and the well-chosen references will enable the student to follow up any lines of work on which he desires further information. B. A. K.

A Course in Elementary Mathematics for Schools. By Dr. H. E. J. Curzon. (Organised Mathematics Series.) Book 3. Pp. 88. 2*s*. 6*d*. net; with answers, 3*s*. net. Book 4. Pp. 111. 2*s*. 9*d*. net; with answers, 3*s*. 3*d*. net. (London, Bombay and Sydney: Constable and Co., Ltd., 1922.)

BOOK 3 of Dr. Curzon's attempt to deal with school mathematics contains many problems, including compound interest, discount, stocks and shares, some arithmetic like square roots, the solid geometry of pyramids, cones and spheres, the algebra of quadratic equations, simultaneous equations, graphs, factors and fractions, some deductive geometry of triangles and parallelograms, and logarithms. Book 4 deals with Pythagoras's theorem, the circle, similar triangles and loci, algebra including simultaneous quadratic equations, cubic equations, surds and indices, logarithms, ratios and the progressions, numerical trigonometry, the elements of the calculus and some advanced practical geometry. It seems very doubtful whether it is better for the student to have different books for different years of study rather than for different branches of the subject. Perhaps the harassed parent may prefer the possible economy involved in Mr. Curzon's plan, in view of sudden transference from schooling to earning a living. From the educational point of view, the mixture might be really useful if the different components were organically combined, instead of being quite independent chapters placed side by side with no connecting links.

The treatment is competent if somewhat dull. We might remark that the exchanges on p. 12 of Book 3 are quite useless except as a reminder of the good old days. We certainly approve of the early introduction of the calculus, and wish it were possible to assume that all students who have done mathematics at a secondary school reach the university with at least a rudimentary knowledge of the calculus.

S. B.

The Inspection and Testing of Materials, Apparatus and Lines. By F. L. Henley. (Manuals of Telegraph and Telephone Engineering.) Pp. xi+355+12 plates. (London: Longmans, Green and Co., 1923.) 21*s*. net.

THE testing and inspection of the material and apparatus used in the British Post Office is an operation of great importance and requires the services of a large staff. The Post Office issues invitations to tender for telephone and telegraph apparatus and material, and as a rule the manufacturer quoting the lowest price obtains the contract. The manufacturers, therefore, have to be furnished with a satisfactory specification, and must have an assurance that nothing inferior to the standard specified will be accepted. Fully equipped mechanical, chemical, and electrical testing laboratories are necessary, and the inspection and testing of the tenders requires thorough knowledge, high skill, and lengthy experience. Mr. Henley's book gives many theorems in chemistry, mechanics, physics, and mathematics which have direct applications in practice. The subject is one of ever-increasing importance, and only those engaged in everyday testing are fully aware of the many assumptions that have to be made in theory and how these assumptions limit the application of ordinary academic methods. Mr. Henley gives a great deal of interesting information which will be of value to the scientific worker and will show him the type of problem in which the practical man will be grateful for his help.

The Maori Mantle: and some Comparative Notes on N.W. American Twined Work. By H. Ling Roth. Pp. 124+22 plates. (Halifax: Bankfield Museum, 1923.) 42*s*.

EARLY accounts of the inhabitants of New Zealand describe their body-garment as a mat or cloth, almost square in shape; and in this later writers concur. These garments have also been made a subject of study by modern writers on Maori culture, such as Mr. Elsdon Best. There are, however, several points which have remained obscure, and these Mr. Ling Roth has endeavoured to elucidate in this valuable monograph. The author gives the results of an exhaustive study of specimens in museums and private collections upon which his profound knowledge of the technique of primitive textile work has been brought to bear. The method of manufacture, he points out, is that known to technologists as "twining," and not that of weaving. Mr. Ling Roth's letterpress, taken in conjunction with the very full series of illustrations, which are responsible for the high price of the book, may be regarded as the last word on the technological side of the subject. This, however, does not exhaust its interest. The conclusions at which the author has arrived as to the light these technical processes throw upon the question of cultural affinities may be commended to the careful attention of ethnologists.

The Genesis of Petroleum. By Dr. P. E. Spielmann. Pp. iv+72. (London: Ernest Benn, Ltd., 1923.) 5*s*. net.

THE origin of petroleum remains an obscure problem after much experimental work and more theoretical discussion. Of the two principal explanatory hypotheses, one is that petroleum results from the action of water on metallic carbides in the interior of the earth; according to the other (which is more favoured), it is derived from the decomposition, by destructive distillation or slow change, possibly bacterial, of vegetable or animal matter, probably fish. A suggestive fact, recently brought to light by Chaston Chapman and others, is that the shark-liver oils contain as much as 90 per cent. of long-chain unsaturated hydrocarbons. Dr. Spielmann gives an impartial and detailed account of the whole situation, with special attention to recent work, and an excellent bibliography. His book is a most useful contribution to the literature on petroleum.

The Theory of Relativity: Three Lectures for Chemists. By Erwin Freundlich. Translated by Henry L. Brose. Pp. xii+98. (London: Methuen and Co. Ltd., 1924.) 5*s*. net.

A POPULAR exposition of Einstein's theory by a competent mathematician in three short lectures. They are described as "for chemists," but have no special application to chemistry.