

various contributions are not standardized in this respect. Chapter 8, "Screening Chemical Repellents", describes various methods, and instructively relates the fundamentals of the subject to the testing procedure. Chapter 9 deals with "Insect Proofing of Food Packing Materials". Chapter 10, "Screening Chemical Attractants", gives a rather unorganized account of this difficult subject. It includes a method for assessing 'contact attractance' which is out of place, and much material about the use of attractants in conjunction with insecticides which has no relevance to screening.

Chapter 11, "Testing Acaricides", is one of the best in the book, and supplies the information that anyone embarking on this work would require. Chapter 12, a short one, entitled "Animal Sprays, Dusts, Dips and Dressings", gives an account of field test methods. Chapter 13, "Techniques for the Evaluation of Systemic Insecticides against Livestock Sprays", is a clear introduction to this subject. However, some of the methods used sound unpleasant for the animals, and one wonders if alternatives could not be devised.

This is a useful reference work and the best chapters give excellent introductions to the subjects discussed. Unfortunately test-insects are not listed in the index.

W. A. L. DAVID

CONTROL OF PLANT GROWTH

Crop Production and Environment

By Dr. R. O. Whyte. New edition. Pp. 392+31 plates. (London: Faber and Faber, Ltd., 1960.) 63s. net.

THE title of this book is not a reliable guide to the contents. Some of the subjects discussed, for example, the morphology of stem apices, the biochemistry of reproduction and the effects of growth substances, extend into much wider fields than the relation between crops and their environment. On the other hand, the most important practical aspect of this relation—the dependence of crop yield on climate, seasonal weather and soil factors—is barely mentioned.

The purpose of the book is to summarize results of research on the physiology of plant growth and development published since 1946, when the first edition appeared, and to show their application in agriculture and horticulture. As in the first edition, the chief topic is control of morphological development, particularly flowering, by temperature and day-length, that is, vernalization and photoperiodism, but there is also some discussion of quantitative growth of field crops, and of the significance of leaf area as a determinant of yield. An account of equipment for growing plants in controlled environments ranges from commercial glasshouses to phytotrons. Twelve chapters deal with the physiology of growth of different crop species, and the "agricultural botanists, agronomists, crop ecologists, plant breeders and general biologists" for whom the book is intended will probably find this the more interesting and useful part.

The author's aim has been to give as much factual information as possible within the prescribed space; he has not attempted to write a critical review, nor to deduce general relationships from the mass of experimental data. The resulting narrative has no

clear pattern and few connecting threads, so it is difficult to read and still more difficult to absorb. Much of the text consists of quotations from the original papers, and their variation in style contributes to the lack of unity and cohesion. The figures and plates are used to squeeze in still more information in a compact form; often they are not mentioned in the text, and sometimes the descriptions in the legends are inadequate.

Although, as the author himself says more than once, this book is superficial and not comprehensive, it will be a valuable reference work, for there is no other that attempts to cover the same ground. It is thoroughly documented, and has a bibliography of about four hundred references.

D. J. WATSON

EARLY THOUGHTS ON PROGRESS AND PROFITS

Progress and Profits in British Economic Thought, 1650-1850.

By G. S. L. Tucker. (Cambridge Studies in Economic History.) Pp. vii+206. (Cambridge: At the University Press, 1960.) 27s. 6d. net.

MR. TUCKER provides a scholarly analysis of the course of the debate in Britain about the relationship between the return on investment and economic progress. It should be of great interest to those who ponder the attempts of societies to understand themselves.

It is a little curious that it is during the beginning of the story, in the second half of the seventeenth century, that the debate is closest to the kind of emphasis applied nowadays. For then men argued, more or less instinctively, about the ability of rulers to affect the course of events by manipulating an indicator, which might also be a determinant. Josiah Child and his kind were all for pushing down interest rates, to attain by synthetic means what the course of commerce had produced in Holland, with the idea that this would create the most favourable conditions for British commerce. But with Adam Smith, and especially Ricardo, the emphasis changed; the debate became more concerned with distribution than with growth. The author throws much light on how this occurred, though perhaps he does not sufficiently emphasize the restrictive nature of the full Ricardian theory, making the whole outcome depend on diminishing returns to agricultural effort. The only policy measure left to Ricardo and his school for the furthering of growth was the plea for free trade, so that the margin of cultivation could be thrown back to the New World. But with the next generation, though much Ricardian influence is still present, the problem of excessive capital formation has become pressing. Britain had arrived at a situation similar to that of the Dutch much earlier, but instead of plenty of capital guaranteeing progress, the fear that it might be excessive gains ground, as the stresses mount in Britain in the late 1830's and the 40's. Thus J. S. Mill, Wakefield, Torrens and others begin to think in terms of the export both of capital and men, so that both may find better opportunities abroad, and may, in conjunction, reduce the cost of imported primary products to Britain. Here, at the mid-nineteenth century, Dr. Tucker's story ends; he might well continue it.

S. G. CHECKLAND