SCIENCE

VOL. 75 FRIDAY, APRIL 8, 1932 No. 1945

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. MCKEEN CATTELL and published every Friday by

THE SCIENCE PRESS

New York City: Grand Central Terminal
Lancaster, Pa. Garrison, N. Y.

Annual Subscription, $6.00 Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

MODELS OF THE PHYSICAL UNIVERSE[1]

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INTRODUCTION

FIRST of all, I wish to express my thanks to Professor Boodin and to Professor Miller for suggesting that the Philosophical Union might be interested in some of the recent work of theoretical physicists in the field of cosmology. More than two thousand years ago, at the instigation of Aristotle, scientific expeditions were financed by Alexander the Great to explore the countries which he had conquered and report their findings to the great philosopher and his school[2]; and in coming as a scientist to report to you—who are philosophers—I feel that I am acting in accordance with an honorable and desirable tradition.

Nevertheless, certain changes have occurred in the relations between science and philosophy since the golden time of Aristotle which must not be overlooked.

In the first place, philosophy and science are no longer a united study, and it is not the philosophers but the scientists themselves who now organize and direct their own explorations. Indeed, I think it would have been an unhappy day for science if Galileo had not broken from the Aristotelian tradition, and in any case, whether for better or worse, science has long since issued a declaration of independence from philosophy which can not now be disregarded.

In the second place, the developments of philosophy and science have in the meantime been so extensive and complicated that both disciplines and even their separate branches have been forced to invent special technical languages for the discussion of their subject-matters. Indeed, I have heard a humorous, and I trust untrue, definition of philosophy which

[1] Address before the Philosophical Union, University of California at Los Angeles, February 17, 1932.

[2] See Pliny, "Hist. Nat.," VIII, 16.