

Anticipation may be achieved, partly, by extending and enforcing existing legislation designed to compel manufacturers to reveal the composition and properties of new substances which they propose to release directly or as by-products. Governments must share an international responsibility to monitor the environment with special regard to potential pollution. As the work of the Plymouth laboratory shows in this book, scientists from non-governmental laboratories and universities can make an important contribution. Indeed, ecologists may have perhaps the most vital part to play. Man is now a major component of many ecosystems, placed at the top of the food-chain in the most vulnerable position of all, and particularly susceptible to the steady concentration of pollutants through the chain. The assessment of the impact of man on nature demands long time-series of observations and analyses of the sources of variation in natural communities. Without this knowledge, it will be difficult to distinguish between natural and artificially induced phenomena, and it will be impossible to devise precautions. The present level of activity in ecology is wholly inadequate to tackle such tasks. It has to be admitted that, even in the well-known seas and shores so near the Plymouth laboratory, the quantitative ecological bases of knowledge were lacking in some respects and it is salutary to read that the study of the Torrey Canyon was "limited in scope because only a single suitable research vessel was available".

The wreck of the Torrey Canyon was a moment of high drama. It was a small and localized crisis compared with the undramatic but potentially more dangerous and widespread risks which society is taking deliberately—by producing and releasing large quantities of new substances without an adequate foundation of knowledge of the consequences. These risks extend not only to oil and detergents but also to insecticides and fertilizers, foods and drugs, domestic and industrial sewage.

Perhaps the most important lesson of the Torrey Canyon episode is that it should serve to remind us of the urgent need to give the highest priority to the study of the ecology of man in his Earth-bound environment.

R. S. GLOVER

## WHOLE PLANTS

### On Integration in Plants

By Rudolf Dostál. Translated by Jana M. Kieily. Edited by Kenneth V. Thimann. Pp. xxi+218. (Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1967.) 57s. net.

To the botanist interested in the morphogenesis and growth of whole plants, the name of Rudolf Dostál is well known. For nearly sixty years, in Brno, Czechoslovakia, he has been carrying out experiments on the mutual interactions of plant organs during growth and development, and this book, written at the beginning of the present decade, represents the distillation of these sixty years of experimentation and philosophizing. For the promotion of its translation and publication in the English language, we have to thank Professor K. V. Thimann, who became aware of the existence of this book when visiting Professor Dostál in 1961.

As the title indicates, the unifying theme of the book is the integrated functioning of the plant in respect of its growth and development. There are eight chapters, each dealing with a different facet of his work, such as seedling development from the embryo, polarity, regeneration, periodicity and correlation, the last topic naturally occupying more than a third of the book, for it contains the most significant of his contributions to growth physiology. The most valuable aspect of this book is that it brings together, for the first time and in the English language, the most important of Dostál's experi-

mental observations. Some are already well known, but there is much that has not yet been available to workers in the West. In this era of molecular biology it is refreshing to be reminded that many exciting experiments can still be done by simple manipulation of plants; it is stimulating to discover that there are still many problems of plant regulation to be tackled, where the application of modern techniques may open up new fields of study and produce new ideas on the mechanisms of the control of plant development. For this reason the book is well worth the effort necessary to grapple with its rambling ramifications of theme and the difficult ambiguous style which the translation seems to have produced.

There is another reason why this translation may have been worth while. To quote Professor Thimann from his foreword, the book "provides an invaluable outlook on to an area of biological history . . . an area of administrative control over scientific views", for it is perfused throughout with the dialectico-materialistic philosophies of Lysenko and Michurin, to which the author must have been constantly subjected for most of the latter part of his working life, and from which he has been unable to break away. Even with Lysenko long since discredited, ideas of the unity of the organism with its environment underlie the pattern of all his arguments. It is in many ways a sad autobiography of scientific atavism, an atavism induced, no doubt, by the author's virtual isolation from the rapidly evolving ideas of western biologists. Although the book refers widely to plant growth regulators, yet one feels that in the mind of the author they are still as mystical as the calines of F. W. Went or even the organ-forming substances of Sachs; indeed, the reader will find in this little book no biological principles of control that were not already fully formulated in the writings of the early pioneers.

L. J. AUDUS

## ENEMIES OF PLANTS

### Plant Nematology

By W. R. Jenkins and D. P. Taylor. (Reinhold Books in the Biological Sciences.) Pp. xvi+270. (New York and London: Reinhold Publishing Corporation, 1967.) 116s. 6d.

THE authors state that their specific objective in writing this book was to provide "a beginning text for general courses in plant nematology". During the past decade or so the study of plant and soil nematodes has progressed, and extended geographically, in a way that can only be described as explosive. Allen and Sher have pointed out that 1,079 new species in the phytoparasitic groups were described between 1950 and 1966 as against 250 species up to 1950. In the light of such facts, Jenkins and Taylor's statement (page 13) that only 2 per cent of the estimated number of nematode species have yet been described is frightening. Clearly sound basic training for future nematologists is of prime importance and one is bound, therefore, to look critically at this book.

The first four chapters deal with the structure, biology and host-parasite relationships of plant nematodes, the last three with the principles of control and the remaining seventeen describe all the important genera of nematodes associated with plants. Techniques are excluded. Each chapter is followed by a list of selected references. The book concludes with a useful glossary of some 330 terms and a comprehensive index. I consider that the first two chapters are the best in the book; they provide an authoritative and scholarly introduction to more advanced texts such as Chitwood, Goodey and Thorne which, although standard works, are nevertheless highly subjective in their treatment. The first chapter, for example, discusses the vexed question of the place of the Nematoda in the animal kingdom and their relationships with other