

GEOLOGY

Age of Earth Determined As Over 2,000,000,000 Years

Radioactive Minerals Form Basis of Four-Year Study by Scientists Appointed by National Research Council

THE AGE of the earth is at least two thousand million years. This is the verdict of a committee of scientists appointed by the National Research Council who have investigated for the past four years this basic problem of science.

The radioactive minerals uranium and thorium, which spontaneously disintegrate into lead, give the best clue to the earth's age. By carefully analyzing the radioactive minerals and their products in a sample of rock, it is possible to tell how long it has been in existence.

The oldest rock in the world whose age has been determined in this way is a piece of uraninite or uranium bearing rock from Sinyaya Pala, Carelia, Russia. It is 1,852 million years old. As it occurs in rocks that were intruded into the surrounding rocks, which therefore must be older, the scientists conclude that the age of the earth must be in round numbers at least two thousand million years.

Estimates Multiplied

Estimates of the age of the earth have been multiplied by more than twenty during the last three decades. The idea that the amount of salt in the ocean is an index of the earth's age was found by the National Research Council committee to be unreliable. Only a hundred million years can be accounted for by this method. This was a favorite figure for the earth's age at the turn of the century.

Prof. Alois F. Kovarik, Yale physicist, and Prof. Arthur Holmes, geologist of Durham University, England, explain in the National Research Council report soon to be issued the methods of age determination based on radioactive disintegration. They are based on the fact that the radioactive elements uranium and thorium disintegrate spontaneously at constant determinable rates and yield lead whose atomic weight varies according to the proportion contributed by its radioactive parents.

The chairman of the committee was Prof. Adolph Knopf of Yale. Prof. Charles Schuchert of Yale compared the radioactive age results with the evidence

from the thickness of layers of the earth. Prof. E. W. Brown, Yale astronomer, concluded that while there are no known astronomical methods the two thousand million year age is consistent with astronomical probabilities. Prof. A. C. Lane of Tufts College was also a member of the committee.

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ASTRONOMY

Moon Lacks Oxygen, Its Light Proves

THE NEARLY complete absence of oxygen from the surface atmosphere of the moon has been directly proved by examination of the ultraviolet rays present in full moonlight.

Dr. Brian O'Brien of the University of Rochester announced this conclusion to the American Physical Society as a result of his measurements of the spectrum or rainbow of moonlight.

The test depends on ozone, a form taken by some of the oxygen in the sun's light. Ozone is opaque to ultraviolet light of certain kinds. As no dif-

ferences can be observed in the strength of these colors in the light reflected from the surface of the moon as compared with light direct from the sun, the absence of oxygen on the moon is shown.

The conclusion is not interfered with by the presence of ozone in considerable quantities in the earth's atmosphere as the amount remains practically constant during the night.

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ZOOLOGY

Rare Giant Pandas Are Added to Museum

THE RARE giant panda—large Asiatic animal with a face like a raccoon, a body like a bear, and feet like a cat—is on exhibition in a new habitat group recently installed at the Field Museum of Natural History. Col. Theodore Roosevelt, now Governor of Porto Rico, and his brother, Kermit Roosevelt, obtained the two specimens.

The giant panda is one of the rarest, and possibly the rarest, of all the world's larger mammals. One of the specimens in the museum group was trailed and shot by the Roosevelt brothers along the Tibetan border, and it is the only one on record ever seen alive and shot by a white man. The other was obtained by the Roosevelts from native hunters.

Pandas are not bears, though they look bearlike. They are a distinct genus, related to both bears and raccoons.

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POSSIBLY THE RAREST OF THE WORLD'S LARGER MAMMALS