

- (c) The Danville brown earths over serpentine rocks were marked particularly by Dicksonia punctilobula, Acer pennsylvanicum, Spiraea latifolia, Viburnum cassinoides, and Vicia Cracca.

In co-operation with the Agronomy Department an important disease of swede turnips, referred to as brown-heart of swedes, about which very little is known, has been under investigation from several standpoints. The symptoms of brown-heart can be seen only when the turnip is cut open. It shows in the early stages as brownish water-soaked areas giving the flesh a mottled appearance. As it increases, these areas become more general and finally the flesh loses its water-soaked appearance and becomes a greyish brown, dry, punky mass. In extreme cases the turnip becomes hollow-hearted. Affected turnips when cooked are woody. These investigations are as yet preliminary, but it is hoped that they will give some useful leads towards the solution of this problem. It may be stated, however, that very definite evidence has been obtained that application of manure to the soil tends to materially reduce the trouble as compared to the use of commercial fertilizer alone, which seems to have no definite effects.

A blighting of oats characterized by spotting and dying of the leaves, particularly in the early stages of the growth of the plant, which may result in serious damage and loss, has been carefully studied for the past two years. During this time halo blight of oats caused by Bacterium coronafaciens Elliott has been very important in this blighting. Another form of blighting, which we believe from preliminary studies to be of a physiological nature of the type of "grey-speck of oats", developed somewhat later in the season. Greenhouse and field experiments have shown that halo-blight can be defin-