Dear Dan -

I very much enjoyed your remarks.

Many things were wrong with lab strains, but selection for casserability was not one of them. It was pleiotropic.

The canonical crosses were conducted with the very first auxotrophic mutants available (grown together), and then with various derivatives in which I introduced additional markers.

679-680 (the Kan) as we later learned had already lost the F factor.

The parental K-12 strains with all the mutants above derived already carry an effective F.

But think about five years of selective culture passage of K-12 from its first isolation in 1922.

Yours,

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**Chart 2. Some derivatives of strain Y10**

E. coli K-12 (λ') F+ → X-ray → 674 F+ thr-l

→ X-ray → 697 F+ & 680 F--

X-ray → Y10 F--

thr-l

leuB6

supE44

rfbD1

Note: The original "parent" Y10 B strains can be found in Tatum 1945 PNAS 31:215.