

July 20, 1953

Ingalls H. Simmons, Lt. Col., M.C.
Chief, Preventive Medicine Division
Headquarters Fifth Army
1660 East Hyde Park Boulevard
Chicago 15, Illinois

Dear Colonel Simmons:

This is written in response to the request of Lt. Col. Gelperin, in a letter of July 17 (ALFMD-PM), for information on the possibilities for injurious effects that reside in the exposure of men to dust and fume created in cutting and welding titanium.

I know of no evidence that would lead one to believe that there is any significant hazard in an exposure of this type over considerable periods of time. I would not say that there is none, since I have had no experience with exposure to the metal in the form of dust or fume. Machle (in Wampler's book on Industrial Medicine, Williams and Wilkins, Baltimore 1943) has said that "inhalation of the oxide has caused pulmonary irritation in guinea pigs," and there is a belief, which I have not seen confirmed, that sufficient exposure to the fume could give rise to metal fume fever, but there is nothing to indicate that the materials in common use as pigments are dangerous in any way.

I should think that the situation which Lt. Col. Gelperin mentions, if it is sufficiently significant and persistent, would provide a very good opportunity to measure the extent of the exposure, to determine the nature (compound, size of particle) of the material dispersed in the atmosphere, and to establish by suitable clinical and laboratory examinations of personnel whether or not any hygienic problem exists. I don't know of any work of this type that has been done to establish the positive or negative facts. Perhaps that is the reason for the almost complete lack of information about titanium in relation to human exposure.

Cordially yours,

Robert A. Kehoe, M. D.

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