

The hemlock looper appears to be the more susceptible of the two species of DDT. This difference may be associated with behaviour. When the hemlock looper larvae were set out for the tests in the evening they were extremely active, dropping from the foliage and trying to escape over the tanglefoot. This activity continued after spraying, thus exposing the larvae to more DDT as they moved

over the foliage and across the trays. The green-striped forest looper larvae were more docile, tending to settle down on the foliage and remain stationary. Some larvae moved under the foliage and remained there, thus not being directly exposed to the insecticide.

As no further defoliation was observed after July 25, and no top-kill occurred, the control operation was considered a success.

#### References

- Hopping, G. R. 1934. An account of the western hemlock looper, *Ellopiia somnaria* Hulst, on conifers in British Columbia. *Sci. Agr.* 15: 12-19.  
Whitford, H. N., and R. D. Craig. Forests of British Columbia. Commission of Conservation, Ottawa.

### LIOCORIS SPP. COLLECTED ON ALFALFA IN CENTRAL AND NORTHERN BRITISH COLUMBIA

J. C. ARRAND<sup>1</sup>

During the summers of 1957-58 collections were made in alfalfa fields from Grand Forks through the Interior to as far north as Fort St. John, in the Peace River district. Identifications were made according to Kelton (1955):

Fort St. John, Taylor, Two Rivers—*Liocoris lineolaris*, *L. rufidorsus*, *L. borealis*, *L. unctuosus*, *L. elisus*, *L. nigrosignatus*, *L. solidaginis*.

Vanderhoof—*L. unctuosus*, *L. borealis*, *L. columbiensis*.

Smithers—*L. unctuosus*.

Vernon, Otter Lake, The Coldstream Valley—*L. lineolaris*, *L. rufidorsus*, *L. borealis*, *L. unctuosus*, *L. elisus*, *L. nigrosignatus*.

Grand Forks—*L. lineolaris*, *L. rufidorsus*, *L. borealis*, *L. unctuosus*, *L. nigrosignatus*.

*Liocoris unctuosus*, *L. borealis*, and *L. lineolaris* appear to be the most important species economically. One or more of these species generally made up the bulk of the "Lygus bug" population, although the relative abundance varied considerably.

It is interesting to note that in Kelton's (1955) distribution maps of *Liocoris* spp. in the prairies provinces, *L. nigrosignatus* is limited to the southern part of Alberta. Kelton does not record *L. elisus* from the northern areas of the prairies provinces, although he had examined specimens from the Yukon. *L. nigrosignatus* and *L. elisus* were commonly collected on alfalfa in the Peace River district.

<sup>1</sup>Kelton, L. A., 1955. Species of *Lygus*, *Liocoris*, and their allies in the Prairie Provinces of Canada (Hemiptera: Miridae). *Canadian Ent.* 87: 531-556.

## In Memoriam

WILLIAM DOWNES - 1874-1959

William Downes was born in Combe Raleigh, South Devon, England on October 13, 1874. His father, the Reverend W. Downes was an ardent botanist and an authority on the geology

of the West of England. From him, and two elder brothers, Mr. Downes learned the elements of botany, geology, and entomology. All three men were keen entomologists with good collections.

He started school at Newton College in South Devon but on the death of his father, the family moved to Bristol where William went to Bristol Grammar School. Here there was ample opportunity for the study of natural science. Since there were no organized athletics nor even a proper playing field, he spent his free afternoons in the country searching for specimens. Besides entomology he studied the fresh water molluscs and acquired a considerable collection of them.

On leaving school Mr. Downes accepted an offer from his eldest brother to join him in New Zealand where he was established in sheep farming. After a year on his brother's place he worked for the Kiaora Sheep Farming Co. for two years, and subsequently purchased a property of his own. This was all bush land that had to be cleared and sown to grass, work that he let by contract. After six more years, he had cleared two-thirds of the land and established a flock of 1200 sheep. In 1901 he sold this farm and returned to England for nine months. Then he decided to visit Canada and spent one winter in Alberta. After having experienced the balmy New Zealand climate the Alberta winter gave him a poor opinion of the prairies and he left for British Columbia.

In May 1902 Mr. Downes purchased the J. Johns ranch near Armstrong, B.C., and for 14 years engaged in mixed farming. Because of ill-health, in the winter of 1915, he rented the ranch and moved to the coast. By the beginning of 1917 his health was greatly improved and he was employed to study the biology of the pear thrips by Dr. A. E. Cameron and Mr. R. C. Treherne, entomologists of the Canada Department of Agriculture, after they left the field station at Royal Oak near Victoria. The work was accomplished to the satisfaction

of Dr. G. Hewitt, Dominion Entomologist and Mr. Downes was placed in charge of a new laboratory at Victoria in 1919 which position he held until his retirement in 1946. During this period he studied many insect pests of farm, garden, greenhouse, orchard, and dwelling. Some of his outstanding contributions were in the developing of control measures for root weevils, narcissus bulb fly, European earwig, cherry fruit-worm, pea leaf weevil, and apple sawfly.

His entomological zeal did not diminish after he retired for he continued to work on his insect collection, attend entomology meetings and publish papers. He received world recognition as a specialist in Hemiptera and had one of the finest collections of this order in North America. He donated the collection to the University of British Columbia two years before he died. In 1956 he enjoyed attending the Tenth International Congress of Entomology at Montreal where he saw many friends and co-workers in his field.

He was the author of many scientific papers and articles in systematic and applied entomology, 25 of them in our Proceedings. He was a rare, valuable combination of systematist and very practical economic entomologist. During his last 25 years he altered little in appearance or in keen mental alertness. His eyesight was failing somewhat but he still passed the annual driving test, and drove his car. He took good care of his health, believed in keeping busy at an unhurried pace and found time for his favorite diversions—snoozing after lunch, playing the stock market, salmon fishing, and gardening.

He was a member of the Entomological Societies of America, and Canada, and of the Professional Institute of the Public Service of Canada. His keen interest in our Society was reflected by his election to every office, and service on the executive

continuously from 1918 until his retirement. On retirement he was elected Honorary Life Member of the Society.

He is survived by his wife, the former Miriam Palmer at Victoria, and one daughter, Dorothy Halley at Texada Island, B.C.

—HARRY ANDISON.

## INSTRUCTIONS TO CONTRIBUTORS

### EDITORIAL COMMITTEE

Every journal should occasionally review its editorial policy and directions to contributors. The last time this was done for the *Proceedings* was about 1946, under the editorship of Hugh B. Leech. A clear understanding by authors of the requirements and a measure of uniformity help to shorten the time lag between the annual meeting and the publication date. Uniformity of presentation need not make for dullness, but it does make for efficiency, in that readers and abstractors can quickly find salient points. The presentation need not be without humor or individuality of expression, but it must be as simple and brief as possible and above all, clear.

Papers published in the *Proceedings* have not necessarily been delivered at the annual meeting, and papers delivered are not always published in the *Proceedings*. It is preferable, but not mandatory, that authors be members of the Society and contributions from amateurs are as welcome as those from professionals. Papers on almost any aspect of entomology are acceptable at the discretion of the Editorial Board, so long as they have some bearing on insects or pests of this Province.

Authors should understand that manuscripts will be scrutinized by the Editorial Board, and in certain cases may be submitted to outside reviewers at the Board's discretion; in these cases the author is given an opportunity to revise his paper in accordance with the reviewers' comments.

The maximum space allowed to one author per issue is 10 printed pages, i.e. about 25 pages of MS typed double spaced on 8½x11-inch paper. The cost of printing pages in excess of 10 must be borne by the author or his sponsoring institution, at a current rate of \$10 per page. The price is subject to change.

Adherence to the following suggestions for preparing manuscripts will help to keep down costs by simplifying typesetting, and will minimize editorial revision.

Typing.—Use a fresh ribbon on one side of 8½x11-inch white bond. Submit the original and one clear carbon; retain a copy against possible loss. Double - space everything including quotations. Keep all margins at least 1-inch wide.

Title.—The shorter and more specific the better. Type in capitals. Identify organisms properly with author, taxonomic Order, and Family. Use a footnote to give a contribution number.

Author(s).—Give the initials and names only. Omit *By*. Centre and type in lower case. Use a footnote to give the location where the work was done or the sponsoring institution. The author's rank is not necessary, but if some details are desirable give these in a footnote.

Abstract or Summary.—Place at the end of the paper. Do not combine discussion and summary, and avoid numbered facts. The author is at an advantage if his summary can be used unchanged by abstracting organizations.