

At Quesnel one afternoon in 1948 I dusted a considerable area of tall, sparse-growing alfalfa with 3% DDT dust to watch its effect against a heavy infestation of *Lygus oblineatus* Say and *L. elisus* Van D. and some leafhoppers; by next morning not one of these insects was alive on the plot and again it was nearly two weeks before the area began to be repopulated. The effect of the dust on insects other than Hemiptera-Homoptera was not observed.

At Vancouver one evening in early May 1957 I sprayed some lilac bushes and a tall privet hedge with a mixture of DDT and benzene hexachloride against the leaf miner *Gracilaria syringella* Fab. Next morning *Carabus nemoralis* Mul. beetles were lying paralyzed in some numbers up to 9 ft. from the hedge and others continued to die even 13 days after the spraying. Carabidae or ground beetles are very susceptible to modern residual insecticides. Every autumn numbers of *Pemphus angusticollis* (Mann.), *Carabus granulatus* L., and *C. nemoralis* Mul. find their way into the basement of our home and run over the floor which has had residual insecticides splashed on it and the beetles very soon become paralyzed and die.

These records show the possibly unavoidable slaughter of innocents, but the situation will become really serious in many large gardens in Vancouver which have fallen into the hands of men who glibly talk the

owners into yearly contracts for periodical blanket sprays for controlling ALL insects. These operators use very powerful sprayers mounted on trucks with two large tanks containing two spray mixtures. The spray gun can throw a towering jet that will reach to the top of a 30-ft. tree, or, by a twist of the wrist, a very fine mist. In both cases the jet is almost of gale force, bending the vegetation right over.

I asked an operator what he was using and what insects he was supposed to kill: he had no idea whatsoever but stated that the company for which he worked had many contracts and he was working seven hours overtime per day to cover the ground. So he was drenching everything from tall Colorado blue spruce, Douglas firs and maples to border plants whether they needed it or not. I examined parts of one garden ahead of the spray and found no pests anywhere.

Granted that the vacua formed by such wholesale sprays will gradually fill in from surrounding properties, but the whole principle is wrong from a biological standpoint since it has been shown by many entomologists that modern residual insecticides may be more potent against parasites, especially Hymenoptera, than against the pests themselves.—G. J. Spencer, Dept. of Zoology, University of British Columbia.

## BOOK REVIEW

Annual Review of Entomology, Vol. 2. (E. A. Steinhaus and R. F. Smith, editors). 1957. Annual Reviews, Inc., Palo Alto, Calif., pp. vii - 407.

The first volume in this series (1956) was widely and favorably reviewed. Now appears Volume 2, thinner by 59 pages but maintaining the high standard, and with it the prospectus for Volume 3. The bindings are good and the format attractive considering the limited budget.

Minor useful items are the running page titles of authors and subjects, the index of authors quoted and the adequate subject index. Less readily usable are the literature citations without titles, more than half of them arranged non-alphabetically. The brevity is necessitated by questions of space and economics, but the citations might be rearranged with little trouble.

The chapters originate as follows: from the U.S.A. 7, the U.K. 7, Canada 3, Australia 2, and Israel 1. The topics and authors follow: Digestion in insects, D. F. Waterhouse; Some aspects of intermediary metabolism of carbohydrates in insects, M. Rockstein; The physiology of insect cuticle, V. B. Wigglesworth; The comparative morphology

of the insect head, E. M. DuPorte; Cytogenetics and systematic entomology, M. J. D. White; The taxonomic significance of the characters of immature insects, F. I. van Emden; Caste determinations in social insects, M. V. Brian; Dynamics of insect populations, M. E. Solomon; The synoptic approach to studies of insects and climate, W. G. Welington; Insect migration, C. B. Williams; Recent advances in veterinary entomology, A. W. Lindquist and E. F. Knipling; Transmission of disease agents by Phlebotomine sand flies, S. Alder and O. Theodor; Genetics of insect resistance to chemicals, J. F. Crow; The mode of action of insecticides exclusive of organic phosphorus compounds, P. A. Dabm; Chemistry and mode of action of organophosphorus insecticides, E. Y. Spencer and R. D. O'Brien; The behaviour of systemic insecticides applied to plants, S. H. Bennett; Aerial application of insecticides, F. E. Weick and G. A. Roith; Cotton insects and their control in the United States, J. C. Gaines; Insecticidal control of the spread of plant viruses, L. Broadbent; Pollination of alfalfa and red clover, G. E. Bobart. It is a healthy sign that among 72 authors in the 3 volumes is a good representation of young men in full research production, not all of whom are entomologists.

As source books the value of the series can hardly be questioned, either now when the backlog of papers is being reviewed, or later when the reviews are more immediately topical. The question is rather the

personal one of whether they are worth 59 cents per month to a hard-pressed professional entomologist. The answer must surely be affirmative.

*H. R. MacCarthy.*

### **The Collections of Lepidoptera in the Department of Zoology, University of British Columbia**

In 1929 the University purchased what was stipulated and understood to be the entire collection of macro- and micro-Lepidoptera from the estate of E. H. Blackmore. Since that time, however, the United States National Museum reported the gift from Dr. Gates Clarke of "the Blackmore collection of 2,000 specimens"; the Provincial Museum at Victoria reported the acquisition of "The Blackmore Collection"; and the late J. R. J. Llewellyn-Jones told me that he had seen notices of two sales of specimens of "the Blackmore collection of Lepidoptera". How many species and how many specimens the collection originally contained is impossible to say. The University received approximately 1,300 species of 9,900 specimens, but many of the species, especially in the Noctuidae, are represented by single specimens and in some cases by name labels only. There is one cabinet of duplicates and "material for further study".

Within the last three years we have received some valuable additions. When he sold his estate at Duncan, the late J. R. J. Llewellyn-Jones deposited his large cabinet at the University. It contained nearly 5,000 beautifully spread specimens on short English pins, of bright unfaded macros, ending with the Geometridae. This collection was willed to the University when Mr. Jones died. Through E. Ronald Buckell we received the collection made by his uncle, Dr. W. R. Buckell (see Proceedings, Vol. 43). These named, beautifully spread, perfect

specimens, are housed in a tall walnut cabinet of 20 drawers. There are 541 species of macros and 232 species of micros, totalling 2,813 specimens, mostly from the Salmon Arm district.

By the will of James Wynne of Enderby, the University received his collection of macro-Lepidoptera the existence of which we had not known. For years Mr. Wynne had sent me valuable ectoparasites from birds and mammals and although we corresponded at intervals, he never mentioned being interested in Lepidoptera. His collection of 2,800 perfectly spread specimens is housed in 30 store boxes.

Both the Buckell and the Jones collections are separate units since they are mounted on short pins and cannot well be incorporated with others on long pins. The Wynne collection is on long pins and is being merged with the main Blackmore collection, which will henceforth be known as the Blackmore-Wynne collection. The Wynne collection is especially valuable since it contains some series of which we had few or no specimens, and some eastern North American forms.

Thus the University collection contains some 19,600 spread and named butterflies and moths of British Columbia and a few drawers of brilliant Tropical forms for demonstration, acquired a few at a time from various donors.—*G. J. Spencer, of Zoology, University of British Columbia.*