when the tree is planted, aeration will be perceptibly checked whenever a prolonged wet period occurs. The young rootlets decay, the tree is weakened an l becomes more liable to attacks of fungi, which prey upon the roots.

3. Another cause for the death of many trees is *Sun Scald*, which produces a wilting of the tissues by a too rapid evaporation from the leaves. The tender young shoots are very liable to injury from such a source, especially if they are subjected to a hot sun after a period of rapid growth in moist weather. The edges of the leaves turn reddish yellow, wilt and dry up.

4. A cause which produces practically the same results as Sun Scald is known as *Winter Blight*. The tissues wilt owing to too rapid evaporation during fine, warm days in winter, when the soil about the roots is frozen, or when dry, cold winds prevail.

It is very difficult to provide remedial treatment for Sun Scald and Winter Blight. Perhaps a liberal mulching with manure or straw would be as efficacious a remedy as any that could be devised.

5. Other causes occasionally produce

serious results, but only under peculiar circumstances. Sometimes the air of cities and towns becomes poisoned with harmful gases to such an extent that whole avenues of trees are seriously affected. There is of course no remedy available in such a case.

A few words may be said as to the treatment of old trees which are showing signs of lack of vitality. Growth may often be stimulated by assisting nature when the roots have become sluggish. The branches should be pruned so that the demand upon the roots may not be exceeded by the transpiration from the leaves. The turf, moreover, should be removed and the soil given a top dressing of compact earth before replacing the sods, so as to allow the nutrient salts to be washed down to the rootlets by the rain.

All decaying patches or holes should be mended by clearing off all rotten wood, and the place finally closed up with pitch or coal tar to prevent the entrance of fungi.

My second article will deal with the protection of shade trees from the attacks of insects and fungi.

O. A. C., Guelph. W. Lochhead.

## WARM AND COLD WATER FOR PLANTS.

Some of the experiment stations have been trying the prolonged effect on plants of water at various temperatures, from freezing to too degrees. The tests have been made at the Wisconsin and Ohio stations during the last two years on a variety of plants, including geraniums, coleus, potatoes, beans, etc., and the conclusion is reached that between 45 and 75 degrees, the temperatures mostly available in practice, no apparent difference in effect is caused with any of the plants tested. Water at 32 to 34 degrees grew healthy, short-jointed geraniums, but sometimes affected the more sensitive Coleus unfavorably. At too degrees a weak and spindling growth was caused in almost every

instance. The practical point is that where the available water supply in a garden or greenhouse is of a temperature not much below 40 degrees, it will hardly pay to use artificial means to warm it. Cold water, indeed, seems to act as a tonic for many cultivated plants, and glasshouse growers are more and more coming to rely on forcible spraying with cold water to clear growing plants of insect pests. They find that the soil is not appreciably chilled by a reasonable amount of cold water. There are times, however, when the immersion of pot plants kept in a chilly room in warm water is very beneficial, as it renders the fertilizing matter in the soil more available. R. N. Ý.