

June 9, 1949.

Dr. L. Cavalli,
Dept. Genetics,
University of Cambridge,
England.

Dear Dr. Cavalli,

I hope you will forgive my delay in sending you duplicate subcultures of the stocks which were lost from my letter of March 24. However, I have been away from the laboratory part of this time, and also I have been a little perplexed about what would really be worthwhile to send you. You may by this time have noticed my paper in the April Proc. Nat Acad. Sci. which describes some of the perplexities of the aberrant heterozygotes. In an attempt to elucidate the role of the Mal₁ region (since Mal has always been ~~hetero~~ hemizygous when other factors were homo- or heterozygous) I have been trying to map it, and the results so far indicate that it may be off on a "branch" of the chromosome, i.e., indicating structural heterozygosity in the stocks used. However, further tests on crosses of segregants from the same heterozygote, which should be structurally uniform, have given the ~~same~~ peculiarities of segregation, so that the situation is not yet settled. I am writing you this, because I am afraid now that the assumptions, which had been made previously, that segregation was essentially random, and that the ratios recovered are the result only of the selection imposed by the minimal medium, may not be true. In this connection, detailed segregation ~~data~~ and crossover data will be very useful. We are doing a little of this, and will send you a summary as soon as feasible. Meanwhile, any information that you may have been able to accumulate in crosses involving the complex fermentation stocks would be very useful.

I am sending you again a few stocks which may be useful.

W-677 (closely related to W-583, but carries a non-epistatic, but difficult-to-score Gal-) Lac₁- Mal₁- Gal- Xyl- Ara- Mtl- V₁^F TLB₁-

W-945 (carries same Lac, Mal factors as W-677, but the other mutations may be different, as they were obtained independently, and have not been tested.) Lac₁- Mal₁- Gal- Ar- Xyl- Mtl- TLB₁-. Judging from the occurrence of some weakened Lac⁻ recombinants in outcrosses, this stock also carries a factor which may be partially epistatic to Lac⁻, but probably not enough so to cause any confusion. I am of course continuing to try to develop the most suitable stocks.

W-705 B-M-Lac₁- Mal- Ara- Gal- V₁^F. The Lac₁- and V₁^F of this stock are allelic to those in W-677, although of independent occurrence. I have no further information on the other factors.

W-826 Histidine-; Serine or Glycine- New mutant from K-12, using penicillin
W-836 methionine/ lysine-; tryptophane- " ". May be useful in "outcrosses",

There is very little else that I can report to you. I hope and trust that you have had better luck with EMS. And, of course, I would be very pleased to hear any later details on your stocks which show high rates of recombination.

Sincerely,

Joshua Lederberg,
Assistant Professor of Genetics