

### THE INVESTIGATION OF AIR POLLUTION AT THE MELLON INSTITUTE

DURING 1911-1914 Mellon Institute sponsored the first broad scientific study of smoke abatement. This preliminary investigation had as its objects the determination of the extent of air pollution by smoke in the city of Pittsburgh and the initiation of preventive measures to curb the smoke nuisance. After sufficient data had been obtained on sootfall, legislation was directed toward the minimization of dense smoke; obnoxious gases and solids not imparting color to the smoke stream were not considered then. This legislation served as a basis for smoke abatement laws in other cities in the United States and even in Europe, particularly in England.

Subsequently, in 1923-24, a supplemental survey was made by the institute to determine the effect of the Pittsburgh ordinance on the state of atmospheric pollution. The data showed an approximate decrease of 70 per cent. in smoke, but an increase of 40 per cent. in total solids, as compared with the results of the first investigation.

The results of the two studies have been incorporated in ten bulletins and a number of papers published by the institute. The following improvements in conditions brought about by the smoke abatement regulations may be pointed out: material reduction in dense smoke; improvement in combustion methods; improvement in boiler and furnace design, and increase in possible sunshine with a corresponding decrease in the number of "dark days."

This work has recently been reestablished as one phase of the institute's basic, non-commercial research. The investigation is in charge of W. A. Hamor, assistant director of the Mellon Institute, and H. B. Meller, senior industrial fellow. The latter was head of the survey in 1923-24. At the present time they are being aided in the experimental work by four assistants, but the comprehensive plans for future work will necessitate a larger personnel.

In a broad way, the goal of this work is not only to arouse public interest in the evils of air pollution, but also to develop, to propose and to secure the initiation of effective and economically feasible measures for relief. It will be necessary to consider, in addition to "dark smoke," the solids and obnoxious gases that do not give dark color to the gas stream.

The more specific topics which a study of this scope will entail include: methods of sampling and analyzing air; characteristics of effluent gases from different types of buildings, such as industrial plants, commercial plants, private dwellings, locomotives, steamboats and automobiles; determination of the amounts and characters of the emissions from boilers and furnaces under different conditions of loading,

fueling and firing; effects of different kinds and amounts of solids in the absorption of light rays of certain wave-lengths; effect of solids in the atmosphere on the formation and character of fogs; effect of different velocities of air currents in dispersing fogs containing different percentages and sizes of solids; effect of barometric pressure changes on the stability of fogs.

The extension of the investigation into the field of public health is of such general interest that it deserves special mention. The comparatively unknown effects on health of smoke, visible and invisible, present a field for inquiry whose importance can hardly be overestimated. Then, too, the hygienic aspects of natural ultra-violet radiation will be searchingly studied.

LAWRENCE W. BASS

### THE DES MOINES MEETING OF THE AMERICAN SOCIETY OF ZOOLOGISTS AND THE SECTION OF ZOOLOGICAL SCIENCES OF THE AMERICAN ASSOCIATION

SECTION F and the American Society of Zoologists will hold sessions for the reading of papers on Monday, Tuesday and Wednesday, December 30, 31 and January 1. Following the policy of recent years the program will be arranged with formal reading of papers in morning sessions and informal demonstration presentation in afternoon sessions. Those who expect to contribute should indicate which type of presentation they prefer. In accord with the usual practice all contributed papers will appear in the program of the American Society of Zoologists, Section F holding no separate sessions for the reading of papers. The address of the retiring vice-president of the section, Dr. M. F. Guyer, entitled "The Germinal Background of Somatic Acquirements," will be given immediately following the zoologists dinner on Monday or Tuesday evening. The business session of the section will come on Tuesday afternoon, immediately preceding the business session of the Society of Zoologists. Hotel headquarters for both groups will be the Hotel Savery, 4th and Locust Sts.; all rooms are with bath and range upward from \$3 for single rooms and \$4 for double rooms. Reservations for hotel accommodations should be made early by members and directly with the hotel, not through secretaries or local committee. Other hotels are available, a list of which will be given in an early issue of SCIENCE. Arrangements have been made for the usual railroad rates of a fare and a half and will be specially announced in the preliminary announcement of the permanent secretary. In securing transportation a first-class one-way ticket should be purchased and for each ticket a certificate