

ASBESTOSIS—Part II. The Nature and Amount of Dust Encountered in Asbestos Fabricating Plants.

INTRODUCTION

In 1934 the Department of Labor and Industry of the Commonwealth of Pennsylvania received a request for information relative to the health of workers employed in asbestos fabricating plants in Pennsylvania. The Department had no data available, and a review of the literature at that time revealed a scarcity of information on the general subject of asbestos pneumokoniosis. Because of this lack of information, the industries in the State were consulted, and their cooperation was obtained to conduct a survey, which would include an evaluation of the hazard from the standpoint of the degree of dustiness and the physical condition of the workers. An agreement was made with the employers and employes that neither would be given specific information as to the physical findings of any particular workman, and that the original identity of all employes in this study would be destroyed, case numbers only being recorded. All records obtained were to become the property of the Department of Labor and Industry.

Asbestosis was first recognized clinically by Dr. H. M. Murray (16) at the Charing Cross Hospital, London, in 1900. Cooke (16) in 1924 reported a case of pulmonary asbestosis. Pancoast and Pendergrass (83) in 1926 examined a group of seventeen asbestos workers. Since then, other investigators have reported individual cases of asbestosis, but it was not until 1930 that Merewether and Price (74) published the results of a study on a group of asbestos workers, together with some evaluation of the degree of exposure. Lanza, McConnell, and Fehnel (66) have recently published a preliminary report of a comprehensive survey on this subject.

The industry in this State consists mainly of several fabricating plants engaged in the making of asbestos cloth, brake lining, insulating tape, asbestos rope and wick, and other miscellaneous products. According to the 1931 Pennsylvania Industrial Directory (61) there are approximately two thousand persons engaged in the manufacture of asbestos products in Pennsylvania.

The nature of asbestos dust is such that many of the standard procedures used for other dusts could not be used. Changes in the accepted standard method were required in the collection, counting, and particle size determination of the dust. In Part I of this report (41) the method of collection and counting of dust encountered in this study was described and summarized.*

* Samples of dust taken in plants for fabricating asbestos products were collected by a modified form of the standard method, using a 96 per cent U. S. P. ethyl alcohol as a medium. In this medium the particles were well distributed and readily counted. When distilled water was utilized as the collecting medium, agglomeration occurred immediately, and made counting impossible. Dispersion of the dust in alcohol is good. A settling time of at least thirty minutes was required before counting. The particle count in any given field remained constant after this period. A modified holder is described. It is constructed of leather straps, in such a way that the fluid in the impinger flask is visible at all times.