Book Reviews

British Tertiary Volcanic Province. C. H. Emelus and M. C. Gyopari Geological Conservation Review Series of the Joint Nature Conservation Committee. Chapman and Hall, London, 1992, 259 pp. £65 (hardback only). ISBN 0-412-47980-X.

This text is the first of a series which sets out to provide detailed accounts of Geological Conservation Review (GCR) sites throughout Great Britain. The majority of the titles in the series deal with rocks of a specific age, as for example this text on the volcanic and subvolcanic rocks of the Tertiary. The rationale of the series is to set down for the first time, and in a form understandable to the non-specialist, an account of GCR sites which are being considered for notification as Sites of Special Scientific Interest (so-called SSSIs). As such, this volume should not be treated as a lexicon of SSSIs in the British Tertiary Volcanic Province (BTVP). Neither, according to introductory text, should it be considered as a field guide. However, for geologists unfamiliar with the numerous world-famous sites within the BTVP, this volume is an excellent introduction and source of key data.

The text is presented clearly, with an introductory chapter which sets the geological scene, together with details on the chronology of the main extrusive and intrusive units, a brief account of the copious body of research which has been published on these rocks, and a precis of the current state of our understanding. Subsequent chapters deal with each of the main areas which preserve igneous rocks of Tertiary age: Skye, the Small Isles (Rum, Eigg, Muck, Canna and Sanday), Ardnamurchan, Mull and Arran. A final chapter provides details on Rockall, the Shiant Isles, St Kilda and the Cleveland Dyke (Langbaurgh and Cliff Ridges on the border of Cleveland and North Yorkshire). The reference list is very detailed and will greatly aid newcomers to the literature, past and present. A glossary of geological terms and rock names is provided for non-specialists. Finally, and to be greatly applauded, there is a detailed index, which permits excellent access to the main text.

Each of the chapters on the main areas of interest is set out with an introduction, which provides details of the geological evolution, accompanied by a table setting out the main rock-units. Excellent maps are used to great advantage throughout the text. Following the chapter introduction, individual GCR sites are identified and described as follows: Highlights explains what the sites consist of and why they are considered important; an Introduction sets the scene and provides an account of the history of research for the site; the Description presents details of the geology, and typically refers to the detailed maps interspersed throughout the volume; the Interpretation describes the evolution of the site in terms of geological processes; and, finally, the Conclusions section summarizes the key features of the site.

The main emphasis of this volume is towards the field relationships of the GCR sites; very little detailed petrological and isotopic data are included. This might be seen as a failing. However, if the authors had attempted to include such data, the present volume would have grown in size by perhaps an order of magnitude.

Many of the identified sites cover small geographical areas and consequently are described in great detail. Such sites could easily be visited and the text used to help the non-specialist understand the geological features described. In contrast, other sites cover very large areas and it has not been possible for the authors to be particularly directive towards the key localities. However, we should be reminded that this volume does not set out to be a field guide and that the authors have followed the format approved by the Geological Conservation Review Committee.

The overall production quality of the volume is high. However, the recommended price of £65 will place it beyond the pocket of many of those who would wish to have a copy on their shelf. Certainly, all good science libraries should have a copy. It still remains a mystery to me why publishers in the United Kingdom adopt a small print run and high price policy, as opposed to a large print run and lower unit cost approach.

In summary, the authors are to be congratulated on the production of a superb volume. It will stand the test of time and provide an excellent basis for much new geological research into the next century.

Brian Bell

Excursion Guide to the Geology of East Sutherland and Caithness. N. Trewin and A. Hurst (eds.). Scottish Academic Press, 1993, 184 pp, £8.50, ISBN 0-7073-0721-7. Pbb.

Nigel Trewin and the Geological Society of Aberdeen have done the geological community yet another service in publishing this excursion guide to the far NE of Scotland. There is a lot of very good geology to be seen around the eastern and northern coasts of Sutherland and Caithness, so that the publication of this guide is very welcome. After using a great many field-guides over the last few years, I must admit that it is a model of its kind, with clear and concise directions for...
reaching the field localities, and good descriptions of the geology once you get there. There is a judicious and up-to-date survey of the geological history at the start, augmented by more detailed introductions to each excursion, which are themselves divided into a number of different itineraries.

Three excursions cover the Triassic and Jurassic strata exposed along the coast from Golspie to the Ord of Caithness. Apart from a detailed description of what exposures are available on-shore to examine these economically important rocks, greatest interest attaches to the spectacular boulder-beds and rock-fall breccias of Upper Jurassic age exposed along the coast from Kintradwell to beyond Helmsdale. The guide provides a detailed description of the various localities where it can reasonably be demonstrated that these boulder-beds and rock-fall breccias originated by slumping or falling off a submarine fault-scarp, when the Helmsdale Fault itself was active, downthrowing to the SE.

Two further excursions deal with the Devonian rocks of Caithness, and their often-intriguing relationships with the igneous and metamorphic rocks of the underlying basement around the margins of the Orcadian basin. Apart from the road-cuttings at Ousdale on the A9 north of Helmsdale, where the Helmsdale Granite passes almost imperceptibly upwards into Lower Devonian arkoses (apart from a great deal of argument!), Devonian rocks are described as mantling an irregular topography in the basement rocks at Dirlot in the centre of Caithness. Similar and often very spectacular features are described from the well-known localities at Red Point, Baligill and Portskerra along the north coast, overlooking the waters of the Pentland Firth. Other localities to visit include the well-known fish-bed at Achanarras, although it is stressed that perseverance and a permit from Scottish Natural Heritage are required to find good specimens. Various other localities are described around the coast which allow the visitor to appreciate the great wealth of sedimentological interest shown by these Devonian rocks.

The final excursion deals with the Kildonan Gold-Rush of 1868–69, which ended when the Duke of Sutherland closed the diggings in 1870 to protect the fishing, even though gold worth £750 000 at present-day prices had been recovered by then. Would-be prospectors can today obtain a free permit from the present estate to pan for gold, and the field-guide describes the most likely localities for success.

The field-guide is well-produced with useful sketch-maps, showing even the local hostleries, while it is bound together in a proper manner for a paperback book with a laminated cover.

J. L. Roberts