

**A GEOLOGICAL HISTORY OF MANHATTAN
OR NEW YORK ISLAND, TOGETHER WITH A
MAP OF THE ISLAND, AND A SUITE
OF SECTIONS, TABLES AND COLUMNS, FOR
THE STUDY OF GEOLOGY, PARTICULARLY
ADAPTED FOR THE AMERICAN STUDENT**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649040001

A Geological History of Manhattan Or New York Island, Together with a Map of the Island, and a Suite of Sections, Tables and Columns, for the Study of Geology, Particularly Adapted for the American Student by Issachar Cozzens

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Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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BY ISSACHAR COZZENS, Jr.,
 LIBRARIAN OF THE LYCEUM OF NATURAL HISTORY OF NEW YORK, CORRESPONDING
 MEMBER OF THE NATIONAL INSTITUTION FOR THE PROMOTION
 OF SCIENCE AT WASHINGTON,
 &c., &c., &c.

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 W. E. DEAN, PRINTER & PUBLISHER, 2 ANN ST.

1843.

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TO

DR. J. AUGUSTINE SMITH,

PRESIDENT OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

DEAR SIR :

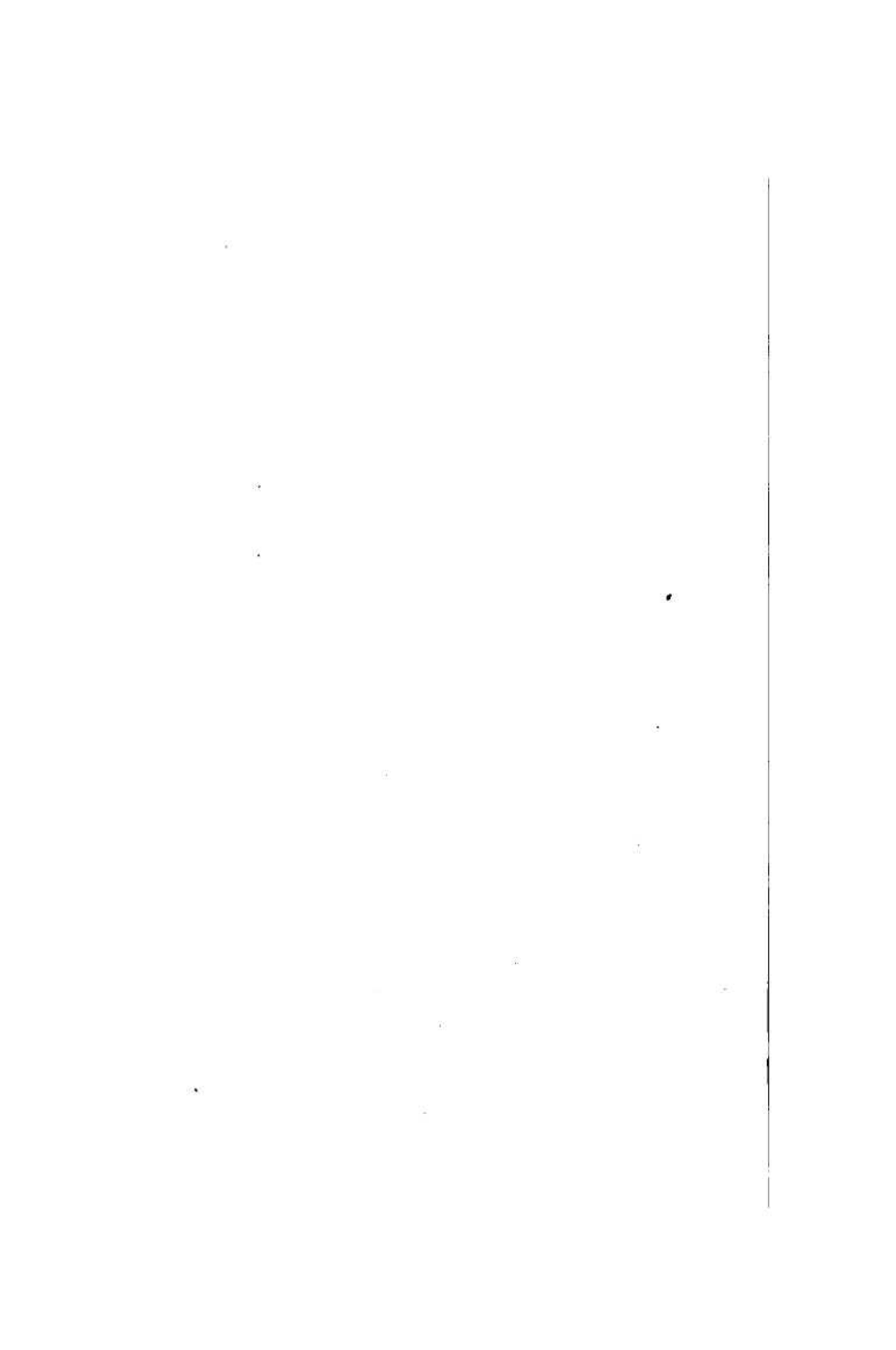
Knowing you have taken a greater interest in the promotion and study of Geology than any other person in the city of New York : and as your late lectures have proved your high attainments in the science, I beg leave to dedicate to you this my humble contribution.

I am dear Sir,

Your friend

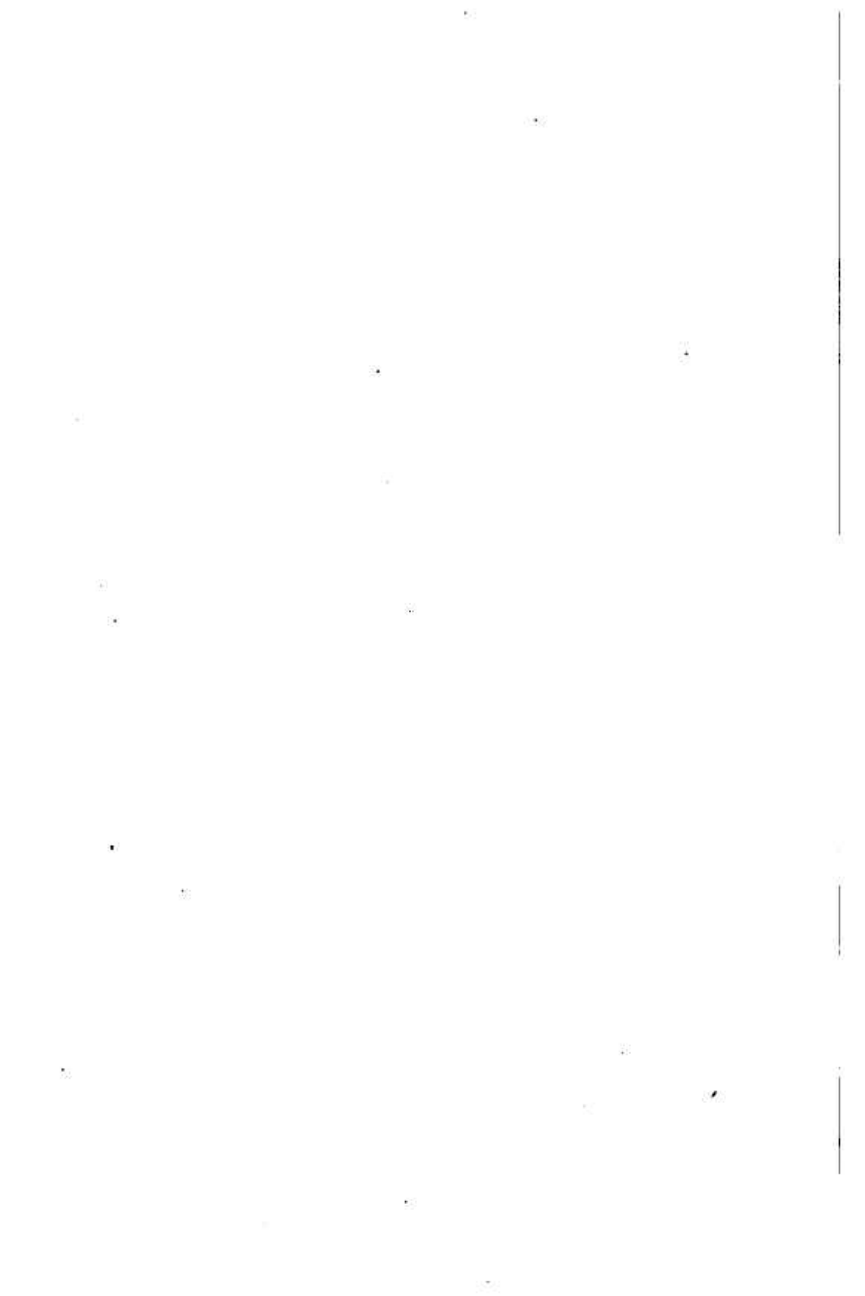
THE AUTHOR.

New York, January, 1843.



PREFACE.

WHEN I first undertook to make Geological Sections, Maps, &c., it was for my own study and amusement, and I had no thought of publishing my productions ; but as I found most of the elementary works on the subject, to be mere collections of hard names and foreign references, and consequently not likely to be looked on by the American student, but as a task, I thought I could show something more agreeable nearer home, and by adding historical facts, anecdotes and reminiscences of the city, I might induce some to read and become interested, in the greatest of all sciences ; I therefore enlarged my work, and now, by the advice of my friends, I lay it before the public, hoping, it may at least serve as a *stepping stone* to the young Geologist.



DEFINITION AND USES
OF
GEOLOGY.

Definition of Geology.—Geology is the study of the rocks, and all earthy and mineral properties, that form the crust of the globe, which man and his cotemporaries now inhabit ; of all the apparent, past changes it has undergone by volcanoes, floods, earthquakes, and other lesser causes, such as heat and cold, the wear and tear of its surface, by rains or any thing else, which alters, or occasions a displacement of any of its materials.

Uses of Geology.—The knowledge of Geology seems to be requisite in all states and pursuits of life. The artisan and the mechanic, are benefited by the mineral products of the earth ; without Iron alone, (the rusty king of all metals,) man could not exist in a civilized state, for, from the weighty hammer and the delicate needle comes most of the power, that man possesses in the mechanical arts. The agriculturist is assisted by a knowledge of the rocks, which compose the base of the material of