

Mr. L. E. Taylor: I found one on a bird on one occasion. Mr. Cockle in his paper mentioned about birds not seeming to like ticks, but I know of a team of oxen in South Africa which, when they got home at night, covered with ticks, the chickens would make their evening meal of the ticks on them. It was really an extraordinary sight to see the birds jumping up at the bellies of the oxen.

In South Africa arsenical dips for sheep are considered good things, despite the poison. I have seen the hair removed completely by dipping too many times. Up to a certain point dipping is fine. Donkeys are especially afflicted with ticks. One cure for ticks in South Africa is to apply a hot coal to the body. This causes the tick to loosen its hold. On other occasions a nearly full-gorged tick, if left on the body, will drop off naturally, with little evil results.

Dr. Hadwen: Deer in this country are often attacked by what are called "ticks," but they are not true ticks. At certain times they fly, and when they light on an animal they throw off their wings and live as body-parasites.

Mr. Wilson: When I was in India I got what was called a "black man's louse" on me, by sleeping too close to the natives.

Dr. Hadwen: That, of course, is due to the pigmentation of the skin from a negro. The species of the louse was the same as the "white man's louse."

Mr. Treherne: Mr. Cockle in submitting his paper attached a letter in which he mentions some interesting details. He mentions taking a very minute tick from a shrew, which is being sent to Washington, D.C., for determination. He has also added to his records of snow-insects by the capture of another species of "snow-flea," whose name he does not mention. The first specimens were taken on the snow when the thermometer registered 25° Fahr., actively walking. This is the lowest temperature that he has ever seen any insect-life active and alive. He has also discovered another small colony of golden snow-fleas in a locality different to any one known up to the present. It is to be hoped that Mr. Cockle will give us further information on this interesting form of insect-life on another occasion.

Mr. Blackmore (Vice-President): I will now ask Mr. Tom Wilson to give us his paper on the "Cottony Maple-scale."

THE COTTONY MAPLE-SCALE (*PULVINARIA INNUMERABILIS*).

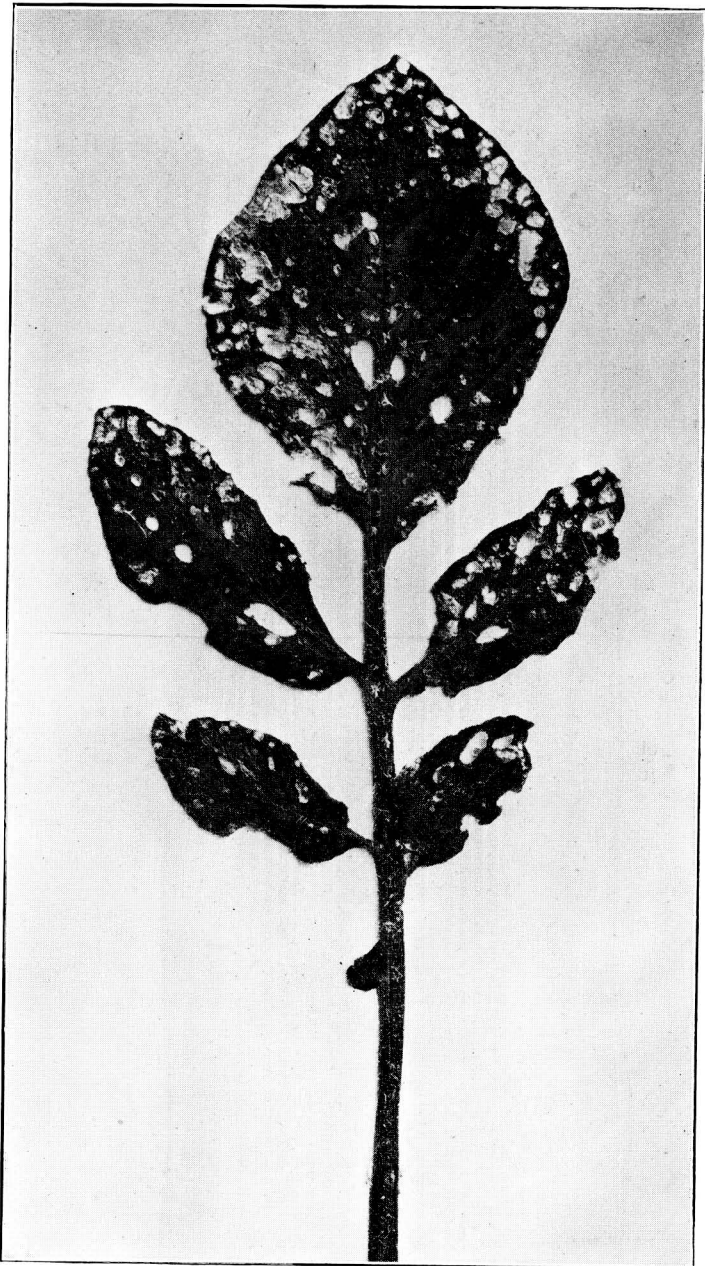
By TOM WILSON, F.R.H.S.

The above-named insect has increased both in numbers and distribution during the past season to an almost alarming extent. It has been noticed in the City of Vancouver on a great variety of food-plants, such as thorns, poplars, grape-vines, willows, and gooseberries. At Agassiz, on maples and other plants. At Lytton, on *Acer glabra* and *Acer negundo*. Near Nanaimo, the willows out in the woods were attacked, as were also the maples, and the writer has had letters from many gooseberry-growers in various parts of the Province, sending in specimens of the affected twigs bearing the characteristic white cottony masses. We have not noticed them so numerous in the Province since 1899, when the thorn hedges and also currant-bushes around Chilliwack were all heavily infested. They almost disappeared the following year.

This insect is usually very inconspicuous in the early part of the year, but comes into notice after the females have attained their full growth in May or June, and have excreted a cotton-like substance, which protrudes from under the scale, covering the insect.

The entire under-surface of limbs is frequently covered by these insects, with their cottony filices full of minute eggs and young. The species is very prolific, and the late I. S. Putman, who published an exhaustive report on the insect, says that a female will lay from 500 and more frequently 2,000 eggs in the season. When the young leave the mother they establish themselves along the veins and usually on the under side of the leaves, sometimes on the upper side. It has been noticed that the young insects grow more rapidly on the under side than on the upper. The

first moult takes place about a month after the young leave their mother, and is followed by the secretion of a homogeneous layer of wax. The insects are yellowish for a period, the females showing deep-red marking about the time the delicate two-winged males make their appearance. They later change to a brownish colour and migrate to the sides of the twigs before the fall of the leaf.



Work of the potato flea-beetle on potato-leaves. This form of injury is common in the Province. To control, apply Bordeaux mixture, accompanied by arsenate of lead, in the spring. (Photo by R. C. Treherne.)

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.