Reverse Crosses —

28 [illegible]

A. Y40 × Y53.

T(0).		−R	−S	+R	+S.	
	1.	7	7	6	0	
	2.	3	1	4	0	
	Σ	10	8	10	0	28
T(B,)	1.	2	3	4	0	
	2.	4	3	4	0	
	3.	11	2	6	0	
	4.	9	4	7	0	
	5.	10	5	2	1	
	7.	15	6	9	1	
	8	7	5	7	1	
	9.	5	7	7	0	
	10.	2	4	1	1	
	11.	8	7	3	0	
	Σ	73	46	50	4.	173.

Expressed as percentages.

	−R	−S	+R	+S.	
A (0).	35	30	35	0	28
A(B,)	42.3	26.6	28.8	2.3	173
B(0)	31.9	47.4	4.3	16.4	116
B(B,)	34.9	39.0	2.6	22.4	312

See summaries of data

B. Y64 × 58-161.

T(0).						
	1.	4	4	0	0	
	2.	2	3	1	1	
	3.	2	5	0	2	
	4.	1	4	1	0	
	5.	6	9	2	2	
	6.	5	9	0	4	
	7.	3	5	0	2	
	8(2)	2	4	0	2	
	9.	5	8	1	3	
	10.	7	4	0	3	
	Σ	37	55	5	19	116.
T(B,) —						
	Σ	109	125	8	70	312.

see next page.

Y.4x58-161 B

Y40 x Y53 A

April 20, 1947

	−R	−S	+R	+S.	
A :	7	9	3	0	
	4	8	3	1	
	7	5	4	2	
	20	22	10	3	55

In pneurosis cypts, +R >> −S occasionally.

A(B₁)	9	4	4	1	18
	8	4	4	0	16
	8	8	4	0	20
	11	4	3	1	19
	7	4	8	1	20
	16	10	8	0	34
	59	34	31	3	127
B :	8	9	1	2	20

B(B₁)	6	7	0	6
	4	9	1	2
	10	16	1	8
	10	5	0	1
	20	21	1	9
	2		2	11

B

A

	8	1	1	2

A(B(B))

1192
22
1214

484 ctd. Y64 × 58-161. T(B,)

	−R	−S	+R	+S.	
1.	7	4	1	7	
2a	5	7	1	7	
b.	8	10	1	4	
c.	9	5	0	4	
3a	4	14	1	1	
b.	6	7	1	5	
4a.	5	12	0	3	
b.	6	8	1	4	
5a	8	10	0	2	Retest - phage n.g.?? 13-R: 6+R.
b.					
6.	11	6	6	1?	appearance very poor!
7b	10	6	0	0	
7a	5	8	0	6	
8a	9	5	1	5	
8b.	2	10	0	7	
9a	7	10	0	2	
b.	10	3	0	5	
10a	~~10~~ 9	12	0	3	
b.	7	4	1	7	
Σ	109	125	8	70.	312

numerals designate separate recombination plates. letters are testing plates.

N. tetrasperma

A — Pu 16 / Sub.   B. — + Sub

Spread spores (or perithecia) on agar surface.

2/26/47. Irradiate spores c̄ ca 20,000 r (courtesy of Pollard)

Isolated 2/27 Transfer spores to small corn meal agar slants + heat-activate.

Do. c̄ unirradiated controls.

First scoring —

	#	#			Σ fertile	#	
Sub/Sub		3/1	3/1	3/1		3/1	
Control	100	80	37 +	16	53	28	35%
X (Sub) 1 (?) 25000 r	100	69	9	7	16	51	= 76%

Sub/16	J.	47	34 +1	69	+ 23	13	6
	E.	21		25	4	0	1
		= 70	49	=	27	5	7
X ray /	J	50	14		6	2	
	E	79	35 / 42	41	13 / 19	0	6

X: 41 / 129 ; 2/41 ⊕

C: 40 / 70 , 22/40 ⊕

D	d
10	4

+ 3 Scumbo

Sub/16 — C → 28, X → 51

C → 18 >

X → 13

31

Sub / Dummy

April 15, 1947.

FH(2% glucose+). Inoc 5 PM 5

	HC ½%	N2 case ½%
	++	+
	+++	+++
	growth 12h.	7 h.
1 Glutamic ac.	++	++
2 Glycine	++	++
3 Serine	++	+
4 Aspartic ac.	+	+
5 Asparagine	+	++
6 Glutamine	++	++
7 Proline	+	+
8 Hydroxyproline	++	++
9 Cysteine	++ H_2S 4g.	++
10 Alanine	±	
11. Tyrosine	++	++
12. O.	+	++

1 mg/10 cc.

The production of gas in the minimal medium is at odds with previous results, and perhaps speaks for some error.

Repeat: OR. — gas produced on FH (0) by K-12 in 36-48 h.

abandon momentarily. One could seek an ~~at~~ antagonist of formate, however, which seems to be present in N2 case.

Streptothrix?

Phytomonas – Recombination.

April 1947

Strains: **B**. A6/Pro/MG. **A**. A6/Sth/Sm. Inoc separately and together after growth on ∞ slants, into carrot medium. – 4 wks. Sediment + wash pellicles.

1: carrot 2: slant. Inoc from carrot into YB liq: 3.

On 1AB/Nutr. Agar plate, ! "rough" colony noted. 1: cla to recover

A = Proflavine 100γ/ml.
B = Malachite Green 100γ/ml.

C = Streptomycin 50u/ml.
D = Streptothricin 100u/ml.

Read at 48 hrs.

No.	Plate	1A ①	1B ②	1AB ③	2A ④	2B ⑤	2AB ⑥	3A	3B	3AB.
11	A	– – R ✓	+ ++ ✓	+ ++ ✓	– – ✓	– ++ ✓	– ++ ✓			+
12	B	– – ±R	± ++ ✓	– ++ ✓	– – –	– – – 2R	– – – 2R			++
13	C	+ ++ ✓	– – R ✓	± ++ ✓	± ++ ✓	– – ✓	± ++ ✓			++
14	D	+ ++ –	– – – 1R ✓	± ++ –	± ++ –	– – –	± ++ ✓			++
5	AB	– – –	– + ++ but pap.	– ± ++	– – –	– – –	– – –			++
7	AC	– – R ✓	– – R	– – R±	– –	– –	– – R –	✓60		many R
8	AD	– – R –	– ±R ✓	– ±R ✓	– – ✓	– – ✓	– – ✓			± R of 1B
(9)	BC	– – – 1R	– – –	– – –	– – –	– – –	– – –			–
(10)	BD	– – –	– – –	– – –	– – –	– – –	– – –			–
6	CD	+ ++ pap.	– – R ✓	± ++ ✓	– ++ –	– – ✓	– ++ ✓			+
1	ABC	– – ✓	– – ✓	– – ✓	– – ✓	– – ✓	– – ✓			–
2	ABD	– – ✓	– –	– –	– –	– –	– –			–
(3)	ACD	– – 1R ✓	– –	– – 1R	– –	– –	– –			– 1R
4	BCD	– I R± ✓	– – ✓	– – R± ✓	– – ✓	– – ✓	– – ✓			–
15	ABCD.	– – ✓	– – ✓	– – ✓	– – ✓	– – ✓	– – ✓			–
	NA.	+	+	+						

Inoc series ~~A+B~~ 1+2 P21; also inoc on NA plates for series 3.

Streak on plates in order:

Read at 1) 12h.
2) 48h No evidence of recombination. Proflav + M.G. apparently interact. (see 5).
3) 60h.

Sm and St OK. (see CD). But 3 and 4 do not suggest recombination

R = individual resistant colonies (1–10)

Inoc 3AB N24.

Use ACD c̄ ≤B in combinations.

Segregation of Cla^R.

48h.

Y40 x Y88.

Compare c 1R1A.

A. T(O) B. T(B).

Streak out on CLA - minimal or CLA - biotin agar.

A. 1R/6S. = 1/7 Sp R!

B. 1R/6S = 1/7.

2/16 = R. undetected in segregation c B$^-$

Use selection of Cla^R on B plates, c reverse cross to establish completion.

#14/16 Res.

Homogeneity of B_1^- types.

(A) Plate Y40 × Y88 on B_1-Acetate medium. This should select for B_1^- Ga^s [redacted] segregants. By plating these colonies into SMTL-Ga medium it should be possible to eliminate the parental types (B-M- req. Ga sensitivity; T-L-B_1- req. B_1 requirement) and find any complementary recombinant.

Growth is moth-eaten, suggesting phage! very strikingly.] probably not. See 489. 4-9.

(B.) Plate Y40 × Y88 on B_1 medium, spreading very lightly (to avoid contamination.) Pick 100 colonies carefully to minimal (ca 20 colonies/plate). and test: Streak out original isolates of those carrying a B_1^+ component to find any possible B_1^- types

Scoring as B_1^- or B_1^+ not very clear cut. Group A. more definitely B_1^+ Group B doubtful.

A. — 15. B. — 17. Streak out on Lac plates.

A		
1	all −	
2	all +	
3	+	
4	−	
5	−	
6	+	;(−)
7	−	
8	−	
9	+ −	((−))
10	−	
11	−	
12	−	
13	−	
14	−	
15	no cols.	

+/− 10/4

all phage homogeneous unless Lac reaction different. Test these individually

B	
1	100+ : 1 −
2	100+ : 1 −
3	all −
4	"
5	"
6	"
7	all +
8	[redacted]
9	all −
10	all −
11	all +
12	all −
13	"
14	"
15	no colonies
16	all −
17	all −.

11 − / 5 + (~~12 −~~)

T Ga.

See over.

Streak onto plates c̄ 4 cols. each plate.

A) mostly +R Cla^R

~~F~~ R. Cla^R

1 - S. TLB$_1^-$

parental.

B) mostly -R Cla^R (B$_1^-$)

1 + R Cla^S. (B$_4$)

no new combinations aside from main component in these colonies!

A. Y40 x Y86. (to compare V^R loci)

B_1. (to reduce inoculum required). $B-M-Lac+V^R_{1A}\,Muc^- \times T-L-B_1-Lac-V^R_{1B}\,Muc^+$

(-S Sm.)

	$V^R M^+ Lac-$	16	$\therefore V^R_1 \neq V^R_{1B}$
	$V^R M^+ Lac+$	3	
	$V^R M- Lac-$	1	
488-1	$V^S M^- Lac-$	1	This Recombination suggests that $V^R_{1A} \neq V^R_{1B}$
488-2	$V^R M^- Lac+$	1	
		2R.	$V^R_{1B} = T5$ S.

B. ~~58~~ 58-161 x Y86. (to test complexity of Muc^+-V^R). $Lac+V^R_{1A}\,M^- \times Lac-V^R_{1B}M^+$

$_1$ (to reduce inoculum required.)

-R Sm. $\therefore Muc^+ \neq V^R_{1B}$

	$V^R M^+ Lac-$	13
	$V^R M^+ Lac+$	3
	$V^S M^- Lac-$	1
488-3	$V^R M^- Lac-$	1.

This recombination suggests that $Muc^+ \neq V_{1B}$.

[resistant to all phage. Contam? I "diplococci"]

Compare the resistance patterns of Y88-1; 2; 3; Y40; Y86

Compare recombination values of Mucoid/Lac c Standard V_1?/Lac.

From accumulated data: 45.29

	$V^R Lac-$	$V^R Lac+$	
Y40 x Y53.	846	546.	/1392 = 60.6% · 39%.
Y40 x Y88	56	15	/71 = 79% · 21%

$\therefore V^R_{Muc}$ is [redacted]

Reversion of Ta^R.

24 [illegible]

Plate 487 into .1% Acetate - minimal.

Indefinite background growth. no definite colonies. probably Ac too low.

~~440.~~

Allelism of V_1^R

April 23, 1947

allelism of V^R. Y40 x Y64. all resistant.

159/159

T(o). Lac- Lac+

4 1 (Mucoid)

T(B_1)

Lac-	Lac+	
11	4	
15	4	
11	7	
13	4	
13	5	
18	0	(1)
15	3	
9	0	
13	5	
122	32	/ 154. = 79% Lac-

This distribution fits Y64 x S8-161 better than Y53 x Y~~54~~0

Compare fit & accumulated data.

a).

106	48 ✓		
122	32	154	
122	562		
1206	578	1784	
1328	610	1938	

$\chi_1^2 = 8.44$

$\chi^2 = 16^2$ χ 9/

= .25

2.42

~~5~~.32

.45

8.44

for Y40 x Y53

$\chi_1^2 = < 1.$

119	122	55 32	154
540	537	136 159	696
659		191	850

Linkage Relations of Cla.

Plate 440 x 488 into Biotin$_{B_1}^-$ - Acetate$^-$ agar [select for Ac$^+$ = Cla^s and compare segregation of $\underline{B}^-$ and $\underline{B_1}^-$ in the Cla^s class I.

M.q. see 489

Mitchell-Westergaard medium. 493

24 APR 1947

1. Cf. 490. 1 drop of Y40 x Y64 mixture in B, suppl medium, to compare ē Y90 for rate: (grown in YB; plate in MW) 0.

2. Y40 x Y53. grow in M-W: ∞ Plate do:

3. Y40 x Y53 grow in M-W Plate in T(0) } adjusted to ca. same inoculum. > 200.

~~4. Y40 x Y53 grow in YB~~

4. Y40 x Y53 grow in YB Plate T(0). } adjusted to ca. same inoculum. 39; 35. ca 40

5. do. do. Plate M-W 0.

The medium is n.g. for plating, but may be OK, or better than YB for growing cells previously. Try $\bar{5}$ buffer., $\bar{5}$ KNO_3. Difference is within range of normal variation 1 expt. to another.

Medium: per liter

KNO_3	1
glucose	10
NaCl	5
K_2HPO_4	3
$NH_4H_2PO_4$	1
$MgSO_4$	.1
trace + $CaCl_2$	

I (N Z Case 5
Yeast Extr 2.5) for 10.

April 26, 1947.

A. Y87 (B-M-V_1^R·Lac-) × Y10 (T-L-B_1-V_1^S·Lac+). for segregation of Lac-. (prediction: +R > +S = -R >>> -S.).

B. Y87 × ~~Y55~~ Y64 (B-M-V_1^RLac- × T-L-B_1-V_1^RLac-). for test of alleleism.

B). 134 tests of prototrophs all Lac- ∴ loci are allelic.

A) Segregation:

	-R	-S	+R	+S.	
Plated mT(0)	7	1	7	6	
	5	3	7	3	
	3	0	9	9	
	7	0	6	6	
	2	1	11	7	
	4	1	6	6	
Σ	28	6	46	37	117

mT(B_1)	9	1	16	9	
	5	0	16	10	
	7	0	8	4	
	5	1	13	3	
	4	0	10	3	
	4	0	10	4	
	4	0	9	4	
	5	0	12	1	
	8	1	10	5	
	4	0	6	6	
	4	0	8	4	
	2	1	14	6	
	6	0	12	3	
	6	1	6	5	
	4	1	7	4	
	4	0	13	4	
	9	1	5	3	
	6	2	7	6	
	6	0	9	4	
	4	0	10	3	
	102	7	201	91	401.

Y91 x Y53. 496

Y91 x Y53 ($B\text{-}M\text{-}Cla^R V_1^R$ x $B_1\text{-}T\text{-}L\text{-}Lac\text{-}V_1^S Cla^S$)

Minimal plates too crowded.

B_1 - Streak on B_1·Cla on Cla N.A. to classify mutants/susc.

4/56 ~~Resistant~~. Resistant

Use plating on B·CM agar for bacteriophages.

April 26, 1947

Streak on indicated plates.

		Backgr	Papillae
Y64	Cla 1	+	+++
58-161	Cla 1	+++	—
Y90		+	+++

4/27.

Y64	Cla 2	±	±	+	++ Y94
58-161	Cla 2	±	±	+	++ Y96
Y90	Cla 2	±	±	+	++ Y95
Y92	Az 50	+++	—		
Y92	Az 100.	++	—		
Y53	Az 50	++	—		
Y53	Az 100	—	±	—	
Y40	Ia 25	++	—		
Y93	Ia 25	+++	—		
Y40	Ia 50	—	++		Y97
Y93	Ia 50	+++	—		

need a buffered test medium probably.

	Bgr.	Pap.
Salm. 20	±	++
Salm. 21	±	++
Serratia	+++	—
Phytomonas	++	—
Staph	+++	—

	Cla	Ia	Cla+Ia.
Y95.	++	+++	(—)

Interaction??

Streak out all mutants on N.A. Test on indicator and transfer to plants.

Note - terminology: unless otherwise stated, figures are r/ml. Underlined figures are mg/ml.

Virus Resistance Pattern.

498

		T1	T3	T4	T5	T6	T7.	
	Y40	"R"	R	S	(S)	S	S	note!
	K-12	"R"	R	S	S	S	S	
"V_1^S 4 -lac-"	488-1	"R"	R	S	S	S	S	
"V_1^R 4 -lac+	488-2	"R"	R	S	(S)	S	S	
	488-3	"R"	R	R	R	R	R	contam!?
2	Y86	"R"	R	R.	R	R	S	
	Y65	"R"	R	—?	—	[redacted]	R	too light mixed?
	Y68.	"R"	R	S	S	S	S	

This plaque OK on other plate. Repeat! plaque?

Y40 V_1^R V_3^S V_5^S. compare original description

K12 = S...

488-1 = S...

488-2 = V_1 R, S..

Y86 = V_1^S! (unstable: reverted??)

Y65 = R....

Y68 = S....

Repeat T3, T1.

	T1	T3	
Y40	R	S	
K12	S	S	
488-1	S	S	
488-2	R	S	
Y86	S	S	Unstable resistant?? Less mucoid on this plate
Y65	R	R	
Y68.	S.	S	

streak out

[redacted] stock Y86 is predominantly mucoid; a few smooth colonies

this w/streak is predominantly smooth; a few mucoid colonies.

April 25, 1947.

Add varying amounts of 30% camphor in 95% Alcohol to plates, 1 ml. to a plate, to give following "concentrations" of camphor. Incubate 3 days. Strain 53:

A. 0
2. 100
3 1
4 2
5 5
6. 10

very little growth inhibition was noted except in #6 (10% camphor!) where there was considerable retardation. Comparison of cells from 6 and 1 reveals the presence of many beaded, ~~elongate~~ slightly elongate bacteria.

Streak out 6 as EMB to isolate clones and test for diploidization by the suppression of recessive mutations (e.g. Cla^{-}). Many smooth-mucoid colonies noted.

	Papillae on CA 2		
1	±	16	+
2	±	17	++
3	+++	18	+++
4	—	19	++
5	—	20	+
6	++	21	+
7	+	22	+
8	-	23	++.
9	-		
10	++		
11	+++		
12	±		
13	+++		
14	±		
15	±		

Recover 4, 5, 8, 9 to test for polyploidy.

Utilization of Acetyl-Glycine

~~447~~
500

April 27, 1947

Sc 480. ~~Glucose~~ Glycine
Acetate ~~Glycine~~ Glucose

					48 h. - 62 h.					
					Y89	K-12	Y89.		K-12	
					Y	K				
A. .1%	1	✓			−	−	±	±	+	++ ✓
	2			✓	−	−	−		−	
	3	✓	✓	✓	+	−	+++		+++	
	4				−	−				
	5	✓	✓	✓	++	−				
B	1	✓			±	− ±	±	±	+	++
	2			✓	± ✓	± ✓	−	−	−	−
	3		✓	✓	++ ++	± ++	+++	✓	+++	✓
	4	✓			− ✓	± ✓	±	±	+	++
	5	✓	✓	✓	++ ++	− ✓	+++		+++	✓
B. .2%										
C .5%	1	✓	ACETATE		−	−	±		±	
	2		GLYCINE	✓	±	−	−		−	✓
	3		✓	✓	++	−	++		++	✓
	4	✓			±	−	±		±	
	5	✓	✓	✓	−	−	−		−	
D .5%	1	✓			−	−	−	±	±	++
	2			✓	−	−	−		−	✓
	3		✓	✓	++	+	++		++	
	4	✓			−	−	±	±	±	++
	5	✓	✓	✓	−	✓	−	±	−	−
D. 1%										
E	1.		✓	~~+++~~	+	+ ++	+	+++		
F.	1 Acetyl-Glycine .5%				+	+				
	2. " + glucose. both + in 11 hours all others −.				+++	+++				

Glucose 1% ferment

Readings at 24 h:

Conc. Glycine is not utilized; not inhibitory
Acetyl glycine is utilized by both
Acetate is not utilized by unbank comp/mild

Staining in zone of lysis. 501

April 27, 1947.

Compare Y53 lysed by T'on:

EMB - lactose :

- sucrose :

- blank. :

all show coloration in margins. lytic zone, suggesting that it is mostly staining of debris.

Segregation of A2 and Ia

April 28, 1947

A. Y90 x Y53 (Y40/Ia) B. Y92 x Y53 (Y40/A2)

A.

T(0).

readings on complete are unreliable. Technique for tests on synthetic should be developed.

>> TB1.

B: Lac V1.

	R	S
T(B1). −S.	29	2
−R	8	1
+R	12	1
	49	4

Use 100 r/ml NaN_3 in T(0)+B1. Somewhat too concentr.

B1	BM	Lac	V	TL	A2
−	++	−	S	−−	S
+	−−	+	R	++	R

Mostly R. ∴ A2 is near TL.

ca 8% recombination.

either beyond or between T-L Use selection to locate

April 28, 1947.

A.) Y86 x 58-161 ~~B) Y86 x Y40.~~

not useful. Interesting types could be merely mutants. [Accelerate mutation?]

T(o) - no colonies (counted??)

T(B,) -

Mucoid character too poorly expressed, although many of the colonies picked looked as if they should be Muc Is there progressive "attenuation" of this character??

A 1. 1. Streak out Y86 stock on EMB-lactose; ~~[illegible]~~.
34 Muc : 31 Smooth.

P2 2: Streak out: A. Muc from 1. B. Mix pop. from 1.
A: "all" mucoid ~~[illegible]~~.
B: 19 Muc : 70 Smooth.

P4 3 A - mucoid from 2A. B. Mix pop. from 2B.
all mucoid. ca 100:1 smooth : mucoid

A6 4. A - mucoid from 3A. B Mix from 3B.
all mucoid. > 200:1 smooth : mucoid

P7 5. B. (mix) from streaks of 4. all mucoid

P10 6 streak from mass streak of 5: ca 10 Mucoid : 1 smooth.

May 15, 1947.

A15. 7. Streak from mass-streak of 6.
ca 45:20 M:Sm.

A17 8. Streak from mass-streak of 7.
ca 23:43 M:Sm.

P18 9. do. 9:21 M:Sm.

P20. 10. do. 19:48 M:Sm.

P22 11. do.

Acetyl utilization

April 29, 1947

	Ac.	Glucose	Glycine.	12-24h. K-12	12-24h. Y89.	36-48h. K-12	36-48h. Y89	60h.	
1.	1/2%			−	−	−	−	+	±
2.	1/4%	1/4%		−	+	±	+	++	++±
3.	1/4%		1/4%	−	−	−	−	±	++ ±
4.		1/2%		±	++	±	++	++	+++ +++
5.		1/2%	1/2%	±	+++	+	++	++	+++ +++
6.			1/2%	−	−	−	−	−	− −
7.			1/4%	−	−	−	−	−	− −
8.	Acetyl-Glycine		1/2%.	±	±	−	±	+	+ +
9.	o	o	o	−	−	−	−	−	− −

Autoclave separately from medium. Adjust acetate to pH 6.8 ± AcOH before using.

The differential between K-12 and Y89 on acetate is not complete; there is a definite residual growth. Stimulation by glycine (not used by itself) accentuates the difference.

(Use static aerobic + anaerobic conditions?)

8/4h: K-12 Y89.

1. Ac. ++ + !
3. ++ ±
8 + +.

} eventually the bug does better on acetate than on Ac Gly!

diacetyl-diketopiperazine 1/2%
neither K-12 nor Y89 showed any response!

Test of Camphor Treatments

May 1, 1947.

See 499.

Recover preemptive strains.

a) Streak again on CA agar. 4, 5, 8 finally throw off many mutants 9 only ~ 2%.

b) Cross to Y40.

c) streak out on EMB lactose all isolates are lac - V_1^S both semi-mucoid character interfere with determination of resistance.

b. P2. ~~Y-broth~~ .1 ml mixtures into B_1, plain agar respectively.

1. 499-4 2. 499-5 3. 499-8 4. 499-9. x Y40.

Lib expansion between O and B_1, plates are only ca. 3-fold rather than 10-fold.

	1-CO).	Smooth.				Mucoid			
	~~F(o)~~.	+R	-R	+S	-S	+R	-R	+S	-S.
(1)	T(O)	1				2	9		1
	B_1:	11	5			9	22		3
(2)	T(O) —								
	$T(B_1)$	14	32	1	11	typical segregation.			
(3)	T(O)	1					2	1	
	$T(B_1)$	13	1			1	21		
(4)	T(O)	2	8			2	10		
	$T(B_1)$	16	21			2	16		2

The Y53 2x doubled is not a good test; better would be Y40 which carries more dominant alleles.

Resistance Patterns.

probably contam. with T1. start new stock. -

	① T-1	② T3A	③ T3 B	④ T3 Batch 2	⑤ T5	⑥ T5 Batch 2
		N.G.	OK	OR.	← large + small plaques	
K-12	S	R	S	S	S	S
Y40 (from 140 phil)	R	R	S	S	S	R
Y40 pure.	R	R	S	S	S ← v.s. small	R
Y53	S	S	S	S	S	S
Y64	R	S	S	S	S	R
~~Y87~~	R	R	S	S	S	R

Use phage stocks which have aged, not original cultures since Y400 = Y40 now in all respects. T_3A must be fallacious. T_5 Batch 2 behaves like T_1 and is similar to previous responses. Could it be contaminated??

Phages need purification! Recheck T_3A. Present indications favor the interpretation that the results of last fall were due to gross contamination of T_3 and T_5 & T_1.

Program: Purify T_5 - ~~the~~ and isolate components.

⑤ was streaked out and exhibited both large and small plaques. Pick from a large and a small plaque and streak each with K-12 and Y40.

P 5 T-5 from original culture (Demerec) was plated with K-12 but gave confusing lysis. several resistants appeared; test these with T_1, etc. Use this to reisolate T5 stock.

Phage stocks

507.

1. Start new T5 stock from 1) lysate using original T5 on K-12
   2) small colony picked from existing T5.

2. Other stocks OK. Renew T1 on K-12.

3. Test a large-plaque component of old T5 on K-12, Y40, K/5.

4. Test T1 on K-12, Y40, K/5. (from 506 & 5).

	T1	"T5 large"	"T5 small"	"T5"
K-12	S	S	S	S
Y40	R	R	R	R
K/5.	R	R	R	R
"	R	R	R	R
"	R	R	R	R

T5 from original bottle!

three are isolates from 506 - (5) which, previously, lysed Y40.

Recessions. 888.

May 2, 1947.

~~Plate~~ Pour ca 10^9/.1ml on middle of NA plates + irradiate at ca 2500 r/min 20 min ≅ 50,000 r. Wtaget 60kv 25ma.

(1.) After shaking agar strip in H_2O ca 3 hr., streak out on EMB.

~~2. Streak out original sample on EMB.~~ (Y40 only.

3. Killing very great. Probably only ca 10^2-10^3 survivors.

Streak out proliferated cultures on EMB.

Isolate 14 colonies each from Y40X and Y53X and streak across each other. Plate mixed growth on T(0) agar. (28 tests).

	# of plates.
1	20
2	30
3	20
4	10
5	30
6	20
7	20.
8	20
9	200
10	10
11	20
12	20
13.	100
14.	10

No crossover suppression here!