

necessarily mean under any circumstances a corresponding heavy crop of fruit; in fact, the reverse is almost invariably the case. Therefore the pruning-away of surplus blossom-buds not only has the effect of strengthening and making more fertile those that remain, but it also reduces the number of blossoms to be visited by bees, which in a season when suitable working-weather is limited is of no small advantage.

In preparing to meet attacks of fungus diseases and insect pests the orchardist has more scope. The *modus operandi* in each case is governed by circumstances, but the guiding principle throughout should be cleanliness and thoroughness. Cleanliness consists in the complete removal from the orchard or the destruction of all rubbish, &c., likely to harbour disease, particularly coarse bark, old dead leaves, and fruit; also the pruning-away of all dead and diseased wood and the destruction of all prunings. Thoroughness pertains to all seasonal matters, particularly in cultivation, and in the application of reliable spraying-compounds not after but before the particular diseases aimed at become active, also the renewal of such spraying as circumstances demand.

Much of the preparatory work for the coming summer campaign should already have been attended to, one of the most critical periods of the year having already opened. There is little doubt that the most effective treatment for the control of black-spot, as far as spraying is concerned, is when the buds show colour, and although a large number of varieties will have already passed this stage of development there are still a number that have not yet done so. In addition to the completion of this spraying there is also the calyx-spraying to attend to.

CALYX-SPRAYING.

Calyx-spraying (or spraying when the fruit has set, as it is generally termed among New Zealand growers) is considered of the utmost importance in many parts of North America. It is there estimated that the codlin-grub enters the eye of the apple in the proportion of 75 per cent. of affected fruits, and the orchardists aim at overcoming this by carrying out what they term the single-spray process. The single spray in this case, however, is really a term applying to the calyx-spraying period, and not to the number of applications required. As a matter of fact two applications are required. The object aimed at is to fill the calyx-cup with a poisonous mixture, the poison to be held in place by the closing of the calyx, thereby forming a toxic trap for the destruction of all grubs that endeavour to enter the fruit at this point.

For applying this method thoroughly a high pressure is needed to force the spray well into the calyx-cups. This, of course, cannot be done after they close, which they do a very short time after the blossoms fall. Therefore, owing to the period over which a tree sets its fruit, at least two applications of the spray are required to make the work effective. The first of these is recommended to be given when two-thirds of the blossoms have fallen, the second when the remainder have fallen.

Although the percentage of infection through the eye of the fruit does not appear to be anything nearly so high in New Zealand as is stated to be the case in America, calyx-spraying is held to be an important feature of our orchard-work. This is not only in connection