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March 31, 1970

Congressman Roger Zeeb

Dear Roger:

Our colleague, Congressman John Coffman has recently made extraordinary charges against the government and the Atomic Energy Commission. Since the matter is likely to change, it may be helpful for you to know about the issues. I have prepared a short outline of the essential details as I know them.

It is not likely that you will be drawn into the controversy, but it is to your advantage to know about the situation.

Sincerely

Gordon R. Jones

University of California at Berkeley
The Regional Library/The University Art Museum, Berkeley, CA
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About a year ago, Professor Robley Evans, a biophysicist at MIT, claimed from study of persons exposed to radium borders that he had established absence of bone cancer risk below a threshold of radiation exposure. Evans' assertion was not statistically valid. A few months ago our Professor John Gofman concluded that Evans was in error and that his error was being accepted as reason to permit greater exposure to radium. Gofman began an attack on Evans which he has now enlarged to include all policies about radiation protection standards. He has three contentions. 1) Evans is wrong, and radiation effects, including carcinogenesis, occur at small exposures but at risks proportionally reduced from the risks observed at high exposures. 2) Radiation exposure increases the risk of cancer multiplicatively (that is radiation induced risks of cancer are not added to other cancer risks but multiplied by other risks) and 3) that allowance of radiation exposure to the public should be reduced to "zero".

1) The first contention has no force because all governmental policy has been set on the assumption of existence of small risks in the low exposure range. These policies were established about 12 years ago, in large part as a result of my findings.

2) Radiation exposure seems to add risks of cancer rather than multiplying the natural risk. I had originally proposed a multiplicative interaction between radiation and other environmental factors, but I have found since 1967, that nearly all information supports additiveness of radiation and other hazards. The recent follow up of uranium miners show a multiplicative interaction between smoking and exposure to radon (radium emination) but other explanations may account for this observation. Gofman's argument is based on the evidence that uranium miners have ten times more lung cancer whether they smoke or not and smoking already increases the risk of lung cancer by a factor of thirty times. There are always difficulties about such an isolated observation. A number of scientists are gathering new information to test the possible interaction between radiation and other cancer risks. We expect to be able to have a new detailed look at this entire question in mid-May.

3) Setting radiation exposure limits to zero is in any event unwarranted. Zero is not comprehensible and measurable exposures can be very much less than natural intensities of exposure to ionizing radiations. For example, Louis Alvarez just completed the scanning of the inner structures of the Great Pyramid using only high energy cosmic rays, this is one of the most remarkable measurements ever attempted at low intensities of ionizing radiation. Zero radiation exposure would also eliminate use of coal because coal smoke and ash contains appreciable amounts of long-lived radioactive materials.

The Gofman attack on radiation exposure occurs at the same time that there is a wave of leftist propaganda against weapons, defense and energy development. Locally, as you know these radicals are moving against the university and the Lawrence Radiation Laboratory. Gofman is giving his finding in a specially arranged course this quarter. We can expect that his arguments will be picked up by the new environmental movement.

Harold S. Jones