WILEY

Review: Relief in Maps

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Alexander's book which may also be found in most textbooks of geography whose authors have not any very special knowledge of meteorological principles. On p. 5 we are told that "the hills on the western shores of England, Scotland, and Ireland first condense and precipitate the moisture contained in the south-west winds blowing from the Atlantic, which, becoming nearly exhausted before they reach the eastern side of our island, are unable to give out the same copious rainfall." The major error from the geographical point of view contained in this statement lies in supposing that the highlands of Britain, where the rainfall is always excessive, are high enough to cast rain shadows on their lee side after the manner of the great mountain chains of the Earth. So little do the Pennine and Cambrian ranges exhaust the moisture of the south-westerly winds that the rainfall of the east of England is but little short of what it would be if these highlands did not exist, and if a high range traversed East Anglia in a north-and-south direction it would provoke there a similar high rainfall. The minor error consists in regarding the hills as condensers—assumably by contact action. This may be partially true in winter, but in midsummer the heated hill-slopes would often have a reverse—a drying—effect on the cool winds from the Atlantic. It is mainly by a thermodynamic process that the hills send down the rain: they force the winds, which they obstruct, upwards into higher levels where the sudden expansion, consequent upon reduced atmospheric pressure, involves cooling of the air and condensation of its aqueous vapour.

The information given upon the influence of geological factors on springs and rivers, and on the quality of water to be used for economic purposes, is full of interest; and quite apart from the special importance of Sir Alexander Binnie's wide experience to civil and sanitary engineers who will use it, the book is well worth being read by geographers if only as an aid to the proper understanding of hydrographic problems. In civilized countries the circulation of waters is greatly complicated by the artificial control to which they are all more or less subjected, and its study not only opens out many interesting subjects of inquiry, but frequently brings home many facts one would otherwise perhaps never realize.

L. C. W. B.

RELIEF IN MAPS.

'Contours and Maps explained and illustrated.' By Frederick Morrow. London: Meiklejohn & Son, 1913. *Price 1s. 6d. net.*

The aim of the author is to give a thorough grasp of the principles underlying contours, and the methods to be adopted in drawing them. The exercises which are set at the end of each chapter will doubtless be found useful by the busy schoolmaster; but we doubt if the book itself is well adapted for use by his scholars.

The author seems to be burdened with the necessity of saying fair things of the so-called "orosopic" method of showing relief—the method in which the contours on one side of a hill are shown in black, and on the other side in white. It is now generally recognized that this is not a success, except, perhaps, in strongly marked country, which would show up well on any system. The examples given in the book make this plain.

In his treatment of heights and contours in general the author is not always happy. He speaks of the height of Everest as estimated. He defines mean sea-level as the mean between the heights reached by spring-tides and neap-tides. He says of the sea-level contour that "this line has no elevation, just as the equator has no latitude." He thinks that a country viewed from overhead would stand out

in bold relief. He uses a chain for spacing his contours in compass sketching, and defines a bench-mark as a starting-point in a line of levels. It is said that a river "always flows down the most gentle slope," and that a gradient is "the average rise in the slope between any two points on a map." The experiment on p. 4 is ill-devised; the vertical intervals should be given by an independent vertical scale. The contours shown at the south of Fig. 9A, said to be taken from an O.S. map, are curious if not impossible, and the omission of a 400-foot contour in the middle of Fig. 15A accentuates the improbability of the topography there represented.

An experienced teacher will know how to avail himself of the useful parts of this book, and to avoid the unsatisfactory. We regret that the existence of the latter makes a well-intentioned book unsuitable for use in schools.

'The Realm of Nature.' By Dr. H. R. Mill. (London: Murray. 2nd edit. 1913. Pp. xii, 404. *Maps*. 5s.) The second edition of this well-known work, deservedly one of the most widely read of modern geographical text-books, has received important revision throughout. A new chapter has been added on weather and storms, including the relation of weather to pressure, and the subject of forecasts. This replaces the shorter sections which covered these subjects in the chapter on climate generally in the first edition. A number of new illustrations have been introduced and old ones improved, and the book is now presented in decidedly more attractive styles of type, make-up, and general appearance. The demand for this new edition (in spite of the first having been frequently reprinted), and the advantage which has been taken of it, are matters for congratulation to both author and publisher.

GENERAL.

'Ancient Town-planning.' By F. Haverfield. (Oxford: Clarendon Press. 1913. Pp. 152. *Plans and Illustrations*. 6s.) The somewhat striking title of this small volume has not been idly given. There is a clear endeavour throughout to correlate the doctrines of modern town-planning with the practices of the Greeks and Romans, with illustrations drawn from a number of the best-known sites in various countries, including Britain. The results are full of interest, not only to the expert antiquarian, but to all whose interests have any antiquarian bent, and the numerous diagrams are so clear and good as to afford any necessary assistance in following the descriptions in the text.

'The Ottoman Empire, 1801-1913.' By William Millar. (Cambridge: University Press. 1913. Pp. xvi, 547. *Maps*. 7s. 6d.) This volume belongs to the well-known Cambridge Historical Series, edited by Dr. G. W. Prothero. It appears wholly to fulfil the requirements of a book of its type, with its fully analysed chapter-references, bibliographical references, adequate maps, and comprehensive index, and withal it is written readably. The introductory chapter summarizes the history of preceding centuries so far as necessary to the comprehension of that of the nineteenth and twentieth. To the political geography of the period, at all events in the narrower sense of the consideration of boundary-lines and their changes (whether proposed, as in the treaty of San Stefano, or actually carried into effect), full attention is given, and the maps, so far as this purpose is concerned, are admirably clear.