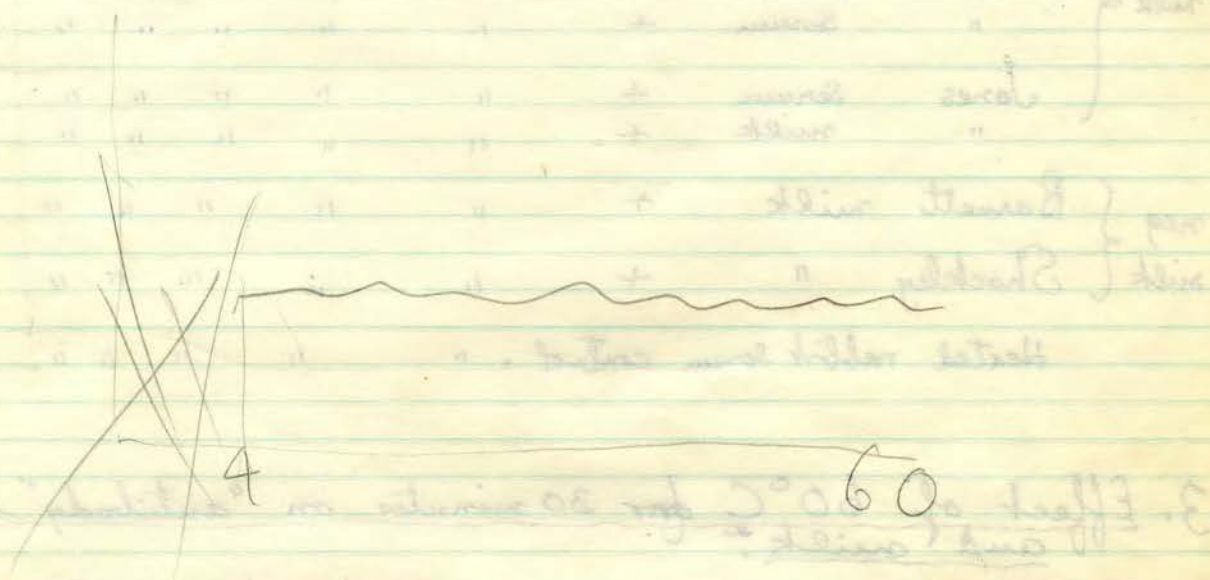
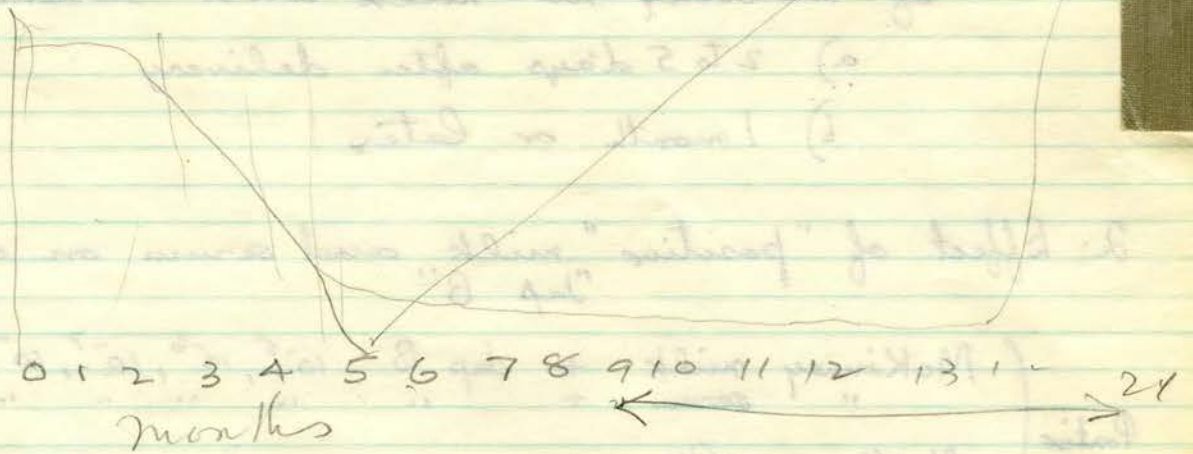


Incidence of Paralysis or Death Among Groups of 8 Mice
Inoculated with 10^{-2} Dilution of Same Lot of Lansing Virus.

<u>Date</u>	<u>14</u>	<u>21</u>	<u>28</u>	<u>35</u>	<u>Date</u>	<u>14</u>	<u>21</u>	<u>28</u>	<u>35</u>
12-21-49	7/8	8/8	...	..	4-3-50	7/8	8/8	...	...
12-23-49	4/8	6/8	7/8	8/8					
1-3-50	6/8	7/8	8/8	...					
1-26-50	7/8	7/8	7/8	8/8					
1-27-50	8/8	...	..	...		
1-24-50	7/8	7/8	7/8	8/8					
"	6/8	8/8	...	...			
1-25-50	5/8	6/8	7/8	7/8					
"	6/8	7/8	8/8	..					
2-1-50	7/8	8/8	...	..			
"	6/8	8/8	...	...			
2-2-50	6/8	7/8	8/8	..					
"	5/8	6/8	7/8	7/8					
2-3-50	6/8	6/8	6/8	6/8					
"	7/8	7/8	8/8	...					
2-20-50	6/8	6/8	7/8	7/8					
"	6/8	7/8	7/8	7/8					
2-21-50	7/8	8/8	...	...			
"	8/8	..	..	...		
2-10-50	6/8	7/8	8/8	...					
"	6/8	7/8	8/8	...					
4-10-50	7/8	8/8	...	...			
"	8/8	...	...	...		
4-13-50	8/8	...	...	..		
"	8/8	...	..	...		

BREAST
MILK
POLIO



3. Effect of 60°C for 30 minutes on "Polio" in serum
Put one in glass cup & set - change for
testing
Test while, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

4. Effect of Condensed milk on Polio virus

Study on Polio "Antibody" in Breast Milk.

1. Quantitative relationship between concentration of "antibody" in milk and serum at

a) 2 to 5 days after delivery

b) 1 month or later

2. Effect of "positive" milk and serum on other virus - "Jap B"

					10^{-5}	10^{-6}	10^{-7}	10^{-8}	
Positive milk	██████████	milk	+	Jap B	"	"	"	"	Incubate 2 hrs. 37°C 1150,000 500,000 0.2 cc virus + 0.2 cc "
	██████████	serum	+	"	"	"	"	"	
	██████████	milk	+	"	"	"	"	"	
	"	serum	+	"	"	"	"	"	
neg milk	██████████	serum	+	"	"	"	"	"	180 mice
	██████████	milk	+	"	"	"	"	"	
	██████████	"	+	"	"	"	"	"	
		Heated rabbit serum control		"	"	"	"	"	

3. Effect of 60°C for 30 minutes on "antibody" in serum and milk.

Put one cc in glass ampule & seal - submerge for heating.

Test undil, 1:4, 1:16, 1:64 against 10^{-2} virus

██████████ Serum + milk
" + "

4. Effect of Cow's milk on Lansing virus

Inventory of Human Milk on Hand 5/24/50

<u>Name</u>	<u>Days after delivery</u>	<u>Antipolio titer</u>	<u>Am't available</u>
[REDACTED]	2		3.5cc
	3		.4cc
	5		.4cc
[REDACTED]			0
	3		7cc
	2		4cc
	2		3cc
	2		2.5cc
	2		9.5cc
[REDACTED]	192		7cc
	340		5cc
	190		5.5

Pool A
boil
1.5
Centrifuge
4cc

Pool B

Pool A stored in B-2-3

" B " " B-2-5

MILK TAKEN FROM LACTATING
MOTHERS AT GENERAL HOSPITAL

DEC 20 1949

<u>NAME:</u>	<u>AMOUNT</u>	<u># OF COLONIES ON BAP</u>	<u>GRAM STAIN</u>
[REDACTED]	2.8 cc	0	—
[REDACTED]	7.3 cc	0	—
[REDACTED]	8 cc	1	Pos. cocci - (STAPH)
[REDACTED]	1.5 cc	9	Pos. cocci - (STAPH)
[REDACTED]	2.7 cc	170	Pos. cocci - (STAPH)
[REDACTED]	6.2 cc	22	Pos. cocci - (STREP)
[REDACTED]	10.9 cc	9	Pos. cocci - (STAPH)
[REDACTED]	3.2 cc	22	Pos. cocci - (STAPH)
[REDACTED]	7.5 cc	outgrown	Pos. cocci - (GAFFKY) (TETRAGANI)
[REDACTED]	4.8 cc	150	Pos. cocci - STAPH

HEALTH CENTER CLINIC

DEC 30 1949

[REDACTED]	5	HEM. STAPH.
[REDACTED]	0	—
[REDACTED]	0	—
[REDACTED]	35	HEM. STAPH
[REDACTED]	30	"
[REDACTED]	40	"

JAN 6 1950

[REDACTED]	40	HEM. STAPH
[REDACTED]	0	—
[REDACTED]	0	—

STANDARD B&P "Notepad"

1-14-50

HEALTH CENTER CLINIC

<u>NAME</u>	<u>AMOUNT</u>	<u># OF COLONIES ON BAP/0.1cc</u>	<u>GRAM STAIN</u>
[REDACTED]	7.1cc	7	Pos. cocci
[REDACTED]	10.1cc	2	"
[REDACTED]	4.5cc	2	"
[REDACTED]	4.6cc	1	"
[REDACTED]	9.0cc	5	"
[REDACTED]	8.9cc	350	"
[REDACTED]	7.0cc	146	"
[REDACTED]	11.5cc	43	"
[REDACTED]	5.0cc	300	"
[REDACTED]	5.0cc	175	"
[REDACTED]	6.4cc	225	"

STANDARD B & P "NOLAN"

RECORD OF MILK AND SERUM OBTAINED FROM LACTATING MOTHERS

Cincinnati General Hospital - Ward K 1 - Dec. 20, 1949

Name	Milk	Color	Age	Serum	Address	Date of Delivery	Time after delivery Days	Date Lactation Begun
[REDACTED]	+	C	18	+	817 Findlay Street	12-15-49	5	12-17-49
[REDACTED]	+	W	37	+	1521 Blue Rock Street	12-18-49	2	12-20-49
[REDACTED]	+	C	20	+	524 Poplar Street	12-18-49	2	12-19-49
[REDACTED]	+	C	25	+	1061 Wade Street	12-17-49	3	12-19-49
[REDACTED]	+	W	18	+	232 East Clifton Ave.	12-18-49	2	12-20-49
[REDACTED]	+	C	26	+	1751 Dreman Ave.	12-17-49	3	12-20-49
[REDACTED]	+	W	18	+	27 West Clifton Ave.	12-18-49	2	12-20-49
[REDACTED]	+	W	32	+	1121 York Street	12-18-49	2	12-20-49
[REDACTED]	+	W	23	+	62 East McMicken Ave.	12-15-49	5	12-18-49
[REDACTED]	+	W	17	+	2011 Vine Street	12-17-49	3	12-20-49

Total = 10

Early Milk

Private Patients - Middle Income

MILK + SERUM SPECIMEN'S
FROM CHRIST HOSPITAL

5-22-50

NAME	AGE	Serum	DATE DELIVERED	Days after Delivery	Milk + Serum CC OF MILK	Result Milk
[REDACTED]	0	0	5/18	4	23 cc ✓	0
[REDACTED]	8	+	5/16	6	20 cc	0
[REDACTED]	1	0	5/17	5	45 cc ✓	0
[REDACTED]	1	0	5/19	3	10 cc ✓	0
[REDACTED]	10	+	5/18	4	28 cc	+
[REDACTED]	30	+	5/17	5	9 cc	+
[REDACTED]	30	+	5/18	4	33 cc	+
[REDACTED]	26	+	5/19	3	4 cc	+
[REDACTED]	26	0	5/19	3	36 cc	0
[REDACTED]	39	0	5/30	1, 3, 5 10, 30		0

Total 10 ~ Early

RECORD OF MILK AND SERUM OBTAINED FROM LACTATING MOTHERS

Cincinnati General Hospital-Wards J & K - February 26, 1951

Serum

Name

Race

Milk

Age

Delivered

Time

Days After Del.

Amt. Milk

BAP

C	+	29	2-23-51	9PM	3	26 ml	100 White (Staph)
C	+	15	2-23-51	3PM	3	22 ml	35 White (Hem. Staph)
C	+	27	2-24-51	5AM	2	6.5 ml	5 White (Staph.)
C	+	17	2-23-51	1PM	3	7 ml	30 White (Staph.)
C	+	18	2-22-51	1PM	4	24 ml	000
C	0	33	2-20-51	11PM	6	31.5 ml	60 White (Hem. Staph)
C	+	31	2-23-51	3AM	3	26 ml	000
W	0	19	2-23-51	4AM	3	8 ml	TMC S. Gray (G+ cocci)
C	0	30	2-21-51	4AM	5	33.5 ml	50 White (Hem. Staph.)
C	+	14	2-23-51	10AM	3	17.5 ml	25 White (Staph.)

Total = 10

all early

Summary

Early

No. antibody positive = 25
Milk of above " = 21

No. with antibody neg = 5
Milk of above posit. = 0

December 30, 1949

Name	Color	Age	Address	Date of Delivery	Months after Delivery
<u>SERUM</u>	<u>Milk</u>				
+	+	C	414 David St.	20 June 1949	6 1/2 ^{193 days}
+	0	C	1416 John St.	5 July 1949	5 3/4 ^{178 days}
+	+	C	1053 John St.	31 Oct. 1949	2 ^{60 days}
+	0	W	1323 Republic St.	5 Oct. 1949	2 3/4 ^{86 days}
+	+	W	1318 Race St.	22 Nov. 1949	1 ^{38 days}
+	+	C	426 David St.	2 Aug. 1949	2 3/4 ^{150 days}

Total = 6

150 days 5 mos
All late

* This woman mother of 4 children: Nursed all except the first one, now 6 yrs. of age. When this oldest child was 3 yrs., had polio with paralysis of left lower extremity and weakness of right -- eventual complete recovery. Second child was nursing at the time of first child's polio.

Few specimens, solely because of light clinic today at the Health Center, 210 W. 12th
between Elm + Parkway

STANDARD B & P "NOLAR"

Health Center

January 6, 1950

	Name	Color	Age	Address	Date of Delivery	Months after Delivery	Days
Serum	_____	<u>Milk</u>	_____	_____	_____	_____	_____
+	[REDACTED]	+ C	19	922 York St.	14 July 1949	5 3/4	175
+	[REDACTED]	+ C	26	410 Dayton St.	27 Sept. 1949	3 1/2	101
+	[REDACTED]	+ W	22	1012 Race St.	31 Jan. 1949	11	310

Total = 3

All late

STANDARD B&P "NOTESAR"

Health Center

January 13, 1950

Serum

Milk



Name	Color	Age	Address	Date of Delivery	Months after Delivery	cc.
	C	18	540 West 5 St.	20 July 1949	117 DAYS 5 3/4	4.5
	C	19	419 West 8 St.	28 Oct. 1949	77 2 1/2	5.0
	C	22	832 Guest St.	7 Apr. 1949	281 9	7.1
	W	17	923 Elm St.	19 Nov. 1949	55 1 3/4	4.6
	C	18	430 Richmond St.	18 Oct. 1949	87 2 1/2	8.9
	C	20	327 West 6 St.	27 Sept. 1949	108 3 1/2	10.7
	C	19	319 West 15 St.	23 Sept. 1949	112 3 1/2	9.0
	W	31	278 West McMicken	7 July 1949	190 6	6.4
	C	24	615 Central Ave.	4 Dec. 1949	40 1 1/4	7.0
	C	21	1023 Mound St.	5 July 1949	193 7 1/4	11.5
	C	22	904 Kenyon Ave.	23 Nov. 1949	51 1 1/2	5.0

Total = 11 - all late

STANDARD B & P "NOTEPAPER"

RECORD OF MILK AND SERUM OBTAINED FROM LACTATING MOTHERS

Shoemaker Clinic (1041 Cutter St.) March 5, 1951

<u>Name</u>	<u>Serum</u>	<u>Race</u>	<u>Age</u>	<u>Milk</u> <u>Delivered</u>	<u>Days After Del.</u>	<u>Amt. Milk</u>	<u>BAP</u>
[REDACTED]	+	C	38	+ 8-3-50	<u>214</u>	15.5 ml	000
[REDACTED]	+	C	20	+ 9-9-50	177	5 ml	TMC White (Staph)
[REDACTED]	0	C	20	0 1-14-51	50	12 ml	TMC White (Staph)
[REDACTED]	+	C	28	0 12-18-50	77	9.5 ml	100 White (Staph)
[REDACTED]	+	C	30	0 10-18-50	138	7.5 ml	000
[REDACTED]	+	C	28	0 10-6-50	150	15.7 ml	20 White (Hem. Staph)
[REDACTED]	+	C	28	0 12-6-50	89	23.3 ml	000
[REDACTED]	+	C	21	+ 11-28-50	97	20.5 ml	000

Total = 8

all late

Private Patients - Christ Hospital
5/16 - 5/19/50 - Bled 5/22

RECORD OF MILK AND SERUM OBTAINED FROM LACTATING MOTHERS

Babies Milk Fund Ass'n (1029 Findlay Street) March 2, 1951

Serum

	<u>Name</u>	<u>Race</u>	<u>Age</u> ^{milk}	<u>Delivered</u>	<u>Days After Del.</u>	<u>Ant. Milk</u>	<u>BAP</u>
+	[REDACTED]		24	+ 1-26-51	35	11.5 ml	20 White Hemo. (Staph.)
+	[REDACTED]	C	21	+ 10-4-50	149	6 ml	TMC Hemo. (Staph)
0	[REDACTED]		28	0 11-29-50	93	15 ml	000
+	[REDACTED]		26	0 4-6-50	330	16.5 ml	000

Babies Milk Fund Ass'n April 26, 1951

	[REDACTED]		21	+ 10-4-50	204	12.0 ml	TMC ^{staph.} non-hemolytic _{strep}
--	------------	--	----	-----------	-----	---------	--

Babies Milk Fund Ass'n May 15, 1951

	[REDACTED]		21	+ 10-4-50	223	6.0 ml	
--	------------	--	----	-----------	-----	--------	--

Total = 4 all late

RECORD OF MILK AND SERUM OBTAINED FROM LACTATING MOTHERS

Shoemaker Clinic (1041 Cutter Street) February 27, 1951

Serum

<u>Name</u>	<u>Race</u>	<u>Age</u>	<u>Milk Delivered</u>	<u>Days After Del.</u>	<u>Amt. Milk</u>	<u>BAP</u>
+		C	32 + 8-15-50	196	12 ml	50 White (G+ rods)
+		C	22 0 11-29-50	90	23 ml	15 Gray Hemo (Staph.)
+		C	22 + 12-12-50	77	10 ml	20 White (Staph.)
+		C	19 0 8-24-50	187	11.5 ml	100 S. Gray (Staph.)
+		C	20 0 11-26-50	93	20 ml	White Col. (Staph.)
+		C	21 0 12-5-50	84	15 ml	25 White (Staph.)
+		C	22 + 3-8-50	356	7 ml	TMC White Hemo (Staph.)
+		C	25 0 8-23-50	188	8 ml	4 White Hemo. (Staph.)
+		C	32 + 12-16-50	73	14 ml	30 White Hemo. (Staph.)

Total = 9

all late

Total late milks -

9
4
8
11
3
6
<hr/>
41

Effect of Heating at 60°C for 30 minutes on
 LANSING Protective Substance in Human Serum
 and Milk

Donor	Substance tested	Treatment	Mortality at indicated final dilution vs. 50 LD ₅₀ of virus					50% Protective Endpoint
			2	8	32	128	512	
[Redacted]	SERUM	Unheated	1/8	2/8	4/8	8/8	8/8	20
		Heated	2/8	1/8	5/8	8/8	...	17
	MILK 2 day	Unheated	0/8	0/8	2/8	6/8	8/8	64
		Heated	0/8	5/8	5/8	5/8	...	17
[Redacted]	SERUM	Unheated	0/8	1/8	1/8	4/8	7/8	108
		Heated	2/8	1/8	3/8	5/8	...	42
	MILK 3d.	Unheated	1/8	1/8	5/8	8/8	8/8	19
		Heated	1/8	3/8	5/8	8/8	...	14
[Redacted]	Serum	Unheated-A	0/8	2/8	7/8	8/8	8/8	14
		" - B	1/8	3/8	8/8	8/8	...	9
		Heated-B	1/8	3/8	8/8	7/8	...	10
Jhop	MILK 5d.	Unheated-A	0/8	0/8	3/8	7/8	8/8	47
		" - B	0/8	1/8	4/8	6/8	8/8	39
		Heated-B	0/8	0/8	6/8	6/8	8/8	25
[Redacted]	MILK 2d.	Unheated-A	0/6	1/8	7/8	8/8	8/8	16
		" - B	0/6	1/6	7/8	8/8	..	16
		Heated-B	1/8	3/8	6/7	8/8	...	10

*A letters ^{APB} indicates 2 different tests

Also Steele - Milk
(over) Good - Serum

Donor	Substance tested	Treatment	Mortality at indicated final dilution vs. 50 LD ₅₀					
			2	8	32	128	512	
3 days	MILK	Unheated-A	0/8	0/8	3/8	7/8	8/8	47
		" -B	0/8	1/8	6/8	8/8	8/8	18
		Heated -B	1/8	1/8	6/8	8/8	8/8	16
192 days	Serum	Unheated-A	0/8	0/8	0/8	0/8	3/3	256
		" -B	0/8	1/8	1/8	3/8	8/8	128
		Heated -B	1/8	0/8	2/8	6/8	8/8	64
192 days	MILK	Unheated-A	2/8	2/8	6/8	8/8	8/8	14
		" -B	3/8	3/8	4/8	8/8	...	12
		Heated -B	1/7	0/8	5/7	8/8	....	19

STANDARD B&P "Nalpar"

Summary of Quantitative Tests for LANSING ANTIBODY IN HUMAN SERUM AND MILK FIRST 5 DAYS AFTER DELIVERY

NAME	Age ↓ DAYS AFTER DELIVERY	Material tested	Mortality at indicated final dilution of serum or milk vs. 50 PD ₅₀ of virus					50% Protective End point
			2	8	32	128	512	
✓ [REDACTED]	2	SERUM	^{0.3} 1/8	^{0.9} 2/8	^{1.5} 4/8	^{2.1} 8/8	^{2.7} 8/8	20 (63)
		MILK	0/8	0/8	2/8	6/8	8/8	64 (100)
✓ [REDACTED]	2	SERUM	0/8	2/8	1/8	7/8	8/8	51 (67)
		MILK	^{1/5} ?4/8	3/8	5/8	8/8	8/8	14 (100)
✓ [REDACTED]	2	SERUM	^{0.5} ?3/8	0/8	3/7	4/8	7/8	89 (145)
		MILK	0/8	1/8	6/8	8/8	8/8	20
✓ [REDACTED]	2	SERUM	0/8	1/8	0/8	8/8	8/8	58
		MILK	^{0.6} ?2/8	1/8	7/8	8/8	8/8	16
✓ [REDACTED]	2	SERUM	0/8	0/8	2/8	6/8	8/8	64
		MILK	0/8	2/8	7/8	8/8	7/8	16
✓ [REDACTED]	3	SERUM	1/8	6/8	6/8	8/8	8/8	6
		MILK	0/8	0/8	3/8	7/8	8/8	47
✓ [REDACTED]	3	SERUM	1/8	1/8	2/8	2/8	8/8	128
		MILK	0/7	3/8	6/8	8/8	8/8	13
✓ [REDACTED]	3	SERUM	0/8	1/8	1/8	4/8	7/8	108
		MILK	1/8	1/8	5/8	8/8	8/8	19
✓ [REDACTED]	5	SERUM	0/8	2/8	7/8	8/8	8/8	14
		MILK	0/8	0/8	3/8	7/8	8/8	47
✓ [REDACTED]	5	SERUM	2/8	0/8	5/8	7/8	8/8	22
		MILK	4/8	8/8	7/8	8/8	7/8	3

STANDARD B & P "NOTEPAPER"

Comparative Concentration of Antipoliomyelitic Substances
in Human Milk and Serum During
First Five Days after Delivery

Mother No.	Days after delivery	50% protective endpoint vs. 50 LD ₅₀ of LANSING Virus	
		<u>SERUM</u>	<u>MILK</u>
1	3	6	47
2	5	14	47
3	2	20	64
4	5	22	3
5	2	51	14
6	2	58	16
7	2	64	16
8	2	89	20
9	3	108	19
10	3	128	13

Summary of Quantitative Tests for LANSING ANTIBODY in Human Serum and Milk

38 to 340 Days after Delivery

Name	Days after delivery	Material tested	Mortality at indicated final dilution of serum or milk vs. 50 ED ₅₀ of virus					50% protective end point
			2 (0.3)	8 0.9	32 1.5	128 2.1	512 2.7	
✓ [REDACTED]	38	Serum	1/8	4/8	7/8	8/8	8/8	8
		Milk	4/8	6/7	8/8	8/8	8/8	2
[REDACTED]	40 55	Serum	0/8	0/8	2/8	7/8	8/8	56
		Milk	4/8	8/8	8/8	8/8	8/8	2
✓ [REDACTED]	60	Serum	0/8	3/8	3/8	8/8	8/8	26
		Milk	4/8	5/8	8/8	8/8	8/8	3
✓ [REDACTED]	86	Serum	2/8	0/8	1/8	7/8	8/8	100 52
		Milk	7/8	7/8	8/8	8/8	7/8	<2
✓ [REDACTED]	101	Serum	0/8	0/8	1/8	2/8	2/8	512+
		Milk	1/8	4/8	8/8	8/8	8/8	7
✓ [REDACTED]	108	Serum	1/8	1/8	3/8	7/8	8/8	36
		Milk	0/8	5/8	8/8	8/8	8/8	6
[REDACTED]	150	Serum	0/8	1/8	0/8	3/8	5/8	220
		Milk	4/8	7/8	7/8	7/8	6/8	4
[REDACTED]	190	Serum	1/8	1/8	0/8	3/8	5/8	200
		Milk	0/8	3/8	8/8	7/8	8/8	12
✓ [REDACTED]	192	Serum	0/8	0/8	0/8	0/8	3/3	256
		Milk	2/8	2/8	6/8	8/8	8/8	14
✓ [REDACTED]	193	Serum	1/8	0/8	0/7	7/8	8/8	64
		Milk	0/8	5/8	8/8	8/8	8/8	6
✓ [REDACTED]	340	SERUM	0/8	1/8	1/8	6/8	7/8	72
		MILK	1/8	3/8	8/8	8/8	8/8	9
✓ [REDACTED]	178	Serum	1/8	1/7	1/8	7/8	8/8	52

Relation between Titer of Antibody in Serum and Antipolio Substance in Milk - 38 to 340 Days after Delivery

Mother No.	Days after delivery	50% Protective Endpoint vs. 50 LD ₅₀ of Lansing Virus		Serum Milk
		SERUM	MILK	
11	38	8	2	1:4
12	60	26	3	1:8.6
13	108	36	6	1:6
14	178	52	<2	neg
15	55	56	2	1:28
16	193	64	6	1:10.7
17	340	72	9	1:8
18	86	100 52	<2	neg.
19	190	200	12	1:16.7
20	150	220	4	1:55
21	192	256	14	1:18.3
22	101	512+	7	1:73.1

less than 1:10 2/22 - 9%

10 < 100 14/22 - 64%

100 to 500 6/22 - 27%

DATE OF TEST	NAME	TIME AFTER DELIVERY DAYS	SERUM				MILK			
			1:20	1:100	1:20	1:100				
1/26/50		175	$\frac{2}{8}$	$\frac{35}{8}$	$\frac{0}{8}$	$\frac{35}{8}$	$\frac{6}{8}$	$\frac{6}{8}$	$\frac{3}{8}$	$\frac{5}{8}$
		101	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
10^{-2} -8/8	X	340	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{2}{8}$	$\frac{4}{8}$	$\frac{0}{8}$	$\frac{1}{8}$
10^{-3} -7/8	X	117	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{4}{8}$	$\frac{6}{8}$	$\frac{1}{8}$	$\frac{1}{8}$
10^{-4} -3/8		77	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{4}{8}$	$\frac{5}{8}$	$\frac{0}{8}$	$\frac{2}{8}$
		281	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{7}{8}$	$\frac{3}{8}$	$\frac{4}{8}$
	X	55	$\frac{1}{8}$	$\frac{2}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{0}{8}$	$\frac{4}{8}$
					$\frac{7}{8}$	$\frac{5}{8}$			$\frac{7}{8}$	$\frac{8}{8}$
1/27/50		87	$\frac{4}{8}$	$\frac{5}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{5}{8}$	$\frac{5}{8}$
	X	108	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{5}{8}$	$\frac{7}{8}$	$\frac{0}{8}$	$\frac{0}{8}$
10^{-2} -8/8		112	$\frac{4}{8}$	$\frac{5}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{5}{8}$	$\frac{8}{8}$	$\frac{4}{8}$	$\frac{6}{8}$
10^{-3} -6/8	*	190	$\frac{0}{8}$	$\frac{2}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{0}{8}$	$\frac{0}{8}$
10^{-4} -3/8		40	$\frac{2}{8}$	$\frac{4}{8}$	$\frac{1}{8}$	$\frac{2}{8}$	$\frac{4}{8}$	$\frac{4}{8}$	$\frac{2}{8}$	$\frac{2}{8}$
	X	192	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{0}{8}$	$\frac{0}{8}$	$\frac{2}{8}$	$\frac{2}{8}$	$\frac{2}{8}$	$\frac{2}{8}$
		51	$\frac{1}{8}$	$\frac{2}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{7}{8}$	$\frac{8}{8}$	$\frac{4}{8}$	$\frac{6}{8}$
					$\frac{8}{8}$	$\frac{5}{8}$			$\frac{8}{8}$	$\frac{8}{8}$

Summary of Simultaneous Control Titrations

Date	10^{-2}	10^{-3}	10^{-4}	L _{D50}	
12-21-49	8/8 (8/8)	6/8 (4/8)	3/8 (1/8)	3.6	Ink - 35 day
12-23-49	8/8 (6/8)	6/8 (2/8)	4/8 (1/8)	3.8	Pencil - 21 u
1-3-50	8/8 (7/8)	7/8 (6/8)	3/8 (1/8)	3.7	
1-26-50	8/8 (7/8)	7/8 (6/8)	3/8 (2/8)	3.7	
1-27-50	8/8 (8/8)	6/8 (4/8)	3/8 (2/8)	3.6	
	<u>40/40 (36/40)</u>	<u>32/40 (22/40)</u>	<u>16/40 (1/40)</u>	10-3.7	(10 ^{-3.15})

Date of test	NAME	Time after delivery days	SERUM		MILK	
			1:20	1:100	1:20	1:100
12/21/49 1:100 = 8/8 1:1000 = 6/8 10 ⁻⁴ = 3/8	[REDACTED]	2	0/8	3 ² /8	2/8	0/8
		2	2 ² /8	0/8	1/8	2 ² /8
		3	2/8	1/8	1/8	0/7
		3	1 ² /8	0/8	0/7	1 ² /8
		5	6/8	0/8	0/8	0/8
12-23-49 10 ⁻² = 8/8 10 ⁻³ = 6/8 10 ⁻⁴ = 4/8	[REDACTED]	2	1/8	1 ² /8	1/8	0/8
		2	2 ² /6	0/8	1 ² /8	1 ² /8
		2	1/8	0/8	2 ² /8	0/8
		3	1/8	1 ² /8	2/8	0/8
		5	2 ² /8	2/8	7/8	4/8
1-3-50 1:20 - 8/8 10 ⁻² - 8/8 10 ⁻³ - 7/8 10 ⁻⁴ - 3/8	[REDACTED]	193	3/8	1/8	3/8	0/8
		86	3/8	2/8	<u>8/8</u>	<u>7/8</u>
		150	1/8	0/8	6/8	4/8
		178	3/7	1/8	<u>8/8</u>	<u>7/8</u>
		60	2/7	0/8	5/8	4/8
		38	1/8	1/8	5/8	4/8

SUMMARY OF TEST OF MARCH 16, 1951

LANSING NEUTRALIZATION WITH EARLY HUMAN MILKS AND SERA

DONOR	SPECIMEN	MORTALITY AT INDICATED FINAL DILUTION OF VIRUS				LD ₅₀	NEUTRALIZING INDEX
		1.6	2.3	3.0	4.0'		
[REDACTED]	MILK	6/8	0/8	—	—	1.8	250
	SERUM	3/7	1/8	—	—	1.6	400
[REDACTED]	MILK	5/8	1/8	—	—	1.8	250
	SERUM	4/8	3/8	—	—	1.8	250
[REDACTED]	MILK	2/8	3/8	—	—	1.5	500
	SERUM	5/8	1/8	—	—	1.8	250
[REDACTED]	MILK	5/8	1/8	—	—	1.8	250
	SERUM	7/8	1/8	—	—	1.9	200
[REDACTED]	MILK	5/8	4/8	—	—	2.0	160
	SERUM	1/8	1/8	—	—	1.3	800
[REDACTED]	MILK	8/8 8/8	8/8 7/8	— 4/8	— —	2.6+?	40?; 13
	SERUM	5/8 7/8	6/8 2/8	— 1/8	— —	2.3	80; 80
[REDACTED]	MILK	6/8	0/8	—	—	1.8	250
	SERUM	6/8	1/8	—	—	1.9	200
[REDACTED]	MILK	8/8 8/8	5/8 5/8	— 5/8	— —	2.4+?	100; 60
	SERUM	6/8	3/8	—	—	2.0	160
CONTROL		—	8/8	6/8	6/8	4.2	

SUMMARY OF TEST OF MARCH 19, 1951

LANSING NEUTRALIZATION WITH TWO EARLY AND SIX LATE HUMAN MILKS AND SERA

DONOR	SPECIMEN	MORTALITY AT INDICATED DILUTION OF VIRUS				LD ₅₀	NEUTRALIZING INDEX
		1.6	2.3	3.0	4.0		
[REDACTED]	MILK	8/8 8/8	8/8 7/8	— 5/8	—	2.6?	Repeat 400
	SERUM	4/8	3/8	—	—	1.8	400
[REDACTED]	MILK	3/8	0/8	—	—	1.5	800
	SERUM	4/8	1/8	—	—	1.7	500
[REDACTED]	MILK	8/8	5/8	—	—	2.4	+ 100
	SERUM	2/8	0/8	—	—	1.4	1,000
[REDACTED]	MILK	7/8	3/8	—	—	? 2.0?	250
	SERUM	1/8	1/8	—	—	1.3	1,300
[REDACTED]	MILK	8/8	8/8	—	—	2.6+	Repeat 0
	SERUM	8/8	8/8	—	—	2.6+	0
[REDACTED]	MILK	8/8	7/8	—	—	2.6+	Repeat 0
	SERUM	2/8	0/8	—	—	1.4	1,000
[REDACTED]	MILK	8/8	6/8	—	—	2.5+	Repeat 0
	SERUM	4/8	4/8	—	—	1.9	320
[REDACTED]	MILK	8/8	6/8	—	—	2.5	Repeat 0
	SERUM	8/8	3/8	—	—	(2.2)	11 +
CONTROL		—	8/8	7/8	8/8	4.4	

SUMMARY OF TEST OF MAY 11, 1951

LANSING NEUTRALIZATION WITH EARLY AND LATE HUMAN MILKS AND SERA

Repeat Tests

DONOR	DAYS AFTER DELIVERY	SPECIMEN	MORTALITY AT INDICATED FINAL DILUTION OF VIRUS				LD ₅₀	NEUTRALIZING INDEX
			1.6	2.3	3.0	4.0		
[REDACTED]	6	MILK	8/8	7/8	4/8	—	2.9	13
		SERUM	7/8	2/8	1/8	—	2.1	80
[REDACTED]	3	MILK	8/8	8/8	5/8	—	3.2	6
[REDACTED]	5	MILK	8/8	7/8	5/8	—	3.1	8
[REDACTED]	50	MILK	8/8	8/8	7/8	—	3.4	4
		SERUM	8/8	8/8	7/8	—	3.4	4
[REDACTED]	77	MILK	8/8	8/8	8/8	—	3.5	3
[REDACTED]	138	MILK	8/8	8/8	4/7	—	2.8	16
[REDACTED]	150	MILK	7/8	7/8	4/8	—	2.6	25?
		SERUM	8/8	4/8	1/8	—	2.4	40?
CONTROL			—	7/7	7/7	4/8	4.0	

SUMMARY OF TEST OF MARCH 20, 1951

LANSING NEUTRALIZATION WITH LATE HUMAN MILKS AND SERA

DONOR	SPECIMEN	MORTALITY AT INDICATED FINAL DILUTION OF VIROS				LD ₅₀	NEUTRALIZATION INDEX
		1.6	2.3	3.0	4.0		
[REDACTED]	MILK	7/8	5/8	—	—	2.3	Rep. ² 0
	SERUM	5/8	1/8	—	—	1.8	160
[REDACTED]	MILK	3/8	1/8	—	—	1.5	320
	SERUM	4/8	0/8	—	—	1.6	250
[REDACTED]	MILK	6/8	1/8	—	—	1.9	130
	SERUM	2/8	1/8	—	—	1.4	400
[REDACTED]	MILK	2/8	1/8	—	—	1.4	400
	SERUM	3/7	3/6	—	—	1.7	200
[REDACTED]	MILK	8/8	7/8	—	—	2.6?	Repeat 0
	SERUM	8/8	8/8	—	—	2.6?	0
[REDACTED]	MILK	4/8	6/8	—	—	2.3	Rep 0
	SERUM	7/8	2/7	—	—	2.0	100
[REDACTED]	MILK	3/7	1/8	—	—	1.6	250
	SERUM	5/8	0/8	—	—	1.7	200
[REDACTED]	MILK	8/8	7/8	—	—	2.6?	Repeat 0
	SERUM	1/8	0/8	—	—	1.3	500
CONTROL		—	7/8	7/8	5/8	4.0	

SUMMARY OF TEST OF MARCH 21, 1951

LANSING NEUTRALIZATION WITH LATE HUMAN MILKS
AND SERA

DONOR	SPECIMEN	MORTALITY AT INDICATED FINAL DILUTION OF VIRUS				LD ₅₀	NEUTRALIZING INDEX
		1.6	2.3	3.0	4.0		
[REDACTED]	MILK	5/8	3/6	—	—	1.9	130
	SERUM	2/8	0/8	—	—	1.4	400
[REDACTED]	MILK	8/8	6/8	—	—	2.5	Rep Neg
	SERUM	1/8	1/8	—	—	1.3	500
[REDACTED]	MILK	6/8	6/8	—	—	2.4	Rep Neg
	SERUM	0/8	0/4	—	—	1.2	630
[REDACTED]	MILK	6/8	5/8	—	—	2.3	Rep Neg
	SERUM	1/8	2/8	—	—	1.4	400
[REDACTED]	MILK	2/8	0/8	—	—	1.4	400
	SERUM	1/8	0/8	—	—	1.3	500
[REDACTED]	MILK	6/8	1/6	—	—	1.9	130
	SERUM	2/7	1/7	—	—	1.5	320
[REDACTED]	MILK	8/8	8/8	—	—	2.6	Rep Neg
	SERUM	1/8	0/8	—	—	1.3	500
CONTROL		—	8/8	8/8	4/8	4.0	

SUMMARY OF TEST OF MAY 14, 1951

LANSING NEUTRALIZATION WITH LATE HUMAN MILKS AND SERA

DONOR	DAYS AFTER DELIVERY	SPECIMEN	MORTALITY AT INDICATED FINAL DILUTION OF VIRUS				LD ₅₀	NEUTRALIZATION INDEX
			1.6	2.3	3.0	4.0		
[REDACTED]	89	MILK	8/8	6/8	3/6	—	2.8	16
[REDACTED]	93	MILK	8/8	8/8	8/8	—	3.5	3
[REDACTED]		SERUM	8/8	8/8	8/8	—	3.5	3
[REDACTED]	330	MILK	8/8	8/8	8/8	—	3.5	3
[REDACTED]	90	MILK	8/8	8/8	7/8	—	3.4	4
[REDACTED]	187	MILK	7/7	6/8	3/8	—	2.7	20
[REDACTED]	93	MILK	8/8	6/8	1/8	—	2.6	25
[REDACTED]	84	MILK	7/8	6/7	1/8	—	2.6	25
[REDACTED]	188	MILK	8/8	6/8	3/8	—	2.7	20
CONTROL			—	7/8	7/8	5/8	4.0	

SUMMARY OF TEST OF JUNE 6, 1951

TEST FOR PRESECE OF LANSING NEUTRALIZING ANTIBODIES
IN TWO DIFFERENT SAMPLES OF LATE MILK FROM THE
SAME MOTHER

SPECIMEN	DAYS AFTER DELIVERY	MORTALITY AT INDICATED FINAL DILUTION OF VIRUS				LD ₅₀	NEUTRALIZING INDEX
		1.6	2.3	3.0	4.0		
[REDACTED]	204	5/8	0/7	0/7	—	1.7	160
	223	7/8	4/8	0/7	—	1.9	100
CONTROL		—	8/8	7/7	3/7	3.9	

Protective Antibodies Against Lausing Virus in Human Milk and Serum

Days after Delivery	MILK		SERUM	
	No. tested	% positive	No. tested	% positive
2-5	10	100	10	100
38-340	20	75	20	100
2-340	30	83	30	100

Incomplete

UNDILUTED
Antipoliomyelitic Activity of λ HUMAN MILK AND SERUM
TESTED AGAINST 50 and 250 LD₅₀ OF LANSIN VIRUS

DAYS AFTER DELIVERY	M I L K		S E R U M	
	No. MOTHERS TESTED	% POSITIVE	No. MOTHERS TESTED	% POSITIVE
2 to 5	10	100	10	100
38 to 340	20	75	20	100
2 to 340	30	83	30	100

10

10

CONCENTRATION OF ANTIPOLIOMYELITIC SUBSTANCE IN HUMAN
 MILK AND SERUM 2 to 5 DAYS AFTER DELIVERY

MOTHER NO.	DAYS AFTER DELIVERY	PROTECTIVE TITER VS. 50 LD ₅₀ OF LANSING VIRUS	
		S E R U M	M I L K
1	3	6	47
2	5	14	47
3	2	20	64
4	5	22	3
5	2	51	14
6	2	58	16
7	2	64	16
8	2	89	20
9	3	108	19
10	3	128	13

Comparative Effect of Serum and Milk of Lactating American Mothers against the Viruses of Polio myelitis and Japanese B Encephalitis

Donor	Days after delivery	Substance tested	Protective Effect Against Indicated Virus			
			POLIOMYELITIS		Japanese B	
			Unheated	Heated	Unheated	Heated
[REDACTED]	2	SERUM	+	+	-	
		MILK	+	+	-	
[REDACTED]	3	SERUM	+	+	-	
		MILK	+	+	+(50)	
[REDACTED]	193	SERUM	+	.....	-	.....
		MILK	+	.....	+(3200)	+(25)
[REDACTED]	86	SERUM	+	.....	-	-
		MILK	-	.....	+(1000)	+(2500)
[REDACTED]	178	SERUM	+	.....	-	-
		MILK	-	.....	+(40)	-

See (over)

Donor	Days after delivery	M I L K				S E R U M	
		Polio myelitis Unheated	Japanese B Unheated	Heated	Polio myelitis Unheated	Japanese B Unheated	
[REDACTED]	2	+	-	...	+	-	
	3	+	+(50)	...	+	-	
	193	+	+(3200)	+(25)	+	-	
[REDACTED]	86	-	+(1000)	+(2500)	+	-	
	178	-	+(40)	-	+	-	
	2	+	+(640)	+(80)	+	-	
[REDACTED]	3	+	+(100)	+(800)	+	-	
	192	+	+(4000)	+(5000)	+	-	

192

3

2

Sera and Milk Specimens Tested Quantitatively
against 32-50 PD₅₀ of virus

<u>Date of Test</u>	<u>Name</u>	<u>Time after Delivery</u>	<u>SERUM</u>	<u>MILK</u>
1/24/50	[REDACTED]	86 days	+	0
1/25/50		2 days		
		5 days		
		3 "		
		5 "		
		150 2 ³ / ₄ months	+	UND?
2/1/50		2 days		
		2 "		
		3 "		
2/2/50		2 "		
	2 "			
	2 "			
2/3/50	6 1/2 months			
	2 "			
	38 days		?	
	6 months	<u>ser. only</u>	0	

HUMAN MILKS

6/30/50

NAME	DAYS AFTER DELIVERY	EST. AMOUNT
[REDACTED]	(1:64) 2	Stop (220/cc) 3.5
	3	.25
	5	.25
	(1:3) 5	leaky growth 7
	1:2 38	11
	+ 40	7
	neg 51	neg - 4.5
	1:2 55	3.5
	1:3 60	14 *
	+ 77	4.5
	<2 86	4.5
	lost 10/10/50 neg 87	neg - 9
	1:7 101	5 *
	lost 10/10/50 1:6 108	10 *
	lost 10/10/50 neg 112	neg - 9.5
	+ 117	3.5
	lost 10/10/50 1:4 150	5.5
	1:2 or < 175	6
	<2 178	4.5
	1:6 193	4.5
1:2 or < 281	7	
	Neg 4	22 cc *
	Neg 6	19 cc
	Neg 5	44 cc *
	Neg 3	9 cc
	+	27 cc *
	+	8 cc *
	+	32 cc *
	+	3 cc
	neg 3	35 cc *
	neg	
	1 1/2	.75 cc
	3	1.5 cc
	5	4.5 cc
	10	1.5 cc
	30	2.5 cc

Pool A (BURNS) ⁽¹⁶⁾

[REDACTED]

2-3

3.5 cc

Pool B (GOSCH) ⁽¹⁴⁾

[REDACTED]

190-340

7 cc

S. SABIN MILK

5/31/50

-

BAP
@ 250 Colonies:
50 yellow - irregular edges
Remainder - small white.
none of Colonies seen by tri

6/2/50

-

5 tents

6/4/50

-

5 small golden, raised, round
Colonies - no hemolytic

6/9/50

-

2 colonies - 1 yellow, 1 white.
both of medium size + irregular edges.

MILK SPECIMENS FOR DR. COOPER

Human Milk Specimens

<u>Period after Delivery</u>	<u>Polio +</u>		<u>Polio 0</u>	
	<u>Days after Delivery</u>	<u>Name</u>	<u>Days after Delivery</u>	<u>Name</u>
First 5 days	4	[REDACTED]	4	[REDACTED]
	5			
	4			
51 days or longer	60	[REDACTED]	51	[REDACTED]
	101			
	108			

4 cc of each supplied

* Antipolio titer

Cows' Milk Specimens

<u>Cow</u>	<u>Date</u>	<u>Type of Milk</u>	<u>Culture</u>	<u>Antipolio</u>
S 12	4-28-50	Antepartum colostrum	1500/ml.	++
S 10	5-5-50	Regular last calf 10/13/49	sterile	+
S 9	5-12-50	Regular last calf 9/1/49	sterile	0

5 cc of each supplied

Pool of "Late" Human Milk from
"The Directory of Mother's Milk, Inc." of Boston, Mass.

Pool made up July 25, 1950 - sent in dry
ice by Air Express - arrived Cincinnati frozen
on July 26, 1950

<u>Date of Delivery of Contributors to Pool</u>	<u>Interval Days</u>
1. 6-29-50	26
2. 6-10-50	45
3. 6-8-50	47
4. 6-8-50	47
5. 6-2-50	53
6. 6-1-50	54
7. 5-21-50	65
8. 5-19-50	67
9. 4-14-50	102
10. 4-12-50	104
11. 3-18-50	120 ±
12. 3-16-50	122 ±
13. 12-6-49	230

Two containers

one

1000 cc

500 cc.

HUMAN MILKS

OCT 10 1950

10/10/50 The milks of Green, Hunter, E. Bell, & Nelson were found in the refrigerator. It was decided that these milks had been in the refrigerator since 8/16/50 (@ 7³/₄ weeks). The milks were clear at the bottom & a curd at the top. Upon shaking all the milks resumed their normal appearance & none had a sour odor.

@ 0.1 cc of each milk was placed on a BAP & the remainder of the milk was frozen.

BAP- [REDACTED] - 000

BAP- [REDACTED] - 000

BAP- [REDACTED] - 000

BAP- [REDACTED] - 000