

gates from associations rise to speak, one may well complain of the length of the road to be covered before attaining the Promised Land. Even at the inaugural meeting, when all protocol can not be avoided, the presidential address should not be buried under a mass of others. The way followed at a certain congress, where representatives of foreign countries, upon their names being called, simply came one by one to the podium to shake hands with the president, making thus "acte de présence," seems to me an easy and correct arrangement.

SCIENTIFIC BOOKS

Destructive and Useful Insects; Their Habits and Control. By C. L. METCALF, M.A., D.Sc., and W. P. FLINT, B.S. McGraw-Hill Book Co., Inc., New York (1928). xii+918 pp., 561 text illus.

It is impossible to do justice to this big book in a short review. I marvel at the confidence of the authors in starting such a comprehensive work almost as much as I marvel at their achievement in completing it. It contains in its nine hundred pages enough material for several books; and the student who uses it in his introductory courses will find it a standby in later life in helping to solve his insect problems. It takes the place, in a way, of a small entomological library. Of course, no one man could have done it so well. Dr. Metcalf, a sound research man with fifteen years of teaching experience, and Mr. Flint, with his record of twenty-five years of successful work in agricultural entomology, make a strong combination. And how they must have worked!

The first eight of the twenty-three chapters are concerned with insects as organisms, aside from the general consideration, in Chapters I and II, of these creatures as enemies of man and as of value to man. "External Morphology," "Internal Anatomy and Physiology," "Mouth Parts," "Development and Metamorphosis," "The Place of Insects in the Animal Kingdom" and "Orders of Insects" are the headings of comprehensive chapters. Insect control is given general consideration; a chapter is devoted to apparatus for applying insecticides, and the remaining chapters consider insects in relation to the different crops, the final ones treating of insects attacking shade trees and shrubs, greenhouse insects, household insects and stored product insects, species injurious to domestic animals and insects that attack and annoy man and affect his health.

That seems pretty well to cover the whole field, does it not? Of course, the forester will notice that forest insects are omitted; but the authors evidently had the choice of omitting them or of giving them

scanty consideration. And it seems to me that their decision was wise.

A laudable feature of the book is the introduction of frequent "tables, synopses, and outlines" which are great aids; and under the different crops or cultures the field keys for the identification of the insect pests of each particular crop are very convenient. In fact, with the aid of these field keys, a farmer or fruit-grower will be able to identify any of the more important crop pests that occur in this country.

When we think of the very great number of topics considered in this big book, its balance is remarkable. The especial interests of the reader will undoubtedly cause him to regret that more extended treatment is not given to one or another topic, but when he considers the work as a whole he can not but admire the good judgment of the authors in this matter of balance. It is in this way that I console myself for the very brief consideration of the insect parasites of injurious insects. Perhaps, on account of my especial interest, I may overestimate the value of this element of natural control; but even so it seems that a little more space should have been given to it.

The book seems to be absolutely up to date. The authors are very familiar with the enormous literature, and have made admirable use of this knowledge. They have printed no separate bibliography, but a mere bibliographical list would obviously have filled so many pages as to make its publication impracticable. There are publication references here and there, usually in a few lines of small type after each of the more important topics, and I am not sure that this is not the best way.

The illustrations as a whole are admirable. They have been well selected, and some of them are original. In the crediting of the sources of some of these illustrations mistakes have been made, but that sort of thing has gone so far now in entomological books (as well as in other books) that it seems impossible to correct it; and at all events it means little except to the man who prepared the original illustration.

In preparing a review of a big book one feels that he should write a big review. But a brief one suffices when practically everything that is to be said is of a laudatory character, and this is the case with this review of a remarkably fine book.

It is most appropriate that the authors should have dedicated their work to Professor S. A. Forbes, "Dean of American Economic Entomologists," and to Professor Herbert Osborn, "Master Teacher of Entomologists."

Both authors and publishers are to be congratulated on the "get-up" of the volume.

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