

GEOMETRY IN THE SECONDARY SCHOOL

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Geometry in the Secondary School by J. W. MacDonald

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J. W. MACDONALD

**GEOMETRY IN THE
SECONDARY
SCHOOL**

W. Miller

GEOMETRY

IN

THE SECONDARY SCHOOL.

BY

J. W. MacDONALD,

PRINCIPAL OF THE STONHAM (MASS.) HIGH SCHOOL.

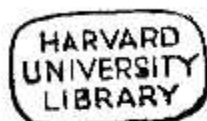
"Sçavoir par cœur n'est pas sçavoir." — Montaigne.

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P R E F A C E .

IF it seem to any one presumptuous that one who lays no claim to being a profound mathematician shou'd venture to publish a geometry and a treatise on how it ought to be taught in secondary schools, let me say, in explanation, that a profoundly learned and exhaustive treatise on a subject, and a practical school-book designed with a view to the development of intellectual power as well as for furnishing information, are very different things. For producing the former, profound special learning is essential ; for the latter, less special learning may suffice, provided it is supplemented by a practical knowledge of psychology. Even an average scholar knows a great deal more than ought to be put into an elementary school-book, and the profound specialist is strongly inclined to yield to the common passion to tell, after once getting started, all he knows. This has worked great injury to many kinds of text-books, especially those in mathematics and English literature ; for it has produced text-books that usurp the function of the teacher, and, except memorizing, of the pupil also. A reform in this particular is greatly needed, and such a reform this treatise is designed to further.

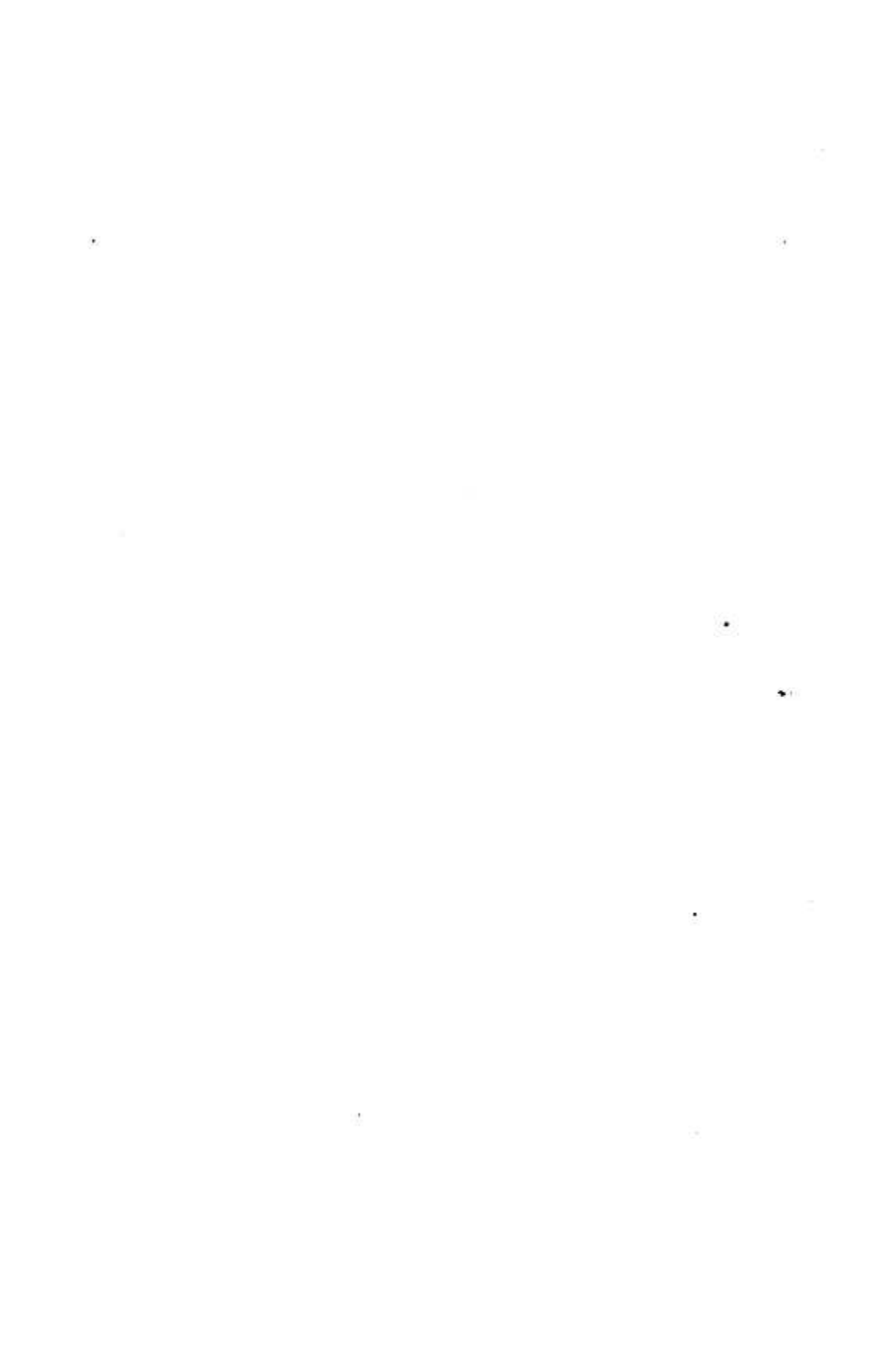
In closing, I wish to acknowledge my obligations to my friend, Mr. H. N. Wheeler, to whose hints, encouragement, and assistance I feel greatly indebted.

J. W. M.

STONEHAM, July 28, 1889.

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GEOMETRY IN THE SECONDARY SCHOOL.

CHAPTER I.

THE PURPOSE OF GEOMETRY IN THE SECONDARY SCHOOL. — HOW TO ATTAIN IT.

THE little book* for which this treatise is partly intended as a plea, is the outcome of careful reflection on the purpose of studying geometry, and of observation of the common methods. I am convinced that the purpose and the methods do not connect. While, by general assent, the chief purpose of the study is to train the reasoning faculties, the methods, measured by psychological laws, are not adapted to effect that result. The way and the only way to acquire facility in doing anything mentally or physically, is to do it, and doing something else, whatever the semblance, will not train the faculty. A boy will never learn to skate by memorizing directions; no more will he become a rea-

* Principles of Plane Geometry. By J. W. MacDonald. Published by Allyn & Bacon, Boston, 1889.