stances, the stronger solution being used if there is reason to anticipate an epidemic. Third, the same strength applied ten to twenty days later, according to the weather. Additional sprayings may be necessary with very susceptible varieties or continued wet weather. These should be given when the spray materials from the previous sprayings begin to get washed off. In most places in the Interior in a normal year the first two sprayings are sufficient. A difficulty lies in the long period in certain seasons between the breaking of the buds and the opening of the blossoms, which gives time for infection to take place before the first spray is applied. Good results, therefore, have been obtained in some cases by spraying when the buds are unfolding. Where infections have taken place, subsequent sprayings, whether with Bordeaux mixture or lime-sulphur, may produce very serious "burning" of the leaves, since the fungus injures the epidermis in such a way as to allow the spray material to come in contact with the delicate internal cells.

Proper pruning and good air-drainage are important. Destruction or ploughing-under of the leaves in fall or early spring, if practicable, reduces infection. Certain varieties are very susceptible, notably the Fameuse (Snow) and McIntosh Red. These should not be planted where scab is bad, unless special care can be given to controlling the disease.

POWDERY MILDEW (*Sphærotheca mali*).

This forms a greyish-white mouldy growth on the surface of the parts attacked. From this growth summer spores are produced in large quantities, so that it seems powdery to the touch. Late in the season small, round, black fruiting-bodies of a different type and capable of carrying the fungus over the winter may be formed in the felted mycelium. The fungus mainly persists over the winter, however, in the form of mycelium on the twigs. The young shoots are chiefly affected, but the fruit may also be attacked. Such shoots are stunted and the leaves smaller than normal. The Jonathan seems to suffer most. This disease is widely distributed in the Province, but is most pronounced in dry districts. It has generally been considered of almost negligible importance, except on nursery stock, but latterly has become quite serious on orchard trees in some localities.

Control.—Powdery mildews are superficial parasites feeding only on the external cells of the host. Most of them are on this account easily controlled, sulphur and its compounds being particularly effective. Apple-mildew, however, is an exception, although where the dormant spray with lime-sulphur and one or more scab sprays with the same substance are given it ought not to be serious. Latterly Atomic Sulphur has been strongly recommended against this disease, but we have no experimental data as yet regarding its efficacy under our conditions. Diseased twigs should be pruned out during winter pruning.

SILVER-LEAF.

This is a condition which may affect a considerable variety of fruit-trees, stone-fruits being considered especially liable to it. In British Columbia it is commonest on the apple, but also occurs on apricot, peach, and pear, and has been reported on cherries. The disease has received its name from the peculiar appearance of the leaves on an affected limb or tree. Instead of being of a normal green colour, they have a leaden or silvery appearance. The intensity of this may vary very much, being in some cases hardly noticeable except by close observation, while in others the tree is conspicuous at a distance. The alteration in colour is apparently due to the separation of the epidermis from the underlying cells, thus permitting the presence of air-spaces which mask the normal green colour. The cause of silver-leaf has been much discussed. It was formerly supposed to be purely physiological, but recent work, both in Britain and Eastern Canada, has shown that many cases, at any rate, of the disease are associated with the presence of the fungus *Stereum purpureum*, and that inoculation of this fungus into healthy plants can reproduce the disease.