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Resume of Discussion on Diatomaceous Earth Problem
in California Between Representatives of the Industry
and the California State Department of Public Health

Two meetings were held, one on February 26, 1952 in Berkeley at the office of Bureau of Adult Health, and the other on February 28 in Los Angeles at the offices of State Health Department.

Present at the first meeting were the following:

For the industry:

Johns-Manville Corporation: Mr. O. B. Westmont, Superintendent of the Lompoc plant; Mr. J. P. Woodard, Director of Personnel Policies, New York office; Mr. H. M. Jackson, Safety Engineer, New York office; Dr. Anthony J. Lanza, New York, Medical Consultant.

Great Lakes Carbon Corporation: Mr. D. R. Tellefsen, Director of Insurance; Mr. E. A. Harris, Operations Director, Dicalite Division; Mr. R. W. Taylor, Personnel Director, Dicalite Division.

For the State Health Department:

Dr. M. H. Merrill, Acting Director; Dr. F. M. Kriete, Assistant Chief, Division of Preventive Medical Services; Dr. H. K. Abrams and Mr. F. R. Ingram, Bureau of Adult Health; Dr. Charles E. Smith, Chairman, State Board of Health; Dr. W. P. Shepard, Medical Consultant to the Bureau of Adult Health.

Present at the second meeting:

All of the above were present, with the exception of Drs. Smith and Shepard. In addition, there were present Dr. Walter Anderson, Lompoc plant physician for Johns-Manville Corporation and Dr. Reginald Smart, Los Angeles, Medical Consultant for both Johns-Manville Corporation and Great Lakes Carbon Corporation; and Mr. Christine Einert, Miss Patricia Marr and Mr. Paul Caplan, of the Bureau of Adult Health, and Dr. Waldo Oechsli of Bureau of Tuberculosis Control.

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TRIAL EXHIBIT

Dr. Merrill was chairman of both meetings. In opening the discussion he described the public health responsibilities of the State Health Department. In approaching problems, the State Health Department tries to bring together the people concerned to work out a satisfactory solution, and he cited examples of the work of the Department with other industries. Recently, diatomaceous earth has come forward as a public health problem and these meetings have been called to see if the Department, together with the industry, can do something to meet adequately the public health aspects of diatomaceous earth.

Dr. Abrams outlined the major questions that have arisen with regard to this problem: (1) The incidence and epidemiology of this disease have never been adequately established. This includes such questions as the occurrence of pneumoconiosis by occupation, type of dust, time and amount of exposure, and industry. (2) The relationship of this disease to pulmonary tuberculosis has not been satisfactorily elucidated. (3) No studies have been done in this country of possible health hazards in the numerous industries which use one or more forms of diatomaceous earth. In Italy reports of the disease have emanated from the industry which manufactures filter candles out of diatomaceous earth. (4) Obtaining of epidemiological data is the basic step necessary in working out a "maximum allowable concentration," which is a valuable tool for the industrial hygienist in achieving safe and healthful working conditions. Dr. Abrams cited studies which have been done by the U. S. Public Health Service in the field of quartz silicaand other materials, which have resulted in the development of "MAC's."

An outline of the type of information needed was presented:

1. Industrial: number, types, location of deposits and plants both producing and consuming diatomaceous earth materials; number of workers employed in these industries; number of workers exposed to the dust; description of processes in which the dust is produced or used.

2. Chemistry and physics: amorphous and crystalline forms; relationships with other silica materials, according to different deposits and different commercial products (quartz, tripoli, trydinite, cristobalite, asbestos, etc.); methods of analysis.

3. Clinical aspects:

   Types of disease caused.

   Relationship to tuberculosis.

   Relationship to classical silicosis and other pneumoconioses.

   Diagnosis, management.

4. Epidemiology: statistics on incidence by all factors and according to types of dust.

5. Prevention:

   Engineering program, especially for those dust-producing areas now not well controlled.

   Medical program.

   Health education.

   Employee participation.

It was pointed out that a good deal of the above information is already available in one form or another. It merely needs to be compiled systematically.

Dr. Lanza explained at length the research work sponsored by the industry which has been done during the past several years at the Saranac Laboratories of the Trudeau Sanatorium in New York. This work includes animal studies

with various forms of diatomaceous earth, animal studies with diatomaceous earth plus aluminum, and human pathological studies. The animal studies will contribute greatly to an understanding of the reaction of lung tissue to diatomaceous earth; nevertheless, caution was advised in applying these findings to the human. The final answer can only be found by long-term studies upon man himself, clinical, X-ray, and environmental.

Dr. Lanza elaborated on the difficulties in doing an epidemiological study of diatomaceous earth. He pointed out that these difficulties are inherent in any chronic disease and would be more difficult with a disease such as pneumoconiosis from diatomaceous earth since relatively few people are involved. Similar studies with regard to quartz silicosis were relatively easier because there had already been a large amount of information accumulated not only in this country but in Europe, South Africa, Australia and other countries. Moreover, many more persons are exposed to quartz silica.

Despite these difficulties, Dr. Lanza urged that such a study should be done.

Dr. Lanza and others emphasized the need for critical analysis of the data with regard to tuberculosis and diatomaceous earth pneumoconiosis. He pointed out that in many of the classical studies of quartz silicosis it had been found that in areas where there was a silicosis problem the pulmonary tuberculosis rate was also excessive.

Because there has been presented conflicting information regarding the incidence of tuberculosis in and around Lompoc, it was agreed by all that the State Department of Public Health should immediately undertake a thorough review of the available data on tuberculosis morbidity and mortality in this area over the past 10-20 years.

Dr. Lanza also urged that a study include a consideration of possible hazards to users of diatomaceous earth in other industries.

There was a good deal of discussion of the value of studying past experience of the industry and elucidating this problem. It had been pointed out by Dr. Abrams that to achieve, for example, an "MAC", it would be necessary to closely correlate dust counts for many years with clinical and occupational data for many years. Therefore the industry could greatly contribute to this problem and shorten the period of future studies if it could make available as much of this type of data as it had in its possession. The Bureau, itself, has dust count data dating from 1964. If this could be correlated with the occurence of lung changes of all types along with detailed occupational exposure for each case it might be possible to arrive at the answer to the question of how much dust exposure, of what type, over any given period of time, would result in disease.

Mr. Taylor of the Great Lakes Carbon Corporation and others of the industry pointed out their feeling that their past data on employment would be inadequate since payroll designations of occupations do not necessarily reflect the true occupation of the employee. He and others pointed out that a man working in the quarry would be transferred to the mill during rainy weather and, similarly, other laborers would be transferred from one job to another as the need or conditions indicated.

The suggestion was made that the first essential step would be to plan the study. Such planning would include (a) the determination and definition of information to be collected and (b) the determination of methods by which data might be collected. At this point it would be valuable to review plant records to determine whether the data therein available would be adequate for the purpose of the study, as defined under (a) above.

Members of the industry emphasized the importance of continued efforts to control dust, regardless of whether or not a study might be made. New techniques

in box car loading (use of fork lift trucks and pallets) were cited as examples of a continuous search for new methods of dust control. Mr. Westmont pointed out that on certain specific operations, dust control is still extremely difficult, and research in technical methods should not play second fiddle to a broader study.

Dr. Lanza and others discussed plans of the industry to use aluminum prophylactics. He cited the experience in the Canadian quartz mines with this material and also pointed out that experiments are now under way with animals at Saranac in connection with diatomaceous earth.

Dr. Merrill raised the question of participation of the U. S. Public Health Service in the study. He stated that the USPHS could bring to the study their experiences elsewhere, would be able to assist by providing additional resources, and would make possible correlation of the study in California with similar studies in other states. Dr. Lanza stressed the value of USPHS contributions in many other fields of industrial health and supported their participation.

Dr. Merrill expressed the desire of the State Department of Public Health to cooperate with the industry and the USPHS in a long range study of the problem of diatomaceous earth. He suggested that the problem be approached in the following steps:

1. A study group be formed from representatives of industry, the USPHS, and the SDPH. This group would plan a definitive study of the problem of diatomaceous earth. The planning phase would include a study of plant operations and a review of available information, both in the scientific literature and in available records.
2. The final plan would be presented to a group similar to that meeting here, for a policy decision as to whether or not the plan presented

should be carried out. If the decision were favorable,

3. The actual study would be carried out.

Agreement by the industry to USPHS participation was deferred for a few days on the suggestion of Mr. Tellefsen, who stated that he would inform the State Health Department within the next week. Dr. Merrill pointed out that as soon as agreement by the industry was forthcoming the USPHS would be invited to assist in drawing up detailed plans for a study and that the question of their direct participation in the actual study would be brought up for discussion later.

In closing the meetings, Dr. Merrill emphasized that a study of this problem should be done and requested the industry for its full cooperation in this matter.

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