

cases have been noticed in this Province, which could be put down to mushroom root-rot (*Armillaria mellea*). In none of the cases noticed by the writer was it possible to find either fruiting-bodies or rhizomorphs. This is rather surprising in view of the frequency of the disease in the Pacific States and the undoubted presence of the fungus with us. Very little can be done in cases of collar-rot, the tree being generally in a dying condition before the injury is noticed. It is desirable that the trees be so treated that the wood is well matured by the time cold weather sets in, as late growth and a supple condition of the tree predispose to all kinds of winter injury.

FRUIT-PIT.

Also known as Baldwin spot and bitter-pit. This is one of the commonest diseases of the apple fruit, being found more or less in all districts. It is probably worst in the irrigated districts, although it may be very severe at times elsewhere. In its usual form the disease appears as sunken circular spots, $\frac{1}{8}$ to $\frac{1}{2}$ inch in diameter, on the surface of the fruit. These are often darker in colour than the surrounding surface, at least in the later stages. The skin over the spot is usually unbroken. The tissue beneath the spot is dead and brown, and similar pockets and streaks of dead tissue are generally found scattered through the interior of the fruit. In some cases an apple may be very badly affected in this way with little or no indication of the disease on the surface. In many cases, apples, apparently without blemish when picked, develop the disease in storage. The name "bitter-pit" has been given to it from the bitter taste which the pitted spots are stated to have. This does not seem to be the case with us, the chief injury in most cases being to the appearance and consequently the market value of the fruit. A peculiar form of "core-rot" or "dry-rot" found in certain sections is probably due to similar conditions. Cases may be found where one limb of a tree bears badly pitted fruit, while that on the remainder of the tree is either free from the disease or much more lightly affected. There is considerable difference in the susceptibility of different varieties, although none is entirely immune. Northern Spy appears to be one of the worst, but this may in part be due to most of the trees of this variety not being yet in full bearing. Jonathan and McIntosh Red suffer very little from it, this being another strong point in favour of the latter as an apple for irrigated sections.

The disease occurs in Europe, South Africa, and Australasia, in addition to North America, and has been studied by many investigators. A great deal has been written on the subject, but as yet the relationship between the factors which cause it and the development of the disease has not been defined with sufficient clearness to render possible any very definite measures of control being put forward. It appears certain, however, that no parasite is responsible, and therefore spraying or similar treatment is useless. Apparently the trouble is due to the conditions of growth, and probably in particular to climatic factors, such as cold nights following warm days, etc. Some of these factors, therefore, are likely to remain beyond our control. Where a tree produces a few overgrown apples, these are more liable to be affected than if the tree had borne a good crop of normal-sized fruit. Irregular growth caused by drought followed by heavy rainfall or irrigation often results in a bad attack. Those horticultural practices which tend to ensure even growth through the season and the maturing of a good crop of medium-sized fruit are, rather than any special measures, likely to remain the best safeguards against the disease.

McAlpine, who has been making an exhaustive study of the disease in Australia, finds that where the disease is liable to appear in storage on apples apparently quite sound when picked, "even with very susceptible varieties the development of bitter-pit was retarded by keeping them at an even temperature of 30° to 32° Fahr." He also recommends "that the apples should be picked . . . just when they have reached their full size and on the green side, and placed in cold storage without delay."