

The Committee are also of opinion that the Customs officers or the Sheep Inspectors in the various ports and parts of the colony might be made available for carrying out the provisions of the Act, and for giving effect to the suggestions above made, without much additional expense to the colony.

The Committee find that Mr. Maskell, Registrar of the New Zealand University, has devoted a great deal of time and trouble to collecting information about the various insect pests which do so much damage in the colony, and that he would be willing to undertake the compilation of a full report, if the Government would provide the necessary illustrations and pay the expense of printing and publishing. They consider that such a report, in a concise form, and sold at a low price to secure its wide distribution, would be of great value, and they recommend it to the consideration of the Government accordingly.

28th August, 1885.

Hon. Captain BAILLIE, Chairman.

APPENDIX.

EVIDENCE OF T. KIRK, F.L.S.

For the information of the Committee I should state that when engaged in reporting on native forests in March last, I received instructions from the Minister of Lands to report on the various fruit-blight, and the best means of preventing their ravages. In compliance with these instructions I have collected information on the chief diseases of fruit-trees, and, pending the completion of my inquiries, am now engaged in the preparation of an interim report, which will embody the results already obtained. In the meantime I have been directed to attend the Committee and afford any information in my power.

The Codlin-Moth.

This insect is causing a great amount of injury and loss in parts of the Auckland District, in Nelson, Picton, and other places, but at present it is not so common as other troublesome pests. It has been known in Auckland for upwards of twelve years; in Nelson and Picton for fully eight years.

Its life-history may be briefly stated: The moth deposits a single egg on the apex of the ovary when it is beginning to swell; the egg is hatched in a few days, and the caterpillar eats its way towards the central portion of the ovary. It does not pierce the parchment-like covering which immediately protects the immature seeds (pips), but continues its boring until it perforates the outer surface; so that a slightly tortuous gallery is formed, extending from the crown of the young fruit to its base, admitting air freely at first and facilitating the discharge of excreta. The caterpillar now returns to the core, pierces the cartilaginous covering and gains access to the seeds, upon which it feeds until the apple falls, when it leaves the fruit and ascends the trunk, taking shelter in a crevice of the bark, or beneath a tuft of lichen or moss, or immediately below the junction of a branch with the stem, &c. It now enters the chrysalis stage, which, in the early part of the season, is of brief duration, the moth emerging and depositing its egg in the apple as already described; so that two, or possibly three, generations may be developed in one season. Caterpillars leaving the fruit late in the season continue in the dormant stage through the winter, the perfect insect making its appearance the following spring.

The habit of the caterpillar in ascending a tree to pass through the chrysalis stage affords the best opportunity for insuring its destruction. Bands of canvass, calico, or even brown paper from three to five inches wide are fastened round the trunk by means of pins in such a way that the upper margin fits tightly, so that a caterpillar cannot pass between the band and the trunk, while the lower margin is not in absolute contact with the trunk at all points. Instead of seeking the shelter of a bark crevice or tuft of lichen, the caterpillars will take advantage of the bands, which should be detached once or twice a week and the caterpillars destroyed.

To Mr. Hobbs: I should prefer syringing with a weak solution of caustic potash rather than Paris-green for preventing the moth from depositing its eggs.

To Mr. Bruce: The codlin-moth is a serious enemy to the apple-grower, but its ravages may be expected to be less serious in some seasons than in others. I think the danger arising from its wide diffusion is such as to justify the Government in taking steps to prevent the importation of affected fruit; but do not think Mr. Hobbs's suggestion to employ Sheep Inspectors to examine suspected fruit before landing would be attended with success. The subject of fruit-blight is a matter of great importance; I could not say of vital importance.

To the Chairman: The interim report, now in preparation, will contain recommendations with regard to preventive measures.

Scale Blight.

The apple, plum, lemon, &c., are attacked by scale insects of different species. The species infesting the apple is commonly termed the mussel-scale. It is found in all parts of the colony, but is most abundant and injurious in the Districts of Nelson, Marlborough, and Canterbury, where, owing to neglect, it has seriously diminished the annual yield.

In the young state the apple-scale is extremely minute, and possesses active locomotive powers. After a short time it becomes attached to the bark by its suctorial mouth, and secretes a horny case or shell, which not only serves to protect the mother-insect, but answers the purpose of a puparium. The shell is slightly curved, resembling that of a mussel, and is attached to the bark by its sides; the lower portion contains eggs, or young insects in process of development. In old, neglected orchards the trees are often incrustated with myriads of these insects, so that the plant is unable to perfect fruit, or even leaves, although it may maintain a lingering existence for a term of years. Pear-trees are subject to its attacks, and hawthorn hedges often suffer severely.