

(49) Total Review of pedigree reports.

APR 18 1956

Exp.		1954	SW666 X-
1137	✓	2-15	12
2	✓	16	12
3	✓	17	12
4	✓	18	12
8	✓	3-1	967
41	✓	9	12
42	'	11	960
43		16	60
44		17	60
47		30	60
49		4 2	60
50		12	60
51		14	22 <sup>x</sup> 578
36		2 23	12
37		26	→ 967
40		3 <del>2</del>	92
46		3 19	→ 967
48		31	60

# Tabular resume of pedigree.

APR 19 1956

$a =$  minimum  
interval of branching.

Exp.  Initial.

Interval of latest branching  
a   b   Interval of termination  
c   d

↑  
how many  
intermediate  
branches.

↑  
max  
yield  
per  
branch.

APR 19 1956

#

a b c d followed e to Yield.

1131 CD followed 3 generations. All cells became immotile. Separated at  $n_3$ , 1 cell gave a swarm; D3. the others non motile clones.

On further isolation, D3 was mixed  $\rightarrow 12^- : 8^+$ , the latter all i, the former x - FA10  $\rightarrow$  b.

C5 all nm at  $n_{13}$

B5 " "

	a	b	c	d	e to	Yield.
C5	0	-	-	-	1sw/n <sub>4</sub> .	1sw.
B5	0	13 (2)	13	13	13	1

APR 19 1956

1132 ES Unicat. 2 divisions.  
 8: all at n<sub>3</sub>, and at n<sub>8</sub>

DS. dicet, branch at n<sub>1</sub>.

x					y
a	b	c	d	e	
<del>0</del>	<del>0</del>	<del>(1)2</del>	<del>3</del>	<del>8, 13?</del>	1
0	0	2	2	8	
<del>1</del>	<del>1</del>	<del>(2)8</del>	<del>21</del>	<del>21</del>	2
<del>1</del>	<del>1</del>	<del>8</del>	<del>21</del>	<del>21</del>	
1	1	8	21	21	
1	1	8	21	21	

2

APR 19 1956

1133

ES

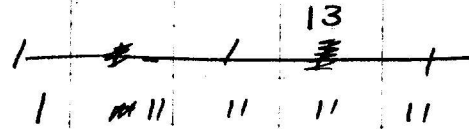
pure swarm (late isol.,  
1/4 inv. 3/4 → H<sub>2</sub>)

a b c d e

Y.  
1 sw

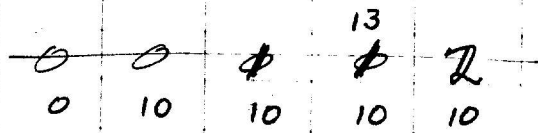
DS

test for swarm essentially  
+ → + →  
+ → + →



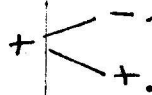
#2

CS



1

BS



① in notes

APR 19 1956

how many + at this time

1134

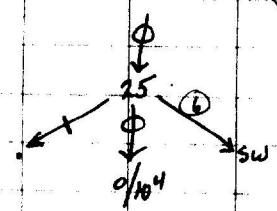
c3  
①

a	b	c	d	e	Y.int.
2	5	15	-	15	1
		15	-	15	1
		21	-	21	1

D4  
①

0	0	4	-	4	1
---	---	---	---	---	---

E5  
①



-	5	18	-	18	1
---	---	----	---	----	---

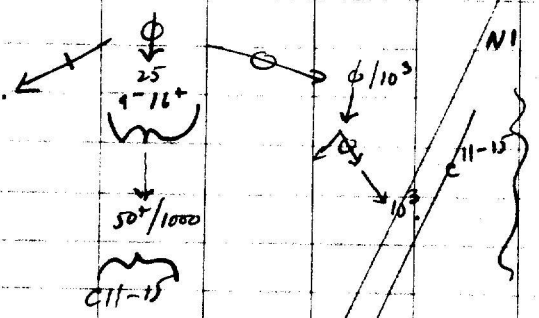
swarm

c5

1 Unicatate

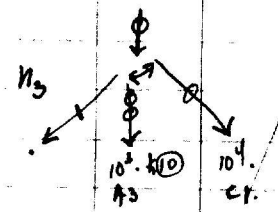
0	1	23	33	33	1
---	---	----	----	----	---

c4



-	5	16	26	26	1
	10	10	18	23	
	10	10	18	23	
	10	10	19	29	
	10	X			
	10	11	18	23	2

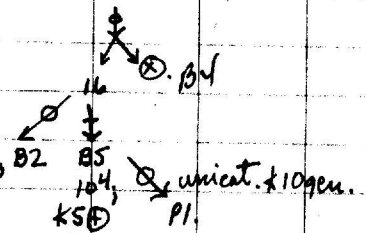
A3



-	3	-	16	16	1
6	-	-	-	16	10

10:1

B5



D4	lost at n1						
01	6	14	14	18	27	1	€
			14	20	27	1	€
			14	19	33	1	€
			17	-	17	1	€

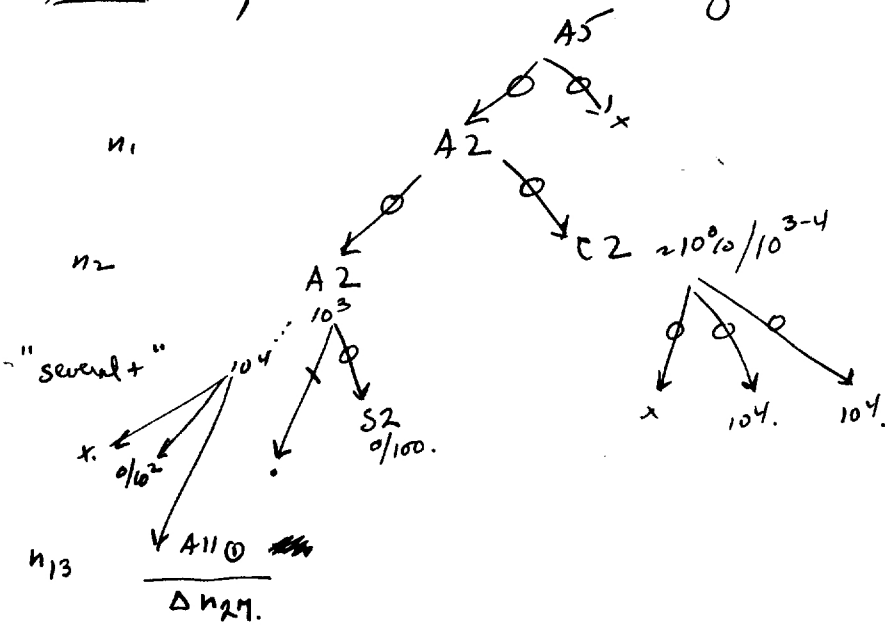
B5: "51%+ / 104"

Recount these after P1 was shown as chain. (furs)

1/15 lost. 01

Note: P1 was mycoplasma diagnosed as a  
 swarm as a first ex. of a pluricellular clone.  
 Exact number not specified. 5 isolated.  
 P1 was taken as an early sample

Trace P1. cell isolated at n<sub>22</sub> was a chain for at least 500 and  
 seen again at n<sub>39</sub>, n<sub>42</sub> as no motiles. The chain had subbranches between n<sub>5</sub> and n<sub>22</sub>.  
 a should read, ~~latest~~ <sup>latest</sup> time that branching must have ceased for that chain.



AD  
 corrected.





4/21/56

1134 A5

see for partitions  
 10:10?

transposed.

A4  
 see @ for hp knots  
 and terminal  
 partitions

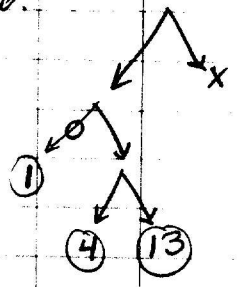
	a	b	c	d	e	x	y
A5	1	-	-	-	1		
S2	6	12	12	19	22		
A11	6	15	42	<del>42</del>	<del>47</del>		
12	6	15	x.				
13	6	15	-	22	22		
<del>D11</del>	6	14	x				
12	6	14	-	27	27		
13	6	14	-	27	27		
<del>1</del>	<del>5</del>	<del>12</del>	<del>-</del>	<del>-</del>	<del>-</del>		
	1	5	12	-	12		2
	1	5	20	-	20		

4/21/56.

1138  
B4

967 → x666.

n4  
n5  
n6



	a	b	c	d	e
F21	5	5	44	45	51
022	8	15	<del>19</del>	28	28
23	8	15	<del>19</del> <sup>19</sup>	<del>24</del> <sup>24</sup>	<del>31</del> <sup>31</sup>
24	<del>8</del>	15	32	44	44
E24	8	15	28	28	38
A21	10	16	18	-	18
22	10	16	19	32	32
23	10	16	17	29	29
24	10	16	32	-	32
25	10	16	31	35	42
B22	10	16	32	-	32
23	10	16	17	29	29
24	10	16	19	26	26
25	10	16	33	38	38
C21	10	16	20	20	30
22	10	16	19	32	32
E21	10	16	29	<del>34</del>	39
22	10	16	44	50	54

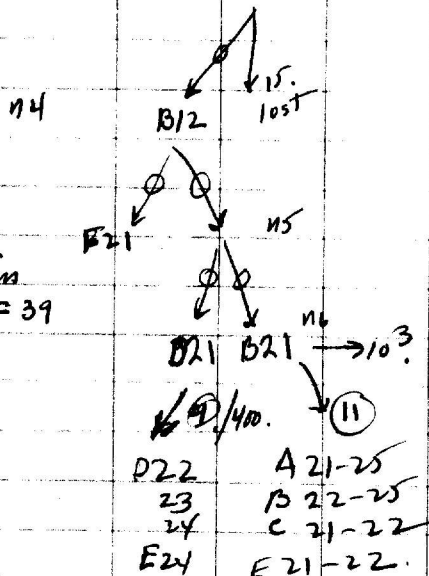
V.S.

1138

967-X666.

most lost.

B4:



	a	b	c	d	
F21	5	5	44	—	44.

E21 n13 → B32 term.  
 E22 n13 → B33 n2, n8 → E31 → n, n1, n2, n2 < n6 can't to n10.  
 E23 n13 → B34 n5.  
 E24 n13 → B31 term, to n10.

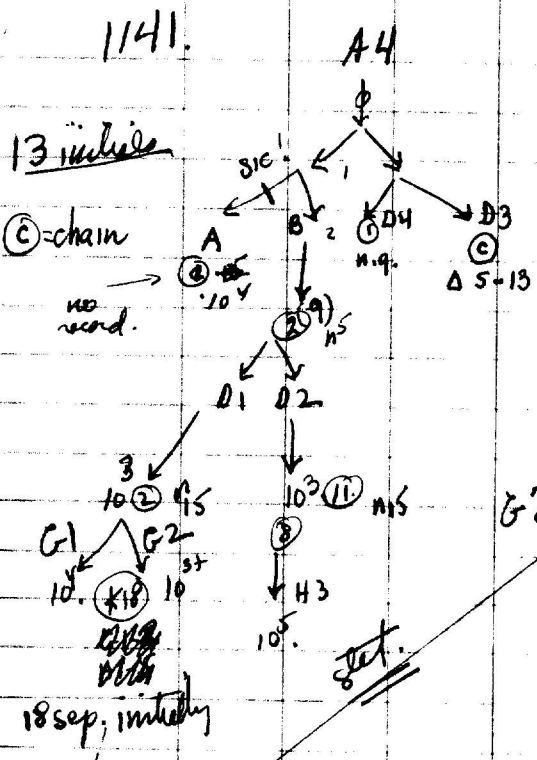
- A21. unicat n2, c23
- A22 " n3 c24
- A23 " n1; term < 4n13
- A24 " n3 → c25.
- A25 n2 → D25
- B22 n3; n13 → A31 x
- B23 n1; term < 4n13
- B24 n3 < 4n10
- B25 n2 n2 E23
- c21 n4;
- c22 n3; < n13
- c23 ① - lost
- c24 ① < n13
- c25 ① n13 → A32 x
- ~~D21. E24~~
- D22 n4 < n13
- D23 n4 → B31. term < n5 to n12
- D24 n3 n13 → A34 n1 term < Dn12
- D25 n13 → A33 Term. < n4 to n11

see over for tabulation.

1141 - 13 in ch. 1E(33)

3 did  
1 last  
8 E.

4-22-56

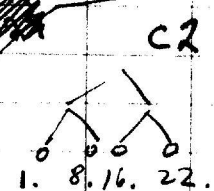
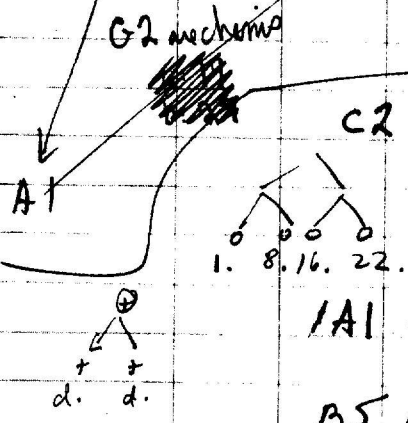


see  
curr + pp.

	a	b	c	d	e
A4 A	2	2	15	-	15
D4	2	-	-	-	2
D3	2	2	7	13	13
B1	19	16	16	29	29
G1	19	27	28	32	32
2	19	27	28	37	37
3	19	27	28	40	40
4	19	27	28	32	32
5	19	27	27	32	32
H1	19	27	28	32	32
2	19	27	40	47	50
3	19	27	29	29	x index
4	19	27	28	41	41
5	19	27	28	41	41
A3	8 cells.	<del>18</del>	<del>15</del>	<del>29</del>	<del>29</del>

persisted D n.g.

Partitions  
1:1:1:30  
11, 19



A1 ② d after 1 fixins.

B5 ① n.g. - persisted 48h. compatible.

A3 ① did overnight

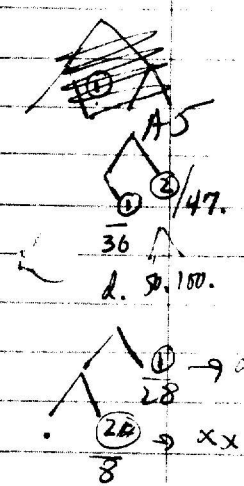
A5

B1

B2.

B3

a	2	2	46	46	11
b	2	2	37	57	20
c	2	2	5	5	<del>28</del> 18
d	2	2	2	2	15
	1	-	-	-	1
	0	-	-	-	0
	0	-	-	-	0
	1	5	-	-	5
	2	5	-	11	<del>12</del>
	2	5	-	12	<del>18</del>
	0	0	<del>1</del>	2	10
no data	0	<del>0</del>	1	1	15
	1	1	1	6	15



1141A4.

	a	b	c	d	e
A4A	2	2	15	-	15
D3	2	2	7	13	13
D4	2	-	-	-	2
8 cells 43- D2	8	15	-	29	29
G1	6	16	-	29	29
a	b	c	d	e	
19	27	28	32	32	
19	27	28	37	37	
19	27	28	40	40	
19	27	28	32	32	
19	27	27	32	32	
19	27	28	32	32	
19	27	40	47	50	
19	27	29	27	x sm.	
19	27	28	41	41	
19	27	28	41	41	

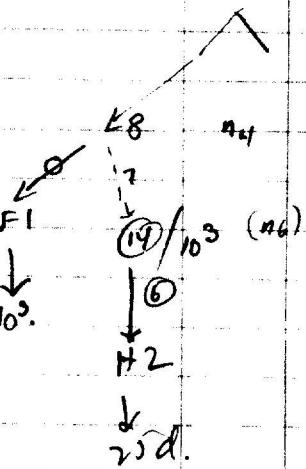
persisted n.g.

G2  
19  
19  
19  
19  
19  
19  
19  
19  
19  
19

	a	b	c	d	e
As alt interpretation, 1141A4 for G2 subset.	6	16	31	-	31
1141B4 : G2 series	<del>6</del> 13	<del>16</del> 21	etc.		

subtract 6 from above.

114/B4.



	a	b	c	d	e
F1	4	-	-	14	14

Note: notes are confusing on the G2-H2

sequence. cf. A4:

Note 14: partitions.

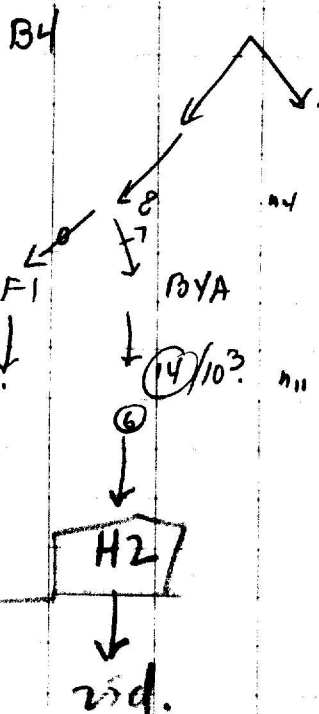
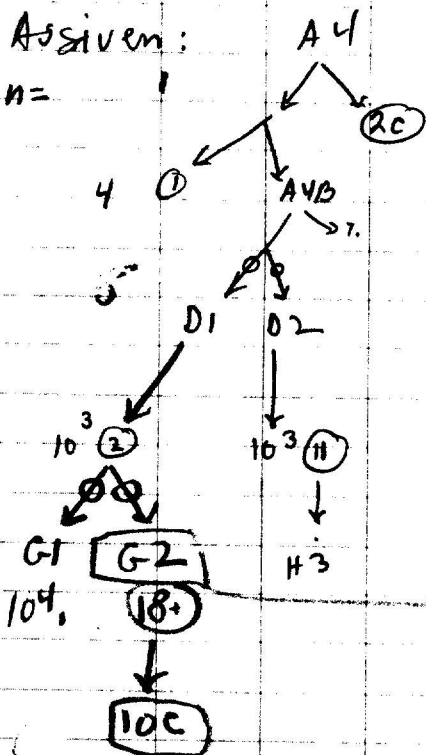
H2	6	-	-	-	6 (lost by duping).
----	---	---	---	---	---------------------

A4 and B4 sequences may have been mixed at G2 ↔ H2 so

following interpretations are possible indicated. This seems

Assigned:

n=

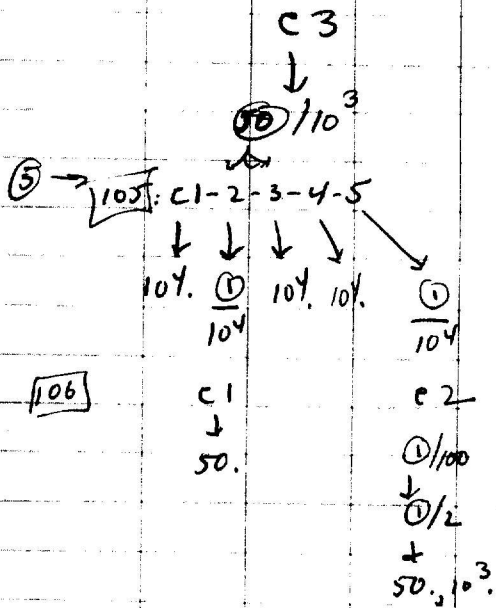


An account of H1, the given interp. seems most likely, but it should be recorded with reserve.

1142  
60 → 666  
1/2 for plating

No early separations: survey of yields of ①.  
A1-5B1-53 ⑩ were ess. invariable.  
C-D followed ERG-H plated.  $\log_{10}$

Yields at first examination	+	/Tot
C2	2	2
C3	>50	3
C4	10	3
C5	1	4
D1	>100	4
D2	3	3
D3	0	3
D4	0	3
D5	1	3



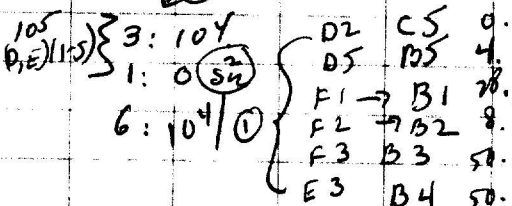
	a	b	c	d	e
C3 { C3, C4, C5	6	10	10	23	23
C2	6	10	23	29	33
C5	6	10	31	37	41
D1 { (3), (1)	7	13	-	26	26
	7	13	14	-	14
	7	13	26	-	26
	7	13	26	28	36
	7	13	26	31	36
	7	13	26	29	36
	7	13	26	31	36
	7	13	26	31	36

106

D1

>100  
104

108



Platings: 16 "cells" plated

→ 9 grew 1 swarm  
3 uninitiated  
5 colonies

residues

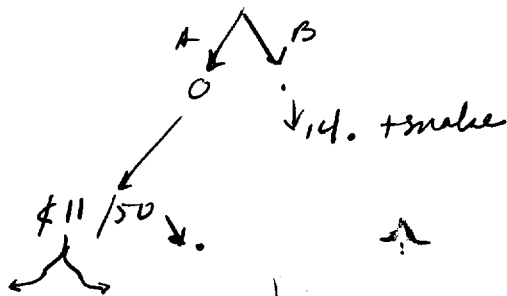
E3: swarm  
F2 ⊕/- and more

4 not homeformed  
(1 swarm)





1144 B4



A	B	C	D	E	F	G	H	I	J	K	C.
0	(15)	0	0	0	(3)	(2)	(1)	(1)	(4)	(1)	2 <sup>8</sup> each
v.i.											
A40 D2 C1											
A50 <del>3-8-8</del> B1 <del>4-8</del>											
B2 (3-8) (3-8) (3-8) (3-8) (3-8) (3-8) (3-8) (3-8) (3-8) (3-8) (3-8) (3-8)											
A3 (5-6-16) B3 (6-12-12) B4 (6-6-6) C2											

- c3 (15) / n5
- c4 n6.
- c5 (15) / n5
- D1 71.
- D2 n5 n8.
- D3 - n6 n10
- D4 - n5 n10
- D5 - n4 n10
- E1 - 22-28-78
- E2 . n5 n5
- E3 . n4 n7
- E4 . n4 n7
- E5 . n5 n9
- F2 . n5 n9
- F3 n5 . n11 n11

$[\bar{x} = \frac{1}{2^x}]$

$\sum 34-38-39$  C2 n6 n1 n6 n1 H3 n32 Z T 5 H I T 4 G2 2 2 F2 T 4 5.

$\sum 21-23-31$  B4 10 T H2 5 I2 T 4 H2 n2. n10.

$\sum 37-37-37$  B5 5 n 3 H1 n I1 T 3 H3 T 10 G3 0

But see notebook for missing items: Now K → C2

But acc to notes, { C2 is n27 } { H3 = n32 }

Other doesn't OK; there must have been an n3 interval between K → C2, H3 ; H → B5 n5

1144B4

any other summaries?

5/2/56

(11) isolat n7

	a	b	c	d	e	
	7	4	cells 0.			
<del>#055</del>	<del>7</del>	<del>4</del>	44	44	44	disc at n44
<del>#I055</del>	<del>7</del>	<del>4</del>	<del>#10</del>	15	15	
<del>#K055</del>	<del>7</del>	<del>4</del>	41	45	46	

(27)

(2) isolat n15

		a	b	c	d	e
G A1	<del>#8</del>	15	-	-	15	
A5						

(3) isolat n15

		a	b	c	d	e
F A1	9	15	-	-	15	
A2	9	15	18	23	23	
A3	9	15	20	21	31	

(4) " " n15

		a	b	c	d	e
J B1	<del>#9</del>	15	-	19	23	
B2	9	15	21	27	27	
B3	9	15	-	21	21	
B4	9	15	36	38	46	

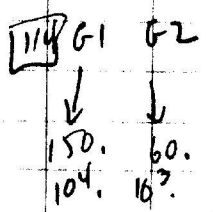
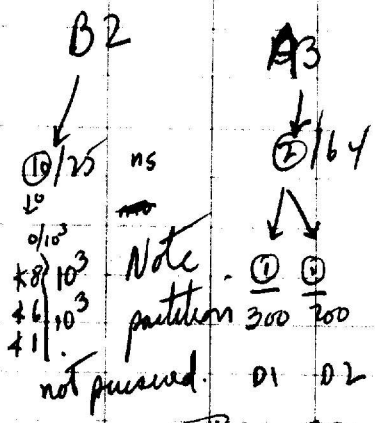
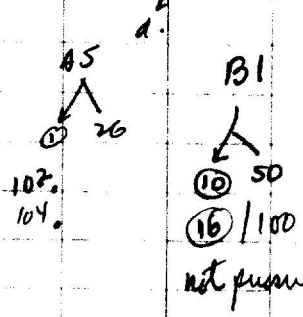
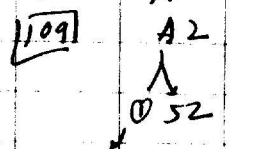
(15) " " n15

		a	b	c	d	e
B	C3	11	15	27	32	32
	C4	11	15	-	21	26
	C5	11	15	20	25	25
	D1	11	15	-	21	25
	D2	11	15	-	20	23
	D3	11	15	-	21	25
	D4	11	15	-	19	25
	D5	11	15	-	19	25
	E2	11	15	-	20	20
	E2	11	15	37	43	43
	E3	11	15	<del>19</del>	19	22
	E4	11	15	-	19	22
	E5	11	15	-	19	24
	F2	11	15	-	20	24
	F3	11	15	20	26	26

isolated at n8, n15

H	B5	5	7	59	59	59
I	C1	5	7	10	15	15
K	C2	5	7	52	56	57

11/4/8 clones started



B5  
57.  
test.

B4  
see next page.

	a	b	c	d	e	
A2	0	0	6	-	6	
A5	0	0	5	12	17	
B1	3	-	-	-	-	
B2	5	15	-	-	10	① → 0
	6	15	-	-	15	① → ①
	8	-	} not isolated			① → 4.6
	8	-				① → 4.8
B3	Pure swarm		Pure gas		saved.	
A3	1	6	14	21	27	
	1	6	14	20	24	
B5	2	6	-	-	-	3 cells lost

5/2/56.

1147

This expt. "designed for swarms; did not search diligently for oligoclonates.  
• = 0 or 1 or 2 Flat.

35 Flat 11P

3 n.g.

4 swarms; 1  $\frac{48}{200}$  G3; 19 few ⊕  
8 few or no ⊕.

SWARMS:

(2 hours)

B4: pure motile

G1: pure motile variable expression. Question of phenotypic variability.

H2:

H3:  $\swarrow \searrow$  both pure s. low manifest

	a	b	c	d	e
F1	2	14	-	24	24

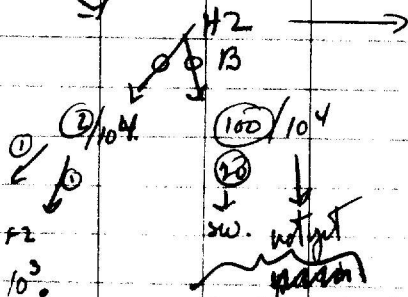
about 1-10% Flat swarm.

cont 1/5 - key progeny test

→ 20% + in H2B

at least 2 generations segregation. of B, C, H3!

not segregating, esp H3.



119F1

10<sup>3</sup>.

F2  
10<sup>3</sup>.

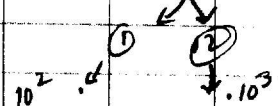
sw. not yet  
assayed

some h, some - definite

Note: some late isolates had 50%+, but were lost. These probably showed incomplete expression but late segregation not excluded.

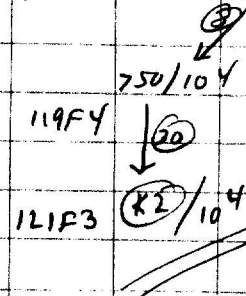
F2

119E3, E4



Appl. assays? (esp. H3)

118 G3 48/200



ignire  
as incomplete

1148

10 cells: 2 n9  
2 ⊙  
4 20  
2 pluri cat

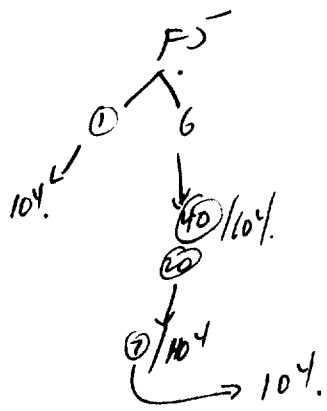
B1. (20)/300

B4. (30)/10<sup>3</sup>

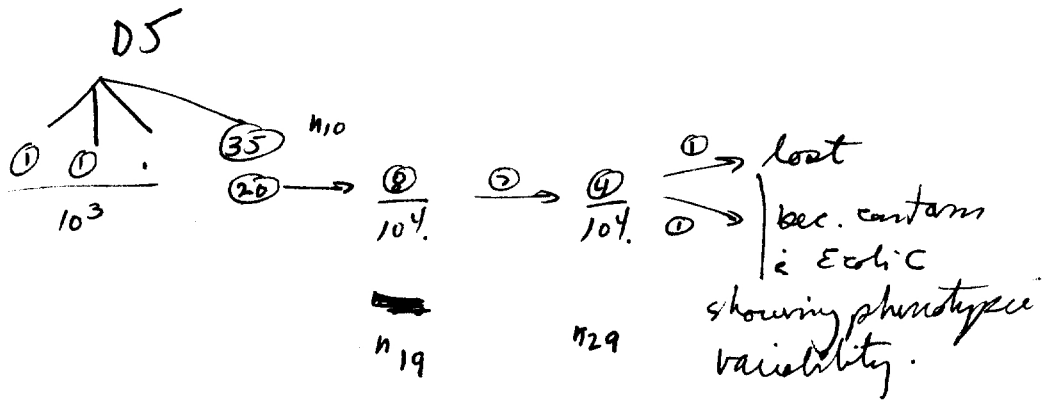
no further data.

Get  
1/201

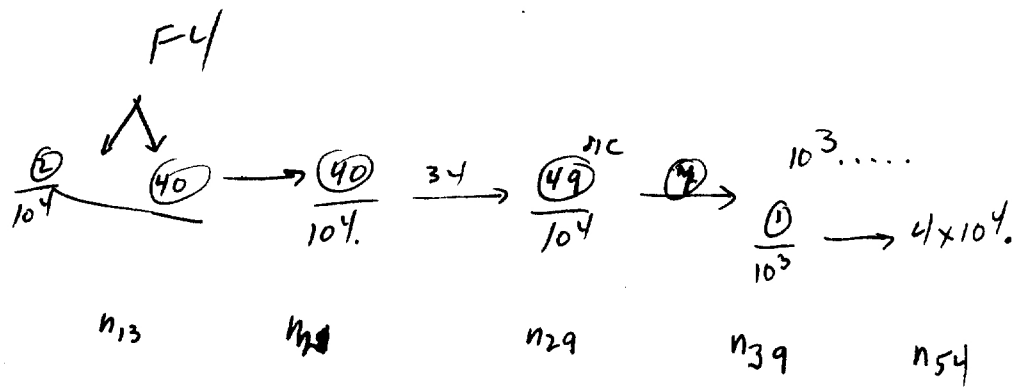
1149



Not certain when single clones



Remarks  
problem of  
variability in  
Flat clones



1149



37 ① → 2 swarms B5 F5  
 pure pure  
 ①① → 1 swarm Z1.

intended to separate early descent to make it to handle. primarily for resequencing of clones.

game no ⊕ at  $n_{10}$ : A2, A3, A4, A5 B1 B2 B3 B4 C1 C3 C4 C5  
 D2 D4 E1 E2 E3 E5 F1 G1 G2 G3 G4 H2 H3 H4  
 (included = "uninteresting") = 26 clones.

These pedigrees generally are not useful except for partitions as no intermediate solutions were made. Note 2 pure swarms. Some late isol were lost.

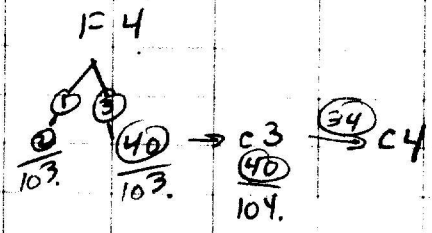
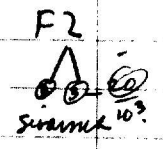
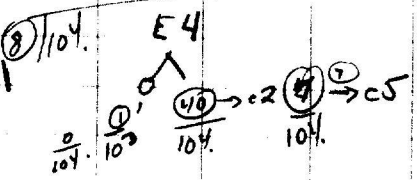
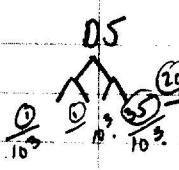
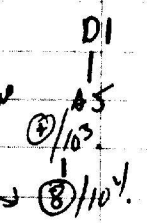
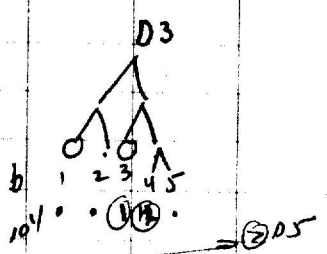
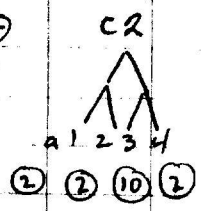
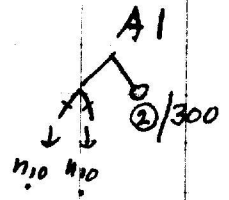
No indication of late refections.

Partitions:  
 at 1st div.

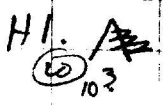
- 2:0
- 2:2:2:10
- 0:0:1:12
- 1:1:0:35
- 1:40
- 2:20
- 2:40

sw: pure  
 sw: pure.

	a	b	c	d	e
(actual F4)	6	39	-	54	54



F5 sw. ⊕  
 pure



1149B Crossovers among tail ends.

35 from 1149 X-FA60, X-FA90 → (only b)

F1 H5 D3 F2 all ++  
but 60C dutkois lysate as it transformed 967!

Found that SW969 is lysogenic on SW666 for a X phage



1150  
60-4666

isolates at 2 1/2 - 3+ hours. 40 isolates

(134)  
↓  
126

A2 ← pure swarm.  
at n<sub>100</sub>

Divide at n<sub>1</sub>, n<sub>2</sub> when possible. Partitions or yields.

No further partitioning.

- A3 1:1
- A4 1:0
- A5 0 0
- B1 0 2
- ~~B2 0 1~~
- B3 1 1
- B4 1 1
- B5 1
- C1 1 1
- C2 1 0
- C3 1 1
- C4 1 1
- C5 1 1
- D1 1 0 0 0
- D2 1
- D3 0 0
- D4 0 1
- D5 1 1
- E1 1 1
- 2 1 0
- ~~3 1 1~~
- ~~4 1 1~~
- ~~5 1 1~~
- ~~F1 1 1~~
- ~~F2 1 1~~
- ~~F3 1 1~~
- 4 1 1
- 5 1
- ~~G1 1 1~~
- 2 1 0
- 3 1 1
- 4 1
- 5 1

orig mat

orig num

- H1 0 0
- 0 0
- 0 0
- 1 → H3
- 2

interesting partitions

- E3
- 4 8
- E4
- 1 12662
- 13
- A1
- 1 43
- F3
- 30 6
- E5
- 1 20
- H4
- 50
- G1
- 26
- F1
- 4 27
- B2
- 12

Are phenicatometes delayed?

→ X paralytic

1151  
5/16/56.

TM2 → SW578. Most ⊕ proved immobile, and motility sluggish.

~~4~~ 16 inv.

10 → 140 ⊕ / 10<sup>3</sup>.

3: i. denis

B1  $\frac{20}{5} / 10^3$ .

C1  $\frac{300}{7} / 10^3$ .

These ⊕ proved very sluggish & could not readily be followed.

EL  $\frac{2}{1} / 10^3$ .

F1  $\frac{2}{1} / 10^3$ .

also remarks on stability of Fla<sup>+</sup> in E coli C.

at this point these expts. were interrupted for pair isolation.

5/22/56.

1212  
Resume'

Representations  
and splits, early.

17 isolates.  
A-x.

	Splits	at		n	n	n	$\sum$
		n					n
A1.	3, 3	1					6
B1	1, 1	1					2
C1	7, 6	1	7, 0	2			13, 7, 6
			4, 2	2	3, 1	3	
B3	6, 3	1	6, 0	2			9, 6, 3
			3, 0	2			
D1	7, 4	1					11
E1	1, 1	1					2
F1	1, 7	1					8
G1	1, 1	1					2
H1	4, 2	1	3, 1	2			6, 4
C3	lost						—
D3	no						—
E3	2, 0	1					2
F3	swarm		same. (prob pure)				sw. no seq?
G3	1, 1	1					2
H3	4, 1	1	2, 2	2			5, 4
B5	<del>1, 1</del> 1, x	1					—
C5	24, 2	1	21, 3	2	20, 1	3	26, 24, 21, 3
					2, 1	3	

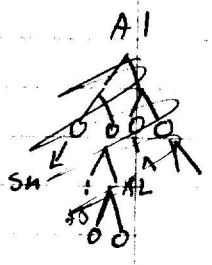
5/16/86.  
5/27/86.

1212.  
notes

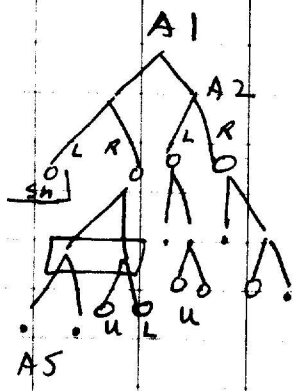
Recruitment

18 pool from 22 x 666 (3 hours)

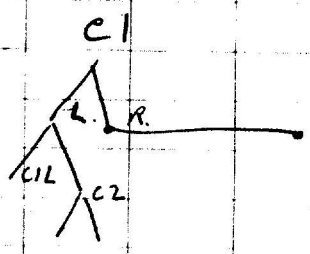
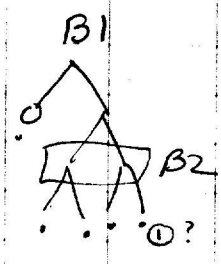
37 x 666 count subclones at n<sub>10</sub>.



no+ at n<sub>10</sub>.



F3  
diverse.  
prob pure.



See protocol sheets.  
Significant partitions.

A1: (3) (3)  
↓ ↓

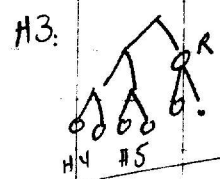
B1: (1) (1)

C1: 4:6  
Λ Λ  
4:0 2:4  
1:3  
C3 1:1

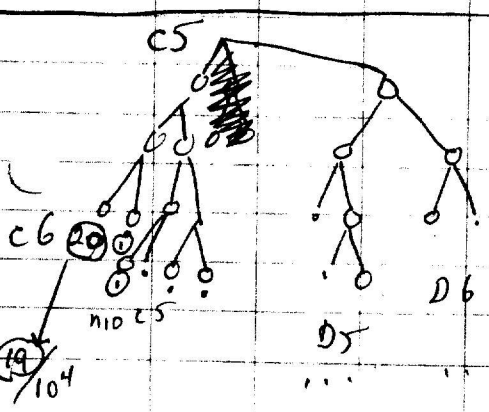
at n<sub>1</sub>  
unless  
indicated.

B3: 6:3

H1: 4:2



4:1



24:2 n<sub>1</sub>  
↓  
(21:3) n<sub>2</sub>  
↓  
(20:1) n<sub>3</sub>

