

possibly there would come the discovery of a new type of energy in the bodies that emit beta rays or electrons.

Dr. W. O. Richardson, famous British physicist, maintained that the meaning of energy is indefinite within the nucleus or heart of the atom.

Hope that neutrons, the recently discovered atomic particles, can be used to reveal the structure of the atomic hearts was expressed by le duc Maurice de Broglie, French physicist, who described a peculiar absorption of neutrons by lead. M. de Broglie visualizes the neutrons as waves and he believes that they interfere with the hearts of lead atoms and are thus absorbed differently than would otherwise be the case. Further experiments, he hopes, will elucidate just what is within the nuclei or hearts of atoms.

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ASTRONOMY-GEOLOGY

Pacific Not Big Enough To Furnish Moon

THE MOON didn't come out of the Pacific Ocean basin.

So says D. Artur Neuberg, of Meissen, Germany, in flat contradiction to a widely held theory, that pictures the earth as "calving" the moon out of the Pacific Ocean basin in some remote geological period.

Choosing one of three proposed methods for calculating the total volume of the Pacific Ocean basin, Herr Neuberg arrives at an estimate of approximately 700 million cubic kilometers (167 million cubic miles). But the moon, with a diameter of 3,480 kilometers, has a volume of approximately 22 billion cubic kilometers (5 billion, 240 million cubic miles). The Pacific Ocean basin is therefore about 31 times too small to supply all the material needed.

Even if the Pacific, Atlantic and Indian oceans, together with all smaller seas, were scooped out to make the moon, they would not yield nearly enough material. According to Herr Neuberg's calculations, their collective volume is roughly one and one-third billions of cubic kilometers (319,200,000 cubic miles), or only one-sixteenth that of the moon.

Herr Neuberg sticks to the theory held by another school of geologists, that the earth and the moon were shot off together from the sun as a single egg-shaped mass, which subsequently separated into a larger body, the earth, and a smaller, the moon.

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ARCHAEOLOGY

Golden Goats' Heads Found In Ruins of Old Persian Palace

FIVE mountain goats' heads wrought in gold are among the long-buried art treasures of a Persian palace at Damghan, now restored to the light of day by American archaeologists.

First cabled reports of the discovery to the University of Pennsylvania Museum at Philadelphia, indicate that the Persian treasures may rival those of the royal tombs of Ur. Ruins at Damghan are being excavated by a joint expedition from the University Museum and the American Institute for Persian Art and Archaeology, led by Dr. Erich Schmidt.

The sumptuous array of jewelry and ornaments includes necklaces and diadems of gold, vessels delicately carved in alabaster, copper weapons and accoutrements, and cones made of gold

and silver. All of these adorned the persons or the palaces of Persian royalty 3,500 years ago.

Dr. Schmidt's cable does not tell where the treasure lay, but the Museum staff assumes that it was in a room of a small palace discovered by the excavators.

This palace appeared to have been buried by a natural catastrophe, probably by a fire, commented Horace H. F. Jayne, director of the Museum. The art objects in the ruins would confirm this hypothesis, for precious metals, seldom escape pillaging enemies.

The Persian treasure opens up new vistas of history, Mr. Jayne declared. The golden goats' heads, in particular, are important because they suggest affinities with the Sumerians.

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ASTRONOMY-PHYSICS

Shrinking Atom Alternative For Expanding Universe Theory

THE theory that the universe is expanding at a tremendous rate might also be called the theory of the "shrinking atom," Sir Arthur Eddington, British astronomer, reminded members of the International Astronomical Union at their meeting in Cambridge, Mass.

"All change is relative," he declared after summarizing the evidence that the universe is doubling its diameter once in 1300 million years, about the length of geologic time as measured in rocks here on earth.

"The universe is expanding relatively to our common standards; our common standards are shrinking relatively to the size of the universe.

"We walk the stage of life performers of a drama for the benefit of the cosmic spectator. As the scenes proceed, he notices that the actors are growing smaller and the action quicker. When the last act opens the curtain rises on midget actors rushing through their parts at frantic speed."

Sir Arthur credited Americans with

the observational work that laid the foundation for the expanding universe theory, mentioning Slipher, Hubble and Humason by name. Prof. W. de Sitter of Holland gave the first theoretical hint of an expanding universe in 1917 and just as predicted, the remote spiral nebulae appear to be running away from us and the velocity of recession increases in proportion to the distance.

But, said Sir Arthur, "they are not avoiding us—everyone is having the same experience."

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ENGINEERING

Corrosion Fought to Save Money for Industry

A NATION-WIDE battle against the loss of millions of dollars each year by the corrosion of non-ferrous metals and alloys is being waged by the American Society for Testing Materials.