

years. It will be very interesting to see when and from where the next infestation comes, but in the meantime I will not dare to set my brains to work to offer suggestions as to the controlling influences in the universe, to predict when the next outbreak occurs.

So far as Vancouver Island is concerned, my notes extend back only as far as 1908, in which year the caterpillars were very numerous and destructive in the neighbourhood of Victoria and up the line of the Esquimalt and Nanaimo Railway to all points where there was a preponderance of crab-apple trees.

In 1909 it was again very prevalent about the same points and through as far as Alberni.

In 1910 there was a distinct lessening of the attack at all the above points on the Island. I have notes to show that a great deal of parasitism took place this summer, which must have been very effective, for in 1911 they had practically disappeared, and thus far have not appeared again.

Here again, as on the Mainland, it is gratifying to note the scarcity of egg-masses in most of the districts which have been subject to the heaviest attacks in the past, both in orchard and forest.

PRELIMINARY NOTE ON THE WORK OF *ERIOPHYES* SP. UPON APPLES, APRICOTS, AND PLUMS.

BY W. H. BRITAIN, B.S.A., PROVINCIAL ENTOMOLOGIST.

The first specimen of the work of this mite to come under my notice on some young apples was sent in by Mr. Chas. Holt, of Balfour, B.C., on July 3rd, 1912. Since that time I have had samples sent in from all parts of the Kootenay and Okanagan Districts. The correspondent nearly invariably stated that the trouble attacked the same trees year after year and did not seem to spread rapidly through the orchard. Nearly always it was confined to a few varieties—Wealthy, Duchess, and Yellow Transparent.

Affected fruit has a peculiar spotted or blotched appearance. The injury varies from slight elevations or blisters upon the skin, of about 1 m.m. diameter, to large, slightly raised blotches, which may involve one-quarter to three-quarters of the surface of the fruit, the cells below the surface being also affected to some extent. The raised patches vary considerably in colour, some appearing dark green or water-soaked; others dark red or reddish-brown; and others, again, a dark yellowish-brown. The smaller blisters are in most cases red or reddish. In some cases the blotches are not raised at all.

Where the injury is very severe the fruit may be dwarfed or stunted. The death of the cells and underlying tissues sometimes results in the formation of brown sunken spots or even cracks upon the fruit. The fruit may reach its normal size, but more often it drops prematurely.

Where the mites are active a clear, slightly yellowish fluid will sometimes be detected oozing through the skin. Later the fluid may become cloudy, or whitish in colour. On examining this exudate and the tissue beneath, the adults and eggs of the mites were found in abundance. The exudate was first noticed on July 10th; and hundreds of samples of such fruit were examined at intervals throughout the season, the mites being present in each instance.

On August 15th a number of apricots were sent in from Naramata, covered with reddish and brownish-yellow unraised blotches. Examination revealed the presence of the mites and their eggs. Similar specimens obtained from different parts of the Okanagan, obtained at the packing-house of the Vernon Fruit Union, showed the apricots to be affected by the mites.

On August 19th Mr. Wm. Middleton, Jr., sent in a box of plums from Penticton. These plums were covered with raised russet spots and beads of a clear fluid. From these specimens were also obtained mites and their eggs.

An attempt was made to transfer the mites from diseased to healthy fruit. Though negative results were obtained in most cases, the typical mite-blisters were produced in a few instances and the mites again recovered from the inoculated fruit. From this it would seem that these mites are probably responsible for the foregoing symptoms on apples, apricots, and plums.

From inquiries which we have received, and from notes taken regarding the distribution and destructiveness of the "apple-blotch mite," there seems to be no doubt that this pest is one to be reckoned with by fruit-growers in all parts of the Province.

A number of correspondents claim to have exhausted every means of control without effect. A careful study should undoubtedly be made of the life-history of the mite, and experiments conducted with a view of obtaining some satisfactory method of control.

ANTS AS FRUIT-TREE PESTS.

BY W. H. BRITAIN, B.S.A., PROVINCIAL ENTOMOLOGIST.

I first noticed the work of these ants, which were determined by Dr. Wheeler as *Formica rufa*, Linn., subs. *obscuripes*, upon peach-blossoms at Penticton on May 3rd, 1912. The ants were boring into the nectaries of the blossoms, destroying the pistil and feeding upon the nectar. In some cases small round holes were eaten in the petals, and in a few instances the young tender foliage was injured in a similar manner.

In an orchard at Summerland on May 10th, 1913, I noticed a Morello cherry-tree in which 75 per cent. of the blossoms were destroyed by these ants, which swarmed over the tree and ate out the pistil of the flower to get at the nectar.

At Kelowna on May 12th, 1912, Mr. Lionel Taylor, of the Bankhead Orchards, called my attention to apple-blossoms injured in the same manner as above.

In no case where I have seen this injury has there been any aphides present on the trees. It is conceivable that herein lies the explanation for this strange behaviour of the ants. In a German paper (Vosseler J. Verhinderung des Fruchtausatzes bei *Cobæa* durch Ameisen, Zeitschr. Wiss. Insectenbiol. 11, 1906, pp. 204-206) mention is made of an ant boring into the blossoms of *Cobæa scandens* to get at the nectar.

Though this species is an abundant one everywhere in the North-west, little seems to be known of its habits and life-history. I have only one note on the habits of the species, taken at Vernon on June 15th, 1913. A large number of the ants were swarming around the base of the apple-tree, busily engaged in destroying and carrying off the cutworms which were abundant in the soil of the orchard. Though the insect is a very small one, it seemed capable of handling a cutworm considerably larger than itself.

PRESIDENT'S ADDRESS.

(G. O. DAY, F.E.S.)

Gentlemen.—When I was casting about in my mind for a subject for an address this evening, it appeared to me that a review of the study of entomology in the Province would be suitable and useful and perhaps acceptable to our members, especially to those who have joined our Society in recent years. On mentioning the matter to our Secretary, Mr. Treherne, I found that he had already written a paper covering much the same ground that I had intended to deal with, and supplementing the information contained in Mr. Tom Wilson's address in 1911.

I urged Mr. Treherne to read the paper himself, and I would content myself with a few general remarks on other matters. However, with great generosity he placed the results of his labours at my disposal. So you must please understand that the following is a joint production. I feel extremely reluctant to appropriate another man's work for my address to-day, but as Mr. Treherne was down on the programme to read another paper, and also because I am confident that the notes he has gathered