

"within the concave," as Symmes called the interior. Symmes even thought the earth might consist of several hollow spheres within spheres.

As late as the eighteen seventies, a writer in the *Atlantic Monthly* defended the Symmes theory and predicted that one day the almost forgotten theorist might yet be honored as a great philosopher.

Symmes based his geophysical conclusions on such data as his observations of the planets and far-fetched explana-

tions of Indian lore. While his reasoning has long since been discounted, his persistent plea for exploration of the polar regions is believed to have been one factor leading to the Wilkes expedition, which resulted in turn in the first discovery of land below the Antarctic Circle.

Symmes' theories survive in one of the tales of Edgar Allan Poe, "The Adventures of Arthur Gordon Pym," and possibly in writings of Jules Verne.

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ticians and physicists at the meeting of the American Association for the Advancement of Science there during the Christmas holidays.

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ARCHAEOLOGY

Stone Age Venuses Were Not All Fat

DID STONE Age Siberians like their womenfolk slim while western Europeans of the same date preferred them fat?

Perhaps, and then again perhaps not. It is hard to probe the motives of people who have been dead 30,000 years.

But speculation over feminine types and the place of women in Stone Age society is raised by the discovery in Siberia of slender little female figurines.

Scientists have found the sculptured art of the Aurignacian period of the Old Stone Age before. But these figures of women were fat, grotesquely fat. The rare figures emerged in digging in France, Germany, Austria, and other countries. Aurignacian Venuses, science dubbed them, until the term promptly conjures up a vision of over-stuffed womanhood. The Venus part of the name was given because of the scientific theory that these statuettes of women bear some remote connection with the goddess of love. Just as Stone Age hunters painted deer and mammoth pictures on cavern walls, figuring that painting a

PHYSICS

Einstein's Relativity Defended at Princeton

New Compromise Theory of Indian Mathematician, Sir Shah Sulaiman, Criticized in Report to Science

LOOPHOLES in the mathematical armor of the new theory of relativity proposed by Sir Shah Sulaiman, Indian justice and mathematician, are found by scientists of Princeton University.

Sir Shah's theory claimed to be a workable hypothesis midway between the old classical theory of Sir Isaac Newton and the relativity of Prof. Albert Einstein. (*See SNL, Dec. 1, 1934*).

Prof. Harlow Shapley, director of Harvard College Observatory, characterized the Indian theory as one of the high-lights in astronomy for 1934.

D. R. Hamilton, under the direction of Prof. H. P. Robertson of the physics department at Princeton, points out, (*Science, March 15*) that Sir Shah's theory can hardly be classed as new because it rests on the concept of fine particles called "gravitons" which are responsible for the pull of gravity. This concept he says, "is essentially the same as that put forward by LeSage in 1764."

Carrying out calculations with Sulaiman's formulae, Mr. Hamilton found the speed of propagation of gravity through space would have to be from 60,000 to 200,000 times that of light. Light travels at the speed of 186,000 miles a second.

Other calculations on the orbit of the planet Mercury, again using Sir Shah's formulae, reveal that within 300 years the planet would no longer be swinging about the sun in an ellipse but would go off on a parabolic path which would take it far from the solar system.

Although Prof. Einstein is nowhere mentioned in the Princeton report, his presence at the neighboring Institute for Advanced Study at Princeton, N. J., lends added interest to speculations on how much Mr. Hamilton's paper is a defense of Einstein's relativity theories.

Prof. Robertson, under whom the Princeton criticism was directed, is a close friend of Prof. Einstein and accompanied the distinguished scientist to Pittsburgh when he spoke to mathema-



NOT ALL FAT

From Siberia comes this slim figure of a woman (left) carved in mammoth bone by a sculptor of the Aurignacian period of the Old Stone Age. Aurignacian Venuses heretofore discovered have been inclined to excessive fat and ungainliness, as the Venus of Willendorf, Austria, (right) a stone figurine four and one-half inches high.