fect without water-soaking. Similarly, tobacco may be greatly predisposed to *B. angulatum* and *B. tabacum* Wolf and Foster, by the same method, resulting in large necrotic lesions comparable to those often noted under field conditions. Water-soaking as a consequence of water sprays or storm effects has recently been emphasized by Clayton,[1] and while the significance of this relation is not questioned, it lacks certain essentials as a satisfactory explanation in all cases of the epidemiology of the diseases in question. Infection through water-soaking by root pressure furthermore confirms Clayton's contention that the water-soaking is of greater consequence to infection than epidermal wounding.

Similar, though less striking, results have been secured through increasing root pressure by means of the simultaneous exposure of plants to a high soil temperature and a low air temperature, with the evaporation power of the air at a minimum. It should be emphasized that great differences between individual plants may exist with respect to the ease with which they become water-soaked, this being in part influenced by the ratio of the size of the root system to the leaves. High root pressures under field conditions, resulting from a particular sequence of weather conditions, are a fairly well-known phenomenon. That conditions of this type precede epidemics of disease in tobacco has been noted by the writer, whereas apparently more favorable external environmental conditions, including severe storms, in the presence of pathogens, have in many instances failed to result in expected epidemics of disease.

A more extensive account of the experiments bearing upon this problem will be presented later.

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A STUDY OF THE EFFECT OF DROUGHT ON TREES

THE 1936 drought is one of the most serious and widespread the nation has ever experienced. Not only have there been untold suffering by the local residents and terrific losses in crops, but other forms of life over considerable areas are showing the effects of abnormally high temperatures and deficient precipitation. Just how serious some of these effects are remains to be seen.

In forestry and plant ecology, droughts are of considerable significance because of their effects on survival, growth and behavior of trees and shrubs. Some species or individuals may be killed, others suffer severe injury, while still others may show remarkable ability to withstand the most adverse conditions. In times of severe drought, forest plantations suffer severely, especially those composed of species not native to the locality or those badly abused as by grazing. In addition many native species that have been slowly invading drier sites or localities may be eliminated over large areas.

As information on drought resistance of trees and shrubs is sadly lacking, the present affords an unusual opportunity to obtain data of outstanding value. Consequently, it is hoped that those who are in a position to do so will take notes on the reaction of various plants to the drought. Such information is not alone of scientific interest but has great practical value in many current operations, such as the reforestation program of the CCC, cultural operations in the forest, erosion and flood control, etc.

The Forest Service is undertaking the collection of data on the drought damage. In this it is seeking the aid of botanists, agronomists, foresters, meteorologists and other interested individuals throughout the drought area. Consequently, any one with observations on species behavior should communicate them to the Division of Silvics of the Forest Service at Washington, D. C. Data are desired especially on such features as the nature, extent and character of the damage, the relative resistance of trees growing on different sites, the comparative ability of native and exotic trees to withstand drought and the nature and extent of the damage to stands or to shade or ornamental trees, shrubs, etc. A questionnaire covering these points has been drawn up to aid observers in reporting the effects of the current drought.

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REMARKABLE LIGHTNING BOLT

ON the evening of July 27, 1936, an exceptionally severe and spectacular electric storm passed over the Washington area, traveling very rapidly in a northwest-southeast course. The center of the storm kept somewhat west of the writer's position at Clarendon, Virginia, and at a point in the southwest, only a few miles away, there appeared a most spectacular frequency of discharges earthward. Some appeared as mere single sparks, but the majority were of the repeating or of the stream type of discharge of exceptional size, appearing like ribbons of flame searing the darkness.

One of these, which seemed almost to hang in the sky only a few miles away, appeared to ignite something high in its course, leaving wisps of flame which per-

[1] E. E. Clayton, *Jour. Agr. Research*, 52: 239–269, 1936.