June 14, 1948.

Test, on T1 + T1h (raced from North):

	T1	T1h.
B/1	R	S
B/1,5	R	R
B/4	S	S
K-12	S	S
Y40		
W400.	R	R

∴ V_{1a}^{R} in K-12 is not entirely homologous with B/1 either with respect to tryptophane requirement or to sensitivity to T1h.

T1h (10^9) plated with ca 10^8 W400 + 10^8 K-12. Uniform growth of bacteria – 1 possible plaque (v. small) – Streak out on O on W400. No plaques.

Tetrazolium

June 15/1948.

Variations in concentration, in nutrient agar + 1% lactose.

per ml	K-12	S-20.
50r	faint rust	Borders of streak + I.C. stained.
100r	beginning red	more thoroughly stained
200r	W.I.C. deeply stained.	"
500r	" v. " "	" " " "
50r + Brilliant Green 25r.	—	Mostly inhibited. A few red resistants.

Variation in nutrient medium — 50r T2/ml. Agar 1.5% Lactose 1%

	K-12	S-20.
1. Peptone 1%	WIC faint rust.	WIC deep red
2. " ½%	Some large colonies rust	Some WIC deep red.
3. N2Case 1%	faint rust.	All IC deep red; borders of streaks are stained.
4. Casamino Ac. 1%	All −, except near S20.	All colonies uniformly deep red.
5. N2Tone 1%	⟶	Intermediate between 4 and 3.
6. N2 Amine B 1%	Well isolated faint rust	W.I.C. deep red.
7. " " A 1%.	All colorless	All colorless.

(4) is the most satisfactory medium here encountered, giving a uniform intense red reaction. 50r may be optimal level. Expt. re variations in T2 concentration, pH of medium + addition of Brilliant Green.

T2 Reagent for enteric pathogens.

June 17, 1948.

Make up lactose agar with Casamino acid 1%, Yeast Extract .1%
Streak out (1) K-12 (2) Shigella flexneri (3) Y53 (4) SY-20. P17.

1	2
4	3

N18: (1) (2) (3) (4).

50γ T2. − Y.Ex. (1) faint red near (4). Otherwise white. (2) Most colonies are small, deep red. (3) Inhibited but deep red (4) Many large red colonies. Entire growth red.

50γ T2 + Y.Ex. As above. K-12 a little redder in those parts of the plate, near S20. Shigella much larger.

Glucose. All white. faint pink in spots.

Maltose. (4) All red. 1 & 2 are faint red in certain colonies (alkaligenesis?).

Galactose. ~~All red~~ All white.

2% Casamino acids. K-12 colonies near S20 are red. Y-53 most inhibited, but red.

Brilliant Green 25γ All inhibited except S20 - good red colonies.
" " 10γ All but S20 inhibited.

T2 10γ. Shigella red + white colonies. Y53 spotty red streak. S-20 Uniform light dirty red.

T2 25γ. As 10, more intense.

T2 50γ, preautoclaved. Like standard.

Lac EMB. (1) large white (2) inhibited (3) + (4) large white.

Salmonella phage — lysogeni.

Grow Y2 broth cultures of: shake overnight.

S20

S21 Numerous plaques.

S22

S23

S39

S40

S43

S46 Numerous plaques. (maybe confused with S22 smear).

S56.

Sediment most of the cells + heat supernatant 30 m. @ 57° to kill cells. Spread S 36 (Gallinarum) as N.A. and mix. ± loopful of supernatant to test for lysogenicity.

Use S21 as the standard for possible studies on lysogenicity. (+Mutants can be used on synthetic plates).

Add 2 ml supernatant + 1 drop S36 culture + shake overnight. Sediment, add supernatant to fresh S36 culture, shake 6h., sediment + filter. = ϕS_5.

June 19, 1958.

Spread SY7 + SY8 on galactose T2, + a few plates each of glucose, mannitol, + gluconate T2.

Cross tests of Salmonella phages.

June 17, 1948.

On hac T2 plates, spread 1 drop of φ + 1 drop bacteria.

	S20	S21.
~~S20~~		
Sp-1	10^3 - 10^4 turbid plaques, but no confluent lysis!	numerous plaques, obscured by smearing of resistants?
Sp-2	Confluent lysis ± a few dozen large red resistant colonies.	A few plaques noted. See above?
Sp-3	? Smeared areas of lysis. All plaques are quite small when noted. Recover large plaqued phage from original streakings from Crude phage.	Confluent lysis obscured by smearing.

Cross-streak on T2 agar: Sp-1, Sp-2, & Sp-3 + Sp-4.

Sp-5, smear on S36 shows no plaques (smearing ?) but when streaked exhibits numerous plaques.

S-20 }
S-20 }
S-20/2 } No lysis.
S-20/2 }
S-20/2 }
S36 lysed only by Sp-5.

June 16, 1948.

Plate 1 drop Y10 + 1 drop (ca 10^9) phage on EMBLac. (-NaCl!)

T1 Uniform lysis. Ca 100 to resistants. Test these on T5, T1h.
T2 v. numerous small plaques peripherally; cleared area centrally.
T6 Ditto.
T7. Uniform lysis. Ca 100 resistants.
T1+T7. No survivors.
T1+T2. Edges of some colonies irregular. Otherwise like T1 only.
T1+T6. Numerous (ca 50-100) resistants, many with plaques in them.

Omission of salt may have prejudiced these results. Repeat the series + include sensitivity to phages.

100 Y10/1 were tested on T1h and T5. 99 were resistant to both
1 was $T1h^R$; $T5^S$.
Subculture as W-401
= Y10 V_{1a}^R.

Phage mutants of K-12.

June 18, 1948.

Plate 1 drop (= ca 10^8+) Y10 + 1 drop (ca 10^9) phage on nutrient Ub plates.

T1. Uniform lysis. Ca. 300 resistants.

T2. Uniform lysis. Ca. 10-12 (mucoid?) resistants.

T3k. U.L. Ca. 10-20 resistants.

T4. Uniform lysis. 2 mucoid resistants.

T5. U.L. Ca 300 resistants.

T6. U.L. Ca 100 resistants.

T7. U.L. Ca 200 R. (Spreading contaminant).

T1 + T2.	Ca 10-12 R. (Some nibbled).	
T1 + T3	1 nibbled resistant	
T1 + T4.	2 mucoid resistants.	grew out as mucoid bac+. "Purify" as W-402.
T1 + T6.	1 mucoid; 1 "non-mucoid resistant (cent?)	picked as 231-1.
T5 + T6	10 mucoid resistants.	
T1 + T7	1 tiny colony, probably cont.	picked as 231-2
T5 + T7	No resistants	did not grow out on bac EMB

[Compare with E. coli B where, according to Demerec + Luria, the combinations 1,4 ; 1,5,4 ; 2,3,4,7 ; 1, 2,3,4,6,7 occur with some frequency. I. (1, 6) combinations should be studied more extensively, also using coli B.].

June 19, 1948.

Test Y10/1 m. (on nutrient salt agar).

T1h	T5		
S	S	4	
R	R	96.	

Y10/5 on T1 51 all R
Y10 S.

Y10/6 on T2, T4.

5 tested, $T2^S$ $T4^S$. 16 more tested. $T2^S$.

∴ 21/21 $T6^R$ are $T2^S$. This differs from (B).

Purify as 231b 1-4. Check for T1 resistance.

Test on nutrient NaCl Agar (NSA):

	T1	T1h.	
W400	R	R	
W401	R	S?	
-1	R	S	*
-2	S	S	
-3	R	S	*
-4.	R	S	*

(T1-sensitive —)

* These streaks show a heavy underlying layer of growth which may also be indented with plaques. This makes scoring somewhat uncertain. -2 showed complete lysis in the same region. Streak out this growth as 231b-1A etc. Tests repeated at room temperature show 231-1 to be completely resistant to T1h ~~also~~, but sensitive to T5, while W400 scored $T5^R$. Repeat all tests with once purified colonies.

Previous scoring of K/1 as T1h resistant may have been due to absence of NaCl in the medium.

Streaks out the substratum in the streaks of 231-b-3 + 4, T1h.

(3) shows considerable lysis in ~~both~~ broad streaks, and superimposed ~~heavy~~ development of some mucoid resistants. (4) streaks out well. Purify 4 further & test isolated ~~s~~ colonies against T1h and T5.

2316 - ~~2~~ 41 etc.

Test 5 colonies.

T1h	T5.
S	S
S	S
R	R
R	R
S	S.

This background is, therefore, for the most part sensitive although lysis may be delayed.

Do not pursue further.

Perhaps plaque formation should be studied quantitatively?

June 21, 1948.

231b-1, 3+4 form rather small colonies on nutrient gel. Continue purifying them to establish strains. Retest isolates on USA

	T1	T1h	T5	
W400	R	R	R	Has been misclassified.
W401	R	S	S	
Y100	R	S*	S	
-1	R	S	S	W-
-2	S	S	S	W-
-3	R	S	S	W-
-4	R	S	S	W-
-1*	R	S	S	

*from T1 original test streak.

* Incomplete lysis.

Plaques appear in the "resistant" section. This may be due entirely to incomplete absorption of virus.

Check nutrition of -1, -3 + -4.

	T(0)	+ TLB,	+ TLB, + Trypt.
1.	-	+++	+++
3.	-	+++	+++
4.	-	+++	+++

Tetrazolium — bacmutation sum.

June 19, 1948.

Irradiate Y10 + Y40 on Lac-T2.

Y10 a) 4 seconds — 5 pl. × ca 2000 = 10,000. Plates very crowded.

21. ⊙ all +

b 5 sec. — 10 pl × ca. 600 = 6000.

11. • All +, rather small cols.
12. ◉ All +.
13. ◉ W406. slow +
14. ⁘ W407 −
15. ✺ + and slow +, do not recover.
16. ● All slow +
~~17. ◉ Mostly + ; a single − ? mated W408~~ No mutant.
18. " Slightly slow. do not recover.
19. ⊙ all +
20. ⊙ All +.

Y40 a) 4 secs. — 4 plates × ca 1000/plate. = 4000

8 1. ⊙ Apparently all +.
7 2. • W403
6 3. · 2 + colonies.

b) 5 secs. — 9 plates × ca. 500/plate — 4500.

5 4. • ~~W409~~ W408
4 5. • W405.
3 6. ⊙ 1 few + colonies.
2 7. ◉ Apparently all +; some slow?
1 8. ✺ W404 slow fermenter

4 mutants / 8 tested.

Streak out on EMB to find possible mutants.

June 18, 1918.

Plate S20 + S21 & Ps-1, 2-3.

	Sp-1	Sp-2	Sp-3.
S-20	Ca 10^3 sm. plaques.	Uniform lysis, moderate size plaques.	No plaques.
S-21.	No plaques.	No lysis.	A few large plaques.

Phages are thus far specific for S-20 & S-21. Regrow them!

Cross test; streak on plates

	Sp-1	Sp-2	Sp-3	Sp-5
S-20	R	faint cl. lys.	R	R
S-21	R	R	R	R
S-36	R	R	R	S
S-20/2	R	R	R	R
"	"	"	"	"

Phages Sp 1–5 grown again on specific hosts in ~~H2~~ Y2 broth N-P 19.

Spread loopful & sp. host on NSA to get estimate of titer.

Sp 1 – S20. Confluent lysis & resistant colonies.

Sp 2 – S20 ditto

Sp 3 – S21 A few dozen large plaques & concentric rings: Titer clearly very low.

Sp 4 – S20 A few very large plaques, with indefinite margins.

Sp 5 – S36 Patchy areas of complete lysis.

See over:

Spread S36 on (1) N.A.

(2). T(B,).

Superimpose:

N.A.

1. B-P-5 — Indefinite zone of lysis & halo clear.

2. S20
3. S21
4. SW7
5. SW8
6. SW10

— Good growth; sharp margins (lytic halo ??)

T(B,) SP5 Central area of growth; wide halo on margins (3-5 mm).

S20 Good growth. No marginal halo

S21 Marginal halo (ca. 5 mm) discernible.

SSW7 No growth; definite marginal lysis, best observed around periphant inoculation.

T5 h.

June 20, 1948.

On NSA, plate "1 drop" each of bacteria + phage.

(1) Y40 + T5

(2) Y40 + K-12 + T5

(3) K-12 + T5.

A21. (1) Uniform growth.

(3) Uniform lysis + resistant colonies, ca 200.

(2) 2 plates - Uniform growth.

No virus mutants of T5 active on Y40 were noted.

Lysogenicity of S-21 mutants.

June 20, 1948.

From irradiated T2 plates, pick single colonies of SW-7 and SW-10, in attempt to find non lysogenic colonies. Streak growth directly on a) Lac EMB and b) T(B,) smeared with SY-36, look for lytic areas on b).

Plate 1. SW7. 42 colonies tested. 42 lytic areas

2. SW7. 42 tested. 41 lytic areas. 1 untested (out of bacterial smear)

3. SW10 28 tested 25 lytic areas.
3 not clear, retest.

~~Retest SW1-3~~

June 22, 1948. Irradiate 10 secs. on Lac EMB plates.
Repeat above procedure.

1. SW7. 62 tested. Each one lytic. Lytic zones usually somewhat turbid. Occasional clear plaques, probably vir mutants

2. SW8 8 colonies which grew on minimal agar. These are barely distinguishable on lac agar. All but one is not lytic. Isolate 1 active, 1 inactive + test for Salmonella. With these exceptions, all of 63 tested are lytic.

3. SW10. 65 tested. All lytic.

4. SW11. None lytic of 65 tested. [Is SW-11 a mutant of SW7?]

Note small possible plaque-like areas in the streaks of S21 dens. streaked on + lysing SB6. (Is S36 lysogenic ?)

June 27, 1948.

Repeat expt. on SW8, plates incubated 20 and 30 secs.

Some tests were made by puncturing again with an inoculating needle rather than making a short streak.

109 tests. Each survivor carried intact phage!

Tetrazolium: use in mutation rsn.

June 19, 1948.

Use T2 50γ/ml + Casamino 1%, Y. Extr. 0.1% Sugar 1%.

Irradiate all cultures 5 secs. ~~+500~~

Y40. Glucose ca. 500/plate Most colonies dup'ed! Occasional wh. cols!

Glucanate. 1 plate: central spreading zone of pink colonies; start at thinnest part of plate

1 plate: uniform white colonies; l. (●) formd. – slow org rsn

W409

Galactose Some plates sl. smeared. Occ. red colonies

10 plates × >600 cols. too crowded to read well 1 picked to GalEMB.

Y10 Gluconic. 2 pl. × 800 cols. 2 likely mutants. No!

Galactose 10 pl. × 800

SW7. Sucr. Many cols rather dup pink. Picks dupe at one.

Gal. As above

Mannitol Many colonies bright red!

No other mutants

SW10 Sucr. } As SW7.
Gal
Mannitol

June 21, 1948.

Plate Y10 with T1h. Test resistants on T1 and T5.
70 tested. All were resistant both to T1 and to T5.

58-161 with T1h. Test on T1 and T5.
60 tested. 57 resistant to both; 3 show some action of T5 but not of T1.

		T1h	T5.	
=	237-1	Plaque ridden; must be sensitive		
W-413	237-2	R	S	} show a substrate of unlysed cells similar to that of V_{10}^{R} on T1H.
W-414	237-3	R.	S	

Y10 with T5. Test on a mixture of T1 + T1h.
68 tested All resistant.

Y10 with T2. 1 plate shows half a dozen moderately large colonies and 1-200 rather small.
Y10 - T6.
Y10 - T1 + T2 20-30 good sized rough colonies. Several mucoid ~~radiate~~ radiate colonies also noted. Pick + test.

T1 + T6. Several mucoids per plate, only.

W401 plated with T2h. June 26, 1948.
75 resistant colonies picked and tested for T1-resistance. All 75 colonies were resistant to T1 (Cf. Luria's report that B/1/2h was sensitive.

Salmonella cross.

SW3 x SW10.

June 19, 1948.

Grow up cultures, wash + spread on T(0) agar.

P21. Pick colonies and streak on Arabinose + ~~Arabinose~~ Xylose EMB.

SW3 - numerous colonies. 11 picked X+ A+

SW10. 5 picked all X- A-

SW3+SW10. 22 picked. 19 X+ A+ 2 X- A- 1 ? (maybe A- X+).

Streaked on arabinose + xylose = 237-1. : Mixture of A- X- and A+ X+.

No Recombination.

Nutrition: SW5, SW11, Y132, W93.

	1	2	3	4	5	6	7	
		AA3 + ...						
SW11	0	0	H.C.	Y.Cx.	Vits.	HCV	Rhamnose.	
	−	−	++	++	−	+++	−	H.C.
	✓	✓	✓	++++	−	✓	✓	

	1	2	3	4	5	6	7	
SW5.	0.	HC	V	HCV	Y.Cx.	X-1	X-3	Y. Cx.
	−	−	−	−	++	−	−	

~~SW~~ W93	0	+	−	±	−	−	−	?
Valine +:								

Y132	0	+++	−	+++	++	−	−	HC.

Arginine +: 20h.

SW11. Grows on A3 + A5 or A3 + EA. ∴ Requires either histidine or threonine.

SW11.	A3 + H	H	A3
	A3 + Th.	Th.	−

V_{1a}^{R} Crosses.

June 23, 1958.

1. W-183 × W-401.
2. Y87 × W-401.

Pick P26 and test smears on T1; EMS Lac.

(1).

−R	−S	+R	+S.
3	4	15	5
4	2	9	7
7	6	24	12

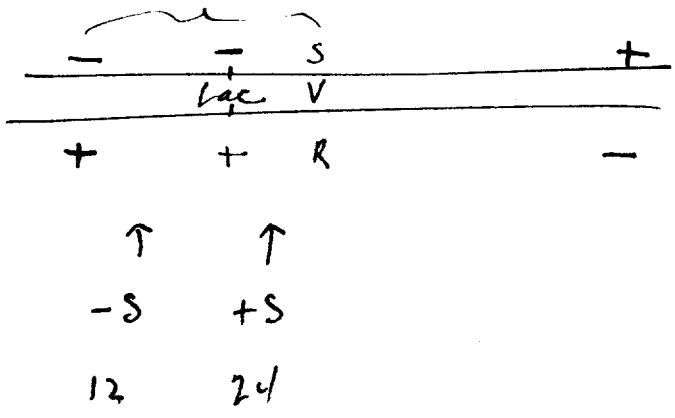
$\frac{R}{S}$ $\frac{31}{18}$. 49

$\frac{+}{-}$ $\frac{36}{13}$. 49

B-M-Lac-V^S × B+M+T-L-Lac+V^R Lac = 72%, linked to BM.

V_{1a} = 60+% also linked to BM.

Indicated order:



But these are not linked to each other! V_{1a} may, then, be to the left of B_1!

2 yoa

(1). W401 × W183. T1:

Note: 46+ : 41−
14+ : 18−
60 : 59

* T(B1)	−R	−S	+R	+S.
	2Y	17	36	10.
T(0)!	4	10	17	1

Ratio should be 80+ : 40− !

(2) W401 × Y87.

T(B1)	$T_1T_5{}^R$	$V_1{}^S$	$T_1{}^RT_5{}^S$	$T_1{}^ST_5{}^S$	
Lac−	15	9	6	3	2Y
Lac+	27	20.	7	13.	47
					71

Lac+ : −
117:34 o.f.

$V_1{}^R$: $V_1{}^S$:
42 : 29 o.f.

* Nutrition of W401 needs to be rescheduled!

June 28, et. seq.

(1). 58-161 / T1. 100 tested 98 Resistant to T1h and T5
2. Sensitive ....
presumably V_{1a}^{R}.

Purify as W-413 + W-414.

(2). 58-161 / T1h. Test on T1 + T5. 56 tested.
1S = 241-2

(3) W183 / T1h 28 tested. " 1S. = 241-1.

(4). W[redacted] / T1h. Slow absorption but lysis finally complete.
Test on T1 + T5. 55 tested.
Many nibbled streaks. 1QS. (241-3-12).

		[redacted]	T5	T1		W-415	415 1
W183.	1	R	S	R			416 2
58-161	2	R	S	R	plaque ridden	416	417 3
W-401	3	R	S	R			418 4
	4	R	S	R	plaque ridden	417	419 5
	5	R	S	R			
	6	Lysed				418	420 7
	7	R	S	R			
	8	Lysed				419	421 9
	9.	R	S	R.	A few plaques.		
	10.	Lysed.				420	422 11
	11.	Mucoid			but T5 S!		
	12.	Mucoid, T5[R], lysed....					

V_{1a}^{R} crosses.

~~June 27, 1948. Et Seq.~~ July 4, 1948.

An T(S.) unless indicated.

(1) W401 x W-183

(2). W401 x Y87

(3) ~~Y100 x 58 161.~~
Y94 x W-314.

July 6, 1948.

(1) W-183 x W-401 4+ : 3- All T_1- S. !

(2) W-415 x W-401 See below.

(3) W-415 x Y641.

-R	-S	+R	+S.	
8	1	10	1	∴ not allelic to V_{1a}

~~(3). all - 19R 3S ; not allelic to V_1 -~~

~~Call the resistance factor carried by W-415 V_{1c}^R. Its phenotype is T1R T1hR T5 S.~~

May be allelic to V_1^R

(3). All T1R.- Some are T5S.

1. = ΦONa 2. = ΦOH 3 = ΦOGal.

July 9, 1948. Beckman spectroph.

M/5000 o-nitrophenols.

λ	S.W. (mm)	1	2	3	
350	.3	.270	.706	.325	
340		.217	.669	.431	
330	.3	.205	.583	.519	
320		.269	.513	.564	
310	.32	.418	.571	.559	
300	"	.662	.843	.541	
290	.37	.930	1.232	.589	
280	.4	1.010	1.445	.749	
270	.43	.860	1.324	.980	
260	.48	.881	.928	1.045	264 = max
250	.54	1.166 1.157	.570 .571	.860 .857	
240	.63	1.84	.570	.819	
230	.84	+4	.820	1.158	
220	1.2	∞	1.446	1.600	
215	.9	∞	2.25	2.4	
210	1.3				
290	.2	.922 .930	1.188 1.173	.590	
288		.975	1.238	.611	
286		.979	1.290	.630	
284		.998	1.331	.658	
282		1.005	1.370	.696	
280		1.00+	1.394 1.403 (280)	.735	

1. = ΦONa 2. = ΦOH 3 = ΦOGal.

July 9, 1948. Beckman spectroph.

M/5000 o-nitrophenols.

λ	S.W. (mm)	1	2	3	
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300	"	.662	.843	.541	
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280	.4	1.010	1.445	.749	
270	.43	.860	1.324	.980	
260	.48	.881	.978	1.045	264 = max
250	.54	1.166 1.157	.570 .571	.860 .852	
240	.63	1.84	.570	.819	
230	.84	+4	.820	1.158	
220	1.2	∞	1.446	1.600	
215	.9	∞	2.25	2.4	
210	1.3				
290	.2	.922 .930	1.188 1.173	.590	
288		.975	1.238	.611	
286		.979	1.290	.630	
284		.998	1.331	.658	
282		1.005	1.370	.696	
280		1.00+	1.394 1.403 (280)	.735	

		1	2	3
278	.2	.990	1.390	.780
276		<.96	1.379	.821
274		.935	1.345	.880
272				.920
270				.970
264				1.045
260				1.037
262				1.040
264				1.044
265				1.038
266				1.027
263				1.040

Tungsten lamp

340	.18	.276	.672	.447
350	.27	.300	.638	.326
360	.11	.372	.616	.217
370	.09	.509	.530	.130
380	"	.664	.410	.068
390	"	.818	.293	.034
400	.15	.980	.185	.015
410	.05	.979	.180	.011
420	.04	1.088	.053	<0
440	.03	.925	.015	0
460	.03	.603	.03	—

480	.13	.316		
500	.102	.134		
520		.050		
525		0	.039	0

~~Y15 + 1%~~ T2 Medium. 1Y3

To NA-Lac-T2, add: /50 ml.

		Y10	S20	Y87
(1). 5 ml M/10 buffer pH 7.0		-	-	±
(2) 1 ml	"	-	+++ uniform!	+++ exc. br. st.
(3) .5 ml	"		+±	+±
(4) Sodium lactate 50%	.5 ml	Inh. all cult.		
(5). $CaCO_3$ g.s.	.1%	-	± occ +	± occ +
(6). Sodium succinate	1g.	±	±	±
(7). Asparagin	.2g	inh. gr.		
(8) Na formate g.s.	.5%			
(9). Methylene blue		-	+	+
(10) Cartiol.		-	OK usl. col.	++occ col.

Repeat critical members. Some numbers rubbed off flasks during autoclaving + maybe confused. Buffering seems to be the "lead"

T2 Medium. 241a

July 10, 1948.

N.L.A. + (50 ml.)	Y46	Y87	S20.
1. Buffer pH7 1 ml M/10.	- sl. inh.	uniform ++	++ - not th. sh.
2. Sodium lactate .1 ml 50%	—	all not tiniest +++	+++
3. Asparagin .2g	-	++±	+++
4. Sod. Succinate .5g	—	lgit red +	lgit red +
5. Sod. formate 10% 1 cc	- inh.	±	+
6. —	~~+~~	- faded in some colonies	+++
7. Buffer M/10 pH6.0 1 ml	-	faded	faded.
8. " M/5 pH6.6 .5 ml	-	±	faded

addition of sodium lactate seems to be helpful.

July 7, 1948.

Cultivate overnight in YB:

SW-7, SW-12, SW-7 + SW-12.

Wash and plate on T(B,):

1. SW-7
2. SW-12
3. SW 7+SW 12.
4. ① + ②.

No colonies (except for obvious contaminants) on any plates. 7/10/48.

July 8, 1948.

Test by cross-streaking.	SD-2	SD-6.	Growth in broth.
S-20	S	R	R
SW-7	R	S.	S
SW-12.	S	R	R.

∴ 16 is sensitive to SP2, suggesting that we have true smooth + rough phages, as confirmed by growth habits.

Plate #21 ē SW12. No plaques noted (e.g. SP 3).

SW3 / Sp 4 ultimately gave a fairly dense secondary growth, limited almost to a few colonies.

SW7 / Sp 6 gave a large proportion of resistants (possibly because taken from a old culture) Pick + purify.

SW3 / Sp 2 gave a few colonies at margin which are probably sensitive

July 10, 1948.

SW7 x SW12. Grown separately overnight in YB and plated on T1B, J.

July 12: colonies noted on X and SW12 plates.

SW12^R. 10 tests all Sr+ Sp6^R. SW12 is supposedly Sr−!
These tests n.g.

July 10, 1948.

w-112 ($Lac^- V^S$) X.

1. w-413 (U_{1a}^R) !!! No yield! on T(B,). 17+ : 99− on lacEMS' Sensitive!!!

2. w-416 (V_{1c}^R) Excellent yield. Test from T(0) + T(B,) to EMS & EMA'. 7/12

3. ~~Y87 (V_1^R)~~

(1): −: 72 S 1?R
+: 14 S 0 R.

kuplee's very close linkage of V_{1a} to BM. Check parents:

	W112	S!
	W413	S!
249-1	→	S! from T(0) ALL S : 1+ : 6−

(2) from T(0):

	−R	−S	+R	+S
	11	16	0 *9	9.
T(B,)	55	83	35	10.

* 9+ colonies (not otherwise scored) were "incompletely" lysed by T1 but supported definite plaques.

many colonies show "partial" lysis.

streaks out some streaks for further identification:

(2): Many "R" streaks show some regns of lysis within the streak. The following is offered:

~~R S + R + S.~~

S.0:

1. "– R"
2. "
3. "
4. "
5. +

Test 5 colonies derived from each.

1. 5 – cultures show fuzzy lysis, some individual plaques ~~fuzzy~~ same for all 2 + 3 cultures.

∴ these crosses could not be scored. Recomb^nts originate from W4/6 (V_{1c}^{R}) which is $T1^{R}\ T1h^{R}\ T5^{s}$.

Compare 2496 1 with W4/6 and 58-161 re , T1, T1h, T5.

EMB Lac

EMS + TLB,

USA.

July 10, 1948.

Nutr. Lac Agar +50 r/ml T2- +:

		W413	W112	SW7.
1.	—	—	++	++
2. Na lactate	.01 ml	-	++	++
3.	.05	—	++ +++ vs.	+++
4.	.10	±	+++	+++
5.	.50	+ max:	+++	+++
6.	1.0.	uni -	uni	uni.

11str. .1ml lactate

11.	—	±	+++	+++	
12.	+.1 ml M/5 NaOH	-	—	—	no inhibition?
14.	M/10 buffer pH 6.0 1 ml	±	++±	++±	
15	" pH 7.0 1 ml smeared.				

Mutation run: Inoculate 58-101 on medium #1. 27 plates.
On many plates, all colonies have red centers. ca 150/plate. 4000 colonies.
Pick up those with most intense reaction. → This may be in part an effect of radiation

T1:

1. ● → — W425= R probably contam. T.O.
2. ◉ → + and - W425 S
3. ◉ → all +
4. ● → — W427 R.