

WELSH GEOMORPHOLOGY

The Glaciations of Wales and Adjoining Regions

Edited by Colin A. Lewis. (Geographies for Advanced Study.) Pp. 378. (Longman: London, September 1970.) 140s.

THE elucidation of the part that glaciers have played in shaping the landscape requires the mind of a detective. The glacial geomorphologist must be prepared to work hard and long in his analysis of the forms and deposits left behind by the glaciers, but above all he must be able to appreciate the significance of the vital clues. That these clues are very varied in character is amply shown in this book. It is divided into twelve chapters, ten of which are devoted to the separate regions of Wales and the area around it. The introduction, by the editor, sets the scene by ranging widely over Pleistocene and Holocene chronology.

Each region is described by a geomorphologist who has a very intimate knowledge of it. Naturally their approaches to their areas differ according to the nature of the evidence, and they are by no means unanimous in their views. At times the accounts are so detailed that a reader unfamiliar with the area tends to lose the thread of the argument. J. B. Whittow discusses north-west Wales and C. Embleton describes north-east Wales. P. Worsley links the glaciation of Wales to that of the Midlands in his chapter on the Cheshire-Shropshire lowlands, which is a key area. The Lower Severn is discussed by N. Stephens, and E. Watson stresses the importance of periglacial activity in his account of the Cardigan Bay area. The Upper Wye and Usk and the Hereford basin are described by C. A. Lewis and B. H. Luckman respectively. D. Q. Bowen and B. S. John complete the area by their descriptions of south and south-west Wales. The adjacent area of the West Country and Southern Ireland is considered in the last regional chapter by N. Stephens.

F. M. Synge sums up the evidence in the final chapter. His main conclusion is that final agreement in the subject is far from achieved. In fact the diversity of views on the glaciation of Wales is the outstanding impression gained from the book. Every type of evidence is explored by the different authors. The book thus provides a useful account of possible methods of studying glacial chronology and land forms, as well as providing the latest views concerning the activity of the glaciers and the processes associated with them in Wales. The book is well illustrated by maps, sections and photographs. Many chronological correlation tables and long reference lists are included. The price of the book, however, seems rather high in view of the relatively small area covered and the obvious lack of definitive conclusions. It is of considerable value, however, as a record of the present state of knowledge in that it points out where more work is needed before there is sufficient evidence to write a consistent and more complete account.

C. A. M. KING

RURAL PASTIMES

Land and Leisure in England and Wales

By J. Allen Patmore. (Problems in Modern Geography.) Pp. 332+26. (David and Charles: Newton Abbot, September 1970.) 84s.

THIS book is a comprehensive study of the problems posed in Britain by the increasing demand on the country's limited resources for outdoor pastimes and pursuits. Mr J. A. Patmore details and quantifies the various ways in which the British spend their spare time in the open. There is an abundance of graphs, charts, maps and statistics which have been culled widely.

The favourite outdoor pursuits are swimming and

angling. One illustration of the strength of the latter sport is that the London Anglers' Association recently paid £37,000 for fishing rights on an 8,200 yard length of the Wiltshire Avon. It is surprising to find that wild-fowlers may number as many as 500,000; it is surprising also that it is estimated that 50,000 people weekly attend meetings of foxhounds. Mr Patmore gives plentifully the sources of his information.

There are the horror figures too that are seen more often—21½ million motor cars by the year 2000, and rural car parking at a density which will cover vast acreages. Indeed, quite understandably, the author gives a great deal of space to the way in which people use the car and to its impact on the countryside. The questionnaires, reports, and investigations on the behaviour of the motorist in the countryside are now numerous, and, generally speaking, these reach the conclusion that most visitors to the countryside are simply looking for an open space, preferably near water, where they can park the car and enjoy the view and play.

Though the shadow of the motor car hangs over the book, Patmore is not discouraged or pessimistic about the future. There are solutions, some which he rightly says may offend the precepts of rigid rural conservationists. In this category must surely come the suggestions that at Malham, between the village and the tarn, there should be widened roads with overlooks (viewpoints) and access to the famous Cove and gorge on made footpaths (tarmac or concrete?) provided with explanatory displays. Another suggestion is that there should be permitted residential development around country parks, where the enhanced site values would help to pay for the recreational provision within. Patmore is undoubtedly influenced in his solutions by what he has seen in America. The idea of the "heritage highway", a route which links places in the life of national figures or strings together a story of industrial archaeology, seems to me to be a sort of motorized nature trail in which the use of personal initiative is at a low ebb.

A greater degree of planned provision for leisure will have to be made; more thought given to the segregation of conservation areas from recreational areas, a policy for the greater spreading of holidays, and in particular some measures for taking the pressure away from the pronounced Sunday afternoon peak. Patmore deals with all these and many other problems in a book which is interesting, useful and provocative.

GEOFFREY BERRY

STRESSES AND STRAINS

Yield Point Phenomena in Metals and Alloys

By E. O. Hall. Pp. viii+296. (Macmillan: London, July 1970.) 76s.

A YIELD point, in the sense in which Professor Hall uses the term, is a sharp discontinuity on a tensile stress-strain plot at which the elastic (or nearly elastic) stage is abruptly replaced by plastic deformation. The phenomenon owes its practical importance to the fact that mild steel and light alloy sheets subject to such behaviour cannot be shaped by deep-drawing or pressing without displaying unacceptable local distortions: these are due to the fact (intrinsic to yielding) that once plastic deformation begins at one point, it tends to continue there rather than spread elsewhere. Thus the superplastic alloys now being studied so intensively are at the opposite pole to alloys showing sharp yield points.

The study of yielding came to life in 1949, when Cottrell and Bilby published their detailed theory of the locking of dislocations in mild steel by "atmospheres" of carbon atoms. This theory, which in its chief features has stood the test of time, opened the way to a quantitative understanding of many mechanical features of this most