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W. L. SLATE, JR., *Director.*

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SUN SCORCH, ANTHRACNOSE, ETC., OF SHADE TREES.

G. P. CLINTON

SUN SCORCH AND WHIPPING WIND INJURIES.

Injury from Sun Scorch varies greatly in different seasons, but usually comes on suddenly and generally in the spring rather than later in the season. There are various conditions that favor this trouble and these are not always easily made out, so that in a row of street trees one sometimes finds trees badly scorched, and others in varying degrees up to little or no scorch. Injury to the roots or wood through recent transplanting, a previous dry season, winter injury, or insects and fungi are, no doubt, some of these obscure secondary factors. The chief causes, however, are dry seasons with hot days, and, where the trouble comes on suddenly, bright sunshine quickly following rainy weather. In the latter case the stomates of the leaves are likely to be open and transpiration of moisture from the tissues takes place faster than it is supplied by the roots, so that scorch at the edge or within the leaves results. A number of our shade and fruit trees such as the elm, beech, oak, ash, apple and peach are subject more or less to this trouble, but the chief sufferers are the maples, especially the sugar maples. Some have thought that the leaves of trees so injured were likely to continue to scorch and the trouble to spread to other trees, but as it is not a parasitic disease, it is not an infectious trouble.

Wind Injury may occur at any time of the year when the wind is strong enough to whip the leaves off the limbs, but the most serious injury is that which comes during violent wind and rain storms in the spring of the year when the leaves are quite tender, the lashing injuring or killing the tissue. This is often an accompanying feature of sun scorch at such a time, so that it need not be especially distinguished.

Where trees are injured by anthracnose fungi, late frosts when the leaves are young, gas leaks from street mains, or smoke from brick kilns, it is not always easy to distinguish these leaf injuries from the sun scorch trouble, especially on maples, since the leaves die in very much the same manner from the edges inward; evidence for any of these other causes must be looked for.

Maple. The maple trees in many places, especially in New Haven County, were injured this spring by sun scorch. Some

drop of leaves took place, but most of the injured leaves hung on and will show the red dead areas at their edges during the remainder of the season. In some cases the injury to the rootlets from the severe drought of last year no doubt favored this scorch. However the chief factor seemed to be their exposure on hills, etc., to the full force of a whipping wind and rain storm about May 24th, that was followed the next day by bright sunshine. This occurred before the leaves were fully grown.

Other Trees. We have seen no serious injury to other trees from scorch this year unless the trouble on beech is partly due to that rather than the anthracnose. Apple and pear trees, however, in some places showed minor injury from whipping winds when the leaves were young, turning them black at the edges.

ANTHRACNOSES.

These are fungous troubles that usually cause injury to the leaves or young twigs in the spring. While different trees may have a distinct fungus, the injuries resulting are much the same, as are the preventive treatments. In general the trees should be sprayed with Bordeaux mixture as soon as the leaves begin to develop, and have two or more subsequent treatments at intervals of about two weeks.

Sycamore. The anthracnose (*Gloeosporium nervisequum*) of this tree was unusually abundant this year, due to the cold wet spring that held back the rapid growth of the leaves, so that abundant bud infection often killed the leaves before they had made much growth. As a result everywhere in the state the native sycamores showed an unusually scanty foliage. After killing the small leaves and buds, the fungus works down into the young twigs where it fruits and becomes a serious source for infection another year if the weather conditions prove favorable. These trees therefore should receive also a dormant spray just before the buds open. The European sycamore is not so susceptible to the disease, and young American sycamores show less than the older trees because twig infection has not become so common. Badly infected trees usually put out some additional leaves which escape serious infection.

Oak. White oaks also were more or less injured by an anthracnose fungus (*Gloeosporium canadense*) this year. This is very similar to the sycamore anthracnose, but causes injury more on the mature or nearly mature leaves. However, we found it in some cases killing the very young leaves in the buds and fruiting on the stems.

Beech. For the first time we found an anthracnose fungus (*Gloeosporium Fagi* var. *Americana*) on the beeches, especially on the Purple Beech, but not causing serious injury in most cases.

Maple and Ash. These trees also have anthracnose fungi that cause more or less injury to the leaves, though this year we had few complaints.