Atmospheric Pollution

HISTORICALLY the terms air pollution and smoke pollution were synonymous. Submicron size particulate matter emitted from fuel-fired combustion unit chimneys was recognized as a necessary evil and accepted as an adjunct of urban living in London three centuries ago. Carbonaceous material was not the only substance emitted, nor was the form always particulate. Only a few scientific reports of investigations concerned with atmospheric pollution appeared in literature of the nineteenth century, but since 1900 a growing interest has been evident.

Recent progress of inquiry into the causes of atmospheric pollution and concomitant investigation of means of controlling air-contaminant concentrations have demonstrated a fact of considerable scientific importance. Many professional interests are searching concurrently for basic information.

Engineers, chemists, physicians, toxicologists, biologists, meteorologists, bacteriologists, and physicists have each discovered variables that affected the soundness of their own initial conclusions. Each has found it necessary to turn to specialists in other sciences for assistance in verifying data required for the formulation of empirical approaches and for explanations pertinent to fundamental advances in theory.

Individuals engaged in many different occupations find that they are faced with problems of air pollution. Executives, administrators, managers, industrial research staffs, public health officials, consulting firms, equipment manufacturers, and engineers of the several branches—particularly sanitary, chemical, and mechanical—are forced to cope with individual atmospheric waste collection and disposal situations. Pollution may be localized to industrial premises or may be extended to neighborhood, community, or region.

Atmospheric pollution has today become a major challenge to scientists, to administrative officials, and to the public. Several important meetings have been held or are scheduled for the first half of 1952. These include scientific meetings, industrial conferences, public gatherings, and official agency sessions offering information about air pollution, its effects, and its control.

University, foundation, and industrial centers of research are devoting more time to fundamental investigations. As one example, Gordon H. Strom and his staff, who are working with wind tunnels at New York University (College of Engineering), are venturing into a relatively unexplored field by investigating the effect of temperature gradient on atmospheric turbulence in scale models. Current meteorological field studies at Brookhaven National Laboratory and other comparable research will add knowledge of many characteristics of the atmosphere that will be correlated with Dr. Strom's studies.

As may frequently occur when scientific investigations overlap, or when professional and technical viewpoints are multiple, there are points of difference. Differences traceable to gaps and inadequacies in factual information can be resolved by research. Interpretation of information so that professions are attacking air pollution problems in unison requires compromise and patience, as well as recognition of the technical competence of others.

The past fifty years, and notably those following World War II, have witnessed a narrowing of both scientific and professional differences. The next ten years promise great scientific advancement in instrumentation for detection of contaminants; in techniques for studying dispersion characteristics; and in assessment of the effect of airborne substances on people, property, animals, and vegetation. Concurrently there should be swifter development of methods for the control of exhaust emission, for waste treatment, and for process-controlled reduction of any hazardous atmospheric pollutant.

Thus scientific and technological efforts are converging upon the solution of a problem of universal interest.

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