

at 26 Portland Place, in London. The price is six pounds which was about ten bucks as we wrote this.

WE END ON A SAD NOTE, FOR WE'D LIKE TO QUOTE THE SHORT EULOGY OF BUDDY SIMS that *Sheeter* published in December 1977. "Mr. George L. Sims, Jr. (known to most of us as Buddy), died suddenly on Saturday morning, November 19, 1977. For many years he had been Special Assistant for Applied Biology, Atlantic Division, Naval

Facilities Engineering Command, Norfolk. Buddy served as a Medical Service (Entomologist) Officer during the Korean War prior to coming to work with the Navy in 1956. During his 21 years in Norfolk, Buddy worked very closely with the Virginia Mosquito Control Association. Buddy's technical expertise, management and guidance in all phases of mosquito control will be greatly missed. We have also lost a very fine personal friend." To which we can only add a choked, "Amen." We weren't ready to lose Buddy.

BOOK REVIEWS

Virus-Insect Relationships. By Kenneth M. Smith FRS. Longman Group Limited London. 1977. 291 pp.

Dr. Kenneth M. Smith, author of numerous publications in the field of insect virology, in this volume has reorganized and updated his 1967 book, "Insect Virology" published by Academic Press. Our knowledge of insect viruses and virus-insect relationships has grown enormously in the last ten years; yet the author who devoted 256 pages to this subject in 1967, has added only 35 pages to this new book. As a result the book suffers, seriously in some sections, from brevity.

This attractively produced volume, in spite of any weaknesses, should be a welcome addition to the book shelves. It is written in a very readable style, is clearly printed, and is very well illustrated. Unfortunately, many of the numerous electron micrographs have suffered a loss of contrast in the printing process.

The book is divided into 2 parts, the first treating the different types of viruses and virus diseases and the second covering other aspects of virus-insect relationships.

Each chapter in Part I, with the exception of Chapter 7, begins with a general description of virus group, which is followed by descriptions of specific viruses and virus diseases. The specific viruses are grouped according to the insect orders in which they occur. Virus descriptions are based primarily on morphology; the more recent biophysical and biochemical information that is becoming increasingly important in distinguishing the large and rapidly growing number of isolates of insect viruses is largely lacking. The reader is forewarned of this deficiency since the author states in his

preface that "detailed accounts of the chemical nature of the viruses and their molecular biology have been omitted."

Sections of the book that deal with the mosquito viruses and virus transmission by mosquitoes are scattered throughout the book, but there are some errors and omissions. For example, the author's placement of the tetragonal inclusion disease of *Culex tarsalis* among the Baculovirus makes it quite evident that the author did not know of 1969 and 1974 papers that elucidate the nature of the inclusion bodies. Also, in the section dealing with cytoplasmic polyhedroses of mosquitoes, he again refers to a nuclear polyhedrosis of *Cx. tarsalis* and also to one of *Aedes triseriatus*, but no naturally occurring nuclear polyhedroses have been recorded from either of these hosts. The *Cx. tarsalis* virus has been found to be a non-occluded isometric virus that forms crystalline arrays, and *Ae. triseriatus* has served only as an experimental host for the nuclear polyhedrosis virus that was originally found in *Ae. sollicitans*. In fact, references to the *Ae. sollicitans* virus as an *Ae. triseriatus* nuclear polyhedrosis virus are probably ill advised because it is quite possible that this mosquito has its own nuclear polyhedrosis. Moreover, the original description of a cytoplasmic polyhedrosis in mosquitoes was reported in *Mosquito News* in 1969 from *Cx. salinarius* rather than from *Ae. taeniorhynchus* in 1973.

Chapter 18, which deals with insects and other arthropods as vectors of animal viruses, and Chapter 19, which deals with the use of viruses in biological control of insect pests, should be of considerable interest to many readers of *Mosquito News*. Unfortunately, both are too brief to be of much value to specialists in these areas.

The bibliography lists 747 titles, the most recent of which were published in 1974. Although incomplete it will serve as a valuable introduction to the literature of virus-insect relationships.

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The Use of Aircraft in Agriculture, by Norman B. Akesson and Wesley E. Yates. FAO Agriculture Series No. 2, FAO Agricultural Development Paper No. 94. Published by the Food and Agriculture Organization of the United Nations, Rome, Italy (available in the United States from Unipub, New York, N. Y.) 1974 (2nd printing with corrections 1976). 217 pp., 81 illustrations, 25 appendix tables. \$6.50.

The book opens with a rather detailed discussion of the origin, development, and growth of aerial application and ends with a rather brief discussion of a few specific treatment practices. In between, major emphasis, and rightly so, has been placed on application equipment (including aircraft types), particle behavior, operational analysis and flight planning; although government regulation, meteorological factors, collection and analysis of liquid and solid particles, and flight safety and training are discussed in some detail. Although written primarily from an agricultural point of view, some consideration is also given to the application techniques and droplet size used in adult vector control.

The authors' expertise in the fields of aircraft dispersal equipment and the physics and techniques of particle behavior as they relate to swath and drift are reflected in the detailed discussion of these subjects. As a result, considerable space is devoted to the choice of dispersal equipment with a detailed discussion of the various types of pumps, power sources, and atomizers for liquid dispersal and various types of spreaders for dry material dispersal as well as

an in depth discussion of the physics and control of particle and droplet behavior and its roll in effective insect control. The book, therefore, is obviously written for the research or commercial applicator who desires to increase his knowledge or expertise in the field since it lacks the "cook book" methods necessary for the novice.

Although written in the United States, the authors endeavor to project an international usefulness. In most cases, a dual system of metric and English (U.S.A.) equivalents are used throughout the text and discussions on available commercial aircraft, operational analyses and safety deal with international statistics.

There are many excellent illustrations, diagrams and graphs that add to the usefulness of the book, although in many instances their location is far removed from the applicable text and some of those included are of questionable descriptive value.

The 34 pages of appendix tables contain much useful information, including tables of aircraft specifications and operational cost analyses, spray nozzle flow rates and droplet data, physical properties of diluents, speed-swath-acre calculations, insecticide toxicity and conversion tables for metric to U.S. weights and measures.

The book contains no index although there is a detailed table of contents and lists of illustrations and appendix tables. Ample bibliographical references are also provided for those who desire further explanation of a particular subject.

Although not for the layman, this publication offers a comprehensive review of a very technical subject and should be a valuable addition to the libraries of agricultural engineers, aerial applicators, research entomologists and agronomists alike.

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