

British Isles, where owners of woods usually confine their attention to the practical work of planting, thinning, and felling trees, without having clear ideas of the financial problems involved. The objects of management are classified as being either physical or economic. The former apply to protection forests, maintained on mountain slopes to prevent erosion and mitigate disastrous floods, to forests on catchment areas that afford water supplies to towns, and to private woodlands on estates which are treated as amenity grounds for ornament and sport. An economic object of management applies to any forest worked for timber and other saleable products. Forests of this kind are commercial undertakings, and the scheme of management adopted here should be such as to render the woodlands a financial success, yielding the maximum soil rental and giving the highest net return on the capital involved. The principles underlying forest management are clearly explained in Mr. Jackson's little book, which can be recommended as an introduction to this important subject.

Thoughts on Scientific Advance.

Problems of Modern Science. A Series of Lectures delivered at King's College (University of London). Edited by Prof. Arthur Dendy. Pp. 237. (London: G. G. Harrap and Co., Ltd., 1922.) 10s. 6d. net.

THE object of this series of lectures is stated to have been to "place before the general public the present position of some of the main branches of science and to point out the direction in which progress is being made or may be hoped for in the near future." The book will also be found useful by scientific workers who desire to know something of the advances made in regions other than their own. The names of the lecturers are a sufficient guarantee of the value of the matter presented. It is unfortunate that no index is provided, and, for this reason, perhaps the most useful function of a review is to give some indication of the contents of the book. But it is to be understood that the topics mentioned by no means exhaust the list.

Prof. Nicholson's lecture on mathematics shows that much more research work is possible in that science, and it gives a useful account of the quantum theory. In Prof. Dale's astronomical lecture, we find a summary of the present position of the nebular hypothesis. It is interesting to find that certain kinds of nebulae may reasonably be looked upon as bye-products of evolution. Prof. Richardson gives us a valuable general account of the latest views on the structure of atoms, and also further statements with regard to the quantum theory.

Prof. Smiles refers especially to the chemistry of plants.

Prof. Dendy's lecture is an interesting discussion on the various component sciences making up that of general biology. A remark on page 131 with reference to the widespread influence of physiological considerations may be noted—"It is perhaps unfortunate that our interest in ourselves as human beings has resulted in the concentration of attention upon the functions of the human body, almost to the exclusion of the lower animals, so that the development of this branch of Biology has been a very lop-sided growth." It is to be hoped that recent developments, especially at the Plymouth Marine Biological Station, will remedy this state of affairs.

Prof. Ruggles Gates deals with various botanical problems, more especially with those of genetics and mutations. Prof. Halliburton is mainly concerned with pointing out the importance of free fundamental research in physiological science and gives various examples where important practical application at a later date was quite unforeseen. Prof. Barclay-Smith devotes his lecture to a useful account of the formation of bone, which presents phenomena of much greater general interest than some would be inclined to suppose.

The book may be thoroughly recommended, and the price is not excessive in comparison with many scientific works at the present day. W. M. B.

Our Bookshelf.

The Newcomen Society for the Study of the History of Engineering and Technology. Transactions, Vol. 1, 1920-1921. Pp. 88+18 Plates. (London: The Newcomen Society, 1922.) 20s.

IN technology as well as in science the value of a knowledge of the history belonging to a given subject is gaining recognition. One result of the celebration at Birmingham of the centenary of James Watt in 1919 was the formation, by a few engineers interested in historical research, of the Newcomen Society, and the first volume of the society's Transactions has recently been issued. As indicated in its sub-title, the object of the society is to encourage the study of the history of engineering and technology, and it is, we believe, the first society formed for such a purpose. It takes its name from Thomas Newcomen (1663-1729), the Dartmouth blacksmith to whom we owe the atmospheric steam-engine. The honorary secretary and treasurer of the society is Mr. H. W. Dickinson, of the Science Museum, South Kensington.

Besides the papers read during the session 1920-21, the volume under notice contains the first presidential address, a list of members, the rules and constitution, and an account of the first summer meeting. Mr. Titley, in his address, after giving a brief sketch of the steps leading to the formation of the society, passes in review the subjects which come within its scope, points