

### 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

for the Des Moines convention of the American Association for the Advancement of Science and Associated Societies should be obtained. This certificate should be presented at the registration offices immediately upon arrival and called for at the same place the next day; a half-fare returning ticket may be procured after obtaining a validated certificate. Return Pullman reservations on trains should be procured or reserved at the station immediately upon arrival.

Members of Section F who desire to present papers should send the exact title and an abstract of not more than 250 words to reach the secretary not later than November 15; titles received later than this can not be placed on the program and titles without abstracts will not be considered or accepted. The group (cytology, embryology, parasitology, protozoology, comparative anatomy, general physiology, etc.) in which the paper is to be read and whether charts or lantern slides will be used should be indicated. The rules of the American Society of Zoologists are followed in arranging the program and conducting the sessions; members are limited to a total of 15 minutes whether for one or several papers, and the time of students or others introduced by a member are included within the 15-minute limit. The titles and abstracts should be sent as early as possible, either to the secretary of the American Society of Zoologists, Dr. D. E. Minnich, Zoology Building, University of Minnesota, Minneapolis, Minnesota, or to the secretary of the section. The secretary of the section will be at the address indicated below from September 15 to January 20.

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#### THE NINETEENTH INTERNATIONAL CONGRESS OF PHYSIOLOGY

THE Nineteenth International Congress of Physiology opened at Harvard University on August 19, under the presidency of Professor William H. Howell, of the Johns Hopkins University, with more than 1,000 physiologists from all parts of the world in attendance. Thirty-five countries were represented.

The congress met in the United States at the invitation of the American Physiological Society, and the Federation of American Societies for Experimental Biology has shared with the American Physiological Society the honor of acting as hosts. Dr. Walter B. Cannon, of the Harvard Medical School, was chairman of the bureau in charge of arrangements.

Surgeon-General Hugh S. Cumming, of the U. S. Public Health Service, gave the opening address of welcome on behalf of the United States government. He was followed by Lieutenant-Governor William S. Youngman, who welcomed the members on behalf of the Commonwealth of Massachusetts. President A. Lawrence Lowell, of Harvard University, and Dr. Howell, president of the congress, gave addresses of greeting. Professor August Krogh, of the University of Copenhagen, director of the Zoophysical Laboratory at the University of Copenhagen, who was awarded a Nobel Prize for his work on the physiology of the capillaries, then gave an address on "The Progress of Physiology." Following the opening meeting there was a reception to the members in the Harvard College Yard.

The scientific sessions, beginning on August 20 and closing on August 23, were held at the Harvard Medical School, the High School of Commerce and the Peter Bent Brigham Hospital. An address entitled "Reminiscences of the Early Days of the Physiological Congresses" is delivered on Friday afternoon by Dr. Leon Fredericq, professor emeritus at the University of Liège, a past president of the congress.

The international committee includes Dr. William H. Howell, president of the congress; Dr. Filippo Bottazzi, of the University of Naples; Professor Otto Frank, of the University of Munich; M. Eugene Gley, professor of physiology at the Collège de France, Paris; Dr. Archibald V. Hill, of the University of London, and Dr. Johan E. Johansson, of the University of Stockholm, a past president of the congress.

Elaborate arrangements were made to receive the incoming members and their families. The dormitories of Harvard University were open to receive guests. At the Harvard Medical School a post office, a telegraph and cable office and a telephone office, a bank and an office of Thomas Cook and Son were installed. Throughout the congress buses carried members between the dormitories in Cambridge and the Harvard Medical School. In addition to the scientific sessions a number of entertainments were planned. On Thursday evening a dinner was tendered by the Federation of American Societies for Experimental Biology.

After the close of the congress on Friday afternoon a number of trips have been arranged for the foreign members. A party will go to Woods Hole to inspect the Marine Biological Laboratory. Arrangements have been made for a week in New York City, after which some members are visiting Canada and some will attend the Ninth International Congress of Psychology at New Haven.