

Dis 1942.



Isho.



5 1/2 yrs: ♀, white.

Chart # A 7595

Admitted: 8/15/47 - 1.45 p.m.

History:- This morning child said she was dizzy and complained of pain in front of and side of the neck. Mother thought child felt warm, so she was taken directly to Dr. Handford, Caldwell who did a spinal tap and then referred child to St. Luke's.

Findings on admission:-

Positive findings:-

- 1) Flushed face
- 2) Small fleck of exudate on left tonsil.
- 3) Very questionable nuchal rigidity if at all.

CSF -

By Dr. Handford 8/15/45 - 65 cells, all lymphocytes.
(Tap not repeated by Dr. McKean.)

Specimens:-

	Bowel	OP Swabs	Blood.
8/15/47	Enema (poor)	✓	✓
8/16/47	Stool	✓	
8/17/47	(Stool)	✓	

Blood Serum - due on

8/29/47

9/12/47.

11/15/47.

Progress Notes:-

8/16/47. - Signs much more definite today. - Nuchal rigidity is distinct; hamstrings are tight; There is deep muscle soreness of calves and of posterior thighs.

8/17/47. - Mod. nuchal rigidity is all that is present. Temp. is coming down. - Eats + feels well; There is still some hamstring stiffness.

8/18/47. - Afebrile; Neck ± rigidity; feels + looks entirely well, no hamstring tightness or tenderness.

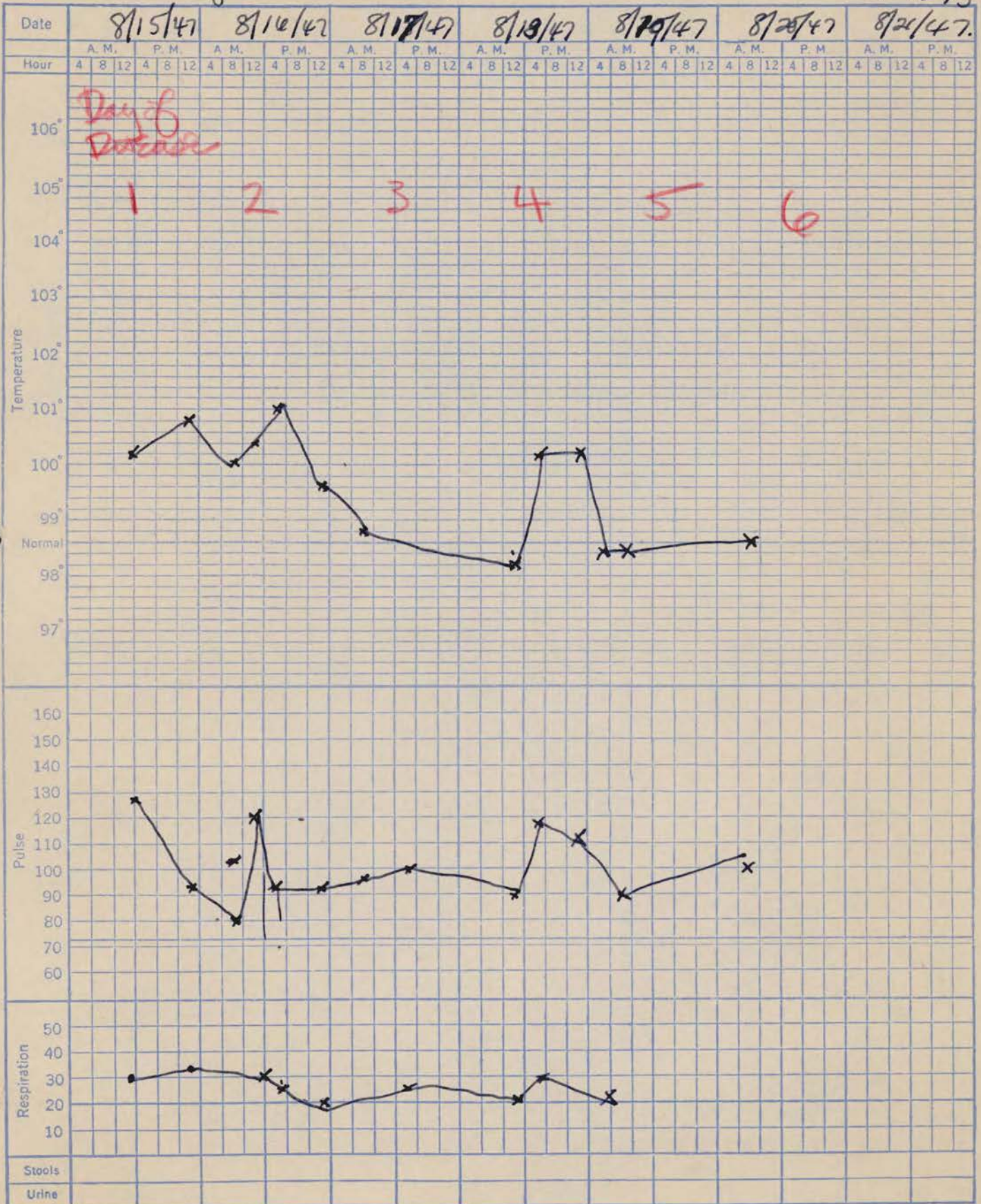
8/19/47. - Seems entirely O.K. today; however Temp. was slightly elevated yesterday afternoon.

8/20/47. - Asymptomatic; free of signs.

ST. LUKE'S HOSPITAL

PHIC CHART

CASE NO. A 7595



JAN 13 1948

A. Stool Material.

Ant Solids Present = 77 gms.
Ant liquid Present = 150 cc.
Ant ~~Added~~ ^{Added} = 235 cc. } 20 %

Blended at low speed for one minute. -

Portion Refrozen = 200 cc. (Box "C")
Remainder Allowed to settle in 100 cc tubes - refrigerator for one hour.

Portion set aside for intranasal use = ± 35.0 cc.

Etherization of 200 cc. of supernatant with 40.0 cc of ether; shaken 10'; refrigerated overnight.

1-14-48. Centrifuged 30'. Supernatant = 145 cc.

Cult: X 7 small colonies; - Smear: large granular sm-rods in long chains; slender sm-rods; sm. + diplococci and sm. + rods.

1-15-48. Re-etherized with 29.0 cc. ether.

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

Culture: X 2 colonies; Smear: coarse sm neg. rods.

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

1-20-48 - Untreated Suspension Frozen (Austroid) } "C"
@ Etherized Stool Frozen (Austroid tube) }

7-20-48 Blended stool thawed and 4.0 cc removed for interference experiment with Samoy Polio. Remainder refrozen "C"

7-22-48 ± 4 cc of etherized stool frozen in one 40 10 cc amp. stored 8-7-9

12-16-48 etherized stool (10 cc vial) of 7-22-48 Discarded

JAN 13 1948

B. Pharyngeal Swab Material-

Liquid Expressed + 0.6 cc Buffer #1 = 3.0 cc -
Buffer #2 = 0.6 cc

3.6 cc

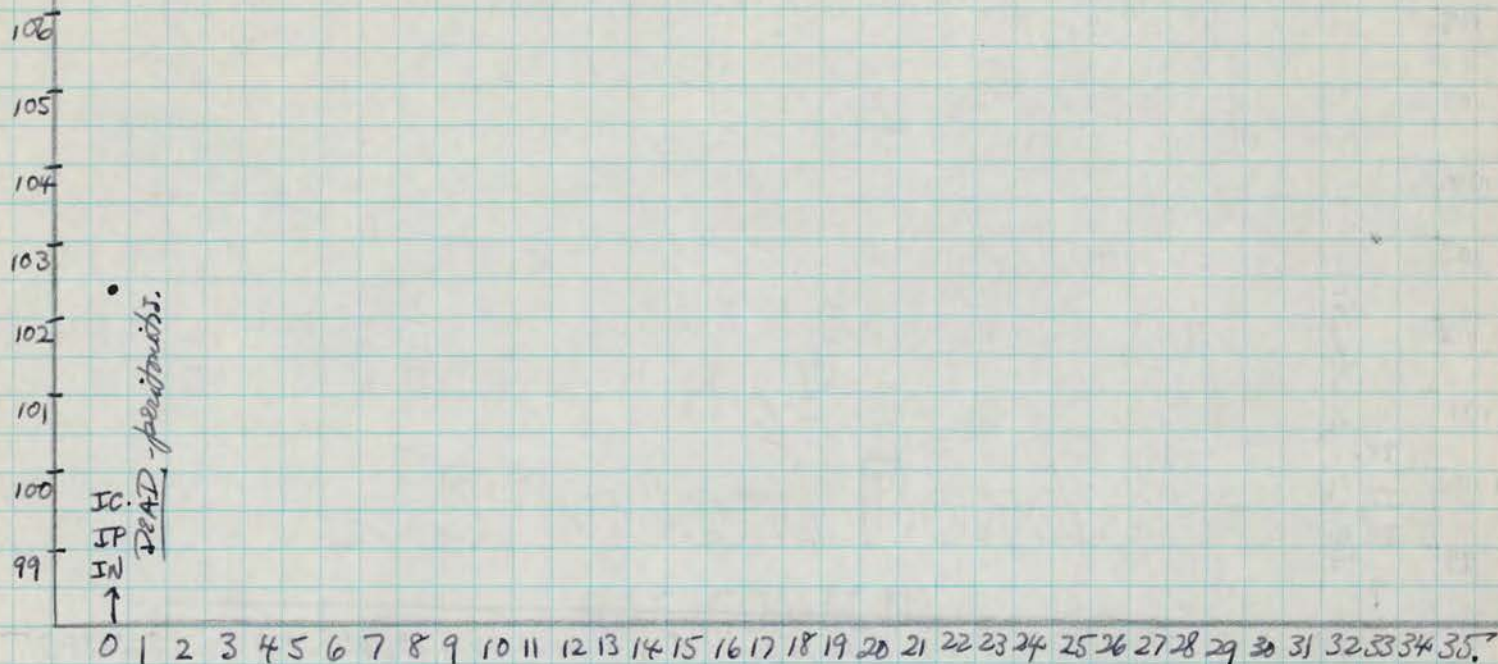
1.0 cc Ether Added; shaken 10'; refrigerated overnight.

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

JAN 17 1948

Treated pharyngeal swabs IC ✓
 Treated stools IP ✗ 2 colonies - unless:
 Untreated stools IN. ✗ coarse sm neg rods

Rhesus # 94-



1-17-48. - Noon. - Gave 1.5 cc IC. 1 cc each nostril; 20 cc IP together with 100,000 units Penicillin IP.

4³⁰ p.m. - Looks moribund; cold; given 300,000 units P.O.B. Penicillin; into rt. Thigh. -

1-18-48 - Dead; peritonitis on autopsy; no TBC; rt. Thigh normal: ± 20 cc peritoneal fluid.

SMEAR: innumerable pus cells with intra- and extracellular large rods - mostly sm. + but some sm. neg. forms. -

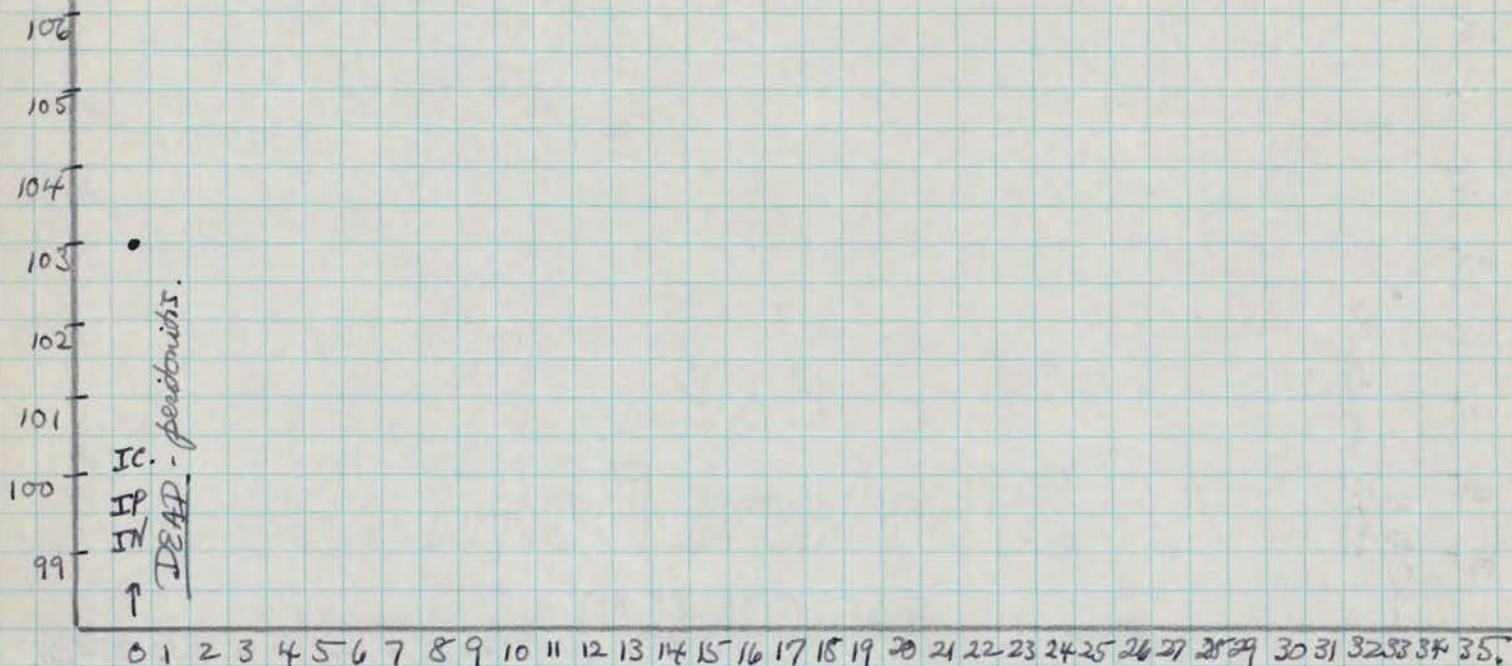
CULTURES: NO colonies. Site of inoc of BAP resembles gray; on (BAP) smear only large sm. + rods are seen. -

Peritoneal Fluid frozen to aa skimmed milk pH=7.0. (B-1-1)

12-16-48 fluid Discarded

JAN 17 1948

Rhesus #95-



1-17-48. - Inoc. 1.5 cc IC: 1 cc each nostril and 20 cc IP together
(NOON) with 100 mgms. streptomycin
with 100,000 units penicillin.

4:30 p.m. Looks ill; feels warm; given 300,000 units penicillin P.O.B.
into rt. thigh.

1-18-48. Dead - Autopsy: Peritonitis - $\pm$ 15 cc turbid fluid. -
No gross TBc; site of penicillin in P.O.B. injection OK

SMEAR: Innumerable pus cells with intra and extra-cellular
large Gram + rods only.

CULTURE: No colonies; inoculum resembles gravy-like
material and shows many large Gram + rods on smear.

Peritoneal fluid frozen with sea skinned milk pH=7.0 (B-1-1)

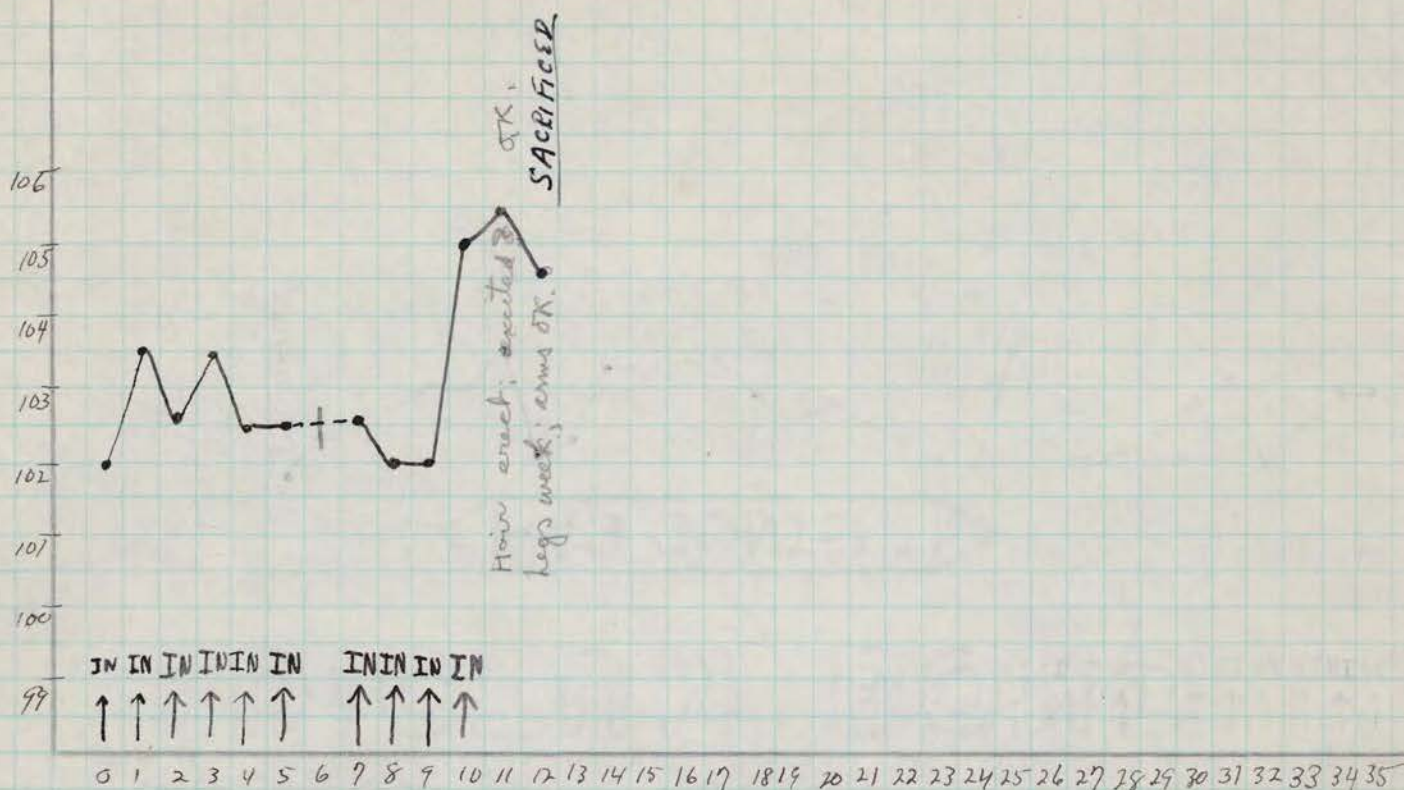
12-16-48 fluid Discarded

JAN 26 1948

SECOND TRIAL

untreated stool - IN. 2 cc/nostril.

Ph. #114-



Feb. 7 - 11:30 A.M. - Temp. 104.3° - very active, eats well, arms strong but legs definitely weak. When allowed out of cage, would not climb off floor and when made to run, exhibited definite partial paralysis of both legs - nothing else.

Killed 11:45 A.M.

Viscera entirely normal.

Z.A. - one level each of lumbar, thoracic and cervical cord, medulla, midbrain, thalamus and hypothalamus.

Frozen - meninges stripped and remainder of entire spinal cord and medulla frozen.

Stored - small freezer d2

2-14-48 - Cord thawed; wt = 5.5 gms.; 24.0 cc saline added to make ± 20% susp. centrifuged; 20 cc frozen in 2 20 cc glass amp. (B-3-7) Cult: ✓✓✓

2-18-48 am 20 cc amp. (designated as NO:1) thawed and 2 cc removed for passage to RL # 132 & RL # 1725. Remainder refrigerated and restored

B-3-7

Histology: **POLIO (acute)**

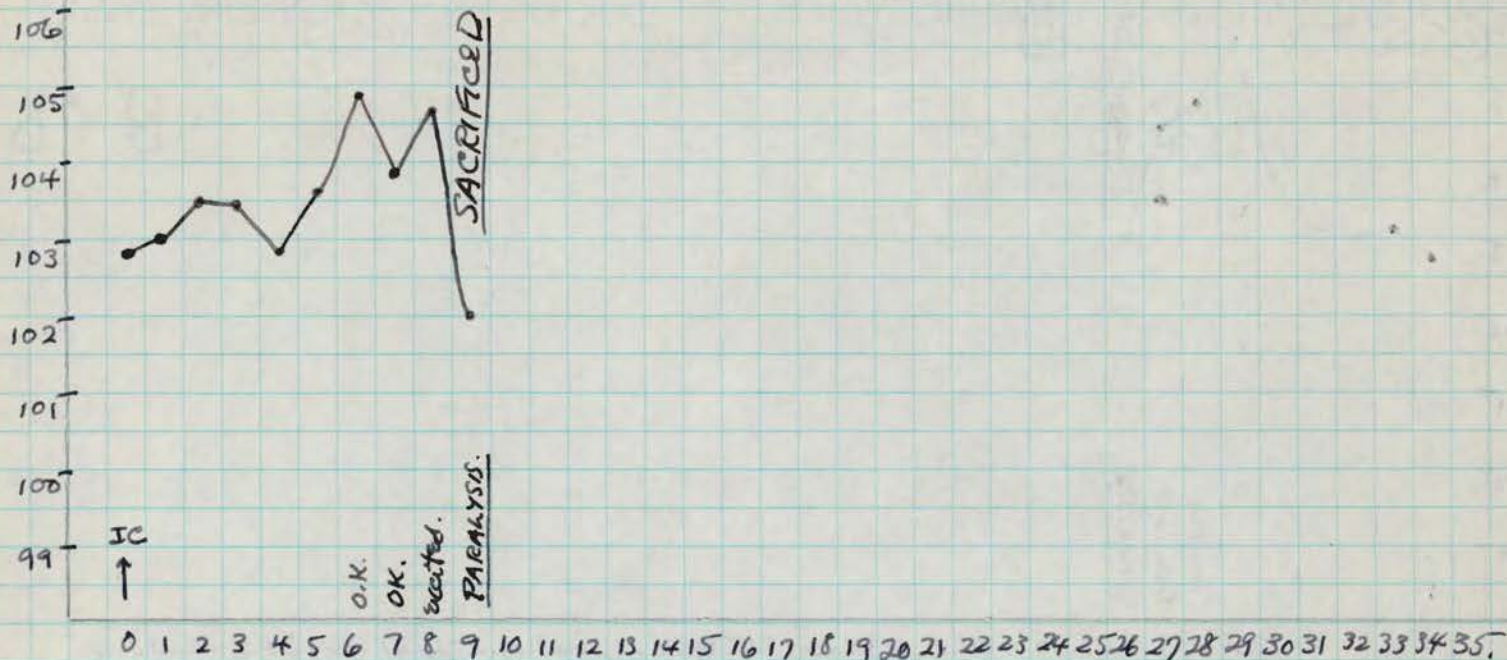


DIAGNOSIS: NO POLIO-

FEB 18 1948

Generation II

Rhesus #132 - normal -



2-18-48. - Inoc. IC with 1.0 cc. of 20% in saline of Dist. virus - gen T.

2-27-48. Paralysis - both lower; otherwise O.K. -

Sacrificed (chloroform-exsanguination) Autopsy: no gross Tbc.

TISSUE FOR SECTION: cervical + lumbar segments. (2-A.)

TISSUE FOR VIROS: cord-midulla pooled with that of Rh. #1725 (see over),

total wt. = 10.7 gms. Made up to 20% susp. in (4.4 cc) sterile saline.

± 37.5% of susp frozen in 4 -20° ampers (designated as vials 1, 2, 3, 4) stored (B-4-2)

Cultured: vvv

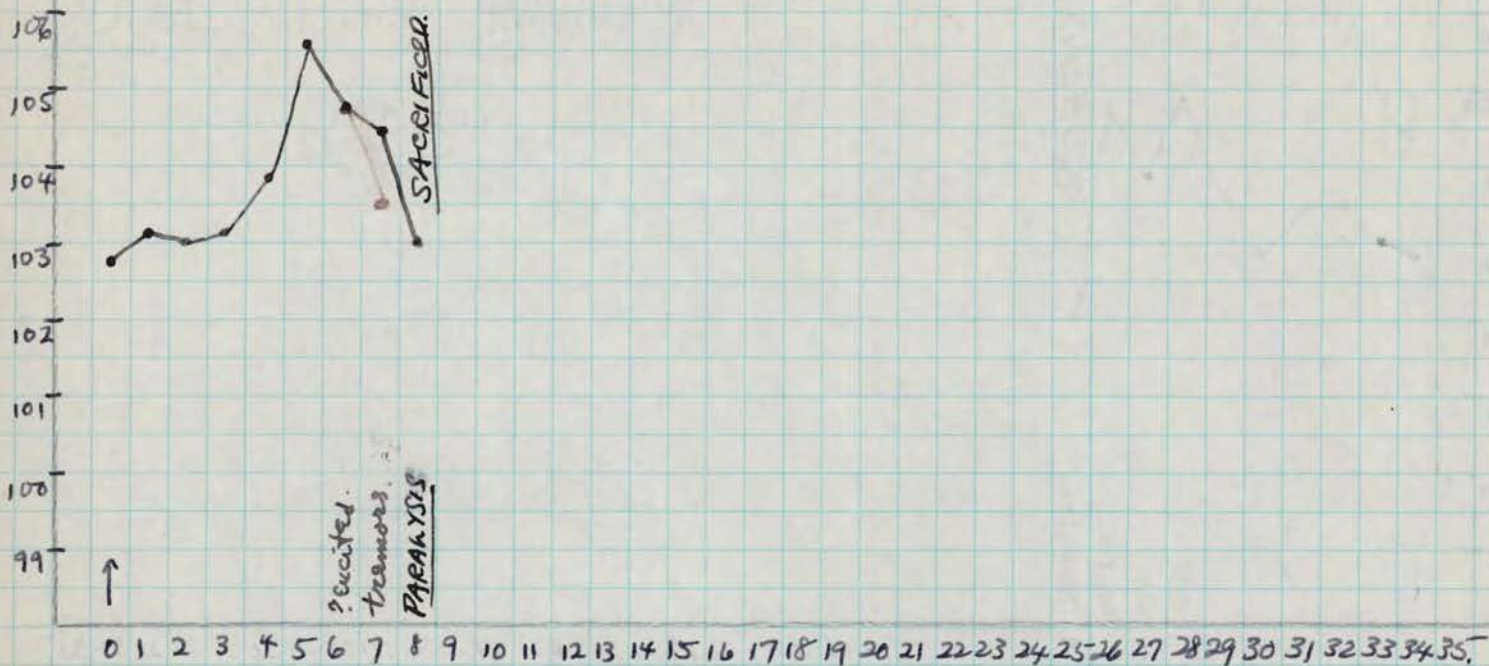
HISTOLOGY

Pathology - POLIO - (acute)

FEB 18 1948

Generation II

Rh. # 1725 - Splenectomized.



2-18-48 - Inj. IC with 1.0 cc of Dent virus - gen. I.

2-26-48 - Complete paralysis both lowers; partial both uppers; cranial nerves appear intact.

Sacrificed (chloroform-exsanguination) - Autopsy: no gross TBC.

TISSUE FOR HISTOPATHOLOGY: Cervical and lumbar cord segments. (Z-A)

TISSUE FOR VIROS: Cord-midulla frozen in isotherm tube. (B-3-8)

Cord Culture: ✓✓

2-27-48. Cord Thawed & pooled with that of Rh. # 132 (see overleaf.)

HISTOLOGY:

POHIO (acute)

Histology: TBC

TRIAL OF 10^{-1} virus in 2 monkeys
(See titration of 10^{-2} , 10^{-3} , 10^{-4} , 10^{-5} done 4/20/48)

5-10-48 Virus Preparation: Vial #2 of 20% in saline Dent Polio virus - Gen II
Thawed; made up as 10^{-1} in saline; kept at room temp. (82°F) for one hour; ice-box overnight for 15 hours; then into ice-bath and inoculated.

MAY 11 1948

Rhesus #425

 10^{-1}

DATE DAY REMARKS.

5-11-48 0

1 ✓

2 ✓

3 ✓

4 ✓

5 ✓

6 ✓

7 ✓

8 ✓

9 ✓

5-21-48 10

11 ✓

12 ✓

13 ✓

14 ✓

15 ✓

16 ✓

17 ✓

18 ✓

19 ✓

20 ✓

21 ✓

JUN 3 1948

22 ✓

23 ✓

24 ✓

25 ✓

26 ✓

27 ✓

28 ✓

29 ✓

30 ✓

31 ✓

JUL 1 ✓

JUL 2 ✓

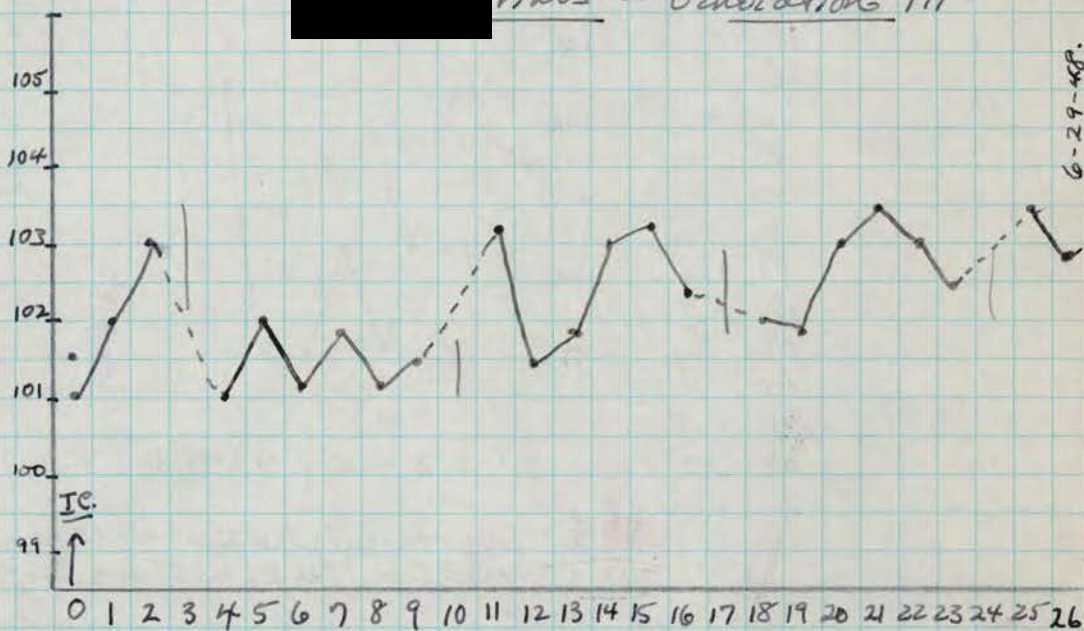
JUL 3 ✓

JUL 4 ✓

JUL 5 ✓

JUL 6 ✓

JUL 7 ✓



JUN 3 1948
JUNE, 3

Inoculated IC with 1.5 cc of 20% (in saline) Dent virus (Gen. II) - amp. #3, directly i.e. without holding at refrigerator temp. overnight.

6-30-48 (27th day) - 103⁴ O.K.7-1-48 (28th day) - 103⁶ O.K.7-2-48 (29th day) - 103⁸ O.K.7-3-48 (30th day) - 103⁴. SACRIFICED: - no gross TSC.

TISSUE FOR SECTION: Thalamus; midbrain; medulla;
2 cervical; Thoracic; Lumbar cord levels (2A)

HISTOLOGY: Above sections show no pathological changes.

DIAGNOSIS: NO POLIO

N.B. Inoc. of Rh. 425 and 426 (overleaf) was carried out in 10^{-1} concentration in the 0.5 cc dose after it became apparent from titration of this strain that it was not very potent. No paralysis has appeared by today, the 23rd day. Since Dent strain virus was the solitary strain recovered from Idaho 1947 polio, an attempt to continue its propagation will be made by inoculating Rh. 425 and Rh. 426 (overleaf) with 1.5 cc of polio virus (Gen II) using an ampoule of virus pool (Amp #3) not used for titration.

MAY 11 1948

POLIO VIRUS (GENTIN)

Rhesus # 426

10⁻¹

DATE DAY REMARKS

5-11-48

0

✓

1

✓

2

✓

3

✓

4

✓

5

✓

6

✓

7

✓

8

✓

9

✓

5-21-48

10

✓

11

✓

12

✓

13

✓

14

✓

15

✓

16

✓

17

✓

18

✓

19

✓

20

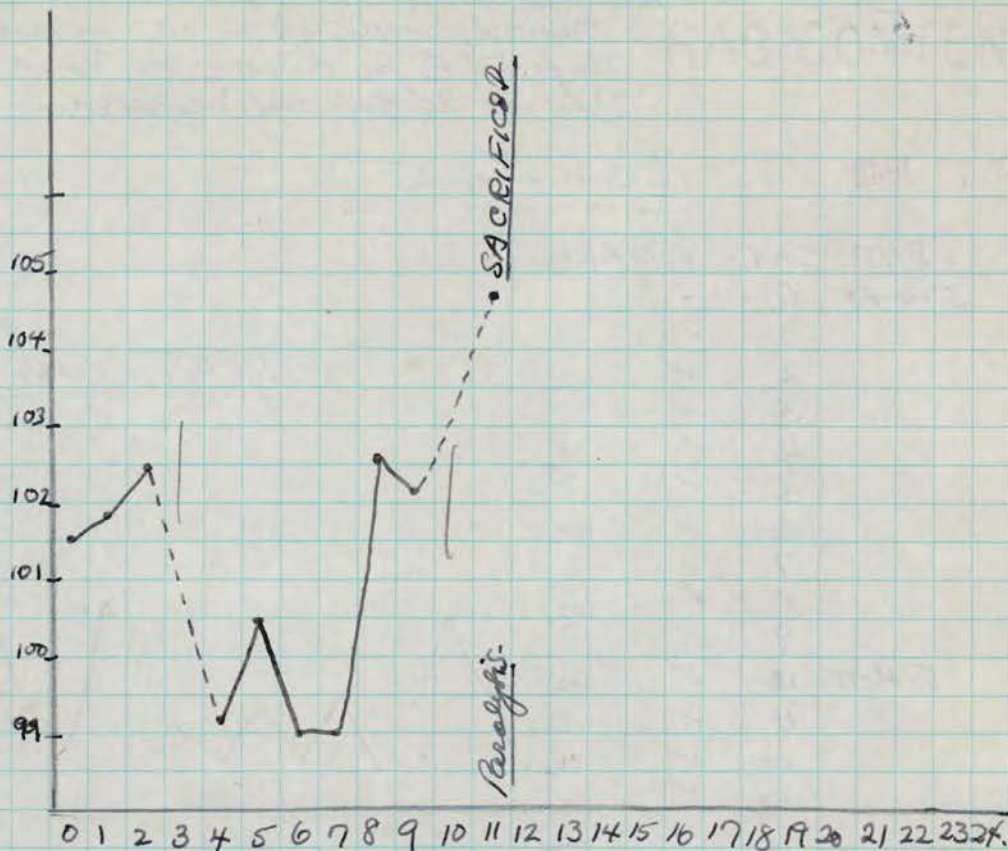
✓

21

✓

22

✓



JUN 3 1948

JUNE 3,

6-14-48-

Inoculated IC with 1.5 cc of Dist Virus (Gent),
amp. #3. - (see Rh. 425 overlay for details.)

Partial paralysis both lowers + left upper;
Sacrificed (chloroform-exsanguination). Autopsy: no gross Tbc.
TISSUE FOR SECTION: single segments of lumbar + cervical cord. (Z-A.)
TISSUE FOR VIRUS: remainder of cord-medulla frozen in acetone. (B-2-7)
Tooth Culture: ✓✓✓

6-24-48 cord & medulla of Rh 426 thawed and made up as a 20%
susp. in (16%) of sterile saline. Weight of cord-medulla = 3.7 gms.
± 13% of susp frozen in one 20% amp and 1-10% amp. Vials #1, 2 (B-2-7)
Culture: ✓✓✓

11-29-48 tissues discarded

TITRATION OF HUMAN POLIO STRAINS

4-19-48.

STRAIN (Gen. ii)

Virus used: strain polio (gen. ii in monkeys) 20% in saline diluted in saline as indicated below.

Monkeys used: 3 splenectomized (in 10^{-2}) + 9 normal rhesus monkeys.

Mixtures used: Dilutions as indicated below, made up in saline. kept at room temp (72°F.) for one hour; then into refrigerator overnight for about 15 hours; then into ice bath during inoculations on 4-20-48.

Inoculum: 0.5cc intracerebrally per monkey.

DILUTION	MONKEY #	FINDINGS		RESULT
		CLINICAL	HISTOLOGY.	
10^{-2}	Rh 1835	○ K.28.	○	0/3
	Rh 1819	○ K.28	○	
	Rh 1836	○ K.28	○	
10^{-3}	Rh 343	○ K.28.	○	0/3
	Rh 344	○ K.28	○	
	Rh 345	○ K.28	○	
10^{-4}	Rh 349	○ K.28	○	0/3
	Rh 350	○ K.28.	○	
	Rh 351	D21 (diarrhea)	○	
10^{-5}	Rh 339	D27 (diarrhea)	○	0/2
	Rh 355	D9	○	
	Rh 356	○ K.28	○	

APR 20 1948

DENT

TITRATION-GENERATION $\frac{11}{11}$

RH. 1835 - Splenectomized

 10^{-2}

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	$T=102^{\frac{2}{3}}$ ✓
	11	✓
	12	✓
	13	$T=102^{\frac{6}{5}}$ ✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓
	20	✓
	21	✓
	22	✓
	23	✓
	24	✓
	25	✓
	26	✓
	27	✓
5-18-48	28	✓

SACRIFICED (chloroform-exsanguination) AUTOPSY: No gross the
TISSUE FOR SECTION Single sections of lumbar, thoracic, cervical
 3-midulla, midbrain, thalamus (2A)

HISTOLOGY: Examination of these levels shows no pathology.

DIAGNOSIS: NO POLIO.

APR 20 1948

TITRATION-GENERATION $\frac{11}{11}$

RH. 1819 - Splenectomized

10⁻²

DATE	DAY	REMARKS
4-20-48	0	✓

1 ✓

2 ✓

3 ✓

4 ✓

5 ✓

6 ✓

7 ✓

8 ✓

9 ✓

10 T = 102⁺ ✓

11 ✓

12 —

13 T = 101[±] ✓

14 ✓

15 ✓

16 ✓

17 ✓

18 ✓

19 ✓

20 ✓

21 ✓

22 ✓

23 ✓

24 ✓

25 ✓

26 ✓

27 ✓

5-18-48

28 ✓

SACRIFICED (chloroform-exsanguination)TISSUE FOR SECTION Single sections of lumbar thoracic

cervical medulla, midbrain, thalamus. (Z.A)

AUTOPSY: No gross ltr. → 4 levels. → 2 levels.HISTOLOGY: Above segments reveal no pathology.DIAGNOSIS: NO POLIO

APR 20 1948

TITRATION-GENERATION

77

RH. 1836

- Splenectomized

10⁻²

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	T=101 ⁻⁸ ✓
	11	✓
	12	✓
	13	T=99 ⁻⁵ ✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓
	20	✓
	21	✓
	22	✓
	23	✓
	24	✓
	25	✓
	26	✓
	27	✓
5-18-48	28	✓

SACRIFICED (chloroform-exsanguination)

TISSUE FOR SECTION Single sections of lumbar, thoracic, cervical
(3) medulla, midbrain, thalamus. (7A)

AUTOPSY: No gross the

(Caudate nucleus)
region.HISTOLOGY: Examination of above sections shows no pathology.DIAGNOSIS: NO POLIO.

APR 20 1948

TITRATION-GENERATION $\overline{17}$

RH. 343

10-3

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓ Severe diarrhea.
	7	✓ " "
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓
5-10-48	20	✓ (Thin, passive)
5-11-48	21	✓ " " Diarrhea
5-12-48	22	✓ " " "
	23	Thin; passive; diarrhea.
	24	seems better today.
	25	" " "
	26	" " "
	27	Thin; has some diarrhea.
5-18-48	28	same SACRIFICED (chloroform-exsanguination) TISSUE FOR SECTION Single sections of lumbar, thoracic cervical, medulla, midbrain, thalamus (2 A) Autopsy: No gross lbc

Histology:

Lumbar Cord; Thoracic Cord; Cervical Cord (1 each) - Negative.
Medulla (2); Medulla-Pons (1); Thalamus 21 - Negative.

Diagnosis: No Polio.

APR 20 1948

RH. 344

TITRATION-GENERATION II

10-3

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓
	20	✓
	21	✓

5-12-48

22

— looks thin; generally weak.

23

" " " "

24

" " " "

25

" " " "

26

" " " "

27

Thin; has some diarrhea.

5-18-48

28

Same. SACRIFICED (chloroform-exsanguination)

TISSUE FOR SECTIONSingle sections of lumbar thoracic,
cervical medulla midbrain thalamus (2 A)AUTOPSY: No gross lvs

(medulla - 3 levels)

Histology: Two single sections examined - no pathological findings.DIAGNOSIS:NO POLIO.

APR 20 1948

TITRATION-GENERATION $\frac{11}{11}$

RH. 545

10⁻³

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓
	20	✓
5-11-48	21	✓ thin; passive
5-12-48	22	✓ " "
	23	" "
	24	" " ; diarrhea
	25	" " "
	26	" " "
	27	" " "
5-18-48	28	

SACRIFICED (chloroform-exsanguination)TISSUE FOR SECTION Single sections of lumbar, thoracic
cervical⁽²⁾, medulla midbrain, ^{pons & medulla} ~~thalamus~~ (2A)AUTOPSY: No gross lbcHISTOLOGY:

Above sections reveal no pathology.

DIAGNOSIS: NO POLIO

APR 20 1948

TITRATION-GENERATION $\overline{ii}$

RE. 349

10-04

DATE	DAY	REMARKS
4-20-48	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	✓
5-18-48	28	✓

SACRIFICED (chloroform-lissanguination)TISSUE FOR SECTION Single sections of lumbar, thoracic, cervical
(2) medulla, midbrain, thalamus (2A)AUTOPSY: No gross ltrHISTOLOGY:

These sections show no pathology. —

DIAGNOSIS: NO POLIO.

APR 20 1948

TITRATION-GENERATION $\frac{11}{11}$

RH. 350

10-4

DATE	DAY	REMARKS
4-20-48	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	mild diarrhea
5-18-48	28	"

SACRIFICED (chloroform-exsanguination)
TISSUE FOR SECTION ⁽²⁾ Single sections of lumbar
⁽³⁾ (1) thoracic, cervical, medulla, midbrain, thalamus
AUTOPSY: No gross etc (2A)

HISTOLOGY: Above sections show no pathology.

DIAGNOSIS: NO POLIO.

APR 20 1948

TITRATION-GENERATION

11

RH. 351

10-4

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓
	15	✓
	16	✓
	17	✓
	18.	Very thin; generally apathetic and weak.
	19	unchanged.
	20	"
	21	DEAD A.M. -

Autopsy: No gross thoracic or abdominal pathology. No evidence of cervical vertebral fracture. No gross th

TISSUE FOR SECTION: Thalamus, hypothalamus, midbrain, pons, medulla, cord, levels (I-A) ? poor fixation
(CNS tissue very soft, difficult to trim).

Histology: - slides almost worthless; roots of the spinal cord sections are well fixed and stained but the remainder of materials are hardly suitable for examination. - There is Midbrain-pons (1); medulla (2); cervical cord (4); Thoracic (4); lumbar (2) - no root changes; no perivascular foci seen.

DIAGNOSIS(!): NO POLIO

APR 20 1948

TITRATION-GENERATION II

RH. 339

10⁻⁵

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	X
	13	✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓
	20	✓
5-11-48	21	✓ Looks thin, generally weak. Passive.
5-12-48	22	Diarrhea. Same.
	23	" " " "
	24	" " " "
	25	" " " "
	26	Very weak, will not eat.
5-17-48	27	DEAD: Autopsy: no gross TBC.

TISSUE FOR PATHOLOGY: lumbar, cervical and thoracic segments; medulla; Thalamus (2A)
(When trimmed - no cervical cord). -

HISTOLOGY:

Examination of slides shows no pathological changes.

DIAGNOSIS: NO POLIO

APR 20 1948

TITRATION-GENERATION

11

RH. 355

10⁻⁵

DATE	DAY	REMARKS
4-20-48	0	✓
	1	✓
	2	General weakness, thin, passive. Looks sickly.
	3	Same. $T=100.5$
	4	" $T=101.2$
	5	Apnoeic; abdomen sl. distended; no diarrhea noted.
	6	$T=101.4$ - Abd. not distended today. Weakness continues.
	7	$T=101.8$ Same.
	8	$T=$ below 94° ! Very thin, passive, weak.
	9	Found <u>DEAD</u> in a.m.

Autopsy: Thorax, abdomen negative grossly. Trachea, and pharynx neg. grossly. No evidence of cervical vertebrae fracture.

TISSUE FOR SECTION: Hypothalamus, thalamus, midbrain, pons, medulla, cord levels. Myocardium. (Z-A)

HISTOLOGY:

Examination of slides shows no pathological changes.

DIAGNOSIS: NO POLIO.

APR 20 1948

TRATION-GENERATION

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RH. 356

10-5

DATE DAY REMARKS

4-20-48

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SACRIFICED (chloroform-exsanguination)TISSUE FOR SECTION Single sections of lumbar, thoracic
cervical medulla midbrain thalamus (Z A)AUTOPSY: No gross ltrHistology: lumbar cord (1); Thoracic (2); Cervical (2); Medulla (3);
Midbrain (1); Thalamus (1) - all negative.DIAGNOSIS: No polio.