

**OUTLINE OF THE GEOLOGY OF THE
GLOBE, AND OF THE UNITED STATES IN
PARTICULAR: WITH TWO GEOLOGICAL
MAPS, AND SKETCHES OF
CHARACTERISTIC AMERICAN FOSSILS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649510535

Outline of the Geology of the Globe, and of the United States in Particular: With Two Geological Maps, and Sketches of Characteristic American Fossils by Edward Hitchcock

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EDWARD HITCHCOCK

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GLOBE, AND OF THE UNITED STATES IN
PARTICULAR: WITH TWO GEOLOGICAL
MAPS, AND SKETCHES OF
CHARACTERISTIC AMERICAN FOSSILS**

J. C. Brammer *copy*

OUTLINE

OF THE

GEOLOGY OF THE GLOBE,

AND OF THE

UNITED STATES IN PARTICULAR:

WITH

TWO GEOLOGICAL MAPS,

AND

SKETCHES OF CHARACTERISTIC AMERICAN FOSSILS.

BY

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AND GEOLOGY.

THIRD EDITION.

YARFORD LIBRARY

BOSTON:

PHILLIPS, SAMPSON, AND COMPANY.

NEW YORK: J. C. DERBY.

1856.

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Entered according to Act of Congress, in the year 1886, by
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BOSTON.

INTRODUCTORY.

THIS little work has been prepared chiefly as a sequel to my "Elementary Geology," especially Section XI. But it may also be useful to all who desire in the easiest manner to get a general knowledge of the Geology of the Globe; for, though the text be brief, yet the Maps teach more, by a few moments' inspection, than many pages of letter-press. The long delay in the publication of this work, which was promised in the eighth edition of my *Elementary Geology*, in 1847, has been unavoidable.

E. H.

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THE GEOLOGY OF THE GLOBE.

A DESCRIPTION of the geology of different countries, in a connected manner, has sometimes been called *Geological Geography*, or *Geographical Geology*.

To attempt to give the geology of the whole globe may seem little better than conjecture, especially when wide districts exist whose geography, even, is not known. The attempt, however, has been made, especially by M. Boué, a distinguished French geologist, under the auspices of the Geological Society of France; and this little treatise will attempt to reproduce the results, in a form better adapted to popular use. The labors of American geologists will enable me to make some corrections of the geology of North America; and the geological explorations constantly going on in all parts of the world will furnish other facts, to correct the imperfections of theory. The outlines of this map I have copied from Johnston's Physical Atlas, Edinburgh

edition of 1848, introducing those alterations which new researches enable me to do.

It can be only the larger groups of rocks which can be represented on a geological map of the globe. They amount only to six.

1. *Hypozoic and Metamorphic Strata, with Granite, Syenite and some Porphyries.*

I distinguish between hypozoic and metamorphic strata; for, though I admit the existence of the latter over wide districts, yet they are not, of course, beneath all the fossiliferous rocks, but may be merely their prolongation; and I believe, with Sir Henry de la Beche, that "beneath all the fossiliferous rocks there are mica and chlorite slates, quartz rocks, crystalline limestones, gneiss, hornblende and other rocks, of earlier production. These may indeed be merely altered or metamorphosed detrital and chemical deposits of earlier times, and possibly organic remains may be discovered in them; but, until this shall happen, it seems desirable to keep them asunder, for the convenience of showing previous accumulations." — (*The Geological Observer, Am. Ed.*, 1851, p. 32.)

2. *Primary Fossiliferous Strata to the top of the Carboniferous.*

3. *Secondary Strata.*

4. *Tertiary Strata.*

5. *Alluvial Deposits.*

6. *Volcanoes and Igneous Rocks of the Alluvial and Tertiary Periods.*

At the bottom of the map the principal mountains of the globe are represented, with their longitude corresponding to that on the map, their heights according to a scale, and stated also in figures, and their geology by colors, as shown by the tablets.

It will be seen that, with unimportant exceptions, all the surface of the map is colored; nor can I doubt that it is done approximately correct. Probably, however, only the predominant rock is given in many instances; and there may be small patches of other rocks in the same region not represented; and the exact limits of the several rocks are not exhibited in many cases. That the reader may judge of the real value of the maps appended, I shall present a brief outline of the means by which they have been colored.

The first and most important means is ACTUAL OBSERVATION. Almost all the islands and peninsulas of the globe, with very much of the sides of all the continents, have been explored by men acquainted enough with geology to give at least the leading features of the regions they have traversed. Nearly the whole of Europe has been carefully examined by able geologists, and the several formations traced out in much greater detail than is given on these maps. The same is true of the Atlantic portion of the United States of North America, and of parts of South America; and hence I have given a second map of the United States, on which much smaller and more numerous groups of rocks are