SCIENCE

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CONTENTS

MSS. intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

MATHEMATICS IN NINETEENTH CENTURY SCIENCE[1]

THE treasures of one age are the rubbish of the next age. Ideas, like things material, are mostly transient. The present possesses but little of that which the past, with infinite labor, has acquired. Our estimate of values changes from century to century, and often with reason: what was once useful is found under later conditions to be wasteful, and new knowledge piles old machinery upon the scrap-heap.

Considered in this light, the science of even one hundred years ago looks antiquated to a schoolboy of to-day. But what of the exceptions? Not all knowledge is novel, and there are indispensable truths and fundamental principles that were discovered thousands of years ago. Most of our exact science is, however, new since the time of Galileo, Bacon and Newton; and it is probably not far from the truth to say that three fourths of the knowledge at present constituting exact science was discovered in the course of the nineteenth century.

Every generation must either advance, or lose much of what it has inherited; only as it is used for finding new knowledge is the value of the old science understood. I speak to-night to a group of younger students of science, into whose hands are committed from the past whatever they can use of accumulated knowledge; and who have announced, by the badge of Sigma Xi, their devotion to the highest ideal in science, that of increasing its definite content

[1] Address before the Syracuse Chapter of the Sigma Xi, March 15, 1915.