

British regional geology: London and the Thames Valley

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Foreword to the fourth edition

The first edition of this guide was published in 1935. Subsequent editions with modest revisions appeared in 1947 and 1960. Since that time, a vast amount of geological research has been carried out by the British Geological Survey, and by academic and industrial researchers. This work has ranged from surface mapping, to the investigation of deep structures by means of boreholes and geophysical techniques. The changes in our geological understanding of the region have been so great that the guide has been entirely rewritten.

The London and Thames Valley region includes some of the most densely populated and urbanised parts of the United Kingdom. To many people in such an environment, the relevance of geology may not be apparent. However, geology is more than just an interesting aspect of natural history; it has

been crucial to the development of the region in many respects. Geology controls the form of the landscape on which we live, and our most basic needs are acquired from geological sources, from the bricks and concrete of our houses to the water we drink.

This book gives a comprehensive account of the geological development of the region, the succession of the rocks, and the uses to which they are put. It begins with the most ancient rocks, present at depth and known only from deep boreholes. Of the rocks which can be seen at the surface, the oldest are the Jurassic strata of the Cotswold Hills, well known to the fossil collector and the source of some fine building stones in the capital. These rocks, like much of the overlying strata including the chalk of the downlands, were laid down in warm tropical seas. Such environments were very different from those represented by the sands, gravels and clays from the most recent part of the geological timescale. Of these, the deposits of the River Thames record the climatic fluctuations of the Pleistocene 'Ice Age' in a completeness and detail which is unique in onshore Britain. Flint implements found at many sites, chronicle the colonisation of the region by human beings. The muds and peats laid down in the Thames estuary during the last few thousand years, give evidence of gradual sinking of the land, which is continuing to the present day. The recognition of this process is one factor which led to the construction of flood defences such as the Thames Barrier, and is a positive demonstration of the way that geological research is essential to safeguard our way of life.

This account is written for all those who have an interest in their surroundings. It is intended especially for the amateur geologist or student, but will also help those concerned with planning, civil engineering or the extractive industries who need a summary of our geological knowledge. It will also be of value to the experienced professional geologist, for this book has been written by authors who are acknowledged experts in their fields, and there is much information within these covers that has never been published before.

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Acknowledgements

The range of geological topics encompassed in this guide is great, and in order to produce a balanced and comprehensive text within a reasonable timescale, the help of many individuals has been enlisted, both from within the BGS and from elsewhere in the geological community. Each of the chapters has been written by geologists with many years of experience in the relevant topics, and in many cases includes information that has not hitherto been published. Particularly, thanks are due to those authors from outside the BGS, namely Dr D R Bridgland (University of Durham), Dr H G Owen (formerly The National History Museum, London), Dr J E Robinson (University College, London), Mr C J Wood (Scops Geological Services, Croydon) and Dr J J Wymer (Great Cressingham,

Thetford), who have generously given their time. The guide has been compiled by M G Sumbler, assisted by Dr B M Cox, who was largely responsible for designing the plates of fossils, and the numerous tables and diagrams. It has been edited by Drs R W Gallois, A A Jackson and Mr R D Lake.

References

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