preservation and dissemination of knowledge across linguistic and cultural boundaries. Scholars such as Al-Farabi and Avicenna played instrumental roles in translating and synthesizing philosophical and scientific works from various traditions, fostering a dynamic intellectual environment that transcended ethnic and religious affiliations.

Cultural Contributions: The scholars of Movarounnahr and Khurasan made significant cultural contributions in fields such as literature, poetry, architecture, and music, enriching the fabric of Islamic civilization. Persian poets like Omar Khayyam and Rudaki flourished during this period, producing timeless works of literature that continue to resonate with audiences today. Architectural marvels such as the Samanid mausoleum in Bukhara and the Great Mosque of Isfahan stand as testaments to the region's artistic ingenuity and cultural legacy. Additionally, the development of Persianate culture and the Persian language as a lingua franca further facilitated cultural exchange and artistic expression across the Islamic world.

Islamic Civilization: Movarounnahr and Khurasan played a central role in the advancement of Islamic civilization during the medieval period. Islamic scholars in these regions made pioneering contributions to various fields of knowledge, including mathematics, astronomy, medicine, philosophy, and Islamic jurisprudence. Figures such as Al-Khwarizmi, the "father of algebra," and Al-Biruni, the polymath who made significant contributions to astronomy, geography, and anthropology, exemplify the intellectual prowess of this era. Moreover, the establishment of prestigious madrasas and libraries in cities like Bukhara and Samarkand served as centers of learning and scholarship, attracting students and scholars from across the Islamic world and beyond.

During the 9th to 12th centuries in Movarounnahr and Khurasan, the transmission of knowledge between the East and West played a pivotal role in advancing various fields of study, including astronomy and medicine. Scholars such as Al-Farabi, Avicenna (Ibn Sina),

Al-Biruni, and others made significant contributions to these disciplines, leaving a lasting impact on both Islamic and Western civilizations.

East-West Transmission of Knowledge: Movarounnahr and Khurasan served as crucial hubs for the exchange of ideas and knowledge between the Eastern and Western worlds. Scholars in these regions translated ancient Greek, Persian, Indian, and Chinese texts into Arabic, making them accessible to a wider audience within the Islamic world. This facilitated the assimilation of diverse cultural and intellectual traditions, leading to cross-fertilization of ideas and innovations. The translation movement catalyzed advancements in various fields, including philosophy, mathematics, astronomy, medicine, and the natural sciences, influencing the development of both Islamic and Western intellectual traditions.

Astronomy: Astronomical knowledge flourished in Movarounnahr and Khurasan during the medieval period, with scholars making significant contributions to the field. Al-Biruni, a polymath whose expertise spanned astronomy, mathematics, geography, and anthropology, conducted groundbreaking astronomical observations and calculations. He developed precise methods for determining the Earth's circumference and accurately measuring the positions of celestial bodies. Al-Biruni's astronomical treatises, such as "Kitab al-Tafhim" (The Book of Instruction in the Elements of the Art of Astrology), served as important sources of knowledge for astronomers in both the Islamic world and Europe.

Medicine: The study and practice of medicine thrived in Movarounnahr and Khurasan, with scholars making notable advancements in medical theory, pharmacology, and healthcare. Avicenna (Ibn Sina), one of the most influential figures in Islamic medicine, authored the "Canon of Medicine," a comprehensive medical encyclopedia that synthesized the medical knowledge of ancient civilizations and Islamic scholars. Avicenna's work became the standard medical textbook in Europe for centuries and had a profound impact on the development of Western medicine. His contributions to anatomy, physiology, and pharmacology laid the groundwork for modern medical science and clinical practice.

Ibn Sina's life path is known from the biography he wrote and the sources left by his student Juzhoni. Ancient Eastern culture, Greek science, philosophy, and the struggle of Central Asian peoples for independence played an important role in the formation of Ibn Sina's scientific interests and worldview. In his biography, Ibn Sina notes that he diligently studied important treatises such as "The Goals of Metaphysics" and "Fusus ul-Hikam" by Farabi and used them extensively. The total number of Ibn Sina's works exceeds 450, but only about 160 of his works have reached us. Many of his treatises were lost due to moving from city to city, feudal wars, palace riots, and various disasters. In many sources, Ibn Sina is interpreted primarily as a physician, while medicine is one of the most important of his scientific fields. Most of Ibn Sina's works were written in Arabic, which was considered the scientific language of the Near and Middle East at that time, and some in Persian. His great known work "Kitab ush-Shifo" ("The Book of Healing") consists of 22 volumes, 4 of which are divided into logic, physics, mathematics, and metaphysics. Some of its parts have been translated into Latin, other European languages, Eastern languages, as well as Russian and Uzbek languages. The 20- volume Kitab ul-Insaf (The Book of Justice) has not reached us because it was lost in a fire in Isfahan. "Kitob un-Najot" ("Book of Salvation") consists of 4 large parts - logic, physics, mathematics, metaphysics, "Kitob lisan ul-arab" ("Book of the Arabic language") consists of 10 volumes "Donishnoma" is written in Persian and includes 4 parts - logic, physics, mathematics, metaphysics.

Abu Nasr al-Farabi, known as Al-Farabi, was a renowned philosopher, scientist, and musician who made significant contributions to various branches of knowledge. Often referred to as the "Second Teacher" (after Aristotle), Al-Farabi synthesized Greek philosophy with Islamic thought, advancing fields such as logic, ethics, political philosophy, and music theory. His works, including "The Book of Letters" and "The Book of Religion," played a crucial role in transmitting Greek philosophical ideas to the Islamic world and beyond, shaping the intellectual landscape of medieval Europe.

Al-Khwarizmi (c. 780-850):

Al-Khwarizmi, whose full name was Muhammad ibn Musa al-Khwarizmi, was a Persian mathematician, astronomer, and geographer.He is best known for his contributions to mathematics and is often regarded as the "father of algebra." His seminal work "Kitab al-Jabr wal-Muqabala" (The Compendious Book on Calculation by Completion and Balancing) laid the foundations of algebra as a distinct branch of mathematics.Al-Khwarizmi's work introduced systematic methods for solving linear and quadratic equations, as well as algorithms for arithmetic operations, which had a profound impact on the development of mathematics in the Islamic world and beyond. In addition to his mathematical achievements, Al-Khwarizmi also made significant contributions to astronomy and geography. His treatise on geography, "Kitab Surat al-Ard" (The Image of the Earth), provided valuable insights into cartography and geodesy.

Al-Biruni (973-1048):

Abu Rayhan al-Biruni, commonly known as Al-Biruni, was a Persian polymath who excelled in astronomy, mathematics, geography, anthropology, and history. Al-Biruni made significant contributions to the fields of astronomy and mathematics. He conducted precise astronomical observations and calculations, developing innovative methods for determining the Earth's circumference, inclination, and axial rotation.His astronomical treatises, such as "Tahdid Nihayat al-Amakin li Tashih Masafat al-Masakin" (Determination of the Coordinates of Places for the Correction of Distances Between Cities), provided detailed measurements of celestial bodies and improved methods for astronomical calculations. In addition to his astronomical achievements, Al-Biruni was a pioneering scholar in the fields of geography and ethnography. His encyclopedic work "Kitab al-Hind" (The Book of India) is a comprehensive study of Indian civilization, covering topics such as geography, culture, religion, and science.

Al-Biruni's writings served as important sources of knowledge for scholars in both the Islamic world and Europe, influencing the development of various disciplines and fostering cross-cultural exchange and understanding.

In conclusion, the scholars of the 9th to 12th centuries in Movarounnahr and Khurasan left an indelible mark on the intellectual and cultural landscape of Islamic civilization. Through their pioneering contributions to fields such as mathematics, astronomy, medicine, philosophy, and literature, these great minds elevated the pursuit of knowledge to new heights, fostering a Golden Age of intellectual achievement and cultural flourishing. Figures such as Al-Farabi, Avicenna (Ibn Sina), Al-Biruni, and Al-Khwarizmi exemplify the spirit of inquiry, innovation, and cross-cultural exchange that characterized this era. Their works served as bridges between diverse civilizations, facilitating the transmission of knowledge and ideas between the East and West. The legacy of these scholars continues to inspire and enrich our understanding of the world, reminding us of the enduring power of intellect, curiosity, and scholarship to transcend boundaries and shape the course of history.

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