

similar treatment of other large collections. Seldom have the utility and purpose of a museum been more palpably illustrated. Though much is given, much is also withheld—perhaps only temporarily. The region includes parts of Norfolk and Suffolk that swarm with flint implements, as the Neolithic map clearly shows; but this period is dealt with in 15 pages, and the Early Stone Age not at all. One has to confess that a Continental work of this kind would have been better proportioned; and Cambridge has a mass of flint to interpret to the world.

The careful study of museum specimens, the verification of their *provenance*, and the identification of others not within the fold have led, as might have been expected, to important results; but the spade has many a surprise in store, and new light has recently been thrown on the history of this part of England by the excavation of the dykes or ramparts that form a series of barriers south of the Fens, and were evidently erected against an inland people, as the ditch is to the south-west. Below the Fleam Dyke, for example, were found Roman remains on the original surface; and as there would have been no reason for such a work in the Roman period, it is now definitely referred to the early Anglo-Saxon period and attributed to the East Anglians, who did not trust their neighbours to the west. Such vast earthworks can only have been constructed by large and organised communities; and the next stage is to decide who were the people that threatened to attack, and also at what moment the position became serious. History can here derive much assistance from archaeology; and Dr. Fox has pointed out the military value of these lines across the main road in open country between Newmarket and Royston. Traffic flowed at right angles to this road in Roman times, and the crossing of two Roman highways was evidently the nucleus of Cambridge.

In striking contrast to the other four is the map of Anglo-Saxon settlements, on which the Domesday Villages are uniformly scattered over what a few centuries before had been dense woodland on a clayey soil, difficult to cultivate and dangerous to traverse. The same might be thought to hold good of the Fens, but large areas on the south-east of that formation were evidently inhabited in the Bronze Age, and must therefore have sunk in the last 3000 years.

The work is planned on a generous scale, and Dr. Fox's thesis has not only benefited himself but has also done excellent service to the Museum with which he is connected. It is no small achievement to have realised the golden mean between the superficial guide-book and the voluminous and often unreadable catalogue. Museum curators, please copy.

NO. 2866, VOL. 114]

Our Bookshelf.

A Textbook of Petroleum Production Engineering. By Prof. Lester Charles Uren. Pp. vii + 657. (London: McGraw-Hill Publishing Co., Ltd., 1924.) 30s. net.

OIL production, like oil geology or oil refining, has undergone rapid development in method and technique during the last few years, and the profession of the petroleum engineer, formerly one of somewhat uncertain definition, is fast becoming one of specialisation both in training and accomplishment. The industry has in the past relied on, and still to a large extent relies on, the services of practical field-men who, though they may have years of experience behind them, lack the requisite technical education enabling them to assume control of large-scale operations involving a competent knowledge of the science of oil production. The demand for qualified men of this description has brought about the establishment of systematic academic training at several universities, especially in America, and the author, himself a professor in the department of petroleum engineering at the University of California, has designed this work as a text-book of reference for students reading for this particular faculty.

The book thus presents to a larger audience the substance of theoretical and to some extent practical teaching of this phase of engineering, in accordance with the curriculum laid down at that university, and as an academic conception of the subject it is well done. The plan of the work is to trace the various stages of field-operations from preliminary exploitation through the ramified processes of drilling and production to transport and storage of petroleum, each of which is treated in great detail. Unfortunately, being an academic treatise of an intensely practical subject, the text reveals the atmosphere of the class-room rather than that of the field, with the result that the large amount of descriptive matter tends to be formal, stereotyped, and tedious to read, besides conveying (doubtless unintentionally) the suggestion of orderliness in actual operations which is far from being the case. Perhaps this is more noticeable in view of the fact that Suman's recent and excellent treatise on "Petroleum Production Methods" has, by its essentially scientific though practical point of view, set a standard as yet unattained by any other work of its kind, not excluding the present volume. To be really successful, a book such as this must give a lead rather than follow precedent; the student of the future, even more than the trained man of the present, will need inspiration as well as guidance, suggestion of possibilities rather than mere digestion of technical data. H. B. MILNER.

Analytical Conics. By Dr. D. M. Y. Sommerville. (Bell's Mathematical Series: Advanced Section.) Pp. vii + 310. (London: G. Bell and Sons, Ltd., 1924.) 15s. net.

WE welcome Prof. Sommerville's book as one of the most comprehensive English treatises on analytical conics. The author shows a wide, detailed, and accurate knowledge of the subject, ranging from elementary co-ordinate geometry to chapters on systems of points on a conic and invariants. A student wishing to acquire a thorough knowledge of the subject cannot do better