

inquiry, expression and servant of that imperious curiosity which in a measure impels all men and women, but with an urgency like destiny literally *drives* men and women of genius, to seek to know and to teach to their fellows whatsoever is worthy in all that has been discovered or thought, spoken and done in the world, and at the same time seeks to extend the empire of understanding endlessly in all directions throughout the infinite domain of the uncharted and unknown." As to research, the author believes in the three-fold organization of a university staff, the administration, the teaching staff, and the research staff. He characterizes his conceptions of the three thus: the great administrator is a man of constructive genius, the great teacher is a source of inspiration, the great investigator is a discloser of the harmonies and invariance hid beneath the surface of seeming disorder and of ceaseless change.

The delightful style of the author, permeated as it is with lofty sentiment, keen appreciation of beauty, wealth of imagery, striking illustrations, wide choice of terms, classical allusion, and warm feeling, makes the reading of these essays on rather abstract philosophical topics a pleasure as well as a profit. Every student of mathematics should read the book and catch the inspiration of enthusiasm for the divine science. "Mathematics is, in many ways, the most precious response that the human spirit has made to the call of the infinite and eternal. It is man's best revelation of the 'Deep Base of the World.'"

JAMES BYRNIE SHAW.

*Four Lectures on Mathematics.* (Delivered at Columbia University in 1911.) By J. HADAMARD, Member of the Institute, Professor in the Collège de France and in the Ecole Polytechnique, Lecturer in Mathematics and Mathematical Physics in Columbia University for 1911. New York, Columbia University Press, 1915. v + 52 pp.

ALL those who have had the pleasure of hearing Professor Hadamard's lectures have doubtless remarked his unusual facility in opening up wide vistas in the course of a relatively brief discussion. It is natural to expect such a facility to appear at greatest advantage in a set of lectures that are intended to be primarily inspirational, such as the above, and in this case the expectation is amply realized. By the omission of practically all technical details, Professor Hadamard has