

## HISTORY OF ANCIENT OR ANCIENT AND MEDIEVAL STAGE DEVELOPMENT OF GENERAL EARTHQUAKE

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DOI: **10.5958/2249-7137.2022.00534.1**

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### ABSTRACT

*The great medieval encyclopedist Abu Rayhan Muhammad ibn Ahmad al-Beruni studied a number of sciences of his time: geography, geodesy, geology, astronomy, physics, mathematics, mineralogy, and history. The question is, are the remaining three-fifths of the globe made up of oceans? This result was inconsistent with Beruni's knowledge of mineralogy, as he was well aware that the continents were composed of various heavy rocks.*

**KEYWORDS:** *Ancient period, Middle Ages, Great Geographical Discoveries, Homer, Strabo, Ptolemy, Erotosphen, A.R. Beruni, Ibn Sino, Ahmad al-Farghani, Farobi, Ulugbek, Z.M. Bobur.*

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### INTRODUCTION

We know that general geology is one of the oldest sciences. Let's look at the following stages in its development.

Ancient or ancient period stage. Science as a conscious activity of man originated in ancient Greece in the VI-V centuries BC. Geographical findings at this stage include:

- Homer created a map of the world in the XII century BC.
- Aristotle in the IV century BC proved that the Earth is spherical, the existence of hot regions on Earth. A world map has been created. In his map, the locations on Homer's map are further expanded.

Aristotle's map of the world depicts the northern part of Africa, Asia and Europe. India, Amudarya and Syrdarya in Asia, the Caspian Sea, Italy, Macedonia, the Inland (Mediterranean), Iberia and other places in Europe are described;

- In the 3rd century BC, Erotosphen determined the dimensions of the Earth and created a map of the Earth. He wrote a work entitled Geography, the term geography was introduced into science;
- At the beginning of the 2nd century AD (Ptolemy) invented the creation of maps using a degree grid. He mapped the world and wrote a number of works on geography. During this time, Strabo wrote major works on geography;

The Middle Ages. At this stage, the science of geography developed mainly in the eastern countries.

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Muhammad Ibn Musa Al Khorezmi is a scholar who made a great contribution to the science of geography. He wrote a book called Surat-al-Arz in the ninth century. In this book, al-Khwarizmi gave the geographical coordinates of the cities known at that time. He is the founder of Central Asian geography. Abu Rayhan Beruni is one of the Central Asian encyclopedic scholars who made a great contribution to the development of general Earth science. The great medieval encyclopedist Abu Rayhan Muhammad ibn Ahmad al-Beruni studied a number of sciences of his time: geography, geodesy, geology, astronomy, physics, mathematics, mineralogy, and history. Beruni's results in determining the latitude and longitude of different places amaze even modern scholars. The great scientist notes that each part of the Earth's surface has its own long historical development. Beruni was the first to seriously study the geological development of some regions of Central Asia, including the Amudarya Valley. His conclusions about the geological history of the Amudarya Valley and the formation of the Aral Sea are one of the most successful geological analyzes of that time. The scientist is based on the theory that "the seas become dry and the dry lands become the sea."

There are many books on geography among Beruni's works, but there is also a lot of geographical information in his books on astronomy and other fields. "India", "Mineralogy" ("Kitab al-jamahir fi ma'rifat al-javohir" - "A book for the acquaintance of jewels"), "Osori baqiya" ("Al-osar al-baqiya an ul-qurun al-khaliya" "(I.e., "Monuments of Ancient Peoples"), Geodesy, "Qanuni Masudi" ("Al-Qanun Masudi fil hayya van nujum" - "Law written in Masoud's name in astronomy"), We can say that Saydana and many other works are geographical works. In his works, Beruni also makes some interesting comments about the Earth and its movements. For example, in India, he says, "The Earth's rotation motion (theory) does no harm to astronomy, but the events that take place on Earth continue in the same plane as its motion. But there is an impossibility in other respects. Therefore, the problem of Earthquake is one of the most difficult to solve.

Abu Rayhan Beruni also spoke about one of the most important areas of geography - weather and climate. He came to this conclusion as a result of his observations of the nature of Central Asia, and is partly based on the legacy of his predecessors.

- Surface, soil and vegetation.
- Proximity to mountains and ocean.
- How many meters above or below sea level.
- Explains that it depends on the latitude (parallel). Modern science interprets climate in the same way.

In Beruni's Konuni Masudi and Osori Baqiya, it is necessary to study the condition of the mountains, the wind and the movement of the clouds in order to get a clear idea of whether it will rain anywhere else. Obviously, the rainfall (in our countries) is much higher in winter.

The play also states, "If the climates are divided into seven, the middle is the fourth climate. There is a difference of half an hour between climates. "A climate is a quarter of an hour between the beginning and the end." Creates a climate map.

He wrote about the geographical map: "In order to raise the level of the Earth, you need the book" Geography", which describes the length and breadth of cities and villages, seas, springs,

rivers, sands, mountains, deposits, hills, rocks and ravines. and their (signs) are processed according to this book. The owners of the books on "Roads and Countries" acted in the form of two images of the earth - the Kura and the Sath: the seas in the color of pistachios, the flowing waters in the color of amber and the sky, the sands in the color of saffron, the mountains a little red with purple, cities with red with rectangles, and roads with gray and orange. " He draws a map of the world.

Beruni determined the geographical coordinates of several regions in Eurasia and Africa. In India alone, Beruni cites the geographical coordinates of more than 70 places, while Masood's Law cites the geographical coordinates of 603 places.

"Calculations show Beruni that the continents make up only two-fifths of the globe." The question is, are the remaining three-fifths of the globe made up of oceans? This result was inconsistent with Beruni's knowledge of mineralogy, as he was well aware that the continents were composed of various heavy rocks. That is why Beruni believed that the existence of only the Eurasian and African continents on Earth does not correspond to the balance of weight on Earth. As a result, he concludes that there must be another continent on the opposite side of the globe from Eurasia and Africa. However, Beruni's Masud's Law states that the continent is inevitable if it is not located in the cold regions of the South or North Poles.

Beruni was the first Central Asian to express his brilliant ideas about the shape of the Earth. His teachings marked the beginning of an era of great geographical discoveries. Abu Rayhan al-Biruni, in his book India, spoke of the structure of the earth, the seas and the land, and said, "... A quarter of the earth is an administrator. It is bounded on the west and east by the Pacific Ocean (Atlantic and Pacific Oceans).

Abu Rayhan Beruni has repeatedly stated in his writings that he firmly believed in the sphericity of the Earth, and provided evidence to prove the sphericity of the Earth. They are listed in the following works:

1. In his book India, he gives the following evidence for the roundness of the Earth: "The reason why the sun is not visible at night is not because it is moving away from the Earth. It is invisible to us because of the earth's bulge. When some nations see the Sun rise, other nations see the Sun at their peaks, the fact is that every place has a different time. This is because the earth is round. If the Earth weren't round, it wouldn't be surrounded by places of different latitudes, and day and night wouldn't be the same in summer and winter, and they wouldn't be the same. "
2. In his work "Qanuni Masudi" he also expresses his views on the shape of the Earth as follows:
3. Beruni wanted to create an image of our planet, while clearly imagining it. In "Geodesy" he writes about his globe:

In the past, I have tried hard to combine the method in Ptolemy's Geography (described) with the methods in Jaihani's Book of Ways and others (the scholar who followed him). I collected information from various works, identified inaccuracies and improved this area of knowledge. So I started by identifying (based on) what I heard from tourists and what I saw first, the distance data and the names of places and cities.

As a result of many of his proofs, observations, and calculations, he was one of the first Central Asian scientists to create a globe with a diameter of 5 meters that reflected the earth. But Beruni

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did not say what he made the shape of (wood, paper, temi ryoki clay). It is known that he made a globe. The diameter of the globe was very large, he said: "My 10 lengths are about 5 meters." This globe was made in Khorezm, and there are two different opinions about the year it was made: P. Bulgakov says it was made in 995, Jacques Bualo says it must have been made in 1016. Based on Beruni's idea above, this globe is designed to more accurately measure distances between cities and thus determine the latitude and longitude of places.

Abu Ali ibn Sina explained the role and importance of internal and external forces in the formation of relief. According to him, the relief of the Earth's surface is formed and changed under the influence of internal and external forces.

Zahiriddin Muhammad Babur made a great contribution to the development of regional geography with his work "Boburnoma". Based on the information provided in the "Boburnoma", it is possible to think about the natural conditions and economy of the Central and South Asian countries in the Middle Ages. Mahmud Qashqari, in his Devoni Lugati Turk, provided information on many geographical terms and concepts and compiled a map of the world.

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