

**MEMOIRS OF THE GEOLOGICAL SURVEY
OF GREAT BRITAIN, AND OF THE
MUSEUM OF PRACTICAL
GEOLOGY. THE GEOLOGY OF THE
COUNTRY AROUND CHELTENHAM:
SHEET 44 OF THE GEOLOGICAL SURVEY**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649451159

Memoirs of the Geological Survey of Great Britain, and of the Museum of Practical Geology. The Geology of the Country Around Cheltenham: Sheet 44 of the Geological Survey by Edward Hull

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EDWARD HULL

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SHEET 44 OF THE GEOLOGICAL SURVEY.

BY
EDWARD HULL, A. B., F. G. S.,
ASSISTANT GEOLOGIST.

PUBLISHED BY ORDER OF THE LORDS COMMISSIONERS OF
HER MAJESTY'S TREASURY.



LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
PUBLISHED BY
LONGMAN, BROWN, GREEN, LONGMANS, AND ROBERTS.

1857.

The Map (No. 44) referred to in the following Memoir may be had of
Messrs. Longman & Co. Price 6s.

NOTICE.

THE following Memoir, the first of a Series which I called for to illustrate the Sheets of the Geological Survey, has, through the great interest attached to the district, naturally led the author, Mr. Hull, so to extend his observations that they really constitute a valuable work. In future it is, however, expected that each Surveyor will, in the first instance, furnish brief references only to those localities, whether natural sections or quarries, the organic remains and mineral contents of which have afforded him the means of completing his labours. Such descriptions to be circulated with the Maps to which they refer.

RODERICK I. MURCHISON,
Director-General.

THE Geological Map (sheet 44) to which the following Memoir refers is the joint production of Mr. Edward Hull and Mr. H. H. Howell, who surveyed the ground under my superintendence, while the late Sir Henry De la Beche was Director-General. The districts adjoining the Severn and Avon, together with Bredon Hill and the northern part of the Cotteswold range as far south as the road between Bourton-on-the-Hill and Snowhill, have been surveyed and described in this Memoir by Mr. Howell. The remainder and larger portion of the country included in the map was surveyed by Mr. Hull, the author of this Memoir.

ANDREW C. RAMSAY,
Local Director of the Geological Survey
of Great Britain.

AUTHOR'S PREFACE.

THE Local Director having stated the part performed by Mr. Howell, it remains for me to acknowledge the assistance received from other sources. Some of the lists of fossils included in this memoir have been kindly furnished by Dr. Wright, of Cheltenham, to whom with several other geologists of the Cotteswolds my thanks are tendered for the readiness with which they have afforded me information and personal assistance during the progress of the survey. Professor Morris has also compiled several of the lists of fossils from collections made by Mr. Gibbs, the fossil collector of the survey. The remainder have been drawn up from the same sources by myself, under the guidance of Mr. Salter, and with the assistance of Mr. Baily, at the Museum of Practical Geology.

I have had recourse frequently to the numerous publications on the geology of Gloucestershire, and amongst these I may especially mention the following :—

Dr. Buckland, *Geol. Trans., Old Series, 1818.*

Sir R. I. Murchison, *Geology of Cheltenham. Silurian System, and Trans. Geol. Soc., Lond., vol. v. p. 331.*

Mr. H. G. Strickland, *Geol. Trans., vol. v. p. 331.*

Mr. L. Lycett, several communications to the Cotteswold Naturalist Club, and *Annals of Natural History, &c.*

Professor Buckman, *Geology of Cheltenham, Ancient Straits of Malvern, &c.*

Rev. B. P. Brodie, *Basement Beds of the Inferior Oolite, Geol. Trans., and on the Insect Limestone, Geol. Trans.*

Dr. Wright, on "the Upper Lias Sands," in *Quart. Journ. Geol. Soc., vol. xii. part 4.*

Mr. Lonsdale (through Dr. Fitton). *Geology of Bath. Geol. Trans.*

Professor Phillips, *Geology of Yorkshire.*

Sir C. Lyell, *Elements of Geology.*

Professor Morris, *Catalogue of British Fossils, &c.*

EDWARD HULL.

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CHAPTER I.

PHYSICAL FEATURES DEPENDENT UPON GEOLOGICAL STRUCTURE.

IN attempting to describe the geological structure of this district I shall arrange the subject under the following heads:—

1. Physical features in connexion with physical Geology.
2. The secondary Geological Formations.
3. Superficial and Drift deposits.

As portions of the Cotteswold Hills and surrounding districts have already been described in several publications, principally with reference to their palæontology, and as they embrace the region more especially under the observation of the Members of the "Cotteswold Naturalists' Club," which comprehends many able observers, I shall occasionally have recourse to the aid of such publications as have already appeared, the present Memoir being intended as a concise *résumé* of the subject, and more especially to serve as an explanation of the coloured map, Sheet 44, published by the Geological Survey.

PHYSICAL FEATURES.

With the exception of a small area formed of Keuper marls and sandstones, extending along the banks of the Severn and Avon, the district consists of two portions, the oolitic and liassic, the table-land and the plain, distinct in geological structure and physical outline.

The former or oolitic district forms a tabulated promon-