

June 20, 1949.

Dear Max:

Your isolates of H168 were received in very good shape, and I had no trouble reisolating the heterozygote. They all agree in being pure Xyl-, although Lac<sup>+</sup> and Mtl<sup>+</sup>. The trouble I reported having with reisolating the heterozygotes from the cultures you sent stems, I think, from my presumption that they were Xyl<sup>+</sup>, which they apparently have not been since they reached you.

"8"-217 is being checked for its nutrition now; it is certainly a Lac<sup>+</sup>/Mtl<sup>-</sup> segregant. Are you surprised that it should have a lethal sib?, or just that it was not predicted as such?

I really don't know what to make of the H-168 Xylose story. I have an old slant of it, which does contain Xyl<sup>+</sup> cells, but I haven't been able to reisolate any heterozygotes from it, either on lactose or mannitol. This tube was a duplicate of the one I sent you, and I am a little hesitant about accepting the notion that this is all a clerical error. I had just burnt my fingers then, you may remember, about H-72! However, unless you happen to have earlier cultures from H-168, preferably the one I sent you, to check up on the presence of Xyl<sup>+</sup> cells, I don't know how it could be decided. Have you ever noted the presence of Xyl<sup>+</sup> cells in any derivative of 168??

Change of type could be a trivial coincidence. Segregation results in large numbers of cells with diverse requirements, and the technique used in reisolating y stocks is identical with that used in the original isolation. Conceivably, the new H168 is the result of a new crossing. I am trying to reproduce the whole phenomenon with some new isolates which are very similar to the original 168.

This week, I've finally isolated not one, but two stocks which are heterozygous for Mal<sub>1</sub>; at the same time have repeated, affirmatively, reversion experiments showing that this same Mal<sub>1</sub> is usually hemizygous. Although Mal<sub>1</sub> y<sub>1</sub> is very rare, they do occur sometimes, and make the whole story that much harder to interpret. One of the Mal y came out of a cross (Lac<sub>1</sub>- x Lac<sub>2</sub>-) like that described in the PNAS paper, not involving Het<sub>1</sub>. Since this stock is heterozygous for Lac, Mal, Xyl, Mtl, and Gal, and is a "spontaneous" heterozygote, it is certainly the culture of choice for the study of the latter. I'll do some work on the segregation pattern while you're on your trips, and send H-215 on to you later.

Don't distract yourself from your vacation, but if you can remember anything else about H-168, I'd appreciate hearing it.

Sincerely,

Joshua