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\]

\[
\begin{array}{c|c|c}
\text{B} & \text{2} & \text{4} \\
\text{2} & \text{0} & \text{2} \\
\end{array}
\]

\[
\begin{array}{c|c|c}
\text{D} & \text{6} & \text{4} \\
\text{2} & \text{1} & \text{1} \\
\end{array}
\]

Ketongi

\(4+!\) (lysozyme)

\(V.\) Incus Recovery!

Incomplete recovery unfavourable.

*Yields V. low!!* 

**C.**

Fresh cross 3:30 - 1:40 1:10.

\(X \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \times \time...
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January 8, 1954.

1x12. 68% of month. 1:10 12:30 - 2:30 AM. Delete a

1:200 pre-manipulation is necessary.

A B C D E F

MIDC 1-cells

Note: D1, D3 and (P2 parent?)

Since removed in appearance (indeed

Anther P1).

B2' hybrid. A' lost.

E, F more 1-cellloid. No pass seen there.

B3-4-5 c§ from 1 clump of 4 cells.

C1-4 from 1 clump. May collide with small cell not

clearly seen in the original clump.

1/9/53.

With no diploids yet. 

Diploid not apparent at time of nil addition.

Rate of D2, D4? Not necessarily accident. Hypothesis

p.o. segregation of X? (Nothing p.o. of P2).

01 possibly
diploid.

Transfer to line with A9.
Plating (strike out from both transfer, Pg) on EMM3 Lac.

\[ p_1 = \text{Lac} - p_2 = \text{Lac} \]

\[ \frac{1.06}{p_1} \]

\[
\begin{align*}
\left\{ \begin{array}{c}
B_3 \quad 0 \\
B_2 \quad p_1 \\
B_5 \quad p_1 \\
C_5 \quad p_2 \\
C_1 \quad p_2 \\
C_2 \quad p_2 \\
C_3 \quad p_1 \\
C_4 \quad p_1 \\
E_3 \quad p_1 \\
E_5 \quad p_2 \\
F_1 \quad p_1 + \text{frr} + \text{papillae} / \text{No} + \text{cervices} \\
F_2 \quad p_2 \\
F_3 \quad p_2 \\
F_4 \quad p_2 \\
D_1 \quad p_1 \\
D_3 \quad p_1 \\
\end{array} \right. 
\end{align*}
\]

No apparent recombinations in this series.

Save \[ B_2; B_3 - 4.5 - 05; D_1, D_3; C_1 - 4. \]

Need D.2, D.4 still empty P10.
Jan. 9, 1953.

P1 x P2 (old cultures) ca 1:5 at 10^20, allow ca 1/50 12N — 3P1
3 - y 30.

6+6 - tested:

\[ \text{lat test, v/v/5y, B5} \rightarrow \text{loc+V, P1 A} \]
\[ \text{loc+V} \]
\[ \text{loc-V, RC} \]
\[ \text{loc-V, SD} \]

6+6 - tested:

There are all v as bal+, loc+, -.
Possibility of recombination here? Or is this an illustration of a "twin" act.
Rec OK of 11193.

10P1 plate. Most had 10^2-10^3 in changed. 15 in B1-3-4. D4-5
P10: litter

A 2 0 P1
3 0 P1+R1
5 0 P2

B 2 0 P2
5 0 P1+R1

D 1 0 P1
2 0 P1
3 0 P1

-"negative" result from one twin to form clumps is P1, P2
Nutrient test: 1107A5 (mass):

\[ \text{O M H M+H} \]
\[ \text{-- -- ++ (12h.)} \]

set up crossing test for A, P, C, O and mass
assuming this is M-H-

Test 1, 2, 3, 4, mass, and W2 2338
\[ x Y10 (F-) ; W1918 (F+) \]

all cultures \[ x Y10 \text{ [or D16]} \] sterile
\[ x W1918 \rightarrow [\text{ luridae}] ++ mototrophs \]

\[ \text{all F-} \]
330 Start in anticipation dinner. Make sure there are plats for pairs.

0 Check development? Have all together in first transfer to drop. Resume data

0 0

A1 0 A2 0 A3 0

A1 0 A5 1 B5 0 1+ 0 B2 0

One doubtless signed. - y^{30} pm

\[ y^{30} \text{ in reservoir} \rightarrow \text{O1} \]

The expected band 1+ has been found despite the initial selection. In some cases first pairs separated. All other tracks removed.
After precipitation of 0.20, washable to separate. Then all were made by separate.

D2 0  D3 0  

D4 — D5 0

D1 0

Add fluid 1:30

ABD
**Compulsory mating**

1. P1, P2 first overnight. 12N-5:45 in Penassay (sep). 1:100 - Separate midges, then coalesce.
   - Repeat, allowing growth six generations. Cells continued to divide in transfusion plates.

   - A, B cells coagulated 0.010" cult and separated 10^{-5}. Could not force conjugation. Extract abandoned 10^{-5} PM.

**Objectives of single cell study:**

1. Genotypes arising from primary hybrids (several separations)
2. Correlation of genetics with association with P2 parent
3. Cyt. appearance of the early hybrid
4. Early stages of the hybrid.

**Notes:**

- Studied a few deglets, but multibroch. First day barely on review for aphasia etc.
- Classi: Bemamagagent. Must finish work.
1/4/52

P1 x P2 1:1:10 5:15 - 7:45 serum diluted 1:100. Difficulties in capsulums. Hadattis began 9:30 PM. Pitch was collected or dropped.

A1 @ 9:36

A2-3 < removed 9:48
M1 0 v. muscle 9:30. BY 0

B1, B2 1 0, 0

B3: serum apparently 0 but only 0

C: 8 in reservoir, 0 + 8 in first drop. 9:38 C4 9:43
c 2 c 3 9:46

D: v. larvae 9:58 0 (latenat.)

E 0 in reservoir → 10 O2 gaspt. 0 + 0 → E3

E2

E1 E4

Latin could not find 14, E1 dregs. (wrap?)

A 1

2 3

V

B1

C 2 3 0

8 cent. dregs n. g. (latex) n. 9. 0 and B1-4 0
DATE: 1/15/54

1 P1 x P2 1:10 12:00 - 2:00. Then shake at 1:50.
Regard as 1:50.

3:15 80

D1

But all invisible. (dried?? - tried to add fluid?)

E1 + E2 (seem normal!)

E2

Survivors. Plate 1/16.

EMBlac 20 ml SMI T5

1 - + + R R S S

E1 40

E2

Every new, pres. secondary.

Unless specified, all cultures used are unpurified 
and time of +1.0 is present, summers as well as 
separate.
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Fresh cultures (ca 2 h, 1:5) W1655, W1 2338. Mix under oil, room temperature, leave in the room breath
+ A -
  B = vol. fresh broth  
  C = ca. 3 x vol. fresh broth.  
and plate in.

A20. Send to EMH.

The found to 1/10 - 1/5 F + in A; 0/10 in B, C.
DATE: 1/6/54

1: P1 x P2.. 10 20-12 30
2: Ref to 215. Dilute 1:25. 1 flat legs
3: 2:50 isolate sandan, empty layer cells.
4: EMBR tire
5: N17 (growth) +
6: S V
7: +
8: +
9: R S P1
10: R R P2

B50
C4 0 X half right
C5 0
D5 0
Dy 20 X half right

but add with fairly promptly.

A5
A4

Control + resermin (H) +

P1 x P1 neither passed, insignificantly, with P1. These crypts give little information as significance of pairing.

Also same in yeast case (WY6) but could not break walls successfully. Suscivenio to bile and numerous cells stick to surface of rather large capillaries nuclei. (Need detailed more?)

No kve. About 5 P1:1 R1
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**Notes:**
- "A4 last peg in A4."
- "medull X, probably normal cells."
- "A4 peg at top. Damaged?" (was well shaped but too narrow for somatic cells.)
- "Can I switch?"
- "Need arrangement of placing fluid drops for replacement and placement."
- "Extra fluid at A and E."
1/18/54. 10:1

10^2^0 - 1.2^0 \begin{array}{c} 1:1:5 \end{array}

miljury. Elevate 25.1.20.54.

30 clones started from about 2:30 - 5:30 PM. [parous time setting up dishes, chamber, etc.] 10 noted that many cells had grown 2-4 cells. Refractate at 5:30 - 8:30 PM to permit further separations of selected cells.

Original separations:

A

B

C

D

E

F

Dr. all clones, wait for 4-5 of necessary

Talacs were transplanted 9:15 - 11:30 PM.

to separate con-plates square, leaving me cell behind in situ. THERE IS better哭...
Growth Type

Singles:
- A1
- A2
- B4
- B5 (from clumps)
- C1
- D1

Groups:
- A3-4-5
- B1-2-3-C2
- C3-4-5

D2-D3 -

E3-4-5 large pair

D4-5

Data may have resulted from... Were anticipated by 10PM in giving of division of A4, F1, F4, F5. E1, E3 were viable. E2 should have grown.

W113 stock used was also plated in E913 lac 

Counts difficult, possibly 4R1: 32P1: ca. 200-300 P2. unstable

On lactose, P1: P1 x K1 = 330:34 (very few R1 x P1)

P19 of P2, W155, W7706 x P1. 10:1 ratio, inoculate homemade plates E913 

W155, W7706 No SK+ (>300-) each. P2 xjohn g2st + 271 total = 15.5% (P1 + P1K1)
Therefore the incidence of R1/P1 isolates is now no better than chance!
DATE: 1/19/54.

REF:

A) Direct plating of clones to EM13 lac agar.

Possible leakage from glycerol!

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| A2 | A1 | A5 | B5 | B4 | B3 | F2 | last cell counted. | Found: 1/19 2:35 PM. | Both gal +
| 3± | 3± | (undet.) | 2± | 1± | 5± | 3± | (undet.) | 1074 1/18. Excellent recovery. |

to 11074 1/18. Excellent recovery.

B) in cotton cell. E1, E2, F1, 3, 4, 5 and A4 n.g. (as reported at all others pure, including E10 from A3 1-5. 1074 also 10 as empty pure cell.

vat:

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All parents except B5-.

High ratio of P1 to P1 not necessary efficient. Perfect concord in with drop platings.

of original cells: Three were 7 groups of P1, 5 groups of P2, 1 cell P1R1 and 1 group P1 P2 -> 2/18 to:

cells: H P1 12 P2 1 P1R1

* 2101 and 5 ded.
"Isolates a single O cell from a clump."

At 5:12 PM recorded only as

"long"

At ca. 10:30 PM, recorded as

\[ \rightarrow P1+R1 \text{ (left in drop)} \]

\[ \rightarrow P1, P1 \text{ (plating glasses)} \]

All remarks over next page.
DATE: 1/21/54

11:30 P1 × P2 1:1 B Ren assay.  

At 5:10-30 8:30  

same at 5'0  

8:30  

12 + 2  

4 + 4  

6 + 2  

A: 9 P.M.  

Feedback to B:  

A1 → (P1)  
A2 male → (P2)  
A3 male  
A4 = (P3)  
A5 = (A4)
11/4C.

00: B2, 3, 4

C2: 0, C3

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`(all but E3, 4) = P1`

= P2
A. $1 \rightarrow B1 \rightarrow NG$  
$2 \rightarrow B2 \rightarrow P1 \rightarrow R1$  
$3 \rightarrow P1$  
$4 \rightarrow B3NG; \rightarrow 0$  
$5 \rightarrow 10P1$  
$6 \rightarrow 6P1$

B. $2 \rightarrow Lact + S^{R} \rightarrow \text{Gel} + V_{1}^{S}$  
Pure Lact + $\gamma$. A 2

C. $B2$  
$3$  
$4$

D. $2$  
$3$  
$4$

E. $2$  
$3$  
$4$

$\perp S^{J}$  
$\text{Gel} - V_{1}^{R}$

$\perp S^{3}$  
$\text{Gel} - V_{1}^{R}$

2P2: 14P1
1/23/54

1:1:3

y:25 - 3:05 a/3
2:05 - 3:15 A, R T + 10. 4 yrs - 5:05.
Plating at 4:05 PM.
EMHlac sm: 3 P1R1 per 167 (2%).
EMHlac: probable zygote = 5/130 P2/113 P1.

In triplicate plates, colony appearance suggests following distribution: R1 P1 (P1 P2, R1 P2).
Single mutant colonies P1+ P2 not counted here.

This may of course be inaccurate.

G1,2 = fur. D1, D2. vs controls OK.

crew P23 - P2 y, a x T.
A1,3, 61 2 c123 D - E23 (6?) F12456.
Growth failed in (B3) 6, 7, 4, 5, 6; E1, E4; controls OK. Some may have died out.
Morphology: very 78A except: B2 (motele, brackley)
B3 has limited small cell development. Hold!
Large wide elements.

B4 grows in a small droplet. Brackley but not motele.
B2 small drogs. B3 small drogs. D1 - D5 day (10/55)
E1 - E4 - F3 small kicks.
W1655, W2338.

exp. cultures in Noursey, 1:1:2 3° at 37°.

34° dilute 1:50. Try to find F+/F- pairs. But drop one to dilute. However.

D1-3
E4-5 from poss. pairs, but both are morph. W2338 next day.

D1-2-3 from poss. S10-2.

D3 n.g.

01, 02 - EML.

D1 - EML

D3 -

D4 ++

D5 -

E4 ++

E5 -
III7B. Pick two from 1175 to 1275 and three from 1300 to classify proportions of parent 1 to show type lac + V, R segregations.

Columns 1, 2, 6, 7. Breeding 6.5 colonies on EMB Eal/11 (naprun) and indicate 
T1 gal types: col+V, R, col+V, R, nrs currently typable.

Some doubt.

Columns 3, 4, 8, 9. Lectypes on shoots are not whole.

Need to be repeated.

III7B: Select (Te N.) 2 x 10^-2 dil for plate.

EMB lac- lac+ lac am 

X: 
+/- 

40.6 55.2 3.5 3.7

- = 3.5/ 99.3 = 3.5%

99.3

+/- 3.5 (SR+) 3.7

1. SR + = lac+/-%. Nuclei all showed presence of each type.

% zygotes = 3.5/99.3 = 3.5%

5.96% Type

3.5

Plotted on 1.45 zygotes from 24 dial times.

Found 1 (see next): not different from chance!
Total $\chi^2$ testing Poison variance: $\chi^2 = 56.0$, d.f. = 5.0

\[ z = 10.58 - 3.92 = 6.633 \]

\[ p = .6 - .5 = 11.7 \]

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<td>4.94</td>
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<td>$\chi^2 = 7.5$</td>
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<td>$\chi^2 = 1.6$</td>
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</table>

Het variance Poison, means homogeneous.

Frequency of het: homogeneous in the theory, het: fact.
Class 2, what to do:

Activity 1: \( \text{as } \frac{\text{Lac}+V_1^S}{\text{Lac}+V_1^R} \)

\[ \begin{array}{c|c|c}
\text{Type} & \text{Counts} & \text{Totals} \\
\hline
\text{A} & 3 & 1 < 25 \\
\text{B} & 5 & 2 < 26 \\
\text{C} & 10 & \frac{\text{Lac}+V_1^S}{\text{Lac}+V_1^R} = \frac{25+2+4}{26+3} = \frac{31}{29} \\
\hline
\end{array} \]

No obvious bias.

\[ \text{see 1117C} \]

Note on 1-cell plate:

\[ \begin{array}{c}
\text{Re-examine } \text{U1} \\
\text{Repeat } \text{lac}^{-}/ \text{T1} \\
\text{17 Clear plaques} + \text{probably mixed: } \frac{\text{Lac}+V_1^S}{\text{Lac}+V_1^R} \text{ and score as 1 each.} \\
\text{28 " " + " " } \\
\text{33 " " + " " } \\
\text{45 " " + " " } \\
\text{46 " " + " " } \\
\text{57 " " + " " (P23)} \\
\text{45, 57 have } -R+S \\
\text{46, 7 have } \text{Col}^{-}/\text{V1} \\
\end{array} \]
Conclusions:

1. Host genetics are known, confirming recombination of V, heterogeneity might be useful to decrease.

2. V. segregation 1:1 if R/s primary + secondary recombination.

2/3 46: 10 lac - are V, 57: 9 lac - 2 V, 7 V.
57: 4 lac+ s  4: 4 lac- s

Sum: 4 lac+ s  11: 4 lac- s

27: 4 lac- s

58: 2- R

2- s  occur with  
Tol+ lac+? L+~ acc to any lac+ V1s?

30: 4 lac- s

36: 4- s

Use e.g.: 58 lac- also mixed R/s so

that there is probably:

loc+ R

loc- R

loc- S

Antibiotic V1s from 45:

2 tol+, mostly lac- (same V1+ papillo)  

45 contains lac+ V1s

2 tol+  

lac+ V1s (pl)

lac- V1s (pl)

lac- V1s

46: tol+, mostly lac+ (same -?)  

lac- V1s presumed. (pl)

lac+ V1s
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<td>1/1/51</td>
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<tr>
<td>17</td>
<td>pure salt+, bacterium weak+, Bac+1-</td>
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<tr>
<td>33</td>
<td>&quot;</td>
</tr>
<tr>
<td>45</td>
<td>&quot;</td>
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<tr>
<td>46</td>
<td>&quot;</td>
</tr>
<tr>
<td>57</td>
<td>&quot;</td>
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</table>
17c1 YR YS
2 × 3R
| 3 3R
| 4 8S OR.

[scribbles]

Is probably different?
something different?
**Crinked Status 2/4/57**

**Type 1A (presumed simple):** 25 (pure $V_s^s < +$) - 25 + 5C

**1B (presumed simple, but possibly containing $S$ also):** 24 + 5C + 1

**C. Containing $V_s^s$ and $V_r^r$: (17, 18, 33, 45, 46)** 5

**D. (37) Containing $+R$, $-S$, $-R$. (1)**

\[
\text{Detected } + R \text{ (parental) } = 30 \\
\text{Selected } + S \text{ (Reduced) } = 30, \\
\text{Reduced } + S \text{ (Knot equivalent) } = 30, \\
\text{Total } = 1:1
\]

**Possibilities:**

1. Loc + $S^s$ containing $1^c + S^r$ (calc).

2. Calc + $V_s^s$ containing Calc + $V_r^r$ (calc-)

i.e. $p$ and $V_s^s$ and $S^s$ cancel $V_r^r$.

Left over: Loc - $S^s$ among Loc - $S^s$ (probably beet hair)

and $S^s$ among Calc-
SR + colonies plated for purification, to EMB plate.
40 + 17.  1/31.  Replace t1 EMISbac ± T1.

CI: Each plate on EMISbac was lac+/lac-.  With T1:
Unaltered recipients (i.e. lac+V/ R):
(lac+AB/AB)  (lac- not verified)

19 6

Pure survivors:
lac+V/ lac-V:

17 9

lact+V/ lac-V:

3 1

C1 recs: lac+ are 31; 26 R/57 total.
Include at least 6 lac-V, R recombinants, possibly more.

1117 B: 318: 29 R.  per

Totals:

\[
\begin{array}{cc}
B & C \\
\hline
31 & 26 \\
31 & 29 \\
\hline
1 & 1
\end{array}
\]

Theor. 1082 18 15

agreement is obvious.
Check 1082 (29R: 26S)

Still queries misidentifying of lac-V, R recombinants
and association with lac+V, R (S, R).  Are the lac- components
of these pure?
Miscells.

DATE: 12/7/54

1235 Overly w P1, P2 1:5 310 1:1.5 X.
(1235 W 2377 x W 2391.)
Growth P P Empabesturer.

Gal, V, S (loc)
all nic C (Gal + V s) S (lac - s = 1)
except C 2 = Gal - V, R, S (lac +)
and E 5 = P1, P2 (SR + m
V, V, S, paper).

± and vis equal P1, P2
proportion.

50
<table>
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<td>1</td>
<td>W2377 x W2341 12th  -  SP4</td>
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</table>
| 2     | A  EMB  
| 3     | B  EMB  
| 4     | C  EMS for T1  
| 5     | 0.10  
| 6     | C  
| 7     | G  
| 8     | 
| 9     | 
| 10    | 

**Observation of Phage A**

- 19/165 tot.
- 11/232 (F.1/241)
- 5/170
- 35/357 +/-. A
- Ea =

**Observation of Phage B**

- +1 tot. = 12/171
- 6/149
- 15/236
- 11/231
- 47/267

**Question (apparently)** in B: 2+1? C: 0

**Observation of Phage C**

- 1/18 pick B, C, D  
- EMS +
- store for later study.

**Additional Notes**

- 50% in C
- ea + 1
- contain some population Uva  
- B. are +, have some S-R factor and V.S.
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Plates streaked from 1/28 in fig.
Replicate B to lac, T1 to prove the V1 segreg. ratio (1119/713).
All colonies have lac-V1R (Phage residue); some started for
number of lac+ 5/2 T1.

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<th>18B</th>
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<td>V1R</td>
<td>7</td>
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\[ \text{Total for str. 1119:} \frac{4}{1119} + \frac{7}{1119} - \frac{1}{1119} = 1 \]

\[ \chi^2 = \frac{12.5 - 10.5}{10.5} = .1 \]

\[ p = .8 \]

**Heterokaryotic** 1119 B 20
for components:

actual numbers therefore type 1: 19
2: 14.
\[ \chi^2 = .7 \]

But total almost too high!

\[ 3 \text{ lac+V1R} \]

\[ 3 \text{ lac+V1R} \]

They would not influence ratios

mixture possible but ignore here.

2/1/54.

C1.
C2. $< \frac{C}{D}$
0.1.
D2.

II 2. All orthotype $S^R$ among lac + $V^r$ recombinants.

Still possible that some $S$ are present but observed in minimum yield, $S$ behaves very differently from lac, V.

Other data show extreme rarity of $S$ in $S$ recombinants but they should be reviewed in multipoint tests.

Pedicle in 1119 only to unfertilized 13-20.

2/5.

Lecalo- 1076, just noted!!

Note also, in 928 - 941, W1875 x W1177 among lac + $S^R$, reported $4/5$: 74R. (Poss. of selection through linkage to T4?) Needs to be reported.
Review V_{1}, suggestion 0.1 cell dem 1.

Cross check against T1, T1 sum, Lac.

---

T1

1105 E4 S, OCC. R

1107 A3 S
- 105 S, R

1110 E5 R, S
1112 O V R, S

1113 O5 S
1118 E5 S, R

1120 O3 R, S

PIR1
PIR1
PIR2
PIR2
PIR2
PIR2

---

New information:

1107 A3 R1 is S

1107 O5 R1 is putative R

1105 E4 is located on P1, P2 model only.

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- Mix fresh bulbs $= 2.2.2.2.3^{[9]} (-9:30 a.m.)$
- Note on motility: W2384 second much less motile in dilute growing nutritive c 2388 than otherwise. Compare effect of growth phases motility.
- See protocols A1, E1 in q.
- (Very large c) (flaccid) (pale)
- D inhibited by c hormone.
- No zoospores from these clumps.
- P1: 11
- P2: 17.
- Good agreement with morphol.
- Predictions except for A4 which is drawn as small clump.

Use W2384 as P1 from here on. To date P1 has not proved satisfactory to W2388.
<table>
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<tr>
<td><strong>A.</strong> W2381-6 x W2344</td>
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<tr>
<td>2:45 - 9:30 PM</td>
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<tr>
<td>Unavailability of new Mal^- mutants, esp. in assessing residual P2 marker.</td>
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<tr>
<td>EMS lac + sm</td>
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<tr>
<td>Mal +</td>
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<tr>
<td>EMS/Mal +</td>
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<tr>
<td>Mal +</td>
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Best have Mal- end unity all/flow (mainly) the S^2 segregation, and maybe equivalent. Use 2384 for future studies.

| **B.** W2057 x P1 |
| 245 - 9:30 PM |
| EMS lac + sm | Plate 10^-6 EMS lac + sm, sttuka lac+ to confirm orthotype for Mal^+ , Mal among these recombinants in lanes 1 x 28A. |
| Mal + | (Some pure Mal^+). Pool and recrude. |
| Mal - | (Some colonies motile. Very likely lac+/-) |
| EMS lac + | Some lac+1-, often too crowded. Protect as likely to Mal^+ |

From EMS lac + sm 10 Lac^- | 9 pure V^- 10^4 (all Mal^+) (different from lanes 1 x 28A in V^- segregate!)
| (V^- orthotype) |

**C.** 11-42 (W2388 x W2344) Plate EMS and T1 test for lac^- |
| (plate as from 1121, 9:30 AM) EMS lac + sm T1 ratio among V^- skx |
| Mal - | Mal + |
| 10 Mal - 3 Mal + |

Fruhul, pick EMS lac + (A) and Mal^- (B) for Mal test.
Control:

Pl alone: heavy colonial background and partial survivors. Phage titre evidently inadequate.

In crosses:

EMB lac sm T1: lac+ probably > lac- but many form spheroids.  More definite platings of mice (same T1) lac- > lac + 1

EMB Sm T1: Fewer T1R and: not detectable? Repeat with better phage stock!

Conclusions:

A. M67 - here all effectively linked to S. More orthotypic

B. W2057 has same elimination patterns for M67, 5, 4.A as W1895, but note that the U ratio is quite different!!  (Look for U^s x W2377?) Have these U^s been tested with TS? This is same V^k as W1177 (= W-1 V^k); may be different loci.

C. No information: need fresh T1 for selection.
2/7/54

2/7: W2393 x W2344 in EM1M+R +. The sun. I clear all day."

2/9:

1. Ratio of M+R to lact: Pick 5 R+ from the sun to EM1M+R.

   Found: 2 M+R+ : 67 M+R-

2. V, R/S ratio in lact+ R of W1895 x W1177. Test colonies with spot classify as + S - R; + S - R, and + R.

Best note: Incidence of 13 suggests that most zygotes had already segregated, this seeming true.
A
8:45
2384 x P 2 1:12 3PM— Dilute ca 4/17,

Also Plate 4/20:
i.e., ca 80 minutes later

Gummy contamination present (probably from W2384)

but...isok

Sr+ ca. 10%

Pick Lack (A: single sector B: others + lac+)

EM 13 + 5m

Host had one + at lac on plate (approx. 1/2)

W 1177 x w23840 ca. Thorensi's broth. Plate EM 13 bact.

Pick 8R+ distinctly vs. T1 or EM 13 lac. Each of 29 lac+: V, R.

Mu (R2 = ophalotyph) cross should produce R increased in size to the R control. (cf. 1107550... carrying V1300y) F-.

B

C

Note W2384 sterile culture contaminated with gummy + lac+, possibly also phage. Rubula single colony for repurif.

D

Of W2384 M- 1-7, all but # 1 appear X5. # 2 = A5?
Variable mutability, response to...
2/7/54.

Are 1125A forms. Dilute at 1 hour.
Test cultures for MH, M1, lac, T1, S, cal. See Gordon Cal.
MH M1 lac T1 S cal streak.

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all parents!

8P2
3P1
2/6/54.

w234y
Recap. I. Hfr $\lambda^{lac+}$ $V^R$ x line 28 $lac^{-}$ $S^R$, almost precisely 50% of the $lac^{+} S^R$ recombinants are $V^R$. (11/7B).

2. In line 1, W1895 x W1177, data are rather heterogeneous, but seems to 415:74 R. Should be recapitulated!

3. A. W2057 x W2-338, in one experiment only, found 18:9 R.

4. 11/38 w2057 x W1177 x W234y: No $V^S$ recombinants.

7/7. A. W2393 x W234y 11:35 A?1 — Rat. Plate on EMB+lac on and EMG+b1 ags. Test $S^R$ x for

8. W1895 x W1177. See 11/22. 7. $lac$ (11/2) and $V$ segregation.

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15

15

23

8

8

10

V$R$ = 6/15

Lac$^+$ = 4/15

Exp. + $R = \frac{24}{225} = \frac{15}{15}$

But actually, + $R > S$!
AA:  
\[ +s \cdot 3 \]
\[ +r \cdot 1 \]

\[ ((+s - r)) \cdot 1 \]
\[ -r \cdot 1 \]

\[ +s + s \cdot 1 \]

I? s \cdot 1

With hold conclusions in ratios:

\[ MH + bac^- s^r \] and \[ MH^+ bac^- s^r \] may occur in same colony.
C. W2394 x P2

D. W2397 x P2

See 11/29.

C showed many more Xyl+ S+ / lac+S+ than did C.

a) Test lac+S+ by dual streak on Xyl.

b) No. Xyl/lac.

b) C: 1/1 lac+

D: 1/8 lac+

Not conclusive.

h) C: 3/28 Xyl+

D: 1/25 Xyl+

25E 7/2/54: C x zo394, Z x P2 on EM 13 lac, Xyl + No S+ found on Xyl. See 11/29 for repeat.

Numerous on lac. (see 11/26 zo30)