

DATE: 1109-C3.

REF:

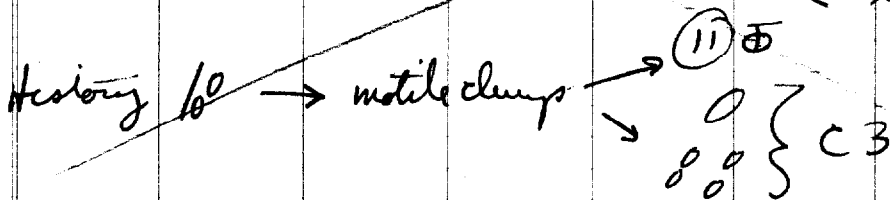
9/21. Not yet analyzed.
lac V, Ara:

Plated on B Ara: pure Ara⁺.

4 children: lac⁺ V₁^r.

But male lac reaction is suspicious. Plate as B Gal!

10 Restreaked 18 on B lac: pure lac⁺ but weak and strong
weak lac⁺ are Gal⁻! (2-3? lac⁻ smallcols)



20 ∴ if σ⁺ is present, not reliable. However, presence of Gal⁻ recombinant
may be valid. So far, 18 seems to carry Ara⁺ lac⁺ Gal⁺ / - V₁^r
contemporary record: M X M - S^R (Gal⁺)

Note: so far identified: Gal⁻ lac⁺ Ara⁺ V₁^r.

30 Isolates:

- a. Gal⁻ lac⁺ Ara⁺ V₁^r
- b. Gal⁺ lac⁺
- c. Lac⁺?

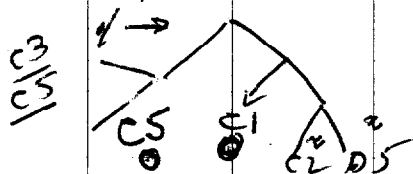
Xyl⁺ S^S
 Xyl⁺ S^S
 Xyl⁺ S^S
 Xyl⁺ S^S
 ≡

Gal⁻ S^S V₁^r lac[±] Ara⁺
 Gal⁺ S^S V₁^r lac⁺ Ara⁺
 Gal⁻ S^S V₁^r lac[±] Ara⁺
 Gal⁺ S^S (- more^S than +) V₁^r
 Lac⁺⁺ Ara⁺⁺ V₁^r

18 is not yet tested as Hal. Is it the σ⁺?

7/2 And date review, find that I have used 1145-C3 for these tests. This is the counterpart of C1 = #17, both stated and accepted as 100 0800 types

- 17A = C2
- 17B = D5
- 17C = C1



June 24 1957.

Incomplete numbers.

1357 B.

DATE:

REF:

	1	Formed 3	4	Wanted 6	7	8	9	10
✓✓ 6	5JH5.	111 011		000 1000				
✓✓ 9	56C1	101		100 001		mostly lac -	000 ✓	000+
✓ 10	C3	101 001 000	✓	100 001 Verify		lac → lacTT: No	100	
✓ 11	D1	100 001 000		Verify				
✓ 12	22							
✓ 13	G5	111 000 011		100				
✓ 18		111 ? ...	GAL!	Verify		Platrol: pure Ara +		
✓ 19	60A2	010 000		1.. (original record)		lac + dried out.		
✓ 21	61G1	0... 111 0001 111 1111		000 1111 000 0001		{ (000 00 111 0000 is absent) }		
✓ 28	63C2	Official		Review			1110	
✓ 25	G5	101		100 001		not present.		
✓ 26	B6	011 000		010 001		Ara + 1-		
✓ 27	64B3	101 000		100 001		were found.		
✓ 29	64D3	000/111 0000/1111		100 001		check		
✓ 30	65A3	000 100 100	(1.0)	100 001		dat types... all	300B.	
✓ 35		111 000	lac 5 ³	100 001		lac - 5 ⁺ ? lac 5 ³		
✓ 36		111 011		000 100		No lac - Segs. at n2-3.		
✓ 37		lac/Md.		V ₁ ?		Schubert's V ₁ ⁵		
✓ 38		101		Verify; 001		100 of 13. 100 pure lac		
✓ 40		011 100		" ;				
✓ 46		011 100		" ;				
✓ 47		100; 100		Verify; 100		(B1, B2, B3 in sm both)		
✓ 48		001 110	100 000	"				
✓ 471		111 000		"				
✓ 72		111 110		"				
✓ 74		101		"				
✓ 81		011 100		Verify				
✓ 84		101 only		Verify; 100		no V ₁ ⁵ , no lac evident		
✓ 88		Fla		Reviews.				

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DATE:

REF:

	1	2	3	4	5	6	7	8	9	10
✓ 17		100	022							
✓ 18		100			7.021 100					
✓ 17		111	Gal S ⁵		pure Ara	111 000 0		111 000 1		ul ⁵ ?
✓ 23		(Hfr-Gal)								
✓ 35		111 000	Lac ^S ✓			000 0000		111 0000		111 0001
88		Fla, MXM, Gal?		Aux too much						
✓ 65		011 100	111 000		verify....					
✓ 66		011 100	111 000		"					
✓ 67	A	100	000 ✓							
✓ 68	A	001 110	100 000	101	010 000 "					
✓ 71	A	111 000	011							
✓ 72	B	111 110	0.00							
✓ 74		101	100 000		no 001 sum.					
✓ 81		011n100								
✓ 89		101			Lac ⁺ very much, <u>shuts out</u> : also <u>wls</u> .					
		100, 110, 111, 101, 100, 111								

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MAY.

1357

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DATE:

REF:

11561321.

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bac bac, Xgl MHR Mds Cal

Previously found 000... and 111 1000 0 only

5/57 a and unmet tests consistent
(17 bac are 000..)

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DATE:

REF:

1156135.

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Previously identified 4 types:

	Lac	Ara	V ₁	Xyl	HE	Mal	S	Gal.
1	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0
3	1	0	0	1	0	0	0	0
4	0	0	0	1	0	0	0	0
5	0	1	0	0	0	0	0	0

10 However, record showed Ara⁺ also present. V₁^S. This now verified and isolated as V#5.

6/20. Mostly Lac⁺Ara⁻. Very few Xyl⁺ (this also Mal⁺).

20 Altogether 73 Ara⁺ tested: all Lac⁻Mal⁻Xyl⁻. Sawhole culture is V₁^S, S^r this defines type 5. Stab example!

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9. Lac⁻ pool: all V₁^S

101

000

no 001

no 100

not tested: Lac⁺V₁^S.

on cross brush, 9 has mostly Lac⁻V₁^S; rare Lac⁺V₁^S, ~~concomitant~~ no appreciable diminution in T₁ portion. Record

as no 100.

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1387
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1156 E 3

DATE:

REF:

	1	2	3	4	5	6	7	8	9	10
	Lac VI.									
	Restatement		101	001	000	must be verified ✓				
						any 100?		No		
	duplicate records (+, -) to Lac T1, A									
	1.1	0.0	0.1	indent	No	1.0				

>100
columns

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DHEB G-5

REF:

1	2	3	4	5	6	7	8	9	10
	111	000	011	identified.					

look for 100.

An apparent 001 proved to be $7a^2 6b^2$ = 13A. probably constant. of 66

α_{10}

Lac + -V ₁ ^v	+S
Aca + r	-S

Plate: Mostly Lac⁺. look for Lac⁺Aca⁻

see: Lac⁻Aca⁺
Lac⁻Aca⁻
Lac⁺Aca⁺
> 100
kots.

1? Lac⁺Aca⁻. Rest usually
✓ Lac⁺. Verify Aca.
Aca⁺V₁^r

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DATE: 1159-03

REF:

100 ✓
100

/146/ = A² /145/ = a³ 4 5 6 7 8 9 10

This was quite a scramble, as #18 q.v. was taken as 1159-03 by mistake, (failure to distinguish the two series) and found to be 111 .1.1 1 and 0.

This culture (17-03) was found to be pure Lac⁺, Ara⁺, V₁^r, motile, but mixed on Gal.

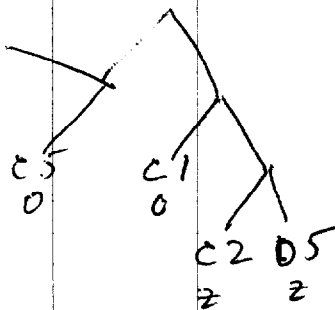
7/2/57

Does the Gal mixture have any significance or is it a reversion? The contemporary record implies it was pure Gal⁻ at that time. However, the whole pedigree should be re-screened.

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c3 c5

acc. 1184: c2 and D5 are 100/1000 only.



call this 1784

20

	17	c1	Lac	V ₁	Ara
→	c2	-	S	S	-
	c4	+	S	S	-
	c5	±	S	S	+
	D5	-	S	S	-
	D5	+	S	S	-

= Gal⁻ Lac⁺ descendants

Gal
+
+
-
+
+

all mixed.
Gal⁺ and ⁻

of

30

c3 + K +

Change from contemporary record, presumably Gal⁻ → Gal⁺ mutation but check ifr.

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x 410 m M Lac c3 and 3 s.c.i are all ifr.

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DATE: 1159-03

146 C3

REF:

100

1 2 3 4 5 6 7 8 9 10

See 17 in re initial mixup.

History: a /oo complex grew into a clump from which // were discarded and ooooo were pooled to give C3.

1184-19 states that this culture also has lll, to be verified. (It is quite possible that the same error was made then). *Subst!*

fact, - V₁^S Aa -
18; ~~fact + VR Aa -~~

~~fact~~ ~~fact~~

and check for 100, 001

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DATE: 11 60A2.

REF:

Previously recorded as $\text{lac}^+, \text{Ara}^+ (V_1^s)$ also $\text{lac}^+/\text{lac}^- V_1^s$ for DEC 10/54

x Now pure $\text{lac}^-! \text{Ara}^+, V_1^s$.

g/24. Try also as $\text{lac}, \text{Ara};$ Reiterate 19. for lac^+
(= 2A-F) 2C - n.g.

000
010
010
51.0
2.10
111
111

143

do not compare 144

~~A B C D E F~~ ~~lac V₁~~ ~~Ara V₁~~

	lac V ₁	Ara V ₁
A	-	S
B	±A	R
D	-	S
E	-	S
F	-	S

Is B the ⊕ rather than A? No This is ♂

As lac^+ component resolved, ~~was~~ record only the 010 element, and considers the lac^+ line as expanded by accident.

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DATE: 6/6/61.

REF:

Record:

1	2	3	4	5	6	7	8	9	10
		Frame:			Merits				
		000	0000	0	1..	...0			
		111	0001	1..0			
		111	111110			
					0..	..1.			
					.1.	...0	now		

6/5/61:

Record: now mostly $lac^+ V_1^+$ lac^+
 α : also some $lac^+ Ara^+ S^+$
 While no S^+ recombinants are evident, further search is warranted for $000 \dots 1$ types
 To facilitate this, enrich the Mal^+ components of present culture.
 For checks, found: 6161-0 $Ara^+ V_1^+$ = whole.
 A - S
 C + r
 D + r
 whole culture is Gal^+ . Replicate to 410. for possible Mal^+ components.
 brush ^{on Mal^+} , imitate Hay Hms restriction. spot Mal^+ to B_{lac} . Mal^+ is
 weak, should perhaps have used Xyl instead. ~ 8 Mal^+ all lac^- also lac^-
 Mal^-

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DATE: 7/4/07

REF:

1 2 3 4 5 6 7 8 9 10

000
100
101
001

Replica: All tra
Mostly 000.
Many ~~too~~ 100, 101
No 001 seen here. (submesh)
Restrict: V, R on motor.

any subs? for 001.

Restrict from V, R → has 2 clo / > 100. Restrict. ✓ Yes 001

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1357
80
✓

DATE: 1207-AY.

REF:

1 [206]2

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4

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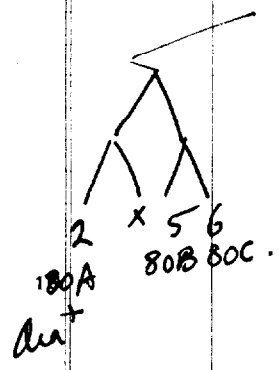
7

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Recorded as Ana, Lac, Lac.



α: A Lac⁻ Ana⁺S⁻R
B Lac⁺/ Ana⁻ S.
C Lac⁺S⁺/R Ana⁻

✓ No Ana⁺V_i⁺

010	001	
000	100	
000	001	100

000
001
010
100

Ana⁺V_i⁺
check A
Lac⁺V_i⁺
check C.

000	✓
001	✓
010	✓
011	
100	✓
101	✓
110	x
111	x

Note this example of early Ana signature photos.

of 68.

? 011 = Ana⁺V_i⁺ Lac⁻ Could this be present in A? No, Ana⁺V_i⁺ present
101 = Lac⁺V_i⁺ could this be in C?
Should be repeated. No Lac⁺V_i⁺. ✓

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The Fla⁺ pedigree

1357-88

DATE:

REF:

	1	2	3	4	5	6	7	8	9	10
	aaV ₁	lacV ₁			Xyl ⁺ res					
α:	A -S +K B -S C -S	A	(+, -) -S -S	R, S.	+S -R *+S -R -R	? +K		Mixed Gal ⁺ /Gal ⁻ (Fla ⁺)		

10 ∴ 88A seems to include σ⁷. Basis in pedigree?

It was so listed at the time (12/10). However, ~~it~~ ^{mutant} could not be ruled out. It was isolated as pure σ⁷.
 putine cell might have been abortive mitosis &

20 88B: original recorded as MXa1⁺. Has a small Xyl⁺ S^s component. Replate from this inoculum. (faint rx)
 Very faint rx. Almost unresolvable.

88A
 1 Gal⁺ S^s V₁ R
 2 Gal⁻ S^s V₁ V

B 30 Gal⁺ S^R V₁ S

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DATE:

REF:

Math classes: 2 ... only

	2	3	4	5	6	7	8	9	10
	111-011	111-100	010-101 100-001	010-000 001-100	100-101 001-000	101-021	100-001	100-101-001	
	6	30	68	80	74	10	11	7	
10	13 36 53 65 71 81								

20	7	1	1	1	1	1	1	#	
----	---	---	---	---	---	---	---	---	--

Multi classes. - incl

7
308
 $\frac{100}{000} \cdot \frac{1010}{0000}$ plus 010

21. 111-0001 and 111-1111

29
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 $\frac{000}{111} \cdot \frac{0000}{1111}$

31
 $\frac{100}{000} \cdot \frac{0200}{0011}$

35 111-0001 111-0000

55
50
 $\frac{100}{220} \cdot \frac{0010}{0000}$

85
 $\frac{100}{220} \cdot \frac{1000}{0011}$

only 29 is segregating M.H.
As to 010
available?
Quantitative analysis

7/4/57.

Semi final analysis

13507

DATE:

REF:

	(i) Significant Recombinant clones			5	6	7	8	9	10
	100	010	001	110	101	011	111		
	1 52	19	not rec.	22	5	26	3		
	2 57	60			8		34		
	4 59				25		51		
	7 61				27		54		
	12 62				56		66		
	14 63						72		
	15 64								
10	16 67								
	17 69								
	20 76								
	24 73								
	28 75								
	32 76								
	33 77								
	37 78								
	79 84								
20	82 85								
	83 86								
	84								
	18								
30	36 37	2	—	1	5	1	6		
add	5	2	4	0	3	7	8		
40	41	4	4	1	9	8	14		
add	4	1	1				4		
	45 46	5	5	1	8	8	18		
	Loc =	45 + 1 + 9 + 18	= 73						
	Area =	5 + 1 + 8 + 18	= 32						
50	V ₁ =	4 + 9 + 8 + 18	= 39						

1 Fla
1 total

should be loc 6, Area.

~~Submitted~~ 7/4/57

Preliminary resume

1357

51-88

Final 7/7/57

DATE:

REF:

#	Exp code	coz.	sibs	prelim scores	6	7	8	9	Finish
51	1185 C1				111	000		111	>
52	G2				100	000		100	>
53	1186 A1	A2 B12			011 000; 100	No 111	100 011		>
54	C4	C11 C12			000; 111 000		111		>
55	F4	F6 F5		Lao' Mal'	00; 10; 01	No 11	100 0010; 000 0010		>
56	D1	D11			101		101		>
57	G1	G12			100		100		>
58	H4	extensive pedigree			.00....		Tetrad *		>
59	1197 D3	D3	C3 H5		100 000		100		>
60°	E4				010		010		>
61	H4	H4	D4		100		100		>
62	1200	D6			100		100		>
63		A3			100		100		>
64	1203-197	a5-a6..			100		100		>
65	1204 D1	D3		011-100			111 011		>
66	1205 E4			011-100			111		>
67	1205 G4			100 ; male?			100		>
68	1206 204-5	2;3		001 110; 100 000			010 101 001 100		>
69		5			100		100		>
70°		26			100		100		>
71		14 16		111 000			111 011		>
72		34 36		111 110?			111		>
73		41			100		100		>
74		43		100			100 101 001		>
75-1207	206- A1				100		100		>
	B5				100		100		>
	H4 D1				100		100		>
	F4				100		100		>
79		G4			100		100		>
80°	A4	A2-5-6		010 001; 000 100;	001 100		001 010 100		>
81	207C1	C3	D2				100 011		>
82	E4	A2		100			100		>
83	A4	A6		100			100		>
84	D5	D5		100			100		>
85	G4	D6		(100) new 000			100		>
86	1210 208D1	d1 d5		100; 100			100		>
87		H4 82		101...			101		>
88	C1			Flat see pedigree			Flat		>

* $\frac{100}{000} \cdot \frac{1000}{0011}$

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DATE:

REF:

Rewrite, fac V, Res:

1
100
111
101
011
010
021
110

2
45
18
9
8
5
4
1

7
102
111
110
011
001

010
101

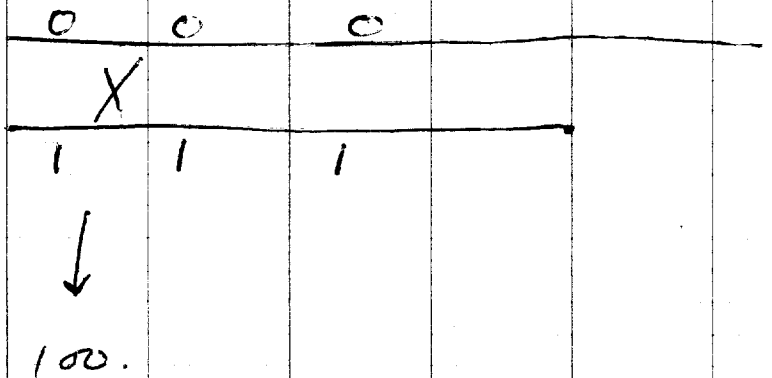
10 100-111
....

1 each.

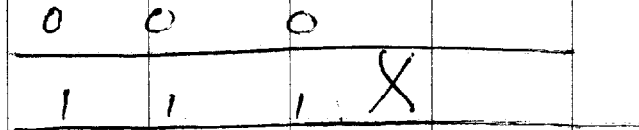
The only ~~of~~ frequent unit is then $\frac{111}{011}$

20 In fact $\frac{7}{18}$ carrying 111 also carry 011 but 011 is very rare
obs. Suggests heterogeneity or interaction

(a) the 100



40 (b) the 111 yields
pair in all regions to give
more recombinants.



50 why $011 > 111 \cdot 100?$ Excess of double crossovers. right of 111?

(1153-1210)

Lac Ara Vl (Mtl Xyl Mal S Gal Fla)
REF:

DATE: July 7, 1957

Initial ascertainment included all markers except Vl.						7	8	9	10	
a)	Only Lac Ara or Vl segregating . 000 present in (virtually) every progeny									
	100	111	111/ 011	101	010	one each:				
	1	61	3	6	5	19	001 not ascertained			
	2	62	34	13	8	60				
	4	63	51	36	25		100 22			
	7	64	54	53	27					
10	12	67	66	65	56		011 26			
	14	69	72	71						
	15	70		81			111/100 30			
	16	73								
	17	75					101/001 10			
	18	76								
	20	77					100/001 11			
	24	78								
	28	79					010/101/100/001 68			
20	32	82								
	33	83					010/ /100/001 80			
	37	84								
	52	85					101/100/001 74			
	57	86								
	59									
	[37]	[6]	[7]	[5]	[2]	[8]	=			
b)	Also other markers [10]									
30	7:	111 1000 only ✓					1			
	8:	100/000:1010/0000 [also 010]					5			
	21:	111 0001 & 111.1111 ✓					2			
	29:	000/111:0000/1111					6			
	31	100/000:0000/0011					7			
40	35	111 0001 111 0000					3			
	55	100/000:0010 →					4			
	58	100/000:1000/0011					8			
	23	000 0000 1 0								
50	88	000 0000 0 1								
	Total: [75] progenies. How many total pairs?									

65)

(1153-1210)

Lac Ara VI (Mtl Xyl Mal S Gal Fla

DATE: July 7, 1957

REF:

Initial ascertainment included all markers except VI.

a) Only Lac Ara or VI segregating . 000 present in (virtually) every progeny

	1	2	3	4	5	6	7	8	9	10
100	111	111/011	101	010	one each:					
1	61	3	6	5	19	001 not ascertained				
2	62	34	13	8	60					
4	63	51	36	25		100 22				
7	64	54	53	27						
10	12	67	66	65	56	011 26				
	14	69	72	71						
	15	70		81		111/100 30				
	16	73								
	17	75				101/001 10				
	18	76								
	20	77				100/001 11				
	24	78								
	28	79				010/101/100/001 68				
20	32	82								
	33	83				010/ /100/001 80				
	37	84								
	52	85				101/100/001 74				
	57	86								
	59									
	[37]	[6]	[7]	[5]	[2]	[8]				

b) Also other markers [10]

30	7:	111 1000 only								
	8:	100/000:1010/0000		also 010						
	21:	111 0001 & 111.1111								
	29:	000/111:0000/1111								
40	31	100/000:0000/0011								
	35	111 0001 111 0000								
	55	100/000:0010								
	58	100/000:1000/0011								
	23	000 0000 1 0								
50	88	000 0000 0 1								

Total: [75] progenies. How many total pairs?

1357
SUM.

DATE: July 7, 1957.

REF:

Sums ¹ : (by progeny, not ² number of recombinants).	6	7	% ⁸	9	10
Lac: 37+6+7+5+7+8 = 70 = 75 -(19,60,26,23,88).		70	93		
VI : 6+7+5+7+4 =		29	39		
Ara : 6+7+2+5+5 =		25	33		
Mal:		6	8		
10 Xyl, S		5,5	7		
Mtl		2	3		
Gal, Fla		1,1	1		

Perhaps a better sequence than Lac Ara VI Xyl Mtl Mal S would be one to fit the

20 above, Lac VI Ara Mal S Xyl Mtl. Where this is done, substitute i/l

This will make the descending order of individual types as follows:

Better S Mal Xyl.
MH.

100	i00	18/2	1000	00i0	00i0	00i0
			10i0	i0i0	0i00	0i00
111	iii	18	0001	0i00	00i0	1000
			0011	i100		1100
011	0ii	8	0010	i000		0i00
			0011	i100		1100
30 101	ii0	8	No particular advantage here.			
010	00i	8				
001	0i0	5	1111			1111

40

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DATE:

REF:

Summ: (by progeny, not number of recombinants).

	1	2	3	4	5	6	7	8	9	10
Lac:	37	6+7+5+7+8	= 70	= 75	-(19,60,26,23,88).		70	93		
Vl :	6	7+5+7+4	=				29	39		
Ara :	6	7+2+5+5	=				25	33		
Mal:							6	8		
Xyl, S							5,5	7		
Mtl							2	3		
Gal, Fla							1,1	1		

Perhaps a better sequence than Lac Ara Vl Xyl Mtl Mal S would be one to fit the above, Lac Vl Ara Mal S Xyl Mtl. Where this is done, substitute 1/1

This will make the descending order of individual types as follows:

100	100	41	1000	0010
			1010	1010
111	111	18	0001	0100
			0011	1100
011	011	8	0010	1000
			0011	1100

No particular advantage here.

Resume of xgotes: remembered

1357.

DATE:

REF:

#	Exp/Slide	2	3	Markers segregating	6	Lac(Ara) V1 Analysis	Mal...	9	Pedigr
1	53D2			Lac		-s			
2	D4			Lac		-s			
3	59A3	130-D3		Lac V1 (+r) Ara		+			
4	F2			Lac		-s			
5	F5			Lac V1 (+r)					
6	H5	H5		Lac V1 Ara					
7	56B2	131-		Lac V1 Ara Xyl					
8	B5			Lac (Ara) Xyl Mal					
9	C1			Lac V1					
10	C3			Lac V1		+r -r -s			
11	D1			Lac V1		SEE -r +-s			
12	F3			Lac					
13	O5	G5		Lac V1 Ara					
14	58B1			Lac					
15	H2			Lac					
16	59A3			Lac					
17	59C2, D5			Lac					
18	C3			Lac V1 Ara		+r, -r			clump
19	60A2	A2		Lac Ara					
20	61C4			Lac					
21	61C1	137 H5		Lac Ara V1 Mal Xyl		See detail.			
22	62B5			Lac Ara					
23	63C2			Oal Hcr		x			
24	D6			Lac					
25	G5			Lac V1					
26	63B6	B6		ara					vl.
27	64B3			Lac V1					
28	64C6			Lac					
29	64D3			Lac Ara Mal Ntl S		X			
30	65A3, H6, B5 B6			Lac Ara V1		+s/++r			x
31	65D2			Lac Mal S		++/-			
32	65B3			Lac					
33	H3			Lac					
34	66C1	153- C1		Lac Ara V1					
35	66C3-4	C3 C4		Lac Ara V1		+ r/- r			
36	83A2	173-A2 [3-6]		Lac Ara V1					
37	83B6			Lac					

These have all been multiplexed scored for V_1^F and for $Lac+V_1^F$ (presumably there are no cases of $Lac+V_1^S/Lac-V_1^F$ except 56D1. Lac means that the only detected recombinants were $Lac+Ara-V_1^S$. $LacV_1$ means that $Lac+V_1^F$ was detected; it does not rule out the additional presence of $Lac+V_1^S$ or $Lac-V_1^F$, though these are sometimes indicated. Detailed analysis is made only for $Lac.Ara$ cases. For Mal... cases, see detail sheet. There have been no $Lac+S^S/Lac-S^F$ lacking +r.

Fwd 7/7/57

comparisons
000 understood

DATE:

REF:

#	Exp/Slide	2	3	4	5	6	7	8	9	10
#	Exp/Slide	zygotes		Markers segregating		Lac(Ara) VI Analysis				Pedigr
1	53D2			Lac		-s		100		
2	D4			Lac		-s		100		
3	59A3	130-D3		Lac VI [+r] Ara		+		111		
4	F2			Lac		-s		100		
5	F5			Lac VI [+r]				101		
6	H5	H5		Lac VI Ara				111 011		
7	56B2	131-		Lac VI Ara Xyl					111 1000 0	
8	B5			Lac (Ara) Xyl Mal				100/000 · 1010/0000 ; 010		
9	G1			Lac VI				101		
10	O3			Lac VI		+r -r -s		101 001		
11	D1	05		Lac VI		xxx -r +s		100 001		
12	F3			Lac				100		
13	O5	05		Lac VI Ara				111 011		
14	58B1			Lac				100		
15	H2			Lac				100		
16	59A3			Lac				100		
17	59C2, D5			Lac				100		
18	C E3			Lac VI		+r, -r		100		clump
19	60A2	A2		Lac Ara	V ₁ ^s	Not act new		010		
20	61G4			Lac				100		
21	61G1			Lac Ara VI Mal Xyl		See detail.		111 · 0001/1111		
22	62H5	137 H5		Lac Ara	V ₁ ^s			110		
23	63C2			Gal Hfr		x		000 000 01		
24	D6			Lac				100		
25	O5			Lac VI				101		
26	63B6	B6		Lac Ara	V ₁ ^s			011		
27	64B3			Lac VI				101		
28	64C6			Lac				100		
29	64D3			Lac Ara Mal Mtl S		X		000/111 · 0000/1111		
30	65A3, B6, B5 B6			Lac Ara VI		-s/++r		111 100		X
31	65D2			Lac Mal S		++/+		100/000 · 0000/0011		
32	65E3			Lac				100		
33	H3			Lac				100		
34	66G1	153- G1		Lac Ara VI				111		
35	66G3	O3 G4		Lac Ara VI		+ r/- r		111 5 ^r /5 ^s		
36	83A2	173-A2 [3-6]		Lac Ara VI				111 011		
37	83E6			Lac				100		

These have all been meticulously scored for V₁^r and for Lac+V₁^r (presumably there are no cases of Lac+V₁^r/Lac-V₁^r except 56D1. Lac means that the only detected recombinants were Lac+Ara-V₁s. LacVI means that Lac+V₁^r was detected; it does not rule out the additional presence of Lac+V₁s or Lac-V₁r, though these are sometimes indicated. Detailed analysis is made only for Lac.Ara cases. For Mal... cases, see detail sheet. There have been no Lac+ S^r/Lac-S^r lacking +r.

DATE:

REF:

#	Exp/Slide	zygotes	Markers segregating	Lac(Ara) V1 Analysis	9	Pedigr
1	53D2		Lac	-s	1000 000	✓
2	D4		Lac	-s	100 000	✓
3	55B3	130-D3 = A2	Lac V1 [+r] Ara	SOK.	111 000	✓
4	F2	A7	Lac	-s	100 000	✓
5	F5	A4	Lac V1 [+r]		101 000	✓
6	H5	H5 A9	Lac V1 Ara		111 011	No 000 ✓
7	56B2	131-	Lac V1 Ara Xyl Mal	✓ sole type: [Lac+/-] [Mal+Xyl+/-]		V1 ✓
8	B5		Lac (Ara) Xyl Mal			
9	G1		Lac V1			
10	C3		Lac V1	+r -r -s	101 001 000	
11	D1		Lac V1	Mal -r +s	100 001 000	
12	F3		Lac		100	✓
13	G5	G5	Lac V1 Ara		111 000 011	✓
14	58B1		Lac		100	✓
15	H2		Lac		100	✓
16	59A3		Lac		100	✓
17	59C2, D5		Lac		100	✓
18	C3		Lac V1 Ara	+r, -r		clump
19	60A2	A2	Lac Ara V1	fact did not.	000	✓
20	61C4		Lac		010	100 ✓
21	61G1		Lac Ara V1 Mal Xyl S	See detail.		100 ✓
22	62H5	137 H5	Lac Ara V1		110	No 000 ✓
23	63C2		Gal Hfr	x		✓
24	D6		Lac		100	✓
25	G5		Lac V1		101	✓
26	63B6	B6	Ara V1		011 000	vl. ✓
27	64B3		Lac V1		101	✓
28	64C6		Lac			✓
29	64D3		Lac Ara Mal Mtl S V1	x	4 TYPES Xyl	✓
30	65A3, B6, B5 B6		Lac Ara V1	+s/++r	000 100	✓
31	65D2		Lac Xyl Hfr Mal S	++/+	Ma- V1	4 types ✓
32	65E3		Lac		100	✓
33	H3		Lac		100	✓
34	66G1	153- C1	Lac Ara V1		000 111	✓
35	66C3-4	C3 C4	Lac Ara V1	+ r/- s	000 111	✓
36	83A2	173-A2 [3-6]	Lac Ara V1		111 011	[000] ✓
37	83B6		Lac		100	✓

These have all been analyzed scored for V1^R and for Lac+V1^R (presumably there are no cases of Lac+V1^S/Lac-V1^R except 56D1. Lac means that the only detected recombinants were Lac+Ara-V1s. LacV1 means that Lac+V1^R was detected; it does not rule out the additional presence of Lac+V1s or Lac-V1r, though these are sometimes indicated. Detailed analysis is made only for Lac.Ara cases. For Mal... cases, see detail sheet. There have been no Lac+ S^S/Lac-S^R lacking +r, except 21

DATE:

June 12, 1957.

REF:

1184.

- (a) lac, V_1 Review and complete analyses especially for complementarity.
 (b) Mal... S) Handle in 2 groups 1-31 are first group.

If possible write following tabs. #'s

- (a)
- | | | |
|----|--------------------------|------|
| 3 | 57D3 | = A2 |
| 6 | 57175 | = A9 |
| 13 | 5865 | |
| 14 | 60A2 | ✓ |
| 22 | 62175 | ✓ |
| 26 | 63156 | ✓ |
| 30 | 85A3, B5, 6 (A, B, C, D) | ✓ |
| 34 | 66C1 | ✓ |
| 35 | 66C3-C4 | ✓ |
| 36 | 83A2 (and 3-6) | ✓ |

~~missing~~
~~missing~~
~~missing~~

lac⁻ ara⁺

~~lac⁺~~

grow up in Pinessay + recheck ara, V_1 , lac

- b)
- | | | |
|----|------|---|
| 7 | 58B2 | ✓ |
| 8 | 58B5 | ✓ |
| 21 | 61G1 | ✓ |
| 29 | 64D3 | ✓ |
| 31 | 65D2 | ✓ |

SS: lac⁺(MMX^{-/+})
 (lac⁺ ara⁺ : +++1--S)(MMXS +++1----) Gal⁺ Fla⁻ check for ara⁺ V_1 (lac, Mal⁺...)

the same to start.

These cultures had all been lysed in tabs. See comments.

Then, what are specific questions?

- a) What combinations of lac, V_1 , ara? Make fresh check of lac, V_1 , static
 40 When yeasts are available, segregants should be checked for ara, V_1 (probably not before).
 b) See details.

6/12/57 Resume of zygotes.
 All served for lac, ara, MXM S, Gal.

DATE:

REF:

Sign
 Adj

	1	2	3	4	5	6	7	8	Analysis	Sign Adj
51	85	C1	lac	ara	Vi				111,000	✓
2		G2	lac						100,000	✓
1178-1803	86	A1	lac	ara	•		+ - / - +			✓
		C4	lac	ara	•					✓
		F4	lac	Mal	•					✓
		D1	lac		•					✓
		G1	lac	ara	•					✓
		H4	lac		S	Mal Xyl S.				✓
	97	D3	lac		S					✓
		F4	-	ara	S					✓
60		H4	lac		S					✓
61		DV	lac		S					✓
62	1200	D6	lac		S				000 100	
63		A3	lac		S				000 100	
117	1203	A5 A6	lac		S					
202	1204	D1	lac	ara	Vi					
201	1205	E4	lac	ara	Vi					
67		G4	lac		S					
204-3	1206	2 3	lac	ara	R/S					✓
69		5	lac							
70		26	lac							
71		14=16	lac	ara	R					✓
72		34=36	lac	ara	R					✓
73		41	lac							
74		43	lac		R					
106	1207	A1	lac							
76		B5-6	lac							
77		D1	lac							
78		F1	lac							
79		G4	lac							
80		A4	lac/ara							
208-218	1210	D1	lac							✓
82		D4	lac							
83		C1	-							
207	1207	C1	lac/ara			Fla / MXM.		Take remaining		✓
85		E1	lac							
86		A4	lac							
87		B5	lac							
88		G4	lac							
40		D6	lac							

38 zygotes.

DATE: June 14-15 1957.

REF:

	1	2	3	4	5	6	7	8	9	10
	<p>$\vec{e} = h\omega + A\omega + V_1^2 = 111$ $\vec{e} = h\omega - A\omega - V_1^2 = 000$</p> <p><i>Cross terms isolated from table → unnecessary on Aug, h.c. / T1, spin.</i></p>									
	<p>found = =</p>									
h.c. T1	3 + R	6 + R	13 + R - S	19 + S	22 + S	26 - R - S	30A, DA + S	30B, C + S	30DB + S - R + R?	
Au T1	+ R	+ R	+ R - S	+ S	+ S	+ R - S	- S	- S	+ R - S	
SM Eh.c., Au J.	R	R	R	R	R	R	R	R	R	R ()
Infer	1.1 0.1	1.1 0.1	1.1 0.1 0.0	0.0 0.10	.10 1.0	0.11	1.00	0.00	0.1 1.0 0.0 0.1	
	<p>why?</p> <p>books for 010 (Au+V₁²) 001 (Au-V₁²)</p>									
h.c. T1	34 + R [S]	35A + R - S	35B + R - S	36 + R	36-3 + S	-5 + S	-6 + S		21	
Au T1	+ R [S]	+ R - S	+ R	+ R	+ S	- S + K	- S + K			
SM.	R	h.c. Au + R - S R	h.c. Au + R - S	R	R	R	R	R	h.c. + R - S	
	1.1 0.1	1.1 0.0 0.0 0.1	1.1 0.0 0.1	1.1 0.1	0.00	0.00	(miscellaneous or <u>vacuum</u> ?) 0.00			
	<p>check out T1</p> <p>Discard.</p>									
	<p>40</p> <p>50</p>									

1357
51....

DATE:

REF:

	1	2	3	4	5	6	7	8	9	Used
<i>blue print</i>										
A....			<i>zygotes</i>			<i>casibS....</i>				
	10	Exp. <input type="checkbox"/>								
	51	1185 C1						<i>already analyzed.</i>	11,000	✓
	52	G2							100,000	✓
<i>V₁, V₂, V₃, V₄, V₅</i>	53	1186 A1	A2	B12						
	54	C4	C11	<u>C12</u>						
	57	178-180 F4	F6		F5	<i>prov. lac Mal!</i>				
	58	G1	D11							
	59	H4	G12							
	59	1197 D3	B25.....							
	60	F4	D3		C3	H5				
	61	H4	F4		D4					
	62	1200 D6	H4							
	63	A3	D6							
<i>V₁, V₂</i>	64	1203 1197 A3	A3		A5					
<i>maybe</i>	65	1204 202 D1	A6			<i>lac Ara V₁</i>				
<i>V₁ analysis</i>	66	1205 201 E4	D3							
	67	G4	E4							
	68	1206 204.5	15 16							
	69		2 3			<i>lac Ara V₁</i>				
	70		5							
<i>anal</i>	71		26							
<i>anal</i>	72		14 16			<i>lac Ara V₁</i>				
	73		34 36			<i>lac Ara V₁</i>				
<i>V₁ Lac V₁</i>	74		41							
	75	1207 206 A1	43			<i>lac V₁</i>				
	76	B5	A1							
	77		B5-B6 = 18, 21							
	78		D1							
	79		F1							
	80		G4							
	81	207 A4	A2 A5 A6							
	82	C1	C3		D2					
	83	E4	A2							
	84	A4	A6							
	85	D5	D5							
	86	1210 208-18 D1	D6							
	87	D4	d1 d5							
	88	C1	g2							
		 C1 C2 <u>C1</u>							

DATE:

REF:

	7	8	21	29	31A	31B	7	8	9	10
<i>Luc</i>	+	+	+	+	+	+				
+TI	TR	-S	R	R	S	S				
+sm	TR - R (15?)	TR R	+S - R	+S + R - S	TR - R	TR - R				
<i>Ara</i>	+	+	+	+	-	-				
+TI	TR	S	R	R	S	S				
+sm	R	R	+S - R	+S + R	R	R				
<i>Xyl</i>	10	+	+	-	-	+				
+TI	TR	S	R	R	S	+S - S				
+sm	R	R	+S - R	+S - R	R	TR R				
<i>Mal</i>	-	+	+	+	-	+				
+TI	RS	S	R	R	S	S				
+sm	R	R	-SR	+S - R - S	R	R				
<i>Mtl</i>	-	-	-	+	-	-				
+TI	RS	S	R	R	S	S				
+sm	-R	R	-RS	TR + S	-R	(S) - R				
<i>Handbook</i>	000									
			has most of already 1201.	has 15?						
			Not to SR							
			see above							

30

40

50

→ June 20. 1957.

note difficulty of recovering all original components in present platings!

1357

13. Replate to search other types. Check allelism of 001.

6 " " " " Too few lac⁻.

19. Now pure lac⁻, Ara⁺/s V₁^s. Check this. Orig. lac⁺, -
locate sites.

21. ¹¹⁶¹²¹ already analyzed: ~~(Ara⁺/s)~~ } lac⁻. MH⁻S^R Mal⁻Xyl⁻
lac⁺ < + s + +
- s - -

what are the ara⁺ now? Review earlier isolates.

22 plate: almost all lac⁺. Try to see. all lac⁺

26 plate. Mostly 011, 000. ? Any 001, 010? 100

29 Repeat ~~Xyl~~/s. Any Mal⁻S^s? Was pure Xyl⁻!

30 DB. Ara⁺/lac⁺/V₁⁺. Plate 5 types, not yet identified!

31 B Mal ↔ Xyl, MH not settled.

35.

36. Now pure? Replate for any Ara⁻. Not worth checking.
cosids are 000.

51-88 Check V₁.

Plate 18 Lac

V, keds + preliminary = "d"
reanalysis for Anal, mainly.

1357a

DATE: June 21, 1957.

REF:

	1	2	3	4	5	6	7	8	9	10
				keds	kals		preliminary			
9				-S +R	-S -R		100		000	
10				+ -R	-R -S		101		000	
11				-R (+S)	-R -S		001 100			
18				+ -R	+R		111?			
10	Lac V	Ana	Ana V1	Lac V1	Ana V1					
53A	-	+ -	-S +R	-R -S	-S +R		011 000	No III		
B	+	-	S	S	-S	100	000			
54A	-	-	S	S	-S	000				
B	+	+ -	+S +R	+R +S	-S +R		111 000	See record for recombination partially saved.		
55A	-	-	S	S	S	101				
B	-	-	L +R	S	S		100			
56	+ -	-	-S +R	R	-S		000	B is recorded note.		
57	+ -	-	+S +R	S	-S	100				
64A	-	-	-S	S	S		000			
20B	+ -	-	-S +R	S some 1?	S		100			
65	+ -	+ -	-S +R	+S -R (+R)	-S +R		011 100	See record		
66	+ -	+ -	-S +R	+S -R (+R)	+S +R		011 100			
67A	+	-	S	S	S		100			
B	+	+ -	S	R	S		111	See record.		
68A	+ -	+ -	+S -R (+R)	+R S -R	-R	SIC 001 110	001 110			
B	+	-	S	S	-S		100 000			
71A	+ -	+ -	+S +R	+R	-S +R		(111) 000			
B	+ -	+ -	R	R	+R		111			
72A	+ -	+ -	R	R	+R		111			
30B	+ -	+ -	R S	R S	+S +R		110?	111 000		
74	+ -	-	+S +R	S	+S +R		101.			
75	+ -	-	+S +R	S	S	All V1 is loc +	100	000		
76A	+ -	-	S	S	S		100	000		
B	+ -	-	S	S	S		100	000		
77	+ -	-	S	S	S		100	000		
78	+ -	-	S	S	S		100	000		
79	+ -	-	S	S	S		100	000		
80A	-	+ -	R S	R S	+S -R	SIC	100	000		
B	+ -	-	S	S	-S		100	000		
40C	+ -	+ -	+S -R	+S -R	-R -S	see record	100	000		
81	-	+ -	R S	R S	-R -S		100	000		
82	+ -	-	S	S	S		100	000		
83	+ -	-	S	S	S		100	000		
84	+ -	-	S	S	S		100	000		
85	-	-	S	S	S		100	000		
86A	+ -	-	S	S	S		100	000		
B	+ -	-	S	S	S		100	000		
87	+ -	-	R	R	R		101...			
50										
88A					-S +R					
B					-S					
C					-S					
89	-S +R						101	000		

Vertical checkmarks on the left side of the table.

Record: [100]

101...

dupet 81 -S +R V1 (S) + V1 C

011, 100?

The Gal H₂ polymer.

13507-23

DATE: June 21, 1957.

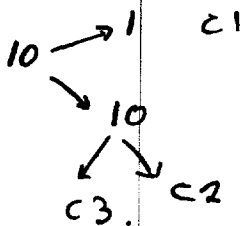
REF:

Recom from stabs.

116302.

As T1

α: 1 + R
2 - S
103 + R.



=

230C1

230C2 [000 0000 %]

23C3

In test x Y10/ Mlac W2502, 2302A are not fertile. Rubens records!

20

30

40

50

25-26-27
1357 ✓

26

DATE: 116336

REF:

	1	2	3	4	5	6	7	8	9	10
	<p>Recorded as lac⁻ VR lac⁻ ara⁺ / - V₁ VR/S Duplicate Ara → Ara T1.</p>								011 000.	
					Many .00 .11		No .10 .01		<p>1? exception noted This is muddled: ✓ V₁ S</p>	
10	<p>25 Recorded as lac⁺ Ara⁻ V₁. all V₁'s are lac⁻ (>50) all V₁'s are lac⁺ "</p>									<p>Photo + duplicate to Bloc T1. 000 101 only.</p>
20										
30	<p>27 lac⁺ VR ; lac⁻ all V₁'s. No evidence on lac⁺ V₁'s but there are too few lac⁺ to tell.</p>								000 101.	✓
40										
50										

1164D3

REF:

1	2	3	4	5	6	7	8	9	10
Record:	A, 1	000 0000	0						
	B, 2	111 0000	0						
	C, 3	11 1111	0						
	D, 4	000 1111	0						

My first reading was interpreted Xyl⁺ as Xyl⁰.
This is based on rechecks.

record as Val⁺ Fla⁻.

6/91. α, Xyl⁺S⁺/-r.

Some possible Xyl⁺S⁺ mentioned. Notes also ref. Mal⁺S⁺. Undercheck!
In recheck there is nothing in Xyl⁺ but no Xyl⁺. Agree.

30

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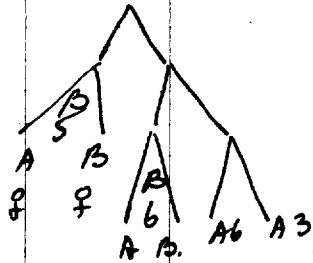
50

1357
30
✓

DATE: 116 3A3

REF:

1 2 3 4 5 6 7 8 9 10



10
A3=30A
A6=30B
A5=30C
A6=30DA
30DB.

α:
lac⁺, - Ara⁻ V₁^S
ooo
lac⁺ - Ara⁻ V₁^S
lac⁺ S₁ - R; +R? Ara⁺R - S

ooo 100
ooo 100
100 100
111.

✓ not yet analyzed.

20

30DB - plated. Ara⁻ → Ara⁺
lac⁺ → lac⁻.

Rephrased form 6/30
lac → lac, lac T1, Ara ↓

∴ must include
Ara⁻ lac⁺
Ara⁺ lac⁻
prob Ara⁺ lac⁺

lac⁺, - No 0.1
Many 0.0 1.0 1.1

Ara. 0.0 are all Ara⁻ ∴ ooo

✓ooo

Ara⁺ C V₁². no .00 < 010
100

no 0.1 < 001
011

probably many ✓ 100

exceptions are 100 ✓ 111
to be checked.

probably escapes ✓ ? 101

✓ streak on Ara T1.
+ plate on Ara T1. No
lac for 011

No. Ara⁻ is V₁^S. all V₁^R are Ara⁺. but
which same exceptions.

No Ara⁻ V₁^S Ara⁺ V₁^R ∴ No 0.10

ooo ✓
111 ✓
100 ✓

No 40 011

6/30. On plating of 600B on lac T1,
2110 V₁^R are all lac⁺. 1 lac⁻, probably
escape but which ✓ ooo

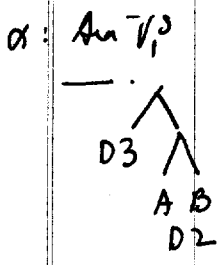
DATE: 1165D2

REF:



1	2	3	4	5	6	7	8	9	10
Record: B		000 0000 0 100 0011 0 100 0000 0 000 0011 0		A	100	0000			

¹⁰ Now all MH⁻Xyl⁻Mel⁻Arg⁻ mucoid. Mostly S⁺, some lact⁺, Lac S⁺. Frises.



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DATE: 1166C3-4

A ↓

B ↓

REF:

1 10² → 3 ⊕¹⁰ C54 C3⁵ 000000 C4₀ C6₀ X⁸ 9 10

A)

111
000 } 10² tested. Lac⁺, - S^R; Xyl - S^R; Hal -

✓ B)

Lac⁺ S^S
Lac⁺ S^R
Lac⁻ S^R? Xyl - S^R
Xyl⁻ S^S (faint popillae)
Hal⁻

Plating: Pure Lac⁺ Pure Hal⁺ About 10% S^R.

Original records, was Lac⁺, - check S^S for phage.

Pool from
B lac.

all V.R. 1/10 of unselected were S^R 9/10 S^S. all are Lac⁺.

1.
2.
3.
4.
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000
111 0000
111 0001

Look in 35A for 0001 types! Tar had no 000 left in 357B.

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DATE: 1183A2.

REF:

slips.
3-6 checked
d: 000...0

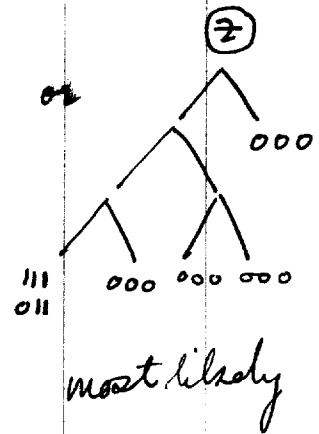
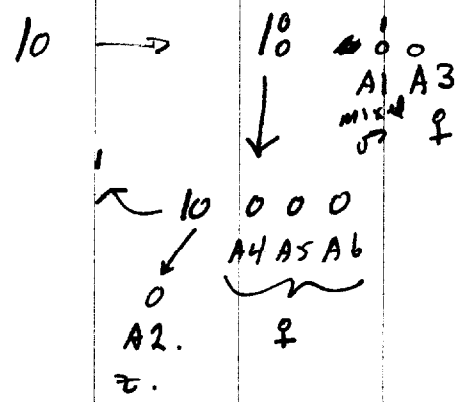
260 repl test, half each →.

111 011 (000)
?

look for 100?

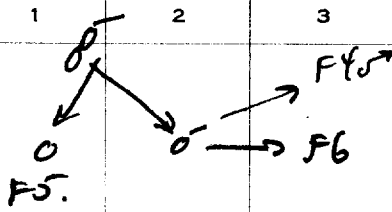
No tra⁻ found on replating (> 300 Aca⁺).

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1186 F4.
DATE:

REF:



Dec. record F5 = ♀
F6 = (ala⁻ xyl⁻)
gal⁺ SR H⁻

no lac⁺ Mal⁺

(lac⁻ Mal⁻)
(lac⁺ Mal⁻)
(lac⁻ Mal⁺)

6/501. Only lac⁻ recovered, Not hopeful for further detail.
check on Mal; Recover F6ABC and check these on V₁.

- A - A Mal⁻ V₁ S
- B Mal⁺ V₁ S
- C Mal⁻ V₁ S
- O Mal⁺ V₁ S

✓ agreement record.

~~F6: 4 # lac⁻ me V₁ 2. not representative of~~

58.

1357
~~58~~ 58

DATE: 118644.

REF:



58	1	Detailed pedigree fully analyzed.	6	7	B25 and A } B } C } D }	9	10
----	---	-----------------------------------	---	---	-------------------------------------	---	----

all
are - V. S.
entire pedigree are -

10

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56 No U, ^s almost pure U, ². 101. No 000.
 ~4 apparent 001, looks atypical fermentation. of 130. Check again
 these are bal. slow as 130. Do not score as 001. Same

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65-66

13507
65 ✓
66 ✓

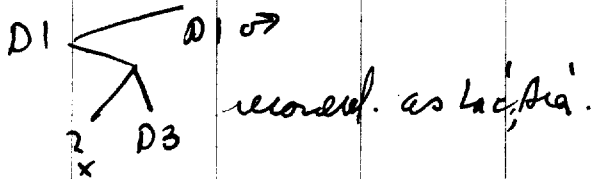
DATE: 1204 - [202] D1

REF: 000

65

1	2	3	4	5	6	7	8	9	10
	α : Lac ⁺ V ₁ +S -R			Ara ⁺ V ₁ -S +R			011	Lac ⁺	

∴ 011 and 100 probable. Need further analysis.



α repeat: Ara⁻ S +R at least ditto Lac. carries above.

α': V₁ Ara⁺, Ara⁻ V₁ Ara⁺ only. ∴ 000 and 111, 01 excluded
Lac⁺, Lac⁻ Lac⁺ 0.1 "

Replies: Lac⁺ V₁ R Ara⁺ = 111 and 000 predominate

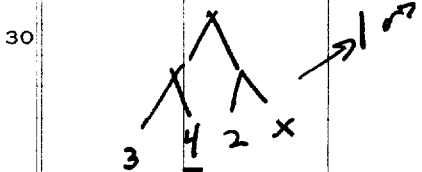
2? 001 at margin, which → 000
1? 011 → 011 > 10.

000 111 ✓

66

1205 E4.

α: as above.



Record: 2, 3 = 000

4 = Lac⁺, Ara⁺, V₁

α repeat: as above

α': V₁ R Ara⁺ V₁ Ara⁺, -
Lac⁺ Lac⁺, -

000 and 111 / No ~~10~~
↓
0.1
01

Replies test: Mostly Ara⁺, Lac⁺. 111 and 00. only

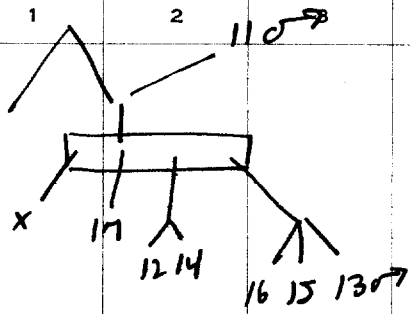
Two dubious 001 at plate margin. Recheck V₁ → 000

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DATE: 12-05-64.

= 116302 x C 3.

REF:



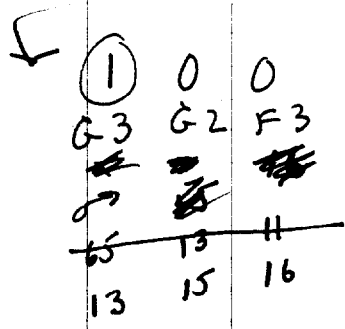
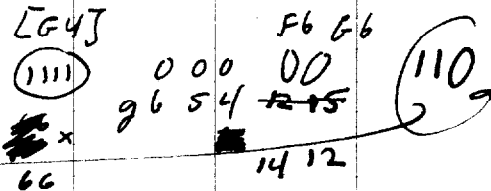
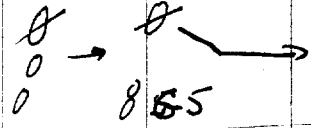
α : and phasing
bac⁺/bac⁻ all bac⁻ V₁S.

Record 15 = 100 = 67A

16: stated mixture of ♂♀ and possible artifact.

Isolation Record:

64-0



It seems conceivable that
110 → 110 → 1 1 0

Alternatively 15 was a homozygote. The ambiguity of this pedigree makes it a poorly to decide my issue.

Isolate components of 16. = 67B.
mostly bac⁻. pile 2-3 to back.

strains B⁺ bac.

1357
68
✓

DATE:

REF:

68A.

α: $ara^+ V_1^S$ $ara^- V_1^R$ (~~loc~~) ∴ No .11
? $loc^+ S$ - R. .01
.10

10 Restrains V_1^R, V_1^S B loc
 V_1^S ara^+ - V_1^R ara^- loc^+ ∴ 101
mostly loc^- 010
.000
inferred.

20 *Hypha plate* most 101 000
 $loc^+ I$ ~~all~~ loc^+ all V_1^R, ara^- Most loc^- are V_1^S, ara^-
? $loc^+ V_1^S$

The plate is too crowded for full screening of loc/loc comparisons.

30 1 probable $loc^- V_1^R$ ara^- 001 ~~000~~
Rebels.

All ara^+ are V_1^S
 $ara^- V_1^S$
 $ara^- V_1^R$ loc^+ = 101

40 Types certainly present absent ? include these.
000 011 001 1? $loc^- V_1^R$ ✓
010 111
101
001 110 n.f. 100 } 1? $loc^+ V_1^S$ → 1 101
100 110 } 6 100

50
Rebels #3: has some .10
 ara^+
spot on B loc to see if 110
No: mixture of 010 and 100.

1357

72B ✓

DATE:

REF:

111

098

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Hydrolysis: mostly lac⁺ dia⁺. All ~~lac~~ V^R are lac⁺ dia⁺
 lac, dia engagement.

20
 72A also. 111 rx

6/22/57

Preliminary resume
51-88

1357

DATE:

REF:

#	Exp'code	co2.	sibs	prelim scores	6	7	8	Data page?	Finish
51	1185 G1				111	000			>
52	G2				100	000			>
53	1186 A1	A2 B12			011 000; 100	No 111			>
54	C4	C11 C12			000; 111	000			>
55	F4	F6 F5		Lac' Mal'	00; 10; 01	No 11	U, S.	.	✓
56	D1	D11			101				>
57	G1	G12			100				>
58	H4	extensive pedigree		Lac Mal Xyl....	.00....			.	>
59	1197 D3	D3	C3 H5		100	000			>
60°	E4				010				>
61	H4	H4	D4		100				>
62	1200	D6			100				>
63		A3			100				>
64	1203-197	a5-a6..			100				>
65	1204 D1	D3		011 100				.	
66	1205 E4			011 100				.	
67	1205 G4			100 ; male?				.	
68	1206 204-5	2; 3		001 110; 100	000			.	
69		5			100				>
70°		26			100				>
71		14 16		111 000					>
72		34 36		111 110?					>
73		41			100				>
74		43		100					>
75	1207 206-	A1			100				>
		B5			100				>
		FL D1			100				>
		FL			100				>
79		G4			100				>
80°	A4	A2-5-6		010 001; 000 100;	001 100			.	✓
81	207C1	C3	D2						>
82	E4	A2		100					>
83	A4	A6		100					>
84	D5	D5		100					>
85	G4	D6		(100) now 000					>
86	1210 208D1	d1 d5		100; 100					>
87		PA g2		101...					>
88	c1			Flat see pedigree				.	

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