Real Mathematics : Intended Mainly for Practical Engineers, as an Aid to the Study and Comprehension of Mathematics. By E. G. Beck. (Oxford Technical Publications.) Pp. ix + 306. (London : Henry Frowde and Hodder and Stoughton, 1922.) 15s. net.

ARE engineers as bad as they pretend to be, or, at any rate, as Mr. Beck wishes us to believe ? His desire is " to bring about a change of attitude towards mathematics," " to show the thing as an actual, tangible reality, instead of as a collection of rigid and unrelated rules and formulæ." He asserts that " the physical realities of mathematics have become swathed about with wrappings of mystery and suggestions of the supernatural." No doubt there is still room for improvement in mathematical text-books ; but Mr. Beck must be singularly ignorant of modern text-books if he imagines that these sentences are anything but a libel on them.

In any case, if modern mathematical text-books are at fault, their improvement will not be secured by Mr. Beck's methods. At bottom there seems to be nothing in his explanations that is not contained in most of the decent school books—only Mr. Beck talks a lot. In addition he says some absurd things. The most striking example is perhaps the discovery that $\sqrt{-25} = -5$.

Mr. Beck's views on mathematical teaching are best understood from the following self-revelation : " The ability to solve a differential equation is, of itself, not worth five seconds of effort to acquire ; but if such ability enable a man to design machines or structures more economically, or if it serve him as a key to the recorded experience of others, its value would clearly be so enormous as to lie beyond the scope of ordinary means for estimation." In other words, the only justification of mathematics is the creation of dividends !

The Social and Political Ideas of some Great Mediæval Thinkers : a Series of Lectures delivered at King's College, University of London. Edited by Prof. F. J. C. Hearnshaw. Pp. 223. (London, Calcutta and Sydney : G. G. Harrap and Co., Ltd., 1923.) 12s. 6d. net.

THIS volume contains eight studies of political thought in the Middle Ages which, with two exceptions, appear substantially in the form in which they were delivered as a course of public lectures in King's College, London, during the autumn of 1922. Seven of the lectures deal with individual thinkers, beginning with " Saint Augustine and the City of God," a composite production by the Rev. A. J. Carlyle and the editor, and one of the exceptions mentioned above, and ending with " John Wycliffe and Divine Dominion," also by the editor. It will be noted the term " Middle Ages " is, chronologically, if not theoretically, liberally interpreted. The remaining lectures deal with John of Salisbury (E. F. Jacob), St. Thomas Aquinas (Rev. F. Aveling), Dante (E. Sharwood Smith), Pierre Du Bois (Eileen E. Power), and Marsilio of Padua (J. W. Allen). The Principal of King's College contributes the introductory lecture, in which he draws an illuminating distinction between political theory and political thought, and fully justifies the claim for the interest of the subject to the modern reader who is not specially concerned with medievalism as a whole. The lectures cover the development of the idea of a national state out of the theory of an international organisation, spiritual or temporal, and are therefore not without bearing upon political theory of the present day.

Hunters of the Great North. By Vilhjalmur Stefansson. Pp. 288 + 16 plates + 2 maps. (London, Calcutta and Sydney : G. G. Harrap and Co., Ltd., 1923.) 7s. 6d. net.

IN this volume Mr. Stefansson recounts some of his early experiences in the Arctic when he was a member of the Leffingwell expedition in 1906–7. He tells of his travels with the Eskimo, how they taught him to hunt, to accept their diet and mode of life, to build snow houses and generally to live in comfort in a region which people will persist in regarding as inhospitable in the extreme. It is a volume of the lore of the Arctic full of vivid descriptions and personal incidents. The chapters on hunting contain a great deal of the natural history of the caribou, polar bear and seal, and there is of course much of interest regarding the Eskimo. Mr. Stefansson has given us no book of polar travel of greater interest than this volume. It should help to dispel some of the current fallacies regarding the Arctic climate and conditions of life in the far north. The call of the north is in its pages, which will awaken memories among those who know the ice, and stir others with a longing to go and see.   R. N. R. B.

Mirrors, Prisms, and Lenses : a Text-book of Geometrical Optics. By Prof. James P. C. Southall. Enlarged and revised edition. Pp. xx + 657. (New York : The Macmillan Co. ; London : Macmillan and Co., Ltd., 1923.)

THE revised edition of Prof. Southall's text-book of geometrical optics, in addition to a number of new problems scattered throughout the book, contains an important new chapter at the end of the volume. The historical notes dealing with the rectilinear propagation of light, and optics in the seventeenth century are of considerable interest. It is usually stated that Newton was the first to distinguish seven colours in the prismatic spectrum, but Maurolycus (1575) in the explanation which he gave of the circular arc of the rainbow directs attention to the four principal colours, together with three other colours which he regarded as transitions. Reflection prisms are discussed at some length, and new and approved schemes of optical calculation, partly due to Mr. T. Smith, are described. A word of praise must be given to the diagrams.

Introduction to Practical Mathematics. By V. Seymour Bryant. Pp. 95. (Oxford : Clarendon Press ; London : Oxford University Press, 1923.) 2s. 6d. net.

MR. BRYANT's little book is intended to supply the needs of classes preparing pupils for the entrance scholarship examinations in science in Public Schools, and is based upon a syllabus issued by the Science Masters' Association at the request of the Joint Standing Committee of the Head Masters' Conference. The course suggested in the book is very suitable and interesting, and the explanations offered should prove of value to the pupils.   S. B.