

YALE UNIVERSITY
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NEW HAVEN, CONNECTICUT

May 19, 1947.

Dear Dr. Mather-

The manuscript to which I referred in my airmail letter is enclosed. There is no pressing reason why it should be returned unless that seems especially convenient.

Since that previous note, some data on a three-point test of linearity have appeared, which, I think are in line with the scheme you suggested-

The characters are: Lac- (lactose fermentation) $V_1^{r/s}$ (resistance to phage T1) and $V_6^{r/s}$ (resistance to phage T6).

In the cross :

A B S C D E
B-M- V_6^s Lac+ V_1^r T+L+ X B+M+ V_6^r Lac+ V_1^s T-L-

The prototrophs (B+M+T+L+) fall into the following categories:

Lac V_1
- V_1 24 2+23
S 17 4+124
+ V_1 19 2+1
S 1 124

V₆
- V_6 40 2+4 3
S 1 134 4
+ V_6 6 2+24 5
S 14 1+124 6
7
8

V_1	V_6	#
r	r	D 23 = 3
s	r	17 = 4
r	s	B 1 123
s	s	0 124
r	r	C 5 2
s	r	1 234
r	s	AC 14 - 1
s	s	BC 0 - 134

*remarkable that if only two lengths involved
region 2 which is smallest region.*

Lac - : + = 41:20 Therefore Lac is linked to B-M

V_6 r : s = 46:15 Therefore V_6 is linked to B-M.

The data clearly show that V_6 is linked to Lac (parentals = new combinations are 54:7) These factors are therefore linearly linked. This is particularly well shown by the interaction with V_1 (e.g. 7 and 8) (or 1 and 3).

The map therefore is:

B_1 B-M V_6 Lac V_1 T-L.

I realize that this is a rather small sample, but it is already extensive enough to be highly gratifying.

Yours sincerely,

Joshua Lederberg
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