

OBSERVATIONA L GEOMETRY

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Observational geometry by William T. Campbell

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WILLIAM T. CAMPBELL

**OBSERVATIONAL
GEOMETRY**

PHILLIPS-LOOMIS MATHEMATICAL SERIES

OBSERVATIONAL GEOMETRY

BY

WILLIAM T. CAMPBELL, A.M.

INSTRUCTOR IN MATHEMATICS IN THE BOSTON LATIN SCHOOL

WITH AN INTRODUCTION BY

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PROFESSOR OF MATHEMATICS AND DEAN OF THE
GRADUATE SCHOOL, YALE UNIVERSITY

AND

OVER 300 ILLUSTRATIONS AND DIAGRAMS



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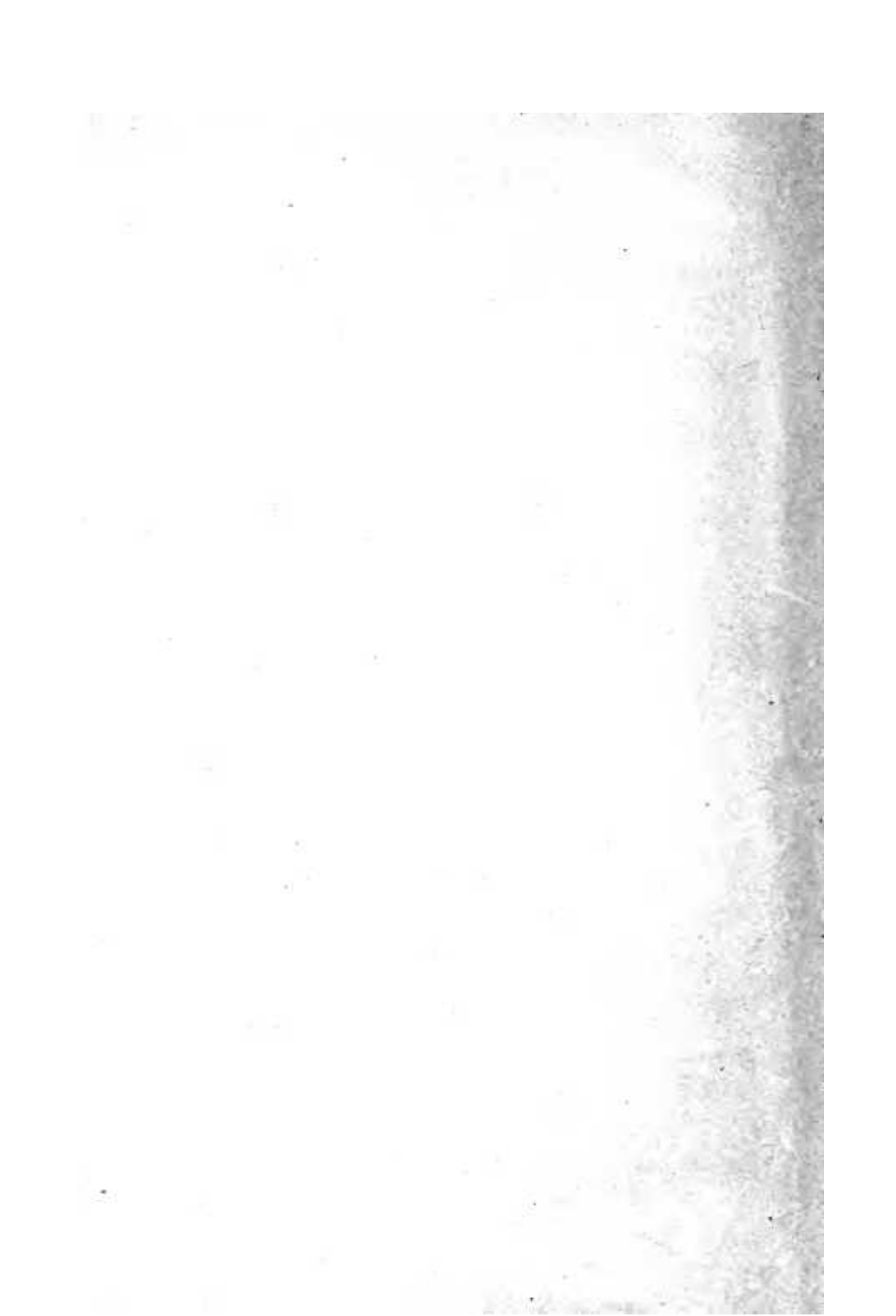
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INTRODUCTION

IN the works of nature and of man Geometry plays a most important rôle. The rays of light from the sun suggest the straight line; the surface of still water, the plane; the faces of crystals, a variety of elementary plane figures bounded by straight lines; while the crystals themselves suggest the most common figures bounded by planes. Moreover, the myriad other forms in the animal, the vegetable, and the mineral kingdoms furnish unending variety of symmetrical and complex geometric forms, while the creations of the artist and the architect, and the problems of the engineer and the astronomer, all have their basis in Geometry.

The practice of training pupils early in observing the simple geometric forms and relations of the objects which come under their every-day notice, of teaching them the use of the simplest tools of geometric construction, and of making them familiar with a variety of means of finding lengths, areas, and volumes, is a most natural and potent means of training their powers of observation, and at the same time of cultivating habits of concentrated and continuous attention.

The old arithmetics with their puzzling problems furnished a powerful means for the cultivation of the powers of analysis, but they did not furnish in any adequate sense the careful training of the child's faculties of observation.