with a view of determining by observation what plants thrive in Pittsburgh and what plants can be grown here under the present difficulties. It includes, furthermore, a study of the physiologic response of plants as a whole and a determination of the reasons why plants that ought to grow here cannot be cultivated successfully.

This work, which is in charge of J. F. Clevenger, botanist of the Pennsylvania State College, will also comprise a series of laboratory experiments so arranged as to determine the effect of definite quantities of soot, of varying composition, upon the seedlings of plants which seem to be most influenced by soot, and upon the seedlings of the hardier plants.

Investigations made elsewhere have indicated that the factors in air pollution which prejudicially affect vegetation are:—the smoke clouds limiting the available sunlight; the tarry matter coating over the leaves and choking the stomata; the presence of free acids in the air, tending generally to lower the vitality of the plant; the effect of the free acids falling upon the soil and limiting the activity of the soil organisms, principally those of nitrification. The measurement of these forms of effective damage to vegetation by smoke, with particular reference to Pittsburgh, will prove of convincing interest to those who are interested in the defoliation and ruin of gardens, trees, flower-beds, and public and private pleasure-grounds.

THE CHEMISTRY OF SMOKE AND SOOT

What is the nature of soot? In view of the agitation against smoke and soot, begun in England as early as 1819, when Parliament appointed the first Special Commission on Smoke Prevention, it would seem that we ought now to know a great deal about the precise composition of soot. This, however, is not altogether true, for comparatively few scientific investigations have been made into this phase of the subject. Moreover, the analyses of soot which have been made from time to time by different experimenters show great variations in composition. When one considers the very different conditions under which coal is burnt it is obvious that the character of the soot must vary. For soot is a product of incomplete combustion, and is formed partly by the mechanical re-