

The text is clear and logically organized; a knowledge of vector algebra is assumed, but vectors are used sensibly and appropriately, and no attempt is made to force every argument into a vector mould. The operators 'grad', 'div' and 'curl' arise naturally in field theory, though perhaps a little more stress might have been laid on the fact that these are simply three aspects of the single Hamilton operator  $\nabla$ . There is a good supply of worked examples and of exercises for the student, carefully selected from degree examinations to illustrate the principles and details of the theory.

This is a very useful text-book, and if it is a little deficient in outlook value, that may be because the author has chosen to work thoroughly in a carefully restricted domain.

T. A. A. BROADBENT

### How Photography Works

By Dr. H. J. Walls. Pp. 352. (London and New York: Focal Press, Ltd., 1959.) 42s. net.

THIS book can be strongly recommended to those making a career in the profession of photography who have already acquired some photographic knowledge. Despite some good attempts by the author to justify his claim in the preface that no scientific knowledge is assumed, it must be stated that the book would prove difficult reading for any person without a good knowledge of general science at Intermediate examination level. While not being a text-book, it would be excellent general reading for such people and, for this reason, it should also appeal to amateur photographers having a similar educational background.

After the first chapter on the formation of an image, which includes many features of lens design, there follow nine chapters on the mechanisms of the photographic process from initial exposure to the completion of processing. Two chapters deal with the subjective aspects of viewing photographs and there are also two chapters on colour photography. After each chapter good references are given for further reading, and the index has been carefully prepared.

R. B. COLLINS

### Handbook of Textile Fibres

By Dr. J. Gordon Cook. Pp. xxv + 422. (Watford: Merrow Publishing Co., Ltd., 1959.) 15s. net.

THIS book well justifies its title. It is most handy for looking up things about textile fibres in use to-day, of every kind apparently, natural and man-made, that one can think of. They comprise natural fibres, vegetable, animal and mineral; regenerated fibres of polysaccharide and protein origin; and synthetic fibres from polyamides, polyesters, polyvinyl derivatives, polyolefines, glass, ceramics, metals—there are, in fact, almost four double-column pages of them in the index. That does not mean, though, that the book is stodgy and chiefly masses of tables—far from it: also presented are the history and economics, production and processing (with special attention to dyeing), structure and properties, the behaviour of the fibre in practical use, and technical notes besides; all set out compactly and systematically yet achieving the double purpose of a reference book for the more experienced technologist and of an instructive general guide for the beginner. It is comprehensive enough as an introduction to textile fibres

as a whole, and also provides comprehensive details about them as individuals. It could scarcely be more useful for its size, and is strongly recommended.

W. T. ASTBURY

### Siberian Arctic

The Story of the Siberia Company. By Jonas Lied. Pp. 214 + 31 plates. (London: Methuen and Co., Ltd., 1960.) 30s. net.

THE events described in the main part of Mr. Lied's book took place during 1910–1920, though they are prefaced by an admirable *résumé* of the previous history of Siberia and followed by an account of what is known of events under Soviet rule.

In 1910 the only practical transport routes from the vast Siberian plains were along the course of the Rivers Obi and Yenisey; the Obi and its tributaries navigable for some 9,000 miles, and the Yenisey for 2,000. To the south the rivers met the Trans-Siberia Railway, a means of transport to the west, but a prohibitively expensive one for trade purposes; and to the north they flowed into the Kara Sea, a potential cheap waterway to the markets of Europe and America. The possibilities of this route had interested various merchant adventurers, but, until 1910, none of them had possessed the necessary business ability and resources to develop them. Then Alfred Derry, buyer and director of Messrs. Derry and Toms, drapers of Kensington High Street, London, caught a glimpse of the vision during visits to the annual trade fair at Nijhny Novgorod. A chance meeting with an energetic young Norwegian, Jonas Lied, followed, and early in 1912 was formed the Siberian Steamship Manufacturing and Trading Co. Ltd. Lied himself carried out all the investigations and negotiations at the Russian end, and his account of those exciting days is the best part of the book. The first successful season was in 1913 when cargoes of cement and assorted trade goods were exchanged for two camels from Turkestan, two bears, a roebuck and an assortment of more-valuable, if less-colourful, local products. Exports from Siberia included timber, flax, hemp, wheat, hides, butter and potash; imports were machinery, cement and general trade goods. The company, after initial vicissitudes, was advancing towards success when the Russian revolution put an end to its prospects, though it was a long time dying against a somewhat tedious background of internal squabbles.

L. M. FORBES

### Geology of Norway

Edited by Olaf Holtedahl. Pp. xii + 540, with 21 separate maps. (Oslo: Norges Geologiske Undersökelse, No. 208, 1960.) 100 Norwegian crowns.

### Geology of Sweden

Description to accompany the Map of the Pre-Quaternary Rocks of Sweden. By N. H. Magnusson and others. Pp. 177, with map (1:1,000,000) in three sheets. (Stockholm: Sveriges Geologiska Undersökning, Ser. Ba, No. 16, 1960.) Text 15 Swedish crowns, map 45 Swedish crowns.

MODERN text-books on the geology of Norway and of Sweden have, until now, been available only in the national languages and in Russian translations; and a most welcome outcome of the twenty-first International Geological Congress in Scandinavia is the appearance of these new works in