



LARGEST PRIMITIVE AREA

Dust devils and dinosaur bones occur everywhere in this vast desert wonderland recently explored in southeastern Utah by the U. S. Geological Survey. The rim rock here was laid down during the age of dinosaurs, 100 million years ago, when the arid lands were the shore of a shallow sea. The rocks are similar to the Mesa Verde formation, so puzzling that for years it was called "alibi sandstone" by oil geologists.

ARCHAEOLOGY

Peruvian Mummies Come to New York

TWO prehistoric visitors from Peru—mummies more strangely swathed than Egypt's ancient kings—have been unwrapped for the American public to behold.

At the American Museum of Natural History, where the Peruvian mummies are temporarily displayed, the first and biggest bundle proved to be no less than 60 layers of clothing, with a huddled mummy of a man in the heart of the wrappings.

Shawls and ponchos covering this American mummy show the wonderful textile arts of Indians in this region. Cats and monkeys are outstanding designs embroidered and woven into the materials. Bundled into the mummy wrappings, the museum curators found ears of corn, peanuts, and other food for the dead; also a calabash, which was possibly an ancient hip-flask, judging by a congealed substance in it, which may once have been a liquid.

The mummy was equipped with a false head made of wrappings. Trinkets of gold in the bundle include two sticks mounted with goldfish hammered out of gold, and a golden disk over each ear of the mummy decorated with a row of seven cut-out cats.

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GEOCHEMISTRY

Nature Changed the Rules Ten Billion Years Ago

Something Radical Happened to Radioactive Elements Now on Earth, Long Before This Planet Was Formed

NATURE changed the rules of the game of radioactivity 10,000,000,000 years ago, probably long before the earth was formed. It was then that potassium, an element essential to life, began disintegrating radioactively, Dr. A. K. Brewer, chemist of the U. S. Department of Agriculture here, has determined.

Measuring the rate of breakdown of potassium into a kind of calcium, a component of limestone, then determining the time that this breakdown has been going on from the amount of this calcium now existing, Dr. Brewer finds that the process has been going on for about 10,000,000,000 years. In reaching this figure, he assumes that all of this special calcium, which has an atomic weight of 40 instead of 40.08 as does ordinary calcium, was derived from the breakdown of potassium, and that the breakdown rate has been uniform since it started. A similar time has elapsed since a variety of rubidium, a rare earth, started to break down into a kind of strontium, another rare earth.

Attempts to determine our planet's age by studying the end products of radioactive breakdown, such as calcium derived from the decay of potassium, may be as futile as trying to find out how old a stove is by weighing the ashes. The method will show, Dr. Brewer believes, how long the disintegration has been going on, or more

simply, how long the fire has been burning.

Dr. Brewer's new studies in no way affect the ages determined for a number of rocks by radioactive methods. The amount of uranium, another radioactive element, in rocks is measured and then compared with the lead which it has added to the rock by uranium's previous decay. The oldest rocks, dated by this method, are about 1,500,000,000 years old.

With earth age estimated from a number of sources at not more than 2,500,000,000 years, some of the breakdown of potassium must have occurred before earth was formed. Under present theories, the breakdown began on the sun, seven or eight billion years before that little star was torn apart to create the solar system.

How matter behaved under the old

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