

TREATMENT OF GRAPE MILDEWS.



to distinguish the one from the other.

The Downy mildew (*Peronospora viticola*), which in the south is very common and destructive, appears to be slowly invading our territory. When it affects the berry, it is spoken of as the Grey Rot, and at a later stage as the Brown Rot; as seen upon the leaves in the summer season, this mildew has the appearance of a shining white powder, on the under side, and by the aid of the microscope this is seen to consist of summer spores growing in thousands upon little branches which spring up through the breathing spores, or stomata, of the leaves, (Fig. 28). There are also parts which correspond to roots, and which draw nutriment for this fungus from the cells of the leaf, and sooner or later cause it to die and fall to the ground. The little summer spores are produced in countless numbers, and may be carried from one affected leaf over the whole vineyard.

Late in the fall the winter spores are formed, which live inside the leaf through the winter, and in the spring are just in the right condition to propagate the disease. The dry leaves are blown about in every direction, and, when disintegrated by the spring rains, set free hosts of spores to settle upon the young foliage. These quickly send down minute suckers to absorb the nutriment which was intended for the development of the leaf itself.

The Powdery mildew (*Uncinula spiralis*) which is so common a pest in our Canadian vineyards, differs from the one just described, first, in appearing upon the upper side of the leaves and berries as a dirty white coating, from which it takes its name; and, second, that it is wholly external and does not penetrate to the interior of the leaf or fruit; and, third, the winter spores are not within the leaf but upon its surface, where they may be easily discerned when

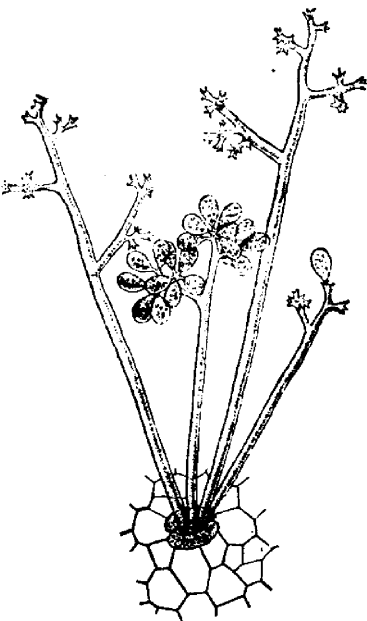


FIG. 28.—SPORE-PRODUCING BRANCHES OF DOWNY MILDEW.