

## PLANT PROTECTION AND APICULTURE\*

**I**T is not so long ago that beekeeping was considered by many as the hobby of a few cranks, but if we go further back, we find that it was an important pursuit and means of wealth long before Great Britain became a part of the civilised world. At the present time apiculture is a most important industry in many countries, not only for the production of honey, but also on account of its importance for the efficient fertilisation of fruit-trees and flowers.

Plant protection is not of such ancient date as beekeeping, but is a most important part of present-day agriculture; and its aim, like that of apiculture, is to increase the agricultural wealth of the country. Diseases and pests attacking cultivated trees and plants, and the excessive growth of weeds, are responsible for many crop failures. Plant protection by the use of washes, sprays, dusts, and traps aims at controlling or destroying these pests and thus increasing the yield.

Apiculture has to struggle against the competition of sugar, diseases which attack bees, and the destruction of nectar-bearing trees. To these has been added another danger—that of plant protection. If diseased plants are treated at the wrong time, or in an unsuitable manner, bees as well as pests may be destroyed.

It is to be feared that many orchardists and market gardeners do not realise the importance of the little insect, of which so many persons are afraid, for the success of their industry, and that the bee is really their friend. It is a certain fact that if all bees were destroyed many crops would fall to an unprofitable figure.

The importance of the bee as a pollinating agent is in some countries realised to such an extent that orchardists will pay beekeepers 12s. to 15s. per colony to place their hives in their orchards at blossoming time. This may seem an excessive amount but if the colonies are strong and in condition for the work, and the orchard conditions are correct, the increased crop much more than compensates for the outlay. In market gardening much the same applies, particularly in the case of pumpkins. Many instances are known where there has been a good flowering of pumpkins, but very little setting of fruit but in the following year, bees having been introduced, there has been a heavy crop. Bearing these facts in mind, it behoves all those interested in plant protection to insure that when they are destroying pests, they are not also destroying their friends.

The chief danger lies in the fact that the means most convenient for the combating of pests and diseases contain chemical substances such as sulphur, copper, arsenic, fluorine, etc. If these are used in the winter to destroy eggs of pests, or diseases, very little harm results to the bees, as the blossom is not there to attract them; also, many of the sprays and washes used at this season do not contain substances harmful to bees. The most harm is done in the spring and the summer, when the bees are most active and blossom is most plentiful. The danger, however, is not so great if sweet substances, attractive to bees, are not added to the sprays. The greatest care is required in the spring time, when orchards are in blossom. It is essential that sulphur, copper, or arsenical mixtures are not applied at the time of blossom, as this is certain to result in the destruction of many thousands of bees. The same applies to vegetable gardens.

\* By H. Willoughby Lance, Apiculturist, in the *Journal of the Department of Agriculture, Western Australia*, Vol. 8, (Second Series) No. 3, September, 1931.

In America and Germany aeroplanes have been used to distribute poisonous dusts over the forests, to destroy forest pests. Serious damage has resulted to many beekeepers as a result, and in one case in Germany a beekeeper, who lost 353 colonies as a result of this dusting, was fortunate in securing compensation of £370.

Seeing that many apiculturists depend upon beekeeping for a living, and that beekeeping is a most important branch of agriculture owing to the great services rendered by bees, it is only right and in the interests of all persons concerned that measures of plant protection should be carried out in such a way as not to be harmful to bees. Bees are very sensitive to poisons and it is stated that 2/1,000,000ths of a gramme of metallic arsenic, 9/1,000,000ths of copper or 13/1,000,000ths of sodium fluorine is sufficient to kill a bee.

Abundant evidence has been produced by investigators working in all parts of the world, which shows that, other factors being equal, the honey bee is the principal factor in the efficient pollination of fruit trees and many vegetables.

Remember that *More Bees means More Fruit*.—In the opinion of many, the honey bee is more valuable to mankind on account of the work it does in the pollination of plants and trees—that produce millions of pounds' worth of food—than for the amount of honey it produces. Beekeeping has, therefore, a double value, not only being profitable to the apiarist himself, but of even greater value to his neighbour.