

**HOW NATURE STUDY  
SHOULD BE  
TAUGHT; INSPIRING  
TALKS TO TEACHERS**

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How nature study should be taught; inspiring talks to teachers by Edward F. Bigelow & H. A. Surface

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**EDWARD F. BIGELOW & H. A. SURFACE**

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# HOW NATURE STUDY SHOULD BE TAUGHT

*INSPIRING TALKS TO TEACHERS*

BY

EDWARD F. BIGELOW, A. M., PH. D.

*With an Introduction*

BY

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AND

*Suggestions as to the Proper Method of  
Introducing Nature Study*

BY

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## FOREWORD.

THE author was, for eight years, the editor of "The Observer," a magazine for naturalists; for three years editor of "Popular Science," and for the past five years he has been the editor of the department of Nature and Science in "St. Nicholas," a magazine for young folks, and as a lecturer and teacher he is not without experience in the department of study which this book aims to treat. For these reasons, and for others which we will allow the reader to discover, he has prepared the book, hoping, like the author of every similar work, to help, instruct, and perhaps inspire, the earnest teacher, whose lot is always a laborious one, whose leisure is always scanty, but whose final reward is certain and great.

Many of the chapters that compose this book were originally published in "The Popular Educator," Boston, Mass.; others are reproduced from "The Journal of Education," Boston; "The School Journal," New York; "School Science," Chicago; "The Ohio Teacher," Athens, Ohio.

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The writer gratefully acknowledges permission from the author and the publisher, to reprint, from the report of General Z. T. Sweeney, Fish and Game Commissioner of Indiana, the valuable paper, "How to Introduce Nature Study," by Professor H. A. Surface, Supervisor of Nature Study in Pennsylvania.

To Professor J. P. Gordy, Ph.D., LL.D., Professor of Pedagogy of the New York University, the writer thankfully acknowledges his obligation for the favor that Dr. Gordy shows him and the reader, by allowing the publication here of the suggestive, helpful and inspiring Introduction.

Where our Mother Nature lives, there is our Dulce Domum. The children of her home are the little brothers of ours. Among all the teachers she is the greatest, and she is ours. What she tells us, "children of a larger growth," shall we not tell ours, of fewer years and more impressionable minds, who cluster about us in the school-room, and in our own particular Dulce Domum? To help the reader in this, is the purpose of this book.

## INTRODUCTION.

BY PROFESSOR J. P. GORDY, PH.D., LL.D.

EVERY revolution in the history of thought is followed by a revolution in the history of education. It was so in the fifth century before Christ, when the Sophists discredited the idea that the individual exists solely for the State ; it was so in Rome two hundred years later, when the old Roman ideal of citizenship gave place to the Greek ideal of individualism ; it was so at the beginning of the Middle Ages, when the pagan ideal of culture and enjoyment was supplanted by the ideal of monasticism ; it was so at the beginning of the Renaissance, when the ideal of asceticism and self-denial gave place to the ideal of enjoyment and self-culture ; it was so in the nineteenth century, when the vast enlargement of our knowledge of the physical universe and its varied application to practical uses, transformed men's attitude towards nature, and made them realize that a servant of almost infinite power stood ready to obey them, whenever they learned enough about the