

HANDBOOK

BRITISH ASSOCIATION

BRISTOL 1898

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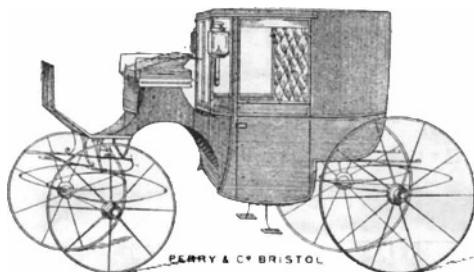
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BRITISH ASSOCIATION,
BRISTOL, 1898.

HANDBOOK TO BRISTOL AND THE NEIGHBOURHOOD

WITH MAP (IN EXCURSION PAMPHLETS)

PREPARED BY VARIOUS AUTHORS, FOR THE
PUBLICATIONS SUB-COMMITTEE,

AND EDITED BY

BERTRAM M. H. ROGERS, B.A., M.D., B.Ch.

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**JOHN WRIGHT AND CO.,
PRINTERS AND PUBLISHERS, BRISTOL.**

P R E F A C E.

THIS Handbook, presented to the members and associates of the British Association for the Advancement of Science, has been prepared under the direction of the Publications' Committee, and it is hoped will form a permanent record of the City of Bristol, and the position it holds among the cities of the United Kingdom, in the year 1898.

Great care was taken in the selection of the authors of the various articles, so that every department might be described and each branch of science might be represented by a high authority in the locality.

As will be seen from a perusal of the book, the authors have spared no pains in producing compact and, as far as space would allow, complete articles on the different subjects allotted to them, and the Committee wish to express their deep sense of gratitude to each and every author.

I also wish to return my hearty thanks to those who have so kindly, ungrudgingly and ably assisted me, and, should the Handbook meet with the approbation of the Members and Associates of the British Association, I shall feel that the time and labour involved in its preparation has not been misspent.

BERTRAM M. H. ROGERS.

*11, York Place,
Clifton, Bristol.*

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BRISTOL AND NEIGHBOURHOOD.

GEOLOGICAL HISTORY OF THE NEIGHBOURHOOD OF BRISTOL.

By C. LLOYD MORGAN.

BRISTOL is situate in a district of varied geological interest. Its picturesque and diversified scenery not only delights the eye of the lover of natural beauty, but affords admirable examples of sculptured relief, leading on the thoughtful observer to enquire into their mode of origin. The abundant organic remains which are stored and displayed in the Bristol Museum show how well the local rocks have repaid the careful search of the collector, while the economic products—coal, building-stone, road-metal, brick-clay, celestine, and iron-ochre—afford to the practical man what one of their number has described as some justification for the existence of stratified deposits.

I take it that the object of a writer in a British Association Handbook should be to sketch in free outline the salient features of the subject which is entrusted to him, and to give information rather to the general member than to the specialist. With this end in view I shall endeavour to trace the chief events in the geological drama of which the neighbourhood of Bristol has been the theatre.

The scene opens in Silurian times with the deposition of strata which are exposed at the surface in Tortworth Park, where, through the kindness of Lord Ducie, geologists will have an opportunity of examining them, and which stretch thence northwards to the Severn. Here John Phillips described beds of Ludlow Age containing thin bands with numerous fish-scales and teeth. The Silurian strata are composed of sandstones and shales with bands of limestone, and contain some of the characteristic trilobites and brachiopods of the period, examples of which are preserved in Lord Ducie's collection at Tortworth. But

perhaps one of the most interesting features of the older Silurian beds of this district (of Upper Llandovery age) is the occurrence of contemporary lava-streams, which show that this part of what is now Gloucestershire was then the theatre of volcanic activity. The igneous rock is quarried for road-metal near Damery Bridge, and its relations to the sedimentary strata have recently been rendered visible. The occurrence of these lavas is the more interesting since the Silurian strata of Wales have no such igneous rocks, the volcanic activity there being of earlier date.

The succeeding beds of Old Red Sandstone indicate a change of physical conditions. For the remains of marine organisms which characterize the Silurian strata do not occur in the Old Red Sandstone. A few fish-scales alone break the palæontological barrenness of these deposits which would seem to have been laid down in a land-locked area cut off from the Southern Devonian sea by some physical barrier. The nature of this barrier we cannot determine. Barren conglomerates, sandstones, and red shales occur throughout the district as far south as the Mendips, where they form the arched summits of the hills. But in the not-distant Quantocks, somewhat further south, we have marine beds of the Devonian type. Perhaps shoals and sandbanks stretched between the present sites of these two ranges of hills and separated the southern sea from the fresher waters of the Old Red Sandstone area, shifting at times, no doubt, further south, but never, so far as we know, allowing the marine deposits to advance further north.

The relations of the Silurian strata to their Old Red successors near Tortworth are difficult to determine with accuracy. There is undoubtedly much faulting. It is probable too that temporary uplift of the Silurian beds above the sea-level led to the removal by denudation of their upper strata, and thus allowed the basal Old Red conglomerates to lie directly on the bared surface of the older Silurian deposits of Upper Llandovery age. It is indeed questionable whether the Silurians of Gloucestershire, south of the