6/11/46.

Assay medium + hydrolysate of cultures grown in excess precursor. Use 50% medium filtrate; hydrolysate as 1 ml equivalent of the completely grown culture / 10 ml. 8P18.

Broc aminidisated, 30° very little in ~~hydro~~ filtrates; considerable in hydrolysates

1	229-1	Medium 50%	Blank.		
2	"	" "	+ Biotin -	58-3214. for proline.	100
3	"	" "	Y38	for arginine.	100
11.	229-2	Medium 50%	Blank		
12		" "	+Biotin	58-3214 for proline.	100
21	229-5	" "	Blank		
22		" "	Y38 -	arginine.	100
31.	229-1	hydrolysate 1 ml.	Blank		
32	"	" "	" +biotin	58-3214 prol.	85[1]
33			Y38	arg.	94[3]
41.	229-2	hydrolysate 1 ml		58-3214 ++	83[2]
51	229-5	"	"	~~58~~ Y38 arg. ++	78[2]
61.	206.	hydrolysate 1 mg.	Blank		
62		"	+biotin	58-3214 prol	77[1],
63.				Y38 arg.	72
71	206	filtrate 50%	blank		
72			+biotin	58-3214	100
73			Y38.		100
81	- T(0)	Y38			=
82	T(B)	58-3214.			=

Broc HP 6/17/46.

K-12 Phage

12 JUN 1946

① 3P. Bror 50ml coli ∞ ē K-12. Shake at 30°.

1130 A13- Bror 1ml of ① + ind. phage sources into 50ml coli ∞.:

1. T-1
2. C
3. Sewage
4. Cole.

Incubate at 35°.

2P. - #1,2 clear; 3,4 turbid.

Bror coli ∞ ē 1ml of grown K-12 + Inc. 35°.

11. 1. cleared
12. 2. cleared.
13 —

Streak Phages on a K-12 plate (coli ∞).

14) T-1 / C / "Cole."

∴ T-1 and C → K-12

Prepare 58-161 /1:

15. [redacted]

Cross streak on coli plate:

	K-12	58-161	679-183	B/r	~~Bkt.~~
T-1	—	—	—	—	
235-11	—	—	—	—	ē secondary growth along streak.
~~235~~					
235-12	do.				
C	do.				

12M 11 Broz coli ∞ flasks; shake at 30°.

♀ 58-161
♂ 679-183
3. Both.

Plate tests to minimal, heavily* after washing 1130 P12.
P15

1.	1		– No colonies.	0	
2	1	+ B	– No colonies.	0	
3	1	+ M	– Turbid plate. No colonies.		
4	2		– No colonies!	0	
5	2	+ T	v. distinct halations around adaptants .... 23. N14.		≠
6	2	+ P	3	6. (Some colonies may adapt in agar.)	
7	1+2		– 2 seen N14.		
8	3		11P13. N14	again, some colonies come up secondarily (after the first.) pick one colony – (236-9) to water + ∞ slant	
9	3		13		
10.	3		13 va 100.		
			12		

same cultures. 1130 P13 (.48 h.). T(0).

11	1	P150
12	1	
13	2	0
14	2	0
15	1+2	0
16.	1+2	
17	3	4.
18	3	3

To recapitulate, in the following expts. wilds were found by interaction only:

Date	1	2	1+2	3	Expt
5/31.	0	0			220
6/2	0	0	0	4+; 5+	224
6/11	0	0	0	0	233
6/12	0	0	3	10^2	236a
6/13	0	0	0	4.	236b.

In 5 attempts, no double revertants have appeared, while prototrophs have repeatedly appeared in mixed cultures.

≠ halation = turbidity around colonies. Consists of v. small colonies with diminishing density.

K-12 - doubles - T-1 resistants.

13 JUN 19[illegible]

Use ~~[illegible]~~ 236 ① and 236 ② as inocula. 1ml ≅ 10^9

1130P13

1. 58-161 10^9 + T-1 10^7 in coli ∞ plate
2. 679-183 do.
3. 58-161 10^9 + T-1 10^7 in coli ∞ ~~[illegible]~~ flask. Incubate . Then plate 1 ml into coli ∞.
4. do. 679-183.

all plates

~~5. 58-161 10^9 + T-1 10^7 in coli ∞ flask~~

10A14 N14 7P14

5 Flasks of 3 — turbid. Streak out on coli ∞.

6. " 4.

Isolate colonies from streak plates to BM + PT medium respectively to avoid "tryptophaneless" resistants. Also, inoculate from 5+6 directly.

	BM.	5		
11	~~[illegible]~~	colony	−	
12	~~[illegible]~~	"	±	Streak out on coli ∞ N16. See 245.
13	~~[illegible]~~	"	−	
14	~~[illegible]~~	"	−	12N17 as infra.
15.	←	liq.	−	

→ BM
→ BM Trypt.

	PT.	6.		
21		colony	+	Streak out on coli ∞ 12N16.
22		"	−	
23		"	+	12N-17. colony to water
24		"	+	
25		liq.	+	

→ slant
→ ∅
→ T
→ PT

Crossstreak 12 + 21 c̄ ~~K-12~~ 58-161.

test for lysogenicity c̄ 161. on coli ∞ plate.

Evidence re heterocaryosis —
Mutant in Recombination stocks.

① 1145 P13. Inoc 50 ml coli ∞ ē 227-1

$\rho S = 5$.
1030 P14. Irradiate 4 mins. ~~Plate~~ Inoc. 1 ml into 50 ml coli ∞. (A). (calc. ~~[illegible]~~ killing).

Wash ice; Dilute 10^{-2} and plate into coli ∞. and detection plates. immediately.

1 P16.

Conclude that survivors are only ca 10/cc.

1	—
2	—
3	1
4	—
5	—
6	—
7	—
8	—
∞.	0

1 tested.

Dilute ① 10^{-7} + detect: (sp! mutants 2/cover ē F(0)!). Apparently killing was > anticipated

Layer ē ∞ 1 P16. Circle previous minute colonies.

S 1 302.
2 Examine 4P, 11P16. 11A17. 10A18 — 2400 total tested.
3
4
5 1 colony found A17. 238-2.
6
7 no growth on picking.
8.
∞. 316.

Dil 1:10^7 11 P15. cover ē T(0) as usual.
Layer 1130 A17.

A 1
2 Examine 9P17, 11A18. 12 M19.
3
4
5 1 colony — surface? cont? 238-1 — 700 tested.
6
7 micr. not ē coli. Sarcina?
8
∞ 91

pick variants to ∞ 12M19.

~~239.~~ Sex-plating.

15 JUN 1946

Inoc 183 (679-) + 161 (58-) (separately) 11P14. ~~Ab[illegible]ing~~

Inoc ~~[illegible]~~ 5ml each into 50ml. coli ∞. 30°. Plate heavily at varying intervals.
G (1:10) (73³) Wash (separately in 1st) + plate as indicated. 1ml of culture.

9:45 P15. Mix:

			A17.		
0 time.				96¹	cells (calc.). 5×10⁸/ml.
	1	161 only	0		
	2	183 only	0		
.5ml each	3				
1ml each	4.		1		
1 hour.	11		0	96²	
2ml	12		0		
2½h.	~~13~~ 21		4.	95²	
1ml.	~~14~~. 22		3		
	31		3	95 (94³)	
19h.	41				
	42.				

1st plating is 5ml each original culture = ca 5×10⁹ added.

designed surface col.

~~Use 241 cultures for inoculum + repeat. Mix ~~45~~ 6 P16.~~

Transfer cultures to coli ∞ slants when possible. design as, e.g. 239-4a.

~~K-12~~ ; phage C ; segregants (successive serotypes) 240

16 JUN 1946

1230 A16. Pick a colony from 236-9 to 1 ml H_2O.

0. Streak a T(0) plate N17. to H_2O → slant 240-1
→ T(0).

From comparison E diluted 239, dil 1/2 : 100 : 1000 +
plate 1 cc dil. into detection plates for recombinants.
Unfortunately, ca. 1200/plate ca ~~10~~ 2% small colonies in minimal (B)
Layer 1230P17.

1. BP 2 new.
2 BT
3 PM
4 MP
5 —

Sterile filter 235-12 + dispense in 10 ml tubes.
Plaque out on 183. (241 moi.) 6P16. 4.9.

Test C again on K-12, 183, 161 by cross streak 1A:8.

active on K-12
non-active on 58-161
activity on 679-183 ??

Pick colonies 12M19. to O. See 245 ~~for tests~~
all prototroph

Ultraviolet induced reversion.

16 JUN 1946

1A from 161, 183 sm colis ~ 30° sh.

$1/S = 3 \times 10^5$

5P16. Irradiate 2 mins. $pS = 5.5$

Wash both aliquots + dilute + plate as indicated.

	1.	10^{-7} in ∞		79.	7.9×10^8
A – unmid.	2.	10^0 in P		3	
	3	10^0 in P	—	3	
	4	10^0 in T	—	0	
	5	10^0 in T	—	0	
	7	10^0 in 0		0	
	8	10^0 in 0.	—	0	
	11.	~~1~~ 10^{-2} 10^{-4} 10^{-6} } ∞		27	2.7×10^3
	12.	10^0 P		0	
	13.			0	
	14	10^0 T	+++	7 many small.	
	15		2 large, ~~1~~ sm. 3 + many small.		What are the small colonies?
	17	10^0 0.	—	0	
	18		—	0	

4P17. A18

What are the small colonies ?? Can conclude anyhow that u-v mutagens revert sole markedly.

6/16/46. 17 JUN 1946

Inoc 50ml T(0) K-12 30° shk. 10P16.
3P17 harvest, centrifuge + sterile filter 25ml sample. = X_1

1. X_1 5ml + T(B) 5ml. Add X_1 sterilely 5 autocl. ++
2. X_1 5ml + T(B) 5ml. Autoclave together. ++

9P17 harvest second sample = X_2

3 X_2 5ml 5 autocl X_2. ±
4. X_2 5ml autocl. ±

Inoc ε 58-3214. 1220A18. 30°.

on 183 + T plates — filter paper tech.

a. .1cc X_1 —
b. .1cc X_2 —
c. (ca) 10γ proline +++
d. .1cc X_1 boiled. —

There is evidently a considerable deficiency as growth proceeds.

Add 100γ proline to 4 1130P19. +++

Sex. plating

Broz 50ml ∞ K1,183 1A17 30° sh.

3 P17. (14h.) ca 25ml. each + 50ml ∞ 30° s shelving.

930 P17. Plate out: 1ml equiv. after washing. Plate in thin layer.

		TP19
1	0	10
2	0	11
3	0	9
4	.5ml	13
5	.2ml	4
6	MP	turbid;
7	MT	"
8	BP	+++ colonies
9	BT	+++ colonies.
		10^4?

Isolate 20 colonies from surface of each. Satellite colonies quite distinguishing in both cases.

See 145 for tests

U-V Induced reversion.

~~243~~ 244.

17 JUN 1946

Use 679-183 cells of exp. 243

430P. Irradiate in medium 1 min. Shutter exposure

Unirradiated: 1/S = 53
ρS = 1.7

1. 10^{-7} ∞ 30- not properly countable.
Wash both:

2. 10^{-7} ∞. 80 (8×10^8)

3. 10^{0} T 21
4. 10^{0} T 12
5. 10^{0} T 11
6 10^{0} P. Turbid!?

11. 10^{-2}, 10^{-4}, 10^{-6} ∞ 10^4 (1.5×10^7)
15.

12 10^{0} T 0
13 10^{0} T 2
14 10^{0} T 0
15 10^{0} P Turbid Turbid!?

16 10^{-2} T 0

Incr. coli ∞ Somlig. ē 10^{0}. (A). 5P17. Sh. 30°

Effect here is very slight. Use longer killing.

Was put in ē T.

19 JUN 1946

Test:	B	M	BM	P	T	PT	BMT syp
237-12			++			++.	OK.
243-8-	=B	=P	=T. BTPM.	-M	=-0	0	
1	++	+	++.				
2	++	+	++				
3	++	++	++				
4	++	++	++				
5	++	++	++				
6	"	"	"				
7	"	"	"				
8	"	"	"				
9	"	"	"				
10	"	"	"				
11	"	"	"				
12	"	[redacted]	+				Streak out
13	"	+	++				
14	—	—	++				(Short rods). (Hooray!). See c.
15	++	—	++				Streak out.
16	++	++	++				
17	"	"	"				
[redacted]							
[redacted]							
[redacted]							
238-1							Not coli.
238-2 n.g. ∞							

243-9. From BT Plate.

21	++	++	++	
22	do.			
23	do.			
24	do			
25	do			
26	++	—	++	Streak out.
27	++	+	+	
28	++	+	++	
29	++	—	++	Streak out
30	++	+	+	
31	++	+	++	
32	++	++	++	
33	++	+	++	
34	++	++	++	
35	++	++	++	
36				
37				
38				
39				
40.				

19 JUN 1945

BMPT. 0

240-1/41
42
240-2/43
44
240-3/45

240-1	41	++	++	Small colonies on T/O
	42	"	"	but not bradinomid mutants.
240-2	43	"	"	Morphological ??
	44	"	"	
-3	45	"	"	
	46	"	"	
	47	"	"	
	48	"	"	
	49	"	"	
4	50	"	"	
	51	"	"	
	52	"	"	
	53	"	"	
5	54	"	"	long rods; hazy internal structure.
	55	"	"	
	56	"	"	
	57	"	"	

Recombination tests

Analysis of a possible recessive recombination #14. BP?

N21. Streak out on ∞ plates; inoc slants to keep it.
Clones to H_2O; ∞ slants N22.
Test on large tubes B: − P: − BP: − (medium?) add M to each.
BM!!

	B −	P −	= BP	T =	BT =	O.
141			−			
142			−			
143			−			
144			−			
145			−			
146.			− .			

Check on def. & redig: − B − − M = − P = − T. = − O

679-188	++	++	−	−	+	
58-3214	−	++	−	++	++	
58-161.	−	−	−	−	++	Is M generally lacking?

151			−			
152			−			
153			−			

261				−		
262				−		
263				−		

These ecotypes are n.q. See ext 249.

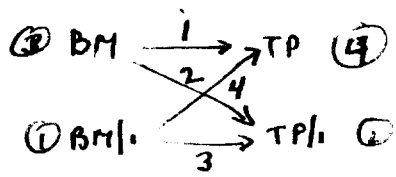
Sex: plating Exp. N.9. c46

Segregation of resistance to T-1

19 JUN 1948

1A20 Inoc 5 ml coli ∞ 30° sh.

(1) 237/2 BM/1 (krypt.??)
(2) 23721 TP/1



(3) 58-161
(4) 679-183.

1130A20. 1 ml each in sterile test tube. 30°.

1. (3)+(4)
2. (1)+(2)
3. (2)+(3)
4. (1)+(4)

5P20. Plate 1 ml eq. (after washing) in thin layer. T(a) a = 0, ... x.

#		a		
1.	(1)	0	++	
2.	(2)	0		
3.	(3)	0		
4.	(4)	0	++	
5.	(1)	BM.	T.	
11.	2	0		
12	3	0	+	
13	4	0		
21	1.	0	++	
22	1.	0		
23	1.	B	++	
24	1. 10^{-2}	B		
25	1	M	T	
26	1 10^{-2}	M		
27	1	P		
28	1 10^{-2}	P		
29	1	T		
30	1 10^{-2}	T		
31	1	BP		
32	1 10^{-2}	BP		
33	1	BT	++	
34	1 10^{-2}	BT	++	
35	1	MP	T	
36	1 10^{-2}	MP		
37	1	MT	T	
38	1 10^{-2}	MT		

3 pl. 1/2 1/2 1/2

39.	(3)	B	−	
40	(3)	M	T	
41	(4)	P	10^3	"
42	(4)	T.	"	

see 247 - use these for controls.

Colonies through depth of agar
Must assume contamination of agar or solutions, etc.
Also lack of diffusion between 33+34, etc.

∓ = surface colonies. Not appl. to 1-5.
39-42 which were not found thin or surface.

U.V reversion.

24 JUN 1946

Inoc 50 ml coli ∞ sh 30° 8A 7 4. 6P25. Wash + radiate in H_2O. in Q. tube

1. 679-183. add 1 ml = to T (Threon) agar.

	Quad.	
1	0	4 3
2	0	
3	½ min	
4	1 "	
5	2 "	
6	[illegible] "	
7	4 "	+++ but only very minute colonies. Possibly only survivors
8	[illegible] "	using proline from killed cells.

Sex: other recombinations

Prototroph recombinations

Incr. [illegible]. 12M 2[illegible].0 50ml ea sh 30°

A. 58-161
B. 58-336

C. 679-183
D. 679-680.

5ml each. 3P2[illegible] 30° mesh.

1. A+C
2 A+D
3 B+C
4 B+D.

plate out 1ml eq. 11P2[illegible]. Use washed agar.

	T(0)	+	8P22.	5P23	
1.	A		—		
2	A	M	T	—	
3	B		—	0	
4	C		—		
5	D.		—		
11	1		—		
12	2		—	T	
13	3		—	T	
14	4		—		
21	1	BT	Turbid.		
22	1	PM	—	—	
23	1	BP	—	6	Incubate for later picking. very marked halation.
24	1	TM	T.		
31	1 10^{-2}	BT	—	T; ①	
32	"	PM	—	—	
33	"	BP	—		
34	"	TM	—		
41	.5	B	T.		
42	"	M	—	—	
43	"	P	—		
44	"	T		T	
45	"	O	—	—	
51	A	B	—	—	
52	A	M	T		
53	B	B	—	10-	compare 3 Marked halation P25.
54	C	T	—	6	
55	C	P	6	7	
56	D	T	—	3	
57	D	L			

This may not be a good method to cross these bugs!

Other recombinations
Phage Resistance Segregates.

22 June 1946.

11P21. Broc. 50 ml coli ∞ sh 30°:

A 58-161
B 679-183
C 58-161/1
D 679-183/1
E 58-278-Y24 (in yx-pept + cystine 1 mg).

4P22. 5 ml each. as in 248.

1 A+B
2 C+B
3 A+D
4 C+D
5 B+E

9P abandon in view of 248

8Y5P22 Broc 10 ml each into 50 ml coli ∞ as above T
-ration - inoc tubes 1-5 into 50 ml coli ∞.

2A23 - Harvest + plate as before.

1.	1	0	–	
2.	2	0	–	
3	3	0	–	
4	4	0		
11.	5	0	–	
12	5	BØ	1	
13	5	BC	7	
14	5	T	1	32
15	5	P	6	
17	5	BØT	2	13
18	5	BØP	4	
19	5	BCT	2	++ cont?
20	5	BCP	38.	
16	5	0	1	
21	E	0	–	
22	"	BØ	A24	A25
23	"	BC		

many plates look contaminated. Do not keep.

June 24, 1946.

8A24. Incr together into coli ∞ (or ∞ + cyst − glucose = c).
30° 5 sh.

1. 58-161 + 679-183 c
2. 58-161/1 + 679-183
3. 58-161 + 679-183/1
~~4. 58-161/1 + 679-183/1~~ c
5 ~~×~~ 679-183 + 424. c

3P25. Harvest + plate. Incl =.
6P26.

	Incr.	T(0) +	cells 10^2
1.	1	0	
2.	2	0	(5)
3.	3	0	0
4.	5	0	(4)
5	5	0	(4)
6	5	0	7
11	5	P	13
12	5	T	19
13	5	Bϕ	6
14.	5	BC	6
15	5	BϕP	(12)
16	5	BϕT	(29)
17	5	BCP	(18)
18	5	BCT.	(1[redacted])

Streak out see 254.

No quantitative evidence [redacted] recombination.

S. pombe. 751

24 JUN 1946

8A24. Inoc into ∅ C. 50 ml; T(0)+pombe. 50 ml
& 10 ml.

5P25. tube +++ oxygenation ??
flasks ±. mds glucose ± doubt.

930P25. Estō hemocytometer: 2.6×10^6/ml.
Use 2×10^{-4} dilution + plate in F(pv)

1. In thin layer –
2. In thin layer, covered –
3. In coli ∞. n.g!!!

Colonies first noted in F(pombe vits) A 28. (2½ days). Thus are rather variable. Large colonies near surface. May be intrinsic heterogeneity. Isolate colonies from baseplate.

P 28; A 29. Good size colonies. More uniform. Pick from single colony + streak out on coli ∞.

26 JUN 1946

Use 1 ml grown cultures as inocula.
6P26.

1. Y40 + Y41.
2. Y40 + 183 Compare 250-2
3. Y41 + 161. Compare 250-3
4 Y24 + 183

12M26. Wash etc + plate in T(0). 1ml =.

			10P27	12M26. P28.
1	1		3	22
2	1		1	14
3	1		1	63
4	2		10'	30
5	2		10'	"
6	2		10'	"
7	3		1?	13
8	3		1	7
9	3		0	9
11	4	[illegible]	ca 30	
12	4	B	30	
13	4	B		
14	4	B		
15	4	Bϕ	ca 30	
16	4	BC	10^2	
17	4	P	10^2	
18	4	T	10^2	
21	4	BϕT	10^2	
22	4	BϕP	10^2	
23	4	BCT	10^2	
24	4	BCP.	10^2	

ampl. (beside 4–6)

~~[illegible]~~ 1A29. (beside 1–9)

Refrigerate 1A29. (beside 11–24)

Abandon tests on these in favor of the more efficient Y24 (BϕC) + Y41 (PT(T-1R)) with the additional character R.

12M30. Streak out 1, 3 of colonies. see 257

Bacterial "nucleoproteins".

26 JUN 1936

A.M. Exps. ± 12 hours ∞ culture K-12. Marked increase in stickiness of bacteria noted after 5 freezing + thawings in .9% NaCl. Considerable material extractable ± .9% which ppt'd ± alcohol in fibrous form (RNP?) Residue still stringy + fibrous. Treatment with 6% NaCl removed stickiness partially, but supernatant failed to ppt on dilution + apparently still had many intact cells. Probably freezing should have been repeated more.

11 P.M. Inoc. col ∞ ± 58-161 for exps. next day of similar nature.

Conclusion: considerable coagulant ± .9% Nothing then removed ± 6% NaCl

100 ml culture 10 hours old. Centrifuge. Pipet supernatant. Suspend residue in .9% & centrifuge again. Suspend residue in .9% (ca 20 cc) and freeze + thaw ||| 7 times in a CO_2 bath. Centrifuge. Supernatant - 1.

Residue + .9% extr + centr. Supernatant 2

S1,S2 + alcohol. no ppt. Residue not as sticky as yeast cells

Residue + 6% Residue mucky stickier.

nothing extractable

27 JUN 1946

Suspend colonies of 250 in H_2O + streak out on coli ∞; incr. slants.

250- Test 1 A 29!

21	2	BM/1 x PT. T(α). +	T-1 Resist. series: a + b + c + d + e + f + ~~g +~~	
22	2	+	+	
23	2	+	+	K-12 ~~+~~ −
24	2	+	+	Y40 +
				Y41 +
11	1	BM x PT. Streak out again.		227-1 −
12				controls
13				
25	2	+	T-1 resist +	
26	2	+	+	
27	2		+	
28	2	T-res. series: + a + b + c + d + e + f + g + h +		
~~24~~	~~2~~	all green (−) on T(α)! Check on neg. See below:		
		T(α) T(β).		~~250.~~ 255.
41	4	+ +		
42	4	− + * Proto		
43	4	+ +	* transfer to ∞ slants +	
51	5			
52	5	− + * Proto	check later. (260)	
53	5	+ +		
54	5	+ +		
			~~Total tested~~ for B.	
61	6	+ +		
62	6	+ +	grant. not valid: plated on minimal medium.	
63	6	+ +	Total tested for B, - 28	
64	6	+ +		
65	6	+ +	B-(test.) 5	
66	6	− +		
131	13	+ ~~(B+)~~ (B) + (O) +		
PT x Bθc on Bθ vs on Breq.	2	+ − *	Biotin-less	later test - did not grow on 7/19/46 B alone.
	3	+ +		
	4	+ +		
	5	− −		
	6	+ +		
	7			
141	14	+ +		
20 BC.	2	+ +		
	3	+ +		
*	4	+ −	Proto.	
	5	+ +		
*	6	+ +	Proto.	
	~~7~~	~~+~~ ~~+~~		
	8	+ +		
	~~9~~			
	10	+ +		

growth in (O) not in B may be incorrect.

Read 830P29.

(3) Rq Retest from Column 3.

	Bφ	P	BφP.	
151	—	+	+	P
2	—	+	+	P
3	—	+	+	P
* (4)	—	—	+	- BφP2 BP
5	+	—	+	Bφ
6	—	+	+	P
* (7)	—	—	+	- BφP?
8	—	+	+	P
9	—	+	+	P
0	—	+	+	P

(BφP.) - Repeat in small tubes:
Bφ -
P -
BPφ +

(P) Repeat again in 10cc tubes
in uniform inocula from dilution:
B -
φ -
P -
Bφ -
Pφ -
BP +++
BPφ +++

7/1/46.

There can be no doubt then that this is $B\bar{P}$ which would be a recombination type for the cross:

$\underline{B^-}\phi^-C^-P^+T^+ \times B^+\phi^+C^+\underline{P^-}T^-$

	Bc	P	BcP	
171				
2	+	+	+	
3	—	+	+	
4	+	+	+	
5	+	+	+	
6				
7	—	+	+	
8	+	+	+	
9	—	+	+	

	Bc	+	T	+	BcT.	+	
~181		+		+		+	—
2		+		+		+	—
3		—		+		+	T
4		—		+		+	T
5		+		+		+	—
6		—		+		+	T.
7							
8							
? 9		—.		+		+	Check: (P.)

from test plate: Requirements of 254-28. known 1.

28. BM. — PT. — BPMT.

Later check: B-M-

12M26. See

Inoc coli ∞ ĉ 227-1. (Ultra-Violet.)

5P29 (40h.) Irradiate 1/2, 1, 2, 5 min twice 1 ml in colio 50 ml. Inoc 1 ml each of these dilutions in colio plates for approximating killing 8h. liquid cultures; incubate plates 30°

2 - ca 10000 surv. (×50) pS = log $10^5/10^9$ = 4.

5 - ca 2 ×50.

Plate out ② at 10^{-7}. in T(0) detection plates. 11P30.

330P2. Layer + ~~irrigate~~. (CSH)

11P12. Mark numerous small colonies. Incubate. ca. 1%

10A14. Picks to complete (not all, only those most convenient by way of isolation). Slant. AIS...

Test Recombinants Exp. 252

2 9 JUN 1946

Streak out on coli 50 plates. Number in orange to test from 255

		T-1 cured colony	[redacted] T(0) 150 col. T-1 cured
Y40+Y41 1	11	R ±?	
	12	all resistant ; 6.	
	13		
2	21	R ±?	
	22	all resistant : 7	
	23		
Y41+161. 7	71	S ✓	S
	~~72~~		
	83	S	S
	74	S	S
8	81	S ✓	S
	(82)	R	R
	83	S	S
	~~8~~		
9	91	S ✓	S
	92	R	R
	93	S	S
	94	S	S
4 :	41	~~R~~ S ✓	R
	42	R	S
Y40 + 183.	43	R	R
	44	R	
	45	R	
	46	~~R~~ S.	S
	47	R	R
	48	R	
	49	S	S
	50.	R.	

all +

Linkage of R to B or M?

Isolate several colonies from 82 + test:

	92
821	R
822	R
823	R
824	R
825	R
921	S
922	S
923	S
924	S
925	S

all +

Phage analysis of Prototrophs.

30 JUN 1948

N30 Inoc coli ∞ ē mid. cultures for incor. below. 4h. 30° 12 4.

1130P. Inoc 50ml coli [redacted] 1 ml: + T-1 10^4 >4. 30°

" 1030A 1. "

1. 257-71a. (183R × 161S) S. Complete lysis.

2. 255-24 (183S × 161R) R. Full growth.

N1. Plate and streak out –

1.	1.	10^0	
2.	1.	10^{-2}	
3.	1.	10^{-4} ca 10^2	→ See 262. Isolate colonies + test for T-1 res. + T(0) growth.
11.	2.	10^{-7} T(0) d. ca 10^2	} no mutants present.
12		" ca 10^2	
13		" ∞ ca 10^2	
14.		Streak ∞.	do not use.

330P2 Layer ∞ + refrigerate at 12N3.

259-C2 team B+/1 x B- ... → B-/1

259-C6 P-/1 ... x P+ ... → P● -