diseases, with three due to "miscellaneous troubles", two to damage caused by animals and three due to eelworms.

The book opens with an interesting introduction to the history of the tomato plant and early prejudices against the fruit, the relative importance of the various diseases to which the plant is subject, and of the environmental and cultural conditions which encourage them. With the view of helping the non-technical reader the accounts of the fungal diseases are preceded by a short description of the nature and functions of fungi and their dissemination by various kinds of spores. The book is beautifully illustrated throughout with photographs on fine paper, showing the symptoms of disease, and the author has relied on them to illustrate the text, to the exclusion of line drawings of histological features, fructifications and spore-forms. No doubt the latter type of illustrations would have been of little interest to the average grower, who is concerned mainly with recognizing the diseases and with the methods of controlling them; and the same applies to the meagre lists of references to literature given at the ends of the sections.

All the diseases are accompanied by the names of the causal agents, where known, and symptoms and the modes of infection are fully described. Methods for the control of the various disorders are particularly well treated and are discussed from various angles—cultural, fungicidal, general hygiene and the production of resistant varieties. Without the help of expensive coloured photographs (with one exception, the frontispiece, showing the symptoms of 'spotted-wilt' disease), which would have enhanced the value of the sections on virus and deficiency diseases, the author has done the next best thing by means of excellent half-tone photographs; and the inclusion of coloured plates, however desirable as an aid to correct diagnosis, would certainly have placed this useful book beyond the reach of many for whom it was written. The volume closes with a chapter on general observations, emphasis being rightly laid on the importance of general hygienic and other preventive practices which are often of far greater value to the grower than any other and more expensive methods devised for the control of disease.

The book is written by a pathologist of wide academic and practical experience in his field of study, and bears the impress of close acquaintance with all phases of the diseases described. Though intended to assist growers in Ireland to identify the maladies of the tomato crop and how to control them, this book will appeal to all who are interested in diseases of plants in general. S. G. JONES

CHINESE VIEWS ON BIOLOGICAL SUBJECTS

Green Thraldom

Essays of a Chinese Biologist. By Prof. Tang Pei-Sung. Pp. 128. (London: George Allen and Unwin, Ltd., 1949.) 12*s*. 6*d*. net.

DR. J. NEEDHAM has put us once more under obligation to him by introducing to us this delightful volume of essays by Dr. Tang Pei-Sung, one of China's best biologists, less well known in Great Britain, however, than he should be. The essays deal with a wide range of subjects; but they practically all invoke some problem of nutrition and energy supply. Their interest lies not so much in the fact that they are so different from what the average British biologist would have written on the same subjects, but in the conditions in which the underlying work was done; during the War and, as Dr. Needham says, "in a series of mud brick huts in the remote village of Tapuchi. . . . Dr. Tang surrounded himself with an enthusiastic group of young scientific workers. Collecting equipment in the face of colossal difficulties, they attacked many biochemical and biological problems, mostly chosen for their bearing on Chinese nutrition, agriculture and industry."

The first essay, "Green Thraldom", traces man's gradual liberation from dependence on agriculture for food and many raw materials, including silk, so important in Chinese economy, to the present-day position when fibres, plastics, vitamins and many other essential substances are prepared synthetically; and it looks forward to the time when photosynthesis will be so well understood that it can be operated in factories on the large scale far more efficiently than Nature does it. Man will then be "freed from the gruelling labours of the field, and the cruel uncertainties of the elements".

This theme comes up again in the interesting essay on silkworms: "the weavers of China's golden thread". The world's production of silk in 1935 was forty million kilograms; it required two million acres of land for the cultivation of the mulberry trees and 680 million man-days of labour. A single chemical plant, however, employing a few hundred men, could in the same space of twelve months turn out the same quantity of artificial nylon.

The essay on the feeding of China is of special interest because so little information on this subject is available outside that country. The author states that the population of China is 450 millions. He does not say what he means by China; but this is the estimate given by the Chinese Ministry of the Interior for the 1935 population of the old kingdom of China which included Outer China, Manchuria and Mongolia. These are now separated from China and appear to be in the process of absorption by another Power: the residue, China proper, which is all that remains to-day, has a population estimated by the United Nations Food and Agriculture Organisation as 400 millions before the War and 404 millions in 1947–48. Assuming the author refers to Old China, his figure is not too widely different. But there is great discrepancy in the dietaries given by the author and by the Food and Agriculture Organisation: Dr. Tang estimates that the daily calorie intake is 2,920, that 10 per cent of the calories comes from fat and the daily intake of protein is 98 gm.; the corresponding figures by the Food and Agriculture Organisation are 2,226 calories per day in 1931–37 and 2,115 in 1947–48, 17 per cent of calories come from fat, and 70·8 and 65·7 gm. of protein per day in 1931–37 and 1947–48 respectively. Both sets of figures have a look of completeness which those concerned in their preparation would probably disown, and the student of Chinese economy will probably regard them both as another instance of the waywardness of Chinese statistics.

But it would be churlish to lay stress on differences of this kind. Dr. Tang has given us a most interesting set of essays, and we can only hope that China may be able to retain sufficient independence to avoid having to set up an 'iron curtain' that would cut us off from any hope of learning more of what Chinese men of science are thinking to-day.

E. JOHN RUSSELL