

SMOKE AND THE WEATHER

Dr. H. H. Kimball, of the federal Weather Bureau at Washington, D. C., has been entrusted with the task of determining the effects of smoke and soot upon fogs, winds, temperature, sunlight and weather conditions generally, with particular reference to soft-coal communities like Pittsburgh. Inasmuch as similar investigations, both official and unofficial, have been made in a number of European countries, this investigation will, for purposes of comparison, be based upon similar methods wherever these methods are found to be scientifically satisfactory. The main topics covered by this section of the investigation are:—atmospheric gases; suspended particles in the atmosphere; dust layers of the atmosphere; the surface dust layer; quantity of soot in the air of cities; limits of visibility; meteorological effects of the smoke cloud; effects of smoke upon condensation; city and country fogs; effect of smoke upon fog dissipation; duration of sunshine in cities; intensity of sunshine in cities; quantity of daylight in cities; effect of smoke clouds upon city temperatures; effect of smoke clouds upon maximum and minimum temperatures; effect of smoke clouds upon the range of temperature.

Data have been obtained from the records of the Government Weather Bureaus at Pittsburgh, Harrisburg, Philadelphia and Williamsport, regarding the reduced atmospheric transparency caused by soot. Observations are being made at several stations in Pittsburgh and vicinity, and will be continued for a year, to determine the intensity of daylight, more especially, on cloudy days when the sunshine recorder furnishes no information on this subject. These observations, made by chemical and photometrical methods, in the clear country air, as well as in the smoky atmosphere of the city itself, will not only be of scientific significance in themselves, but will provide part of the basis necessary for calculating the increased cost of artificial illumination in Pittsburgh due to smoke in the atmosphere, and will be of value to the physicians of the staff in their study of eye-strain in smoky cities.

HOW IS VEGETATION AFFECTED BY SMOKE AND SOOT?

The answer to this important question involves first of all a botanical survey of the "Pittsburgh District,"