

NERVOUS
TISSUE
ANTI-
VIRAL
STUDY
TESTS
IN
MICE
and
MONKEYS

Purpose:

1. To determine whether or not crude supp. of gray matter of sp. cord of paralyzed monkeys is capable of "neutralizing" homologous as well as heterologous polio viruses

a) ~~whether~~ if such a "neutralizing" principle is present, is it associated with the crude tissue only or is it also present in the ^{centrifuged} ~~extract~~ extract of the tissue

Example — Rh. 740 [redacted] paralyzed monkey a little over 1 month.

1. Exsanguinate and save about 10cc of serum.
2. Remove gray matter from ant. horns of cervical and lumbar enlargements separately and "medulla" separately.

Prepare 1 in 3 & 2 suspension

Test against [redacted] virus — 10 P.D.

1:3 = 8 mice = 0.24cc — 0.15cc of sup. need
1:30 = 8 "
1:300 = 8 "

Test against [redacted] virus

1:3 = 3 monkeys (0.5cc each) = 0.75cc

Possible Candidates - other strains

strain - ✓ 797 - 9/9/48 - Part. par. all 4 exts.

✓ 661X - 9/8/48 - " " both lowers + R.U.; wk. L.U.

✓ 799 - 9/8/48 - Comp. both lowers + R.U.; part. L.U.

✓ 762 - 8/25/48 - Comp. LU+RL; part RU+LL

✓ 586X - 8/27/48 - Comp. RL; part LL

700 - 7/14/48 - ~~Comp.~~ Comp. quadriplegia only, i.e. movement of head + neck

✓ 2 Normal "X" Monkeys (pooled)

Check on [redacted] Rhes 666X - 8/8/48
(Died 9/28/48)

		<u>Amounts</u>		
Days Paralyzed		Gray Susp.	Medulla	Serum.
		70 cc.	11 cc.	7.0 cc. (B-7-8) 8.5 cc. (B-7-8)
2 Normal	771X 783X			
1 PER	740	39 days. 2.8 cc	5.3	10.5 cc (B-3-5)
	762	37 days. 3.6 cc	5.0 cc	11.0 cc B-3-5
	586X	35 days. 2.8 cc	5.0 cc	12 cc B-3-5
	700	82 days. 2.2 cc	5.0 cc	10 cc B-3-5
	797	27 days. 2.4 cc	4.5 cc	10.5 cc B-2-6
	799	28 days. 2.4 cc	4.5 cc	9.0 cc B-2-6
	661X	28 days. 2.4 cc	4.2 cc	11.0 cc B-2-6

Purpose - to determine whether or not the nervous tissue of convalescent polio monkeys contains an antiviral substance effective against the homologous strain of virus in monkeys, and whether or not this antiviral substance is present in the centrifuged supernatant liquid, free of cell fragments.

Convalescent from Infection with Strain of Virus	STRAIN of Virus Used	10% Uncentrifuged	10% Centrifuged
Normal Monkey Cords	PER	4	4
PER " " "	[REDACTED]	4	4
Per	Per	4	4
[REDACTED]	[REDACTED]	4	4

PER. - Titer = $10^{-3.8}$.

20 PD₅₀ represented by 0.5 cc of 1:320

aa of 1:160 virus and test substances.

[REDACTED] - Titer $10^{-4.2}$

20 PD₅₀ contained in 0.5 cc. of 1:8000

aa of 1:400 virus + test sol.

Search for Neutralizing Substances vs. Polio Viruses in Nervous Tissues of Normal and of Paralyzed Monkeys

9-28-48

I. Preparation of Normal Monkey Material

Rh. 771X } These 2 monkeys remained well following inoculation on 8-16-48
Rh. 783X } with mixtures of J. TENNANT sera and TENNANT strain polio
virus in neutralization test.

Method: Each monkey bled by cardiac puncture (Ether anesthesia); chest opened and cannula placed thru left ventricle and tied in place in the aorta; a vent was cut in the right ventricle and then each monkey was perfused with 1500 cc of sterile physiological saline - by which time the outflow from the opening in the right ventricle was crystal clear.

The lumbar and cervical enlargements - and the entire medulla were then removed aseptically - and free of pia-arachnoid. -- The spinal cord enlargements were cut longitudinally in the midline and the white matter and post. horns trimmed away. The remaining quadrants were frozen on a sterile glass plate resting on dry ice, and much of the white matter scraped away leaving predominantly the ant. horns of gray matter. -- The cervical and the lumbar gray matter of both above monkeys were allowed to thaw; pooled and weighed and a fine suspension made with saline (1:3.2) in a Ten Broeck glass grinder.

The 2 medullae of the above monkeys were pooled; finely minced up and made up as a 1:3.2 suspension with saline in a Ten Broeck grinder.

"Gray Cord" Pool of Above 2 Monkeys: wt = 3.5 gms.; made up with 7.7 cc. of saline to make 10.0 cc of a 1:3.2 susp. which was frozen in 3 small rubber capped vials. (6-8)
Cult: ✓

Medulla Pool of Above 2 Monkeys - wt. = 4.3 gms.; made up with 9.5 c.c. of saline to make 11.0 cc of 1:3.2 susp.; which was frozen in 4 small rubber capped vials. (2-6)
Cult: ✓

10-1-48

II Preparation of Material From 2 Monkeys Paralyzed with The [REDACTED] STRAIN Polio Virus

Rh. 762 - Inoculated 8/16/48 with 0.5 cc of 10^{-3} [REDACTED] polio virus; became paralyzed on 8-25-48 with partial paralysis of all 4 extremities. When sacrificed today - he had complete paralysis of left upper, almost complete paralysis of rt. lower (feeble foot movement); partial paralysis of rt. upper and left lower.

Rh. 586 X - Inoculated 8/16/48 with 0.5 cc (ven) of with 10^{-1} virus (+ MV serum) (over)

and became paralyzed on 8-27-48 with partial paralysis of lower. When sacrificed today he showed complete paralysis of right lower and partial paralysis of left lower.

Method: As described for "Normal Gray Cord and Medulla (V. Saper)".

Resulting Emulsions:

Rh. 762 - Gray Cord = 1.2 Gms; made up as 1:3.2 with 2.6 cc. of saline resulting in 3.6 cc of material frozen in one rubber capped vial. (6-3) Cult: VVV

Medulla = 1.8 Gms; made up as 1:3.2 with 4.0 cc saline, resulting in 5.0 cc of material frozen in one vial. (6-3) Cult: VVV

Rh. 586X - Gray Cord = 1.1 Gms; made up with 2.4 cc saline resulting in 2.8 cc of material frozen in one vial. (6-3) Cult: VVV

Medulla = 2.0 Gms; made up with 4.4 cc of saline resulting in 5.0 cc of material frozen in one vial (6-3) Cult: VVV

10-4-48-

III Preparation of Material From Monkey Paralyzed with the PER strain of polio virus.

Rh. 740 - Inoculated 8/14/48 with 10^{-2} PER virus (0.5% disp.) became paralyzed on 8/26/48 with partial paralysis of both lower; uppers became weak but not paralyzed. When sacrificed today there was still partial paralysis of both ~~upper~~ lower, with weakness of both uppers.

Method: As previously, except cannula used for saline perfusion was inserted at beginning of descending arch.

Resulting Suspension: - Gray Cord = 1.1 Gms; made up as 1:3.2 with 2.4 cc of saline, resulting in 2.8 cc of material frozen in one rubber capped vial. (2-1) Cult: VVV

Medulla: 1.8 Gms - made up as 1:3.2 with 4.0 cc of saline yielding 5.3 cc of material frozen in one rubber capped vial (2-1) Cult: VVV

10-4-48-

IV Preparation of Material From Monkey Paralyzed with
The [redacted] Strain Polio Virus.

Rh. 700 - Inoc. on 7/7/48 with $1:300$ [redacted] virus (0.5 cc i.c.r.); paralyzed on 7/14/48 with partial paralysis of both paws and weakness of right upper. - This progressed to complete quadriplegia. - - - When sacrificed today he had complete quadriplegia, could move head and neck, but cannot sit up.

Method: As for preparing "normal gray cord" and normal medulla. -

Resulting Suspension: Gray Cord = 0.9 Gms; made up as 1:3.2 with 2.0 cc of saline; yielding 2.2 cc of material frozen in one rubber capped vial. (a-1) Cult: ✓✓

Medulla: 1.8 Gms; made up as 1:3.2 with 4.0 cc of saline; yielding 5.0 cc of material frozen in one rubber capped vial (a-1) Cult: ✓✓

x2.2
cc

10-6-48-

V Preparation of Material From Monkeys Paralyzed with
The [redacted] Strain Polio Virus.

- ① Rh. 797 - Inoc. 8/30/48 with 10^{-3} Walter virus (0.6 cc i.c.r.); paralyzed on 9/9/48; developed partial paralysis of both extremities; - Still showed Tonia when sacrificed today, with uppers showing some return of strength. -

Method: as above.

Resulting Suspensions: 1.0 Gm of Gray Cord = made up as 1:3.2 (2.2 cc) susp. in saline yielding 2.4 cc; frozen. (b-1) Cult: ✓✓

Medulla: 1.8 Gms $\rightarrow$ 4.5 cc susp. (b-5) Cult: ✓✓

- ② Rh. 799 - Inoc. 8/30/48 (with 10^{-1} and acute serum 0.1); paralyzed 9/8/48 progressing to compl. par. both paws + rt. upper; almost complete paralysis of left upper.

Method: As above. -

GRAY CORD: 0.9 Gms. $\rightarrow$ 2.4 cc of a 1:3.2 susp. frozen (b-1) Cult: ✓✓

MEDULLA: 1.8 Gms $\rightarrow$ 4.5 cc susp. (b-5). Cult: ✓✓

- ③ Rh. 661X - Inoc. 8/30/48 (with 10^{-5} virus); paralyzed on 9/8/48 (over)

progressing to part. par. both lowers + rt. upper; with
weakness of left upper.

Method: AS above.

GRAY CORD = 0.9 Gms. $\rightarrow$ 2.4 cc of Emulsion. Frozen. (6-1)
Cult: $\checkmark \checkmark$

MEDULLA: 1.7 Gms $\rightarrow$ 4.2 cc of Emulsion. Frozen (6-5)
Cult: $\checkmark \checkmark$

- Effect of Monkey Nervous Tissues on [REDACTED] Polio Virus -

I. "Gray Spinal Cord" Emulsions - [REDACTED] of Paralyzed Monkeys

OCT 11 1948

Materials Tested:- The "gray cord" emulsions of monkeys indicated below were Thawed and frozen in 1:32 concentration; and diluted also to 1:32 and 1:320, in saline.

Procedure:- 0.2 cc of each dilution of "gray-cord" mixed with 0.2 cc of a 1:200 dilution of Lansing virus, making final virus concentration of 1:400. - After one hour at room temp, each of the mixtures was inoc. i.c.r. into 8 mice; the material was injected through a 27 gauge needle - using 0.25 cc Tuberculin syringes. -

Mice: Maxfield albinos (14-16 Gms each)

Inoculum: 0.03 Each mouse i.c.r.

Virus:- Two ampoules (3.0 cc each) of Lansing Pool III Pass. 204; 10% in saline prepared 7-6-48 - were Thawed; pooled and used to make up the 1:200 virus and 10^{-3} and 10^{-4} dilutions.

Titration: Simultaneous inoculation of 3 groups of 8 mice each, receiving 1:400 virus, as well as 8 mice each in the 10^{-3} and 10^{-4} dilutions of virus in saline.

MONKEY # (Rhesus)	STRAIN	# OF DAYS PARALYZED WHEN HARVESTED	DATE OF HARVEST (MATERIAL FROZEN)
771X (Vog) 783X)	NORMAL TISSUE	-----	9-28-48.
762	[REDACTED]	37 days.	10-1-48
586X	"	35 days.	10-1-48
740	PER	39 day.	10-4-48.
700	[REDACTED]	82 day.	10-4-48.
797	[REDACTED]	27 days.	10-6-48
799	"	28 day.	10-6-48
661X	"	28 days	10-6-48.

OCT 11 1948

27

[illegible]

NORMAL

1:32

GRAY

[illegible]

CORD

1:320

1 - - D
2 - - PD
3 - - - P D
4 - - - - PD
5 - - - - - PPD
6 - - - - - - E D
7 - - - - - - - E PPD
8 - - - - - - - - - PPD

Rh.

1:3.2

1 - ^{ens}D
2 - - - - D
3 - - - - - P D
4 - - - - - PD
5 - - - - - ^{ens}D
6 - - - - - P D
7 - - - - - P P
8 - - - - - P P

762

1:32

GRAY
CORD

1 - - - D
2 - - - PP D
3 - - - D
4 - - -
5 - - -
6 - - -
7 - - -
8 D

3/7

(1:320)

1 - - D
2 - - D
3 - - D
4 - - - - - P PD
5 - - - - - - - D
6 - - - - - - - PD
7 - - - - - - - - - - -
8 - - - - - - - - - - -

1 2 3 4 5 6 7 8 9 10 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

(1:3.2)

Rh.

586X

1:32

GRAY
CORD

(1:320)

 $\frac{7}{8}$ $\frac{2}{8}$ $\frac{5}{8}$ $\frac{8}{8}$

GRAY
CORD

(PER)

1:320

OCT 11 1948

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7/8

6/8

8/8

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6/8

7/8

Rh.
700

(1:3.2)

GRAY
CORD

(1:32)

(1:320)

Rh.
797

(1:3.2)

GRAY
CORD.

(1:32)

(1:320)

OCT 11 1948

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 28 29 30 31 32 33 34 35.

Handwritten notes on grid paper:

1 - - - P
2 - - - - PD
3 - - - - - PD
4 - - - - - P D
5 - - - - - D
6 - - - - - PD
7 - - - - - P D
8 - - - - -

7/8

 $\frac{7}{8}$

Rh.

799

1 - - D
2 - - D
3 - - PD
4 - - - PD
5 - - - - - PD
6 - - - - - PD
7 - - - - - PD
8 - - - - - PD

 $\frac{7}{8}$ [illegible] $\frac{7}{8}$

1 - - - - - D
2 - - - - - PP
3 - - - - - PP D
4 - - - - - PP D
5 - - - - - PP D
6 - - - - - PP D
7 - - - - - PP D
8 - - - - - PP D

 $\frac{5}{8}$ [illegible] $\frac{6}{8}$

1 - - D
2 - - D
3 - - - P D
4 - - - P PP D
5 - - - PP D
6 - - - - D
7 - - - - E* WSD
8 - - - - -

 $\frac{7}{8}$

25

OCT 11 1968

	1	2	3	4	5	6	7	8	9	10	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
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8/8

1:400
VRUS /

Box #2

BOX #

 10^{-3} 10^{-4}

(36 Baby)

11-16-48

1:400 virus Box #1 = 7 dead

Study of Monkey Nervous Tissue "And Bodies" in Monkeys

NOV 11 1948

Purpose:- To determine whether or not the nervous tissue of convalescent polio monkeys contains an antiviral substance effective against the homologous strain of virus in monkeys; and whether or not this antiviral substance is present in the centrifuged supernatant liquid, free of cell fragments.

Viruses Used: I. PER strain. - On Aug 6, 1948 a pool of 10 rhesus monkeys made up as 20% in saline (uncentrifuged) and frozen. - (This pool was titrated on 8-14-48 in rhesus monkeys, with PD_{50} of $10^{-3.8}$). - This material in a 3.0 cc sealed vial was thawed, centrifuged at 2000 r.p.m. for 20 minutes, and supernatant used to prepare 1:160 dilution (saline). (Calculated 20 PD_{50} contained in 0.5 cc of 1:320.)

II. [REDACTED] strain - Generation II in rhesus monkeys, a pool used in this laboratory yielding titer of $10^{-4.2}$. A previously unused vial was thawed and 0.5 cc removed and diluted 1:400 in saline. - (Calculated 20 PD_{50} contained in 0.5 cc of 1:800.)

Nervous Tissues Tested:-

I. NORMAL MONKEY GRAY SUSPENSION: - Frozen on 9-28-48, prepared from pool of Rh. 771X and Rh. 783X; made up as 1:3.2 in saline.

II. PER MONKEY GRAY SUSPENSION: - Prepared on 10-4-48 from Rh. 740, paralyzed for 39 days (with PER virus) at time of harvest; made up as 1:3.2 in saline.

III. [REDACTED] MONKEY GRAY SUSPENSION: - Prepared on 10-6-48; Three WALTERS polio paralyzed monkeys Rh. 797, 799, 661X - paralyzed for 27, 28, 28 days respectively - harvested and prepared separately as 1:3.2 suspension. - For today's test the three were thawed and equal portions from all three used to make "Walters monkey gray suspension".

Method:- PER virus (above) diluted to 1:160 in saline; [REDACTED] polio virus diluted to 1:400 in saline. - The three monkey gray suspensions made up to 10% in saline, and a portion of each centrifuged at 2000 Rpm. for 20 minutes - The supernatant resulting being used as the corresponding 10% centrifuged monkey gray cord suspension.

Equal portions of above virus dilutions and test materials mixed together; room temp. incubation for one hour; then overnight incubation (ca 16 hrs) in refrigerator; then into ice bath during inoculations on 11-12-48.

Monkeys Used: Rhesus monkeys arrived on 11-10-48 from Okatie Farms - except Rh. 885X, 887X, 903X - which remained well following inoc. on 9-21-48 in RICE neut. test; and Rh. 942X, 944X, 945X, 946X, 947X used on 9-28-48 in RISNER neut. test, and remained well.

(over)

Study of Monkey Nervous Tissue Antibodies (cont'd).

Inoculum:- 0.5 cc IC per monkey; each dose calculated to represent 20 PD₅₀ of corresponding virus strain.

Nov. 12, 1948

Per - 1:320
Walters - 1:800

GRAY CORD SUSPENSION	VS. STRAIN OF VIRUS.	10% UNCENTRIFUGED GRAY	10% CENTRIFUGED GRAY.
NORMAL MONKEY GRAY	<u>PER.</u> virus.	1110 D ₂₁ ○	1112 P ₁₂
		1111 P ₁₅	1113 P ₁₀
		1132 P ₁₄	901X P ₈
		885X P ₁₄	903X P ₇
		1114 P ₉	1117 P ₁₂
	virus.	11150; K ₂₈ ○	1118 P ₁₀
		1116 P ₉ - 7 ○	1119 P ₆
		947X P ₉	946X P ₁₀
		1120 D ₆	1123 P ₁₇
		1121 P ₁₀	1124 P ₁₁
<u>PER</u> MONKEY GRAY TISSUE	<u>PER</u> virus.	1122 P ₁₂	1125 P ₁₃
		944X P ₁₀	942X O; K ₂₈ ○
		1126 O; K ₂₈ ○	1129 P ₁₁
		1127 P ₁₇	1130 P ₁₃
<u>WALTERS</u> MONKEY GRAY TISSUE	virus.	1128 P ₁₅	1131 O; K ₂₈ ○
		945X O; K ₂₈ ○	887X P ₁₁

Rh. 1110

NORMAL GRAY - 10% Uncentrifuged
vs. PER virus.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓
- 7 ✓
- 8 ✓
- 9 ✓

11-22-48

- 10 ✓
- 11 ✓
- 12 ✓
- 13 ✓
- 14 ✓
- 15 ✓
- 16 ✓

17. Thin, mild diarrhea,

18. Thin, " "

19. Thin. No diarrhea noted today.

20. very thin; General weakness, very passive.

12-3-48

21. Moribund. Sacrificed, chloroform-exsanguination.

Autopsy: Consolidation of left upper and middle lobes
and of rt. upper lobe.

TISSUES FOR SECTION: 1 midbrain; 2 medulla; 5 cervical; 3 Thoracic; 4 lumbar. (Z.A)

HISTOLOGY:

NO POLIO

Rh. 1111

NORMAL GRAY-10% Uncentrifuged
vs. PER virus.

NOV 12 1948

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓
9 ✓
10 ✓
11 ✓

12 ✓
13 ✓

11-26-48

14

Weakness of both lower extremities

11-27-48

15

Partial Paralysis of all extremities, Weak back

SACRIFICED Discarded

Rh. 1132

NORMAL GRAY: 10% Uncentrifugal
vs. PER virus.

NOV 12 1948

- | | |
|----|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |
| 10 | ✓ |
| 11 | ✓ |
| 12 | ✓ |
| 13 | ✓ |

11-28-48

- | | |
|----|--|
| 14 | Partial Paralysis of both lowers, Weak voice |
| 15 | Complete Paralysis of right lower. Partial Paralysis of other 3 extremities
Weakness of voice neck and back.
<u>SACRIFICED</u> Discarded |

Rh. 885X (wa 9/21/48
in [redacted])

NORMAL GRAY-10% Uncentrifuged
vs. PER virus.

NOV 12 1948

- | | |
|----|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |
| 10 | ✓ |
| 11 | ✓ |
| 12 | ✓ |
| 13 | ✓ |

11-26-48

14

Complete Paralysis of both lowers; Part. Par. both uppers.
Weakness of voice neck and back.
SACRIFICED Discarded

Ph. 1112

NORMAL GRAY-70% Centrifuges
vs. PER virus.

NOV 12 1948

0 ✓

1 ✓

2 ✓

3 ✓

4 ✓

5 ✓

6 ✓

7 ✓

8 ✓

9 ✓

11-22-48

10

Tremors of trunk. -

11

Left upper shows weak wrist; awkward both lowers.

11-24-48

12

Partial Paralysis of both lowers and left upper; weakness of right upper, voice neck and back.

11-25-48

13

Complete Paralysis of rt lower. Part. Par other 3 extremities
Weakness of voice neck and back.

SACRIFICED Discarded

Rh. 1113

NORMAL GRAY 10% Centrifuged
US. PER visual

NOV 12 1948

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓

11-19-48

7 very clumsy and awkward. ^(Bilateral) ptosis. nystagmus
8 Excited; nystagmus (horizontal); ptosis (Bilateral); awkward;
keeps head turned to left side.

11-22-48

9 Same plus definite weakness of both lowers.
10 Partial paralysis both lowers; weakness of both uppers;
nystagmus; bilateral ptosis.
11. Partial paralysis all 4 extremities; bilateral ptosis;
and nystagmus
Sacrificed and Discarded

Rh. 901X (used in test) (2/48)

NORMAL GRAY 10% Centrifuged
vs. PER virus.

NOV 12 1948

- | | |
|----|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | |
| 9 | |
| 10 | |

P.M. Pilomotor response - excited
Complete par. left lower; part. par. other 3 extremities.
9 Compl. par. both lowers; partial par. both uppers.
10 Same condition - plus weakness of back.

Sacrificed - Discarded.

Rh. 903X (used 9/21/48
in [redacted] at
J.S.)

NORMAL GRAY 10% Centrifuged
VS. PER VIROS.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓

11-19-48

- 7 Partial Paralysis of all extremities
- 8. Almost compl. par. left lower: part. par. other 3 extremities.
Back weak.

11-22-48

- 9 Compl. par. left lower: partial paralysis other 3 extremities.
- 10. No progression, except back is now weak.
Sacrificed - Discarded

Rh. 1114

NORMAL GRAY-10% ONCE centrifuged

US.

vine

NOV 12 1948

- | | |
|---|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |

11-21-48.

9

Compl. paralysis left upper; partial paralysis Right upper with weakness of both lowers.

11-22-48

10

Compl. paralysis left upper. - Part. par. other 3 extremities. aphonia.

Sacrificed - Discarded. -

Rh. 1115

NORMAL GRAY-10% uncentrifuged

vs. [REDACTED] virus.

NOV 12 1948

- | | |
|----|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |
| 10 | ✓ |
| 11 | ✓ |
| 12 | ✓ |
| 13 | ✓ |
| 14 | ✓ |
| 15 | ✓ |
| 16 | ✓ |
| 17 | ✓ |
| 18 | ✓ |
| 19 | ✓ |
| 20 | ✓ |
| 21 | ✓ |
| 22 | ✓ |
| 23 | ✓ |
| 24 | ✓ |
| 25 | ✓ |
| 26 | ✓ |
| 27 | ✓ |

12-9-48

12-10-48

28

SACRIFICED (chloroform-exsanguination)

AUTOPSY: No gross the
TISSUE FOR SECTION 2 medulla 5 cervical 0 thoracic
and 7 lumbar cord (Z.A.)

HISTOLOGY:

NO POLIO

Ph. 1116

NORMAL GRAY 10% Uncentrifuged

VS.

virus.

NOV 12 1948

0 ✓

1 ✓

2 ✓

3 ✓

4 ✓

5 ✓

thin, no diarrhea

6 ✓

7 ✓

thin, scrawny, General weakness but no focal weakness.

8

Thin; passive; general weakness.

11-21-48

9.

DEAD: Autopsy: Large and small intestine deeply congested, no alterations; no gross bc.

Entire CNS Extremely pulsatous, making selection of tissues very difficult.

TISSUES: Melampus; midbrain; medulla; cervical; Thoracic; Lumbar. (Z.A.).

Histology: Only one segment cervical suitable - ? infilts. of one horn.

Medulla → ? infilts. and early neuronal changes in floor of IV ventricle. - One PV from Melampus.

Review & ABS.

cannot tell neuronal changes in such material

Material is very poor as indicated - autopsy apparently done long after death & poor pieces of cord taken. - Very bad technique - but in the available material there is no evidence of polio.

Try to cut further in on sp. cord

Rh. 947X (used 9/28/48
in [redacted]
head)

NORMAL GRAY 10% Uncentrifuged
US. [redacted] virus.

NOV 12 1948

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓

11-21-48.

9 Compl. paralysis right lower; partial par. left lower.
10 Compl. par. both lowers; part. par. both uppers.
Sacrificed - Discarded.

Rh. 1117

NORMAL GRAY 10% Centrifuged.

US.

virus.

NOV 12 1948

0 ✓

1 ✓

2 ✓

3 ✓

4 ✓

5 ✓

6 ✓

7 ✓

8 ✓

9 ✓

11-22-48

10 ✓

11 ✓

11-24-48

12

Complete Paralysis of both lowers. partial paralysis of both upper.
SACRIFICED Discarded

Rh. 1118

NORMAL GRAY 10% Centrifuged
US. [REDACTED] virus.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓
- 7 ✓

8 Thin; mild diarrhea. -

9 " " "

10. Partial par. of both lowers; weakness of uppers;
weakness of voice.

11-23-48.

11. Almost compl. par. of all 4 Extremities; weakness
of neck voice + back.

Sacrificed and Discarded.

Ph. 1119

NORMAL GRAY 10% Centrifuged
US- [REDACTED] virus.

NOV 12 1948

	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
11-18-48	6	Almost complete paralysis of both lower and upper, Prostrate
	7	Complete Quadriplegia and aphonia.
	8	Quadriplegia; aphonia.
	9	Moribund.
11-22-48	10	<u>DEAD</u> - discarded.

Rh. 946X ^(used 9/25/48)
in [REDACTED] test.

NORMAL GRAY 10% Centrifuged
US. [REDACTED] virus.

NOV 12 1948

- | | |
|---|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |

11-22-48.

10 Partial par. left upper; weakness of other 3 Extremities
11 Almost compl. par. left lower; part. par. of other
3 extremities; weak voice, neck & back.
Sacrificed and Discarded.

Rh. 1120

PER GRAY - uncentrifuged
vs. PER virus.

NOV 12 1948

0

✓ was apparently O.K. at 5:00 pm; but found dead 6:30 p.m. by P. Schless.
Autopsy: hemorrhage in left Thalamus (site of inoculation), and
gross intraventricular hemorrhage.

Rh. 1121

PER GRAY 10% uncentrifuged

US- PER Virus.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓
- 7 ✓
- 8 ✓

9 ? excited.

11-22-48

10 Partial par. all 4 extremities; weakness of back; face is very flushed.

11 Compl. par. of both lowers; almost complete paralysis of both uppers; weak voice, neck and back.

Sacrificed - Discarded.

Rh. 1122

PER GRAY 10% Uncentrifuged
US. PER virus.

NOV 12 1948

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓
9 ✓
10. ✓
11 ✓

11-22-48

11-24-48

11-25-48

12 Partial Paralysis of both lower and left upper; excited, tremors
13 Complete Paralysis of both upper and right lower; Part. Par.
left lower. Weakness of voice neck and back.

SACRIFICED Discarded

Rh. 944X (used 9/28/48 in test) PER GRAY 10% Uncentrifuged

US- PER Virus.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓
- 7 ✓

8 Tremors of head and trunk.

9. Easily exhausted; awkward.

11-22-48.

10 Partial par. both lowers; weakness both uppers.

11. Compl. par. both lowers; weakness both uppers.

Sacrificed - Discarded

Ph. 1123-

PER GRAY 10% Centrifuged
vs. PER Virus.

NOV 12 1948

- | | |
|----|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |
| 10 | ✓ |
| 11 | ✓ |
| 12 | ✓ |
| 13 | ✓ |
| 14 | ✓ |
| 15 | ✓ |
| 16 | ✓ |

11-22-48

11-30-48

- 17 Partial paralysis both lower; uppers O.K.
18 Partial Paralysis of all 4 extremities. Coarse tremors.
Sacrificed - Discarded

Rh-1124-

PER GRAY 10% Centrifuged
vs. PER virus.

NOV 12 1948

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓
10	✓
11	

11-22-48

Compl. par. both lowers. part. par. both uppers;
weak voice, neck; back.

Sacrificed - Discarded.

Ph. 1125

PER GRAY 10% Centrifuged

vs. PER virus.

NOV 12 1948

	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
11-25-48	13	Partial Paralysis of both lowers and right upper; Weakness of left upper.
11-26-48	14	Complete Paralysis of both lowers and right upper; Partial Paralysis of left upper. Weakness of voice neck and back. <u>SACRIFICED</u> Discarded

Rh. 942X ([redacted])

PER GRAY 10% Centrifuged

vs. PER virus.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓
- 7 ✓
- 8 ✓
- 9 ✓
- 10 ✓
- 11 ✓
- 12 ✓
- 13 ✓
- 14 ✓
- 15 ✓
- 16 ✓
- 17 ✓
- 18 ✓
- 19 ✓
- 20 ✓
- 21 ✓
- 22 ✓
- 23 ✓
- 24 ✓
- 25 ✓
- 26 ✓
- 27 ✓

12-10-48

28

SACRIFICED (chloroform - exsanguination)

AUTOPSY: No gross lcs

TISSUE FOR SECTION 2 medulla + cervical 1 thoracic and 3 lumbar end (c.a.)

HISTOLOGY:

NO POLIO

Ph. 1126-

GRAY 10% Uncentrifuged
vs. [redacted] virus.

NOV 12 1948

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓
10	✓
11	✓
12	✓
13	✓
14	✓
15	✓
16	✓
17	✓
18	✓
19	✓
20	✓
21	✓
22	✓
23	✓
24	✓
25	✓
26	✓
27	✓

12-10-48

28

SACRIFICED (chlowform-erysanguination)

AUTOPSY: No gross lbr

TISSUE FOR SECTION 3 medulla 5 cervical 2 thoracic and 3 lumbar cord (2A)

HISTOLOGY:

NO POLIO

Rh. 1127-

GRAY 10% uncentrifuged
vs. [redacted] virus.

NOV 12 1948

- | | |
|----|-----------------|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ mild diarrhea |
| 4 | ✓ " " |
| 5 | ✓ " " |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |
| 10 | ✓ |
| 11 | ✓ |
| 12 | ✓ |
| 13 | ✓ |
| 14 | ✓ |
| 15 | ✓ |
| 16 | ✓ |

11-30-48. 17. Complete paralysis right lower; partial par. left lower.
18. Complete paralysis both lowers; partial par. both uppers.
Sacrificed. Discarded.

Rh. 1128

GRAY 10% Uncentrifuged

US. [REDACTED] VIRUS.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓
- 7 ✓
- 8 ✓
- 9 ✓
- 10 ✓

11 Thin. No diarrhea.

12 " "

13 " "

14 " "

11-27-48

15 Partial Paralysis of left upper and both lowers. Wink right upper.
 16 Quadriplegia; aphonia; moves head and neck OK.
Sacrificed - Discarded.

Ph. 945X (mod abtug)

GRAY 10% Uncentrifuged
US [REDACTED] VIRUS.

NOV 12 1948

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓
10	✓
11	✓
12	✓
13	✓
14	✓
15	✓
16	✓
17	✓
18	✓
19	✓
20	✓
21	✓
22	✓
23	✓
24	✓
25	✓
26	✓
27	✓
28	SACRIFICED (chloroform-exsanguination)

12-10-48

AUTOPSY: No gross the
TISSUE FOR SECTION 2 medulla 4 cervical 2 thoracic
and 4 lumbar cord (Z.A.)

HISTOLOGY:

NO POLIO

Ph. 1129-

GRAY 10% Centrifuged

US.

VIROS

NOV 12 1948

- | | |
|---|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |

10 Disinclined to climb; weakness of both uppers + right lower.
11 Partial paralysis all 4 exts; weak neck; voice; back.
Sacrificed - Discarded

Rh. 1130

GRAY - 10% Centrifuges

VS.

VIRUS.

NOV 12 1948

- | | |
|----|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |
| 10 | ✓ |
| 11 | ✓ |

11-24-48

- | | |
|----|--|
| 12 | coarse tremors. awkwardness of both lowers. |
| 13 | Complete Paralysis of both lowers and left upper
Partial paralysis of right upper. Weak voice neck & back.
<u>SACRIFICED</u> Discarded |

Ph. 1131

GRAY - 10% Centrifuges
US. [REDACTED] VIRUS.

NOV 12 1948

- | | |
|----|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | ✓ |
| 10 | ✓ |
| 11 | ✓ |
| 12 | ✓ |
| 13 | ✓ |
| 14 | ✓ |
| 15 | ✓ |
| 16 | ✓ |
| 17 | ✓ |
| 18 | ✓ |
| 19 | ✓ |
| 20 | ✓ |
| 21 | ✓ |
| 22 | ✓ |
| 23 | ✓ |
| 24 | ✓ |
| 25 | ✓ |
| 26 | ✓ |
| 27 | ✓ |

12-10-48

28 SACRIFICED (chloroform-exsanguination)
AUTOPSY: No gross the
TISSUE FOR SECTION 2 medulla & cervical 2 thoracic
L and lumbar cord (Z.A.)

HISTOLOGY:

NO POLIO

Rh. 887X

used 9/28/48
in [redacted]
Test

GRAY - 10% Centrifuged

vs. [redacted]

VIRUS.

NOV 12 1948

- 0 ✓
- 1 ✓
- 2 ✓
- 3 ✓
- 4 ✓
- 5 ✓
- 6 ✓
- 7 ✓
- 8 ✓
- 9 ✓
- 10 ✓

11-24-48

- 11 Compl. par. left upper; weakness other 3 Extremities.
- 12 Compl par. both lowers and left upper; Part Par. rt. upper.
SACRIFICED Discarded

JAN 9 1949

Antiviral Effect of Nervous Tissue (Gray Spinal Cord)
of Polio Convalescent Monkeys vs. Homologous Strains of Virus

Experiment III

A. Repetition of Test with [REDACTED] Material

Normal Gray - 10% uncentrifuged (pool of 2 monkeys used before)

[REDACTED] Convalescent - " " - pool of 3 monkeys used before.

[REDACTED] Virus - same lot used in previous experiment.

Vial 1 - diluted to 1:400 with saline to yield 1:800 (or estimated 20 PD₅₀) after mixture with equal parts of test suspensions.

Normal Uncentrifuged (10%) - 1.5cc }
[REDACTED] virus (1:400) - 1.5cc } Rhesus 1209, 1210, 1211, 1212, 1213

[REDACTED] Polio Conv. - Uncentrifuged (10%) - 1.5cc }
[REDACTED] + virus (1:400) - 1.5cc } Rhes. 1214, 1215, 1216, 1218, 1219

B. Test of [REDACTED] MATERIAL

Normal Gray - as above

[REDACTED] Convalescent - pool of gray spinal cord of 2 monkeys.

[REDACTED] VIRUS - GEN II (vial 1) used in all neutralization tests and previous titrations
Combined PD₅₀ = 10^{-4.1}. Estimated 20 PD₅₀ = 1:630; ∴ virus used in dilution of 1:315

The centrifugation was carried out as before, i.e. 20 minutes at a 2000 rpm. on horizontal (Intermet.) centrifuge. Supernatant liquid very clear and sediment well packed.

(over)

Normal Uncentrifuged (10%) - 1.5cc }
+ virus (1:315) - 1.5cc } Rhes. 1220, 1221, 1222, 1223, 1224

Polio Conv. - Uncentrif. - 10% - 1.5cc }
+ virus (1:315) - 1.5cc } Rhes. 1225, 1226, 1227, 1228, 1229

Normal Centrifuged - (10%) - 1.5cc }
+ virus (1:315) - 1.5cc } Rhes. 1230, 1231, 1232, 1233, 1234

Polio Conv. - Centrifuged - 1.5cc }
+ virus (1:315) - 1.5cc } Rhes. 1235, 1236, 1237, 1238, 1239

Mixtures prepared 4:30 - 4:45 PM on Jan. 9, 1949
left at room temperature for 1 hour
with occasional shaking of mixtures.
Then in refrigerator (at 5°C) overnight

JAN 10 1949 - Monkeys inoculated between 9 AM - 10:15 AM.
0.5cc intracerebrally into right "thalamic" region

Summary of EXPERIMENT III of JAN 9 1949
Effect of Polio Convalescent Monkey Spinal Cord on Homologous Virus

STRAIN of VIRUS and FINAL CONC. in Mixture	MATERIAL ADDED TO VIRUS	Monkeys INOCULATED	RESULT	
			CLINICAL	HISTOLOGICAL
[REDACTED] (1:800)	NORMAL	1209	P ₈	
		1210	P ₇ D ₁₂	
	UNCENTRIFUGED	1211	P ₁₂	
	"GRAY" CORD	1212 1213	P ₅ , D ₆ P ₉ , D ₉	
[REDACTED]	"Polio" CONV.	1214	P ₉	
		1215	P ₁₀	
	UNCENTRIFUGED	1216	P ₂₃ D ₂₆	
	"GRAY" CORD	1218 1219	P ₈ D ₂₇ O ₃₀	No polio
[REDACTED] (1:630)	NORMAL	1220	P ₁₀	
		1221	P ₇ , D ₉	
	UNCENTRIFUGED	1222	P ₁₀	
	"GRAY" CORD	1223 1224	P ₁₂ D ₂₄ O ₃₀	No polio
[REDACTED]	"Polio" CONV.	1225	P ₂₇ Sac 30	Acute polio
		1226	P ₉ D ₁₂	
	UNCENTRIFUGED	1227	P ₁₀	
	"GRAY" CORD	1228 1229	P ₉ P ₁₀	
[REDACTED]	NORMAL	1230	P ₈ D₁₅	
		1231	O ₃₀	
	CENTRIFUGED	1232	P ₁₁ D ₂₁	
	"GRAY" CORD	1233 1234	P ₆ , D ₇ P ₁₃ , D ₁₅	Non-par. polio
[REDACTED]	"Polio" CONV.	1235	P ₁₁ D ₂₂	
		1236	P ₁₀	
	CENTRIFUGED	1237	P ₁₆	
	"GRAY" CORD	1238 1239	P ₆ O ₂₉	No polio

Rh 1209

[REDACTED] VIRUS (1:400) - ~~1.5cc~~
NORMAL UNCENTRIFUGED (1090) - 1.5cc

JAN 10 1949

0
1
2
3
4
5

✓
✓
✓
✓
✓
✓

6
7
8
9
10
11
12
13
14
15
16

Pilomotor, excited

~~Weak~~ " " ; P.M. - Tremor

Weak, tremor, P.M. - partial paralysis lowers

Paralysis lowers; weak uppers; sits up -; Paralysis left - Partial ~~Right~~ type

Prostrate; P.M. Prostrate

Prostrate

Prostrate

Prostrate

Prostrate

Prostrate

Prostrate

19
20
21
22

"
"
"
"

24
25
26
27
28
29
30

" can hold head up.
" " " " "
" " " " "
" " " " "
" " " " "
" " " " "
" " " " "

Feb. 9, 1949.

Rh 1210

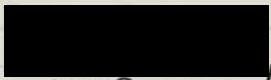
[REDACTED] VIRUS (1:400) - ~~1.5 cc~~
NORMAL UNCENTRIFUGED (1090) - ~~1.5 cc~~

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	
9	
10	
11	
12	

P.M. Partial paralysis left upper; weak lowers
P.M. ; Paralysis left upper; Partial paralysis of lower
Prostrate ; P.M. - Prostrate
Prostrate ; P.M. - Prostrate
Prostrate
Dead

Rh 1211

 VIRUS (1:400) - ~~1.5cc~~
NORMAL + UNCENTRIFUGED (10%) ~~1.5cc~~

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	EXCITED
9	" ; otherwise OK ; P.M. excited
10	excited ; P.M. excited
11	excited, tremor
12	Paralysis of limbs, Paralysis of upper, Prostrate
13	Prostrate
14	Prostrate
15	Prostrate
16	Prostrate
19	"
20	"
21	"
22	"
24	Prostrate.
25	" plus marked head tremor.
26	Same " " " "
27	" " " " "
28	Prostrate.
29	"
30.	"

Rh 1212

[REDACTED] + VIRUS (1:400) - ~~1.5 sec~~
NORMAL UNCENTRIFUGED (10%) - ~~1.5 sec~~

JAN 10 1949

0

✓

1

✓

2

✓

3

✓

4

✓

JAN 15 1949

5

Complete paralysis both uppers, head drop

6

Dead

Rh 1213

 + VIRUS (1:400) - ~~1.5cc~~
NORMAL UNCENTRIFUGED (1090) ~~1.5cc~~

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	Paralysis right upper, partial paralysis left upper + lower
7	Complete paralysis (upper + lower), Prostrate
8	Prostrate
9	Dead

Rh 1214

VIRUS (1:400) - 1.5cc
POLIO CONV. - UNCENT. (10%) - 1.5cc

JAN 10 1949

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓

PYLOMOTOR, EXCITED

PYLOMOTOR, EXCITED

7
8
9 Severe tremor, excited, pylomotor; P.M. Partial paralysis of ~~upper~~
10 Partial paralysis of lower, P.M. Partial of lower
11 Partial paralysis of lower + left upper.
12 Partial of lower + left upper
13 Partial of lower + left upper
14 Partial of lower + left upper
15 Partial paralysis of lower + left upper
16 " "

19 "
20 "
21 "
22 "

24 Same.
25 "
26 "
27 "
28. Same.
29 "
30. Same.

Rh 1215

+ VIRUS (1:400) - ~~1.5~~cc
POLIO CONV. - UNCENTRIFUGED (10%) - ~~1.5~~cc

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓ P.M. - ✓
10	P.Tosis, excited ; P.M. Partial paralysis of left lower
11	Complete paralysis lower left, partial lower right.
12	Complete lower
13	Complete lower
14	Complete lower
15	Complete lower
16	"
19	"
20	"
21	"
22	"
24	Same.
25	Same. -; mild edema both eyelids.
26	Same - no eyelid edema today.
27	"
28	Same.
29	"
30.	"

Rh 1216

VIRUS (1:400) - ~~1.5cc~~
POLIO CONV. - UNCENTRIFUGED (10%) - ~~1.5cc~~

JAN 10 1949

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓
9 ✓
10 ✓
11 ✓
12 ✓
13 ✓
14 ✓
15 ✓
16 ✓
17 ✓
18 ✓
19 ✓

i P.M. ✓
i P.M. ✓

Jan 30

20 ✓
21 OK.
22 OK

23 Paralysis upper & lower extremities - complete
lying down in cage

24 Prostrate

25 " ; Breathing is entirely abdominal.

26 Dead.

Rh 1218

[REDACTED] + VIRUS (1:400) - 1.5cc
POLIO CONV. - UNCENTRIFUGED (10%) - 1.5cc

JAN 10 1949

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓

8 A.M. ✓ P.M. - paralysis lower extremities
9 Paral. lowers: sits up; P.M. sits up, weak upper.
10 Paral. lowers, weak upper; P.M. Paraly in lower
11 Paral lower + weak upper
12 Prostrate
13 Prostrate
14 Prostrate
15 Prostrate
16 Prostrate

19 "
20 " - head OK., eats
21 "
22 " "

24 Prostrate; head OK; ^{but} wrists and forearms have movement.
25 Same.
26 same.
27. Dead.

Rh 1219

VIRUS (1:400) - ~~1.5cc~~
POLIO CONV. - UNCENTRIFUGED (1090) - 1.5cc

JAN 10 1949

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓

9 Pilomotor; P.M. - Pilomotor, excited

10 Pilomotor; P.M. pilomotor

11 Pilomotor

12 Pilomotor

13 Pilomotor

14 Pilomotor

15 Pilomotor

16 Pilomotor

17 O.K.

18 ✓

19 ✓

20 Pilomotor

21 Pilomotor

22 Pilomotor

24 Mild pilomotor response.

25 Same.

26 Same.

27 "

28 O.K. today

29 ✓

FEB. 9, 1949.

30 ✓ Sacrificed - chloroform exsanguination. - Autopsy: no TB.

TISSUES: 3 medulla; 4 cervical; 3 Thoracic; 5 lumbar. (Z.A.)

HISTOLOGY:

NO POLIO.

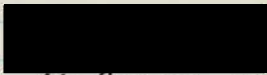
Rh 1220

~~████████~~ + VIRUS (1:315) - ~~1.5cc~~
NORMAL + UNCENTRIFUGED (1090) - ~~1.5cc~~

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	P. Tormentor
7	✓ "
8	EXCITED, PILO MOTOR
9	O.K. ! PM. Excited
10	Slight pilomotor; PM. Paralysis of right lower
11	Complete Paralysis of lower
12	Complete lower
13	Complete lower
14	Complete lower
15	Complete lower
16	Complete lower + Partial right upper
19	"
20	"
21	"
22	"
24	NO Change
25	Same
26	Same.
27	"
28	Same.
29	"
30	Same.

PH 1221

 VIRUS (1:315) - 1.5cc
NORMAL UNCENTRIFUGED (1090) - 1.5cc

JAN 10 1949

- | | |
|---|---|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | |
| 7 | |
| 8 | |
| 9 | |

Alomotor, excited, tremor
tremor (severe), ~~weakness~~ of legs. Partial paralysis
Prostrate
Dead

Rh 1222

[REDACTED] VIRUS (1:315) - 1.5cc
NORMAL UNCENTRIFUGED (1090) - 1.5cc

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	Excited; Pro
9	Severe tremors, excited, pilomotor; P.M. tremors, pilomotor, weak.
10	Partial paralysis of lower + right upper, weak; head chop
11	Prostrate
12	Prostrate
13	Prostrate
14	Prostrate
15	Prostrate
16	Prostrate
19	"
20	"
21	"
22	"
24	Prostrate; can raise head.
25	" " " "
26	Same.
27	Same.
28	Same.
29	"
<u>30</u>	Same.

Rh 1223

[REDACTED] VIRUS (1:315) - 1.5 cc
NORMAL UNCENTRIFUGED (10%) - 1.5 cc

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	Pilomotor
7	Excited
8	Excited, diarrhea, thin
9	Marked pilomotor; P.M. - pilomotor, excited
10	Pilomotor, excited
11	Pilomotor, excited
12	Partial paralysis of lower
13	Partial of lower
14	Partial of lower
15	Partial of lower, excited, pilomotor
16	" "
19	" "
20	" "
21	" "
22	" "
24	DEAD.

Rh 1224

[REDACTED] VIRUS (1:315) - 1.5cc
NORMAL UNCENTRIFUGED (10%) - 1.5cc

JAN 10 1949

0

✓

1

✓

2

✓

3

✓

4

✓

5

✓

6

✓

7

✓

8

Excited - P.M.

9

Slight pilo motor over shoulders; P.M. excited

10

Pilo motor, excited

11

Pilo motor, excited

12

Pilo motor, excited

13

Pilo motor, excited

14

Pilo motor, excited

15

Pilo motor, excited

16

Pilo motor, excited

17

OK

18

✓

19

✓

20

✓

21

O.K.

22

O.K.

24

O.K.

25

✓

26

✓

27

✓

28

✓

29

✓

30

✓ Sacrificed (chloroform - exsanguination). Autopsy: no Tbr.

Feb. 9, 1949.

TISSUES: 2 medulla; 5 cervical; 2 thoracic; 5 lumbar. (Z.A.)

HISTOLOGY:NO POLIO

Ph 1225

VIRUS (1:315)
+ POLIO CONV. - UNCENTRIFUGED (109d)

JAN 10 1949

- | | |
|----|--|
| 0 | ✓ |
| 1 | ✓ |
| 2 | ✓ |
| 3 | ✓ |
| 4 | ✓ |
| 5 | ✓ |
| 6 | ✓ |
| 7 | ✓ |
| 8 | ✓ |
| 9 | Pilomotor; P.M. - pilomotor, excited |
| 10 | Pilomotor |
| 11 | Pilomotor |
| 12 | Pilomotor |
| 13 | " excited |
| 14 | Pilomotor |
| 15 | Pilomotor |
| 16 | Pilomotor |
| 17 | OK |
| 18 | ✓ |
| 19 | ✓ |
| 20 | ✓ |
| 21 | O.K. |
| 22 | O.K. |
| 23 | Marked pilomotor and tremor |
| 24 | Same - plus readily exhausted. |
| 25 | pilomotor; mild tremor; lowers are awkward but not paralyzed; mild edema both eyelids; ? ptosis. |
| 26 | No changes. |
| 27 | <u>Foot drop (left)</u> noted today; very awkward; still has pilomotor response; bilateral ptosis. |
| 28 | No progression of findings. |
| 29 | No progression |
| 30 | NO Change. - <u>Sacrificed</u> (chloroform - asphyxiation) |
- Autopsy: no gross TB.

FEB. 9, 1949

TISSUES (Z.A.): 3 medulla; 5 cervical; 2 thoracic;
5 lumbar.

HISTOLOGY: Foci of recent neuronophagia and PV cuffing, most marked in lumbar cord, but present in cervical, thoracic and medulla. The latter showing considerable PV cuffing; no root degeneration.

DIAGNOSIS: POLIO - Acute^{to} Recent

Rh 1226

[REDACTED] VIRUS (1:315)
L10 CONV. - UNCENTRIFUGED (1090)

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	
9	
10	
11	
12	

Weak, PM.
Partial paralysis uppers & lowers; lies down, prostrate
Prostrate
Prostrate
Dead

Rh 1227

[REDACTED] VIRUS (1:315)
SOLID CONV. - UNCENTRIFUGED (1090)

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓; P.M. ✓
10	Paraly. in lower
11	Partial paraly. in lower
12	Partial of lower
13	Partial of lower
14	Partial of lower
15	Completely lower right, Partial lower left
16	"
19	"
20	"
21	"
22	"
24	Comp. par. rt. lower; part. par. left lower
25	Same
26	Same.
27	"
28	Same.
29	"
30	Same.

Rh 1228

VIRUS (1:315)
SOLID CONV. - UNCENTRIFUGED (1090)

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	Partial paralysis lowers + P.M. - weak upper
10	Complete paralysis of lowers
11	Complete paralysis of lowers
12	Complete lowers
13	Complete lowers
14	Complete lowers
15	Complete lowers
16	"
19	"
20	"
21	"
22	"
24	"
25	Same.
26	Same.
27	"
28.	Same.
29	"
30.	Same.

Rh 1229

+ VIRUS (1:315)

POLIO CONV. - UNCENTRIFUGED

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓; Pm. is
10	Partial analysis of lower, complete part of left upper.
11	Partial lower, complete upper left
12	Partial lower, complete upper left
13	
14	Complete lower, complete upper left
15	Complete lower, complete upper left
16	"
19	"
20	"
21	"
22	"
24	Comp. par. both lowers, ^{complete} left upper.
25	Same.
26	Same
27	Same.
28	Same.
29	"
30	Same.

Rh 1230

[REDACTED] + VIRUS (1:315)
NORMAL CENTRIFUGED (10%)

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	P.M. - Paralysis lower extremities
10	Paralysis lowers ; P.M. - paralysis lower - sit up
11	Paralysis lowers
12	Paralysis lowers
13	Complete lowers
14	Complete lowers
15	Complete lowers
16	"
19	"
20	"
21	"
22	"
24	Compl. par. both lowers.
25	Same
26	Same.
27	same.
28	same.
29	"
30.	"

Rh 1231

[REDACTED] VIRUS (1:315)
NORMAL CENTRIFUGED (1090)

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓; P.m. ✓
10	✓
11	✓
12	waited, tremor
13	✓
14	✓
15	✓
16	✓
17	✓
18	✓
19	✓
20	✓
21	O.K.
22	O.K.
24	✓
25	✓
26	✓
27	✓
28	✓
29	✓
30	✓

Feb. 9, 1949.

Sacrificed - chloroform exsanguination. Autopsy: no T₂.

TISSUES: (Z.A.) 2 medulla; 6 cervical; 2 Thoracic;
5 lumbar segments.

HISTOLOGY: Neuronal outfall; root degeneration; P.V. cuffing, glial nodules - with changes most marked in lumbar cord; particularly dense P.V. cuffing in the medulla.

POLIO- NON-PARALYTIC

Ph 1232

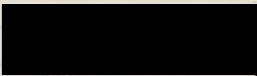
[REDACTED] VIRUS (1:315)
NORMAL CENTRIFUGED (109)

JAN 10 1949

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓
9 ✓; P.M. ✓
10 ✓
11 ✓
12
13
14 Prostata
15 Prostata
16 Prostata
17
18
19 Prostata
20
21 AM: Dead. -

Clumsy + weak lowers P.M. Partial lowers when he runs.
Partial Paralysis in lowers + Rt upper.

Rh 1233

 VIRUS (1:315)
NORMAL CENTRIFUGED (10%)

JAN 10 1949

0
1
2
3
4
5
6
7

✓

✓

✓

✓

✓

✓, thin, sick, diarrhea; sunken eyes, dehydrated)

Partial paralysis right upper; head drop, weak

Dead

Histology - Extensive Polio

13

Rh 1234

[REDACTED] VIRUS (1:315)
NORMAL CENTRIFUGED (1090)

JAN 10 1949

0	✓	
1	✓	
2	✓	
3	✓	
4	✓	
5	✓	
6	✓	
7	✓	
8	✓	
9	✓	✓
10	✓	✓
11	✓	
12	✓	
13		Partial paralysis all extremities - very weak. lies down on floor of cage
14		"
15		Dead

RA 1235

VIRUS (1:315)
L10 CONV. CENTRIFUGED (10%)

JAN 10 1948

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓
10	✓ P.M. ✓ " weak lenses in P.M.
11	Partial Paralysis of lenses
12	Complete lenses, Partial Paralysis of upper
13	
14	Prostrate
15	Prostrate
16	Prostrate
19	"
20	"
21	"
22	Dead

RH 1236

[REDACTED] + VIRUS (1:315)
L10 CONV. CENTRIFUGED (1090)

JAN 10 1949

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓

9 Clammy with lowers 1 P.M. - very weak lowers, ^{lucidity} exhausted
10 Partial paralysis right lower.
11 Partial paralysis right lower
12 Partial paralysis right lower
13 Partial of lower
14 Partial of lower
15 Complete right ~~lower~~, partial left lower
16 " "

19 "
20 "
21 "
22 "

24 Same - (slight movement rt. lower)
25 " " " "
26 Same " " " "
27 " " " "
28 " " " "
29 " " " "
30 " " " "

Ph 1237

+ VIRUS (1:315)
CONV. - CENTRIFUGED (10%)

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	✓
7	✓
8	✓
9	✓; PM. ✓
10	✓
11	excited, Pils motor
12	excited, Pils motor
13	" "
14	excited, Pils motor
15	Pils motor
16	Pils motor; partial left lower, chiefly foot
17	Partial both lowers
18	Paralysis of both lowers - more extensive
19	"
20	"
21	"
22	Same condition + balance excludes...
24	Same - (still has edema O.V.)
25	Same. " " " "
26	Same. " " " "
27	" " " "
28	Same " " " "
29	" (eyes O.K.)
30	" " " "

Rh 1238

+ VIRUS (1:315)
 LIO CONV. - CENTRIFUGED (10%)

JAN 10 1949

0	✓
1	✓
2	✓
3	✓
4	✓
5	✓
6	Tremor, excited, ptosis ✓
7	Excited, Tremor, ptosis
8	Weak, ptosis, Tremor
9	Partial paralysis lowers; R.M. - right lower complete paralysis
10	2nd. Paralysis of right lower; Partial of left lower
11	Complete right lower & partial of left lower
12	Complete right lower & partial of left lower
13	"
14	"
15	"
16	"
19	"
20	"
21	"
22	"
24	Same.
25	Same
26	"
27	"
28	"
29	"
30	"

Rh 1239

VIRUS (1:315)
10 CONV. - CENTRIFUGED (1090)

JAN 10 1949

0 ✓
1 ✓
2 ✓
3 ✓
4 ✓
5 ✓
6 ✓
7 ✓
8 ✓
9 ✓; Pm. ✓
10 ✓
11 ✓
12 Pilomotor
13 O.K.
14 ✓
15 Pilomotor
16 Pilomotor
17 O.K.
18 ✓
19 Pilomotor
20 "
21 Pilomotor
22 "

24 Pilomotor response is pronounced; no weakness.
25 " " " " ; moderately thin.
26 " " " " "

27 Same today. No weakness.
28 " " " " "

FEB. 8, 1949.

29 " " " " — Sacrificed (chloroform-
exsanguination) — NO gross TBC.

TISSUES IN TO Z.A.: — 2 medulla; 5 cervical; 4 lumbar;
1 Thoracic segments.

HISTOLOGY:

NO POLIO.

white; 9; 4 yrs.

Ref. by Clinic at Contagious H.

Adm. 9/5/47. -

	OP Swab	Stool.	CSF cells.	% P.	% L.	(Add. also Pharynx)
9/5	✓	liquid & pasty.	0	0	0	
9/6	✓	✓ Vomiting some particles				
9/7.	✓	✓ liquid stool & solid particles.				
9/8						

Onset: . 7, 9/2/47; perhaps the night 9/1 to 9/2.History: Onset with abdominal ache; malaise; and "slight fever to the touch". No headache or backache.

Same picture continued thru 9/3 + 9/4, and in P.M. of 9/4 pt. vomited several times - + did not eat. - was brought to Contag Hospital OPD evening of 9/4 - seen by Dr. Gilger who rec'd permission from Dr. Stigman to have her come here in the A.M. of 9/5/47. - during the ensuing night she had 2 loose watery green stools - no blood or mucus.

Adm.Exam: - Child volunteers that her throat is sore - pointing her finger into her throat.

No signs of meningeal irritation. - The throat is congested; injected but not edematous, and is free of exudate. - There is no remarkable cervical adenopathy; there is epithelial denudation on dorsum and center of tongue, and a small papillary excrescence on rt. lateral edge of tongue. - NO reflex changes. - Child is rather listless.

Notes: 9/5/47. (P.M.) - Has had two loose watery green stools. To be cultured.

9/6/47. - Generally looking + feeling better; temp. was 100° yesterday and is down today to 98°. - Has pain behind knees - limited from full flexion.

However - Herpes has appeared - on the columella + skin of upper lip, a small vesicle on rt. vermilion border; continued tongue desquamation; red spot in left lower cheek. - Submandibular glands are palpable - but not tender, not very enlarged. I believe this is a secondary herpetic stomatitis. There is no gingivitis.

9/8/47. - (1) Herpetic stomatitis has shown rapid ~~healing~~ ^{but not} complete healing.
(2) had one semi-formed stool today.
(3) "Nissen" sign - can only bend to 6" above knees i.e. resists flexion beyond 45°.

9/9/47. - (1) Yellowish covered ulcers of mouth remain - but no inflammatory reaction around them. - Cutaneous herpes of lip + nostril healing.
(2) Is able to flex completely today - i.e. "Nissen" sign negative.
(3) NO diarrhea. - Dr. M. L. Cooper reports a positive typhoid organism.

9/10/47. - T. 99°; 2 soft stools yesterday. - Stomatitis almost healed.
Nissen sign negative

9/11/47. - Pt. being kept on 3 West ward - being "treated" for a dysentery organism with oral streptomycin under the supervision of Dr. M. L. Cooper.

[Shigella sonnei isolated from bowel.]

Clinic
9/17.

C8F

cells:
2 (mononuclear)

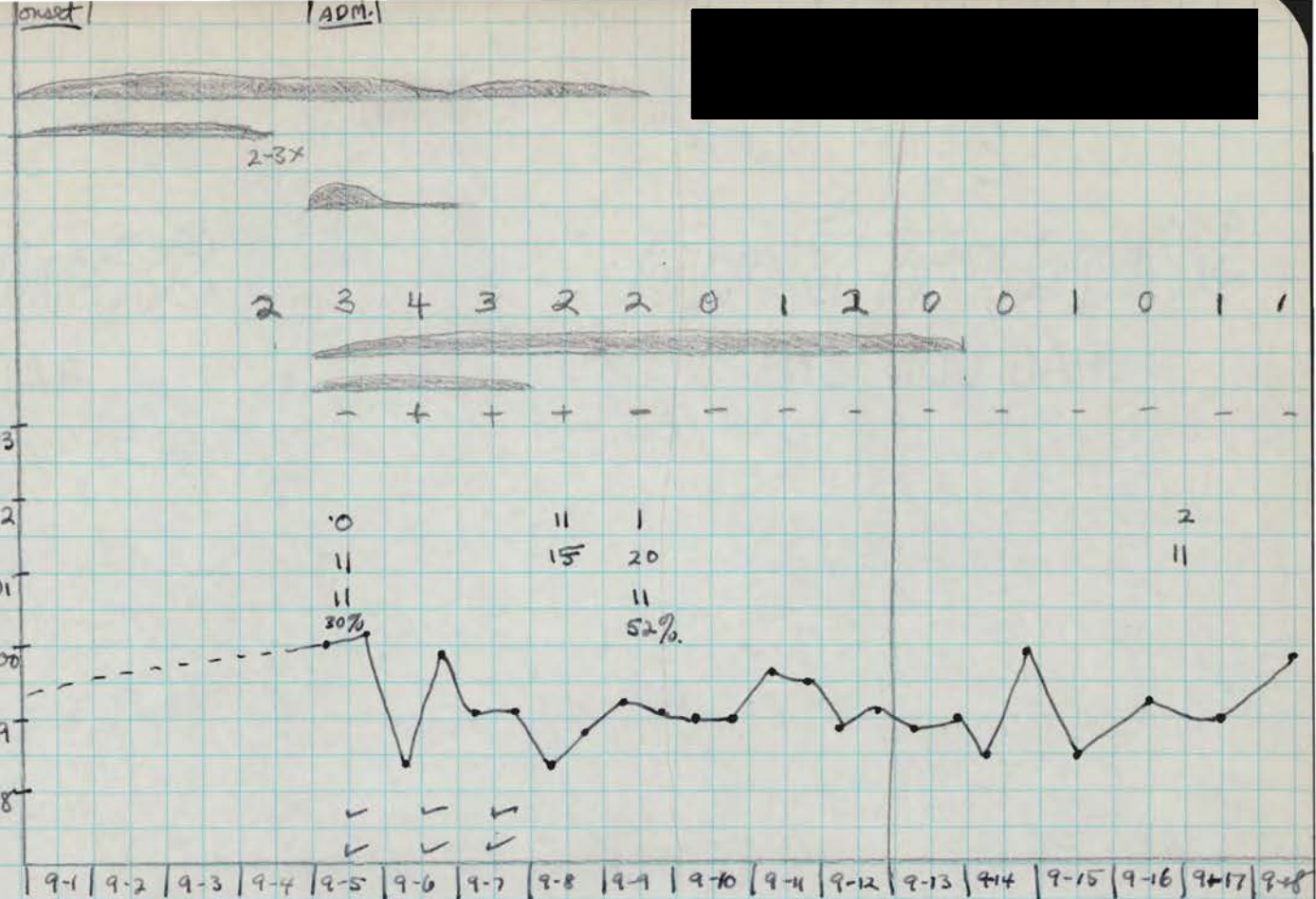
2. protein

Symptoms:
abdominal Pain
Malaise
Vomited
Sore Throat & Mouth.

Signs:-
Stools
Stomatitis
Pharyngitis
Nissen sign.

LAB:
CSF - cells.
mgms protein.
WBC - Thousands.
polys %.

Virus Study:
Stool
Throat Swabs.



9/5/47. Throat Culture: - non-hem. staph. aureus; green staph; non-hem. staph; M. catarrhalis; occ. N. sicca.
9/5/47. Blood Culture: - non-hem. Staph. aureus - coagulase negative (contaminant probably)
9/5/47 - Stool Culture: S. sonnei isolated. (Treated w/ oral streptomycin).
9/6/47 - Urinalysis - Acetone + + +.

JAN 20 1948

3WED

A. Stools.

Estimated Solids 8 gms. } $\pm 3\%$
Liquid Present 300 cc. }

Blended at low speed for one minute.

Portion Refrozen = ± 140 cc. "B" 12-16-48 Discarded

Remainder centrifuged 15 minutes in 100 cc tubes. -

Portion for intranasal use = 40 cc.

Etherization of 150 cc Supernatant & 30 cc ether; shaken 10'; refrigerated.

1-21-48. Shaken 10'; centrifuged 30' on horizontal = 100 c.c.
Culture: ✓✓

JAN 20 1948

B. Pharyngeal Swab Material -

Fluid Expressed + 0.6 cc Buffer #1 = 3.2 cc.

Buffer #2 = 0.6 cc

3.8 cc.

1 cc ether added; shaken 10'; refrigerated overnight.

1-21-48. Centrifuges on horizontal 20 minutes.

3.7 cc.

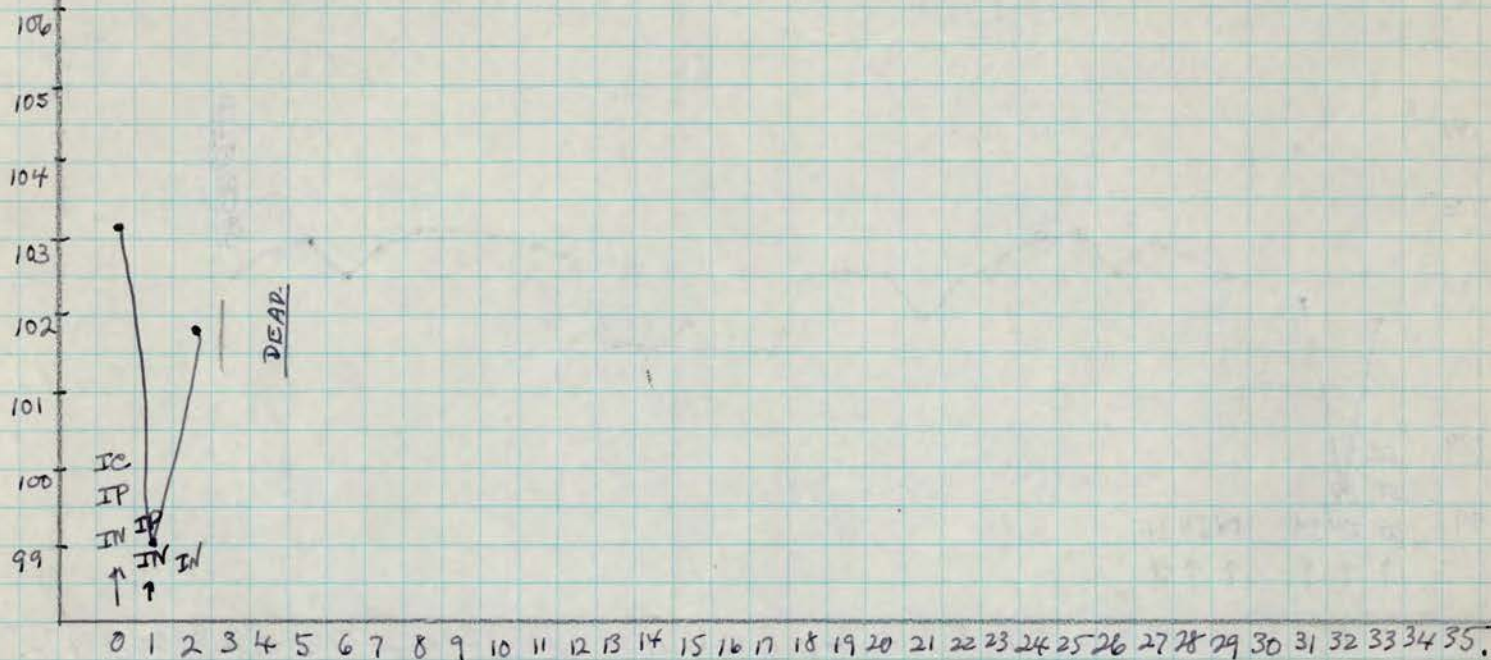
Culture: ✓✓✓

JAN 22 1948

~~Sweet~~

		Culture
Treated pharyngeal swabs	IC.	✓✓✓
Treated stools	IP.	✓✓✓
Untreated stools	IN.	

Rhesus # 102.



1-22-48 - Inoculated 1.5 cc IC; 20 cc IP and 1 cc Each nostril.

1-23-48. T. fell to 99°; no clinical signs of peritonitis; nevertheless 100,000 u of penicillin given IP and IP injection of stool withheld.

1-26-48 - Found Dead. - Seemed OK on 1-25-48.

Autopsy: dry fibrinous peritonitis; scrambled egg type of exudate plastered to left leaf of diaphragm's caudal surface; liver firmly attached to rt. leaf diaphragm; numerous coarse fibrinous attachments between parietal peritoneum and the bowel. -

JAN 22 1948

Rhesus #103-



1-22-48 - Inoculated 1.5 cc IC; 20 cc IP and 1 cc each nostril.

1-23-48, T. fell to 99²; no clinical signs of peritonitis detected; nevertheless 100,000 units penicillin given IP; and IP stool withheld.

2-21-48 - Sacrificed (chloroform - exsanguination) - for histopathology.

Autopsy: Thoracic and abdominal viscera grossly normal.

Tissue for pathology: olfactory bulbs; thalamus; hypothalamus; midbrain; pons; medulla and spinal cord. (Z-A.)

Histology - No Polio

Summer Love Thread
247. MONKEY H

FDL10 - 1947.

МОНЕТЫ

177 570720072.

MK.#.

humans -

Thoracii.

General -

Modula-

Midbrain

Thalamus

Ag. Bulb.

DATE NOTED -

Rh. 103 (AB)

0

6

0

0

0

6

0

0.0

No.

Chart# 58627

Ref. by. Clinic at Contag

Adm. 9/5/47.

Born: 3/25/40

OP Swab.

Stool.

CSF

Cells. % L. % P. -
O (Primary - and ATSS.)9/5/47
9/6/47
9/7/47
9/8/47✓
✓
✓✓ greenish brown;
some sediment
✓ small formed.
✓ small formed

Onset: 9/4/47.

History: The A.M. of 9/4/47 - child was listless + complained of vague abdominal pain as well as left flank pain; she was believed to have fever. - This continued all day + thru the evening. On 9/5/47 - seemed better to appearance - but continued to complain of peri-umbilical pain. - Felt feverish and had mod. severe frontal headache on this day and came to clinic at Contag. - No backache. no pain in extremities or other direct complaints except those of above.

Adm. Exam. T. 101°
Child feels warm + dry but does not look ill; she volunteered that she has frontal headache and that her navel is sore.
CE - Can make out no sign of meningeal irritation. Abdomen not tender. - No rheumatis. - Throat is ~~not~~ rather deeply injected - but there is no exudate.

9/6/47. - Nissen sign - positive - i.e. bending beyond 45° - complaint of pain in back at 45° flexion with complaint of pain adjacent to knees; back cannot be bent beyond 45° angle with thighs.

9/8/47 Nissen - complete flexion possible without complaint. - Throat is entirely normal.

onset ADM. | DISCH.

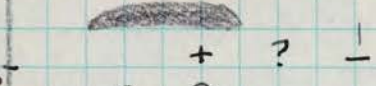
Symptoms:

- Abdominal Pain
- Flank Pain (left)
- Headache
- Listlessness.



Signs:

- Throat-injection.
- "Krisen sign"



LAB. - CSF cells.

103

0

+

?

-

No fluid in CSF

Protein - mg/dl.

10

10

9

6.7

WBC - Thousands.

102

9

33%

Polys %.

101

50%

33%

"Furish"

100

99

Virus Study

98

Stool.

98

Throat Swab

98

9-4 | 9-5 | 9-6 | 9-7 | 9-8

- 9/8 Throat Culture: - Hem. staph. aureus; M. catarrhalis; Gr. Strep; S. albus, Neut. Strep; No pneumo 1-33.
- 9/8 Blood Culture: - Neg. 14 days.
- 9/8 Urine: - Neg.
- 9/5 Stool Cult: - No intest. pathogens.

JAN 20 1948

3 West

A. Stools -

Est. Solids present	52 gms.	} 15%
Liquid present	130 cc.	
Saline Added	240 cc	

Blended at low speed for one minute. -

Portion Refrozen = ± 190 cc. "B" 12-16th Discarded

Remainder centrifuged for 15' in 100 cc tubes. -

Portion for Intranasal use = ± 40 cc.

Etherization of 190 cc. of supernatant with 38.0 cc of ether; shaken for 10 minutes; refrigerated overnight. -

1-21-48 - Shaken 10'; centrifuged 30' on horizontal = 130 c.c.

Culture: * covered with a solid gray-white hemolytic growth; on smear - large β m. + spore forming rods and a few slender β m. neg. rods.

1-22-48 - RE - Etherized with 26.0 cc. -

1-23-48 Am't after centrifugation = ± 90 cc.

Culture: * ± 50 colonies. - 2 types equal.
Smear = 1) large β m. + rods
2) slender β m. rods.

1-24-48 - Re - Etherized with 18.0 cc. ether.

1-25-48 - Am't = ± 80 cc.

Culture: * 6 small colonies (β m. neg. small rods)

1-30-48 - The frozen pooled blend thawed; ± 100 cc removed for treatment prior to inoculation; ± 75 cc of blend refrozen.

JAN 20 1948

B. Pharyngeal Swab Material -

Fluid expressed + 0.6 cc Buffer #1 = 3.2

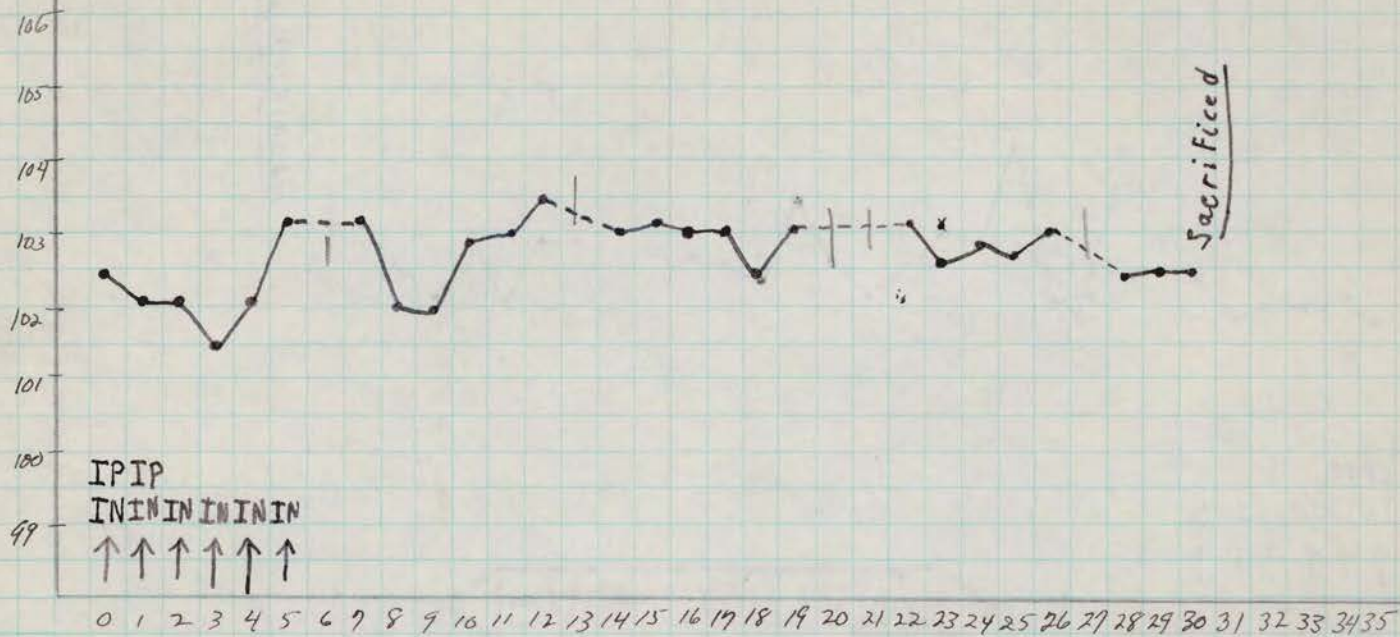
Buffer #2 = 0.6 cc.
3.8 cc.

1 cc Ether Added; shaken 10'; ~~centrifuged~~ refrigerated overnight

1-21-48. Centrifuged on horizontal 20 minutes.
Culture: VVV

West
Second tree

Rhesus # 119



2-2-48. Inoc. 20^{cc} I.P., and 1^{cc} each nostril

3-3-48 Sacrificed (chloroform - exsanguination) for histopathology.

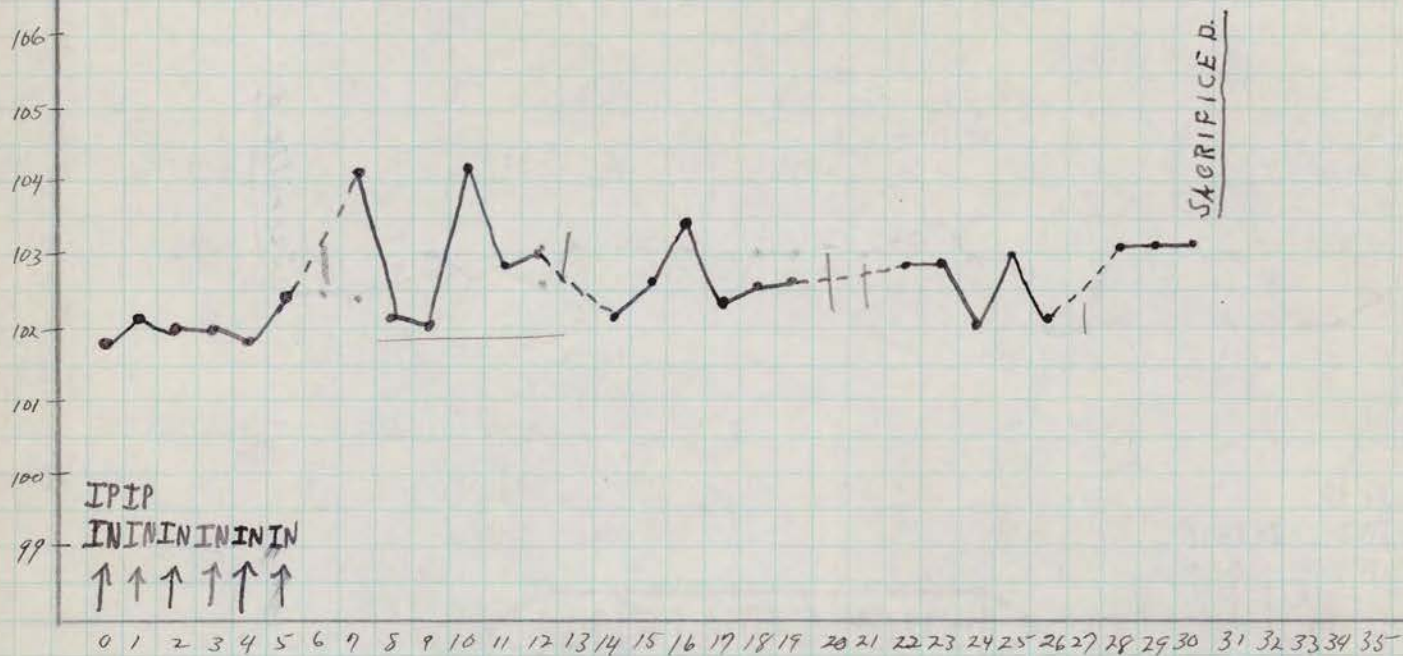
AUTOPSY: No gross tbc.

TISSUE FOR HISTOPATHOLOGY: numerous spinal cord levels; afferent bulbs (1 lacinated); medulla; pons; midbrain; thalamus; hypothalamus. (2-A).

Histology - No Polio

FEB 2 1948

Rhesus #1693 splenectomized



2-2-48 Inoc 20^{cc} I.P., and 1^{cc} each nostrill

3-3-48 Sacrificed (chloroform - exsanguination) for histopathology

AUTOPSY: No gross lbc.

TISSUE FOR HISTOPATHOLOGY: Numerous spinal cord levels; medulla; pons; midbrain; thalamus, & hypothalamus. (Z.A.).

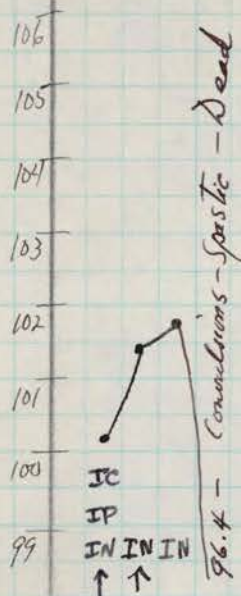
Histology - No Polio

JAN 26 1948

-3 West

Culture
Treated pharyngeal swabs IC. ✓✓✓
Treated stools IP. X 6 small colonies
Untreated stools IX. (8m - rods)

Rh. 1677 - splenectomized.



1-26-48. Inoc. 1.5 cc IC; 20 cc IP together with 100,000 u of penicillin, and 1 cc each nostril.

1-29-48 - At 8:30 A.M. - monkey found to be convulsive + spastic; prostrate shortly thereafter.

11 A.M. - Dead.

Brain - meninges congested - otherwise no evidence of trauma or hemorrhage. Peritoneal cavity clean; lungs OK. No accessory spleen.
Smear - innumerable Gm. positive lancet-shaped diplococci

Culture on BAP - Confluent growth very minute colonies - non-hemolytic. Gm. pos. diplococci

Olfactory bulbs put in 2. A. - look for Polio lesions in mitral cells.

Histology - No Polio

JAN 26 1948

Rhesus # 105 - normal.

106

105

104

103

102

101

100

99

0 1 2 3 4 5 6 7 8 9 10 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

1-26-48. Inoculated 1.5 cc IC; 20 cc IP together with 100,000 units of penicillin and 1 cc each nostril.

1-27-48. Dead: bleeding from both nostrils; tongue clamped tightly between teeth; area of hemorrhage in left basal ganglia - probably (Discussed to ABL) The result of trauma of inoculation. - No peritonitis; spleen prior to Autopsy shows prominent follicular structure; no TB. -

No smear or culture - probably also meningitis

Sumner Lee Hunt

POLIO - 1947 - MONKEY HISTOLOGY.

<u>MK. #</u>	<u>Kamban</u>	<u>Thomasi</u>	<u>Cerebral</u>	<u>Medulla</u>	<u>Midbrain</u>	<u>Thalamus</u>	<u>Hypoth.</u>	<u>Optic Nerves</u>	<u>Brain</u>	<u>Diagnosis</u>
Rh. 1677 (AB)	—	—	—	—	—	—	—	suppurative meningitis.	—	No polio
Rh. 119 (AB)	0	0	0	0	0	0	0	0; 0.	0	No polio.
Rh. 1693 (AB)	0	0	0	0	0	0	0	0; 0.	0	No polio

White; 8; 6 yrs.

CPH - WARD C.C.H. - 3 West.

Chart # 57704

Adm. 9/3/47

Referred from Clinic.

OPSwab

Stool.

CSF Exam. (Dr. Lohley)

cells. % poly. % lymph. Pandey.
4 (3-4) 0 100% neg.

9/3
9/4
9/5
9/6
9/7
9/8
9/9

✓
✓
✓

- clear mucus
discarded.
- clear mucus
discarded.
- clear mucus
discarded.
✓ formed stool.
✓ formed stool.
✓ formed stool.

Onset: 8/30/47.

History 8/30 - Played in the p.m.; took a nap; when he awoke mother said he felt very hot and "had a fever" - (no thermometer reading). - He ate his dinner but complained of headache.

8/31 - Felt "fine" on awaking - but fainted in church, and when taken home had a temp. of 102° F. - Physician called but could not come. - Ate well; slept well; very mild headache.

9/1 - Stayed indoors + seemed very sluggish - but did not seem to have a fever.

9/2 - Entirely O.K.; played outdoors. "Normal in every way".

9/3 - Went to school as planned - and was brought to clinic in the p.m. - only because of a regular appointment for a tetanus shot. - Mother was told child had a temp. - Erasure (99° M.) - and child was to be admitted. -

Adm.
Exam:

T. 102° - child looked ill + toxic.

1) No signs of meningeal irritation.

2) diffuse reddening of oral pharynx, with no exudate; no edema; no raised or depressed areas; sm. ant. nasal crusts.

3) scarletic eruption; looks as if it might have been treated recently. (ill cheeks.)

9/4/47 - T. 99° - Complaining bitterly of pain in back nr. spinal puncture. Throat much better. - Neck supple - back nr. The sp. tap is sore but no meningeal signs. -

9/5/47 - Complaints as above, preventing flexion beyond 90°.

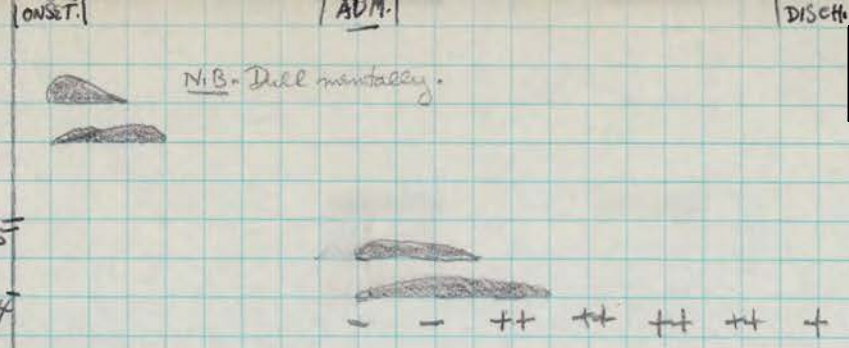
9/6/47 - Walks rather well; but cannot flex any better.

9/8/47 - Walks O.K.; no subjective complaint offered spontaneously, but cannot flex beyond 90° - Temp. up to 100° this morning, and on being propped is 99°.

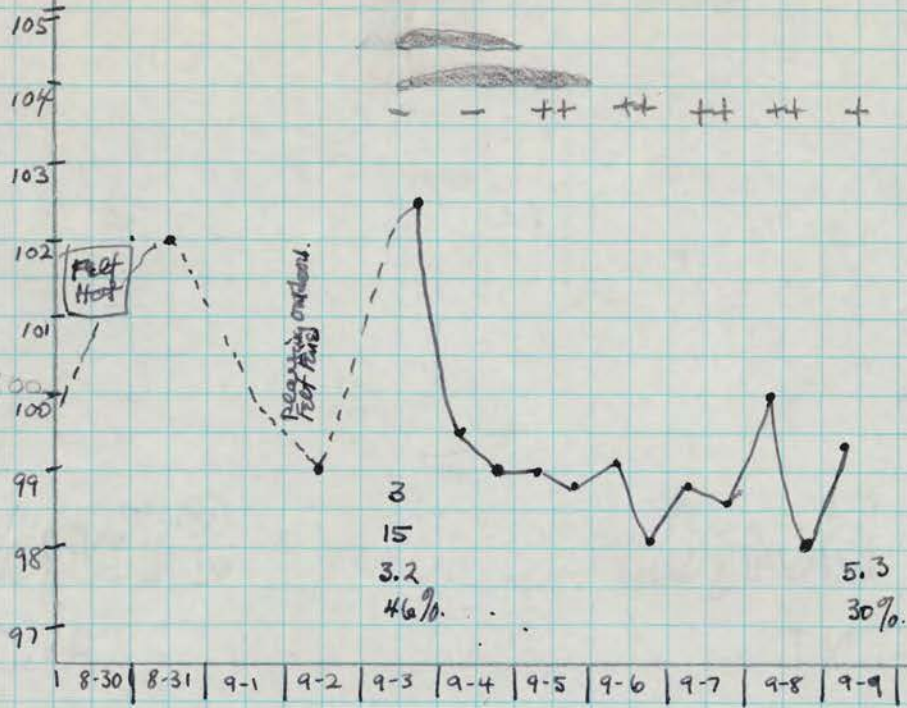
9/9/47 - Can "kiss knees" when flexed but not when extended; on testing "Nissen" he can be flexed to 45° - which is better than yesterday. - To be discharged + have followup serum - 9/27/47 -

Symptoms:-
Headache
Sluggish

Signs:-
Pharyngitis
Rhinitis
Nissan's sign:-



LAB
CSF cells
mgms protein
WBC (thousands)
% polys.



9/4 Throat Culture: Hem. Strep. nonhem. Staph. aureus; hem. Staph. aureus; green Strep. -
M. Catarrhalis - N. P. Sicca -

9/9/47 - Blood Culture: - sterile

9/4/48 Urinalysis - acetone +.

JAN 13 1948

JAN 13 1948

3 West

A. Stool Material.

Solids Present = 183 gms.
Liquid present = 0
Saline Added = 915.00. } 20%

Blended at low speed for one minute.

Portion Refrozen = ± 200 cc. 12-16-48 Discarded

Remainder allowed to settle in 100 cc tubes in refrigerator for one hour.

Portion set aside for intranasal use = ± 35.0 cc.

Etherization of 200 c.c. with 40 cc ether; shaken 10'; refrigerated overnight.

1-14-48. Centrifuged on Horizontal for 30'. — Amount = 140 cc.

Culture: $\times$ 20 small hemolytic colonies + cc spreads at its edge. — Smear = Sm. neg. + Sm + rods.

1-15-48. Re-Etherized with 28.0 cc ether.

1-16-48. Centrifuged 30'. Supernatant = 100 cc

Culture: $\times$ 2 colonies: mucoid small. — Smear: Sm neg. rods

1-17-48. Inoc. to monkeys with penicillin.

JAN 13 1948

B. Pharyngeal Swab Material - { Swabs only
of 9/4/47 and 9/5/47.

Liquid Expressed + 0.8 cc Buffer #1 = 2.4 cc.
Buffer #2 = 0.8 cc.

3.2 cc

1.0 cc Ether Added; shaken 10'; refrigerated overnight.

1-14-48 - Centrifuged on horizontal for 15 minutes.

Culture: x1 col. ? at edge: [? staph. albus].

1-15-48 Re-Etherized with 1.0 cc. ether.

1-16-48. Centrifuged on horizontal for 15 minutes.

Culture: vvv

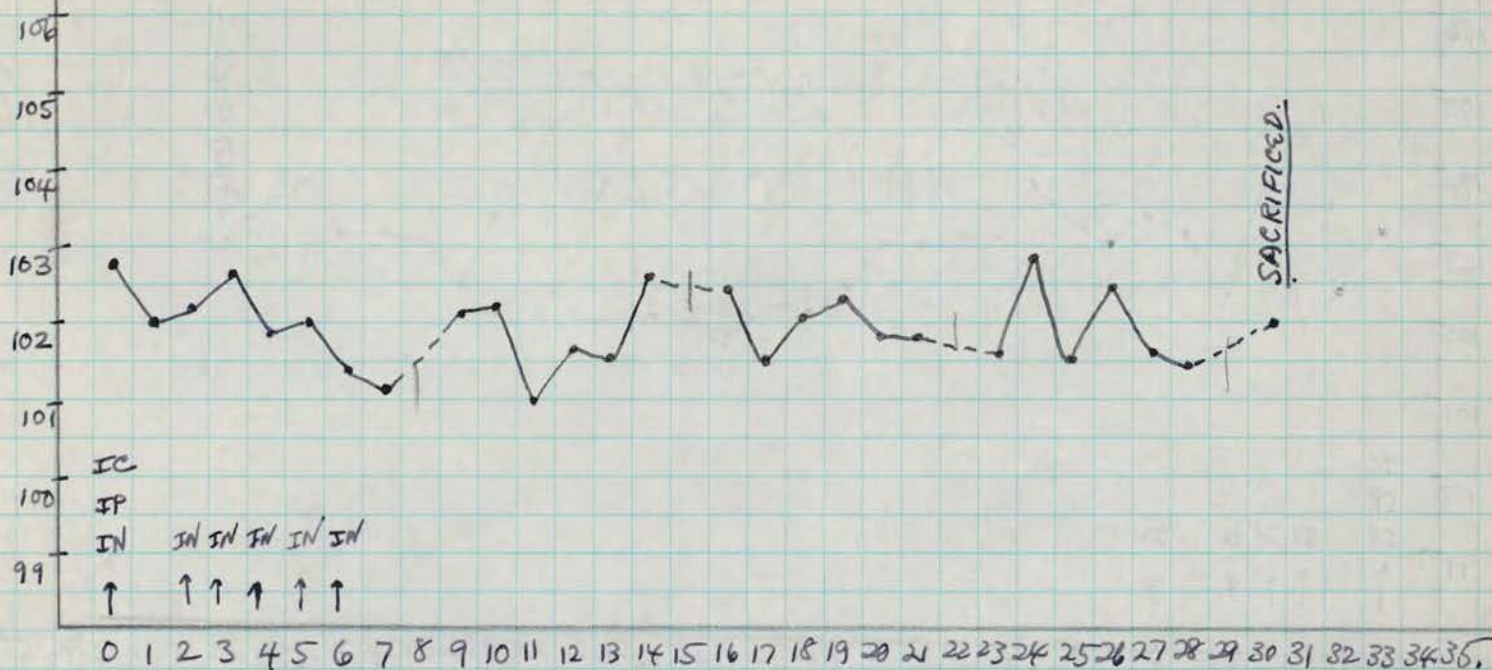
JAN 17 1948

-3wrest

Cust:

-Rhesus #96-

Treated pharyngeal swabs IC
Treated stools IP
Untreated stools IN



1-17-48. Inoculated 1.5 cc IC: 1 cc each nostril; and 20 cc IP together (noon) with 100 mgms. streptomycin with 100,000 u of penicillin.

4:30 p.m. - looks ill; feels warm; given 300,000 u of penicillin in P.O.B. into rt. Thigh.

2-16-48 Sacrificed (chloroform-exsanguination); - Autopsy: no gross TB; gross appearance of Thoracic and abdominal viscera normal.

TISSUE FOR HISTO PATHOLOGY: - olfactory bulb; Thalamus; hypothalamus; midbrain; medulla and spinal cord levels (Z.A.)

Histology - The Polio

JAN 17 1948

-Rhesus #97-



1-17-48. Inoculated 1.5 cc IC; 1 cc each nostril; and 20 cc IP, (noon) together with 100,000 units of penicillin.

4:30 P.M. Seems OK.; but given 300,000 units of penicillin in P.O.B. into rt. thigh.

2-16-48 - Sacrificed (chloroform - exsanguination) for histopathology.

Autopsy: no gross thx; gross appearance of thoracic and abdominal viscera normal.

TISSUE FOR HISTOPATHOLOGY: Thalamus; hypothalamus; midbrain; medulla; spinal cord levels (olfactory bulbs macerated - remnants fixed in Z-A.)

Histology - No Polio

Summer Don Throat
POLIO-1947- - MONKEY HISTOLOGY-

<u>MK.#-</u>	<u>Lumbar-</u>	<u>Thoraci-</u>	<u>Cervical-</u>	<u>Medulla-</u>	<u>Midbrain-</u>	<u>Medulla-</u>	<u>Hypothal.</u>	<u>Cereb. Bulbs-</u>	<u>DORSALS</u>
Rh. 96 (AB)	0	0	0	0	P?	0	0	0:0.	<u>NO.</u>
Rh. 97. (AB)	0	0	0	0	0	0	0	0:0 (Poor)	<u>NO.</u>

Dr. Salim has serial sections.

Serial Sections.

<u>MK.#.</u>	<u>Region-</u>	<u>No. of Slides-</u>	<u>Findings-</u>
Rh. 96	Cereb. Bulbs -	(15)	NEG. (AB)
	Sup. Colliculus	(59)	NEG. (AB)
	Inf. Colliculus	(47)	NEG. (AB)
Rh. 97.	Cereb. Bulbs.	(16)	NEG. (AB)

W; G; Gysb.

Chart #. 58571.

admission 9/2/47.

Dr. D. Jones to Sobri.

	OP Swab	Stool.	CSF. Exam (Dr. Lehey)			
			cells.	Polyp.	Lymphs.	Bandy.
9/3/47.	✓	✓ small formed.	32	65%	35%	NEG.
9/4/47	✓	✓ clear enema discarded				
9/5/47.	✓	✓ no specimen				
9/6/47.		✓ very effective enema & formed stools.				
9/9/47		✓ - effective enema				

Onset: 8/30 - (Drowsy & listless.)

History. - 8/30/47. - Drowsy & listless; Temp. 103°F & soon a complaint of headache, epigastric pain & aching in neck & arms. Was given aspirin.

8/31. - T. 100° - improved somewhat.

9/1 } disinclined to play; a little drowsy.

9/2 } vomited 2x.

9/3/47. - resumption of headache; fever; anorexia; vomited several times. - T. 101°.

Adm. Exam.

on 9/2 by Dr. Lehey

Pronounced meningeal signs; T spine sign. depressed K.T. & mod. injection in both tonsillar pillars.

9/3/47.

Exam. by AS Stigman :- 1) Minor nuchal resistance on full forward flexion.
2) Sm. spot. of injection - each ant. pillar.

9/3/47. - Stigman talked to parents during visiting hours -

a) all of above confirmed.

b) sibling 7 mos. old has been well all summer.

c) Both parents deny any type of illness all of this summer.

9/4/47. - Last night had marked pain & spasm in both thighs & legs.
P.M. Today has minor nuchal resistance and mild back spasm.
- Non-paralytic poliomyelitis seems very likely here.

9/4 - P.M. - T. 99.2 - Very marked spasm of lower back & hamstrings almost to point of "pseudo paralysis" of thighs. - Pain in both thighs anteriorly; suggestive left iliopsoas spasm. Throat O.K. -

9/5 AM. - as yesterday except pain only in left thigh; little if no hamstring stiffness.
suggestive of iliopsoas spasm; especially on the left. Afebrile.
P.M. - Ecchymosis.

9/6. - Walks quite well now (tors-in bilaterally); There is local tenderness just above
left fossa ovalis. - Nissen - cannot be bent beyond 90° angle.

9/8 - Walks + runs well - No signs of meningeal irritation but cannot be bent beyond 90° in
forward flexion in sitting position. - Should be able to go home.

9/9 - Nissen sign unchanged. - To go home + return to Adm. Room for follow-up spinal
tap + blood work, as discussed to Dr. Jones. -

Follow-up Spinal Tap - 9/15/47 - by Dr. Fisher -
cell count quantitative protein

2 monocytes.

13 mgms-%

Sugar
70 mgms-%

chlorides
728 mgms-%
124. + mgms-%

Symptoms

- lrowsy
- listless
- chilliness
- Headache
- Epigastric Ache.
- Pain - Arms + Neck
- Vomiting
- Back Pain + Thigh Aching.

Signs:

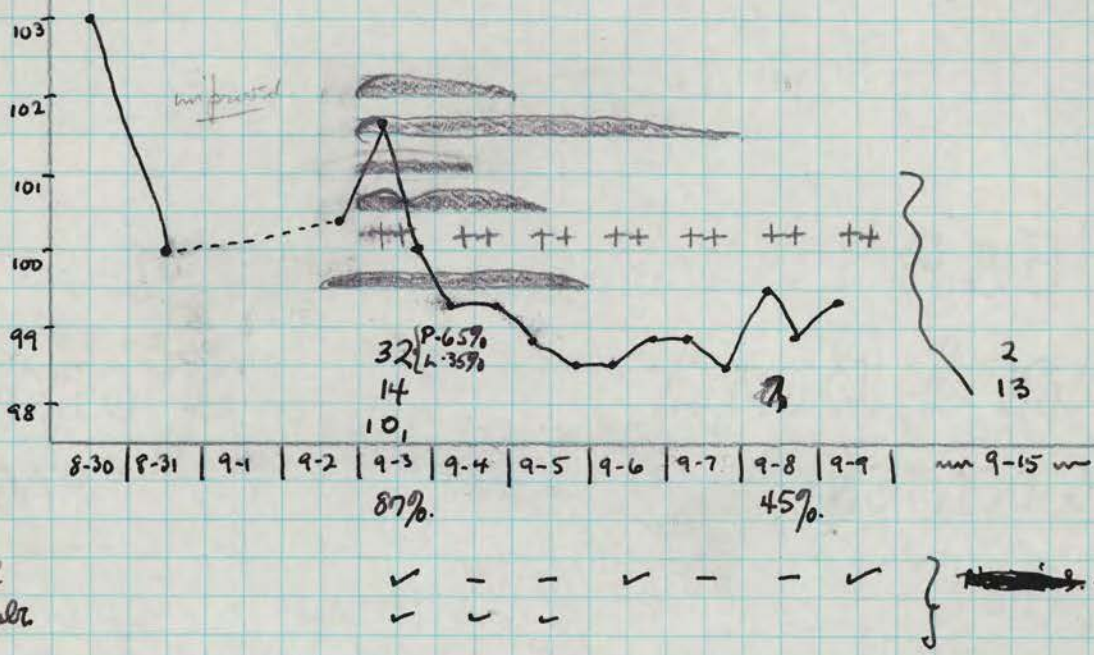
- Neck rigidity
- Spine rigidity.
- Brudzinski
- Haustrick Spasm.
- Nissen Sign
- Tonsil injection

Labr.: C.S.F. cells.
negs protein.
WBC - Thousands

poly. %

Virus Study - Stool
Throat Swab

8/3/47. Throat Cult: - Green strep. freedom; nonhem. Staph. aureus; Pneumo. neg. 1-33.
9/3/47. - Blood Cult: - alcaligenes meta caligenes (contaminant probably.)
9/8/47. - Blood Cult: - Neg.-
9/3/47 - Urinalysis - acetone + + + ; sp. Gr. 1034.



JAN 13 1948

3 West

A. Stool Material -

Solids present -	154 gms.	} 20%
Liquid Present -	160 cc.	
Saline Present -	610 cc.	

Blended at low speed for one minute.

Portion Refrozen = ± 200 cc.

Remainder Allowed to settle in 100 cc tubes in refrigerator for one hour.

Portion Set Aside for Intranasal Use = ± 35 cc.

Etherization of 165 c.c. of suspension with 33 cc ether; shaken 10'; refrigerated overnight.

1-14-48. Centrifuged 30' on horizontal; amt = 135 cc.

Culture: X covered with a hemolytic granular spreader.
Smear $\rightarrow$ Predominantly Gm. + large heavy rods with a few irregularly staining Gm. neg. rods.

1-15-48. Re. Etherized with 17.0 cc ether. -

1-16-48 - Centrifuged 30' - Supernatant = 115 cc.

Culture: X 2 irreg. edged colonies. Smear: = large Gm. + rods.

1-17-48. Inoculated to monkeys with penicillin.

JAN 13 1948

B. Pharyngeal Swab Material -

Liquid Expressed + 1.0 cc Buffer #1 = 2.4 cc.
Buffer #2 = 1.0 cc

3.4 cc.

1.0 cc Stain Added; shaken 10'; refrigerated overnight.

1-14-48 - Centrifuged on horizontal for 15 minutes.
Culture: ✓✓✓

JAN 17 1948

West

Culture

Rhesus #98-

Treated pharyngeal swabs etc.
Treated stools IP
untreated stools IN.



1-17-48. Rec. 1.5 cc IP. 2 cc each nostril and 20 cc IP together with
(room) 100 mgms. streptomycin
100,000 units of penicillin.

4:30 p.m. Cool; looks ill; given 300,000 units penicillin in P. O. Bristo
The rat. Thigh.

2-17-48 - Sacrificed (chloroform - exsanguination) for Histopathology.

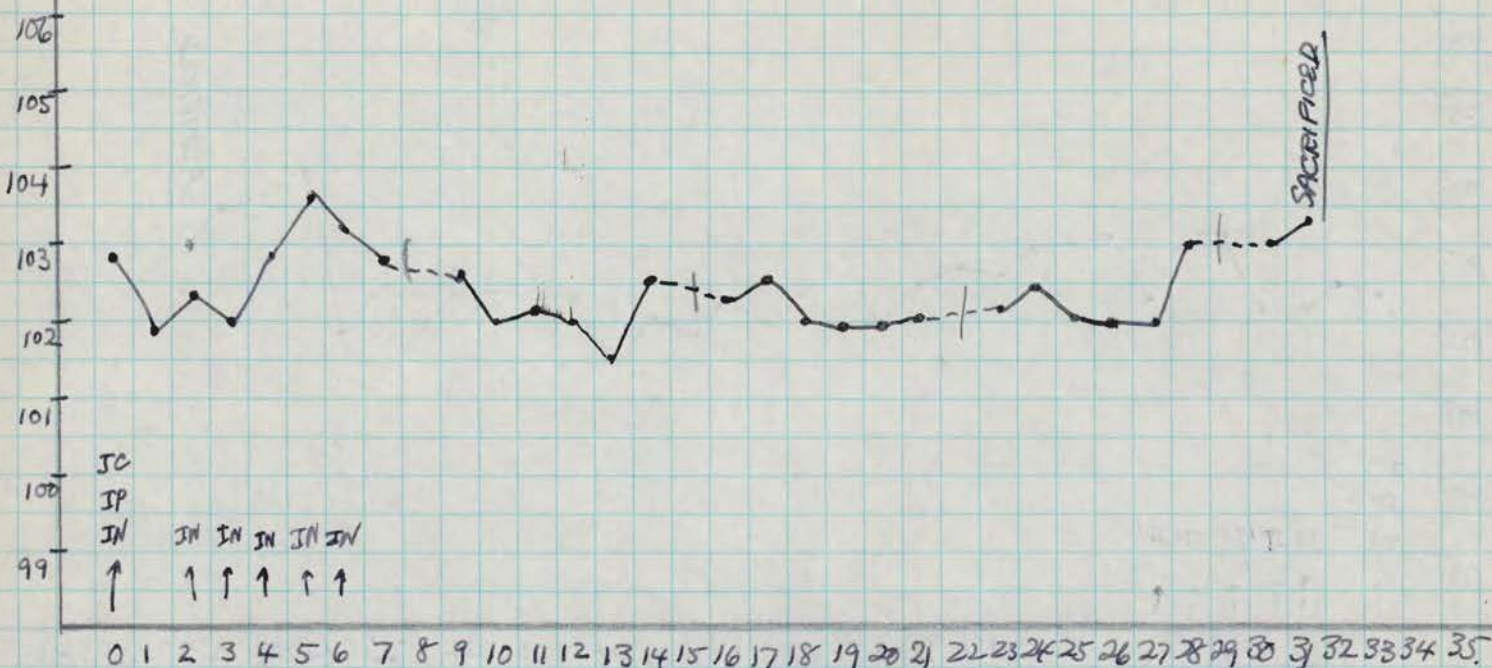
Autopsy - no gross TBO; spleen, liver, kidneys; adrenal; heart grossly ok.

TISSUE FOR HISTOPATHOLOGY: olfactory bulbs; Thalamus; hypothalamus;
midbrain; medulla; cord levels (2-4).

Histology - No Polio

JAN 17 1948

Rhesus #99-



1-17-48 - (noon) - Inoc. 1.5 cc IC; 1 cc each nostril; 20 cc IP together with 100 mgmt streptomycin and 100,000 units of penicillin.

4:30 p.m. - looks ill; feels cool; given 300,000 units of penicillin in P.O.B. into rt. thigh.

2-17-48 - Sacrificed (chloroform-asphyxiation) for histopathology.

Autopsy: thoracic and abdominal viscera grossly O.K.

TISSUE FOR PATHOLOGY: olfactory bulbs; thalamus; hypothalamus; midbrain; medulla; various cord levels. (Z-A).

Histology - No Polio

Summer Low Throat
POLO - 1947 MONKEY HISTOLOGY

<u>MK. #.</u>	<u>Lum Bar.</u>	<u>Thoracic</u>	<u>Cervical</u>	<u>Medulla</u>	<u>Midbrain</u>	<u>Thalamus</u>	<u>Hypothal.</u>	<u>Olf. Bulb.</u>	<u>DIAGNOSIS</u>
Rh. 98 (188)	0	0	0	0	P?	*P?	0	0:0.	<u>NO.</u>
Rh. 99. (189)	0	0	0	0	0	0	0	0:0.	<u>NO.</u>

* Serial Sections → slides #1-73 - Thalamus ~~and Hypothalamus~~

Rh. 98 - NEGATIVE.

Review 8/18/48 - by ABS

Rh. 98 - [serial sections] - NEGATIVE.

Also:- 34 levels of Spinal Cord - neg.

Rh. 99. 29 levels Spinal Cord -

Note: The P? in Thalamus represents a vessel with a unilateral cuff "aggregates!"
likewise the P? for the midbrain