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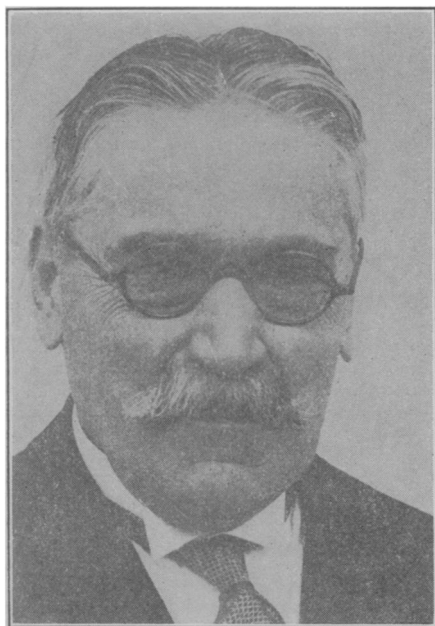
GENERAL SCIENCE

A.A.A.S. Meeting

The 83d meeting of the American Association for the Advancement of Science will be held in Philadelphia December 27 to January 1. The highlights of this important meeting, at which some 2,000 scientific papers will be read, will be given in the next issue. A special edition of the SCIENCE NEWS-LETTER will be distributed at the A.A.A.S. meeting.

Thirty-nine affiliated organizations will join with the sixteen sections of the A.A.A.S. in meeting during Christmas week. It is estimated at over two million words will be spoken during the various sessions.

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MICHAEL IDVORSKY PUPIN

Prof. Pupin is retiring president of the American Association for the Advancement of Science; his address will be the principal address at the Philadelphia meeting. Dr. Pupin holds the position of Professor of Electro-Mechanics at Columbia University

CHEMISTRY—PHYSICS

Making and Unmaking Matter

By EDWIN E. SLOSSON

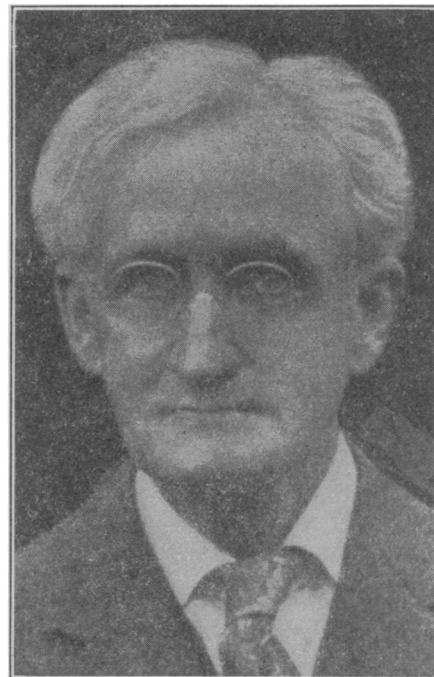
The greatest scientific achievement of the nineteenth century, in the opinion of those who lived in that century, was the formulation of two fundamental physical laws of the universe, the conservation of mass and the conservation of energy. According to these matter and energy were immutable in amount and neither could ever be created or destroyed in the minutest measure.

But the twentieth is an unsettling century. Such mental revolutionists as Einstein, Planck and Bohr have opened our eyes and widened our outlook. We cannot be so cocksure about many ideas as were the simple-minded scientists of the former century. Some of the generalizations which seemed to them absolute and universal principles of nature appear to the more critical eyesight of the present generation to be disguised definitions; similar, as Eddington puts it, to the Great Law to which there is no exception, that there are three feet in every yard.

For instance, the law of the conservation of energy. We see a lump of burning coal giving off energy at a great rate as radiant heat and light. Where did that energy come from? Where was it when the lump was cold, if no energy can be created in the course of combustion? The reply of the nineteenth century chemist was clear and decided. The energy was there all the time in exactly the same amount, although its presence could not be demonstrated because it was in the form of "potential energy." Obviously this was unanswerable as an argument, although not very enlightening as an explanation. We are nowadays disposed to suspect that

this "potential energy" was put into the coal by logic rather than by geology, and that if it exists in nature at all it is in the nature of the human mind. The twin laws of conservation of matter and energy are as useful as ever, for they still serve to clarify our conceptions and to guide our experimentations. No experiment has ever been able to detect the slightest flaw in them, and it may never be possible to devise tests so delicate as to disclose any discrepancy. Yet neither

(Just turn the page)



LIBERTY HYDE BAILEY

Dr. Bailey is president of the American Association for the Advancement of Science, and will officiate at the Philadelphia sessions. He has for many years been this country's leading author, editor and publisher on horticulture and related subjects, as well as a keen systematic botanist.

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