

of $\frac{1}{2}$ oz. to a gallon of water. All dead leaves and wood pruned off should be collected and burned, and the house thoroughly cleaned. These precautions should be taken even in the case of vines not affected by disease.

Grape-spot.

This disease, which rarely attacks any but thin-skinned white grapes, is stated to be probably caused by the fungus *Gloeosporium fructigenum*. Brown spots—which increase in size, rupture the cuticle, and cause a rot—appear on ripe grapes. Once a berry is attacked there is no remedy, and affected berries should be cut off. It is not practicable to spray ripe grapes, therefore the only remedy is to increase the ventilation and prevent as far as is possible an accumulation of moisture during the night. This involves keeping late growths from crowding the trellis.

Shanking.

Sometimes the footstalks of the berries and even the stems of the bunches wither; they are then said to have shanked. This trouble is not caused by a disease proper, but by a cultural defect. Shankered berries fail to colour or ripen properly, and are sour and uneatable. Different opinions are held as to the exact cause of shanking, but all agree that it is a root trouble, and that it is induced by the roots being in sour soil. Sour soil need not necessarily be wet soil, though excessive wetness will cause shanking, and should be remedied by attention to drainage. Roots growing down into cold subsoil may be the cause, and they should be encouraged to remain nearer the surface. Again, when the vines are furnished with leaves very thin in texture shanking may be expected.

All these things result in, or are the result of, an imperfect balance between root and top. Where there is too much organic matter in the soil soft spongy roots are formed which cause an excessive growth of soft foliage early in the season. Later on these spongy roots die, leaving the vines with insufficient roots to feed a gross leafage. The remedy is to restrict root-action by rigid and timely suppression of early lateral growth, in the manner described in the section of this series on routine management. In this way the formation of spongy roots is checked, and the results which would arise from their loss later on are not experienced. Cases are recorded where shanking had been extensive for a number of years, but had since been avoided by the simple means indicated above.

Scalding.

Scalding occurs both on leaves and on berries, in some cases being extensive and causing serious losses. This affection, like shanking, is usually spoken of as a disease, but this is not correct, as no pathogen has been found in either case. Scalding, or scorching, may be due to the direct action of the sun or to variations in temperature. When occurring on leaves it is in nearly all cases due to the action of sun-rays on damp foliage; it may occur at any time of the day. If foliage is allowed to crowd up against the glass the passage of air is prevented, and the leaves remain wet till dried by sun-heat; burning is sure to take place in such circumstances. To a lesser extent leaves may be burnt by the focusing of sun-rays through faults in the glass. The common glass used is full of such faults, and it is rare that some