June 9, 1942

Dear Max:

I have just seen your review in Advances in Enzymology. I'd like a reprint of it, if you have any left.

You may have heard that we are going to Stanford next month. I'm going to work with Beadle on the problem of the future. In case you haven't heard, the set-up is as follows: The mold Neurospora requires, in addition to a C source and inorganic salts, only one growth factor--biotin. All other factors are synthesized by the organism. By irradiation, Beadle and Tatum have been able to induce mutations which require other factors in addition to biotin. The mutants can be isolated, crossed with one another, etc. The mutations are inherited as recessives. So far, they have obtained mutations for thiamin, B_6, pantothenic, two nicotinics, and half a dozen amino acids. In addition, there are some which require unknown factors. The importance of this is obvious. In addition to being a systematic method for the discovery of new growth factors, each mutant is an assay organism for the factor in question. This in itself is of great usefulness for known substances whose assay is difficult (e.g., B_6). There are a dozen other variations and angles to the problem. For example, this is very favorable material for studying the catalytic role of vitamins in cell metabolism. And then, of course, there is the problem of the future--the chemistry of the gene.

The whole thing is so beautifully conceived, the choice of organism so perfect both for chemical and genetic analysis, the techniques for handling it so precise, that it is indeed a marvellous creation to behold. Beadle is really an experimentalist of the first magnitude.

Dave, by the way, is already at Stanford. He is working on the isolation of the unknown factors.

Erik is going to Pittsburgh--my native heath--in September. He will be at the West Penn Hospital, working on the enzymatic aspects of sulfa drugs. He got his Ph.D. this year.

Pearl sends love. Present my compliments to Manny.

Norman Horowitz