

The Royal Institution

By Thomas Martin. (Science in Britain Series: Published for the British Council.) Pp. iv+46+4 plates. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1942.) 1s. net.

BEHIND its imposing Georgian front, the Royal Institution in Albemarle Street, London, conceals well-equipped laboratories fitted up for research in the physical sciences, a comprehensive library of general as well as scientific interest and a lecture theatre with all the aids that modern science has provided for the use of the lecturer. It was founded by Count Rumford, that remarkable genius who combined politics with philanthropy and both with science. Rumford, who was born in Massachusetts, New England, of a family of English descent, had held the post of under-secretary in the Colonial Office in London, and later had taken office under the Elector of Bavaria, in whose service he returned to London in 1798. He decided to remain in London, and in 1799, with Rumford as the prime mover, the Royal Institution was constituted, "for diffusing the knowledge and facilitating the general introduction of useful mechanical inventions and improvements, and for teaching by courses of philosophical lectures and experiments the application of science to the common purposes of life".

Mr. Thomas Martin has been general secretary of the Royal Institution since 1929 and knows its history intimately. In the present booklet he outlines the inception of the Institution and skilfully sketches the many scientific developments with which it has been associated through its distinguished line of professors and directors, from Rumford himself, through Davy, Faraday, Tyndall, Dewar and Sir William Bragg. Mr. Martin has accomplished the difficult task of compressing a story full of interest into a brief but fascinating booklet.

Diseases of Vegetables

By Donald E. Green. Pp. vii+208. (London: Macmillan and Co., Ltd., 1943.) 8s. 6d. net.

IN the monthly issues of the *Journal of the Royal Horticultural Society*, January 1941–April 1942, there appeared a series of excellent papers by Mr. Green entitled "Hygiene in the War-time Vegetable Garden". These have now been brought together, revised and expanded to form the present book, which gives in brief but adequate form for market gardeners and amateur growers of vegetables information concerning the recognition and treatment of diseases of their crops, illustrated by a very rogues' gallery of excellent portraits of diseased plants.

Only one who has had much first-hand experience of diseased plants could write with so much practical insight as this book possesses, and only one knowing his growers intimately could have sensed and met their needs so well. Especially will all growers welcome the admirable "Key to Disease Symptoms" with which the book opens and the clear recommendations of practical measures of control with which it ends. The author is described on the title page as "Mycologist to the Royal Horticultural Society", but his book includes, in addition to the fungal diseases of vegetables, those caused by bacteria, viruses, and the various non-parasitic agencies such as unfavourable conditions of soil or cultural treatment.

The text is written in a simple but, at times, repetitive and wordy style with occasional sentences, statements, or omissions which might with advantage

be reconsidered when a second edition is called for. For its price the book is most agreeably produced, and it should serve the needs not only of professional market gardeners but also of the multitude of amateur war-time growers who are apt to feel distressed and very helpless when faced with unexpected and strange lapses in behaviour on the part of their allotment vegetables.

Statistical Tables

For Biological, Agricultural and Medical Research. By Prof. Ronald A. Fisher and Dr. Frank Yates. Second edition, revised and enlarged. Pp. viii+98. (London and Edinburgh: Oliver and Boyd, 1943.) 13s. 6d. net.

THESE tables, first issued in 1938, were early recognized as an authoritative production in the domain of statistics as applied to biology. The main modern tests of significance, many the work of the authors, are covered; the introduction is a mine of knowledge in itself, and the tables cover all the contingencies envisaged.

This edition, which maintains the standard of the first even to the quality of paper used—no small achievement these days—incorporates new features. Additional tables are provided for precise testing of the significance of the difference between sample means when it is not valid to pool the estimates of variance. One essentially practical problem can thus be dealt with, namely, the comparison of estimates of a physical constant, one based on numerous data of low precision, the other on a small quantity of precise observations. An extra table provides the limits of expectation for the probability of an event observed to occur a number of times in a series of trials, and thus supplies a more direct solution than hitherto of another practical problem. The densities of organisms estimated by the dilution method can be easily calculated from a new table.

The complex subject of balanced incomplete block arrangements, used in field trials, involves the tabulation of combinatorial solutions, which have been simplified by the more extensive use of solutions of the cyclic type. A new type of square arrangement is described in the introduction.

The value of the volume is enhanced by the worked examples illustrating the use of the tables.

J. WISHART.

Practical Physics

By Prof. Marsh W. White, Dr. Kenneth V. Manning, Prof. Robert L. Weber, Dr. R. Orin Cornett, and others on the Physics Extension Staff. (Pennsylvania State College Industrial Series.) (Prepared under the direction of the Division of Arts and Science Extension, the Pennsylvania State College.) Pp. x+365. (New York and London: McGraw-Hill Book Co., Inc., 1943.) 2.50 dollars.

THIS course of study, which is stated to have been tried out on a large scale in Pennsylvania during the War, resembles both in scope and quality some of those devised for evening classes in physics that are customary in Britain for engineers attending National Certificate courses. The emphasis is on mechanics, heat, and current electricity; less attention is given to sound and light. Each chapter reads like the record of a lecture, enlivened by popular illustrations and numerical examples, and followed by a simple experiment, performed either by the