

**A HISTORY OF
ELEMENTARY
MATHEMATICS, WITH HINTS
ON METHODS OF TEACHING**

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A History of Elementary Mathematics, with Hints on Methods of Teaching by Florian Cajori

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FLORIAN CAJORI

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•The  Co. •

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WITH
HINTS ON METHODS OF TEACHING



BY
FLORIAN CAJORI, PH.D.
PROFESSOR OF PHYSICS IN COLORADO COLLEGE



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PREFACE

"THE education of the child must accord both in mode and arrangement with the education of mankind as considered historically; or, in other words, the genesis of knowledge in the individual must follow the same course as the genesis of knowledge in the race. To M. Comte we believe society owes the enunciation of this doctrine—a doctrine which we may accept without committing ourselves to his theory of the genesis of knowledge, either in its causes or its order."¹ If this principle, held also by Pestalozzi and Froebel, be correct, then it would seem as if the knowledge of the history of a science must be an effectual aid in teaching that science. Be this doctrine true or false, certainly the experience of many instructors establishes the importance of mathematical history in teaching.² With the hope of being of some assistance to my fellow-teachers, I have prepared this book and have interlined my narrative with occasional remarks and suggestions on methods of teaching. No doubt, the thoughtful reader will draw many useful

¹ HERBERT SPENCER, *Education: Intellectual, Moral, and Physical*. New York, 1894, p. 122. See also R. H. QUICK, *Educational Reformers*, 1879, p. 191.

² See G. HEPPEL, "The Use of History in Teaching Mathematics," *Nature*, Vol. 48, 1893, pp. 16-18.

lessons from the study of mathematical history which are not directly pointed out in the text.

In the preparation of this history, I have made extensive use of the works of Cantor, Hankel, Unger, De Morgan, Peacock, Gow, Allman, Loria, and of other prominent writers on the history of mathematics. Original sources have been consulted, whenever opportunity has presented itself. It gives me much pleasure to acknowledge the assistance rendered by the United States Bureau of Education, in forwarding for examination a number of old text-books which otherwise would have been inaccessible to me. It should also be said that a large number of passages in this book are taken, with only slight alteration, from my *History of Mathematics*, Macmillan & Co., 1895. Some parts of the present work are, therefore, not independent of the earlier one.

It has been my privilege to have my manuscript read by two scholars of well-known ability,—Dr. G. B. Halsted of the University of Texas, and Professor F. H. Loud of Colorado College. Through their suggestions and corrections many infelicities in language and several inaccuracies of statement have disappeared. Valuable assistance in proof-reading has been rendered by Professor Loud, by Mr. P. E. Doudna, formerly Fellow in Mathematics at the University of Wisconsin, and by Mr. F. K. Bailey, a student in Colorado College. I extend to them my sincere thanks.

FLORIAN CAJORI.

COLORADO COLLEGE, COLORADO SPRINGS,
July, 1896.

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