

MANUKA BLIGHT SURVEY

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DURING the past year considerable interest has been taken in what is commonly termed "manuka blight," which has been associated with the death of manuka in Canterbury. Where the blight occurs dead and dying plants covered with a sooty-like growth are to be seen. Because of the numerous inquiries concerning the dispersal of blight as a means of controlling manuka on hill-country areas, the Department of Agriculture in conjunction with the Entomology Division of the Department of Scientific and Industrial Research undertook a survey of the distribution and nature of manuka blight. The author made a survey of areas of manuka in both the North and South Islands and entomologists studied the blight and checked the identification of specimens forwarded.

A BLIGHT is described as any disease affecting plants, and the fact that manuka trees are dying suggests a blight. However, the death of manuka trees is associated with a sooty mould which has been called manuka blight. The so-called blight on the manuka is in fact a fungus growth which develops on an excretion from a species of scale insect or mealy bug belonging to the genus *Eriococcus*.

The first observations on scale insects in New Zealand were published in 1887 by Maskell (1), who recorded the taxonomy and habits of scale insects and their association with sooty mould. He stated that the New Zealand climate was particularly congenial to scale insects because of the humidity and absence of anything like severe winters.

Maskell recorded 6 species of scale insects on manuka—*Mytilaspis leptospermi*, *Inglisia leptospermi*, *I. ornata*, *Ctenochiton flavus*, *Planchonia epacridis*, and *Coelostomidia wairoensis*, but not the species of *Eriococcus* which is now associated with manuka blight in

Canterbury. He pointed out that these insects have 4 stages of development: The egg, first and second larval stages, and the adult stage, in which the insect does not change its position.

The mature insect lays eggs inside its mealy scale or protective covering. When the larvae emerge they are active in locating crevices in or under the bark or on the undersides of leaves of the plant and, having found a suitable position, they begin feeding. They make a slight indentation in the bark and in addition form a protective mealy covering or scale; it is from the latter that this class of insects derives the name "scale" or "mealy bug."

When feeding, the scale excretes from a tube-like protuberance a clear, sticky solution or honey-dew, which drops on to the lower leaves or branches of the plant. As soon as the honey-dew is produced spores of a native fungus germinate in it and grow, producing the characteristic black appearance with which the insect is always associated.

Maskell mentioned a "black blight," which he stated was often referred to as a destructive pest of a number of plants, but pointed out that there were two possible ways in which the effects of the blight might be produced. First, the activities of the scale insects might drain the "life blood" of the plant; second, the honey-dew and fungus might choke the breathing pores or stomata of the plant and so tend to interfere with growth.

In discussing scale insects generally Maskell considered that birds did not favour the insects, and the usual position of the insects on the underside of the leaves or in the crevices of the bark was a great shelter and protection for them against birds.

He states:—

... They are in many cases effectively covered by waxy or fibrous shields or by the masses of cotton with which they surround themselves. In the greater part of New Zealand the winters do not seem to be sufficiently severe to injure coccids [scale insects] and many of them breed as much in winter as they do in summer. It would therefore seem that everything combines to assist these insects in their career and in their propagation.

Since 1935 and in particular from 1946 onward considerable interest has been taken in the prevalence of blight on manuka. It is stated to have been spreading during the past 5 to 6 years.

The species of the genus *Eriococcus* responsible for damage to and death of manuka occurs also on kanuka, but only the former is susceptible and dies.

An article on manuka blight appearing in 1946 in a New Zealand paper (2) having a wide circulation and further articles on the subject in other periodicals during 1948 (3) promoted considerable interest. Opinion has



Manuka at Maronan, showing dead bushes killed by *Eriococcus*. The healthy-looking plants are kanuka heavily infested with *Eriococcus* but still living.