

ENGINEERING RESEARCH INSTITUTE  
UNIVERSITY OF MICHIGAN  
ANN ARBOR

QUARTERLY PROGRESS REPORT NO. 1

DISPERSION AND PENETRATION OF POLLENS  
AND INDUSTRIAL CONTAMINANTS

June 16, 1953, to September 15, 1953

By

E. WENDELL HEWSON

Submitted to the Geophysics Research Directorate,  
Air Force Cambridge Research Center, Cambridge,  
Mass. The work reported herein is of a preliminary nature and the results are not necessarily in final form.

Project 2160

GEOPHYSICS RESEARCH DIVISION, AIR FORCE CAMBRIDGE RESEARCH CENTER  
CONTRACT NO. AF 19(604)-792

October 2, 1953

## ABSTRACT

An extensive survey of the literature in the field has been commenced. Some of the more significant features discovered will be published about March, 1954. Existing instrumentation is being studied, and improved methods will be tested fully and compared with the older methods.

INITIAL STUDIES

INTRODUCTION

An extensive review of the literature on the dispersion and penetration of pollens and industrial contaminants is under way. A substantial number of papers on dispersion have been found and their contents studied in detail, but none on the penetration of pollens and smokes has been located as yet.

Because of the nature of the project, it is felt that a research scientist with training in the fields of public health and engineering, and with experience in field work and instrumentation, should be obtained to assist with the research program. One candidate has already been interviewed by the Project Director, who stopped over in St. Louis for this purpose on his return from the Great Plains Turbulence Field Program in Nebraska. Several others will be contacted within the next week or two, and a suitable choice made very shortly thereafter.

The primary task at this stage is that of instrumentation. Existing methods of measuring concentrations are being reviewed. If none of these is suitable, new and appropriate methods will be devised. P. H. Gregory has used, for spore studies at Rothamstead Experimental Station, Harpenden, Herts., England, a recently developed instrument known as the Cascade Impactor. This instrument has been especially valuable with a modification designed by J. M. Hirst. A Cascade Impactor built by Casella of London and sold in the United States by the Mine Safety Appliances Company of Pittsburgh, Pennsylvania has been ordered for project use; delivery is expected in the next few days. Its possibilities will be fully studied.

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FISCAL INFORMATION

The balance remaining on the contract as of August 31, 1953, is approximately \$26,500. No substantial change in emphasis is planned.