April 28.1949

Dear Max,

Some hurried answers while I check the cultures you sent.

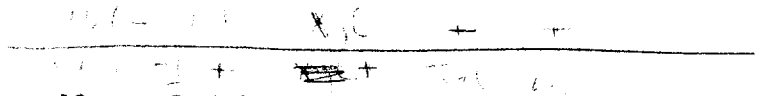
I don't know of any good way to accelerate segregation. My main troubles had been the reverse. I did do one experiment with the addition to broth of ½% sodium nucleate with promising results. It might be worth trying.

H-168 is probably hemizygous for Mal-, heterozygous Ara - # . But the Ara marker isn't worth much, and I would ighore it. I'm still bugy trying to develop stocks which may have more clearcut markers, more suitably spaced, than the rather difficult Gal- and Ara mutations in 168.

Mtl- is reasonably stable. I have picked up some suppressors which are a very weak#. I would say that Xylose would give the very best scoring.

The parents and constitution of H-72 are correctly given,

You've put down the parentage of H168 correctly; I'm not sure that the chromosomal arrangement is the same. To account for homozygous loci with heterozygous parents, there must be crossing over before the propagation of the diploid as well as after. I have tried to find more than one kind of heterozygote in the initial protrophs from which they are obtained, but without success. Arguing from the data which I sent you last time, I would say that the arrangement is probably:



although the #'s are all coupled in the parents.

That is, there must have been a crossover between Xyl and Gal between the fusion and the proliferation of the heterozygote. The other strands presumably segregated out, and unless prototrophic, were lost.

Do you expect to go to Cinncinnati? It seems about time for a long talk. All I wanted to say about your single-cell work was to cite your pedigrees as proof that the heterozygotes and mosaic colonies do issue from single cells.

I'll write again in about a week.

Sincerely,