

THE EMERGENCE OF GEOLOGICAL SCIENCE AND THE ROLE OF UZBEK SCIENTISTS IN GEOLOGY

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Abstract: This paper aims to provide a broad picture of the development of geological science, as detailed as possible. Geology as a modern science started roughly around two centuries ago. But as knowledge of the Earth it has existed since the beginnings of humankind. We begin by mentioning the ideas of ancient peoples - Greeks and Romans. We continue up to the Renaissance (15th century), explaining that practically all schools of thought shared a fairly integrated and unified vision of all the Cosmos. In a Geocentric world, Earth suffered the influence of all other planets and stars and so did everything in it, whether it was human, animal, vegetal or mineral. The planet was not composed only of its own element, but also by fire, water and air, as Aristotle had already postulated. Besides overseas scientists Uzbek geologists created many innovations on this field.

Keywords: Geology, astronomy, globe, physical body, planet, terrain, geography, biosphere, organism, mineral, crust, inorganic, mineralogy, crystallography, petrography, paleontology, hydrogeology, geophysics, stratigraphy, geotectonics, soil science, mineral geology, geomorphology, structural geology, physical geology, lithogenesis, engineering geology

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In controversy within the history of science the question of the rise of geology as an independent scientific discipline has remained an acute problem. In the available literature the view predominates that geology a classical science came into being around the second half of the eighteenth century. But opinions differ widely as to the importance of different naturalists for the development of geology as a discipline.' And little has hitherto been written about the criteria for historical evaluations in this subject.

Geology is the science of the earth, and the Greek word Geo - earth means logos - science. Geology is one of the natural sciences and it studies the laws of development of the planet. Currently, a new branch of geology, the science of cosmogony, has emerged from the joint research of geology and astronomy, which studies other heavenly bodies located in the universe.

Scientists have different answers to the question of what the earth is. Astronomers consider the earth as a spherical physical body, rotating in the solar system at a very high speed (30 km per second). Geographers, surveyors and geomorphologists study the shape and relief of the earth's surface. Biologists study the life on earth - the part of the Earth where flora and fauna develop, that is, the biosphere. Soil scientists also study the topsoil, the soil layer where living organisms develop.

The above-mentioned fields of science examine only the development and changes of events that occur in the upper layer of the earth. While the science of geology covers these fields, it also studies the surface and interior of the earth, the laws of development of existing phenomena in it. Geologists consider the earth as a spherical physical body composed of various minerals and rocks and constantly changing.

The emergence and development of the inorganic part of the earth's crust is directly related to the life of animals and plants, and only the marks preserved between the layers of the earth help in their study.

Thus, the science of geology is a special science of the earth, which examines the structure of the composition of the earth's layers and the history of their development. Since the size and amount of these issues are very large, the science of geology is divided into several special disciplines, each of which deals with its own branches of geology.

The material composition of the earth includes mineralogy (the science of minerals) and crystallography (the science of crystals), petrography (the science of rocks), geochemistry (the science of earth chemistry), paleontology (the science of the fossilized remains of ancient organisms), soil science (the science of soil), mineral geology (the science that studies mineral raw materials), hydrogeology (the science of underground water) and other sciences, the forms of the earth's surface are studied by geomorphology geodesy, which is a part of geography, examines the shape of the globe, its physical properties, geophysics, the relationship between the globe and layers, stratigraphy, the internal and mountain-forming movements of the earth, geotectonics and structural geology defines.

In the course of general geology, the above-mentioned sciences about the material composition and structure of the earth are usually combined into the field of "physico-geology". Dynamic geology deals with processes that change the earth's crust and generate rocks (lithogenesis).

Theoretical geology is related to geological prospecting, investigation of the earth's crust using geophysical methods, oil exploration geology, engineering geology (use of geology in construction), military geology and other applied geological sciences.

Dynamic geology is more related to geography, and the cycle of geology-mineralogy sciences is more or less related to all branches of natural sciences, especially chemistry, physics, and biology. Minerals are irregular and random, minerals are found in the earth's long complex. It was formed during the geological history.

Despite the fact that there are some geological concepts in people's minds since ancient times, geological science emerged as an independent science only recently (200 years ago). Geology is related to the production process.

Current geology-exploration works on the geological structure of each region and what is found in it

it is conducted on the basis of careful study of minerals. Then the ways of extracting minerals available here will be determined.

The history of geological science and geological prospecting was created as a result of detailed information about ore, rocks and minerals, concrete scientific concepts about the composition and structure of the earth, and the experiences gathered from the use of the earth by people over the centuries.

Along with meeting the requirements of the national economy, geology practically examines the laws of natural phenomena.

Production, which is the material base, plays a key role in the creation and development of geological knowledge. No science can develop without its own internal laws.

The first geological and geographical concepts of the extraction of fossil resources date back to ancient times. The science of archeology proved that people used stone weapons first, based on the ancient finds, from the items made in those times (Neolithic). Later, people got acquainted with copper, lead, tin, silver, gold, and then iron ore, and gradually began to make jewelry from amber, lapis lazuli, turquoise, and other minerals and rocks.

Written information about the earth began only in the Babylonian period.

The first stories about the creation of the world were written on clay tablets found in the cities of Mesopotamia and Chaldea.

The Babylonian cosmogony is based on the following religious myth: Sun god Marduk puts everything in order, Tiamat, the source of dark forces, burdens the creature and creates the whole world in his body. Later, the god creates the stars in the sky and their paths, and then man, whose task is to "take care of the gods."

The famous geographer Strabo explained the reasons for the discovery of sea shells in dry land and showed that the movement of the part of the earth under the sea causes its rise and fall, resulting in the formation of islands and even continents. He says that Sicily used to be one with Italy, but as a result of an earthquake, they were separated from each other. Strabo explains that the volcanic activity here is the result of vertical movement of the earth's crust.

In the Middle Ages, the knowledge of geology rose to a high level in the centuries of Beruni and Ibn Sina.

Abu Raykhan Beruni (979-1048 years) in a number of his works written in the Arabic language expresses very wonderful thoughts about the Earth, mineral ores,

and geological processes. He believed in the roundness of the earth and was one of the first to measure its size. The schematic map in his astronomical treatise indicates Beruni's knowledge of the ancient world, in which he was ahead of Western geographers.

Ibn Sina investigated the conditions of formation of stones, mountains and valleys. Ibn Sina develops a hypothesis about the ways of formation of rocks and minerals. According to Ibn Sina, earthquakes, landslides and earth tremors play a major role in the formation of stones.

Generally speaking, up to the Renaissance (15th century) practically all schools of thought shared a fairly integrated and unified vision of all the Cosmos. Christianity and the powerful Catholic Church inherited most of classical knowledge (Greco-Roman), adapting and reinterpreting it according to their conceptions and needs. In this picture, Earth could only be fully understood in terms of its place and function among the bodies comprising the Universe, at whose center it lay. In a Geocentric world, Earth suffered the influence of all other planets and stars and so did everything in it, whether it was human, animal, vegetal or mineral. The metallic minerals originated and increased by the influence of the planets: iron through the action of Mars, lead by Saturn, and gold depended on the Sun. Gems (transparent or precious minerals) reflected cosmic light. In accordance with this view, the Earth was seen not only as a planet but, rather, as an element that permeated all matter in the corruptible regions of the Cosmos. In turn, the planet was not composed only of its own element, but also by fire, water and air, as Aristotle had already postulated.

Lomonosov has great ideas that show how animals and plants turn into stone. He created many innovations in the field of natural science, also did great work in the field of geology and mineralogy. Lomonosov collected the materials collected in the field of geology and mineralogy until that time and based it on a theoretical point of view. Raised it to a scientific level that Western European naturalists reached this level after 100 years. M.V. Lomonosov says that the earth has its own history, its history is constantly changing and developing, mountains appear, they erode, and new rocks are formed. M.V. Lomonosov geology his work in the field confirms that he is the founder of the science of geology

At the end of the 19th century, the science of soil science was separated from the science of geology and mineralogy. The famous Russian scientist V.V. Dokuchayev (1846-1905) contributed greatly to the creation of this science.

At this time, tectonics and geomorphology are separated from the most important branches of geology.

During the Soviet era, geochemistry developed very quickly. V.I. Vernadsky and A.YE. This science, founded by Fers-man, was later developed by A.P.

Vinogradov, D.I. Sherbakov, A.A. It grew and developed under the direct leadership of Saukov and others. Kh.M.Abdullayev, I.M.Isamukhamedov, I.Kh.Khamrabojev, and Kh.N.Boimukhamedov did great work in the development of the sciences of metallurgy and petrography in Central Asia. Our geologists have discovered inexhaustible reserves of mineral resources in our country.

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