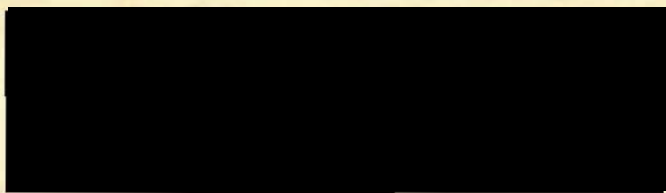


Polio-1947.



Akron.



8/24/47

Poli~~o~~

1947.

Children's Hospital

White; F; 36 yrs.

Admitted - 8/22/47.

Onset: - 8/21/47. -

HISTORY:

c.e. Fatigue: "soreness of neck + forearms"

On 8/21/47 pt. felt very tired and had anorexia. Napped but awoke feeling "stiff" in neck, and some soreness of forearms.

On morning of 8/22/47 she still felt very tired and felt as though she were twitching in the neck, shoulders, arms + fingers, altho no actual twitching was observed. - The stiff neck continued and the Temp. was 100° (oral.) - - Otherwise, no other symptoms presented.

Admission Exam. Temp. 102°.

Mod. nuchal spasm; and mod. low-back spasm, but nothing else noted.

<u>CSF:</u>	8/22/47	WBC	Polys.	L.
	(at Akron City H.)	116	75%	25%

NOTES:

8/23 - Nuchal + low-back spasm continue. Temp. 101°.

8/24 - Blood; OP swabs taken; ~~Temp. 101°~~ Temp. 101°; stools/enema ordered.

8/25 - Temp. 99°; continues to have general muscular aching + low back pain.

8/26 - Temp. 98.2° - feeling very much better; still has lumbar back pain. - Mild nuchal rigidity.

8/27 - Temp. 99.4° - Feels entirely O.K. -

8/28 - Temp. 99° - O.K. says there is pain between shoulder blades on neck flexion.

8/29 - T. 99.8° - Entirely O.K. to exam.

8/30 - T. 98.8° - Neg. to exam.

	OP Swab	Stool
8/24	✓	✓
8/25	✓	✓ ✓ clear mucus (2) ✓ brown tinged.
8/26	✓	✓

DEC 29 1947

A - Stool Material -

Amst. Solabhasant	4.7 gms.
Amst. of liquid "	35 cc.
Amst. Dist. H ₂ O added	200 cc. (20%)

Blended at low speed for one minute.

Refrigerated Blend — ± 130 cc. (80°C)

Remainder of Blend allowed to settle in refrigerator for one hour -

"Supernatant" removed for vitranal use ± 25 cc.

Etherization of 75.0 cc of suspension with 15.0 cc of ether; shaken for 10 minutes; refrigerated.

12/30/47. - Centrifuged 20 minutes - middle layer pipetted = 60.0 cc.

Culture: X heavily contaminated + covered to a spreader.

200,000 units penicillin added to 40.0 cc of the stool suspension, then cultured after 15 minutes

Culture: - X as above with ± 50 col. of sm. neg. rods, not covered to a spreader.

DEC 29 1947

B. Pharyngeal Swab Material -

Fluid Expressed	2.1 cc
Dist. Water Added	1.9 cc.
	<hr/>
	4.0 cc

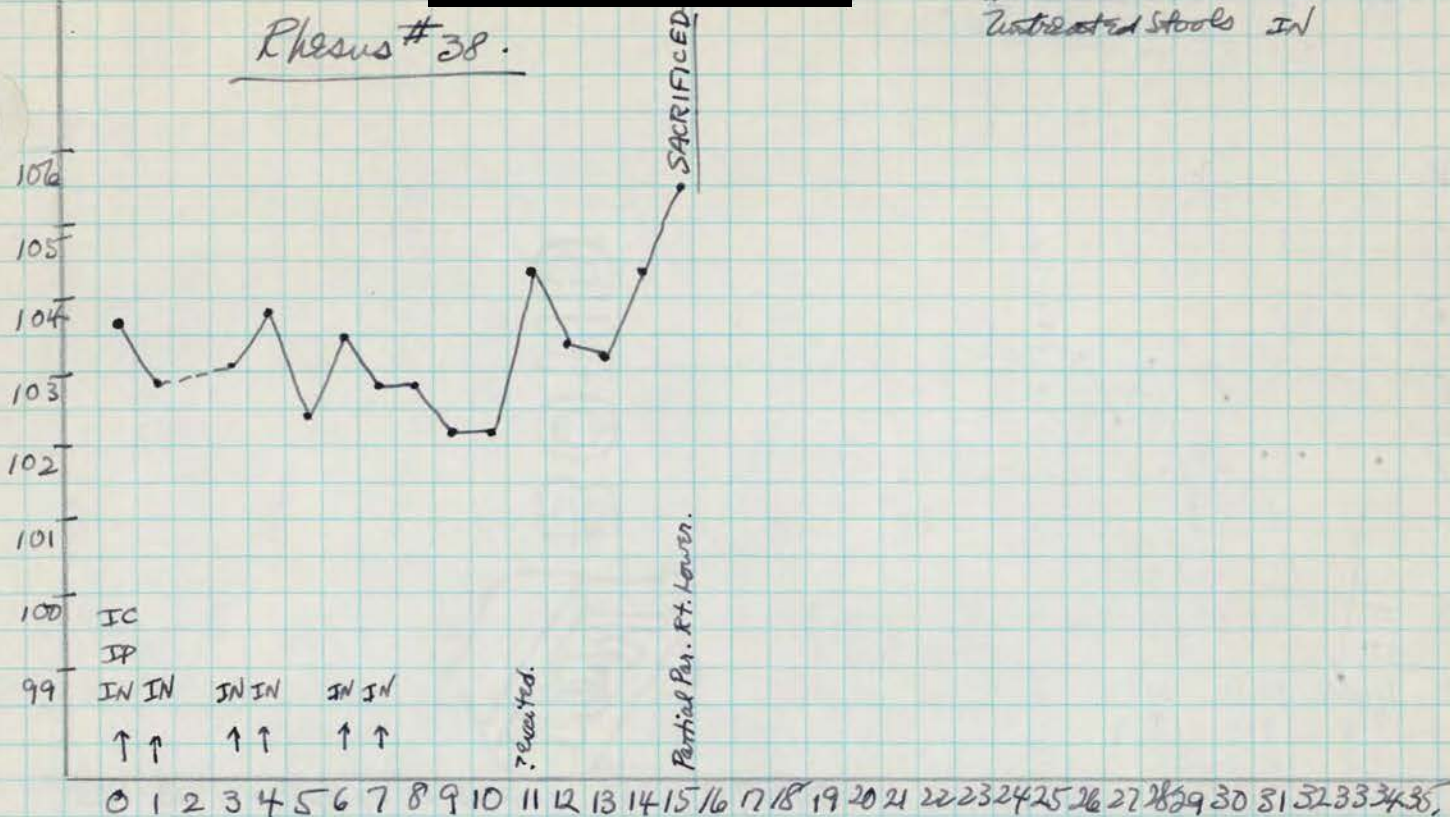
Ether Added = 1.5 cc, shaken for 10 minutes; stoppered lightly and refrigerated.

12/30/47. Horizontal centrifugation for 20 minutes; supernatant taken off for culture + inoculation. -
Cult: v-v

DEC 30 1947

Treated Pharyngeal Swabs IC ✓✓ ^{Quests}
 Treated Stools IP ± 50 col. ^{Quests}
 Untreated Stools IN

Rhesus # 38.



12/30/47. Inoculated 1.5 cc IC; 20 cc IP plus 5.0 cc of penicillin solution containing 100,000 units; and 1 cc per nostril. — at 11⁰⁰ A.M. 5⁰⁰ p.m. — T=104.5. monkey is lively; abdomen seems more tender than is normal. Givens 100,000 units of penicillin IP.

1-14-48 — A.M. — Excited; questionable weakness rt. lower brought out by exercise. P.M. — Partial paralysis rt. lower; weakness left lower. — Sacrificed (chloroform). Autopsy: no gross TBC; no peritonitis.

COLON CONTENTS: frozen in Lusteroid tube. (B-2-9)

TISSUE FOR PATHOLOGY: — cord levels; medulla; Thalamus; olfactory bulbs (Z.A.)

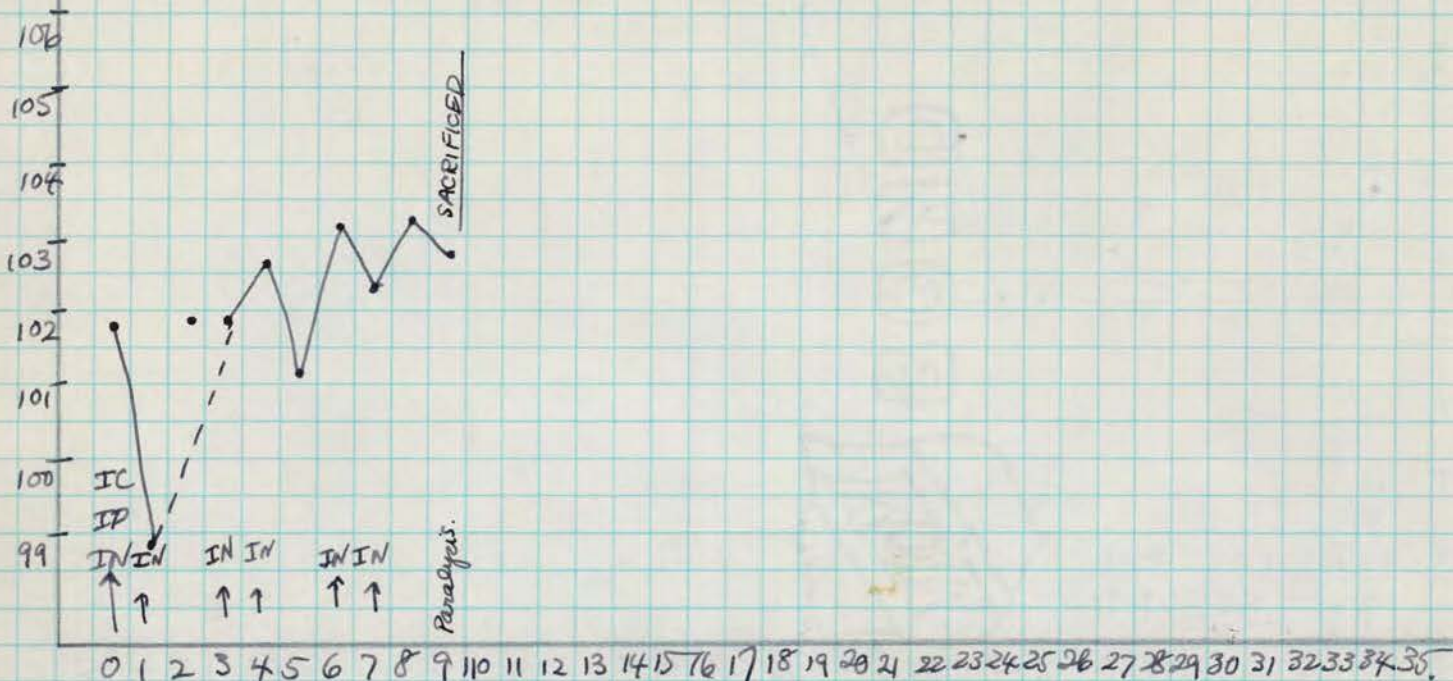
TISSUE FOR VIRUS: cord-medulla pooled with Thawed cord of CYN. 60 (overleaf); pooled weight = 8.0 gms; made up as 20% susp. in (32.0 cc.) saline; ± 27.0 cc of suspension frozen in 4 20 cc ampoules. Culture: ✓✓ (B-1-3)

2-18-48 One ampoule (designated as NO:1) thawed and 2.0 cc removed for passage to RL #133 & RL #1724. Remainder refrozen & re-stored.

HISTOLOGY: ACUTE POLIO

DEC 30 1947

CYNOMOLGUS #60



12/30/47. Inoculated 1.5 cc IC, 20 cc IP with 5 cc of penicillin solution containing 100,000 units; and 1 cc per nostril. - at 11:00 AM 5:00 p.m. - T. 100.5; monkey very sluggish but not prostrate; presents abdominal palpation. - Given 100,000 U. penicillin IP.

12/31/47. - T=98.6; abd. palpation resented; given 100,000 U penicillin IP.

1-8-48 - Paralysis - complete of rt. upper; weakness of left upper, back, + both lowers; cranial nerves seem intact.

Sacrificed - chloroform. - Autopsy: no gross tuberculosis.

* COLON CONTENTS: very liquid - frozen in kusteroid tube. (B-2-9)

TISSUE FOR PATHOLOGY: - cord nuclei; medulla; Thalamus; hypothalamus; olfactory bulbs.

TISSUE FOR VIRUS: - cord medulla frozen in kusteroid (B-2)

1-14-48 - Cord thawed + pooled with that of R#38 (see overleaf).

Colon contents thawed; tested for polio virus. - See "Monkey Feces Study"

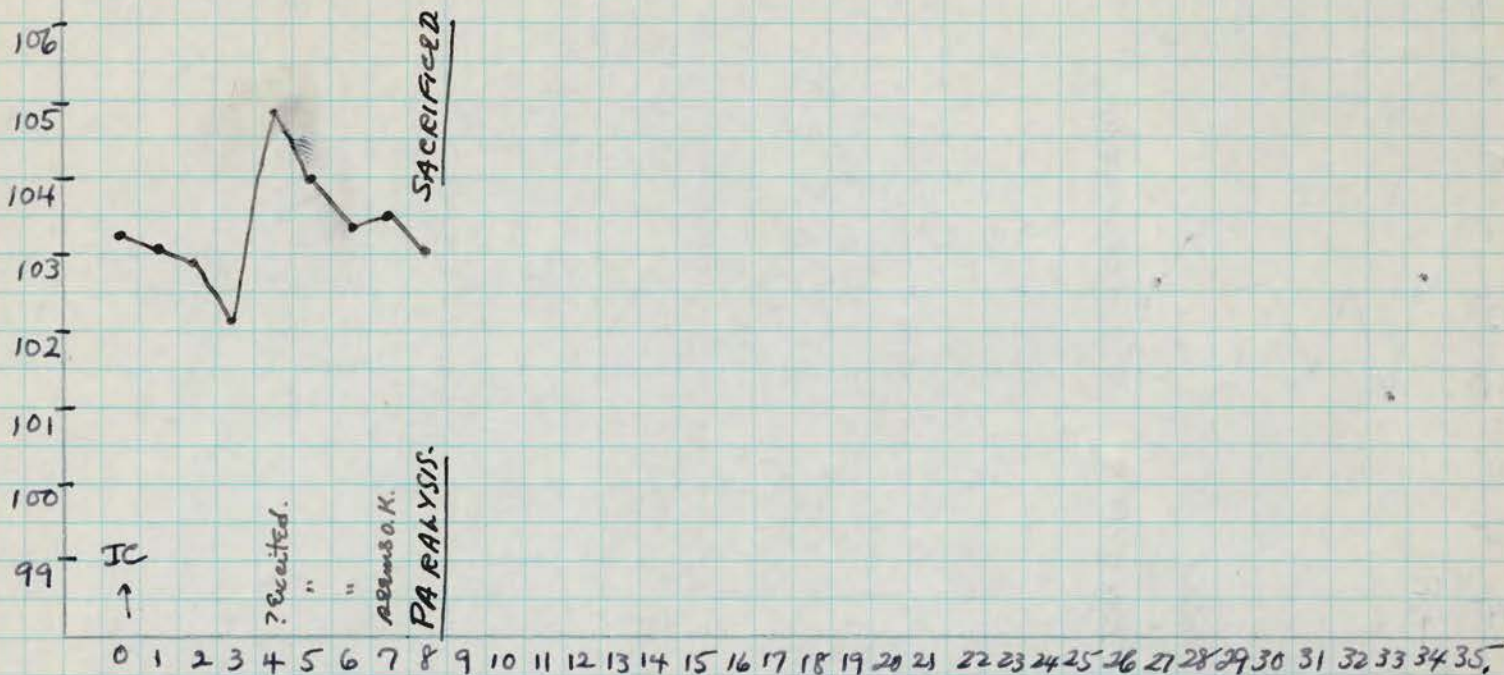
HISTOLOGY:

ACUTE POLIO.

FEB 18 1948

Generation II

Rh. # 133 - normal.



2-18-48 - Inoc. IC with 1.0 cc of 20% in saline ~~factor~~ viral - 98.7

2-26-48 - Partial paralysis all four extremities.

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

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

TISSUE FOR VIRUS: pooled with that of Rh. 1724 (over); total wt. = 13.7 gms.

Made up as a 20% susp. in (56 cc.) sterile saline.

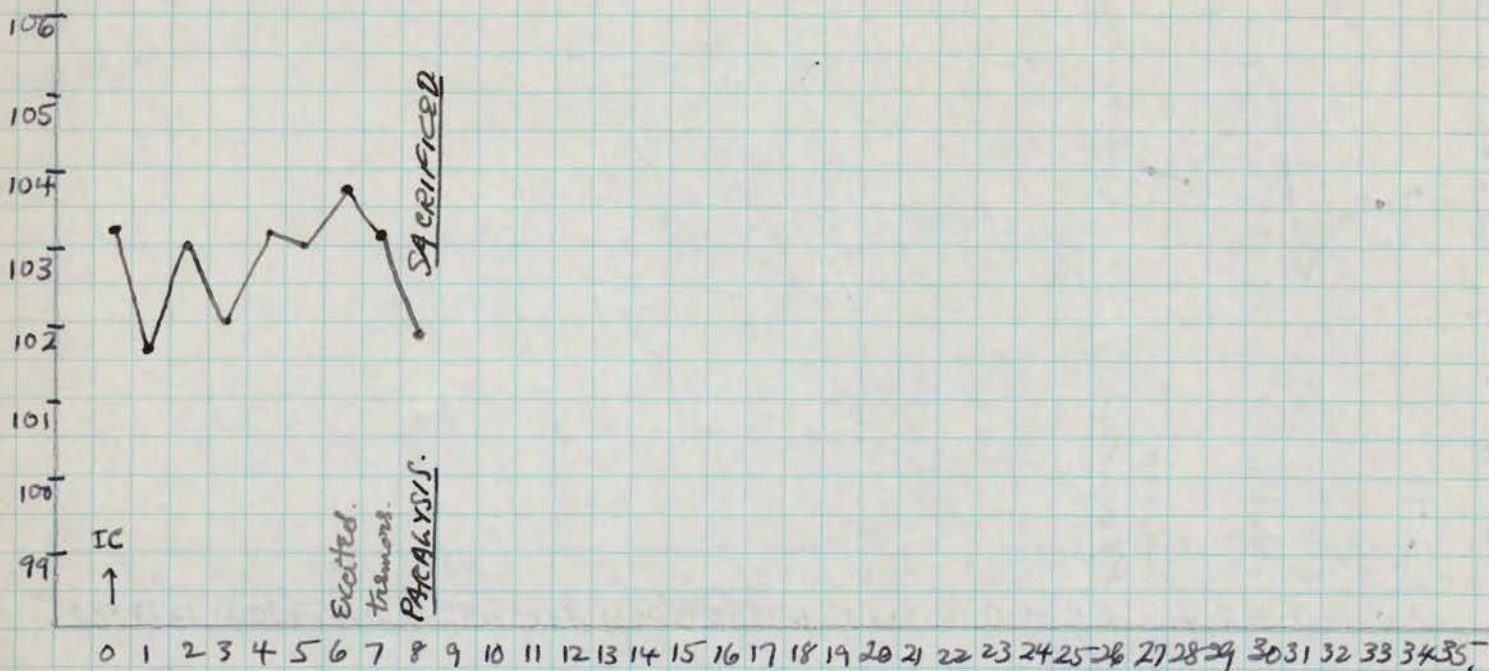
± 40 cc. put in 4-20 cc. amps (designated #1, 2, 3, 4), frozen and stored. Culture: ✓✓✓ B-4-5

Histology - POLIO (acute)

FEB 18 1948

Generation II

Rh. # 1724 - splenectomized.



2-18-48 - Inoc. IC with 1.0 cc of 20% in saline Faler Virus - Gen. I

2-26-48 - Partial paralysis all four extremities; - voice weak. -

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

TISSUE FOR SECTION: - cervical and lumbar cord segments.

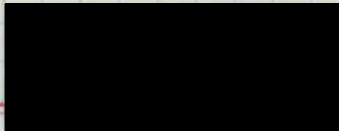
TISSUE FOR VIRUS: cord-medulla pooled & that of Rh. 133 (see overleaf)

HISTOLOGY: POLIO (acute)

Histology - Polio

TITRATION OF HUMAN POLIO STRAINS

5-10-48-



STRAIN (Gen II)

Viruses Used: Falor strain polio (gen. II in monkeys). 20% in saline diluted in saline as indicated below.

Monkeys Used: Normal rhesus monkeys. (From NFIP. farm in N.C.)

Mixtures Used: Dilutions as indicated below, made up in saline kept at room temp. (81°F) for one hour; then into refrigerator overnight (15 hrs.); then used during inoculations on 5-11-48.

Inoculum: 0.5 cc IC per monkey.

<u>DILUTION</u>	<u>MONKEY #</u>	<u>CLINICAL FINDINGS</u>	<u>PATHOLOGICAL FINDINGS</u>	<u>RESULT</u>
10 ⁻²	Rh. 411	O. K.28	0	2/3
	Rh. 412	Par. 15; K. 15.	+	
	Rh. 413	Par. 15; K. 15	+	
10 ⁻³	Rh. 414	O K.28.	0	0/3
	Rh. 415	D ₂₀	0	
	Rh. 416	O K.28.	0	
	Rh. 417	-	[Redacted] (malaria)	
10 ⁻⁴	Rh. 418	-	" " " " "	"
	Rh. 419	-	" " " " "	
	Rh. 420	-	" " " " "	
10 ⁻⁵	Rh. 423	-	[Redacted] (Dengue)	"
	Rh. 424	-	[Redacted]	

T. 11-48

MAY 11 1948

TITRATION OF FALOR STRAIN POLIO (GEN. II)

Ph. # 411

10⁻²

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	✓ (T=10 ²)
	17	✓
	18	✓
	19	✓
	20	✓
	21	✓
	22	✓
	23	✓
	24	✓
	25	✓
	26	✓
	27	✓
6-8-48	28	✓

SACRIFICED (chloroform - exsanguination)
TISSUE FOR SECTION single segments of lumbar, thoracic, cervical, cord,
 and medulla, midbrain, thalamus (2A)
AUTOPSY: No gross the

HISTOLOGY: No root degeneration; no infiltration noted.

DIAGNOSIS: NO POLIO.

MAY 11 1948 TITRATION OF

STRAIN POLIO. (Gen. II)

Ph. # 412

10⁻²

Date	Day	Remarks
5-11-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓

5-26-48 15 T=100° Complete rt. facial paralysis. Voice weak.
 Weakness of all 4 extremities. Very clumsy.
SACRIFICED: (chloroform-exsanguination) / Autopsy: No tbc.
 TISSUE FOR SECTION - Single sections from
 cervical & lumbar cord. (2-A)
 TISSUE FOR VIRUS - Remainder of cord-medulla
 frozen in lusteroid tube (A-6)

5-26-48: Cord-medulla thawed, pooled with that of Ph. 412 to
 make a 20% susp. in saline. Wt. of pooled
 cords-medullae = 11.5 gms. Sterile saline added = 46 cc.
 ± 40 cc. frozen in 4-20cc. amps. (Vials 1, 2, 3, 4)
 and stored! Culture: ✓✓✓ (B-10-8)

HISTOLOGY: Moderately severe acute neurophagia with
 rather marked PV infiltration; There appears to be more
 neurophagia in lumbar than cervical cord.

DIAGNOSIS: POLIO (acute)

MAY 11 1948

TITRATION

OF

STRAIN (Gen. II)

Rh. # 413

10⁻²

Date	Day	Remarks
5-11-48	0	✓
	1	✓
	2	✓
	3	✓
	4	✓
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓

5-26-48

15 A.M.: T = 100^o. Chums. Weakness of all 4 extremities. Marked pilomotor response.

P.M.: Chumsiness increased. Par. par. rt. lower-weakness after 3 ext.

SACRIFICED: (chloroform-embalming)

TISSUE FOR SECTION - Single sections of lumbar and cervical cord (2-A)

TISSUE FOR VIRUS - Remainder of cord-medulla frozen in tasteroid tube. (a-c)

5-26-48: Cord-medulla of Rh 413 thawed + pooled with that of Rh 412 to make a 20% susp. in saline. (see Rh 412).

HISTOLOGY: lumbar and cervical cord shows pronounced acute neuronophagia with marked PV infiltration.

DIAGNOSIS: Polio (acute)

MAY 11 1948

TITRATION OF

STRAIN POLIO (GEN. II)

Kh. #414

10-3

Date	Day	Remarks
5-11-48	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	✓

6-8-48 28 ✓ SACRIFICED. (Chloroform - exsanguination)
TISSUE FOR SECTION single segments of lumbar, thoracic,
 and cervical cord, medulla, midbrain & thalamus (2A)
AUTOPSY: No gross lcs

HISTOLOGY: Sections show no pathological changes.

DIAGNOSIS: NO POLIO.

MAY 11 1948

TITRATION OF

STRAIN POLIO (GEN. II)

Ch. # 415

10⁻³

Date	Day	Remarks.
5-11-48	0	✓
	1	✓
	2	✓ mod. diarrhea.
	3	- " "
	4	✓ better.
	5	✓
	6	✓
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓

5-31-48 20 Found DEAD. Autopsy: No gross tic. No other thoracic or abdominal gross pathology found. No evidence of cervical vertebral fracture.

TISSUE FOR SECTION: - Thalamus, midbrain, medulla, single sections of cervical, thoracic, + lumbar cord (2-A)

HISTOLOGY: Above sections show no pathological changes

DIAGNOSIS: NO POLIO.

MAY 11 1948

TITRATION OF

STRAIN POLIO. (GEN. II)

Ph. # 416

10⁻³

Date	Day	Remarks.
5-11-48	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	✓

6-8-48 28 ✓ SACRIFICED (chloroform-exsanguination)
TISSUE FOR SECTION 1) 4 segments of lumbar, thoracic and
 2) cervical cord, 3) medulla, midbrain & thalamus (2A)
AUTOPSY: to gross the (caudate nucleus region)

HISTOLOGY: Sections show no pathological changes.

DIAGNOSIS: NO POLIO.

MAY 11 1948

TITRATION OF

STRAIN POLIO (GEN. II)

Pl. # 417-

10^{-4}

Date	Day	Remarks.
5-11-48	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	✓
	28	✓

6-8-48 - Observation terminated; animal given to Dr. Schmidt.

MAY 11 1948

TITRATION OF

STRAIN POLIO (GEN. II)

Rh. # 418

 10^{-4}

Date	Day	Remarks.
5-11-48	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	✓
	28	✓

6-8-48 - Observation terminated; animal given to Dr. Schmitt.

MAY 11 1948

TITRATION

OF

STRAIN

POLIO (GEN. II)

Ph. # 419.

10⁻⁴

Date	Day	Remarks.
5-11-48	0	✓
	1	✓
	2	✓
	3	✓ ? hair erect.
	4	? hair erect.
	5	seems O.K.
	6	✓ " "
	7	✓
	8	✓
	9	✓
	10	✓
	11	✓
	12	✓
	13	✓
	14	✓
	15	✓
	16	✓
	17	✓
	18	✓
	19	✓
	20	✓
	21	✓
	22	✓
	23	✓
	24	✓
	25	✓
	26	✓
	27	✓
	28	✓

6-8-48. Observation terminated; animal given to Dr. Schmidt

MAY 11 1948

TITRATION OF

STRAIN POLIO (Gen. II)

Rh. #420

10-57

Date	Day	Remarks
5-11-48	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	✓
	28	✓

6-8-48 - Observation terminated; animal turned over to Dr. H. Schmidt.

MAY 11 1948

TITRATION OF

STRAIN POLIO (GEN. II)

Rh. # 423

10⁻⁵

Date	Day	Remarks.
5-11-48	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	✓
	28	✓

6-8-48. Observation terminated; animal set aside for use later in Dengue Experiments - by ABS.

7-19-48 Monkey too large to be used by ABS, and Tag number changed to 423X, so that he may be used again.

8-16-48 Rh 423X used in invariant neutralization

MAY 11 1948

TITRATION OF

STRAIN POLIO. (GEN. II)

Rh. # 424

10⁻⁵

Date	Day	Remarks.
5-11-48	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	✓
	28	✓

6-8-48: Observation terminated; animal set aside for use later (by ABS) - in Dengue experiments.

7-19-48 Monkey to large to be used by ABS. tag number changed to 424-X, so that he may be used again.

8-16-48 Rh # 424X used for Tendant neutralization.

POLIO - 1947 - MONKEY HISTOLOGY.

Stain	Spinal - Medulla	Milgram	Talamus	Hypothal.	Cereb.	Other	Diagnosis
Rh. 2	NH; PH	NT	NH; PT	NH; PH			<u>POLIO.</u>
1341	NH; PH	NH	NH; PT	N+PH	+; +;		<u>POLIO.</u>
Rh. 23	NH; PH	?	NH; PT	N?; PH			<u>POLIO.</u>
24	NH; PH	NH	NH; PT	NT; PH			<u>POLIO.</u>
<u>TITRATION OF GENERATION II VIBUS. (3/16/48)</u>							
10 ² Rh. 204	NH, PH	-	NH; PT	-	-	-	<u>POLIO</u>
205	NT, PH	-	NH, PH	-	-	-	<u>POLIO</u>
206	NH, PH	-	NH (poor)	-	-	-	<u>POLIO.</u>
207	NH; PH	0	NT; PH	-	-	-	<u>POLIO.</u>
208	NT, PH	-	NH	-	-	-	<u>POLIO</u>
209	0	0	0	0	0	0	<u>No Polio</u>
210	0	0	0	0	0	0	<u>No Polio.</u>
211	0	0	0	0	0	0	<u>No Polio</u>
216	0	0	0	0	0	0	<u>No polio</u>
217	0	0	0	0	0	0	<u>No Polio</u>
218	0	0	0	0	0	0	<u>No Polio</u>
219	0	0	0	0	0	0	<u>No Polio</u>

PRIMARY ISOLATION:

GENERATION II

(over)

(cont'd)

DIAGNOSIS:

POKRO "old"
also partly
revert.

MK# - Lumbar - Thoracic - Cervical - Medulla - Midbrain - Thalamus - CNV.

HOMOLOGOUS NEUTRALIZATION TEST (4/12/68)

SAL. 10³
Ph. 329
Neuronal loss TR.D.
also glial nodular cell clusters
around roots of neurons

Thoracic
and Cervical
the same.

P.H.; nodular
infiltration.

P.H.; glial
infiltration

330

331

332

333

334

335

336

337

338

321

322

323

325

ADULT
SERUM
10⁴

ADULT
SERUM
10²