

1019

Office Memorandum • UNITED STATES GOVERNMENT

TO : Bernard Nebel, M.D., Medical Branch
 Division of Biology and Medicine, Washington

FROM : *Ray E. Albert*
 Ray E. Albert, M.D., Medical Officer
 Health and Safety Laboratory, NYOO

DATE: April 9, 1954

721118

SUBJECT: CONFERENCE ON AEC-USPHS COLORADO PLATEAU STUDY ON MINERS' LUNGS

SYMBOL: HS:REA

A meeting, under the chairmanship of Dr. Shields Warren, was called to discuss the ways and means of setting up a program to determine the distribution and amounts of trace and radioactive elements in the lungs of persons who had worked in and about the Colorado Plateau mines and to correlate these findings with histological evidence of lung disease.

Persons attending the meeting included Drs. Warren, Nebel, Kaiser, Queen, Lansky, McNaught, Lisco, Kushner and Albert.

The discussion started by outlining the nature of the project including radiochemical, radioautographic, pathological and histochemical studies of the miners' lungs. Dr. Warren indicated that a study is now in progress in Utah under Dr. Fellis' direction for the clinical examination of miners. This is supported by the USPHS. Dr. Warren suggested that spirometric studies be added to this program in view of the simplicity of the method and the large amount of data which it will provide with minimal expenditure of time and effort.

Following this, there was considerable discussion of the methods of handling the autopsied lungs including the problem of inflating the lung, preserving it and the appropriate sectioning procedures. There was difference of opinion as to how the lung could best be inflated. Dr. Warren was of the opinion that a procedure involving slitting of the primary bronchi and simple immersion in formalin would be adequate. Drs. Queen and McNaught have used the technique of filling the bronchi with formalin under slight pressure. Mention was also made of injecting the bronchial arteries with formalin. Some discussion was had about the nature of the container used for shipping the lungs and it was agreed that sealed plastic bags would be the most appropriate.

No definite agreement was reached on the methods of sectioning. Dr. Warren suggested the use of a standard motor-driven circular blade slicer as used in delicatessens. Sections of formalin preserved lungs would be made in a horizontal plane (considering the lung and position) with a thickness of 1 or 2 millimeters.

1154797

326 U.S. ATOMIC ENERGY COMMISSION	
RG	
Collection	<i>DBM</i>
Box	<i>335</i>
Folder	<i>10</i>

MEDICINE, HEALTH & SAFETY 9-7

Colony P. P. P. P.

April 9, 1954

Dr. Kushner pointed out that while such sections would be useful for detecting gross lesions and radioautography, it would still be necessary to have material for histological examination. He has made $3\frac{1}{2}$ x 4" sections 10 microns thick. Dr. McNaught pointed out that all of these procedures would involve a tremendous expenditure of effort in technical time to prepare and examine the radioautographs as well as the histology. Dr. Albert suggested that each of the interested groups be provided with a single lung to familiarize themselves with the magnitude of the problem and possible shortcuts. Dr. Lansky pointed out that in his experience, grinding of the microtome knife left sufficient metallic debris on the blade to contaminate the tissue specimen insofar as chemical analysis is concerned. Other techniques are available including plastic or glass knives as well as cutting with an air jet.

Dr. McNaught wished to know how difficult the radioautographic method is in practice and wondered how long it would take one of his department members to learn the technique. Dr. Warren felt that the situation would be best handled by having Dr. Arnold from Salt Lake City assist them in setting up the method and acting as a consultant whenever necessary. Dr. McNaught then asked whether it would be worthwhile, as a side project, to collect femurs from the cadavers used in the Anatomy Section for analysis of radioactive materials. Dr. Warren did not think it was too important at the present time but indicated a need for bone samples from children in the 4 to 5 year age group.

The meeting closed with Dr. Warren's asking that a Steering Committee consisting of Drs. McNaught, Fallis and Lansky set up the pilot study and bring the other interested groups into the program at the appropriate time. The funds for this project would best come from a supplement to the existing joint AEC-USPHS program for the clinical study of miners in the Colorado Plateau.

cc: Mr. Eisenbud

1154798

DOE ARCHIVES