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MATHEMATICS AND SCIENCE[1]

By Professor CHARLES N. MOORE

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THE retiring chairmen of Section A have frequently devoted their addresses to some large phase of mathematical theory connected with their own scientific work. Since their audience and doubtless the bulk of their readers constitute a group whose primary scientific interest is in the field of mathematics, this has been an appropriate procedure. I have chosen to give a somewhat different type of address, for which I think there is also adequate justification. The American Association for the Advancement of Science is an organization that stands for cooperative enterprise among the various scientific groups. I have always felt that an emphasis on the connection between mathematical progress and general scientific progress should constitute one of the most important activities of Section A as a separate entity. For that reason I have elected to speak on the relationship between mathematics and science.

The origins of mathematics and science are lost in the mists of antiquity. As far back, however, as it has been possible for historians in these fields to trace the records, it has been found that science in general and mathematics in particular have undergone a simultaneous and parallel development. A little reflection will convince any thoughtful person why this must have been the case. It is quite apparent that astronomy, one of the earliest fields to attain what may properly be called a scientific form, could not have been seriously advanced without the assistance of a well-developed mathematical apparatus. Even the most descriptive form of scientific development in other fields could hardly have had its inception without making use of counting and calculation. It is well to recall that these elementary phases of mathematics, now become a matter of pure routine, were,

[1] Address of the vice-president and chairman of the Section of Mathematics, American Association for the Advancement of Science, Pittsburgh, 1934.