

notion of the 'Chosen People' has contributed to the evil result.

Development of communications has changed a collection of many largely self-contained groups into a jostling crowd of two thousand millions. Even within an effort to create a cultural unit, such as the effort in the United States, the jostling crowd of culturally diverse peoples lowers the cultural common measure to danger-point. We must have mixture of traditions and of human stocks for vigour; we must, nevertheless, see that our common measure is raised so that there may be understanding, and with it peace among men of good will.

H. J. FLEURE.

VIRUS DISEASES IN PRACTICE

Virus Diseases of Farm and Garden Crops

By Kenneth M. Smith. Pp. 111+16 plates. (Worcester: Littlebury and Co., Ltd., n.d.) 10s. 6d. net.

GROWERS of many crops are becoming more and more aware of the ravages of virus diseases in field, garden, glasshouse and nursery. Acute observation, beginning nearly two centuries ago, led to the localization of seed-potato production in various places where spread of viruses is low because of relative freedom from their insect transmitters. Control of raspberry and strawberry viruses is now being approached along similar lines, with the separation of susceptible and tolerant varieties as a very practical background. Dahlia growers are alarmed at the incidence of virus in their stocks, and are resolved to maintain the vigour of their ornamental clones by the elimination of such maladies. Gardeners are themselves asking for virus-free shallots.

Dr. Kenneth Smith's book therefore descends very opportunely upon a receptive agricultural and horticultural community. It is a volume more practical in every way than any the author has yet attempted. All that can be said about control is said, though there is no approach to the encyclopædic. Dr. Smith has also addressed himself to the advisory officer, with descriptions of the technique of handling viruses and their insect vectors, of maintaining stocks of the latter, and of methods for testing the identity of some common viruses. This part is a welcome and modern addition to virus literature. Twelve line drawings of the taxonomic features of insect vectors should aid recognition, and the text is plentifully interleaved with good half-tone illustrations of various diseases.

Many crops, in addition to having their 'own' viruses, are attacked by diseases originally described upon other plants. Dahlias, for example, have dahlia mosaic, but are also attacked by tomato spotted wilt and cucumber mosaic viruses. Cross-references in such cases are very frequent in the text.

This volume is, perhaps, more stimulating than its size would imply. It makes one think that the time is ripe for publication of a comprehensive photographic tabulation of virus symptoms on all hosts, with the assessment of symptom complexes caused by more than one virus. This will probably come in time, as much work is already devoted to virus taxonomy by Dr. Smith's own school at Cambridge. The text also makes a reader muse upon the relative feebleness of control measures available at present. They give some practical alleviation of the trouble, but there is nothing comparable in value to control

of seed-borne fungus diseases of cereals by organo-mercurial dressings, nor even to spraying the foliage of crops against insect pests. The most promising line of approach to quick eradication of virus in living material is Dr. Smith's suggestion to heat dahlia tubers infected with spotted wilt to 42° C., though even this has yet to be tried.

Such realistic stock-taking is for the research worker, however; the grower will find this volume a good introduction, and the advisory officer or virus technician should have it for constant reference. Dr. Kenneth Smith has maintained the clear, helpful style of his earlier works.

JOHN GRAINGER.

ECTOPARASITIC INSECTS

Faune de France

43: Insectes ectoparasites (Mallophages, Anoploures, Siphonaptères). Par Eugène Ségué. (Fédération française des Sociétés de Sciences naturelles: Office central de faunistique.) Pp. 684. (Paris: Paul Lechevalier et fils, 1944.) 800 francs.

MOST text-books on general parasitological subjects include chapters on ectoparasitic insects of economic importance, but until now no comprehensive work of reference has been compiled covering those orders of the Insecta the members of which are exclusively ectoparasitic on birds and mammals. It is true that standard works exist which describe the great majority of known species of the sucking lice and the fleas, but these are beyond the reach of the general entomologist except through the libraries. The recent volume of the "Faune de France" series on ectoparasitic insects serves admirably as a treatise for the consulting entomologist and fills a need which has long been felt by those whose duties include a more casual identification of parasites as distinct from their systematic treatment.

The book is divided into three main sections. The first, and by far the largest, deals with the Mallophaga (biting lice), the second with the Anoplura (sucking lice) and the third with the Siphonaptera (fleas). Each section is preceded by a brief description of the chief morphological features distinguishing the group and a general account of the development and habits of its members. This is followed by a systematic treatment of those species infesting the birds and mammals of France. Almost every species is illustrated by line drawings, many of which are original, although it is to be regretted that, in some instances, they have evidently been made from poorly prepared or atypical specimens and are not entirely reliable in detail. These, together with a reference list of the hosts and their parasites and dichotomous keys to the families, genera and species, will be found to be an invaluable aid to identification. The extensive bibliography will be appreciated by those who wish to pursue the subject further. The ectoparasitic members of other orders of the Insecta such as the Pupipara (Diptera) are described briefly and illustrated in an introductory note.

The author is to be congratulated on the wide scope of the work and, in particular, on the section on Mallophaga, which brings under one head descriptions of many species which previously could only be identified by reference to original papers. It is unfortunate that this book, which is likely to prove of considerable use, could not have been printed on more durable paper.

J. E. WEBB.