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Opinion Article

Geology Methods and Natural Geographical Interactions with the Natural Environment

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DESCRIPTION

One of the two main subfields of geography is known as human geology and is also known as cultural geography. The study of human geography focuses on the numerous cultural elements present throughout the world and how they interact with the spaces and places where they originate and then travel as people continually move across various areas. Geology explains the processes that have shaped the Earth's structure on its surface as well as beneath it. It also offers methods for determining out the absolute and relative ages of rocks found in a specific area and for describing the histories of those rocks.

Geological material, the majority of geological information is derived through studies of solid Earth components. Geological methods can also be used to study meteorites and other extra-terrestrial natural resources. Mineral, Natural elements and compounds with specified homogenous chemical compositions and ordered atomic compositions are known as minerals. Minerals are made up of elements and compounds that are found in nature and have an ordered atomic structure and a specific homogeneous chemical composition. Rock, any naturally occurring solid mass, mineral aggregate, or mineraloid is referred to as a rock. Since rocks are the principal repository for the large majority of Earth's geological history, the majority of geology research is focused on the study of rocks. Igneous, sedimentary, and metamorphic rocks are the three primary kinds of rock.

An igneous rock is one that forms when molten material (such as lava or magma) hardens or crystallizes. This rock has the potential to weather and erode before being redeposit and lithified to form sedimentary rock. It can then be transformed into a metamorphic rock by heat and pressure that alter its mineral composition and produce a distinctive fabric. All three types have the potential to remelt, and when this occurs, fresh magma is created, which could then resolidify into an igneous rock. Coal, bitumen, oil, and natural gas are all primarily associated with sedimentary rocks that are rich in organic matter.

Petrology, Petrologists also identify rock samples in the lab in addition to identifying rocks in the field (lithology). Optical microscopy and the use of an electron microprobe are two of the main techniques used in laboratories to identify rocks. Petrologists use a petrographic microscope to examine thin sections of rock samples for optical mineralogy. The minerals are identified by their various plane polarized and cross polarized light properties, such as their birefringence, pleochroism, twinning, and interference properties when viewed through a conoscopic lens.

Structural geology, to study the fabric of the rocks and learn more about strain within the crystalline structure of the rocks, structural geologists use microscopic analysis of oriented thin slices of geological samples. Additionally, they plot and combine observations of geological features in order to comprehend fault and fold orientations and retrace the course of local rock deformation. They also conduct analogue and numerical tests on rock deformation in both big and small settings. The orientations of various characteristics are frequently plotted onto stereonets to analyse structures. A stereonet is a sphere that has been stereographically projected onto a plane, with planes being represented as lines and lines being represented as points. These can be used to identify fold axes' locations, the connections between faults, and the connections between various other geological features.

Stratigraphy, examine samples of stratigraphic sections that can be returned from the field, such as those from drill cores, in the laboratory. Stratigraphers examine samples of stratigraphic sections that can be returned from the field, such as those from drill cores, in the laboratory. These fossils help in the age of the core and the comprehension of the depositional environment that gave rise to the rock units. To better offer absolute limitations on the period and rates of deposition, geochronologists precisely date rocks within the stratigraphic section. Planetary geology, this new field of study is called planetary geology (sometimes known as astrogeology) and relies

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on known geological principles to study other bodies of the solar system.

Applied geology, Economic geology a subfield of geology known as economic geology examines the economic minerals that society employs to meet a variety of needs. Economic minerals are those that can be economically exploited for a range of useful purposes. Economic geologists help in the discovery and management of the planet's mineral resources, which include metals like iron, copper, and uranium, as well as natural resources like coal and oil. Mining geology the extraction of mineral resources from the Earth is a part of mining geology. Gemstones, metals like gold and copper, numerous minerals like asbestos, perlite, mica, phosphates, zeolites, clay, pumice, quartz, and silica, as well as elements like sulphur, chlorine, and helium are some resources of economic relevance.