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Dr. Paul B. Pearson
Acting Chief, Biology Branch
Division of Biology and Medicine
Atomic Energy Commission
Washington 25, D. C.

Dear Doctor Pearson:

My comments on the report of the meeting of the panel on the long term effects of acute and chronic radiation are as follows:

The suggested experiments are useful insofar as they will furnish reliable data on well defined conditions of exposure to ionizing radiation. They would, however, be difficult to extrapolate to other conditions because they are not designed to investigate the mode of recovery of late radiation effects. During the discussion I outlined a series of experiments designed to elucidate this point by keeping the total dose of radiation constant but varying the time between exposures. The interpretation of experiments of this type is facilitated if only two exposures are considered. Thus I would propose the following pilot experiments:

Exp I	1st dose	200	intervals 1,2,4,8,16 weeks	2nd dose 600r	observed for life
Exp II	1st dose	400	" " " " " "	2nd dose 400r	" " "
Exp III	1st dose	600	" " " " " "	2nd dose 200r	" " "
Exp IV	1st dose	800	" " " " " "	2nd dose 0r	" " "

At 50 animals per group, these experiments will necessitate 750 additional mice, since Exp IV has already been contemplated in the minutes. The thoughts behind this type of experiment have been exemplified by a paper of Fano and Marinelli and the experimental approach has been found feasible in the case of skin erythema (Quimby, Reissner, etc.).

Another item which I would like to bring to your attention is the desirability of appraising the panel of all pertinent data available by means of a well conducted seminar. Dr. Sacher and Dr. Boche come immediately to my mind as eminently qualified to do so.

The above suggestions are motivated by the growing realization that it might prove impossible to perform indefinitely experiments designed to meet all specific practical problems, since these are likely to change and grow in the future, and that the most realistic approach then would be to determine empirically the laws of biological recovery and its parameters. From these, predictions on the results of different conditions of irradiation could be easily computed.

Sincerely yours,

L. Marinelli

L. D. Marinelli
Assoc. Director, Health Physics Division

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