

The grower will probably first notice the disease in the fruit by one or two of the berries turning brown and gradually getting black. This will happen even when the berries are half grown. The berries will shrivel up and drop. When the disease has reached this stage it will make short work of the bunches. The first appearance is shown, however, in the leaves. Yellow spots appear near the vein of the leaves. It is often apparent, however, that the sun produces similar spots on the leaves, especially when they are tender. The yellow discoloration on leaves caused by the fungus is very noticeable in vineyards which are badly affected.

The fruit grower should destroy all diseased bunches and berries and not leave them to hang on vines, as is too often the case. He should also endeavor to keep the vineyard cleaner. If clean methods are adopted and the vineyard sprayed at least twice every year, little injury should result. The red varieties seem to be more susceptible and should be carefully sprayed.

DOWNY MILDEW, *Plasmopara viticola*.—This fungus is quite common. It attacks the fruit, leaves and young shoots. The bunches and underside of leaves become mouldy, being covered with a delicate white film. The greatest damage is done to bunches. The berries do not develop so well and the appearance of the bunch is far from inviting. This disease is easily controlled by two sprayings of Bordeaux and if necessary an application of flour of sulphur, which is dusted on the vines in the morning.

POWDERY MILDEW, *Uncinula spiralis*.—Attacks the grape in the same way as the downy mildew, but is more especially found on the canes. When berries are affected they show brownish or blackish spots. It is quite common in the Peninsula and the same treatment as for downy mildew is effective.

There has appeared quite frequently in our vineyards an undesirable condition of the vines, which has not been attributed to any particular cause. It appears mostly on sandy soils and attacks all bearing vines. Its first appearance is noted by a peculiar mottled yellow discoloration of the young leaves, and in the middle of the growing season the whole vine will turn yellow. The vine loses its thriftiness and the fruit does not develop so well as on other unaffected canes. This malady may or may not appear in succeeding years on each vine, but it will always be found in the locality of the vine in which it first appeared. I have noticed vines to regain their normal color the year after being affected, and the following year again will show almost an extenuated form of the malady. One vineyard which I have in mind is situated near St. Catharines. In the vineyard the vines seemed to get worse every year and this year they were removed. This peculiar malady does not seem to spread very rapidly, and its periodic appearance would tend to indicate that it might be caused by the lack of some constituent in the soil.

SPRAYING GRAPES. Every vineyard should be sprayed at least twice every season, and the most successful vineyardist sprays three times.