October 17, 1949.

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Dear Francis:

In the course of a systematic search for recombination among E. coli strains, we've picked up a peculiar reversion phenomenon in which I hope to elicit your interest.

W-1189, which is being sent along, is a threonine-histidine-less, maltose-negative mutant obtained in three stages, in the indicated order, from a prototrophic coli isolated by Sarles and Shapiro from chicken feces. Although the unexpected reversion behavior confuses the issue somewhat, I think we have good evidence that this strain does recombine within the same and another (different?) coli strain from the same source. It was noticed, however, that prototrophs appeared on minimal agar plates spread with washed cultures of this parent alone. For example, in yesterdays experiment, 10^8 cells from Pennassay broth gave: (colonies on agar)

minimal:	8, 11
+ hist	448, 380
+ thre	14, 15.

There are obviously far too many prototrophs to be accounted for as simple coincidence. Also, I have done a few preliminary tests, which indicate that both prototrophs and single mutants make up the colonies found on single-supplemented medium. The prototrophs have the same fermentative character as the parent. The same phenomenon was observed in the T-H- before the Mal- mutation was obtained, and fresh single colony isolations have no further effect.

I am not especially interested in working out the mechanism of the double reversion, but would like to know whether you would be interested yourself, or for one of your students. I think it very unlikely that there is a suppressor mutation covering both T-H-. The bug is rather rough, and difficult to suspend uniformly in saline, but plain water should remove that impediment. The strain is being sent in hopes you will be interested; throw it away otherwise. But if you can play with it, let me know what else you may need.

We are looking forward to seeing you in NY at Christmas- probably we will be at the Gov. Clinton. Best regards from Esther,

Sincerely,