PLAINTIFF'S EXHIBIT
K-1057

THE TRUDEAU FOUNDATION
FOR THE CLINICAL AND EXPERIMENTAL STUDY OF PULMONARY DISEASE

DEPARTMENT OF BIOCHEMISTRY
DEPARTMENT OF PHYSIOLOGY
DEPARTMENT OF RADIOLOGY

OFFICE OF DIRECTOR
P. O. BOX 883
SARANAC LAKE, N.Y.

SARANAC LABORATORY
TRUDEAU LABORATORY
TRUDEAU SCHOOL

September 4, 1956

Charles F. Shook, M.D.
Medical Director
Owens-Illinois Glass Company
Toledo 1, Ohio

Re: Lee Bryston
Saranac Laboratory P-56-682
OCD 68

Dear Doctor Shook

Sections and chemical analyses on the material in this case have now become available.

The large masses referred to in the description of the gross specimen already sent to you have proved to be somewhat atypical conglomerate silicotic nodules. There is no conclusive evidence of tuberculosis or of a tuberculosilicosis. The gutty elements are bone. Bronchi and blood vessels in these masses are extensively deformed, occluded, or disorganized.

There are no discrete silicotic nodules. However, the whole lung parenchyma is the seat of alveolar wall fibrosis and there is atrophic emphysema with focal bullous formation.

Thrombosis of pulmonary arteries and areas of infarction are demonstrable in several of the sections. The thrombi are partly organized but not yet too old. These changes, therefore, may be preagonal in significance only.

The chief nocuous minerals found in the lung tissue are tridymite, cristobalite, and quartz. The amounts of these substances vary rather sharply according to whether the determinations were made on the lung tissue generally or specifically on the areas of massive fibrosis. In the latter areas the lung ash (16.65%) is about double the average (7.4%) for our series of silicotics. On the other hand, in the rest of the lungs the lung ash (3.27%) approximates the average lung ash in normal lungs (3.0%).

The total silica content of the ash (3.16 - 5.11%) is only slightly greater than that for normal persons (0.4 - 8.6%) and far below average for our series of silicotics (19.9%). On the other hand, Doctor Gardner has described silicotics with a total silica content of their lungs as low as 0.3%. The free silica content of the lung ash (1.3 - 2.9%) is likewise below the average for our series of silicotics (9.3%). Again, however, silicosis has been admitted in the presence of but 0.2% free silica.

PLAINTIFF EXHIBIT
Kirstein-152
8-28-78

THE SARANAC LABORATORY
For the Study of Tuberculosis, Occupational Disease, and Industrial Hygiene
Founded by EDWARD LIVINGSTON TRUDEAU *in 1885*
7 CHURCH ST., SARANAC LAKE, NEW YORK

Charles F. Shook, M.D. September 4, 1956

P. O. Box 551

Re: Lee Bryston
Reference: Saranac Laboratory P-56-682
OCD 68

Telephone: Laboratory 613
Director 580

The amounts of tridymite (0.6 - 1.7%) and cristobalite (0.4 - 1.2%) found in the lung ash are very much in excess of what we have previously found. Perhaps these forms of free silica explain the pulmonary pathology. We know that cristobalite and tridymite are many times more potent than quartz as fibrogenic agents.

The occupational history you furnished us over the telephone does not help to explain this case. He probably worked in a ceramic products plant at one time or another in his life to account for the presence of the excessive quantities of high temperature free silica found in his lungs. Could this matter be looked into again, or may we assume that he could have been exposed to these substances while performing his duties as a plant guard?

I will set all this up in a formal report when I return shortly from an out-of-town trip. We do hope you will let us have a look at the X-rays of this most interesting case.

With kind regards,

Yours sincerely,

G. W. H. Schepers, M.D., D.Sc.
Director

GWHS:LB

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CHEMICAL, PETROGRAPHIC AND X-RAY DIFFRACTION ANALYSIS OF LUNGS

Name L. Bryston Case No. P-56-682

	Lung: Left upper lobe	Right lobe	Apical mass
Ash, per cent of dried tissue	3.27	3.28	16.65
Total SiO_2, per cent of ash	5.11	3.16	4.91
per cent of dried tissue	0.17	0.10	0.82
Free SiO_2, per cent of ash	2.9	1.3	2.9
per cent of dried tissue	0.09	0.04	0.48
Kind of minerals in tissue, per cent of ash			
Free silica			
Quartz	0.5	0.3	0.3
Cristobalite	1.2	0.4	0.9
Tridymite	1.2	0.6	1.7
Mullite	2.3	1.6	1.9
mica	tr ?	tr ?	tr ?
Component Analysis of Ash, per cent of ash			
SiO_2			
Fe_2O_3			
Al_2O_3			
CaO			
MgO			
Na_2O			
K_2O			
P_2O_5			

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