

C A M B R I D G EPLAINTIFF'S  
EXHIBIT  
WRG-711

TO: H.A. Brown  
FROM: H.A. Eschenbach

DATE: May 31, 1973  
SUBJECT: Talc Symposium  
8 May 1973

CC: O.M. Favorito  
H.C. Duecker  
R.A. Kulberg

This symposium was held at the Department of Interior by the Bureau of Mines for the purpose of "sharing knowledge" about talc, fibrous talc, and tremolite. However, A.P. Nelson, Acting Assistant Director, in his opening remarks commented that the Bureau has in the past followed the Threshold Limit Values (TLVs) published by the American Conference of Governmental Industrial Hygienists (ACGIH) but now plans to deviate where it is felt that the TLVs are inadequate. The tremolite-talc area is one place where inadequacies exist and the Bureau is hoping to come up with its own standard. This is interesting because the ACGIH is more stringent than OSHA. Obviously, the Bureau is trying to out-OSHA OSHA and save its safety function.

The meeting was attended by about 100 people representing industry, medicine, and "friends of the court" (Selikoff's people). Presentations and questions were technical in nature and "low-key" until mid-afternoon when Arthur M. Langer of Mt. Sinai made a presentation. His conclusions were completely opposite those of most of the other participants and his shrill, rapid-fire delivery so annoying that one spectator jumped up, yelled "You guys are still full of crap", and stormed from the auditorium. Undaunted, Langer continued to press for treating talc-tremolite as chrysotile and a zero fiber limit.

Glen Sutton and Walter Bank of Bureau of Mines Health and Hygiene Lab, Denver, were present but made no presentation. I tried to determine who in the Bureau was compiling the data from the symposium, but no one seemed to know. Sutton asked me during a coffee break if we had done mortality, long term health, and medical-statistical studies at Libby. The question was apparently prompted by presentations by Celite Division of J-M and United Sierra which stressed studies of this type. I indicated that we were concentrating our efforts on reduction of fiber levels at this time and did not wish to divert our people from the current to the historical until our fiber level goals were accomplished. This seemed to satisfy them, but they may be requesting this type of study in the future.

Data presented at the meeting concerned talc-tremolite and pure talc exposures. There was a great difference of opinion about which of the

agents was harmful, exact identification of the agents themselves, and correlation of the data. It was obvious to all and stated by one speaker, Dr. G.W.H. Schepers, that a thorough study of a tremolite exposure without talc would answer a great many questions. This coupled with Langer's (Selikoff's) remark that they had been looking at western vermiculites and Sutton's query about mortality studies may indicate immediate future research thrusts.

Following is a brief outline of each presentation:

Kleinfeld, Morris - Retired Director of N.Y. State Division of Industrial Hygiene, now a consultant - Study of Northwestern N.Y. talc mine and mill; talc, serpentine, tremolite, anthophyllite, free silica - 3%; mortality 4 times general population. Mortality rate is dropping, probably due to controls. Most mortality due to pneumoconiosis rather than cancers and most common to workers exposed prior to 1949 when controls installed. 25 of 108 deaths due to cancer (14 of lung); this is also 4 times expected. No great amount of mesothelioma. (Kleinfeld attributed this to the less serious hazard of tremolite; Langer commenting on Kleinfeld's data attributes it to the fact that so many workers died of pneumoconiosis that they didn't live long enough to develop mesothelioma.)

Richard Lamar - Celite Div. of J-M - Technical paper on identifying talc, tremolite, and other fibers (paper attached). The main point being that there is no such thing as fibrous talc, it is really tremolite. If there is a bad actor, it is tremolite and not talc. J-M is mining only non-tremolite talc as a precaution.

Mulryan - President, United Sierra - Discussion of composition of talc from various areas. Indication that study of their workers with many years exposure to high concentrations of heavily tremolite contaminated talc reveals no disease of any type. Ended by saying that Sierra has ceased mining and milling high asbestiform talcs.

Thompson - Research - United Sierra - Comments on weakness of fiber counting techniques. Also stressed that rolled up talc looks like a fiber.

William E. Smith - M.D. - Continued to report lack of mesothelioma in hamsters into which tremolitic talc has been injected. 50% of some animals with chrysotile develop mesothelioma. Fibers  $6.0 \times 0.2 \mu\text{m}$  caused mesothelioma  $.9 \times .04 \mu\text{m}$  did not. Has not done pure tremolite because he has not been able to procure any in fibrous form.

G.W.H. Schepers - M.D. - Believes that tremolite and talc will not cause problems like those of chrysotile. In every case of alleged fibrosis or mesothelioma due to tremolite or talc referred to him, he discovered chrysotile or amosite exposure. In the lung, chrysotile is surrounded by ferrogenous bodies (iron containing protein) in phagocytes which are dead.

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In tremolite, phagocytes surround fiber but remain alive. Tremolite-caused disease is a "storage" disease which will improve as the lung clears after exposure ceases. Also commented on unavailability of fibrous tremolite for animal experiments.

If we have need of a physician-research scientist who is sympathetic to our position and has broad recognition, this may be a good candidate.

Harold D. Stanley - (paper attached) - Pfizer, Inc. - Technical paper on detection and identification of asbestos and asbestoform minerals in talc.

Arthur M. Langer and William J. Nicholson, M.D.'s from Mt. Sinai.

Langer - Specializing in identification and characterization of particles in consumer products. Three tremolites are associated with talc:

|                |             |
|----------------|-------------|
| True Tremolite | Ca, Mg.     |
| Hexagonite     | Ca, Mn.     |
| Tirodite       | Ca, Na, Al. |

Talc also contains anthophyllite. Tremolite is more fibrous than chrysotile or anthophyllite. Arthur Norton of Howell in Britain has found the retention of amphiboles in the body to be 40-60%. Rubber workers exposed to talc-tremolite develop fibrosis. "We have looked at vermiculite from the west, some have lots of tremolite and some of them don't." Talc is potentially as dangerous as chrysotile.

The findings of MacDonald in Canada of only seven cases of mesothelioma in the asbestos workers is probably due to the source of his funds (the asbestos industry). Selikoff's people have found over 200 mesotheliomas in the same workers.

Nicholson - Over 50% of the deaths in amosite workers are due to cancer and asbestosis, insulation workers and J.M. asbestos manufacturing workers are in this 40-50% category. Asbestos textile workers show only 20-30% because they die of dust clogged lungs before asbestosis or cancer can develop. Talc workers will have at least the same problem due to tremolite. Selikoff asks that a complete revaluation of data on asbestos be made to reduce TLV to 0 fibers and that talc or tremolite or whatever the fibers in talc are be considered as asbestos.

*H.A. Eschenbach (mh)*

H.A. Eschenbach

HAE:mh

Attachments

TALC SYMPOSIUM

MAY 8, 1973

INTERIOR BUILDING AUDITORIUM

18th & C STREETS, N.W., WASH., D.C.

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|                  |                                                                                                           |
|------------------|-----------------------------------------------------------------------------------------------------------|
| 9:00 - 9:15 am   | Registration                                                                                              |
| 9:15 - 9:30      | Welcome - D. P. Schlick, Deputy Director<br>Bureau of Mines                                               |
| 9:30 - 9:45      | Arthur P. Nelson - Acting Assistant<br>Director, Bureau of                                                |
| 9:45 - 10:15     | Dr. Morris Kleinfeld                                                                                      |
| 10:15 - 10:45    | Mr. Richard Lamar - Research Manager,<br>Celite Division                                                  |
| 10:45 - 11:15    | Mr. Mulryan - United Sierra                                                                               |
| 11:15 - 11:20    | Mr. Robert C. Bacon - R. T. Vanderbilt<br>Company, Inc.                                                   |
| 11:20 - 11:45    | Dr. C. S. Thompson                                                                                        |
| 11:45 - 12:15 pm | Dr. William Smith - Fairleigh Dickinson<br>University                                                     |
| 12:15 - 1:00     | Lunch                                                                                                     |
| 1:15 - 1:45      | Dr. G. W. H. Schepers - Veterans<br>Administration<br>Hospital, Lebanon                                   |
| 1:45 - 2:00      | Mr. Harold D. Stanley - Pfizer Inc.                                                                       |
| 2:00 - 4:00      | Dr. William J. Nicholson - Mt. Sinai School<br>of Medicine,<br>Dr. Arthur M. Langer<br>Dr. Arthur L. Rohl |
| 4:00 - 4:30      | Dr. Sykes - Ralph Nader Associates                                                                        |

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