

including most of the examples, is devoted to polymorphism, with reference to mimicry and protective coloration mainly in moths and butterflies. The book ends with ecological genetics, the origin of species and a concluding chapter of a general nature on evolution.

These selected topics are well, often very well, treated. The writing generally is direct and clear, and the examples of experiments and observations well chosen. Considered as a whole, however, the book is disappointing. The "important principles", one feels, would have emerged with greater force if, before dealing with selection, the author had clearly defined the nature of the genetic systems within, and upon, which natural selection operates: also, how the variables within the systems—the reproductive mechanisms, breeding behaviour, etc.—are interrelated. It would then have been easier for the reader to grasp more fully the implications of change at various levels within the genetic framework of a population. As it is the book is a valuable record of Natural Selection at work, especially for advanced University students. In surveying modern views on the theory of natural selection, however, it is much less satisfactory.

H. REES.

GENETICS AND THE IMPROVEMENT OF TROPICAL CROPS. By Sir Joseph Hutchinson. Cambridge University Press. 1958. Pp. 1-30. 3s. 6d.

This is the inaugural address of the Draper's Professor of Agriculture in the University of Cambridge. Its main theme centres on the principles underlying the distribution and utilisation of genetic variation in cultivated plants. Vavilov's general conclusion on the reduction in variability away from the centre of origin is challenged, and a distinction based on the breeding system is made between species. It is suggested that the Vavilov effect may be the result of loss of recombination brought about by enforced inbreeding in peripheral regions. In *Gossypium hirsutum* no variation which could be used in a breeding programme was revealed in extensive collections made at the centre of origin, while newer centres of diversity in Africa and Asia have provided valuable material for the improvement of the cotton crop. Great stress is laid on the importance of defining precisely the objectives of a breeding programme and an analysis is made of the outstandingly successful crop improvement projects in parts of Africa. It is a thoughtful and stimulating essay by one who is the undoubted authority on the subject.

WATKIN WILLIAMS.