

The best time to eradicate the pest is when the trees are dormant and the leaves have fallen. The winter strength of the lime and sulphur spray, to which has been added a quantity of caustic soda, will thoroughly dissolve the scales, and they may also be kept in check by washing them off with a strong head of water from a hose.

DISCUSSION.

Mr. Taylor: I should not wonder if we have a similar condition in the Okanagan. We had it very bad last year, and it did considerable damage this year. It is very common on all the wild trees, and apparently causes fruit and trees to turn black.

Mr. Wilson: The late Dr. Fletcher said we had one species of our own on the Coast.

Mr. Treherne: That was *P. occidentalis*, but I believe it is now conceded that this form was only a variety of *P. innumerabilis*. The former name is dropped.

Mr. Wilson: Yes; speaking from memory, I believe I am correct in saying that this scale was first recorded for this Province at Chilliwack about 1899. Last season I took it at Anderson Lake, in the Lillooet country, where it did a good deal of damage.

With your permission, Mr. Chairman, I might mention that while in the Lillooet country last year I found the spruce-bud worm and the pine white both present and doing damage. The spruce-bud worm outbreak occurred both at Anderson Lake and between Lillooet and Bellamy Lake. I do not remember ever having seen these two insects working together. The spruce-bud worm has not been common on spruce for many years. Two years ago it was numerous.

Mr. Sherman: With regard to the pine white, it was very numerous this past summer on Savary Island, eighty miles up the Coast.

Mr. Blackmore: In past years it has been very common in the vicinity of Goldstream, but my total captures during the past five years in this locality has been about five specimens.

Mr. Downes: At Armstrong I have taken the pine white on two occasions; the first, a male, ten years ago; and last year a female.

Mr. E. M. Anderson: Around Sooke, where it used to be very common some years ago, to-day you don't see one. Last summer, as a result of several collectors among the teachers taking the elementary training course, I received four records of the pine white right in this city (Victoria). These were taken in the vicinity of Clover Point and the cemetery.

Mr. Treherne: I took numerous specimens at Agassiz during the past year. I had not noticed it during the three years preceding.

THE PEA-WEEVIL IN BRITISH COLUMBIA.

BY R. C. TREHERNE, FIELD OFFICER, ENTOMOLOGICAL BRANCH, DOMINION DEPARTMENT OF AGRICULTURE.

In April, 1915, Mr. H. S. Brodie, Assistant to the Entomological Branch Laboratory, Agassiz, B.C., drew my attention to some peas he had collected from a consignment of seed-peas purchased by a local farmer of Agassiz (Mr. Sweatman) from a Vancouver seed merchant. These peas were infested by the pea-weevil (*Bruchus pisorum* L.). There were no live adults in the peas Mr. Brodie collected, and later examination of Mr. Sweatman's seeds did not show any live beetles; however, the fact remains that great care must be exercised by seedsmen, farmers, and quarantine officials, especially with regard to small consignments which may evade inspection or fumigation, for fear of introducing this pest.

On inquiry from the seed merchant in Vancouver I found that a considerable amount of peas had been sold recently, and that for the most part the peas had been imported from Ontario.

At the present moment there are no pea-weevils recorded for British Columbia, a fact which is indeed fortunate, because this small beetle has frequently made the growing of peas an impossibility in certain parts of Ontario. There is no doubt that this beetle will thrive in British Columbia if it is introduced, and it can only be introduced through such a medium as mentioned above; that is, the importation of seed from an infested area.

Inquiry in Ontario has elicited the information that peas are not subject by law to fumigation before sale or distribution, but seedsmen, to protect their own business, usually fumigate on their own responsibility. Further, I am informed, the numbers of the pea-weevil in Ontario are gradually increasing in those districts where peas are being grown. Hence, those Provinces, and in particular British Columbia, where the pest does not occur at present, must guard against the introduction of this beetle, which is unquestionably one of the most serious to the pea-growing industry of Ontario.

The adult weevil is about $\frac{1}{2}$ inch long. In general its colour is black, with irregular markings of black and white, over which may be seen a slight brown pubescence. Farmers in British Columbia will recognize it from these characters and from the fact that it may be found as a beetle inside the peas. Its presence is indicated by circular round holes in the pea; consequently when these signs are seen there should be an immediate report made to the Government.

ENTOMOLOGY IN THE PUBLIC SCHOOL.

BY J. A. HAMILTON, PRINCIPAL, JOHN NORQUAY PUBLIC SCHOOL, SOUTH VANCOUVER.

By way of introducing the topic upon which I desire to devote a few minutes of your precious time, and which I shall treat from a standpoint, theoretical as well as practical, permit me to quote William W. Campbell on the subject of agriculture in general. He states: "The nation of the future which will rule the world will be that one which lays most stress on her rural population and her rural wealth. She will be the one in which the great mass of her people till the land. My hope for my Canada is that she will turn all her energies in the direction of the soil, and that she will become a country of orchards and vineyards and wheat-fields and meadows, and a great pasture for the herds of the earth."

Also, the Royal Commission on Technical Education and Industrial Training has this to say: "In all progressive countries education is being adjusted to meet the needs of the children . . . to interest them in rural life, and to qualify them to follow it with advantage."

And let me add a note from the Report of the Royal Commission on Agriculture: "We would suggest the teaching of the fundamental principles of agriculture, with the art of giving . . . some knowledge of botany, soils, and kindred subjects."

The above excerpts will tend to make manifest the standing of authorities who have the real welfare of their country at heart upon the position and status of the subject of agriculture in the school curriculum; and perhaps no part of it has a more important bearing upon its success or failure, its improvement or its retardation, than the study of entomology in its various phases of interest.

A metropolis to be ideal must, besides constant consideration of the æsthetic and the means and methods of attaining a maximum in that respect, note very carefully that all its putrefaction and festering sewerage is deposited at no little distance from its vicinity; all that would mar or destroy must be slowly, carefully, and permanently, if at all possible, removed; so, also, the most profound and intricate study must be made of all the causes responsible for the attainment of the highest and noblest results in agriculture. Perhaps in no other branch is there such a field for research along these lines than in the subject of entomology; besides affording us means to accomplish with satisfaction some of the finest results in nature's processes in agriculture, it gives us a means of removing or at least checking to a degree much which tends to make agriculture a burden and a care, which many engaged in its pursuit would rather shirk than carry.