

Mr. Woodward's descriptions of the various counties contain rather too much matter that could be discovered from the maps themselves. Though dealing with a land of most fascinating variety, they do not always rise to the demands made by the salient scenic features. Yet these are the features that strike the common traveller, to whom this work must always be a boon. From his point of view we have read the account of Gloucestershire a second time, and, of course, discover nothing to add, while we are grateful for a good deal of graphic description, tersely worded. The matter probably only needs a new arrangement, so that the reader who descends in imagination or in memory from the steep side of the Forest of Dean, and wonders at the great scarp of the Cotteswolds, facing him ten miles off across the Severn, is not dragged aside to learn that Coal-measures were discovered in the Severn Tunnel, and the irritating fact that "sulphate of strontium is worked at Wickwar in the Keuper Marl." The traveller wants to move forward; the open landscape lies before him; when he has gained his first broad physiographic view, he will condescend to search for fossils, and to rejoice in geodes of celestine.

The exceptional knowledge of the country possessed by the author is apparent in all these careful pages. He has added, moreover, exceedingly practical descriptions of the geology that is to be learned along the main lines of British railways. His views on the nomenclature of fossils are known from his published writings; but, while most of us are sadly inconsistent, he yields perhaps too little to the purists. If Mr. Woodward goes so far as *Doryderma* and *Cœlo-nautilus*, where none will blame him, why does he retain *Ammonites* and *Goniatites* as unrestricted generic names? Why *Echinocorys scutatus*, which seems to surpass the historical acuteness of Mr. C. D. Sherborn (see "Index to Zones of the White Chalk," *Proc. Geol. Association*, June, 1904), and, side by side with it, *Galerites albogalerus*? We doubt also *Protocardium* for *Protocardia*; but these matters are outside the main intention of the atlas. As a companion in Great Britain, this handy book is to be recommended to every traveller. The complete revision of the Scotch map, which is now so admirable, despite its comparatively small scale, makes us hope that Ireland, as a country of equal interest and variety, may be included in the next edition.

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THE TEACHING OF SCIENCE.

The Preparation of the Child for Science. By M. E. Boole. Pp. 157. (Oxford: Clarendon Press, 1904.) Price 2s. 6d.

Special Method in Elementary Science for the Common School. By Charles A. McMurry, Ph.D. Pp. ix + 275. (New York: The Macmillan Company, 1904.) Price 3s. 6d. net.

A GREAT change in the character of the books concerned with the teaching of science has taken place during the last twenty years or so. A quarter of a century ago the claims of science to a place in the school curriculum were being advocated vigorously,

and men of science had still to convince reigning schoolmasters that no education was complete which ignored the growth of natural knowledge and failed to recognise that an acquaintance with the phenomena of nature is necessary to intelligent living. Speaking broadly, it may be said that most classicists even admit now that there are faculties of the human mind which are best developed by practice in observation and experiment. One consequence of the success which has followed the persistent efforts of Huxley and his followers—to secure in the school an adequate recognition of the educative power of science—has been that modern books on science teaching are concerned almost entirely with inquiries into the best methods of instructing young people, by means of practical exercises, how to observe accurately and to reason intelligently.

Mrs. Boole deals with the earliest education of the child, and gives a great deal of attention to the years which precede school life. Her book may be warmly recommended to parents anxious to adopt sane methods of educating their children and to teachers responsible for the training of the lowest classes of schools. Mrs. Boole rightly insists that the development in the child of the right attitude towards knowledge is of more importance during early years than the actual teaching. We agree with her, too, that "the best science teacher is usually a thorough-going enthusiast in the science itself, who in the intervals of regular teaching, gets his pupils to assist him in his own investigations or pursuits." But, unfortunately, the teaching profession is at present hardly attractive enough to secure the services of a sufficient number of ordinarily well educated men, and we shall have to wait a long time before we can expect to find many men of science engaged upon original research also teaching science to children in schools. Mrs. Boole's little book deserves to be read widely.

Like many other American educationists, Dr. McMurry attempts to do too much for the teacher. The larger part of his book is devoted to "illustrative lessons" and "the course of study," minute instructions being given as to what science subjects should be taught in each of the terms of each of the years spent by children in the elementary school. The teacher will deal most satisfactorily with those subjects of science he knows best, and in which he is most interested. From the point of view of the British teacher at least, it is inadvisable to attempt to impose a detailed scheme of work drawn up by somebody in another district and unfamiliar with the precise conditions and environment of the school in which the science teaching is to be done. Even if this were not the case, Dr. McMurry's scheme of work expects the class to accomplish far more in a term than can be studied satisfactorily in that period. Moreover, subjects too diverse, and hardly at all related one to the other, are prescribed for a single term. But Dr. McMurry's ideal is better than his practice; he says:—"it is easy for us to expect too much from formal method. The atmosphere which the teacher diffuses about him by his own interest and absorption in nature studies is more potent than any of the devices of method."

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