PHYSICIANS NEWS SERVICE, INC.
130 East 59th Street, New York 22, N. Y. · PLaza 9-6300

February 19, 1959

Nan

Dr. Joshua Lederberg
Department of Biochemical Genetics
Stanford University
Stanford, California

Dear Dr. Lederberg:

SCOPE Weekly, a medical newspaper published for the medical profession, is preparing a series of articles on the clinical implications of biochemical genetics with particular reference to the work carried out by yourself, Dr. Tatum and Dr. Beadle.

I have been fortunate enough to secure the cooperation of Dr. Tatum whom I have interviewed twice and who has agreed to go over the series for accuracy.

I am hopeful that you will find it possible to dictate a few words as to the medical potentialities of transduction. I have been intrigued by a section of Dr. Zinder's article on your work in the November, 1958 Scientific American in which he writes:

> "It seems possible to move any heritable trait from one cell to another by transduction. We have succeeded in transducing almost every trait we can reliably detect by experiment, including drug resistance, motility factors and antigenic factors."

Does this indicate anything of ultimate clinical use as to the building of affirmative cellular characteristics as a counter to disease? Can you say anything as to how transduction might concern future cancer therapy or as to any light it may throw on the nature or mechanism of cancer?

Might I also ask if you believe that chemical intervention to correct enzyme changes, deficiencies or cancellations as a result of genic mutation will become a practical clinical procedure in the foreseeable future in the treatment of inheritable metabolic disease? Can you give any indication of the range of entities which may be involved?

I hesitate to ask any more questions and yet I would also like to know whether you are acquainted with any clinical work or experimentation at present in which chemical intervention is being attempted to rectify metabolic abnormalities due to enzyme change from genic mutation. For example, here in New York City at Mount Sinai Hospital, a team headed by Dr. Milton Mendlowitz is suggesting that hypertension may be caused by an enzyme deficiency. The deficiency of enzyme omethyltransferase is said to permit an overproduction of the hormone noepinephrine, causing blood vessels to constrict and resulting in hypertension. Efforts are being made to purify the enzyme for use in chemical intervention ☺

Do you know of any similar efforts, similar at least as to chemical intervention to restore metabolic balance after an enzyme change?

(Cont...)

If all of this represents too much of an interruption, anything you would care to say about the possible clinical implications of biochemical genetics would be most gratefully received. If you could send us any of your most recent speeches or papers, we would be additionally grateful. We are interviewing Dr. Beadle, Dr. Zinder, Dr. Mirsky, Dr. Stanley, Dr. Pauling, Dr. Muller and several others concerning this series. Any material you send us will be submitted to you for correction and approval.

We feel that such a series, in addition to its inherent interest and timeliness, may also serve the purpose of further impressing upon the American Medical community the worth of basic science. There can be few better illustrations of this than the work for which you and your colleagues received the Nobel Prize in medicine. May we hope for your cooperation?

Sincerely yours,

Richard O. Boyer

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Editorial Department