

PAMARINE  
PLASMOCID  
SMALL 20A

TOXICITY OF PAMAQUINE IN RHESUS MONKEYS

Summary of L. H. Schmidt's Data

Dose Mg. base/kilo/day	Monkey No.	Duration of Treatment Days	Result	Remarks
<u>24</u>	454	4	Died 5th day	
	1147	3	" 4th day	
	1186	3	" 4th day	
<u>18</u>	151	Continuous	Died 17th day	Leukopenia - 7% neutr. Extreme cyanosis Anemia
	153	7	" 8th day	Leukopenia Severe methemoglobin
	461	6	" 7th day	Leukopenia
	192	7	" 8th day	Pneumonia, pleurisy
	191	6	" 7th day	Pneumonia
<u>12</u>	155	6 1/3	Died 7th day	Methemoglobin
	1290	13	" 14th day	Cyanosis, leukopenia Anemia
	453	8	" 9th day	Cyanosis, jaundice
	414	6 2/3	" 7th day	
	447	21	" 22nd day	Marked methemoglobin Cyanosis, anemia Neutropenia
	1190	14	" 15th day	Cyanosis, jaundice Anemia, leukopenia
	134	8	" 9th day	Jaundice, leukopenia
	146	7	Sacrificed 7th day	Because of rapidly developing cellulitis
	97	4	Died 5th day	Leukopenia
313	17	Sacrificed 18th day	Anemia	

TOXICITY OF PAMAQUINE IN RHESUS MONKEYS (Cont.)

Dose mg. base/kilo/day	Monkey No.	Duration of Treatment Days	Result	Remarks
<u>12</u>	379	11	Died 11th day	Extreme cyanosis Neutropenia Low grade methemoglob. Anemia
	381	30	Sacrificed	Anemia, leukopenia
<u>6</u>	739	28	Sacrificed	Weight loss, cyanosis Low grade methemoglo.
	704	28		Slight cyanosis
	152	21	Sacrificed	Weight loss, cyanosis 8% methemoglobin
	154	21	Sacrificed	Cyanosis
	429	21	Sacrificed	Anemia, weight loss Methemoglobin
	439	28	Sacrificed	Cyanosis Leukopenia, neutropen. Anemia, weight loss
	5700	21	Sacrificed	No abnormality
	148	21	Sacrificed	No abnormality
<u>3</u>	591	28	Sacrificed	
	767	28	Sacrificed	
	885	28	Sacrificed	Gained weight Slight cyanosis
	869	28		Gained weight Leukopenia
	894	28		Gained weight

TOXICITY OF PAMAQUINE IN RHESUS MONKEYS

Dose mg./kilo/day	Duration Contin.	No. of Monkeys	Result Day of Death
24	"	3	4,4,5
18	"	5	7,7,8,8,17
12	"	12	5,7,7,7,9,9 11,14,15,S18,22,S30
6	"	8	Lived 21 - 28 days when they were killed
3	"	5	Lived 28 days when they were killed

Selected Dosage

9 mg./kilo/day - 8

6 mg./kilo/day - 8

} Amount needed for 20 days is

} 7.2 gm. base or 11.4 gm. drug

Pamaquine citrate is 62.1% base

EFFECT OF PAMAQUINE AND SMALL DOSES OF PLASMOCID

3/14-49

GROUP	MONKEY No.	WEIGHT		MG. BASE PER DOSE 2x a day	STOCK SOLUT. PER DOSE cc.	DISTILLED H <sub>2</sub> O per dose	d. 3/25/49
		POUNDS	GRAMS				
<u>PAMAQUINE</u> 9MG BASE/KILO/DAY 4.5MG 2x a day	1268 ✓	5.75	2603	11.71	1.27	18.8	165. GM 5 1/4 - 4 1/4 = 1935-668
	1269 ✓	5.75	2603	11.71	1.27	18.8	6 1/2 - 5 1/2 = 2491-108
	1270 ✓	7.5	3387	15.24	1.52	18.5	7 3/4 - 6 3/4 = 2057-380
	1271 ✓	5.75	2603	11.71	1.27	18.8	6 3/4 - 5 3/4 = 2603-0
	1272 ✓	6.00	2718	12.33	1.23	18.8	6 1/4 - 5 1/4 = 2378-340
	1273 ✓	7.75	3511	15.79	1.58	18.4	8 3/4 - 7 3/4 = 3511-0
	1274 ✓	4.5	2038	9.17	0.92	19.1	
1275 ✓	6.00	2718	12.33	1.23	19.8		
<u>PAMAQUINE</u> 6MG BASE/KILO/DAY 3MG. 2x a day	1276 ✓	6.5	2944	8.83	0.88	19.1	7 1/2 6 1/2 = 2944-0
	1277 ✓	5.25	2378	7.13	0.71	19.3	5 3/4 4 3/4 = 2150-228
	1278 ✓	8.00	3624	10.87	1.09	18.9	7 3/4 6 3/4 = 3056-568
	1279 ✓	5.5	2491	7.47	0.75	19.3	6 5 = 2265-226
	1280 ✓	7.00	3161	9.48	0.95	19.1	8 1/4 7 1/4 = 3387+453
	1281 ✓	5.5	2491	7.47	0.75	19.3	6 1/4 5 1/4 = 2378-113
	1282 ✓	6.75	3056	9.16	0.92	19.1	7 6 = 2718-338
1283 ✓	6.00	2718	8.85	0.89	19.1	6 1/4 5 1/4 = 2378-340	
<u>PLASMOCID</u> 0.2 mg/base/kilo/day 0.1mg 2x a day	1284 ✓	6.5	2944	.294	2.9	17.1	7 1/2 6 1/2 = 2944-0
	1285 ✓	5.5	2491	.249	2.5	17.5	6 1/4 5 1/4 = 2378+113
	1286 ✓	7.25	3274	.327	3.3	16.7	7 3/4 6 3/4 = 2056-218
	1287 ✓	6.00	2718	.272	2.7	17.3	6 3/4 5 3/4 = 2603-115
	1288 ✓	6.5	2944	.294	2.9	17.1	6 3/4 5 3/4 = 2603-341
	1289 ✓	5.75	2603	.260	2.6	17.4	6 1/2 5 1/2 = 2491-112
<u>PLASMOCID</u> 0.04 mg/base/kilo/day 0.02 mg. 2x a day	1290 ✓	6.25	2831	.057	0.57	19.43	6 1/2 5 1/2 = 2491-340
	1291 ✓	6.75	3056	.061	0.61	19.39	7 1/2 6 1/2 = 2944-112
	1292 ✓	7.00	3161	.063	0.63	19.37	7 1/4 6 1/4 = 2931-330
	1293 ✓	6.5	2944	.059	0.59	19.41	6 3/4 5 3/4 = 2603-341
	1294 ✓	4.5	2038	.041	0.41	19.59	
1295 ✓	6.75	3056	.061	0.61	19.39	6 3/4 5 1/4 = 2603-455	
<u>CONTROLS</u> VIRUS ONLY	1296 ✓	6.00	2718				6 5 = 2265-453
	1297 ✓	5.5	2491				6 5 = 2265-126
	1298 ✓	5.25	2378				5 1/2 4 1/2 = 2038-340
	1299 ✓	6.5	2944				7 6 = 2718-226
	1300 ✓	5.25	2378				5 1/2 4 1/2 = 2038-340
	1301 ✓	4.75	2150				
	1302 ✓	5.00	2265				5 1/2 4 1/2 = 2038-227
	1303 ✓	5.5	2491				6 1/2 5 1/2 = 2491-0

PAMAQUINE CITRATE - 62.1% base - STOCK SOLUTION - 10 MG. BASE/CC = 1.610 GM DRUG/100CC

PLASMOCID (hydrochloride - LOT TW-25 - 80% base) - STOCK SOL. - 0.1 mg. base/CC = 12.5 mg drug/100cc

STANDARD B & P "No. 10" BAR

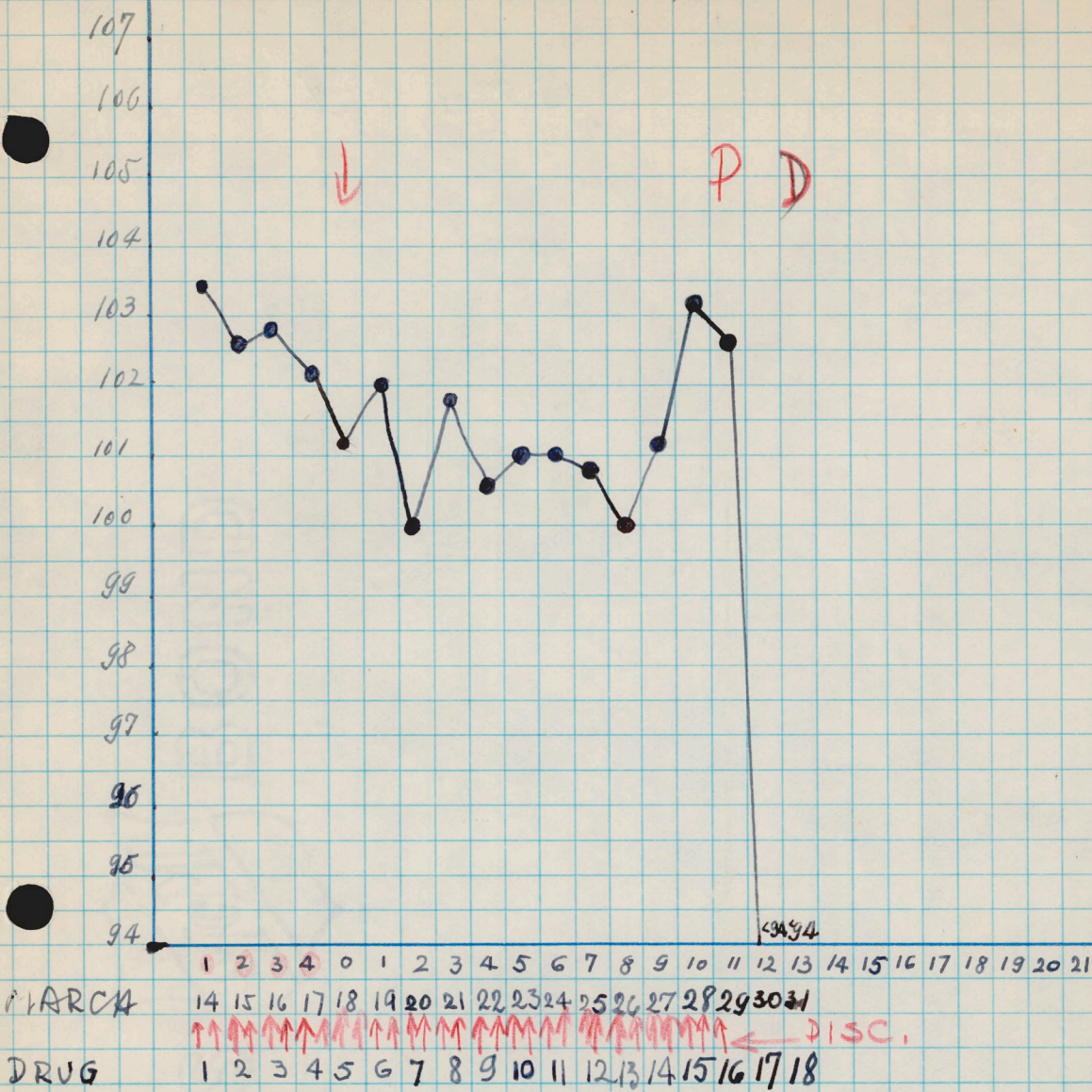
# SUMMARY OF EXPERIMENT of 3/14/49

1cc. into right thalamic region"  
VIRUS CHALLENGED: Koberkamp virus (Vial #4 - Same as used in previous exp. - B-8-4) used. 0.5cc of 1/5495 saline

DRUG	DOSE mg/Kg DAILY	MONKEY No.	RESULT		HISTOLOGY	P					
			DAY OF PAR.	DAY OF DEATH		10	11				
<u>CONTROLS</u>	(NONE)	1296	6	12	Polio	6.71	To "dragon blood" test.				
		1297	10	16							
		1298	6	15							
		1299	8	15							
		1300	5	5							
		1301	?	5							
		1302	6	12							
		1303	6	19							
			-6.71-	-15.66-(5.1)							
<u>PLASMOCID</u>	0.20	1284	7	17	Nonpar. P	7.29	To "dragon blood" test.				
		1285	9	13							
		1286	7	20							
		1287	7	19							
		1288	9	11							
		1289	11	-							
		1	-8.33-	-17.2 (5.2)							
		1290	6	10							
		1291	NONE	5: no Ps.							
		1292	7	-							
<u>PLASMOCID</u>	0.04	1293	7	10	Nonpar. P	7.29	To "dragon blood" test.				
		1294	6	7							
		1295	8	13							
								-6.8-	-10. (5.2)		
		1	6	10							
<u>PIAMAQUINE</u>	9	1268	11	13	No Polio	7.29	To "dragon blood" test.				
		1269	NONE	5: no Ps.							
		1270	9	12							
		1271	7	13							
		1272	7	9							
		1273	11	13							
		1274	-	Dc							
		1275	-	Ds							
								-9-	-12-		
		1276	6	19							
<u>PIAMAQUINE</u>	6	1277	11	13	Polio	7.29	To "dragon blood" test.				
		1278	9	15							
		1279	10	5							
		1280	8	10							
		1281	9	10							
		1282	8	10							
		1283	9	3							
								-8.75-	-14.25-		

Rh. 1268

Pamagum, 4.5 mg B 2x a day - 3/14/49



MARCH

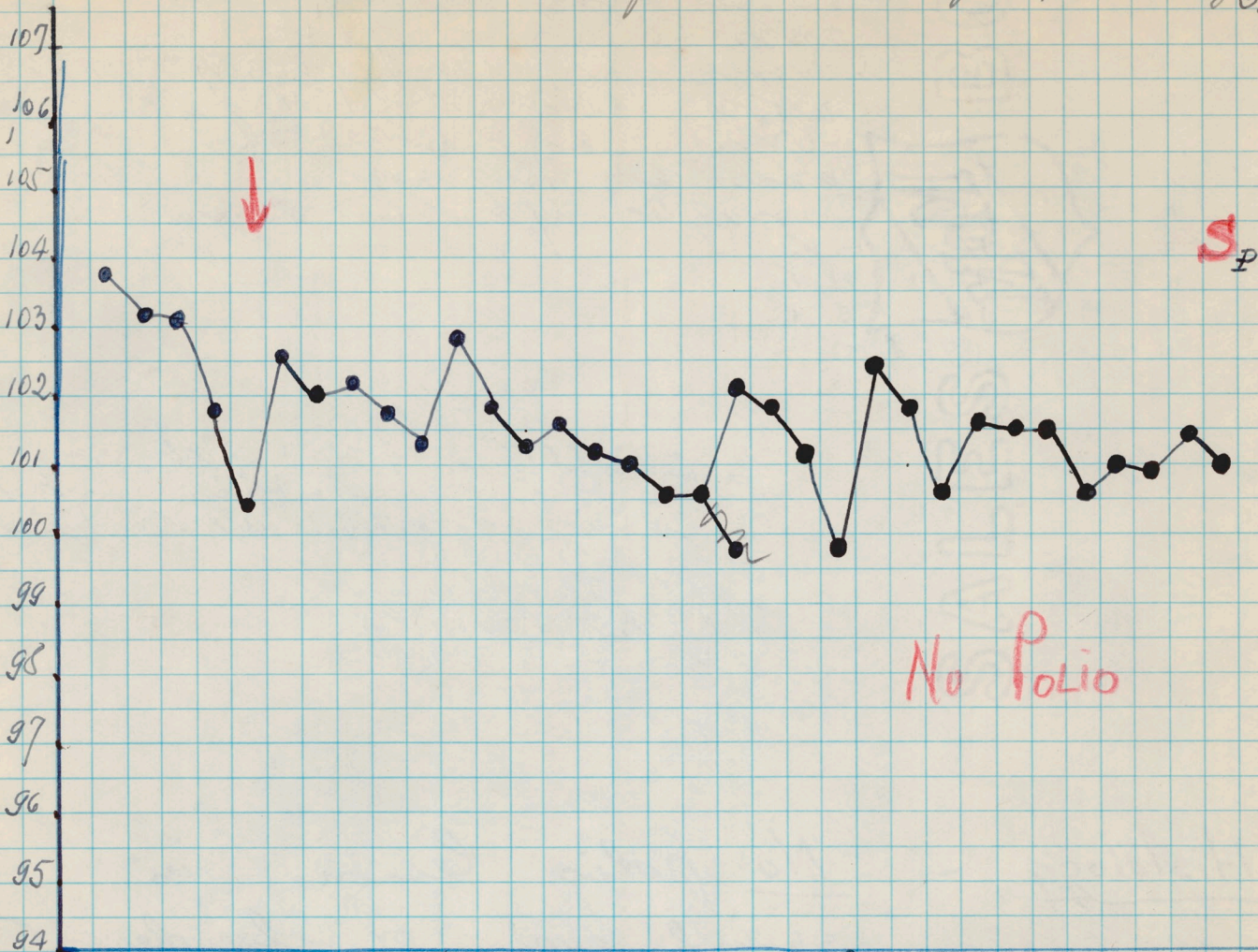
DRUG

- MARCH 15 - AM: Somewhat swollen on submaxillary region, both sides. -
- " 16 - AM - O.K.
- " 20 - PM - Necrotic lesion on the skin of the neck, underneath the chain, more marked on the right side. -
- " 21 - lesion on the neck, same as yesterday. -
- " 22 - Same as before.
- " 23 - Same as yesterday. -
- " 24 - Same as before.
- " 25 - Lesion: good healing - otherwise: O.K.
- " 26 - O.K.
- " 27 - O.K.
- " 28 - O.K.
- " 29 - AMO, K, & water.
- " 30 - 11 AM - Partial paralysis: lowers and back. - Prostate.

MARCH - 31 AM ~~Thurs~~ ~~Thurs~~  
2:30 PM - Dead, warm, no  
w/yr.

DISCARDED

R# 1269 - Pamaguine, 4.5 mg B/K/2x day 3/14/49



MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 DRUG: ↑ ← DISC.

MARCH  
 21 - O.K.  
 22 - O.K.  
 23 - O.K.  
 24 - O.K.  
 25 - O.K.  
 26 - O.K.  
 27 - O.K.  
 28 - O.K.  
 29 - O.K.  
 30 - O.K.  
 31 - O.K.

APRIL 1 - O.K.  
 PM - Disinclined to climb. Put motor wear on all 4 extremities, marked on lower  
 2 - Same as yesterday. No wear?  
 3 - Today this monkey is still disinclined to climb, but appeared more active.

APRIL

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

- 4 - O.K.  
5 - Same condition  
6 - Same as before  
7 - Same as yesterday  
8 - Same condition  
9 - Same as before  
10 - Same as before  
11 - Same as yesterday  
12 - O.K.  
13 - O.K.  
14 - O.K.  
15 - Same O.K.

SACRIFICED

PERFUSION: The washing with carbide started under chloroformic anesthesia.

Good perfusion. No gross pathological changes in viscera.

C.N.S.

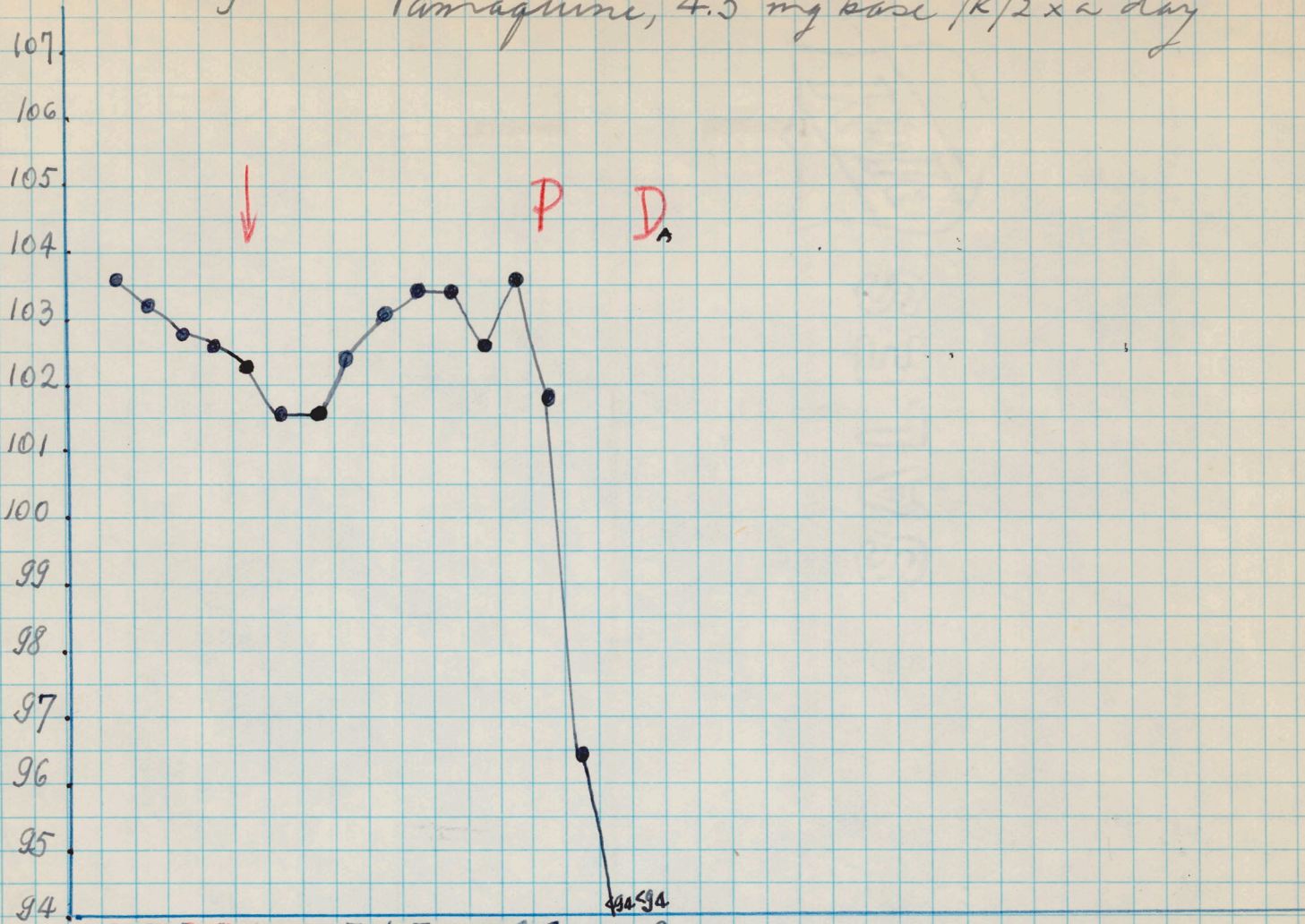
Histology - No polio lesions in spinal cord or elsewhere.

No lesions of other kind attributable to paraquine

R# 1270

Saraguanine, 4.5 mg base /K/2 x a day

3/14-49



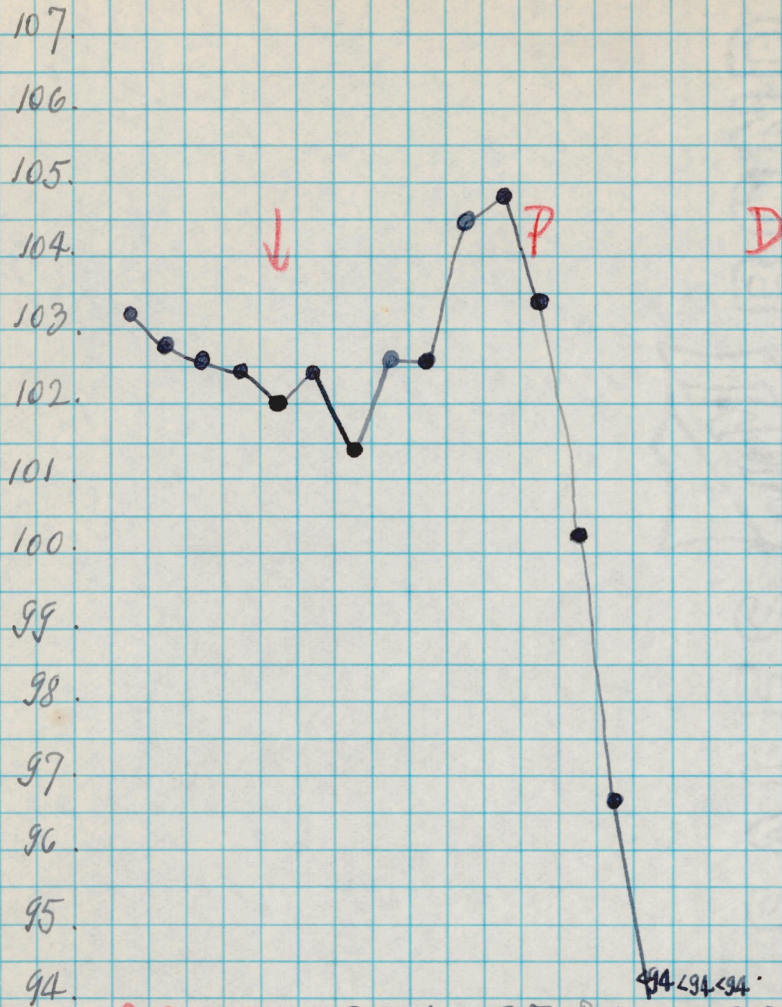
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
MARCH:	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30															
DRUG:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	-	-															

MARCH

- 21 - O.K.
  - 22 - O.K.
  - 23 - O.K.
  - 24 - O.K.
  - 25 - O.K.
  - 26 - Tremor
  - 27 - Partial paralysis both lower ext. back his lower.
  - 28 - Prostrate
  - 29 - Same condition
  - 30 - Same as before very weak.
- 3:30 PM: Dead, no rigor warm. Immediate autopsy: no gross pathological changes on necropsy.

CNF → Z.A.

Rh. 1271 - Paragonimus, 4.5 mg B 2x a day 3/14/49

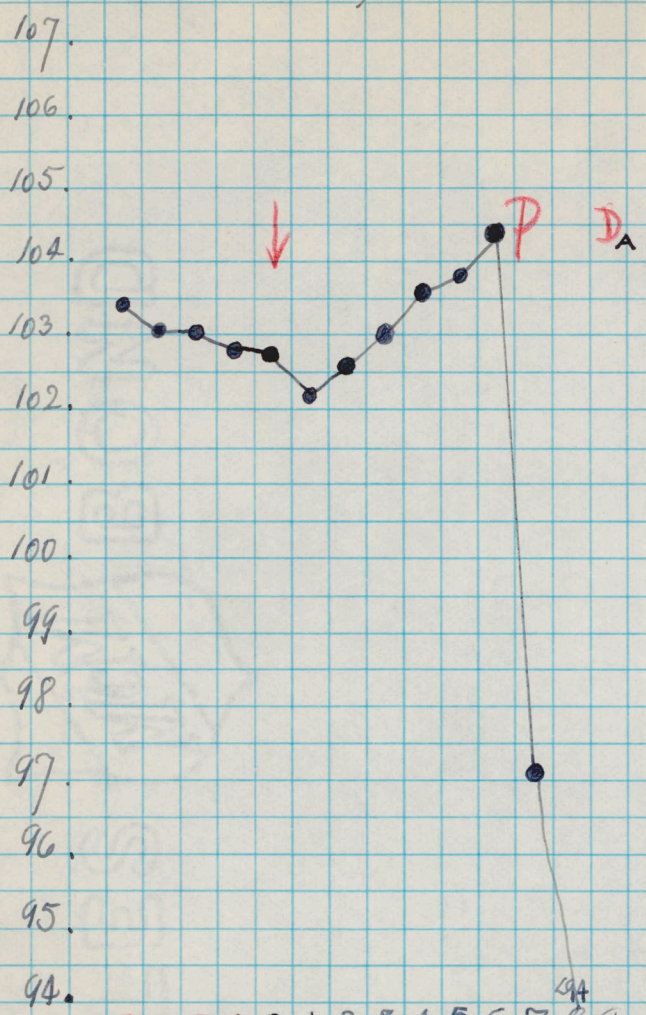


	1	2	3	4	5	6	7	8	9	10	11	12	13					
MARCH	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
DRUG	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	←

MARCH -

- 21 - O.K.
  - 22 - O.K.
  - 23 - M.O.K.
  - PM. Neck.
  - 24 - Same condition.
  - 25 - Partial paralysis lowers and left upper.
  - 26 - Iris down. Partial all four extremities.
  - 27 - Almost complete paralysis all four extremities and back. No paralysis.
  - 28 - Prostrate.
  - 29 - Same condition.
  - 30 - Same as before.
  - 31 - Dead rigor, cold.
- Body DISCARDED -

Rh 1272 - Paragonia, 4.5 mg 2x a day. 3-14-49

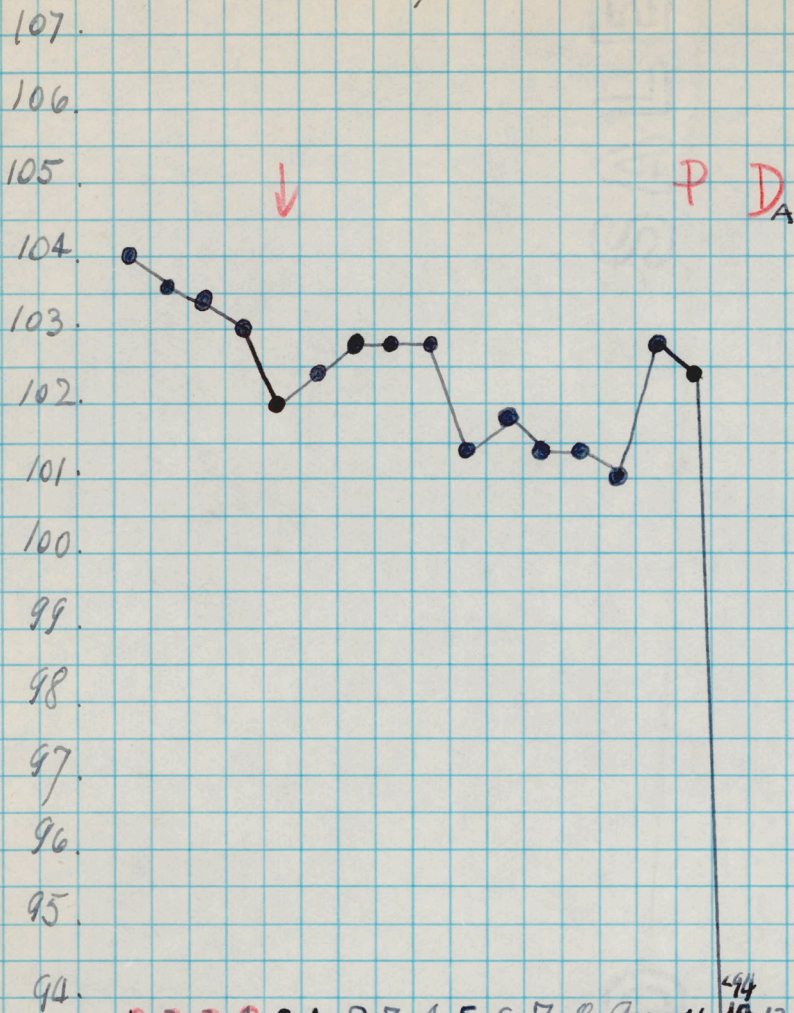


MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14

MARCH -

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - Tremor - Excited.
- 25 - Partial paralysis all four extremities and back - Aphonia.
- 26 - Completely prostrate.
- 27 - 8 AM - Dead in morning.
- 10 AM autopsy: No gross pathology - great changes in CNS - 2.A.

RL 1273 - Paragonimus, 45 mg. B/K/ 2x a day 3-14-49.



MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

DISC.

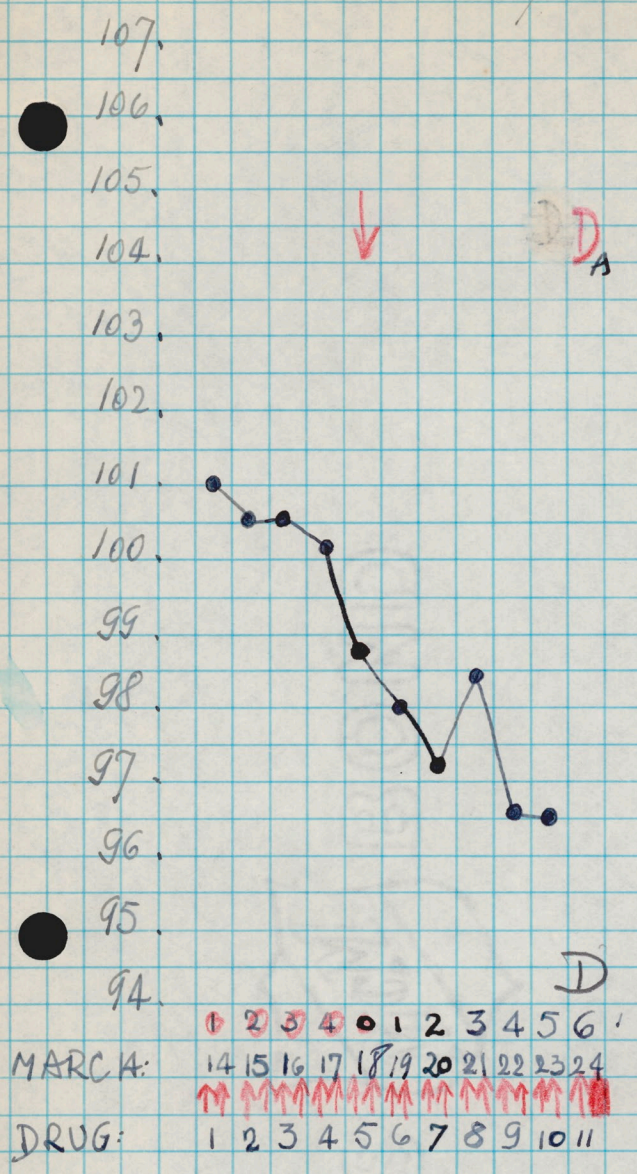
MARCH -

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - O.K.
- 25 - O.K.
- 26 - O.K.
- 27 - O.K.

28 - AM O.K. 3M. Pilomotor.  
 29 - Partial paralysis left upper  
 30 - Complete paralysis both upper and neck. Partial paralysis both lower.

31 - AM. Head, w/ or cold anisocoria. Some old adhesions on right lung base. Spleen moderately enlarged. CNS. -> L.A.  
 Very soft on lumbar an cord in -> enlargements.

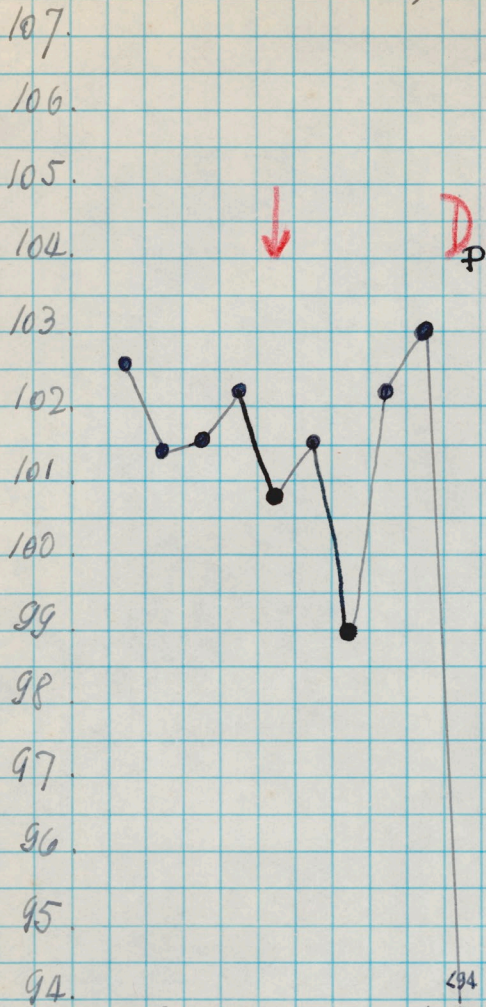
Rh. 1274 - Pamaquine, 4.5mg. 2x a day



MARCH

- 21 - Pilo motor
  - 22 - Pilo motor - weak
  - 23 - his down, generalized weakness.
  - 24 - 8 AM Dead, rigor mortis.
- autopsy: 9<sup>45</sup> - old adhesions on pleurae base, left side. No other gross pathological changes.
- CNS → E.A.

Rh. 1275 - Pamagumil, 4.5 mg @/K 2 x a day 3-14-49

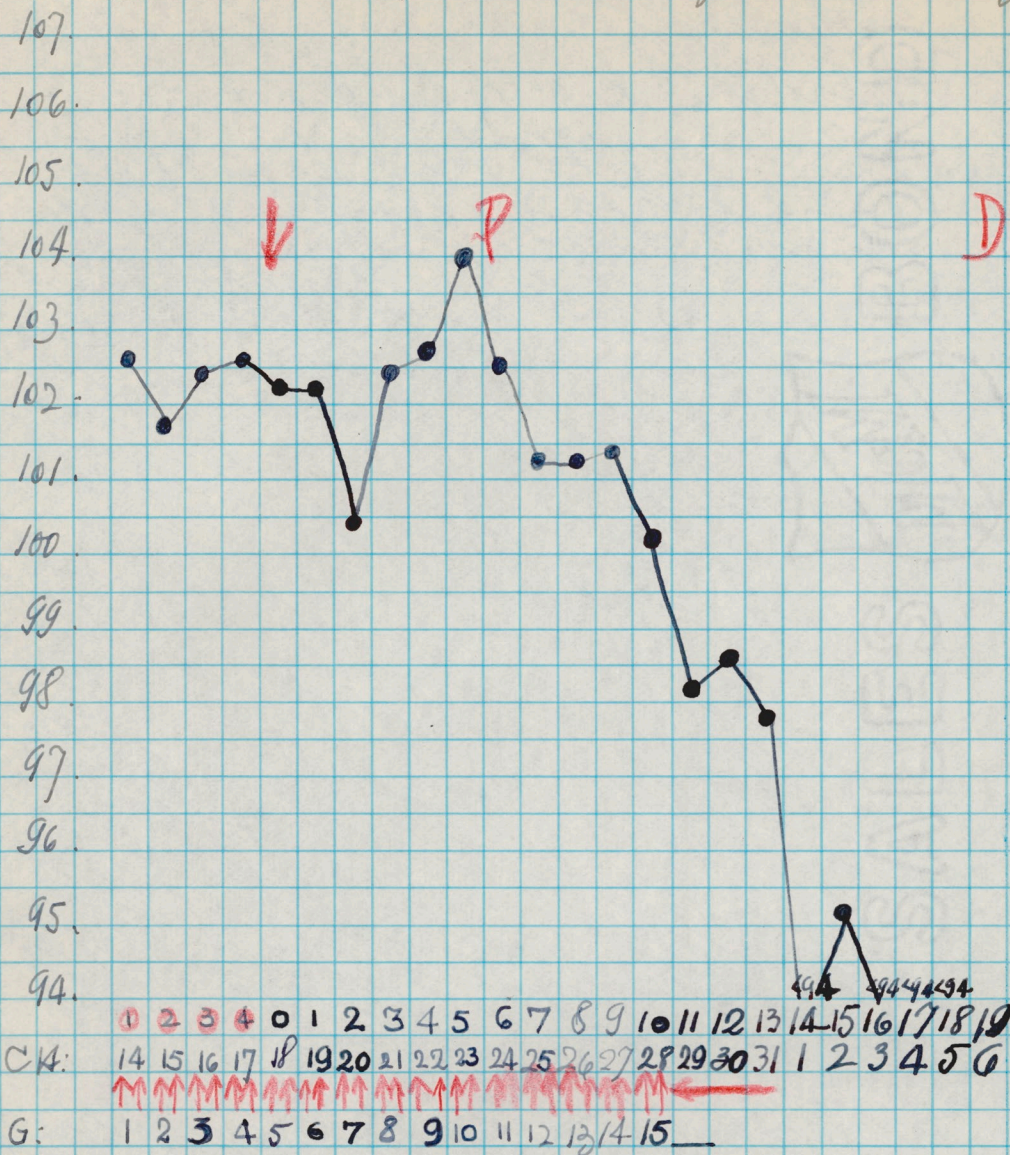


MARCH: 14 15 16 17 18 19 20 21 22 23  
 ↑↑↑↑↑↑↑↑↑↑↑↑ DRUG DISCONTINUED —  
 DRUG: 1 2 3 4 5 6 7 8 9 10

MARCH —

- 21 - Hungry over -
- 22 - Hungry over -
- 23 - Sinking down, prostrate, agonic - drug not given
- 10:45 Dead, warm, no rigor -
- 11 - PERFUSED - good perfusion - No gross pathological changes on viscera -
- CNS - Pieces in L.A.

Rh 1276 - Paralytic, 3 mg B/K, 2 x a day 3-12-49



MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13/4 15

MARCH

- 21 - O.K.
- 22 - O.K.
- 23 - Tremor, excited, piloerector -
- 24 - Partial paralysis, right upper - weakness on both lower limbs.
- 25 - Partial paralysis both lower and right upper. Still tremor.
- 26 - Partial P all four. Cannot sit up.
- 27 - Same condition.
- 28 - Lies down, almost complete paralysis on both lower back and right upper. Manual blad. Partial paralysis on left arm.
- 29 - Same as before.
- 30 - Same as before.

MARCH

31

Same as before.

APRIL

1

Completely prostrate. -

2

Same as yesterday.

3

Same condition. -

4

Same as before.

5

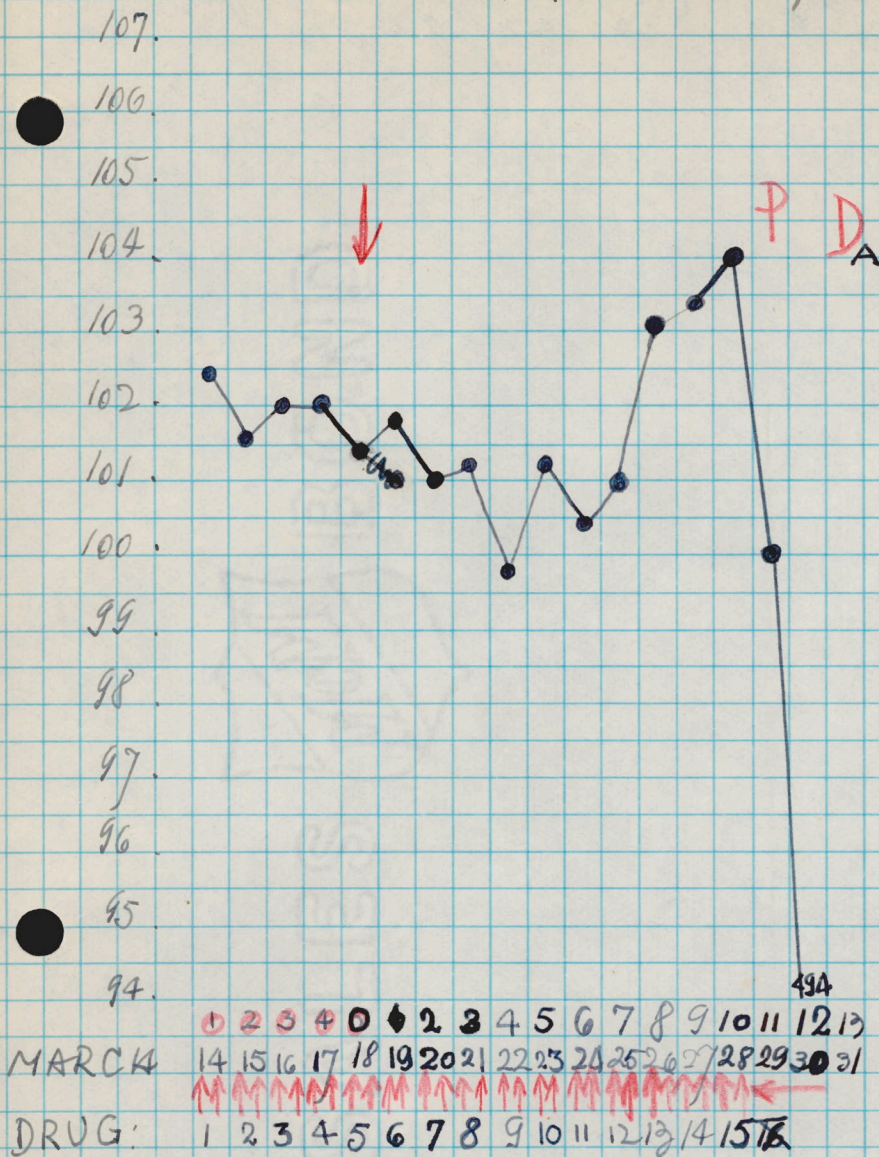
Same condition

6

Dead, rigor, cold.

DISCARDED

Rh . 1297 - Pomagumine, 3 mg B/K - 2x a day. 3-14-49.



MARCH 15 AM: Pts of hemorrhagic suppression on both superior eyelids - other side O.K.

16 - Same as before.  
 17 - Same " "  
 18 - Same " "  
 19 - Same " "  
 21 - Same " " - Pts less noticeable

22 - O.K.  
 23 - O.K.  
 24 - O.K.  
 25 - O.K.  
 26 - O.K.  
 27 - O.K.

28 - Epafed.  
 29 - Partial paralysis both arms - weakness on both lower.  
 30 - Prostrate.  
 31 - faint, white, cold. Autopsy: 9:10 AM

1 Vienna: System somewhat in car-  
ged. No other gross patho-  
logical changes.

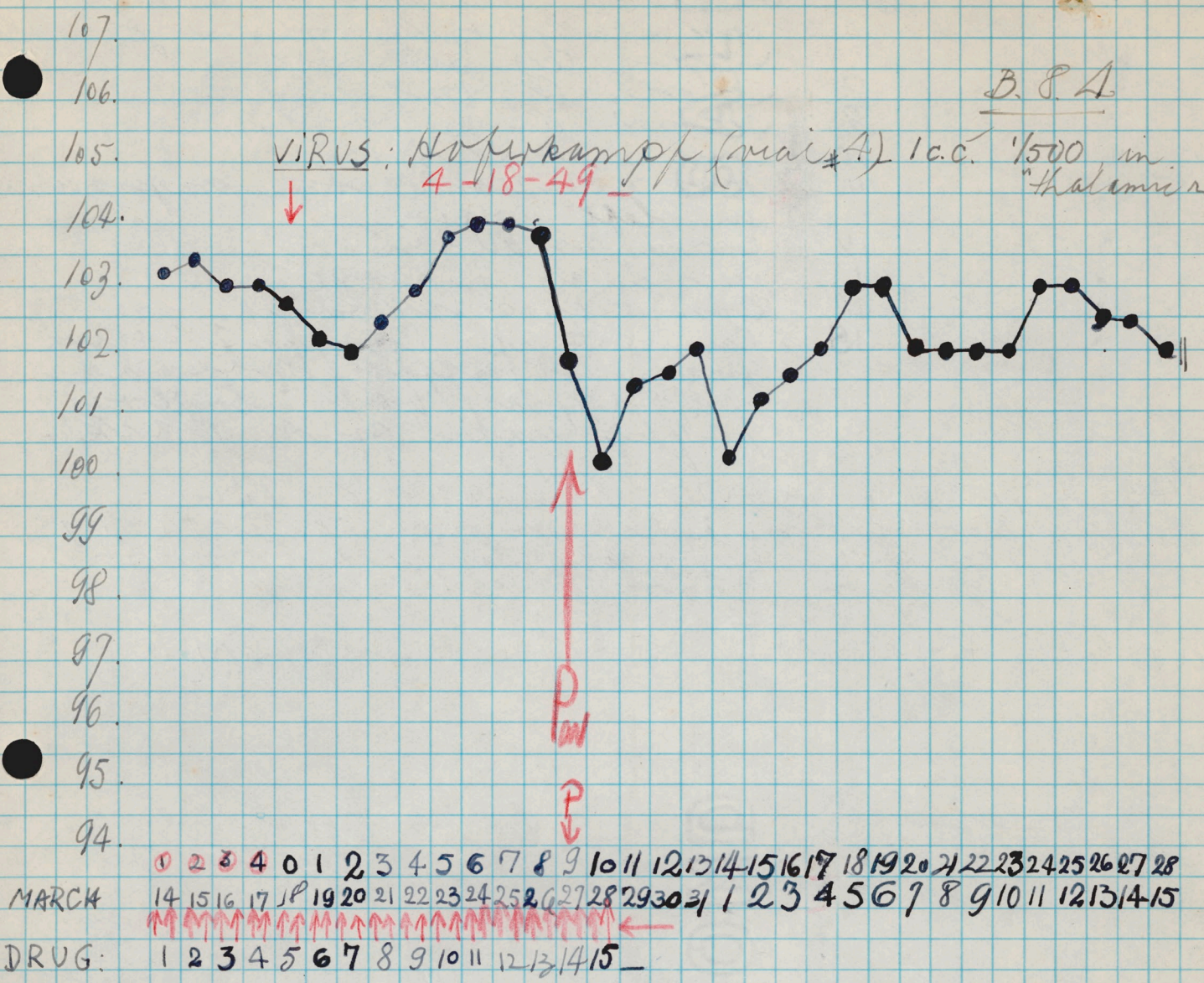
CNS - Z.A.

Rh. 1278 - Panagum, 3 mg B/K, 2 x a day. 3-14-49

B. S. A.

VIRUS: Hopykamp (mar #4) i.c. '1500 in "thalamic region"

4-18-49



MARCH 15 AM Gums bleeding easily. -

- " 16 - O.K.
- " 21 - O.K.
- " 22 - O.K.
- " 23 - O.K.
- " 24 - O.K.
- " 25 - O.K.
- " 26 - O.K.

- " 27 - Partial paralysis in lower
- " 28 - Partial paralysis all four exte-
- " 29 - Same condition. Can sit up. -
- " 30 - Same as before. -
- " 31 - Sit up. Same as before.
- APRIL 1 - Same condition.
- " 2 - Same as before. -
- " 3 - Same condition. -

APRIL

2  
= 3  
5  
5  
2  
2  
2  
2

4 - Same as before. -

5 - Same as yesterday. -

6 - Same as before. -

7 - Same as before. -

8 - Same as before. -

9 - Same as before. -

10 - Same condition. -

11 - It is not clear some improvement in left upper. -

12 - Same condition. -

13 - Same as before. -

14 - Same as yesterday. -

15 - Can sit up. Complete paralysis left upper, partial paralysis both lower, right upper and back. -

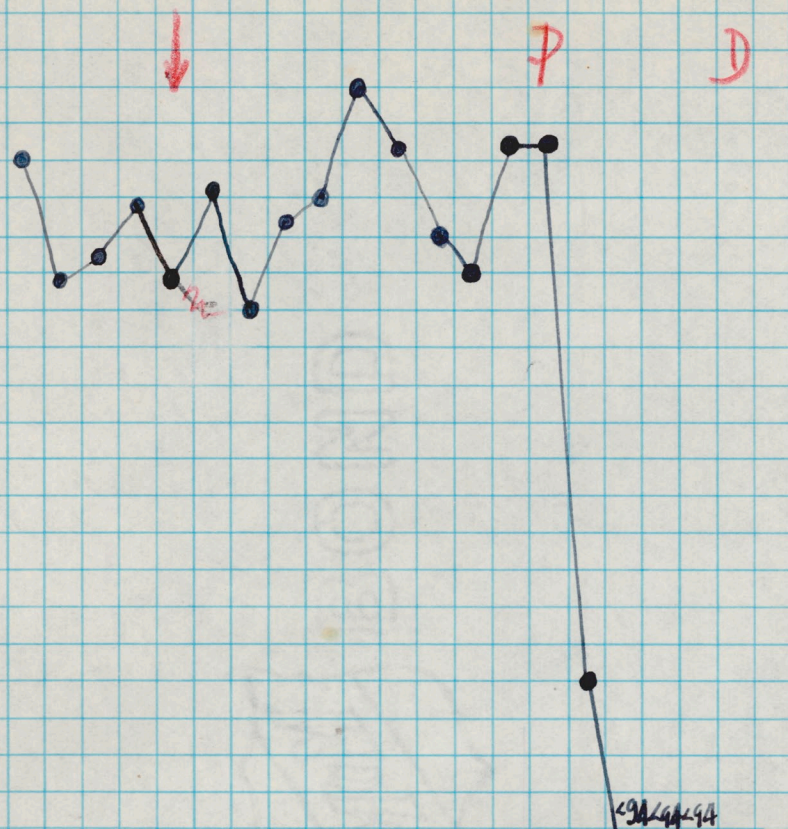
4-16-49 -

This monkey discarded from Panagum experiment of 3-14-49 (at 4-15-49) was selected for the "Dragon Blood test"

weight at 4-21-49 :  $5 \frac{3}{4}$  lbs = 2605 GM.

Rh 1279 - Pomazine, 3 mg B/K. 3-14-49 2 x a day

107.  
106.  
106.  
105.  
104.  
103.  
102.  
101.  
100.  
99.  
98.  
97.  
96.  
95.  
94.



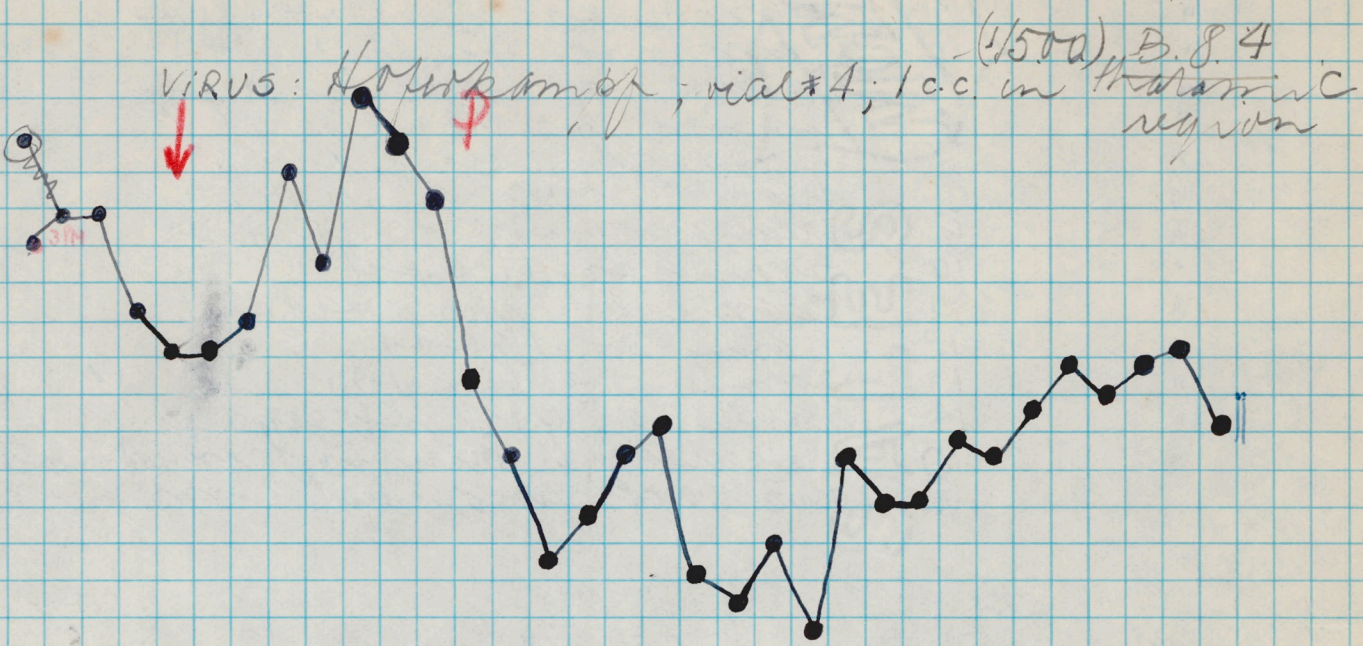
MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 -

MARCH 15 marked discoloration on the skin of the nose - Red face -  
 " 16 - Same as before.  
 " 21 - Thin, Red face -  
 " 22 - O.K.  
 " 23 - O.K.  
 " 24 - O.K.  
 " 25 - O.K.  
 " 26 - O.K.  
 " 27 - O.K.  
 " 28 - AM - partial paralysis both lower and back. PM: Excited.  
 " 29 - Prostrak -  
 " 30 - Same condition -  
 " 31 - Same as before.  
 APRIL 1 - Same as yesterday PM: PTOSIS  
 " 2 - Dead, rigid, cold.

DISCARDED

Rh. 1280 Pamagumic, 3 mg B/K, 2 x a day 3-14-49

108  
107  
106  
105  
104  
103  
102  
101  
100  
99  
98  
97  
96  
95  
94



	0	0	0	0	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			
MARCH:	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
DRUG						↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	←

MARCH 15 - Bleeding gums. - Desquamation on the skin of the nose. - Red face. -

" 16 - No bleedings gums to day. - Nose the same.

" 17 - Pale - otherwise O.K.

" 21 - Same condition. - but small prolapse of the rectum. - Reduced. -

" 22 - O.K.

" 23 - Red face. -

" 23 - Excited, pilomotor. -

" 24 - Excited, pilomotor. -

" 25 - Muscular weakness on left upper. - Excited pilomotor.

" 26 - Paralysis left arm and lower.

" 27 - Lying down. - Paralysis gradually on all four extremities.

" 28 - Same as before. -

" 29 - Lying down. - No neck paralysed. -

MARCH - 30 - Same condition. -  
31 - Same as before.

APRIL

- 1 - Same as before. -
- 2 - Same as before. -
- 3 - Same as before. -
- 4 - Same as before. -
- 5 - Same as yesterday. -
- 6 - Same as before. -
- 7 - Same as before. -
- 8 - Same condition. -
- 9 - Same condition. -
- 10 - Same as before. -
- 11 - Same as yesterday. -
- 12 - Same as before. -
- 13 - Same as before. -
- 14 - Same as yesterday. -
- 15 - His down - mucus somewhat  
his back and left arm. -

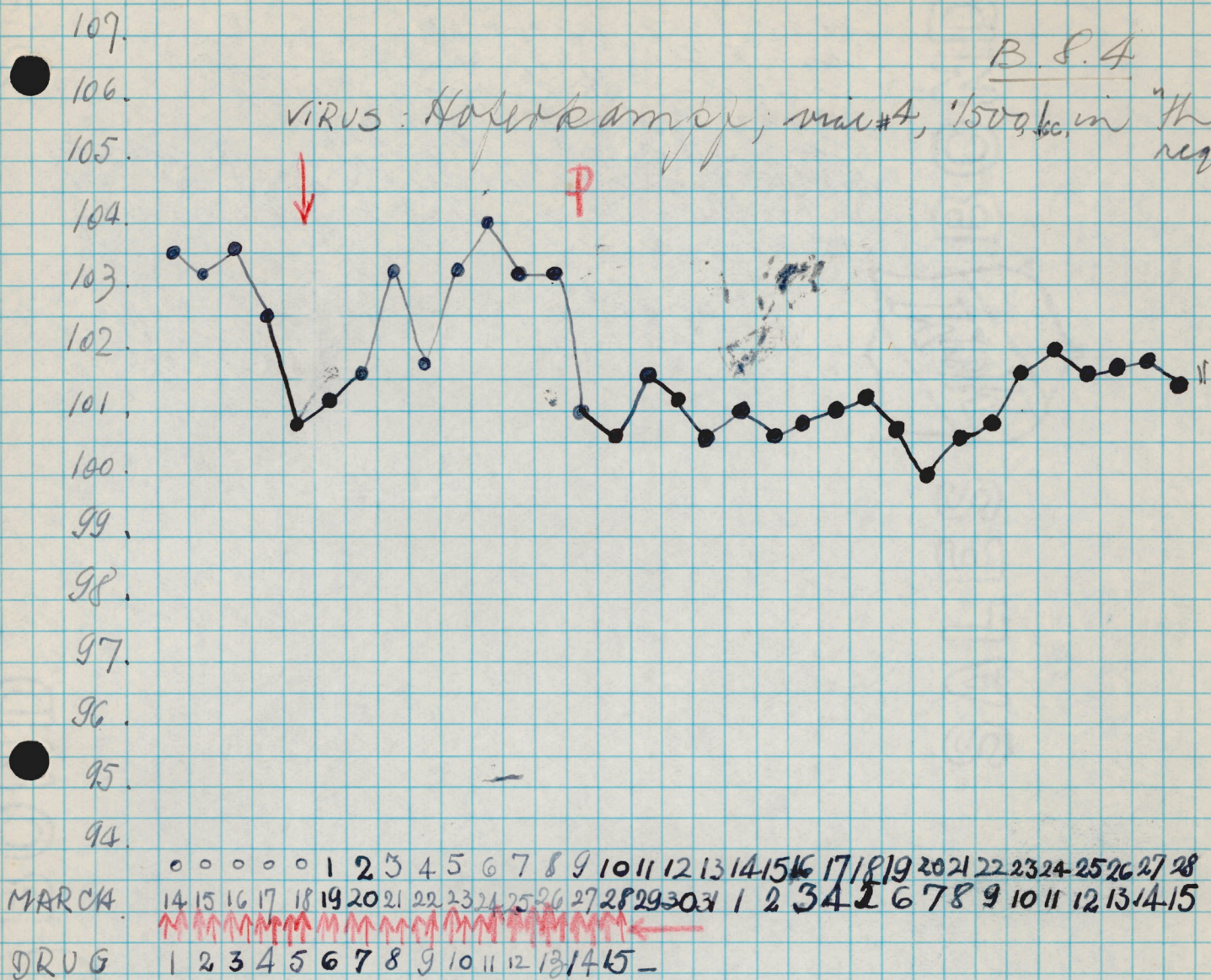
4-16-49. This monkey, discarded from Yama-  
quine experiment of 3-14-49, (at 4-15-49)  
was selected for the "Dragon Blood test".

Weight at 4-21-49 :  $5\frac{1}{4}$  lbs = 2,378 GM

Rh. 1281 - Panaguric, 3 mg B/K, 2 x a day. 3-14-49

B.S.4

VIRUS: Hagerkamp, vac #4, 1500 cc, in "thalami region"



MARCH -

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - O.K.
- 25 - O.K.
- 26 - O.K.
- 27 - Partial paralysis, lowers.
- 28 - Same as yesterday.
- 29 - Partial paralysis all four extremities. Can't sit up.
- 30 - Same as before.
- 31 - Same as yesterday.

APRIL

- 1 - Same as before.
- 2 - Same as yesterday.
- 3 - Same as before.
- 4 - Same cond. given.
- 5 - Same as before.
- 6 - Same as yesterday.

APRIL

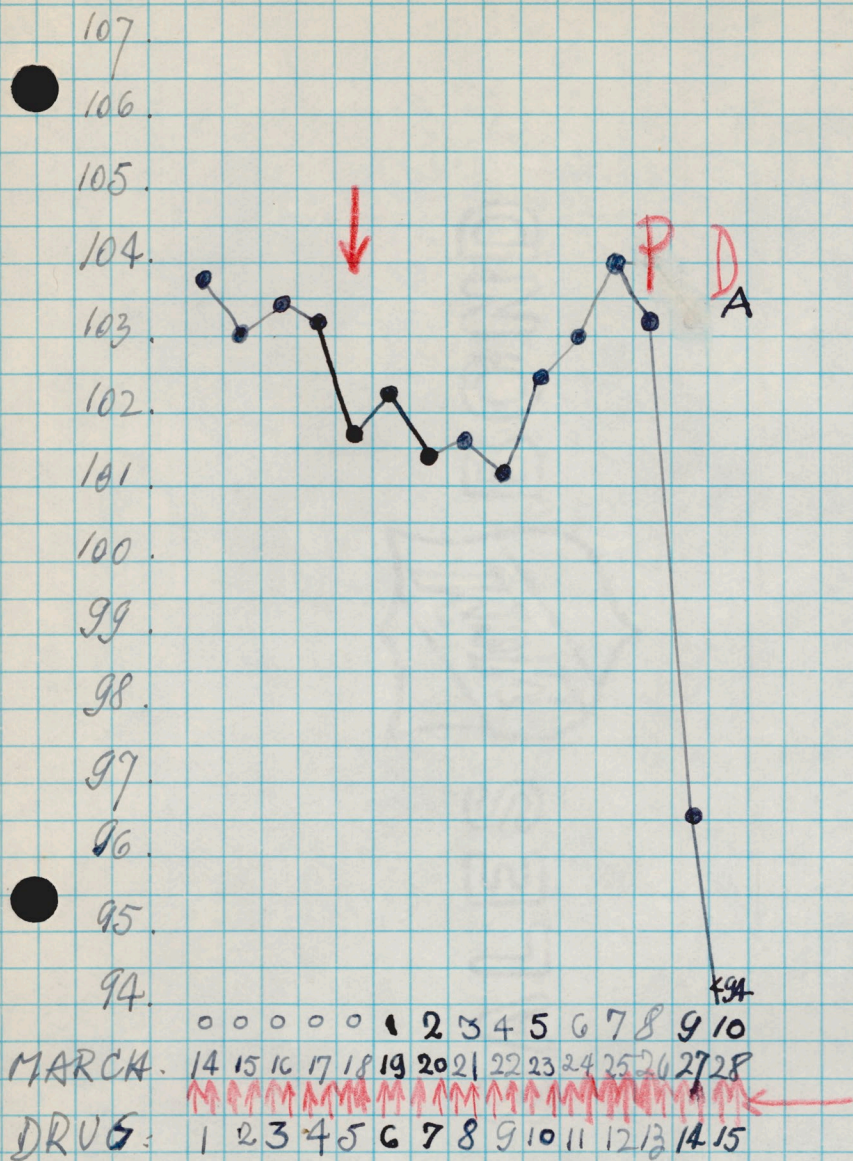
"  
"  
"  
"  
"  
"  
"

- 7 - Same as before. -  
8 - Same as before. -  
9 - Same as before. -  
10 - Same as yesterday. -  
11 - Same as before. -  
12 - Same as yesterday. -  
13 - Same as before. -  
14 - Same as yesterday. -  
15 - Can sit up. Partial paralysis  
both lower, more marked on  
right side. Good recovery  
on arms. -

4-16-49 - This monkey discarded from  
Pamagaine experiment of 3/14-49 (at  
4-15-49) was selected for the "Dragon" Burn  
test.

Weight at 4-21-49: 4 1/2 lbs = 2.138 GM.

Rh. 1282 - Pomagumic, 3 mg B/K, 2 x a day 3-14-49



MARCH

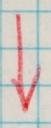
- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - O.K.
- 25 - Excited.
- 26 - Partial P both arms -
- 27 - Partial P on abdomen all down  
 eyelids shut and back  
 legs down.

28 AM Prostrate -  
 4 PM: Dead warm, no rigor.  
 4<sup>15</sup> PM: autopsy. no gross pathological  
 changes in viscera.  
 CNS - Very soft on both sides.  
 ——— germ mts of spinal cord  
 M.A.

Rh. 1283 - Panagumic, 3 mg 3/K, 2 mg 3-14-49

B. S. 4

VIRUS: Hepatitis, viral #4, 1/500, 1 c.c. in thalamic region.



P

107.  
106.  
105.  
104.  
103.  
102.  
101.  
100.  
99.  
98.  
97.  
96.  
95.  
94.

o o o o o 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  
 MARCH 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 -

- MARCH 15 - Bleeding gums - discoloration on the skin of the nose.
- " 16 - No bleeding gums otherwise the same.
- " 21 - Pale - no more discoloration on the skin of the nose. - Active
- " 22 - O.K.
- " 23 - O.K.
- " 24 - O.K.
- " 25 - AM. O.K.
- " 26 - Weakness on left arm
- " 27 - Partial paralysis right lower Still no definite paralysis on left arm.
- " 28 - Partial paralysis all four extremities - Sits up.
- " 29 - Same as yesterday.
- " 30 - almost complete paralysis

MARCH

30 -

on lower  
partial paralysis on both  
upper.

31 -

Sits up - Same condition

APRIL

"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15

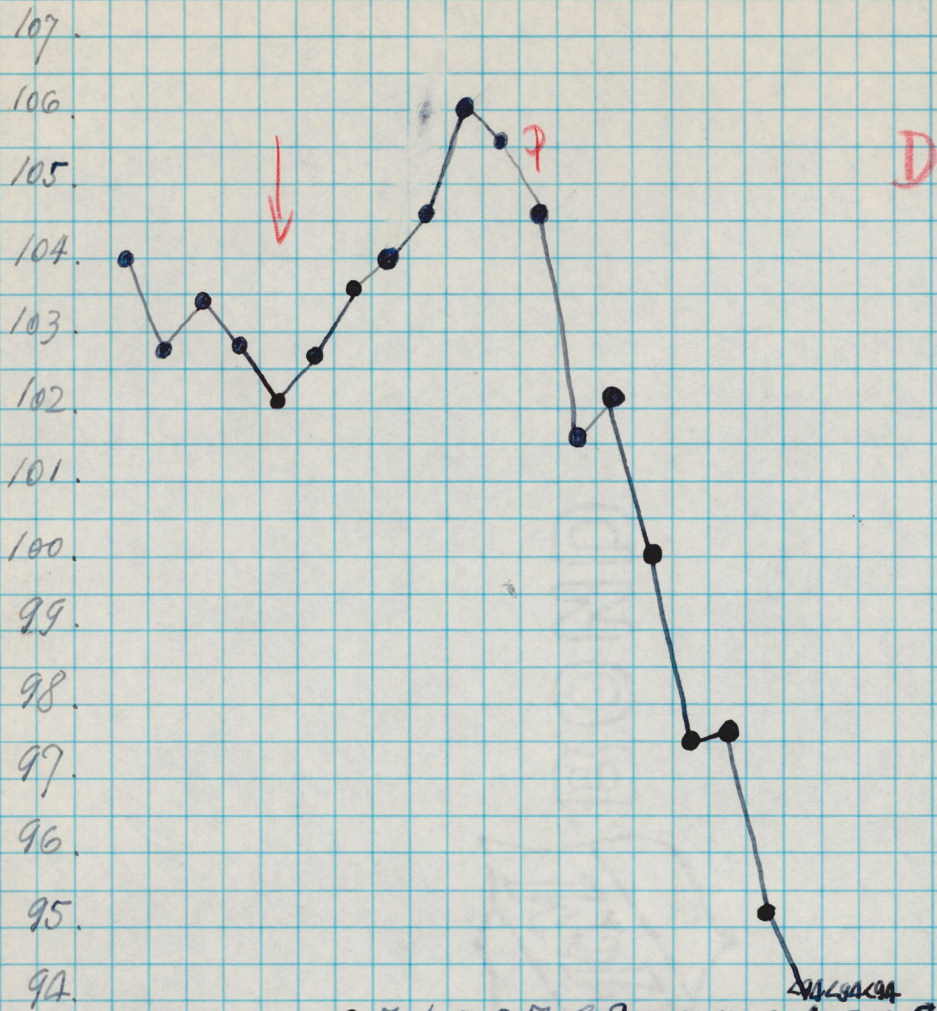
Same as yesterday.  
Same as before.  
Same condition.  
Same as before.  
Same as yesterday.  
Same as before.  
Same as yesterday.  
Same as before.  
Same as before.  
Same as yesterday.  
Same as before.  
Same as yesterday.  
Same as before.  
Same as yesterday.  
Same as before.  
Can sit up! Good recovery on  
all four extremities. The partial  
paralysis on left arm is <sup>now</sup> more  
marked.

4-16-49 -

This monkey discarded  
from the "amalgam" experiment  
of 3-14-49 (as 4-15-49) was se-  
lected for the "Dragon Blood Test"

Weight at 4-21-49: 5 1/4 lbs = 2,378 GM.

Rh 1284 - Plasmodium, 91 mg <sup>8/12</sup> 2x a day. 3-14-49



MARCH 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 2 3 4  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 -

MARCH

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - Plasmodium -
- 25 - afebrile, tremor. Partial paralysis right upper.
- 26 - Plasmodium.
- 27 - Same condition.
- 28 - Same as before. Can move somewhat by head.
- 29 - Same condition.
- 30 - Same condition.
- 31 - Same as before.

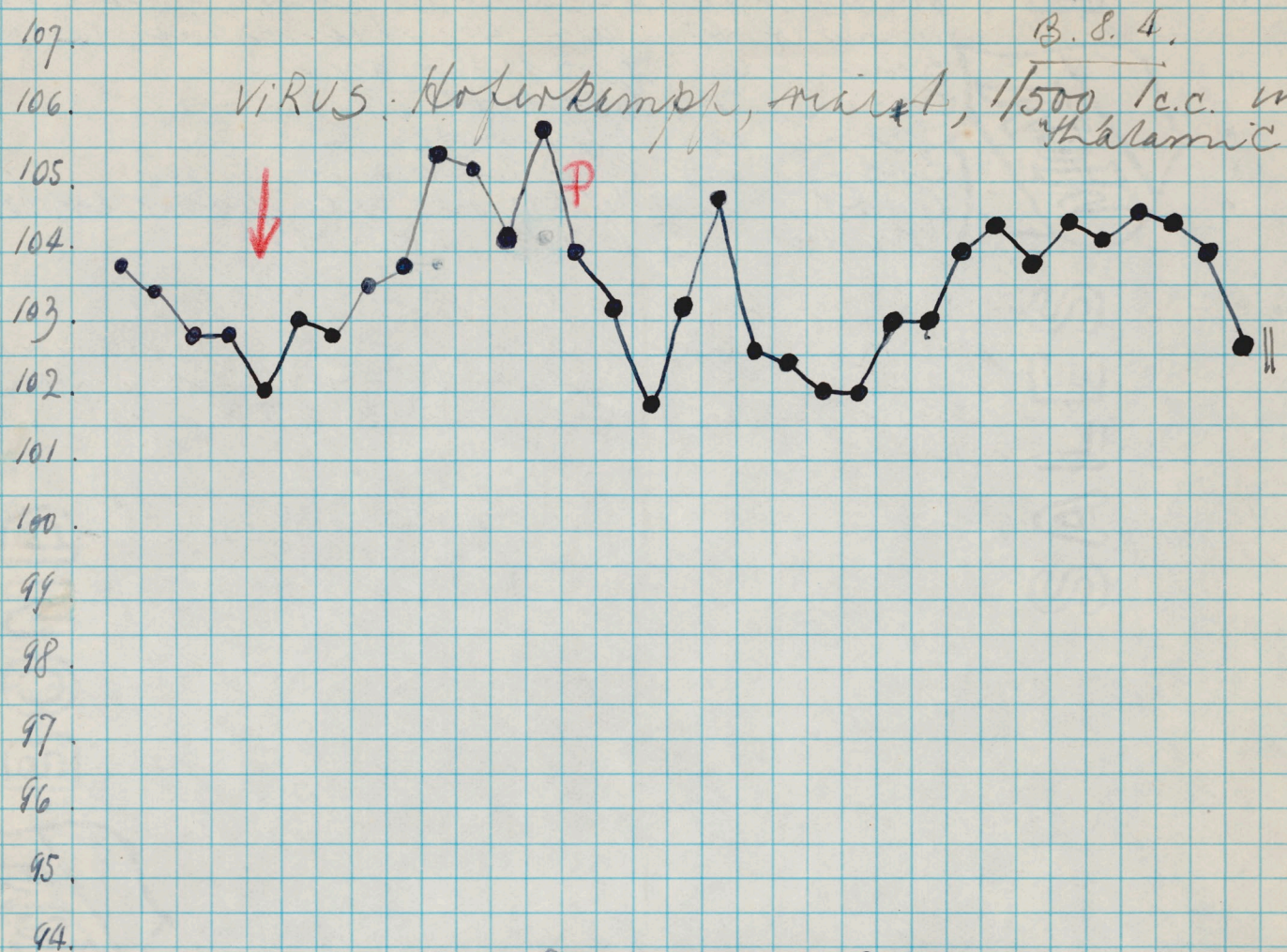
APRIL

- 1 - Same as yesterday.
- 2 - Same as before.
- 3 - Same condition.
- 4 - Dead. rigor, cold. DISCARDED

Rh. 1285 - Plasmodium, 0.1 mg @/K, 2x a day 3-14-49

B.S. 4.

VIRUS: Hoferkamp, mist, 1/500 i.c.c. in "thalamic region"



MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 - DISCONTINUED

MARCH -

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - Pilomotor -
- 25 - O.K.
- 26 - O.K. but Pilomotor + bicycled
- 27 - Partial paralysis lower <sup>upper</sup> <sub>limbs</sub> x. Weakness
- 28 - Same as yesterday. - Can sit up.
- 29 - Same as before.
- 30 - Same condition.

APRIL

- 31 - Can sit up
- 1 - Same as before.
- 2 - Same condition.
- 3 - Same condition.
- 4 - Same as before.
- 5 - Same as before.
- 6 - Same as before.
- 7 - Same as before.

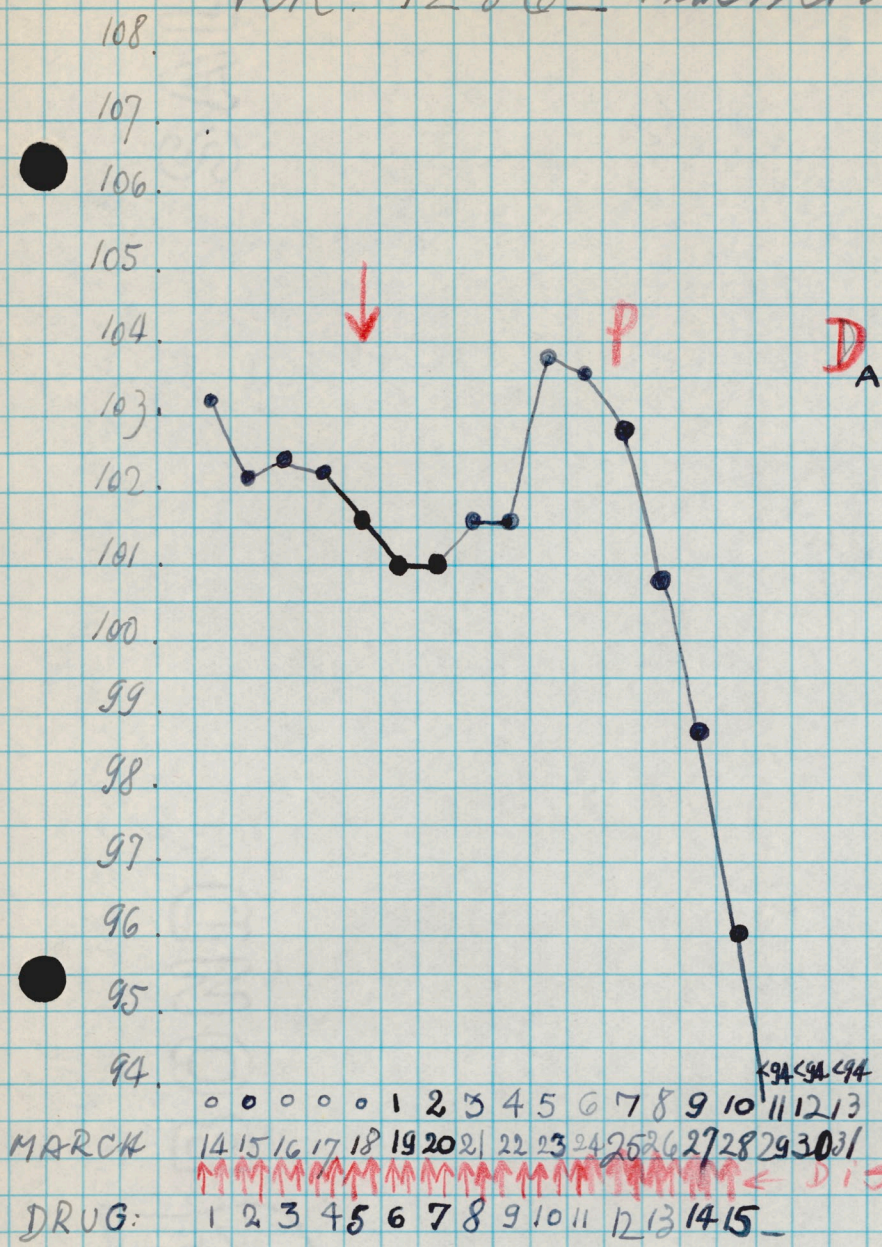
- APR 11 8 - Same as yesterday. -  
 " 9 - Same as before. -  
 " 10 - It is noticeable some impr.  
 amount on all 4 extremities. -  
 " 11 - Same as yesterday. -  
 " 12 - Same as before. -  
 " 13 - Same as before. -  
 " 14 - Same as yesterday. -  
 " 15 - Good recovery on all four ext.  
 limbs. - Sits up, active.

4-16-49

This monkey discarded  
 from the "Plasma" experiment  
 of 3-14-49 (at 4-15-49) was se-  
 lected for the "Dragon Blood"  
 test. -

Weight at 4-21-49:  $5\frac{1}{4}$  lbs = 2,378 GM

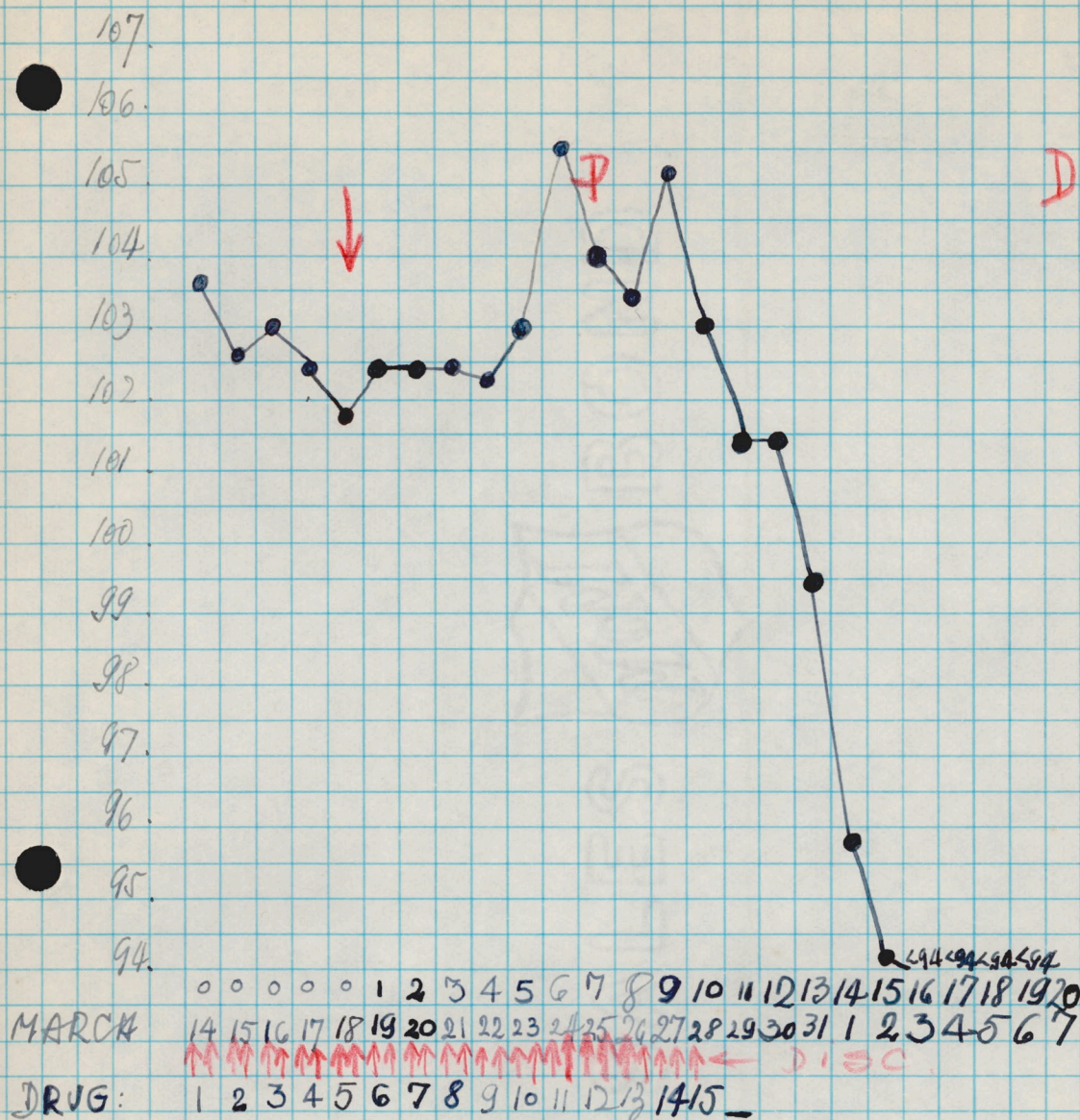
Rh. 1286 Plasmodium, 0.1 mg B/K, 2 x a day. 3-14-49



MARCH

- 21 - O.K.
  - 22 - O.K.
  - 23 - O.K.
  - 24 - weakness on left arm and back -
  - 25 - Complete paralysis all 4 extremities
  - 26 - Completely prostrate.
  - 27 - Same condition
  - 28 - Prostrate
  - 29 - Same as before.
  - 30 - Same as yesterday.
  - 31 - AM Same condition.  
2:30 PM - Dead no rigor.
- Autopsy: No gross pathologi-  
cal changes. Spleen  
somewhat enlarged.  
CNS → Z.A.

Rh 1287 - Plasmodium, 0.1 mg B/K, 2x a day 3-10-49



MARCH 20 - 2M: Traumatic lesion on skin face, right side, superior

21 - O.K.

22 - O.K.

23 - O.K.

24 - Beg. of - P. lomafor.

25 - Partial paralysis left upper

26 - Same condition

27 - Partial paralysis both

28 - Complete paralysis lower -  
Partial paralysis upper -

29 - Lies down. Can move somewhat  
right upper only.

30 - Same condition

31 - Same as before

APRIL

1  
2  
3  
4  
5

1 - Same as yesterday.

2 - Same as before

3 - Same as yesterday.

4 - Same as before

5 - Same as yesterday.

APRIL

"

6

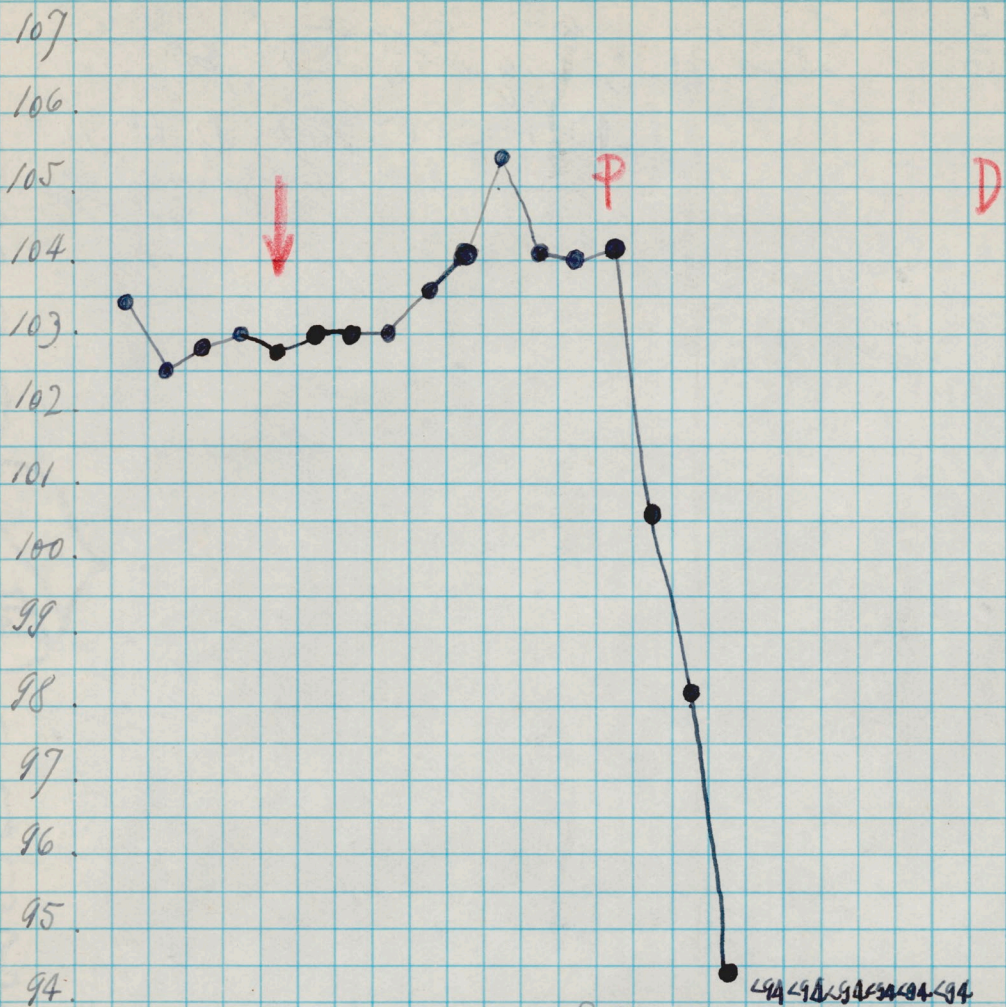
Same condition.

7

Dead, rigor.

DISCARD I.D.

Rh. 1288. Plasmodium, 0.1 mg B/K, 3-12-49, 2x a day



MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 -

MARCH -

- 21 - O.K.
- 22 - O.K. Dark area around his left eye. -
- 23 - O.K. same condition. -
- 24 - Tremor.
- 25 - Tremor & cuffed.
- 26 - Tremor & cuffed.
- 27 - Partial paralysis all four  
 by formula his down.
- 28 - his down. Complete paralysis  
 all four extremities. No neck  
 paralyzed. -
- 29 - Same condition. -
- 30 - Prostrate. - Neck almost com-  
 pletely paralyzed.
- 31 - Same as before.
- APRIL 1 - Same condition. -
- 2 - Completely prostrate. -

APRIL

APRIL

u  
u  
u

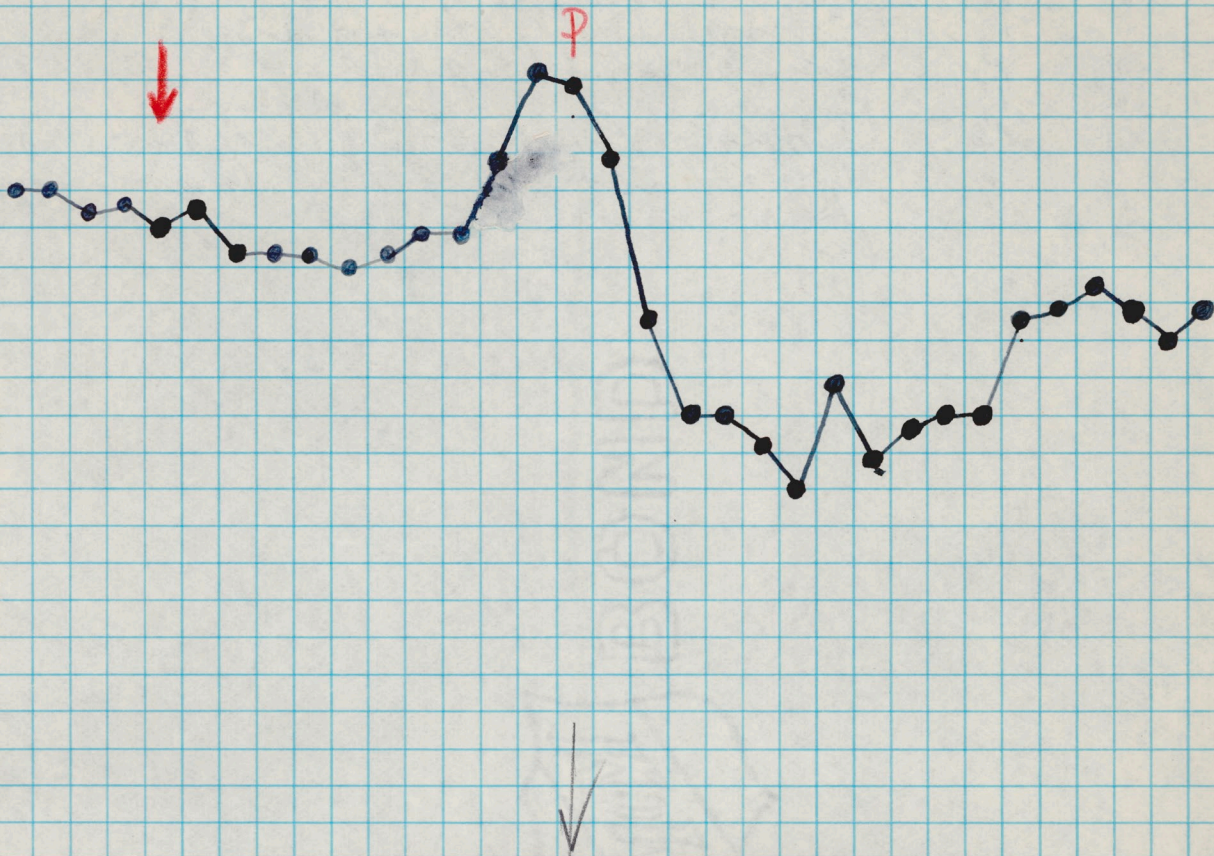
- 3 - Same condition.
- 4 - Same condition.
- 5 - Same as before.
- 6 - dead, rigor, cold.

DISCARDED

101  
+2

Rh. 1289 - Plasmodium, 0.1 mg B/K, 2 x a day 3-14-49

107  
106  
105  
104  
103  
102  
101  
100  
99  
98  
97  
96  
95  
94



MARCH 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 -

MARCH

- 21 - o.k.
- 22 - o.k.
- 23 - o.k.
- 24 - o.k.
- 25 - o.k.
- 26 - o.k.
- 27 - o.k.
- 28 - Excited, film motor -
- 29 - Partial paralysis left lower and back - weakness on right lower -
- 30 - almost complete paralysis on both lowers
- 31 - lies down - partial paralysis all four extremities and back

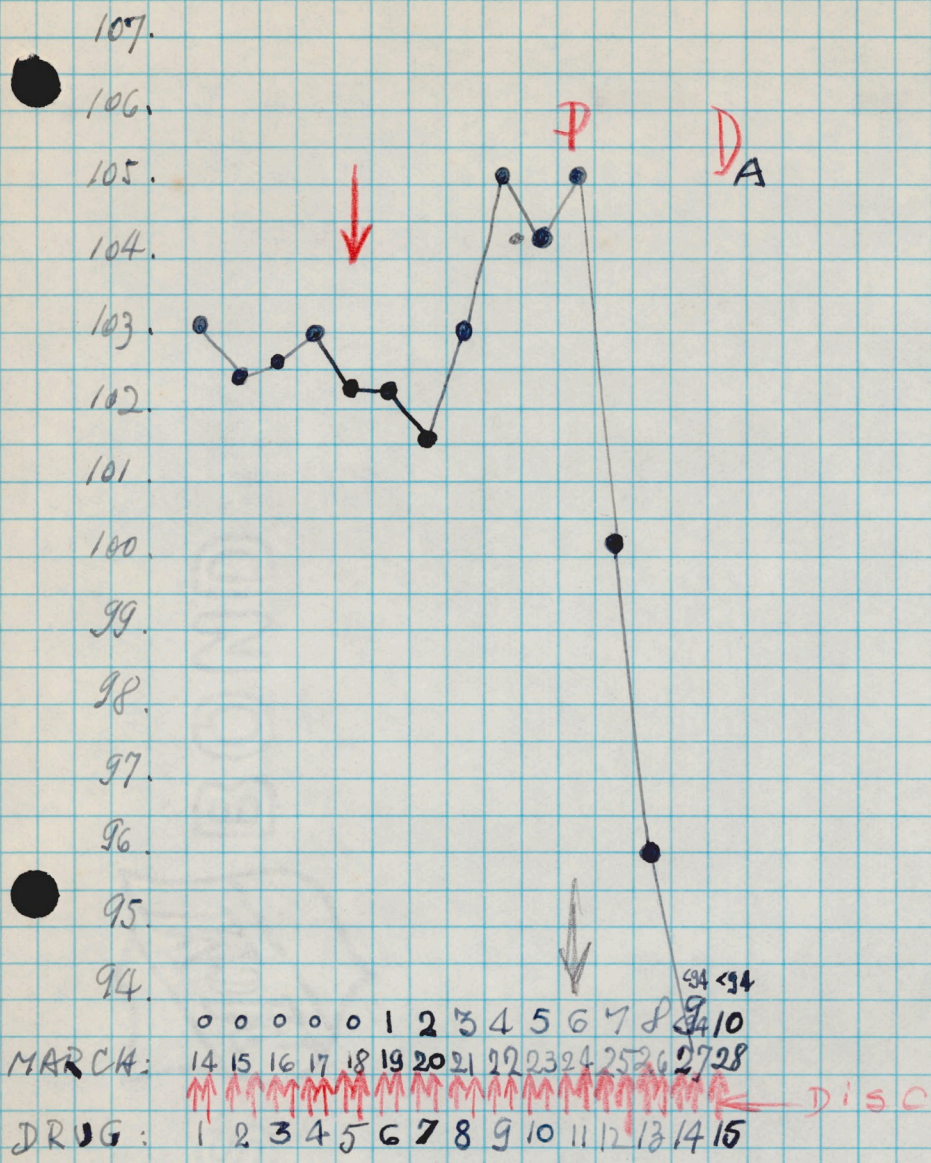
APRIL

- 1 - Same as before.
- 2 - Same as before.
- 3 - Same as before.
- 4 - Same as before.

APRIL

- " 5 - Same as before.
- " 6 - Same as yesterday.
- " 7 - Same as before.
- " 8 - Same as yesterday.
- " 9 - Same as yesterday.
- " 10 - Same as yesterday.
- " 11 - Same as before.
- " 12 - Same as yesterday.
- " 13 - Same as before.
- " 14 - Same as yesterday.
- " 14 - Shows the same signs very little recovery. Neck and paralyzed his down.

Rh 1290 - Plasmodium, 0.02 mg, 2 x a day 3-12-49



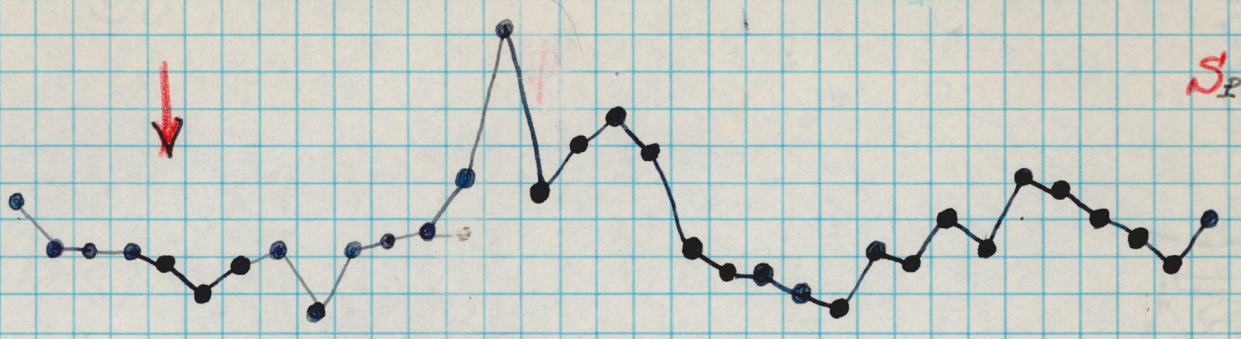
MARCH

- 21 - O.K.
- 22 - Peculiar behavior - 6 P.M. - Does not use left foot - paralysis? - otherwise very active - climbing very well
- 23 - x Excited
- 24 - Partial paralysis on lower more marked on left and partial paralysis on left upper
- 25 - Prostrate. Complete quadriplegia
- 26 - Same as yesterday
- 27 - Same as before
- 28 - AM Same as before. -
- 29 AM - Dead warm no rigor
- 4<sup>15</sup> PM - Autopsy: no gross pathological changes in viscera.
- CNS: Very soft on both in-largements of spinal cord

Z.A.

Rh. 1291 Plasmodium, 0.02 mg 2 x a day 3-14-49

107  
106  
105  
104  
103  
102  
101  
100  
99  
98  
97  
96  
95  
94



Nonparalytic Polio

Slight focal lesions in spinal cord & changes in anterior roots due to loss of cells.

One focus in medulla.  
No lesions due to plasmodium seen

MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

MARCH 15 - AM - Small vomit, @ 2-3 c.c. Not repeated.

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - O.K.
- 25 - O.K.
- 26 - Very excited.
- 27 - Excited.
- 28 - NO PARALYSIS
- 29 - Excited - Pilomotor.
- 30 - Same as yesterday.
- 31 - Same condition.
- APRIL 1 - O.K.
- 2 - O.K.
- 3 - O.K.
- 4 - O.K.
- 5 - O.K.
- 6 - O.K.
- 7 - O.K.

APRIL - P - O.K.  
" 9 - O.K.  
" 10 - O.K.  
" 11 - O.K.  
" 12 - O.K.  
" 13 - O.K.  
" 14 - O.K.  
" 15 - 8AM O.K.

SACRIFICED

PERFUSION:

Viscera: No gross pathological changes.

CNS.



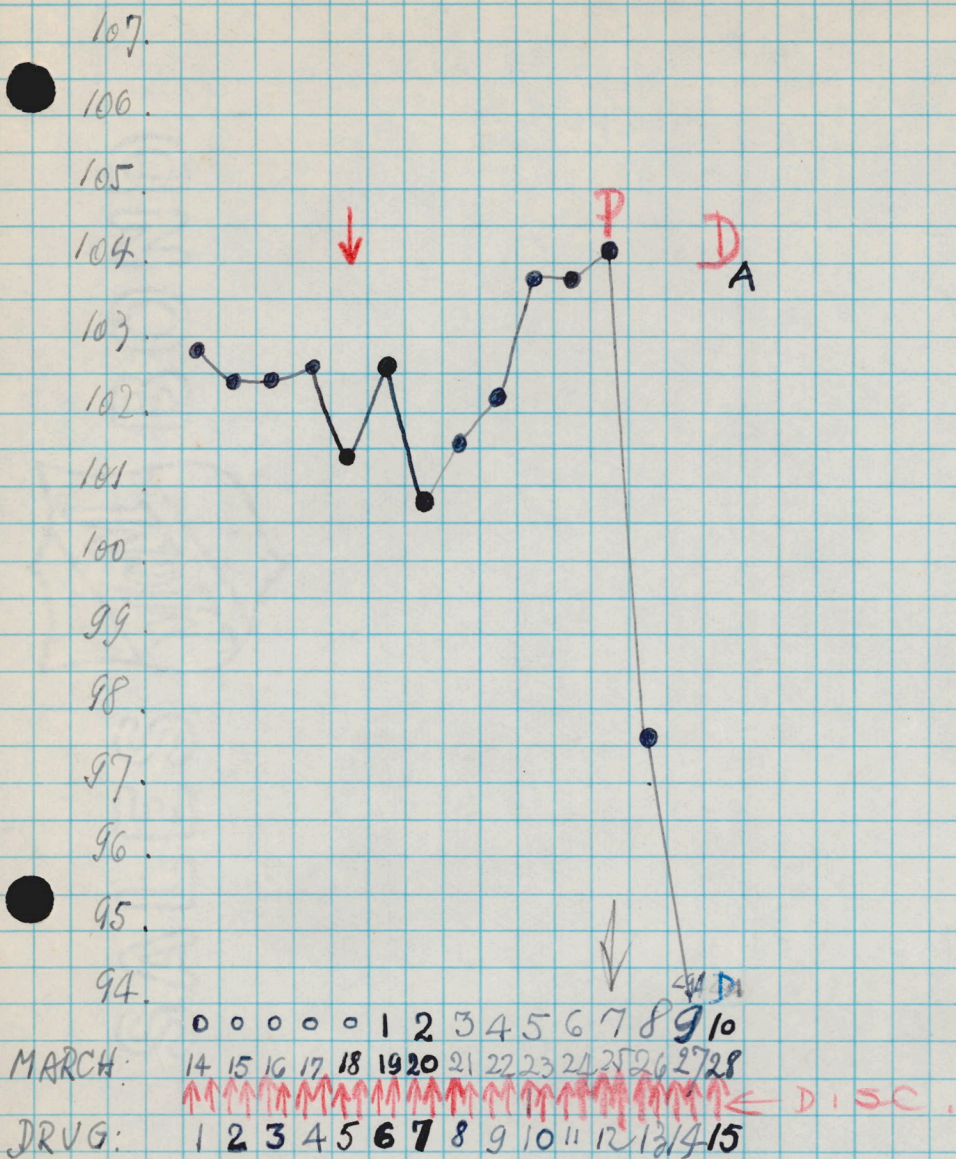
APRIL

"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"  
"

- 1 - Same as before -
- 2 - Same as yesterday -
- 3 - Same as yesterday -
- 4 - Same condition -
- 5 - Same as before -
- 6 - Same as yesterday -
- 7 - Same as before -
- 8 - Same as before -
- 9 - Same as yesterday -
- 10 - Same as before -
- 11 - Same as before -
- 12 - Same condition -
- 13 - Same as before -
- 14 - Same as yesterday -
- 15 - His down + Good recovery in  
uppers: partial paralysis  
of both arms. -

Loweres paralysed.  
No neck paralysed. -

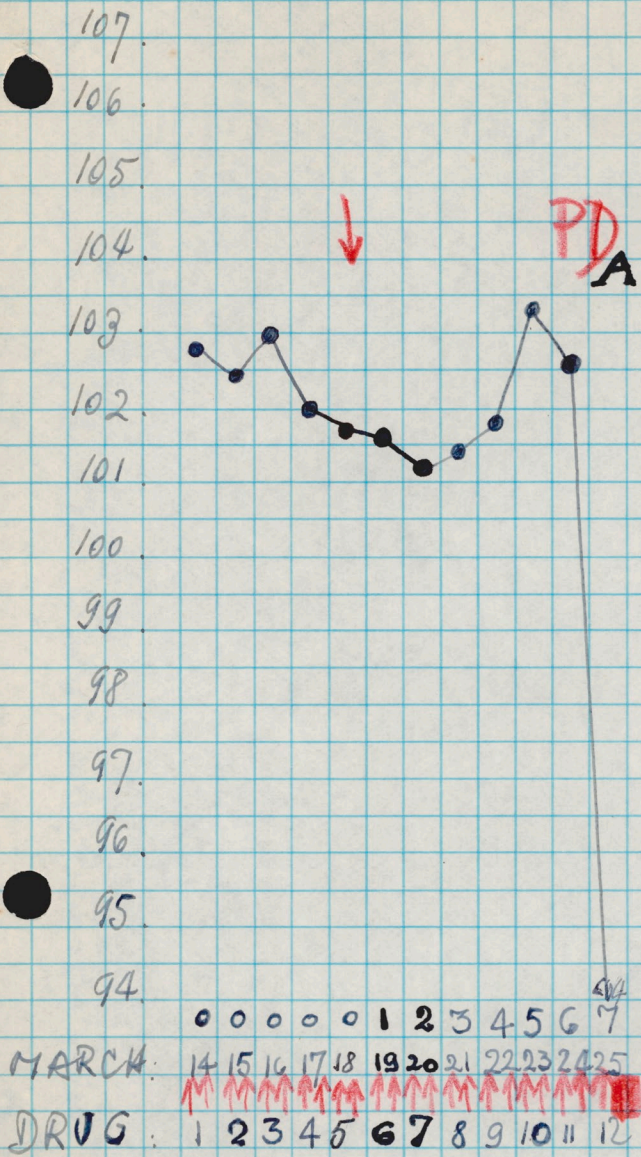
Rh. 1293 - Plasmodium, 0.02 mg B/K, 2 x a day. <sup>3-10-49</sup>



MARCH

- 21 - o.k.
  - 22 - o.k.
  - 23 - Excited.
  - 24 - Excited.
  - 25 - Partial paralysis all four limbs.
  - 26 - Completely prostrate.
  - 27 - Same as before.
  - 28 am. dead, rigor mortis.
- autopsyl: no gross pathological changes on viscera.
- CNS → LA.

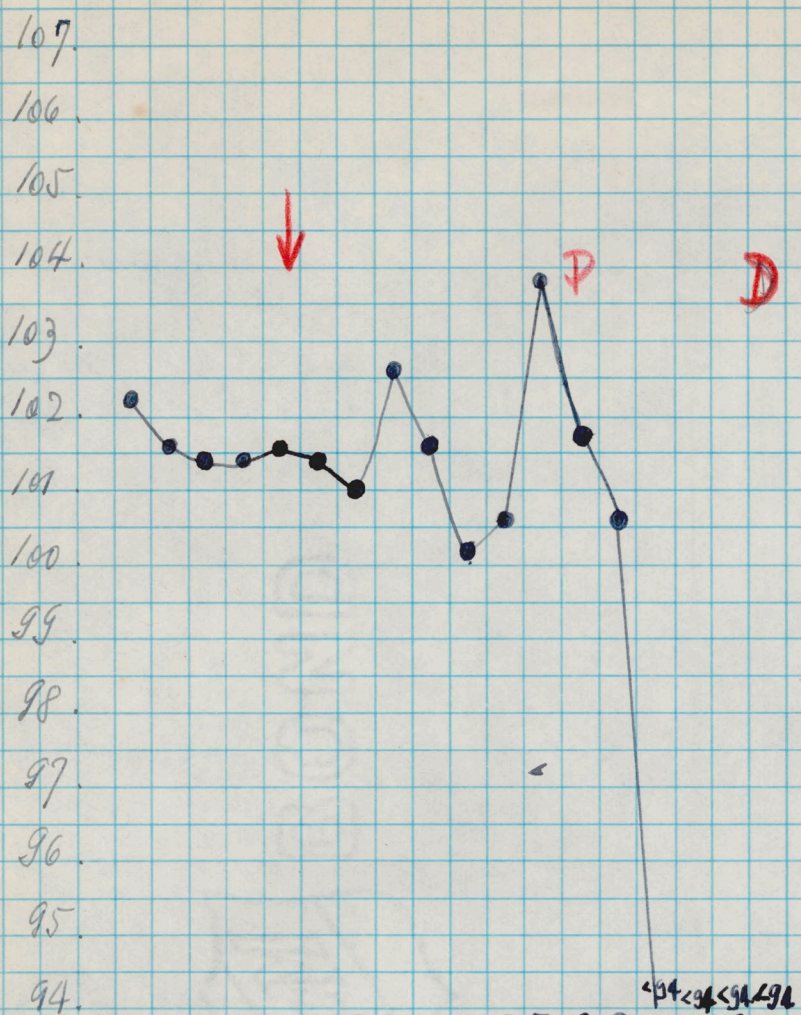
Rh 1294. Propanolol, 0.02 mg, 2 x a day 3-14-49



MARCH

- 21 o.k
- 22 o.k
- 23 Excited.
- 24 Complete paralysis upper <sup>part of</sup> abdomen  
Weakness upper and back
- 25 AM Completely prostrate. Flaccid  
quadriplegia aphonia.
- 10 AM Dead. no rigor.
- 10.10 AM An autopsy. No gross patho-  
logical changes in viscera  
C.H.S. → L.A.

Rh. 1295. Proumid, 0.02 mg. 2 x a day 3-14-49



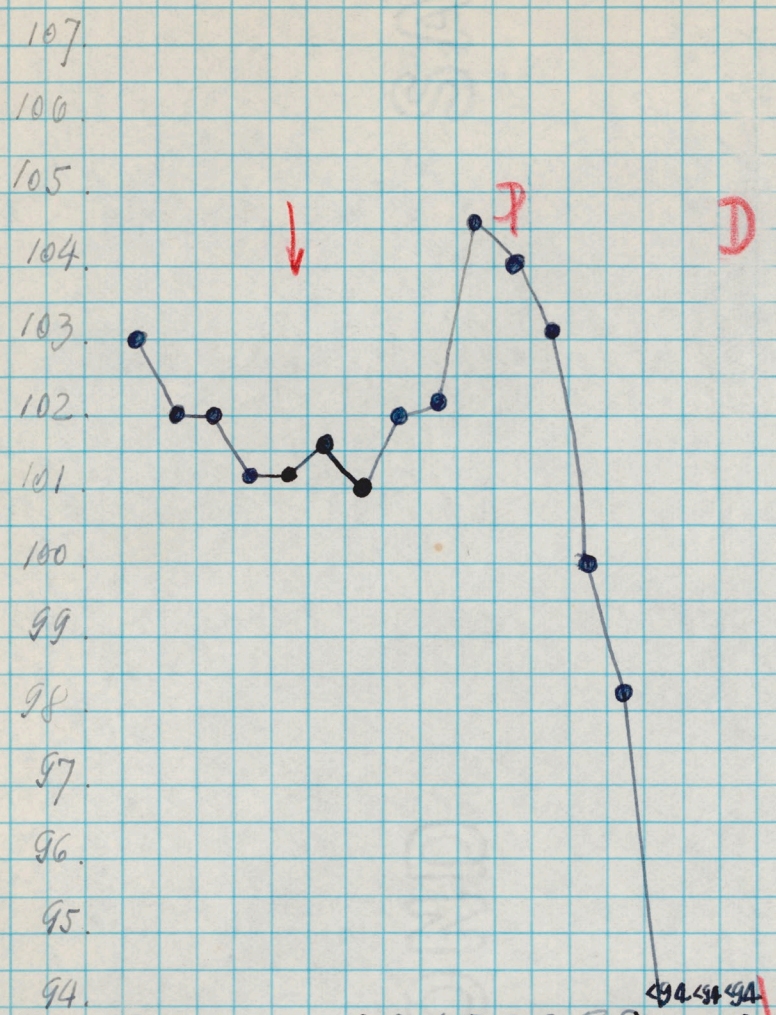
MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31  
 DRUG: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

MARCH

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - O.K.
- 25 - O.K.
- 26 - Partial paralysis all hour  
 pre-sensit. - Can see 2 up.
- 27 - Prostrate.
- 28 - Completely prostrate. -
- 29 - Same as before. -
- 30 - Same as yesterday. -
- 31 AM Same as before. -  
 3PM - dead, the right warm. -

DISCARD

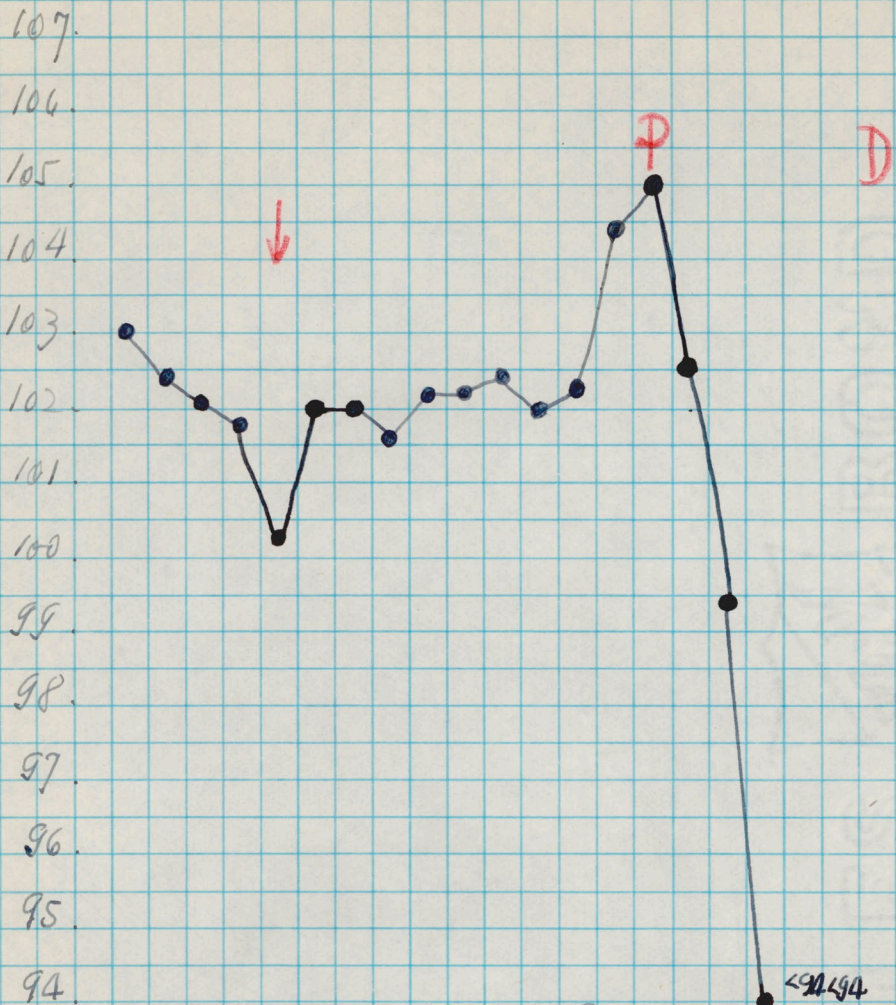
Rh 1296. CONTROL - NDRIG. 3-14-49



MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

- MARCH - 21 - o.k.  
 22 - o.k.  
 23 - Excited  
 24 - very excited  
 PM. Partial paralysis on lower + Back  
 25 - prostrate  
 26 - Same as yesterday  
 27 - Same as yesterday  
 28 - Can move some but head  
 29 - Completely prostrate.  
 30 AM Same as before.  
 3 PM Head - Rigor  
DISCARDED

Rh. 1297. - CONTROL. No DRUG <sup>3</sup> 14-49



MARCH: 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 2 3

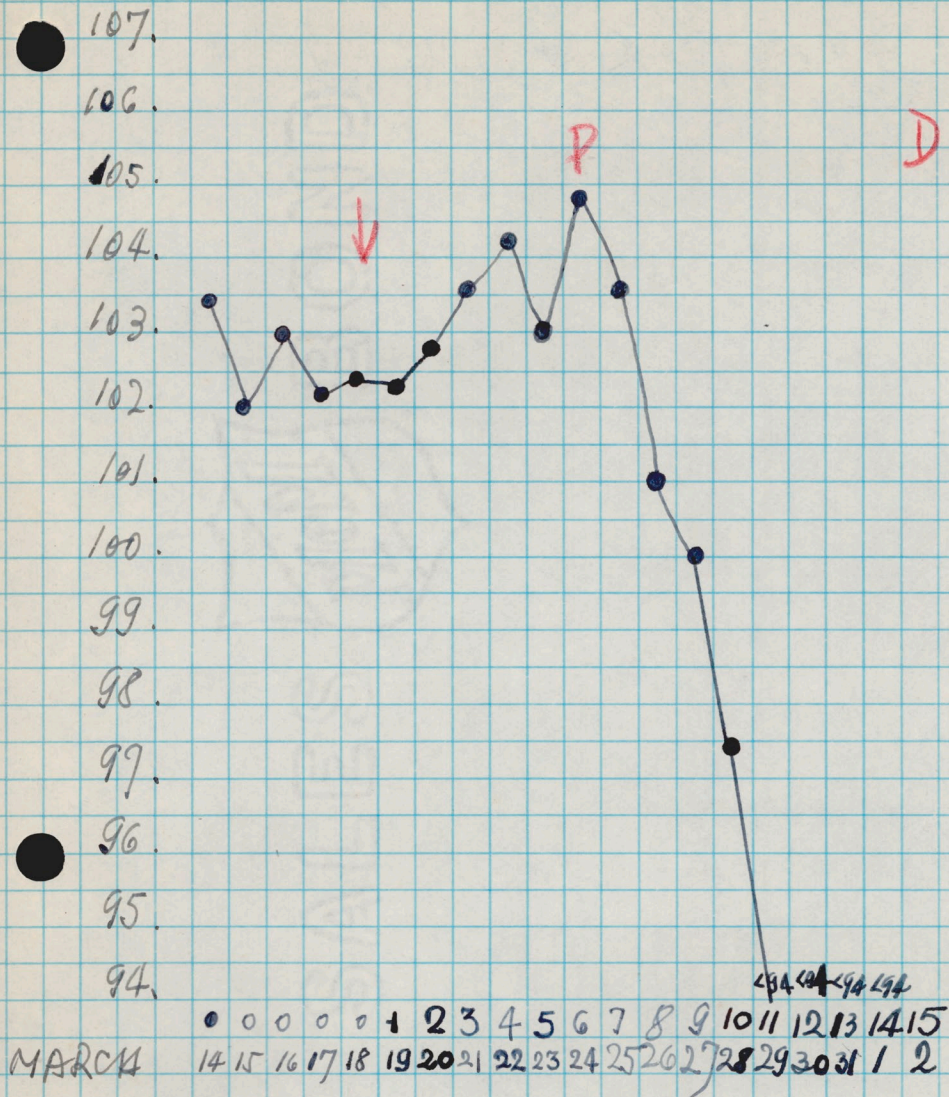
MARCH

- 21 - O.K.
- 22 - O.K.
- 23 - O.K.
- 24 - O.K.
- 25 - O.K.
- 26 - O.K.
- 27 - Excited, tremor.
- 28 - Partial paralysis both upper and lower.
- 29 - His down. Partial paralysis all four extremities. The paralysis is almost complete in upper, and left lower. Can move some what right lower.
- 30 - Prostrate. Can move somewhat his head only.
- 31 - Same condition.

APRIL

- 1 - Same as before.
- 2 - Same as yesterday.
- 3 - dead - DISCARDED.

Rh. 1298 - CONTROL, NO DRUG. 3-14-49



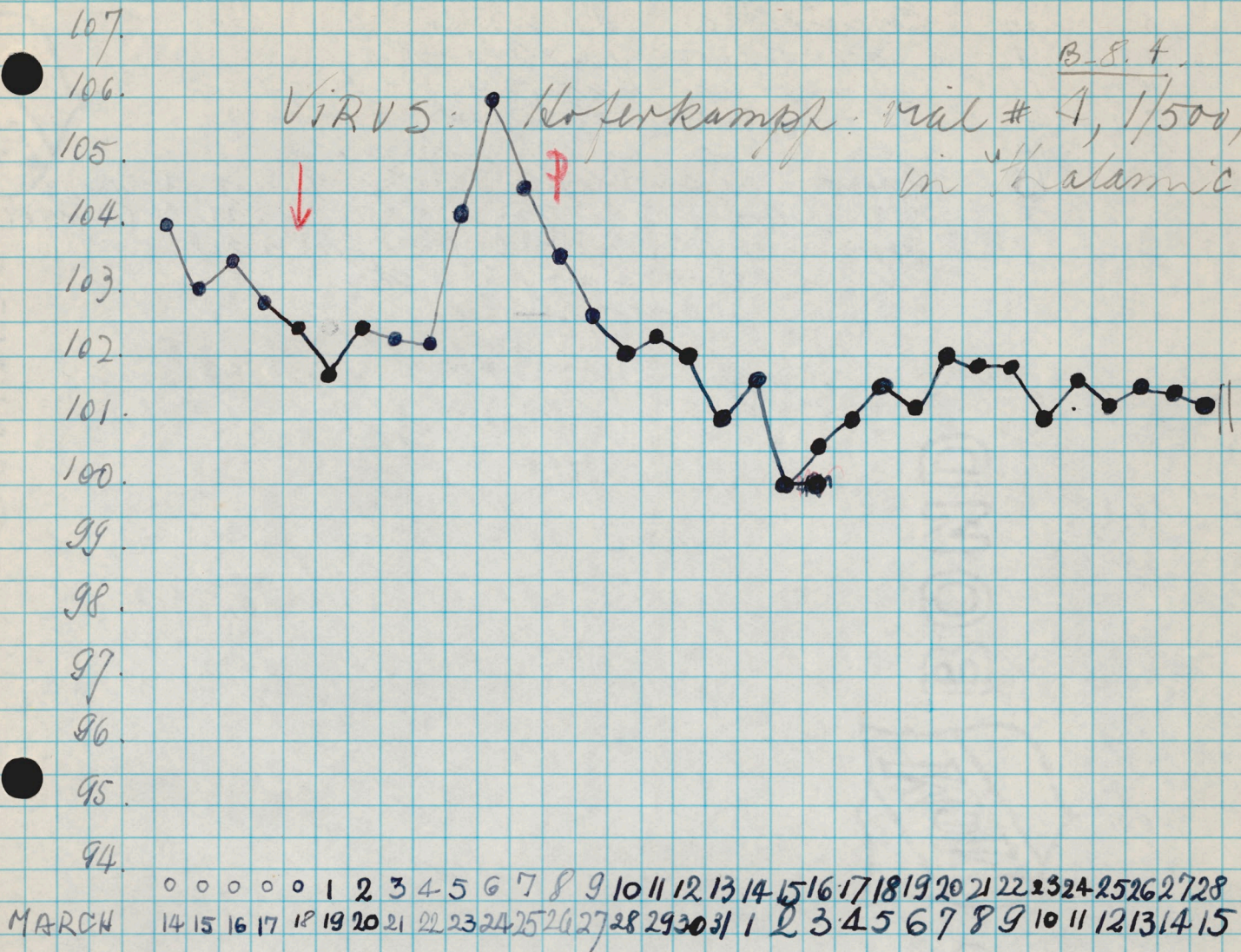
MARCH

- 21 - o. k.
- 22 - o. k. some excitement.
- 23 - This monkey appeared today with his head to the left side. Excitement unmanageable.
- 24 - Marked tremor, questionable involvement of the right upper. Right facial paralysis?
- 25 - Partial paralysis all four extremities. Head to the left side.
- 26 - Prostrate.
- 27 - Same as before.
- 28 - only move somewhat his head.
- 29 - Completely prostrate.
- 30 - Same as yesterday.

MARCH 31 - Same condition.

APR 1 - 1 - Same as before.  
2 - Dead - Rigor of cold.

DISCARDED



MARCH

- 21 - O.K.
- 22 - O.K.
- 23 - Excited.
- 24 - Very excited.
- 25 - Very excited.

26 - Partial throbbing left lower and upper - excited.

- 27 - Lying down. Partial P. all four limbs.
- 28 - Same condition. Can sit up.
- 29 - Same as before.
- 30 - Same as before, but cannot sit up.
- 31 - Same as before. Muzzle head.

APRIL

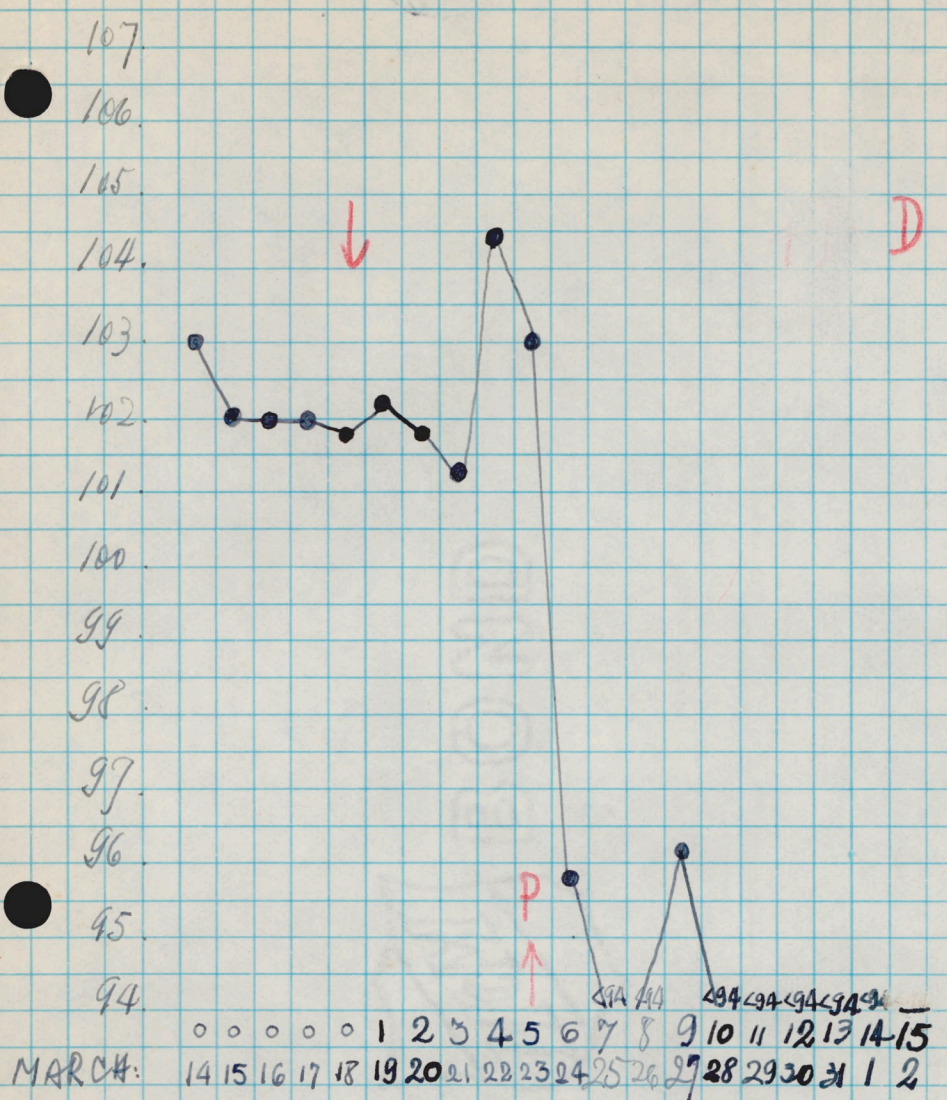
=====

- 1 - Same as yesterday.
- 2 - Same as before.
- 3 - Same as yesterday.
- 4 - Same as before.
- 5 - Same as before.
- 6 - Same as before.

- APRIL - 7 - Same as before. -  
 " 8 - Same as before. -  
 " 9 - Same as yesterday. -  
 " 10 - Same as before. -  
 " 11 - Same as yesterday. -  
 " 12 - Same as before. -  
 " 13 - Same as before. -  
 " 14 - Same as yesterday. -  
 " 15 - Good recovery. The paralysis  
 is partial on all four extre-  
 mities but much marked  
 still on his back.  
 His down. -

4-16-49 - This monkey discarded from  
 the plasmocin experiment of 4-14-49,  
 (at 4-15-49) was selected for the  
 "Dragon Blood Test".

Weight at 4-21-49: 5.75 lbs - 2605 GM.



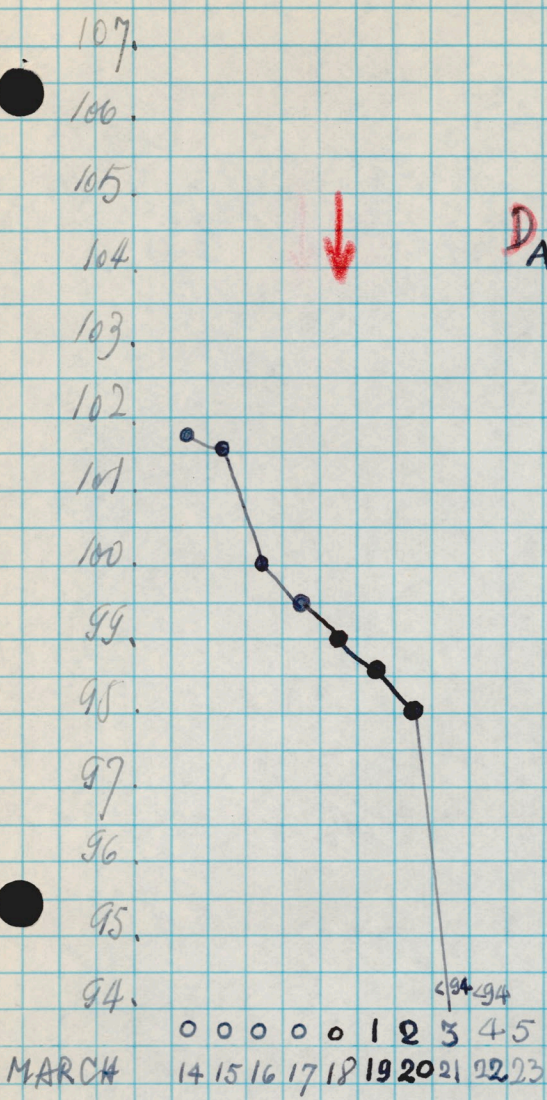
MARCH

- 21 - O.K.
- 22 - Excited. Pilomotor.
- 23 - AM - Partial paralysis both lower and left upper.
- PM - Partial paralysis all four extremities - but down neck no paralyzed.
- 24 - AM. Complete paralysis upper lower, back, aphonia.
- 25 - Completely prostrate.
- 26 - Same as before.
- 27 - Same as yesterday.
- 28 - Prostrate weak.
- 29 - Same as before.
- 30 - Same as yesterday.
- 31 - Same as before.
- APRIL 1 - Same as before. Very weak.

APRIL

APRIL 2 - Head, migs, cold.

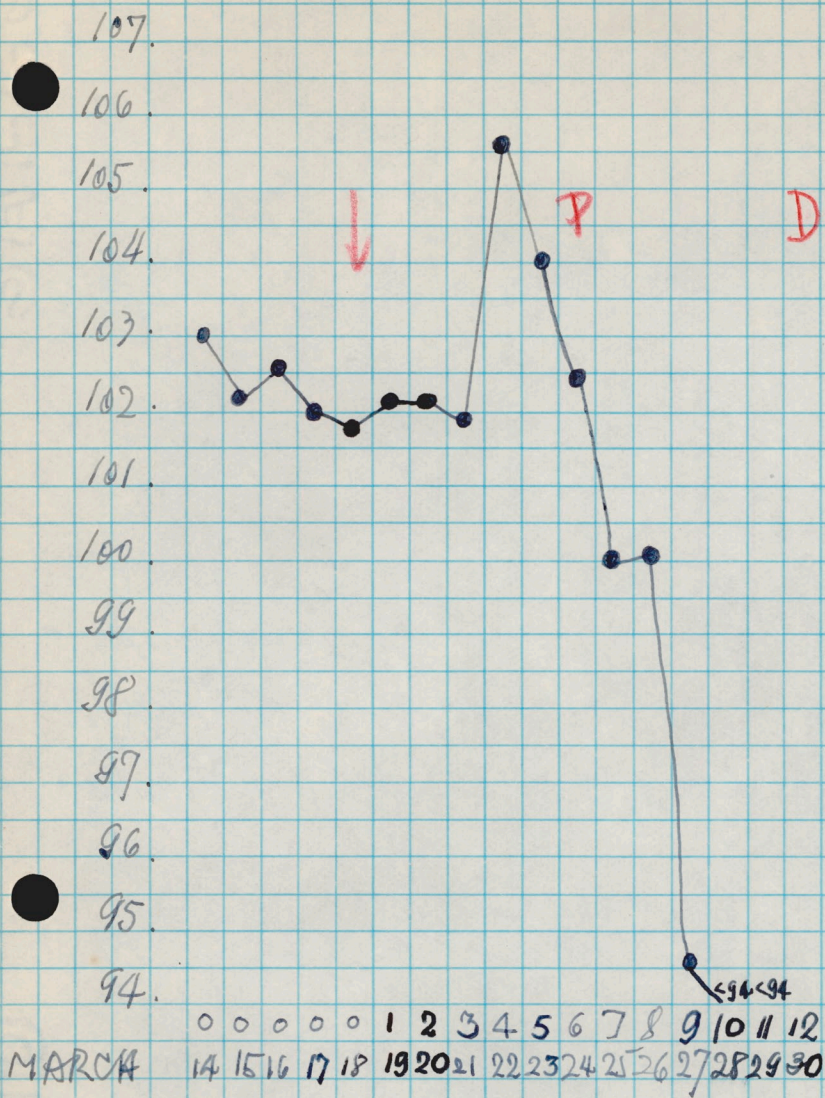
DISCARD



Polio - Neuronophagia in spinal cord affecting only portion of cells.  
 Acute lesions in vagal nuclei in medulla - bulbar?

MARCH 17 - Thin  
 " 21 - Thin, pale, not active  
 " 22 - Laid down, very weak  
 " 23 - 8 AM dead, rot in mortis  
 Autopsy: 10 AM - No gross pathological changes on visceral  
 CNS - 7 A

Rh. 1302 - CONTROL - no DRUG - 3-14-49

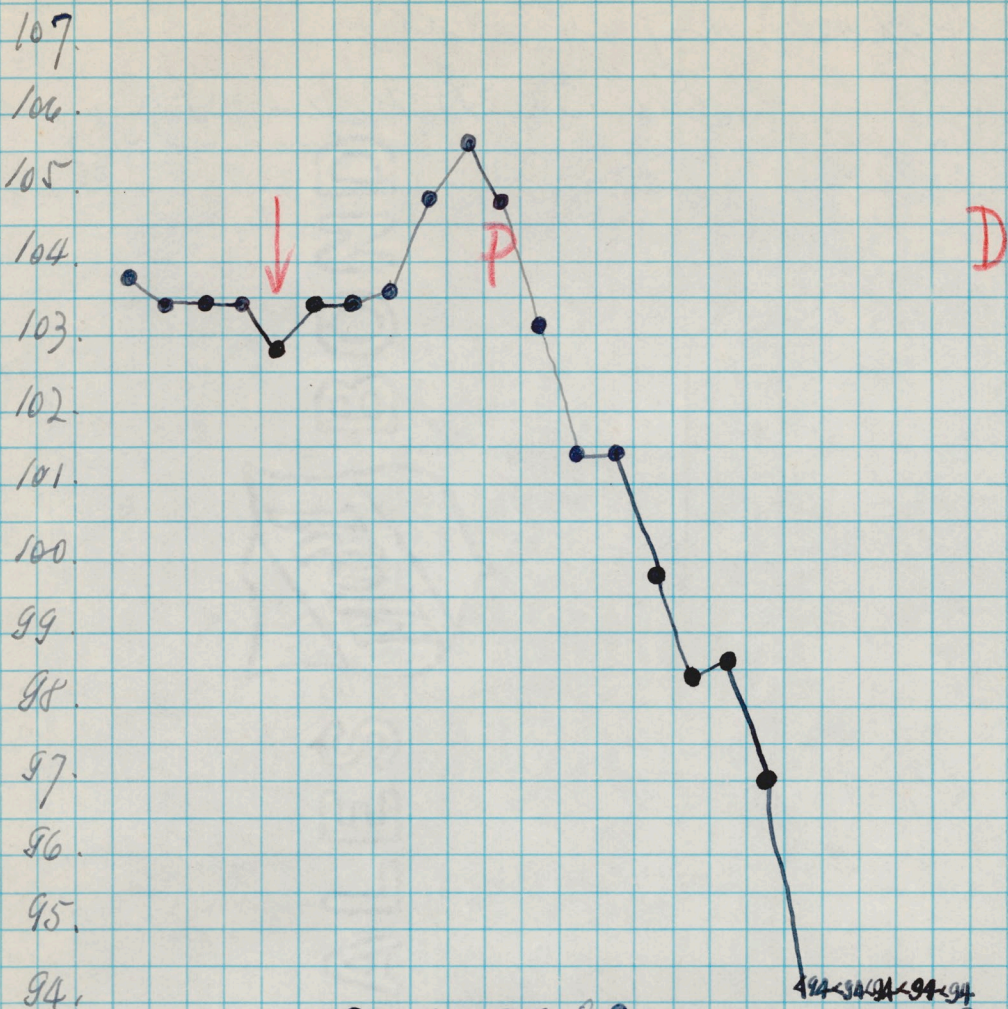


MARCH

- 21 - OK
- 22 - Excited, Pylomotor.
- 23 - Excited, Pylomotor.
- 24 - Right facial paralysis  
partial paralysis of lower  
and back.  
Weakness upper.
- 25 - Prostrate - mouse only left upper
- 26 - Same as before.
- 27 - Completely prostrate.
- 28 - Same as before.
- 29 - Same as yesterday.
- 30 - Dead, rigor, cold DISCARDED

# Rh. 1303 - CONTROL

3-14-48  
NO DRUG



MARCH 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31  
APRIL 1 2 3 4 5 6

## MARCH

- 21 - O.K.
- 22 - Excited - Pulmotor.
- 23 - Excited - Pulmotor.
- 24 - Pulmotor - Excited.
- 25 - Partial paralysis all four extremities.
- 26 - Completely prostrate.
- 27 - Same as yesterday.
- 27 - Same as before.
- 28 - Same as before.
- 29 - Same as yesterday.
- 30 - Same condition.
- 31 - Same as before.
- 1 - Same condition.
- 2 - Same as before.

## APRIL

APRIL

"  
"  
"

3  
4  
5  
6

Same as yesterday.

Same as before.

Very weak respiration.

Head, rigid, cold.

DISCARDED

S. Solution: 1.610 GMS / 100 cc. Calculation for Paragon  
Exp. 3. 2/12/41.

I 4.5 mg 2x a day

$$\begin{array}{r} \checkmark \underline{1268} - 2603 \\ \quad \quad 4.5 \\ \hline 13015 \\ 10412 \\ \hline 11719.5 \text{ mg} = 1.17 \text{ c.c.} = \underline{\underline{1.2}} \end{array}$$

$$\checkmark \underline{1269} = 1268 = 1.17 = \underline{\underline{1.2}}$$

$$\checkmark \underline{1270} - 3387 \\ \quad \quad 4.5$$

$$\begin{array}{r} 16935 \\ 13548 \\ \hline 15241.5 \text{ mg} = 1.52 \text{ c.c.} = \underline{\underline{1.5}} \end{array}$$

$$\checkmark \underline{1271} = 1268 = \underline{\underline{1.17}} = \underline{\underline{1.2}}$$

$$\checkmark \underline{1272} - 2718 \\ \quad \quad 4.5 \\ \hline 14590 \\ 10872 \\ \hline 12331.0 = 1.23 \text{ c.c.}$$

$$\checkmark \underline{1273} = 3511 \\ \quad \quad 4.5 \\ \hline 17555 \\ 14644 \\ \hline 15799.5, 1.58 = 1.6$$

$$\checkmark \underline{1274} = 2038 \\ \quad \quad 4.5 \\ \hline 10190 \\ 8152 \\ \hline 9171.0 = \underline{\underline{0.9}}$$

$$\checkmark \underline{1275} = 1272 = 1.2$$

Chrom

II 3 mg 2x a day.

$$\underline{\underline{1276}} = 2944 \\ \quad \quad \times 3 \\ \hline 8832 = 0.9$$

$$\underline{\underline{1277}} = 2378 \\ \quad \quad \times 3 \\ \hline 7134 = 0.7$$

$$\underline{\underline{1278}} = 3624 \\ \quad \quad \times 3 \\ \hline 10872 = 1.08 = \underline{\underline{1.1}}$$

$$\underline{\underline{1279}} = 2491 \\ \quad \quad \times 3 \\ \hline 7473 = 0.75$$

$$\frac{1280}{3101} = \frac{3101 \times 3}{9483} = 0.95$$

$$\frac{1281}{2491} = \frac{2491 \times 2}{4982} = 0.7 \text{ c.c.}$$

$$\frac{1282}{3056} = \frac{3056 \times 3}{9168} \text{ mg} = 0.9$$

$$\frac{1283}{2718} = \frac{2718 \times 3}{8154} = 0.8 = 0.9$$

Amount of L. solution 34 days

a) Parvaquine

- I {
- 1.2
  - 1.2
  - 1.5
  - 1.2
  - 1.2
  - 1.2
  - 0.9
  - 1.2

11.2 c.c. → 2 x a day = 22.4 c.c. SS/day

- II {
- 0.9
  - 0.7
  - 1.1
  - 0.7
  - 0.9
  - 0.7
  - 0.9
  - 0.9

5.8 c.c. → 2 x a day = 11.6 c.c. SS/day

$\frac{67.2}{3} = 22.4$  c.c. / 3 days

Parvaquine: 2.415 mg D. each  
 Phenomol: 18.75 mg D. 150 c.c. D.W.

I + II = 70 + 34.8 = 104.8 c.c.

To prepare 150 c.c. = 1610 + 805 = 2.415 mg D. + 150 c.c. D.W.

- I {
- 2.9
  - 2.5
  - 3.3
  - 2.7
  - 2.9
  - 2.6
- II {
- 0.57
  - 0.61
  - 0.63
  - 0.59
  - 0.41
  - 0.61
- 16.9 c.c.      34.2 c.c.

Phenomol

16.9 + 3.42 = 20.32 x 3 x 2 = 121.92 c.c.

$\frac{1610}{805} = 2$

$\frac{2.415}{180.5} = 0.0134$

To prepare 150 c.c. = 12.5 + 6.25 = 18.75 mg D. + 150 c.c. D.W.

II. METHYL PLASMOCID

2-17-49-

RI. 1248 -

$$\frac{8 \times 2944}{1000} = 23.552 \text{ mg} \times 2$$

cont. ↓ 10/11 (12)  
n.p. 5/8

□ - 3/8

1249 —  $\frac{8 \times 2831}{1000} = 22.648 \text{ mg} \times 2$

1250 —  $\frac{8 \times 3387}{1000} = 27.096 \text{ mg} \times 2$

1251 —  $\frac{8 \times 3056}{1000} = 24.448 \text{ mg} \times 2$

1252 —  $\frac{8 \times 3274}{1000} = 26.192$

1255 —  $\frac{8 \times 2378}{1000} = 19.024$

2491 × 8 = 19.928

~~1259 — 20.824~~

~~1260 — 23.552~~

~~1261 —~~

17 <sup>30</sup>  
20 56.6

25 <sup>3</sup>  
10 83.3

1256 — 2378 × 9 = 21.402

1257 — 2491 × 8 = 19.928

1259 ~~23.42~~ 26.496

1261 — 20.305

1263 — 27.504

1264 — 28.449

1265 — 30.383

1266 —

52% Phosman.  
945.4  
500 mg base = 927.2  
250 " " = 472.7

945.4  
472.5

21.3

21.6

42.9 <sup>3</sup>  
0209 21.4

# Stock & Solutions

For M. Phos. 80.2% base

To prepare: 100 c.c. D.W. solution  
that contains:  $\frac{10}{100}$  mg. Base / c.c.

So:  $\frac{1 \text{ c.c. } 10 \text{ mg.}}{100 \text{ " } 1000 \text{ mg. Base}} = 1 \text{ GM. Base}$

1 1 GM Base:  $\frac{100 \text{ GM}}{80.2 \text{ GM Base}} = 1.247 \text{ DR}$

80.2 GM Base ——— 100 GM DR / 100

1000 / 80.2  
1980 / 12468  
3760

~~1.247 DR~~  
~~100 c.c. D.W.~~

S.S. for M. Phosmond.

1.247 GM. DRUG = 1 GM Base / 100 c.c. D.W.

2/26/49

S.S. Pentapamine

AM. Dead monkey 75.5  
1000  
- 1267  
- 1258  
2450  
1850  
3400  
3800  
0250

~~1.32450~~

S.S. Pentapamine: 1.324 GM DRUG = 1 GM Base.  
1 GM Base (1.324 GM DRUG) in 100 c.c. D.W. =  
S.S. with 10 mg/c.c.

4-17-2381 - Partial tabbing

METHYL PLASMOCID AND PENTAQUINE

EXPERIMENT I, of: 2-17-49

GROUP	MONKEY	WEIGHT		mg BASE 2% SOLN	C.C.S.S (3)	C.C.D.W. (4)	NOTES	
		POUNDS	GRAMS					
I  CONTROLS  ONLY  VIRUS	1240	4	1812					
	<del>1241</del>	<del>7.5</del> 4.75	<del>2150</del>					
	1242	2.25 4.5	2038					
	1243	5.75 4.5	2038					
	1244	4.5	2038					
	1245	5.25	2378					
	1246	6.5	2944					
1247	6	2718						
<hr/>								
II  METHYL PLASMOCID  16 mg q/d 8:30 AM: 8 mg. 4:30 PM: 8 mg.  VIRUS	1248	<del>5.5</del> 6.5	2944	23.6	2.40	17.6	5.5	
	1249	6.25	2831	22.6	2.3	17.7	6.25	
	<sup>(1)</sup> 1250	<del>4.75</del> 7.5	3387	27.1	2.7	17.3	4.75	
	1251	6.75	3056	24.5	2.5	17.5	6.75	
	1252	<del>4.5</del> 7.25	3274	26.2	2.6	17.4	4.5	
	1253	7.25	3274	26.2	2.6	17.4	7.25	
	1254	<del>5.75</del> 7.25	3274	26.2	2.6	17.4	5.25	
	1255	5.25	2378	18	1.9	18.1	5.25	
	<hr/>							
	III  PENTAQUINE  18 mg q/d 8:30 AM: 9 mg. 4:30 PM: 9 mg.  VIRUS	<del>1256</del>	<del>7.25</del> 5.25	2378	21.4	2.1	17.9	
<sup>(2)</sup> 1257		<del>6.5</del> 5.5	2491	22.4	2.2	17.8		
1258		5.5	2491	22.4	2.2	17.8		
1259		5.75	2603	23.4	2.3	17.7		
1260		6.5	2944	26.5	2.7	17.3		
1261		5	2265	20.4	2	18.0		
1262		5.5	2491	22.4	2.2	17.8		
1263		6.75	3056	27.5	2.8	17.2		
1264		7	3161	28.4	2.8	17.2		
1265		7.5	3387	30.4	3.0	17.0		
<sup>(2)</sup> 1266		<del>4.5</del> 5.75	2603	23.4	2.3	18.7		
1267	6.75	3056	27.5	2.8	18.2			

- (1) - N.C. 41 - 4 Methyl Plasmodin (dihydrochloride)  
Base content: 80.2% - Lot of 7-5-46
- (2) - S.N. 13.276 - Pentaquine (monophosphate)  
Base content: 75.5% - Batch P-FN
- (3) Stock Solutions:  
 -- For Methyl Plasmodin:  $\sqrt{1247 \text{ GM. DRUG IN } 100 \text{ C.C. D. WATER}} = 10 \text{ mg BASE/C.C.}$   
 -- For Pentaquine:  $\sqrt{1324 \text{ GM. DRUG IN } 100 \text{ C.C. D. WATER}} = 10 \text{ mg BASE/C.C.}$
- (4) - Serial.

Fig 20-29. Note. Members of  
the Phosmial group, which are  
unlike that ones of Pentagones.

---

$$\begin{array}{r} 16 \\ 10 \\ \hline 53 \end{array}$$

Effect of Newly Synthesized IsoPLASMOCID ON

POLIOMYELITIS IN MONKEYS.

OCT 15 1949

Note: This compound was newly synthesized by Dr. J.B. Koepfli and arrived in Cincinnati in July, 1949  
Hydriodide - 53% base used.

Tests in mice started 7-19-49 - Amount of isoplasmodid base consumed by mouse astimated at about 160 mg/Kilo/day. No effect on development of poliomyelitis due to Lansing strain.

Purpose - To determine whether in a dose of 12 mg base per kilo/day, ~~this~~ which is estimated to be approximately the LD50 dose, the new compound will have the same effect in monkeys as the original material

Monkeys - 30 rhesus monkeys arrived from Okatie Farm on Oct. 12, 1949. Kept on same powdered diet + ascorbic acid as on farm. Weighed on Oct. 13

10 monkeys - virus only

20 " - drug 6mg base/kilo - AM  
6mg " " - P.M.  
followed by virus on 5th day

DRUG - 1887 mg. of drug = 1000 mg base = in 100 cc of dist. H2O = 10mg/cc.

Made up fresh every few days.

A.M. Dose - start 8:15 AM - end 8:45 A.M.

Then temperatures are taken.

Food given about 10:30 A.M.; Water 11:30 AM

P.M. Dose - start 4 P.M. - end 4:30 P.M.

VIRUS - OCT 21 1949 - [redacted] strain, Gen II, frozen since 2-26-48 (now in B-8-9), vial 4 - same vial used in all previous tests frozen + thawed each time.

0.5 cc of 1:5 (i.e. 20%) + 49.5 cc saline to yield 1:500 - 1cc given into right thalamic area

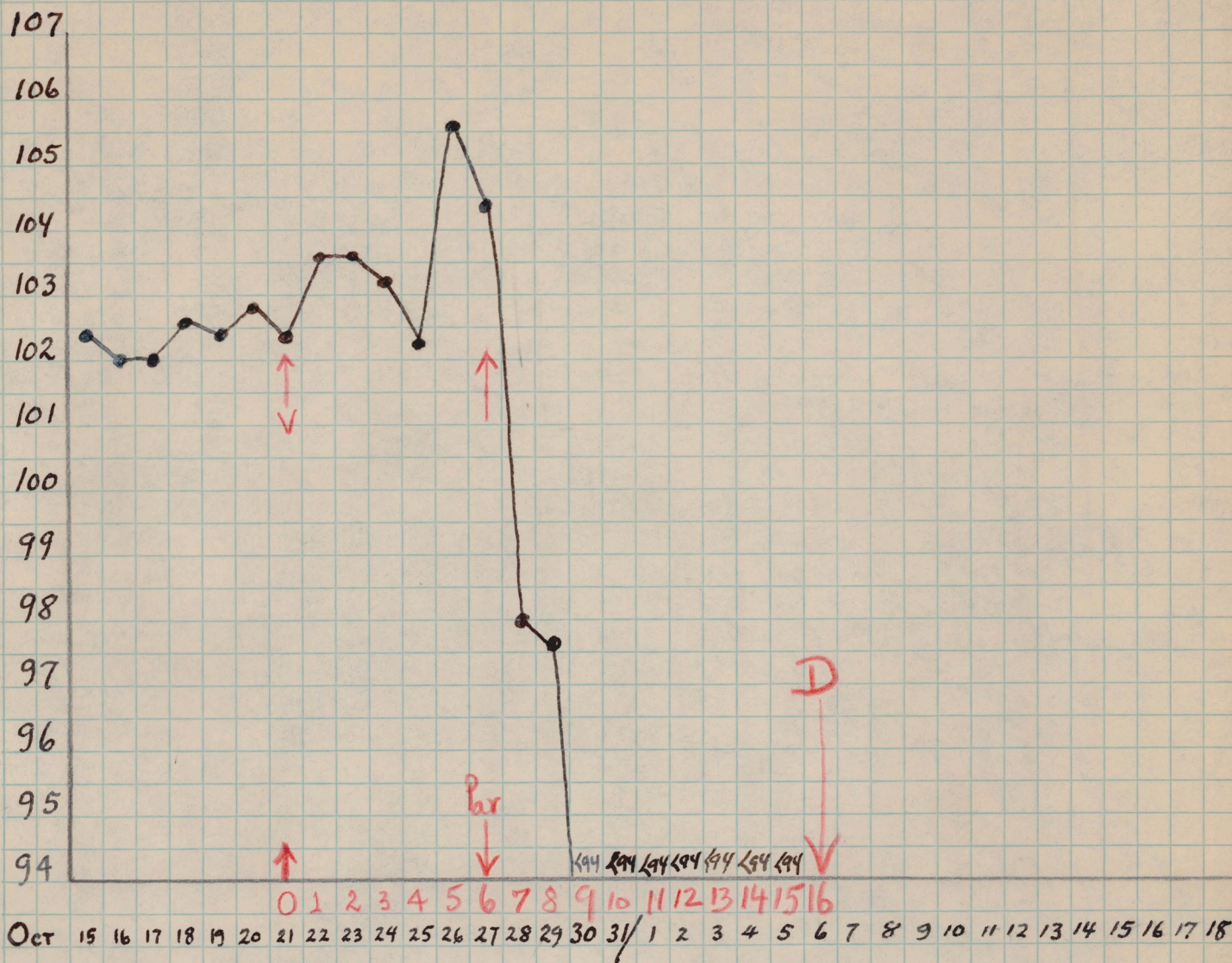
R 1333 inoculated first, then in order back to controls, 1304 - being last. Begon 10:35 A.M. Finished 11:35 AM

Group	Mon key No.	Weight (10/13/49)		Mg. Base Per DOSE 2 x a day	Stock sol. PER DOSE C.C.	Dist. H <sub>2</sub> O per dose c.c.	
		Pounds	Grams				
CONTROLS  VIRUS ONLY	1304	4.25	1930				
	1305	6.00	2724				
	1306	4.25	1930				
	1307	4.0	1818				
	1308	4.0	1818				
	1309	4.0	1818				
	1310	4.75	2157				
	1311	4.5	2045				
	1312	4.0	1818				
1313	5.75	2611					
New Isoplasmodin  12 mg/Kilo/day  6mg bid.  AND  VIRUS	1314	6.0	2724	16.3	1.63	18.4	Drug Tox. 14 <sup>th</sup> d
	1315	4.5	2045	12.3	1.23	18.8	
	1316	5.0	2270	13.6	1.36	18.7	Drug Tox 10 <sup>th</sup> d
	1317	4.5	2045	12.3	1.23	18.8	
	1318	5.0	2270	13.6	1.36	18.7	
	1319	4.0	1818	10.9	1.09	18.9	
	1320	5.0	2270	13.6	1.36	18.7	
	1321	4.5	2045	12.3	1.23	18.8	
	1322	4.75	2157	12.9	1.29	18.7	
	1323	4.5	2045	12.3	1.23	18.8	
	1324	4.75	2157	12.9	1.29	18.7	
	1325	4.75	2157	12.9	1.29	18.7	
	1326	4.75	2157	12.9	1.29	18.7	
	1327	4.0	1818	10.9	1.09	18.9	
	1328	4.5	2045	12.3	1.23	18.8	
	1329	3.0	1362	8.2	0.82	19.2	
	1330	6.5	2951	17.7	1.77	18.2	Drug Tox. 13 <sup>th</sup> d
	1331	5.0	2270	13.6	1.36	18.7	
	1332	4.75	2152	12.9	1.29	18.7	
	1333	4.0	1818	10.9	1.09	18.9	

### DRUG USED

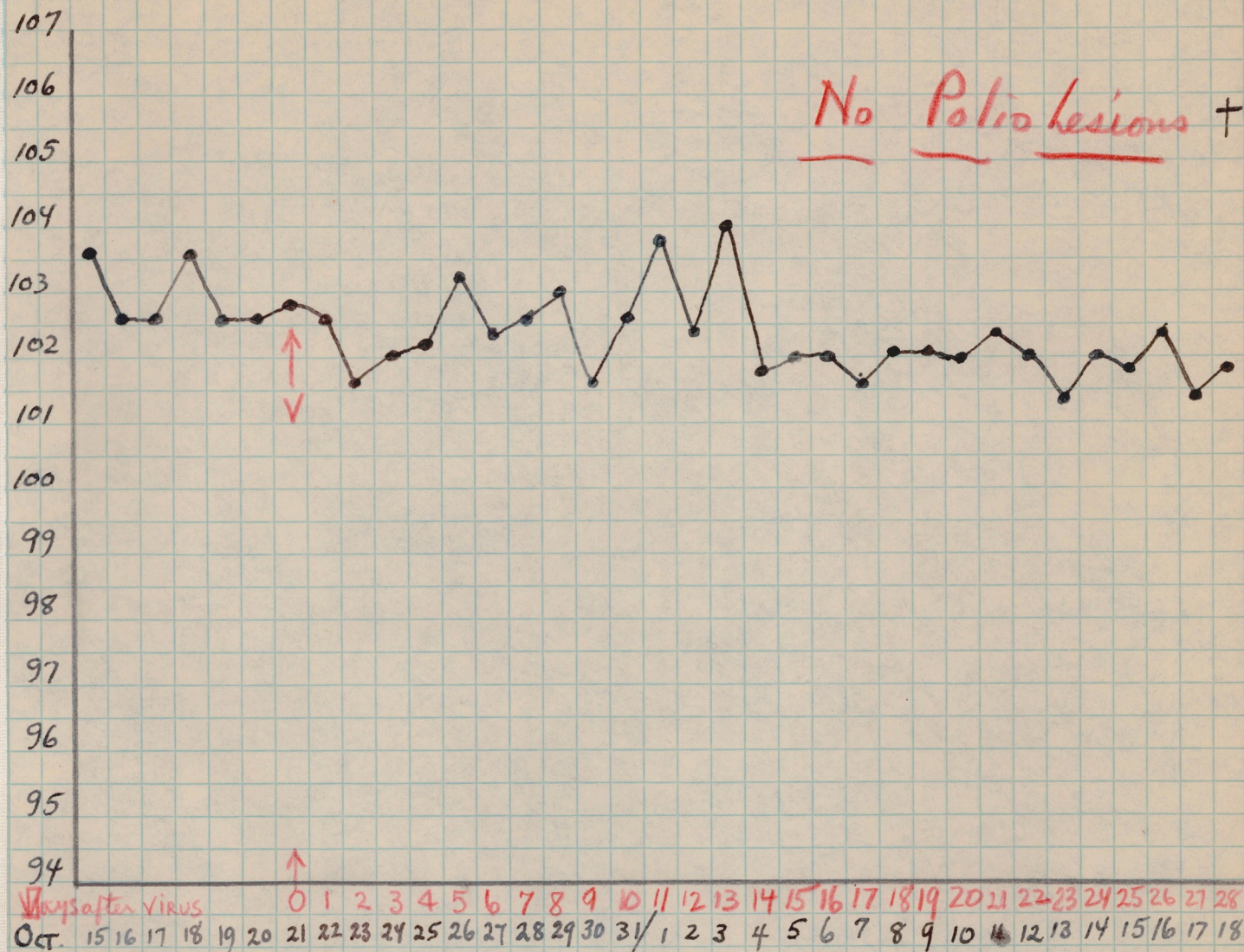
Date Prepared	Amount
10-16-49	1887 mg (100cc)
10-18-49	3774 mg (200cc)
10-22-49	3774 mg (200cc)
10-25-49	3774 mg (200cc)
10-29-49	1887 mg (100cc)

STANDARD B & P "NOISE" BRAND



Drugs

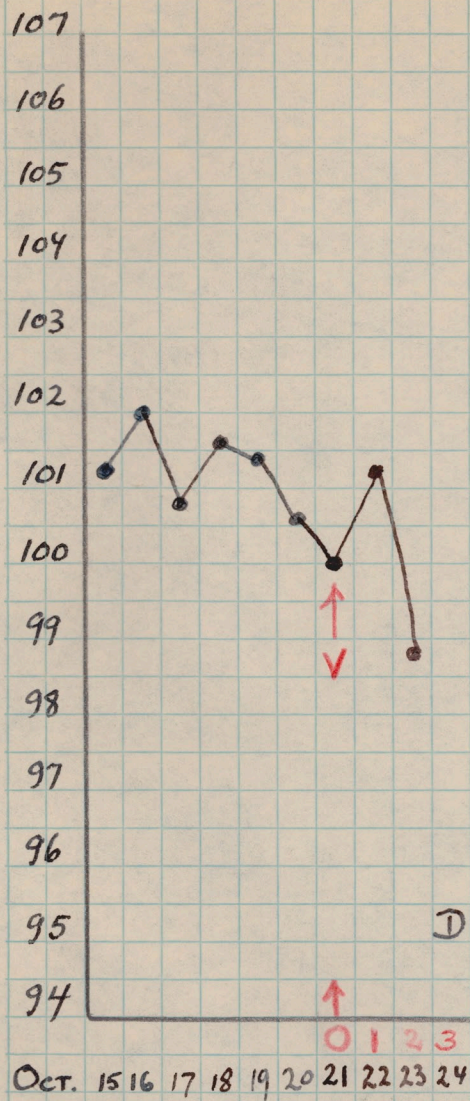
- 10-27 4PM - Partial paralysis lowers, weak uppers, sits up
- 10-28 8AM - Prostrate - almost complete paralysis - cannot feed  
50cc of milk by stomach tube
- 4PM - Prostrate - 50cc of milk.
- 10-29 8AM - Same - 50cc of milk  
4PM - " - 50cc " "
- 10-30 Prostrate - same - 8 AM - 50cc milk  
8 PM - 50cc "
- 10-31 Can move head only - ~~5~~ milk
- 11-1 Same - milk - diet by hand 11/2 - same
- 11/3 - same 11/4 - same 11/5 - same 11/6 - Dead in AM.



~~10-29~~ 12 noon - ~~partial paralysis of uppers~~  
 A.P.M. - ~~complete paralysis of uppers~~

11/5 - This monkey exhibits no paralysis - appears entirely well except for some pilo motor response over head & shoulders.

11/10 - Allowed to run about to-day - no paralysis detected - climbed all over - but fatigued easily - after twice up & down, he gave up & refused to climb.  
 Possibility is that he has polio lesions in spinal cord but insufficient to give rise to distinct paralysis



Histology - 2 levels of thalamus - neg.  
 # 1, of midbrain - neg  
 2 " pons-medulla - neg.  
 1 level of mid-medulla -  
 1 focus of infiltration  
 of mononuclear + glial cells  
 in substance of medulla.  
 1 level of lower medulla - neg.  
 6 levels of cervical cord - neg.

10-21 Appears dehydrated, thin and sick before virus inoculation

10-23 Appears sick without localizing signs - sits up + gets around but weak

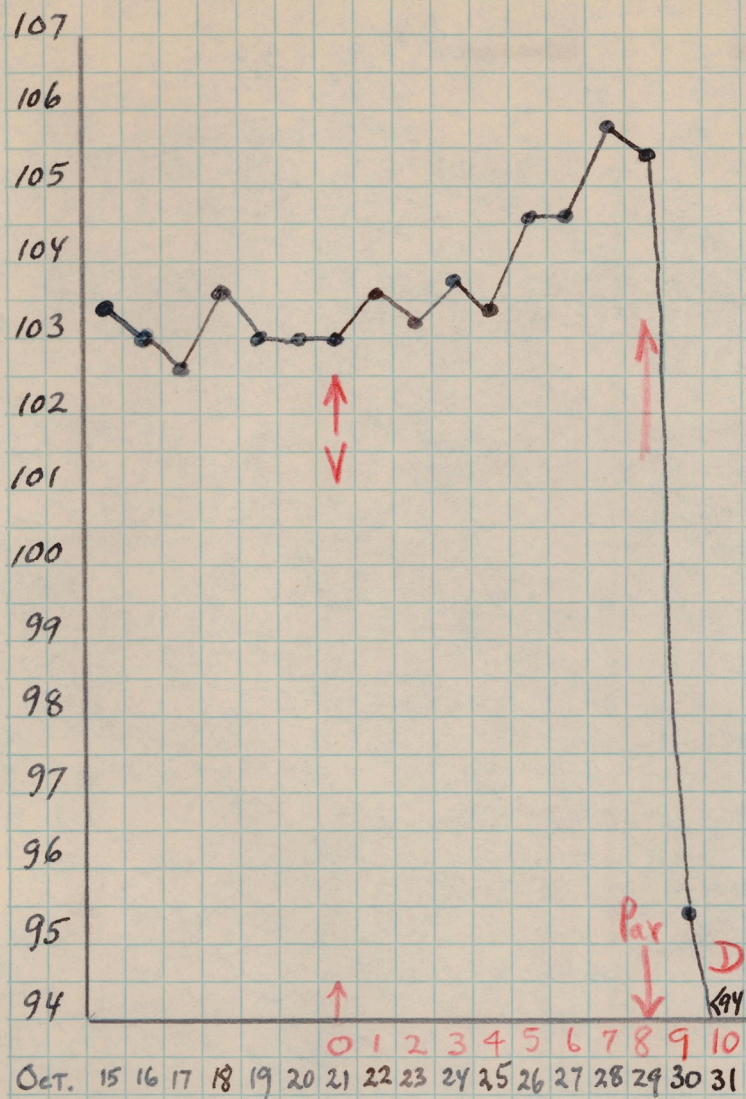
10-24 8:15 A.M. - Dead - warm + in rigor

GROSS - Lungs, liver, spleen - negative.

Oesophagostomum in large intestine - but not likely as cause of death

CNS - neg. grossly - no hemorrhage or other evidence of inoculated site

Thalamus, midbrain, medulla + cervical cord in 2-A.

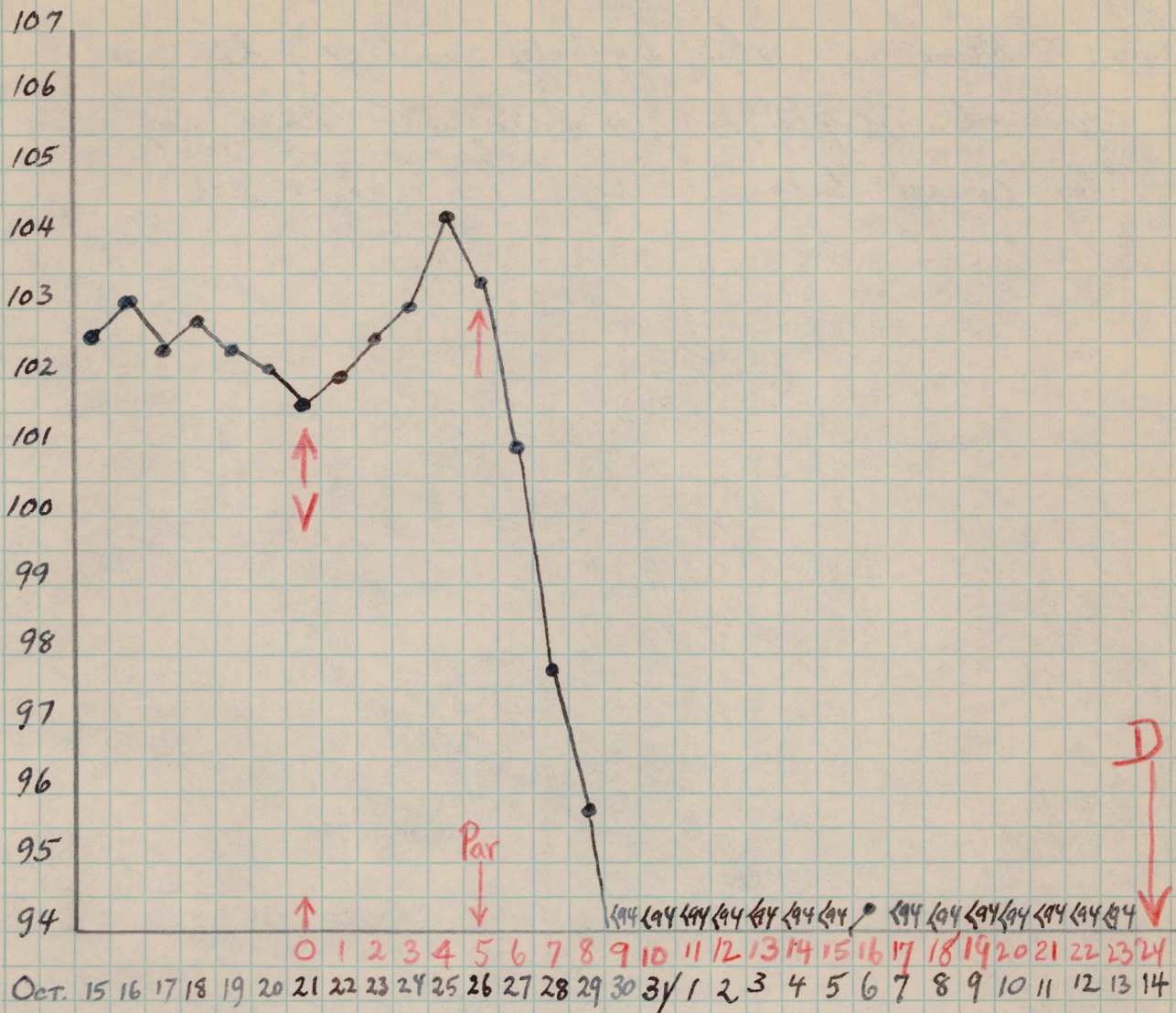


10-28 4 P.M. - Excited, pilomotor

10-29 8 AM - Pilomotor, tremor, arms?  
 12 noon - Partial paralysis uppers  
 4 PM - Complete " "

10-30 Prostrate - complete paralysis, uppers, back, lowers - 8 AM - 50cc milk  
 4 PM - " "

10-31 AM Barely breathes + ~~no~~ - found dead at 2 PM



10-25 - Excited, pilomotor over shoulders, tremor

10-26 - 8 A.M. - partial paralysis left upper, weakness rt. upper, generally "floppy"  
 hunched over with head almost on floor  
 5 PM - paralysis of both uppers more marked; head drop;  
 lowers weak.

10-27 - 8 AM. - Prostrate; cranial nerves intact - unable to feed  
 4 PM - 50cc of milk by stomach tube

10-28 - 8 AM - Same - 50cc of milk  
 - 4 PM - " - " "

10-29 - 8 AM - Same - 50cc of milk  
 4 PM - Prostrate - some use of right upper - 50cc milk

10-30 - Prostrate - complete par. - 8 AM - 50cc milk; 4 PM - 50cc milk

10-31 - Moves head; alert. 75cc milk once

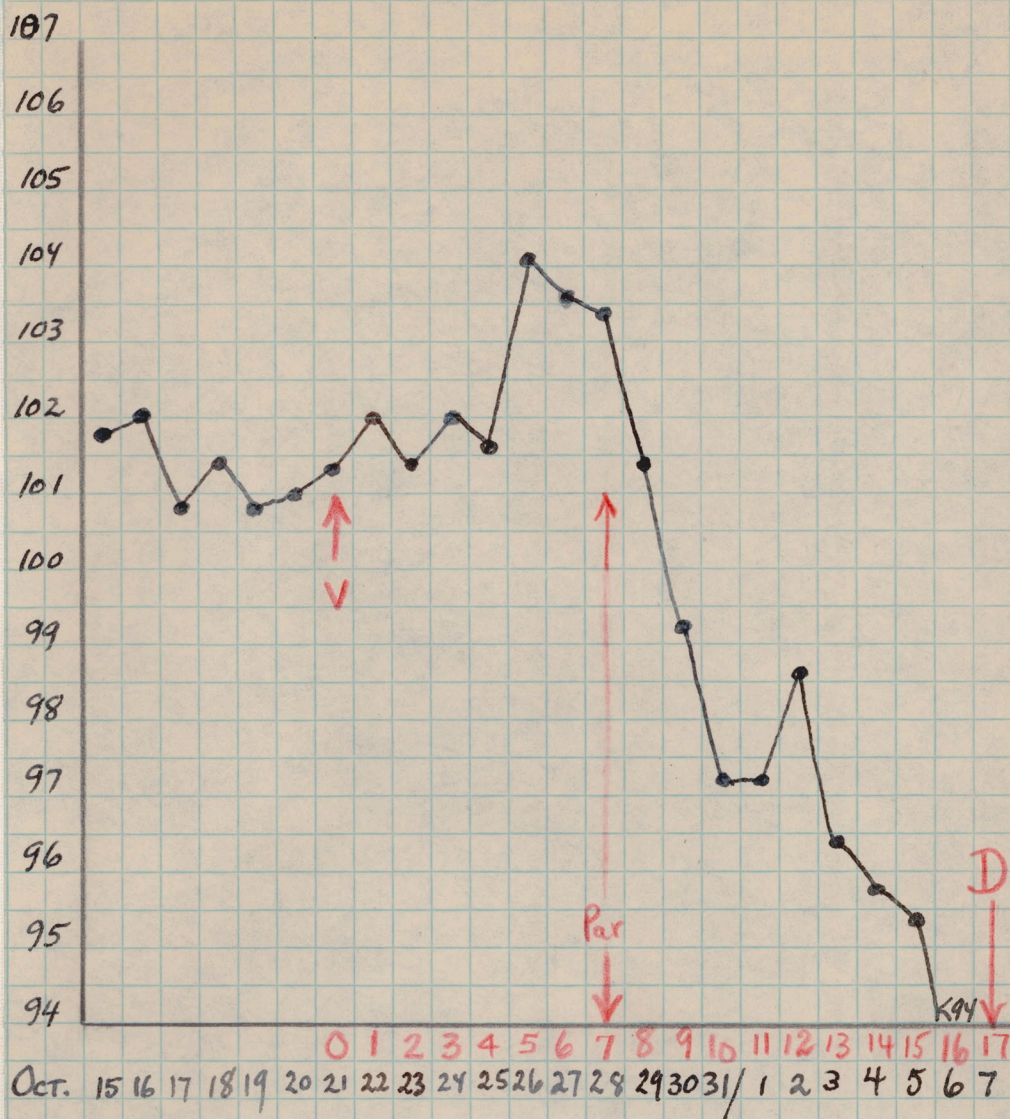
11-1 - Same - milk - diet by hand 11/2 - same

11/3 - same 11/4 - same 11/5 - same 11/6 - 94.4° - same

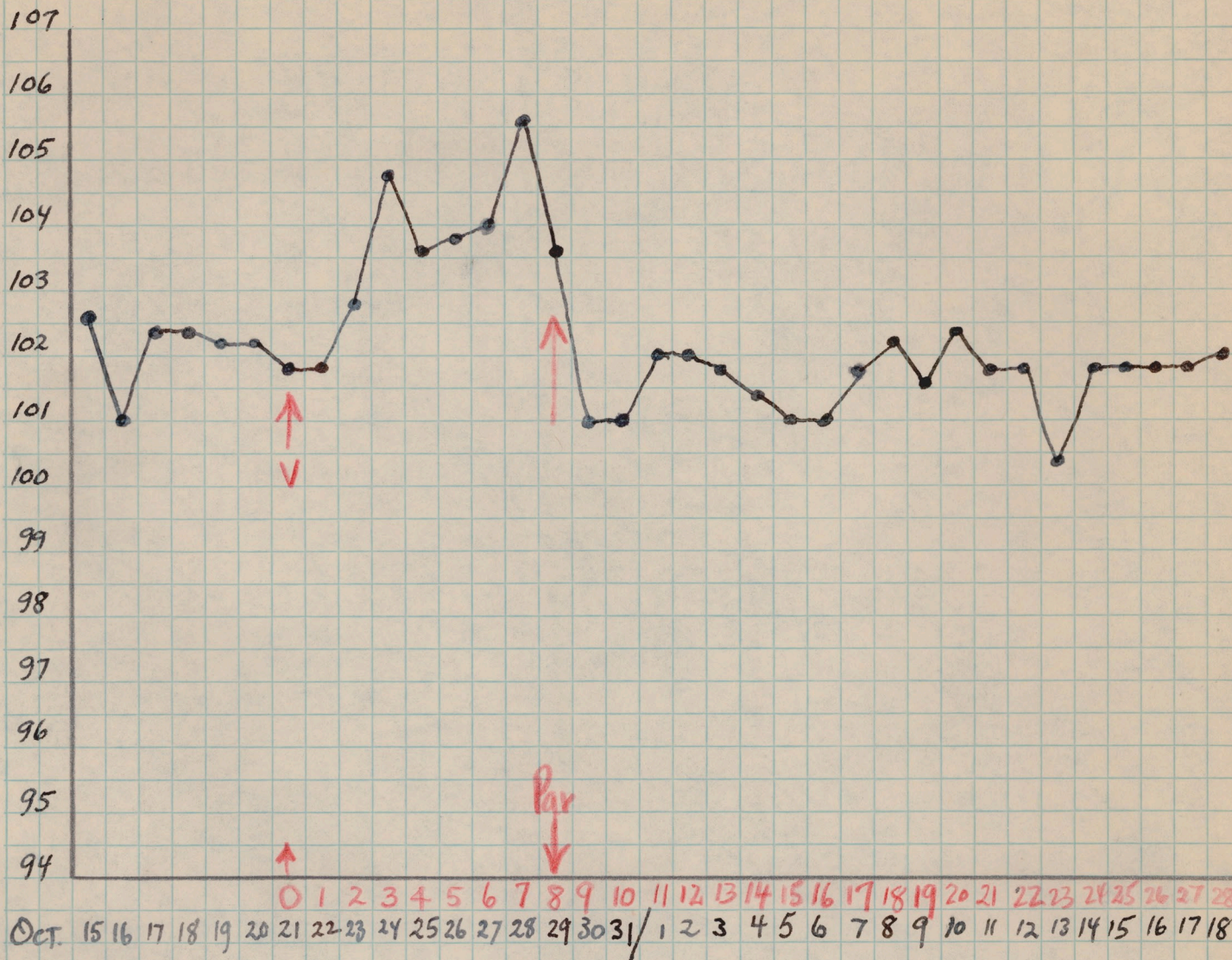
11/7 - same 11/8 - same 11/9 - appears worse - terminal? 11/10 - same 11/11 - same

11/14 - found dead in A.M.

Note: Along with other prostrate monkeys, this one received 75cc of milk + vitamin C each day by stomach tube



- 10-27 4 PM - excited, pilomotor
- 10-28 8 AM - severe tremor, legs weak  
4 PM - " " , partial paralysis of extremities, "rops" about
- 10-29 8 AM - partial paralysis of legs, arms & weakness of back more than yesterday; cannot climb - can bring himself to sitting posture with difficulty.  
4 PM - Prostrate but paralysis still not complete  
50cc of milk by stomach tube
- 10-30 Prostrate but can crawl. 8 AM - 50cc of milk; 4 PM - 50cc milk
- 10-31 Same - can roll over with difficulty - milk - 75cc once
- 11-1 Same - milk - diet by hand "1/2 - same
- "1/3 - same "1/4 - same "1/5 - prostrate - no movement except some of head. "1/6 - same "1/7 - Dead in AM



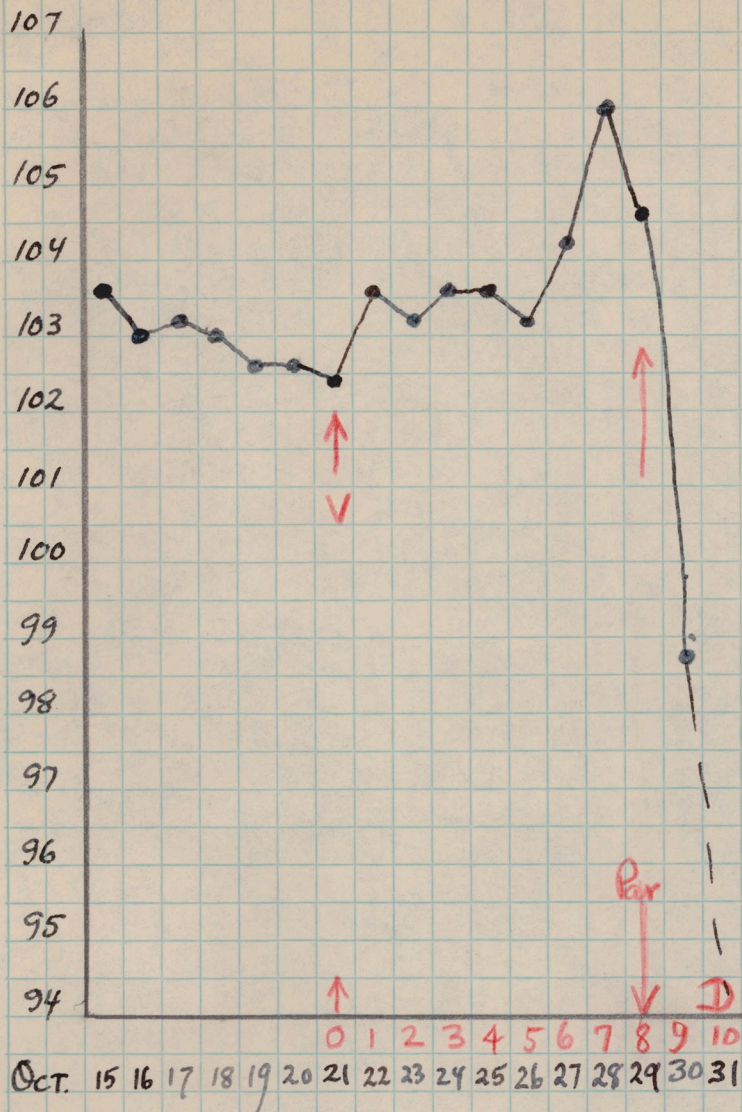
10-28 4 PM - Tremor

10-29 8 AM - Partial paralysis arms - cannot hold on when climbing - falls back  
4 PM - Same

10-30 - Complete paralysis arms, partial of legs; can stand up  
4 PM - 50cc of milk by stomach tube

10-31 - Same; can only sit up - Milk - 75cc once

11-1 - Same "1/2 - same "1/3 - same "1/4 - same  
"1/5 - same "1/6 - same "1/7 - same "1/8 - same "1/9 - same "1/10 - same

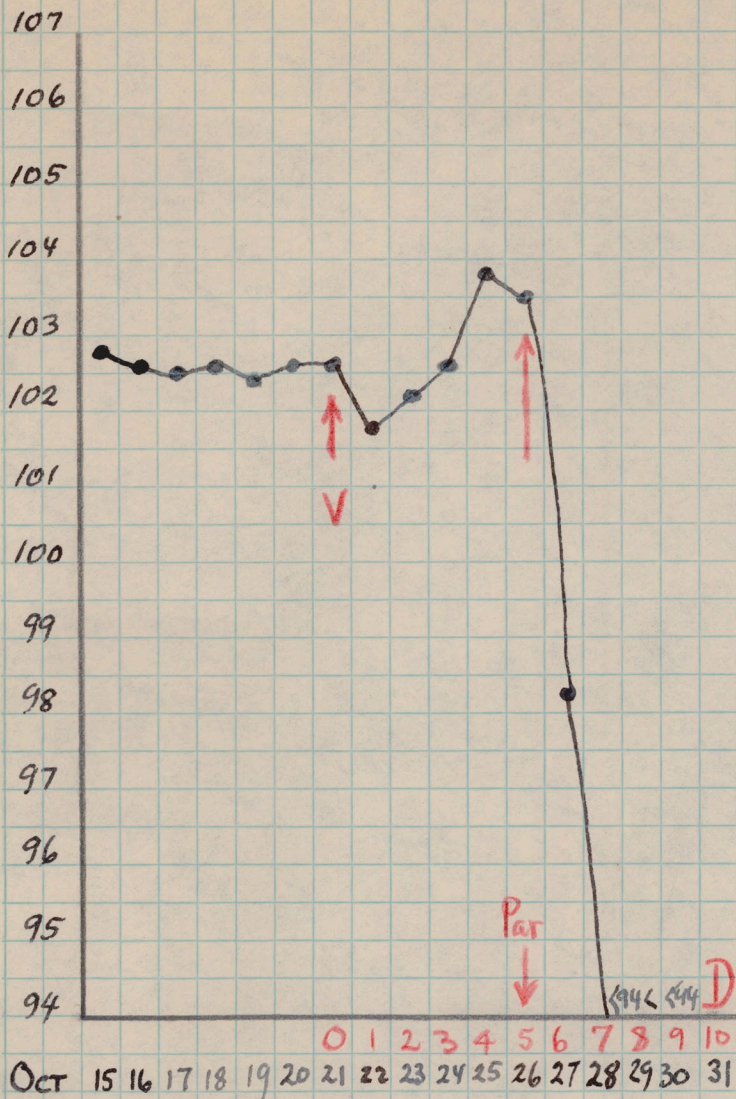


10-29 8 AM Partial paralysis arms, cannot climb, tremor

4 PM Prostrate - uppers almost complete  
 lowers + back partial  
 50cc of milk by stomach tube

10-30 Prostrate - complete paralysis - nystagmus - 8 AM - 50cc milk  
 4 PM - appears terminal - ~~50cc~~ 50cc of "

10-31 Dead in AM



10-25 - Excited, tremor?

10-26 - 8 AM - Almost complete paralysis both lowers, can sit up  
 4 PM - Paralysis more marked - lies on floor - can use uppers

10-27 - 8 AM - Prostrate - uppers also paralyzed - left upper only partial  
 unable to feed himself  
 4 PM - 50cc of milk by stomach tube

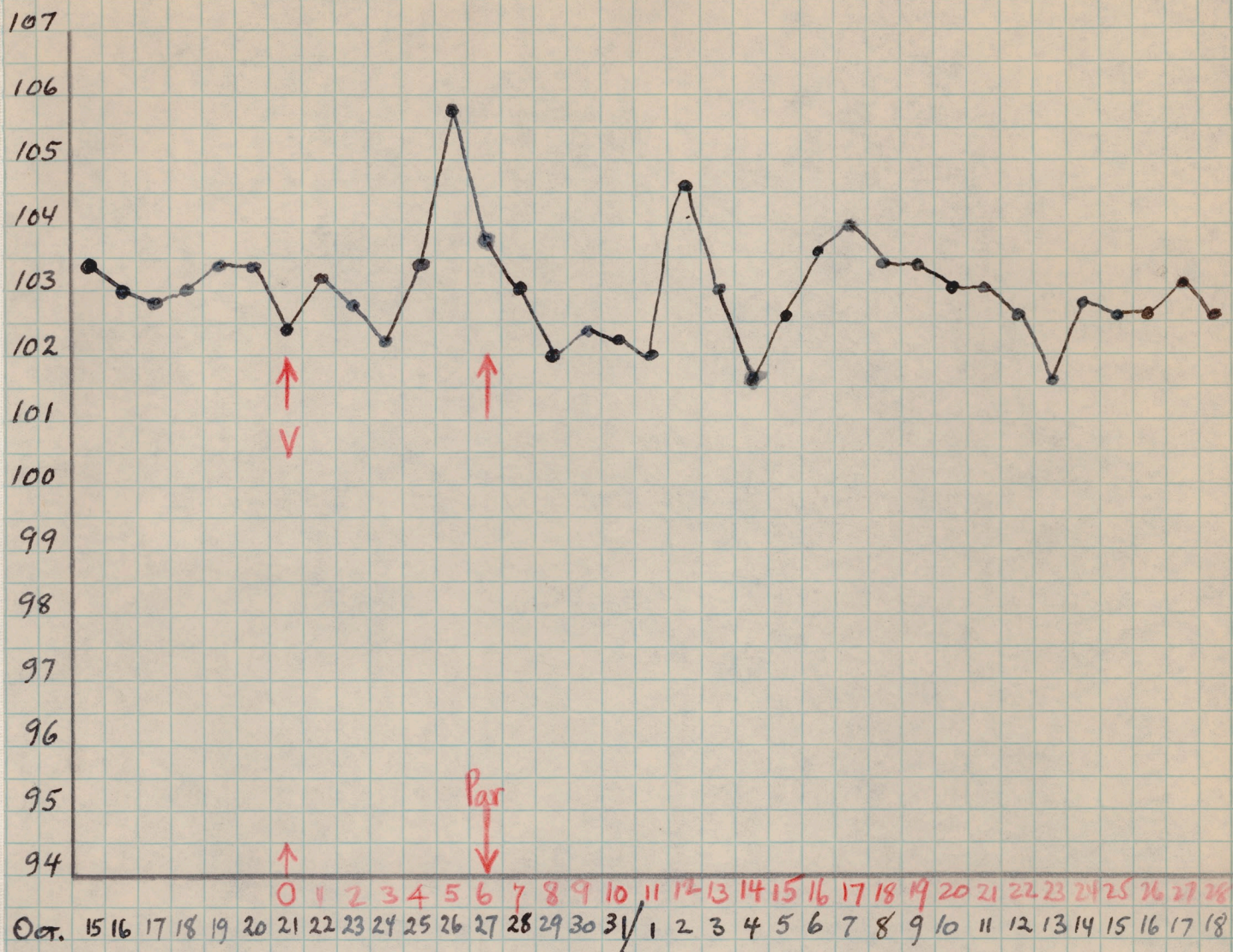
10-28 8 AM - Prostrate - 50cc of milk  
 4 PM - " - " - "

10-29 8 AM - Same - 50cc of milk  
 4 PM - " - 50cc " "

10-30 - Prostrate - complete paralysis - almost terminal  
 8 AM - 50cc of milk  
 4 PM - 50cc " "

10/31 Dead in AM

STANDARD B&P "NoBar"



10-27 - 4 P.M. - Partial paralysis right lower

10-28 - 8 AM - Paralysis deltoids - weakness other extremities climbs but with great difficulty

4 P.M. - Partial all extremities - "flops about"

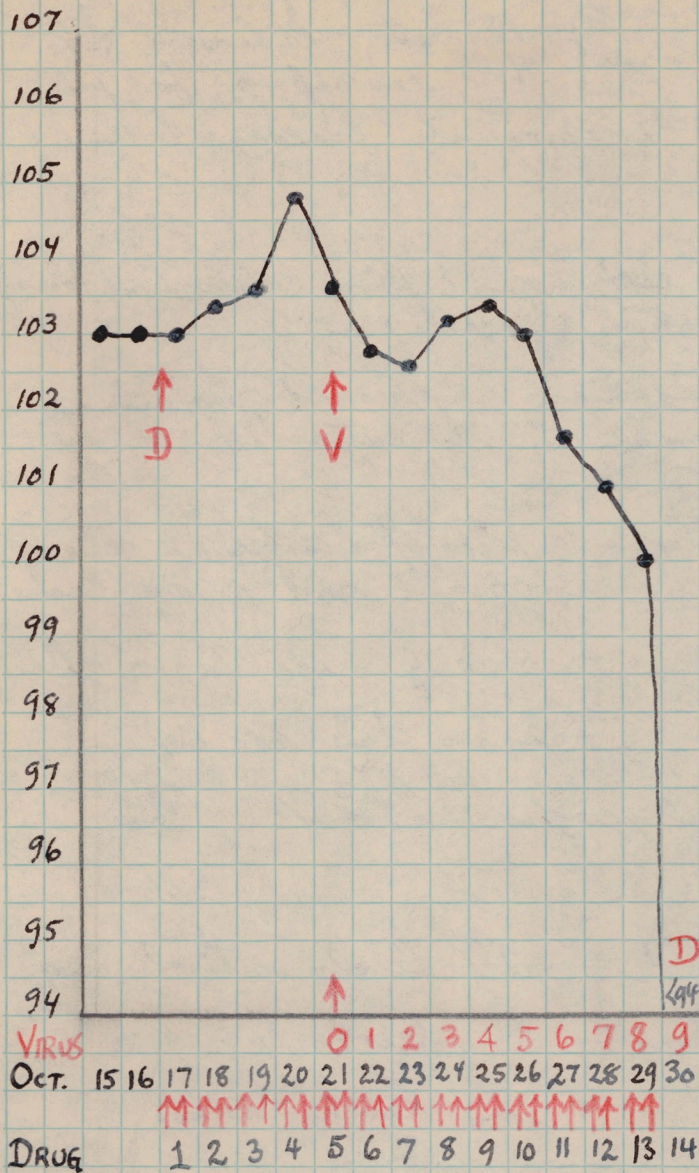
10-29 8 AM - Same 4 P.M. - Same

10-30 Partial paralysis uppers (mostly) - very active.

10-31 Same 11-1 - Same 11/2 - same 11/3 - same 11/4 - same

11/5 - seems less active - weakness of <sup>lower</sup> extremities greater 11/6 - same

11/9 - ~~same~~ improved with right deltoid weakness, but falls off after a few tries 11/10 - much improved - climbs somewhat



No POLIO

VIRUS	0	1	2	3	4	5	6	7	8	9						
Oct.	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
DRUG			1	2	3	4	5	6	7	8	9	10	11	12	13	14

10-29 8 AM - Weak (toxicity); no paralysis  
 4 PM - "very sick"

10-30 8 AM - Appears terminal - temp. not obtainable  
 Drug not given.

12 noon - same;

3:30 PM - found dead; in rigor

Necropsy at 6 P.M. - External examination revealed "dermolytic" lesions of the "agranulocytosis" type in the following places.

Right angle of jaw - 2 discrete lesions about 0.5 cm. in diameter - creamy-colored necrosis centrally surrounded by red ring

(over)

Inner aspect of left thigh - linear dissolution of skin.  
" " " " forearm - 4 discrete lesions (like jaw)  
" " " " bend of elbow - dissolution of skin  
" " " " arm } discrete lesions like  
" " " " rt. arm & forearm } those described for jaw

One piece of skin with 2 circinate lesions taken for section in Z. A.

Lungs - Pneumonia of left upper & lower (section lower)  
Atelectasis of portion of right upper

Liver, spleen, kidneys & intestines appeared normal  
Oesophagostomum as usual. No enteritis

CNS removed aseptically - piece of lumbar & cervical  
spinal cord in one tasteroid  
piece of medulla in other.  
Frozen in dry ice box

Spinal cord, medulla, basal ganglia in Z. A.

HISTOLOGY - Spinal Cord - 27 levels entirely neg.  
Medulla-pons - 3 levels " neg.  
Midbrain - 2 levels neg.  
Thalamus & hypothalamus - neg.

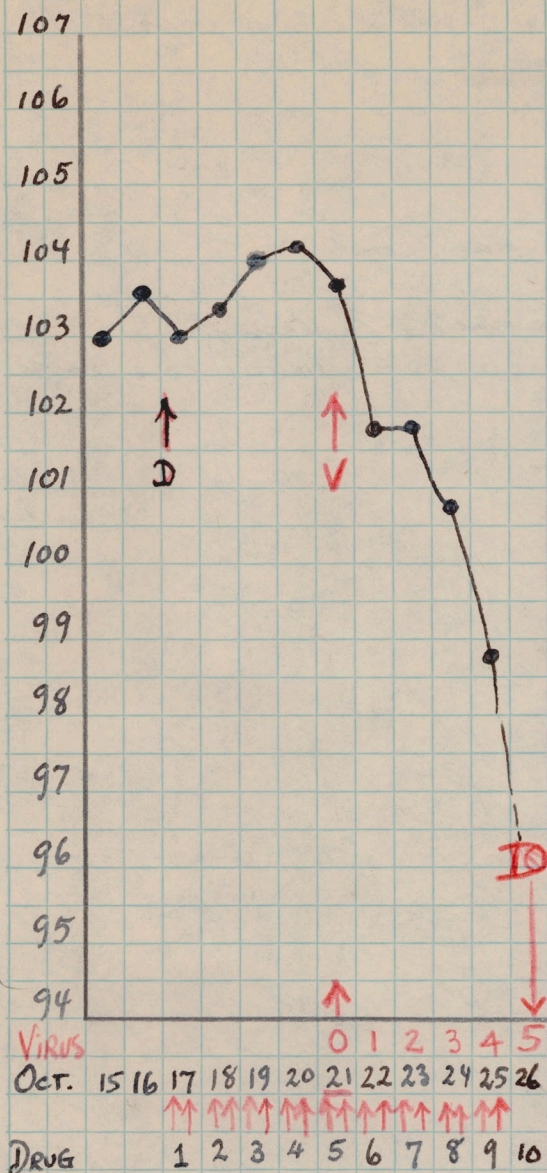
Not even the slightest cellular infiltration was found anywhere to suggest the destruction of an isolated cell.

Lungs - Pneumonia with many "colonies of bacteria"

Liver - neg. Kidney - neg. Spleen - sinusoids seemingly free of most of RBC + Malpighian bodies deficient in lymphocytes.

Skin - disappearance of epithelium and marked inflammatory reaction in subcutis.





No Petio

Oct. 24 - appears sick and weak. No localizing signs except dried mucus or secretions over nostrils; sits in "hunched-over" position

10-25 - Same; hunched; P.M. - lies down on floor - ashen gray  
No localizing signs or evidence of infection at time drug was given at 4 PM

10-26 - 8 AM Prostrate, but still alive  
8:15 AM - Dead (warm) - put in refrig. until necropsy at 9 AM

Lungs - pneumonic process RLL - section  
Spleen - enlarged - almost black - "  
Liver - " ? - normal color - "  
Caecum - either acute oesophagostomum (it was yellowish instead of chocolate spot) - section or something else. Small intest - OK

Kidneys - OK. - section.

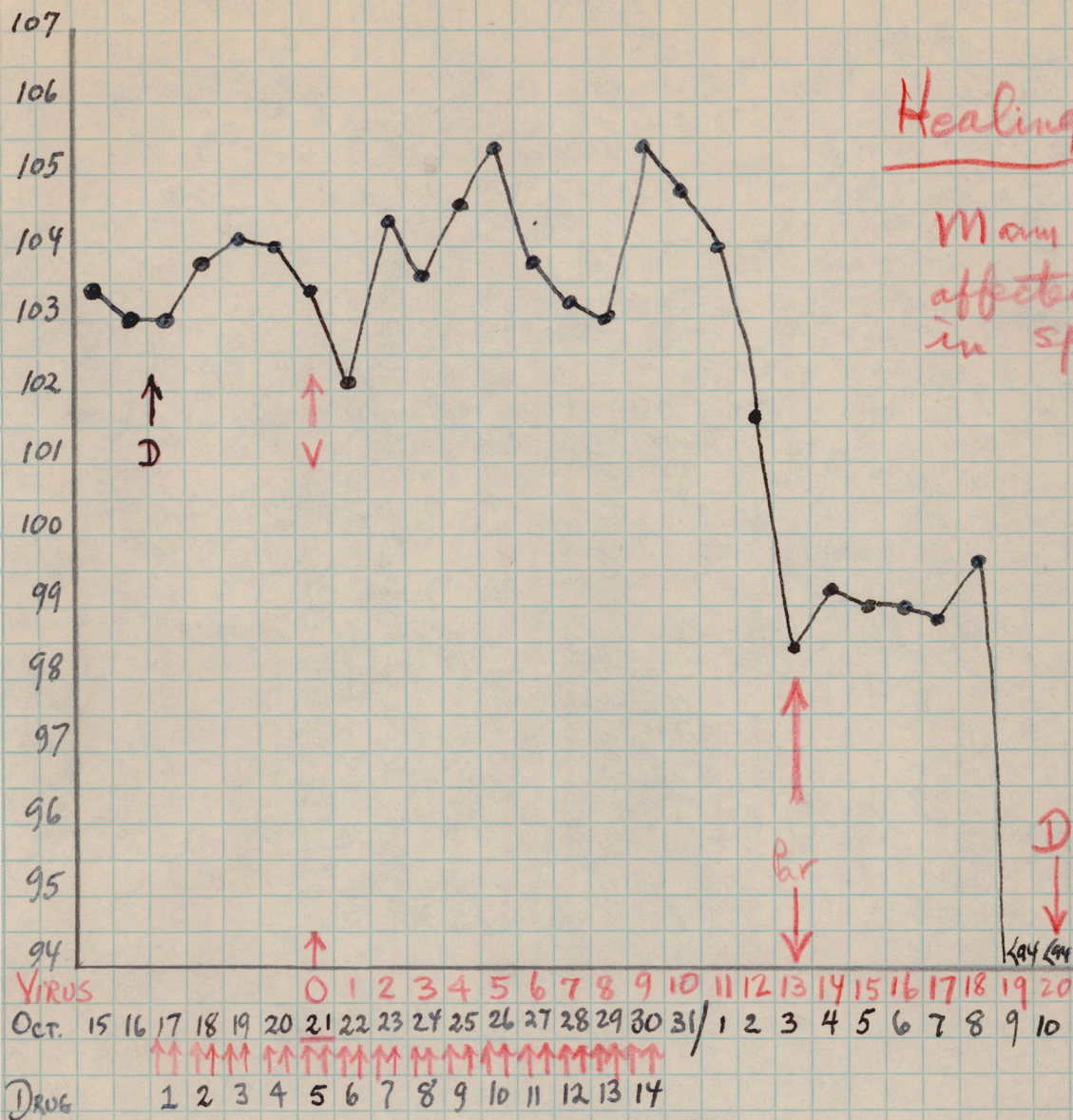
CNS - grossly neg. - Thalam & mid brain  
Entire medulla-pons  
Spinal cord

Histology - No polio

20 levels of spinal cord  
4 of medulla  
2 of hypothalamus & thalamus  
One tiny glial focus in substantia nigra

Lobular Pneumonia





Healing Polio

Many partially affected neurons in spinal cord

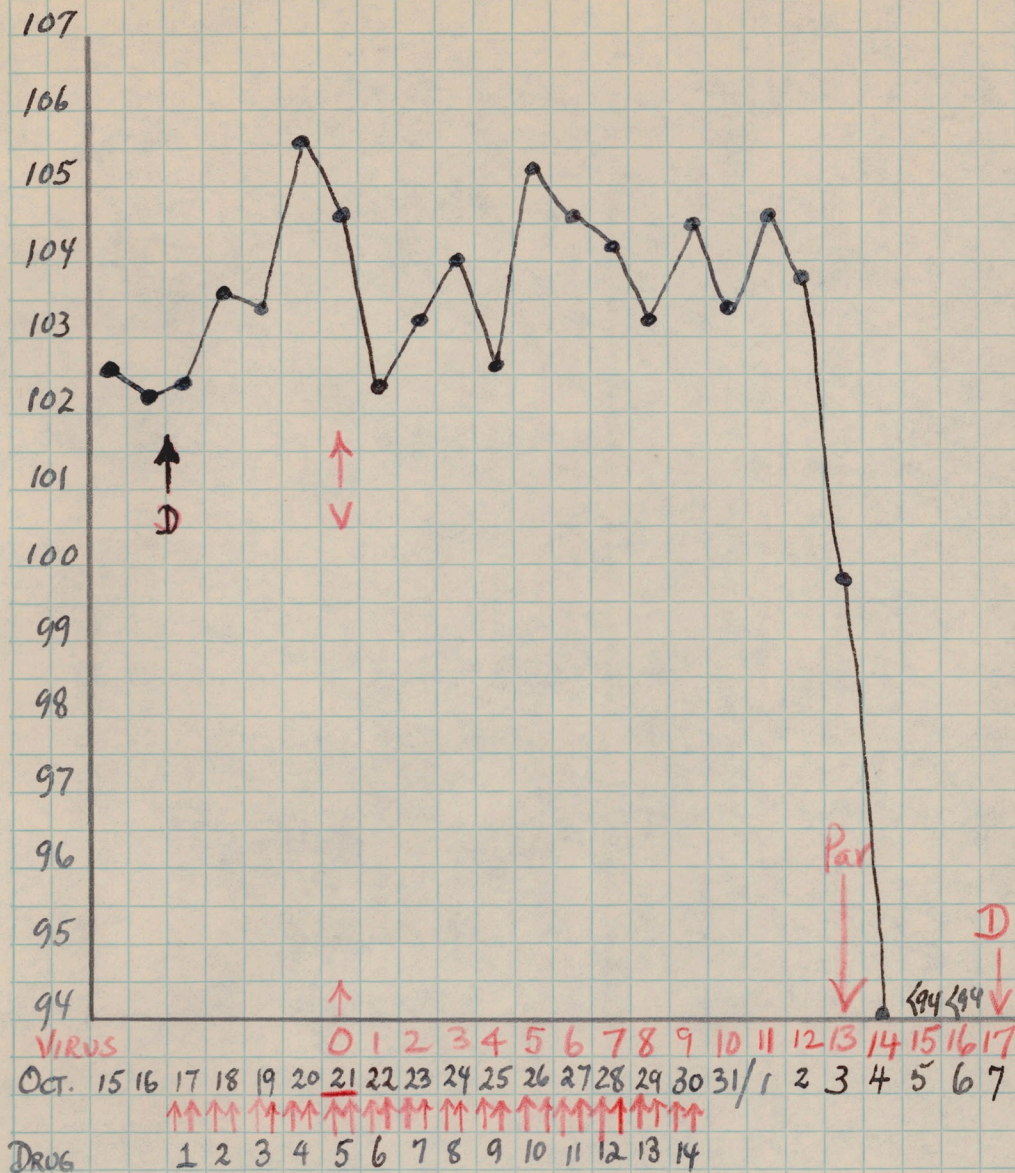
- 11-1 Has had abscess over right wrist for several days; otherwise OK
- 11/2 Many (abscess) near outer malleolus of right foot noted to-day
- 11/3 Can't climb - Uses all extremities but weak - probably paralytic although how much other lesions contribute is not clear
- 11/4 Partial paralysis lowers - sits up - looks like polio
- 11/5 Same 11/6 - same 11/7 - same - very alert - not toxic
- 11/8 - same 11/9 - very weak - lies down in cage - toxicity?
- 11/10 <sup>8:30 AM</sup> - barely breathes - ~~at~~ 10 AM - Dead - immediate autopsy, Viscera - all neg. Spleen very dark - not enlarged CNS - grossly neg. - in 2A.

STANDARD B&P "NoBar"

RH 1319

NEW ISOPLASMOCID --- 12 mg. base/kilo/day

OCT 15 1949

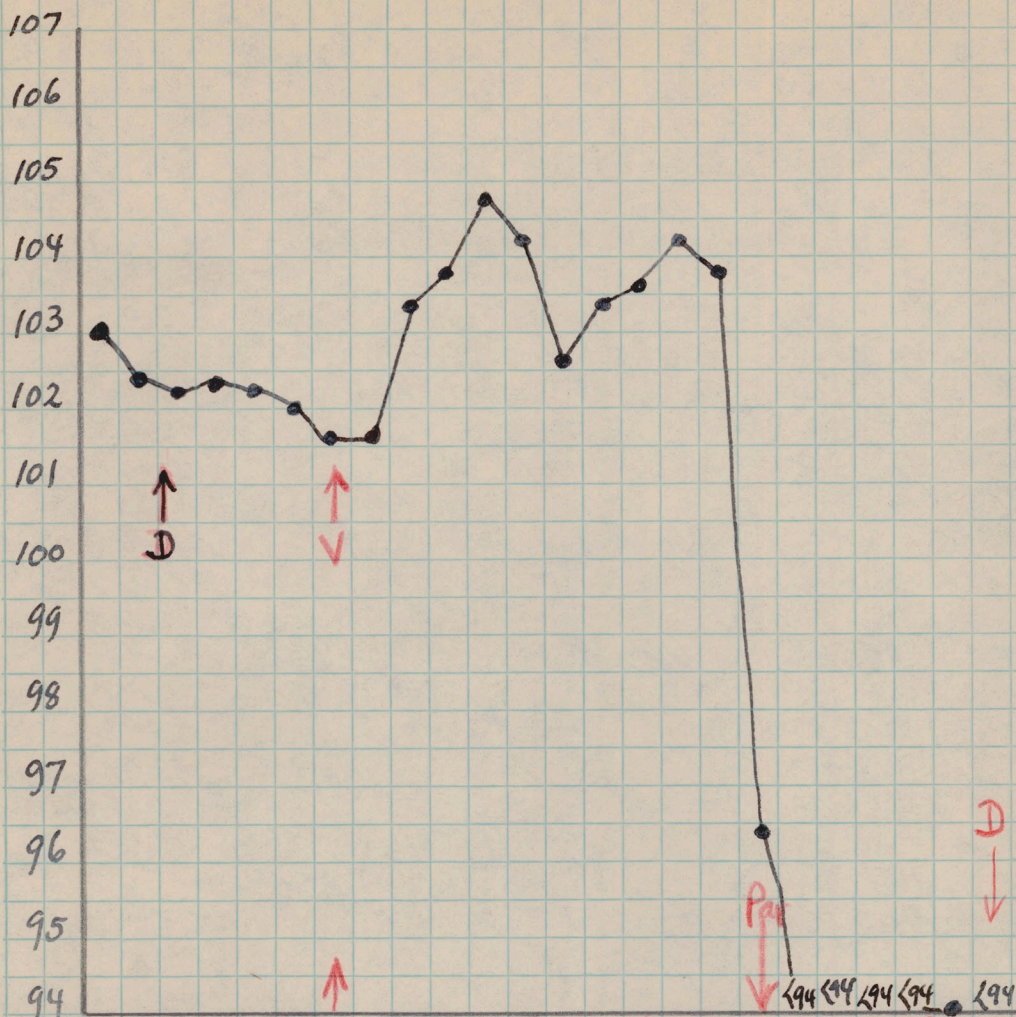


11/3 Partial paralysis arms, legs weak, sits up, can't climb "floppy"

11/4 Prostrate - looks terminal 11/5 Still alive 11/6 - same

11/7 - Dead in AM

STANDARD B&P "NoBar"

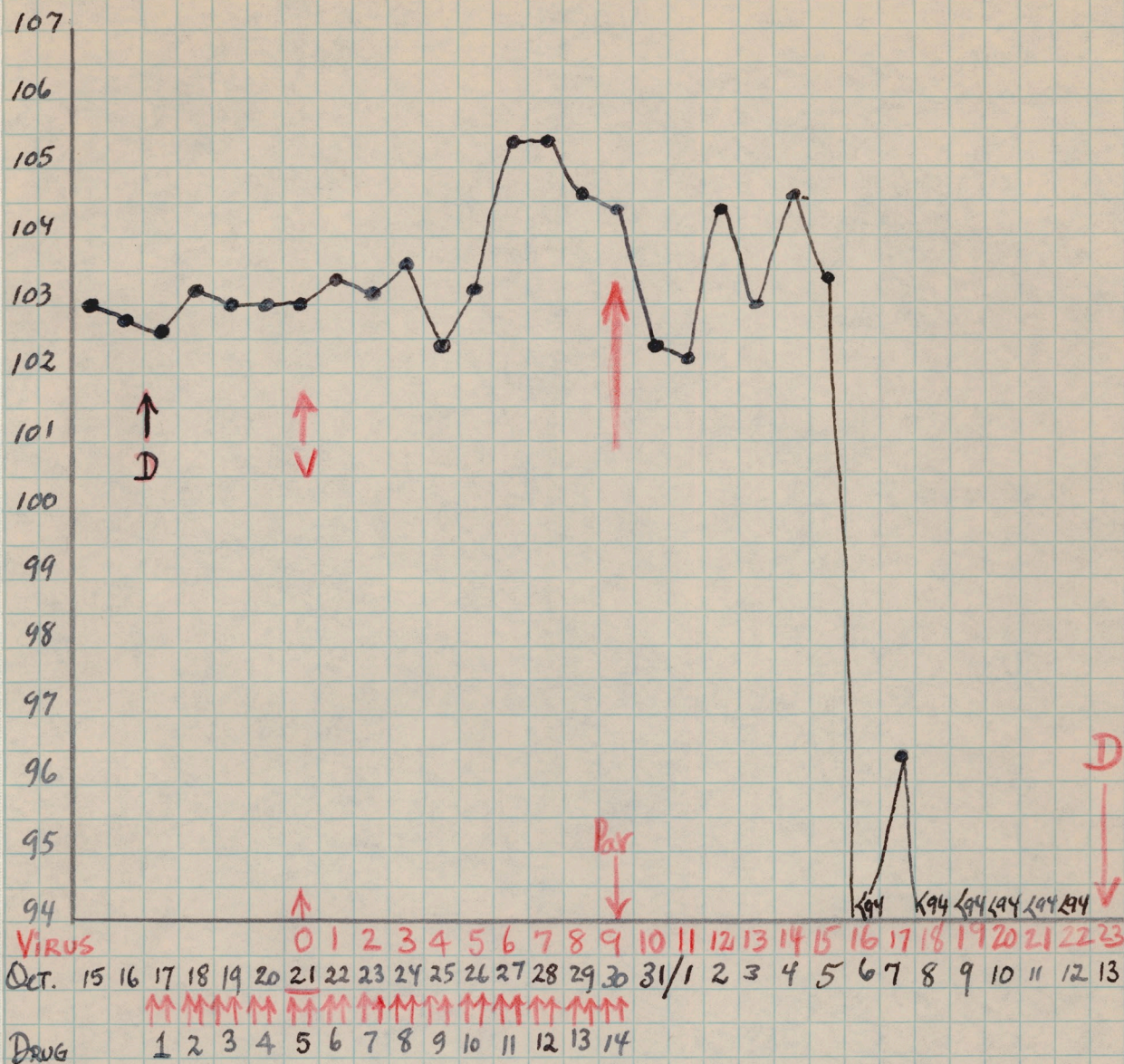


VIRUS 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17  
 Oct. 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 / 1 2 3 4 5 6 7  
 DRUG 1 2 3 4 5 6 7 8 9 10 11 12 13 14

- 10-28 - Suppurative process affecting gums (bone?) of lower jaw in midline
- 10-29 - Same; pus exuding. Dead tissue - as in agranulocytosis
- 10-30 - Lesion more extensive - lower central incisors came out during attempt to put rod in mouth for feeding
- 10-31 - lesion of lower jaw quite marked
- 11/1 - Complete flaccid paralysis of lowers + back; uppers + head-OK
- 11/2 - Prostrate - some use of right upper      11/3 - same
- 11/4 - Same, with extensive "gangrene" of lower jaw
- 11/5 - same      11/6 - Temp. 94 - same      11/7 - "looks terminal"
- 11/7 - PM - Found dead

STANDARD B&P "NoBar"





10-30 4 PM - Partial Paralysis left upper

10-31 8 AM - Partial paralysis upper & lowers, but can use right upper  
sits up

11/1 - Same      11/2 same      11/3 - same      11/4 - same      11/5 - same

11/5 - Can't sit up - oedema left eyelids      11/6 - same

11/7 - appears stronger - crawls around      11/8 - same      11/9 - same

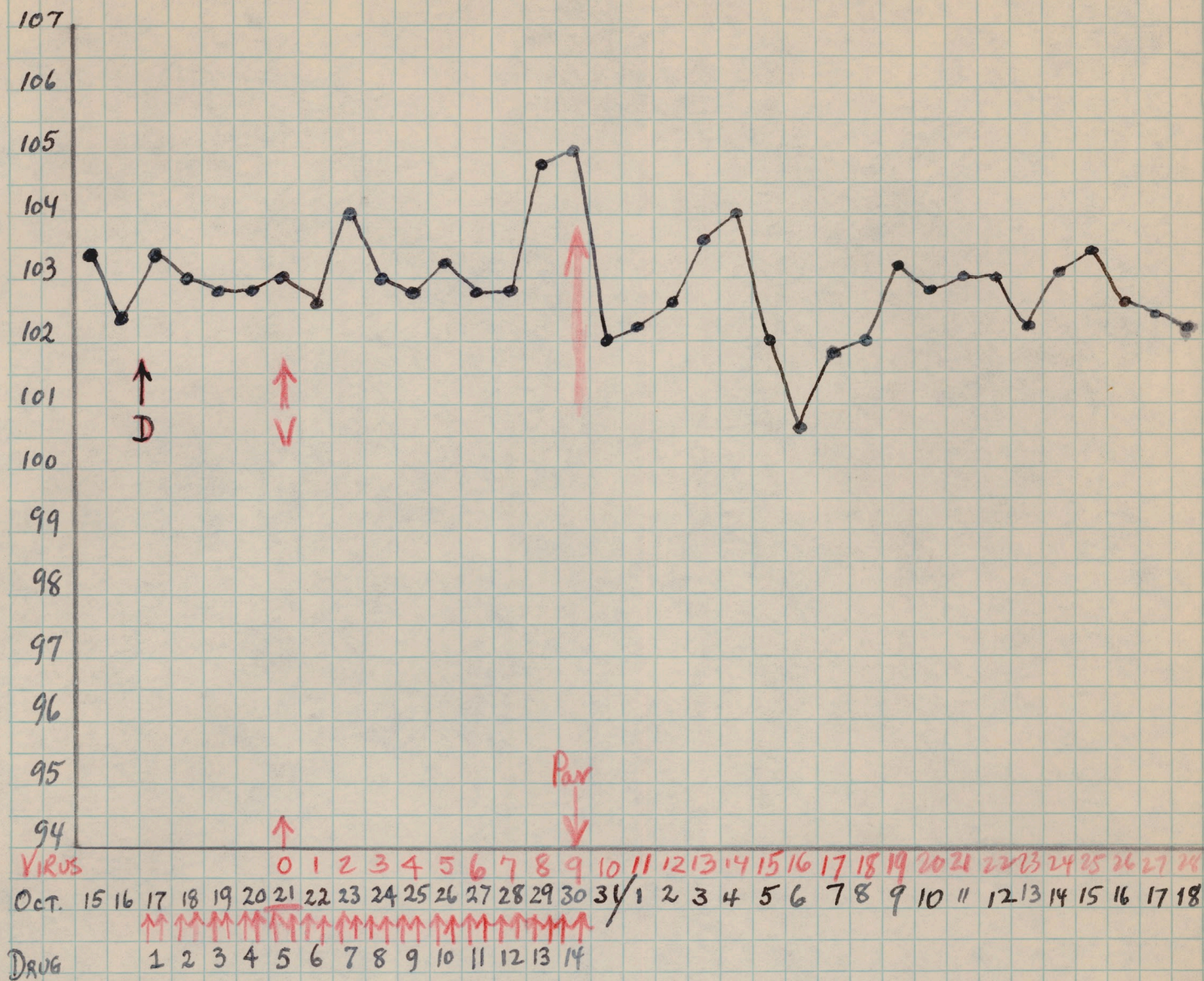
11/10 - same      11/12 - appears terminal      11/13 Dead

STANDARD B & P "NoBar"

RH 1323

NEW ISOPLASMOCID --- 12 mg. base/kilo/day

OCT 15 1949



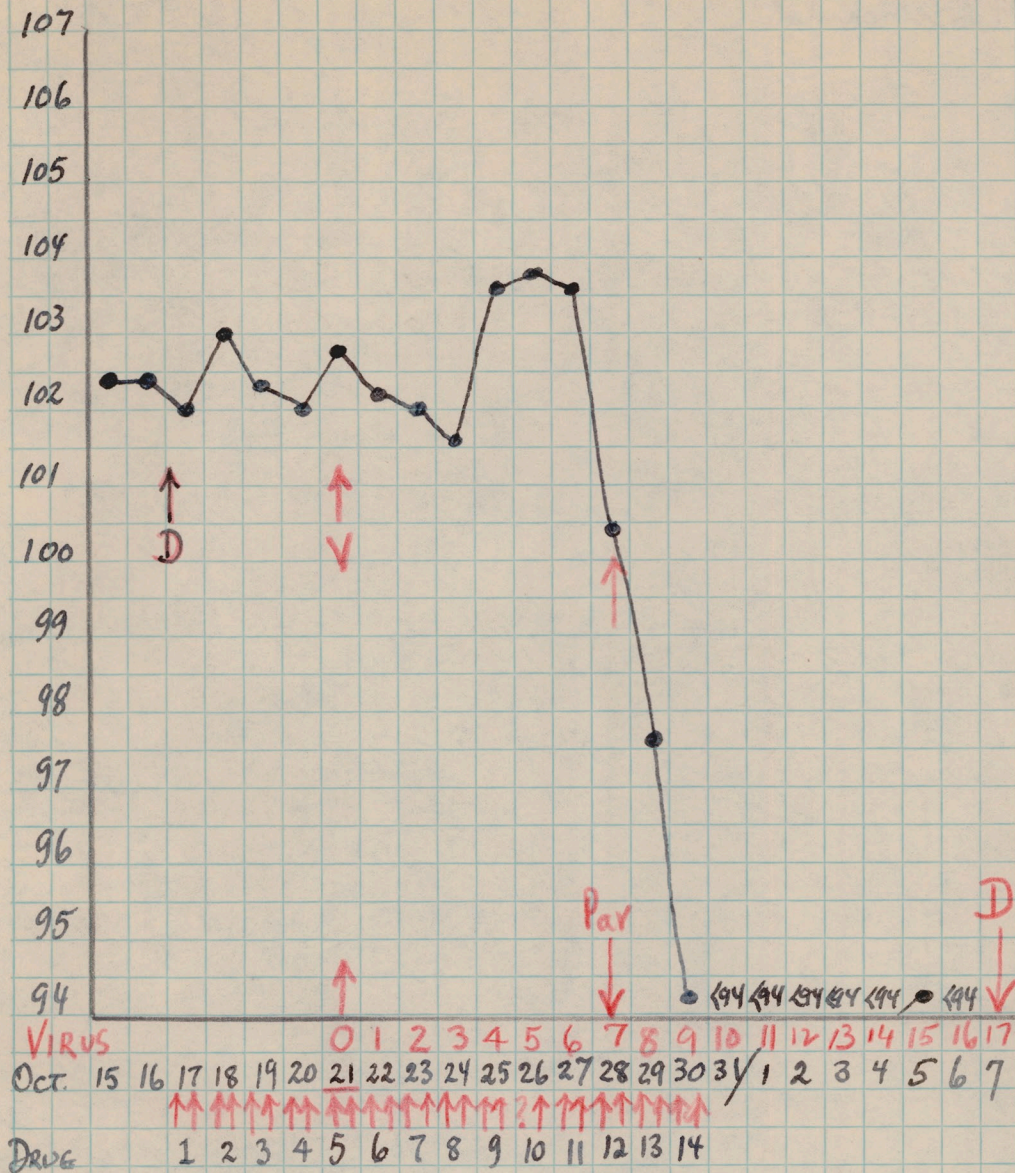
10-30 4PM - Partial paralysis left arm

10-31 Partial paralysis of left upper - only

11/1 - Same 11/2 - same

11/3 - same  
 can't stand up all the way.  
 11/4 - same  
 up  
 11/5 - same with weakness in lowers -  
 11/6 - same  
 11/7 - same - stands up but not  
 11/8 - very active - tries to climb - O.K. except left upper  
 11/9 - same  
 11/10 - same  
 11/11 - same  
 11/12 - same

STANDARD B & P "NoBar"



10-25 PM - vomited almost total dose; same dose repeated + vomited about 1/2

10-26 AM - vomited almost total dose; repeated and again projectile vomiting.  
P.M. - retained his dose

10-27 AM - ok.  
PM - weak; tremor?

10-28 8 AM - Partial paralysis lowers, back and uppers - down on floor (active - looks like polio - not toxic)  
4 P.M. - paralysis more extensive

10-29 8 AM - Complete paralysis of lowers and right upper, partial of left upper; can raise his head  
4 PM - Same; 50cc of milk given after drug instead of water

10-30 - Complete par. - 50cc of milk AM + PM after drug " " "  
10-31 - Same - milk (75cc) diet by hand " / 1 - same; eats.

"/2 - same

"/3 - same

"/4 - same

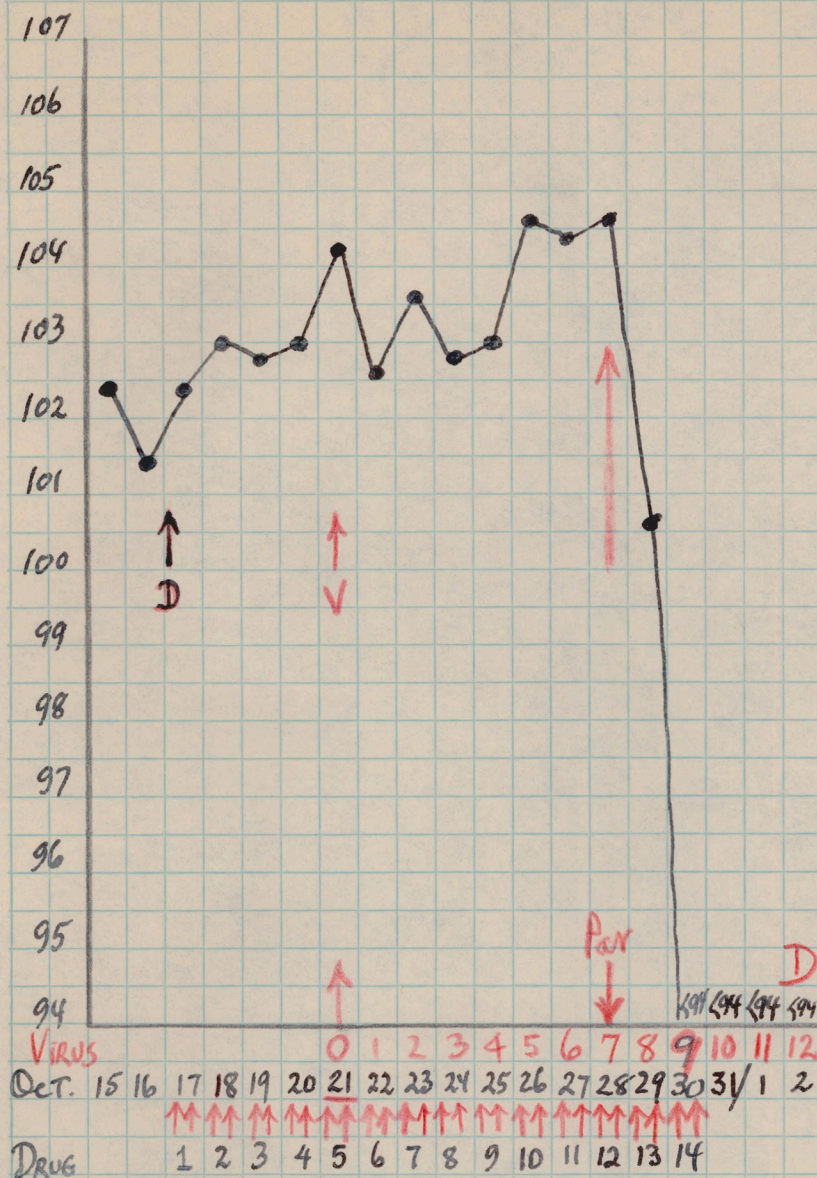
"/5 - 94.2° - same

"/7 - Dead in AM discarded

RH 1325

NEW ISOPLASMOCID --- 12 mg. base/kilo/day

OCT 15 1949



10-27 - PM - Tremor, pilomotor

10-28 - 8 AM - Severe tremor

4 PM - partial paralysis left upper; weakness of others

10-29 - 8 AM - Partial paralysis of lowers, uppers & back; lies down

4 PM - Prostrate; almost complete paral. of uppers & back  
partial of lowers.

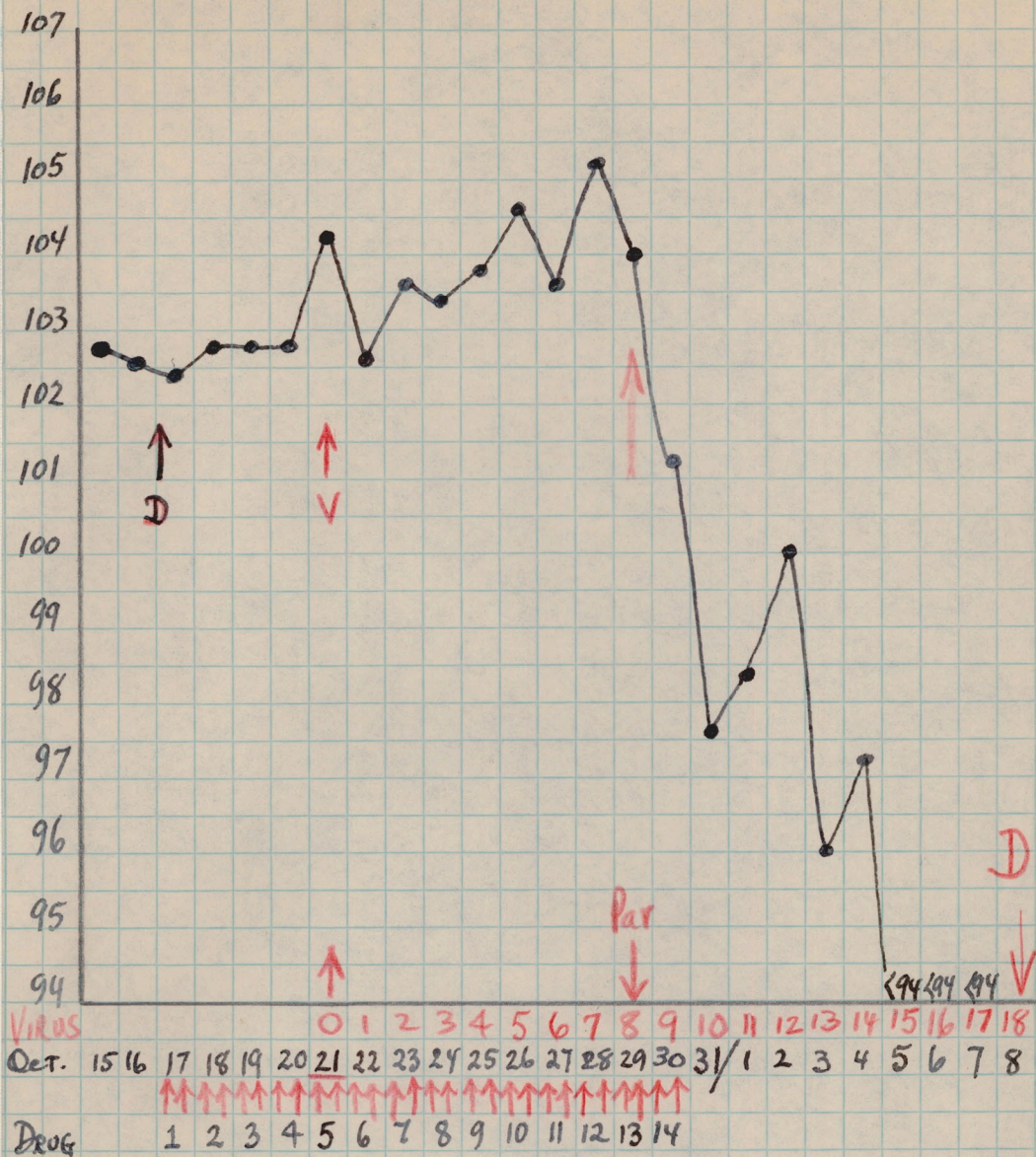
50cc of milk after dose of drug

10-30 - Complete paralysis - 50cc of milk AM + PM after drug

10-31 - Same - milk (70cc) + diet by hand

11/1 - Appears terminal; periodic twitching of facial muscles,  
tongue & shoulder.

11/2 - Still alive at 8 AM - Dead at 9 AM



10-29 8 AM - Partial paralysis of right lower  
 4 PM - Same

10-30 Prostrate - 50cc of milk given AM + PM after drug

10-31 Complete paralysis - milk (75cc) + diet by hand feeding

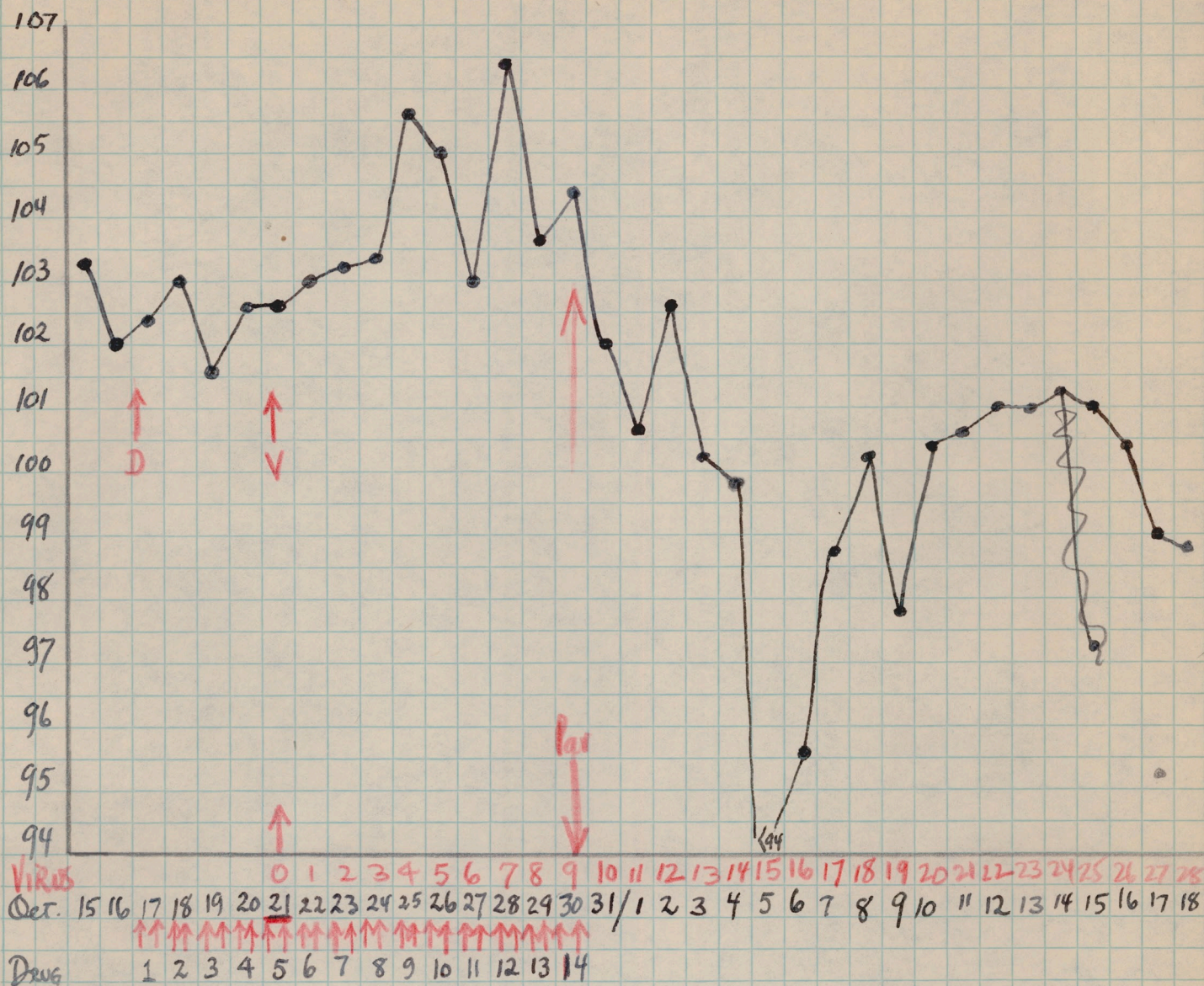
11/1 - moves head - eats. 11/2 - same, alert, eats.

11/3 - same 11/4 - same 11/5 - same 11/6 - same 11/7 - same

11/8 - dead in AM.

STANDARD B&P "No. 1" BAR

OCT 15 1949



10-28 4 PM - Pilomotor ; tremor

10-29 8 AM - Severe tremor ; no paralysis  
4 PM. - " " "

10-30 4 PM - Partial paralysis legs

10-31 Partial paralysis left upper, legs + abdominal muscles?  
Sits up.

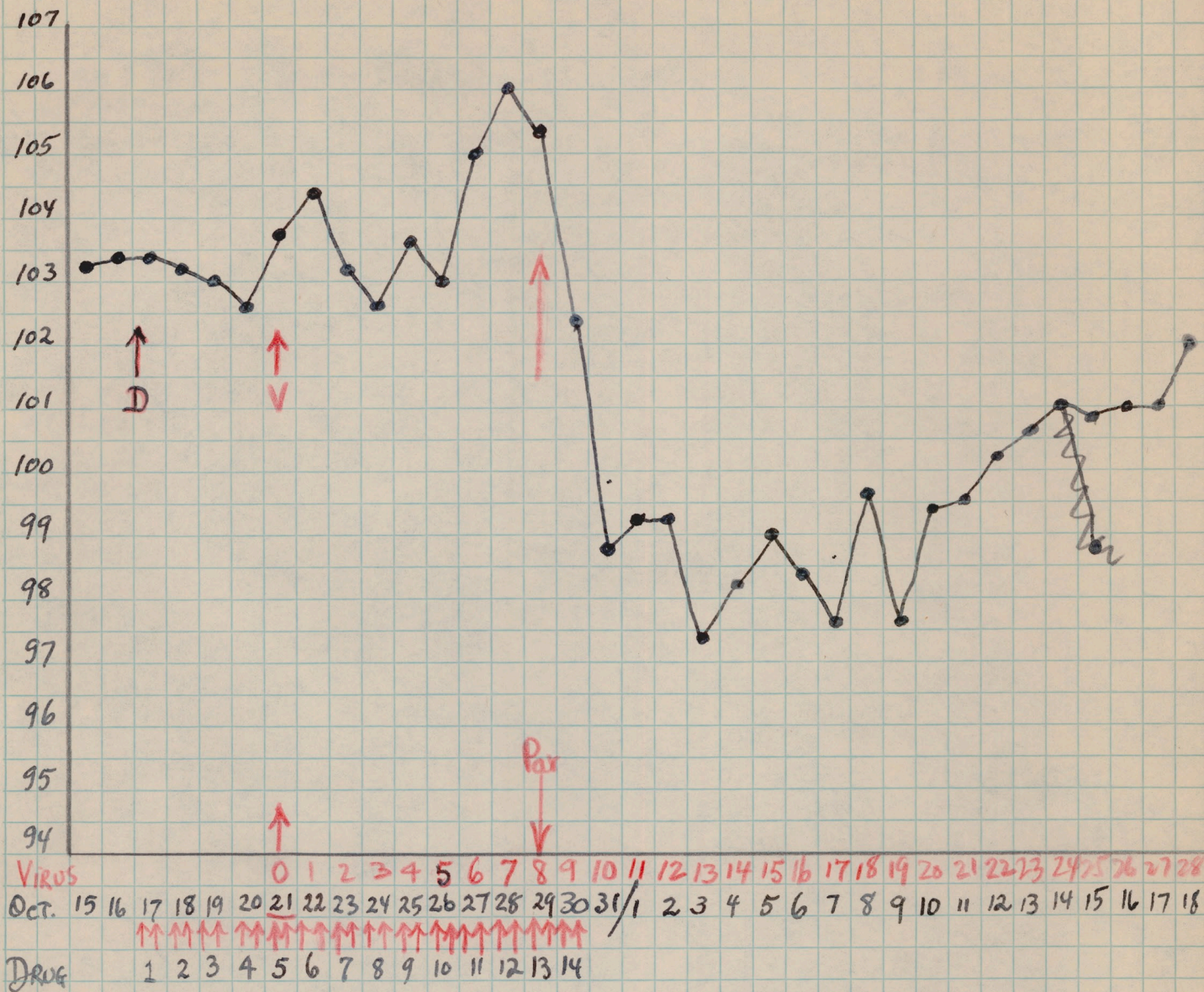
11/1 Prostrate now but crawls some - ~~see~~ has some use of left upper lower. Milk (7cc) by stomach tube & diet by hand

11/2 Same - alert, moves head, hungry, eats 11/3 - same

11/3 - Crawls a bit 11/4 - ~~same~~ same 11/5 - temp checked = 104.0 - condition same nevertheless 11/6 - same

11/7 - crawls somewhat 11/8 - same 11/9 - same 11/10 - same

STANDARD B&P "NoBar"



10-29 - 8 AM - Partial paralysis of lowers

10-30 - Prostrate - 50cc of milk given AM + PM after drug

10-31 - Complete paralysis - milk (75cc)

11/1 - Prostrate - moves head - eats 11/2 - same

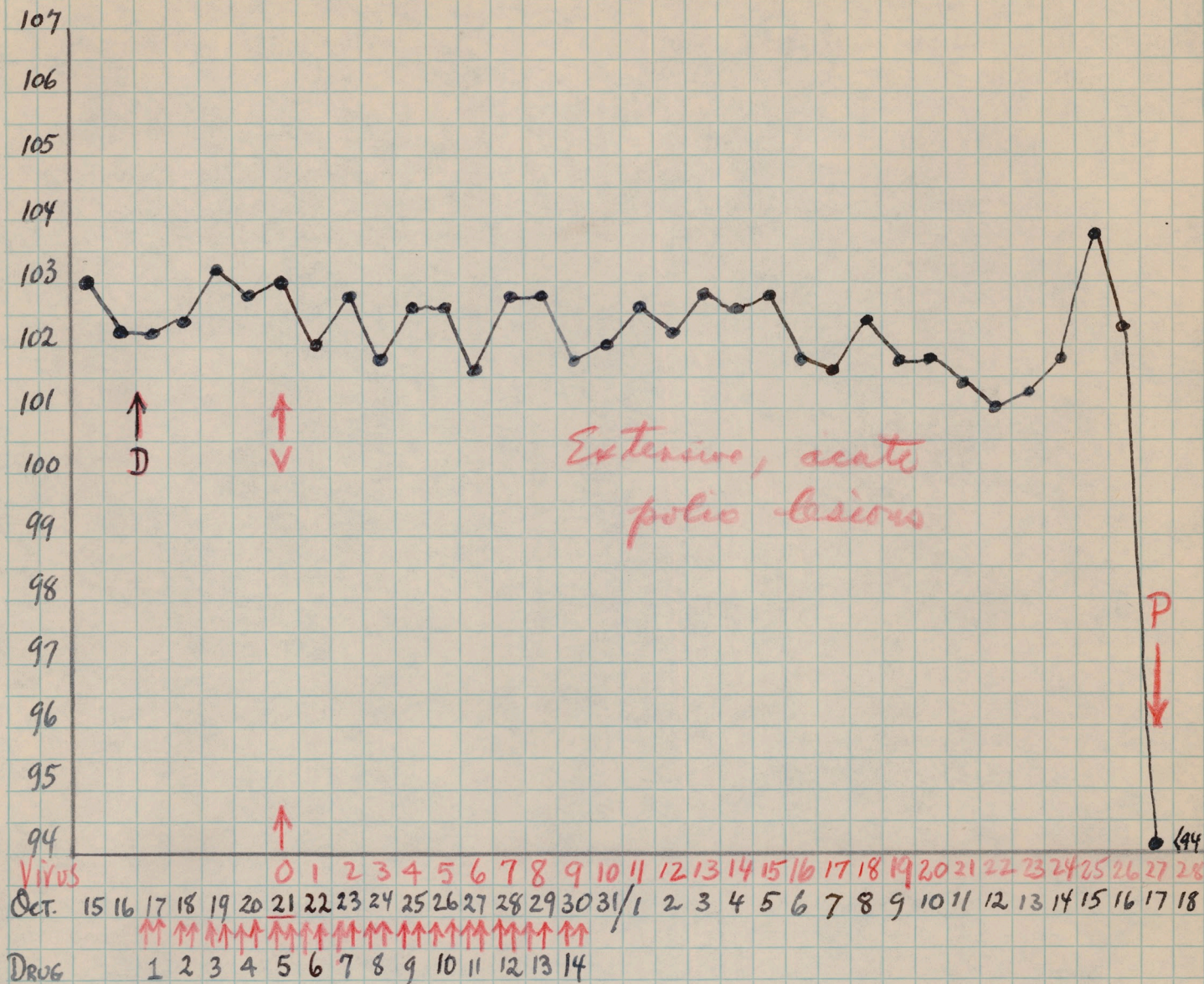
11/3 - same 11/4 - same 11/5 - same 11/6 - same 11/7 - same

11/18 - more active + alert - crawls

RH 1329

NEW ISOPLASMOCID --- 12 mg. base/kilo/day

OCT 15 1949

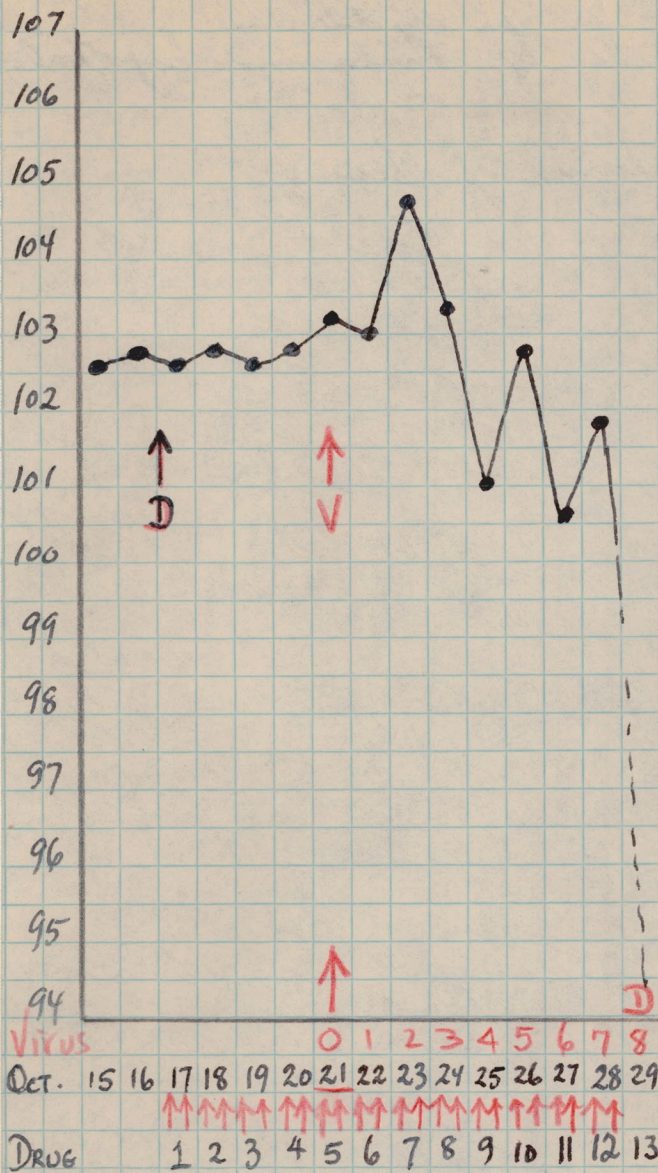


Nov. 17 - Monkey is prostrate with almost complete flaccid paralysis of lowers + back and partial of uppers.

Nov. 18 - Completely prostrate

Necropsy - CNS in 2A.

STANDARD B&P "NoBar"



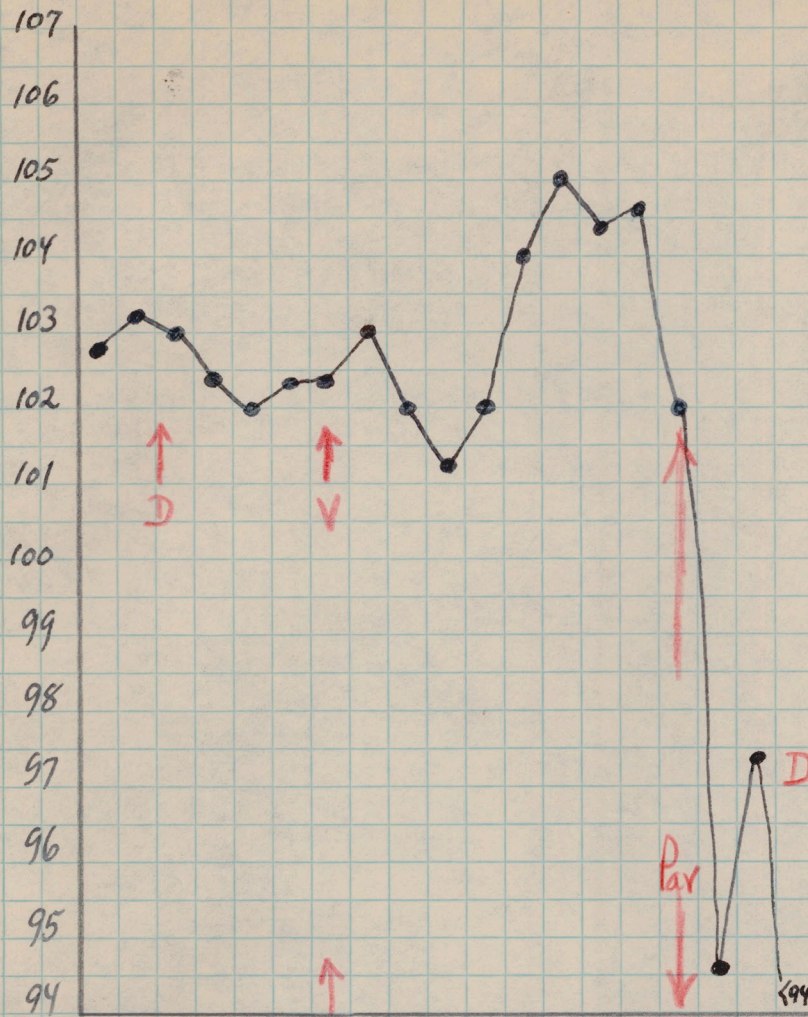
No Polio

- 10-24 - Area of cellulitis on left upper lip about 2 cm. in diam.
- 10-25 - Area of cellulitis larger; otherwise active
- 10-26 - Cellulitis somewhat less marked; eats; active
- 10-27 - Cellulitis not as marked but appears weak  
4 PM - hunched over; ashen gray
- 10-28 - AM. Cellulitis going down - looks "toxic" - weak  
4 PM - Very weak - can hardly sit up after dose of drug.
- 10-29 - 8<sup>20</sup> AM - Appeared in extremis; drug not given  
50cc of milk by stomach tube at 8<sup>40</sup> AM  
Found dead at 9 AM

Neerospay at 10 AM. - lungs O.K. - slight fresh <sup>pleural</sup> adhesion  
right upper lobe. Viscera O.K.  
(Few oesophagostomum) <sup>dringus</sup> Bladder full Spleen normal size. CNS-OX

Histology - No Polio - 26 sections of spinal cord  
4 of medulla  
2 of midbrain  
2 of thalamus - hypothal.

Very poor fixation of tissue



Oct.	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2
Virus							0	1	2	3	4	5	6	7	8	9	10	11	12
Drug		1	2	3	4	5	6	7	8	9	10	11	12	13	14				

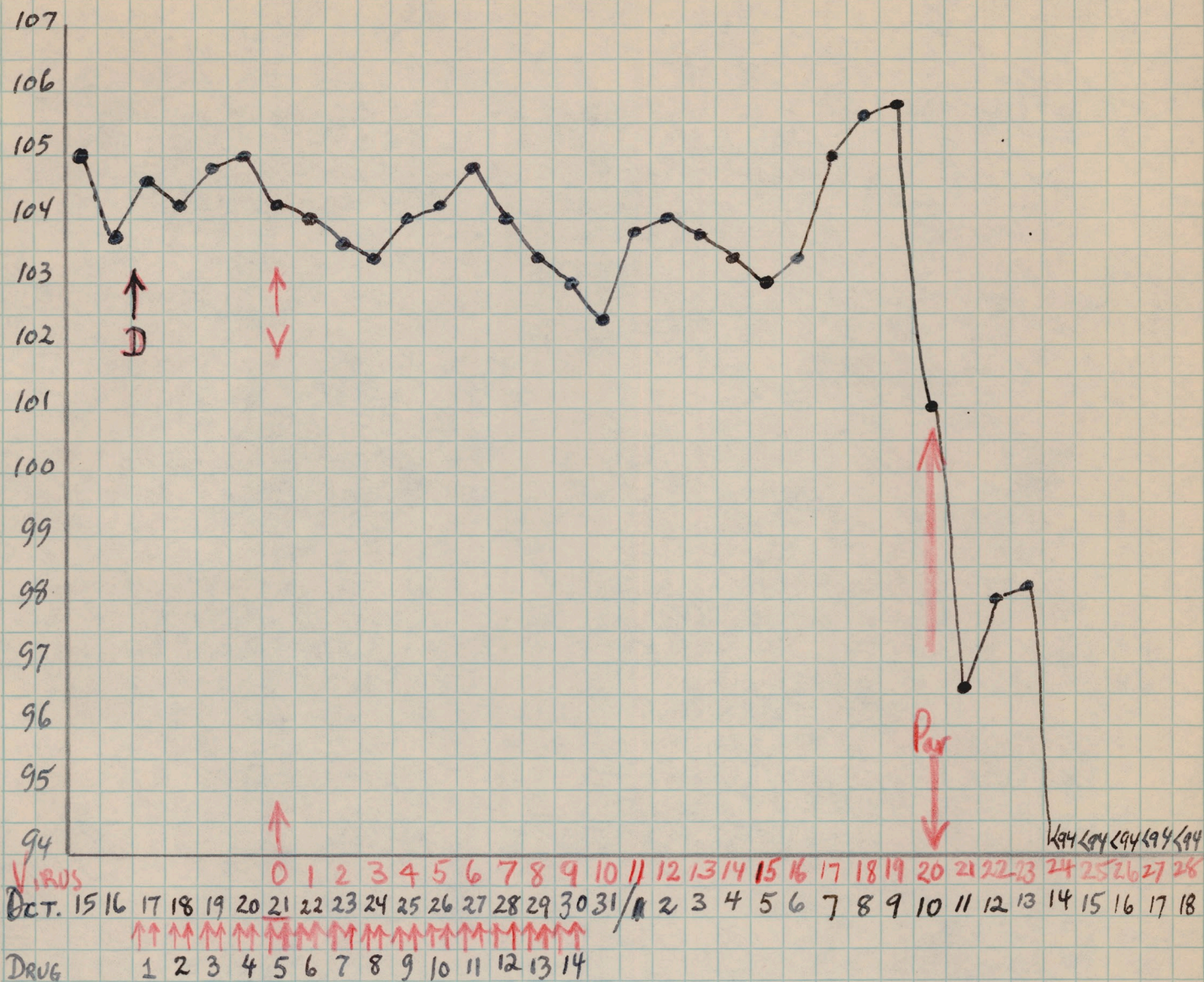
10-30 4PM - Paralysis lowers

10-31 Almost complete paralysis of both lowers, partial of back and left upper - lies down - milk given

11/1 Prostrate but can move right upper - 75cc of milk by tube

11/2 Same - milk & diet 6 PM - Dead

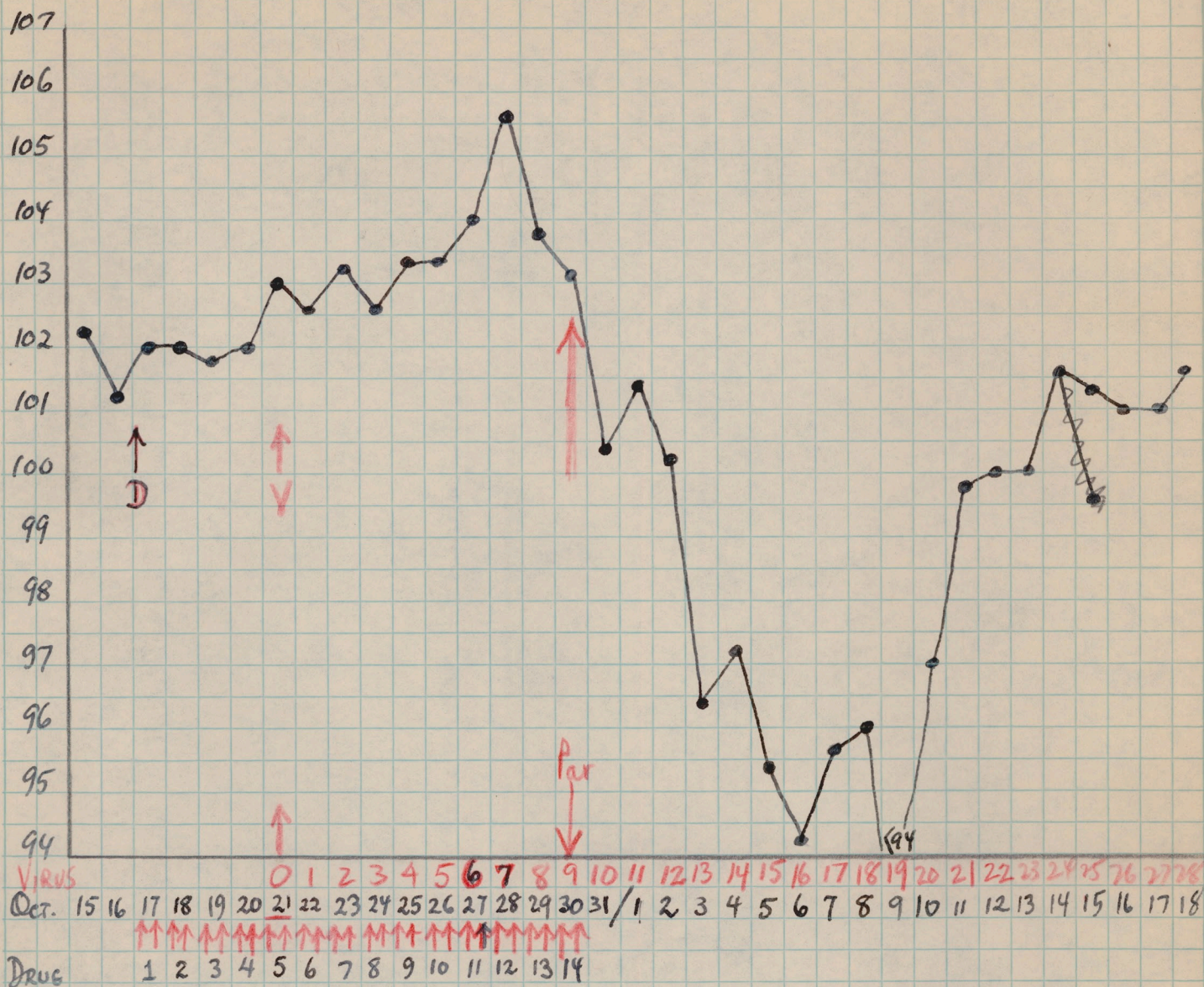
STANDARD B&P "NoBar"



11/8 - excited 11/9 - excited

11/10 Paralysis right upper and lower, partial paralysis of left upper and lower; cannot sit up

11/11 Complete paralysis lowers & back, almost complete uppers  
11/12 Same 11/13 - same



10-30 4PM Partial paralysis lowers - can't climb

10-31 Partial paralysis upper, lowers and back - can crawl; milk

11/1 - Prostrate but can use left upper; eats diet - No milk by tube

11/2 - same - milk & diet 11/3 - same 11/4 - same

11/5 - same 11/6 - same 11/7 - same 11/10 - same

11/16 - much more active - crawls around - uses lower + upper extremities partially

Test for Virus in Spinal Cord of Rhesus 1314

NOV 15 1949

2 pieces of spinal cord frozen since 10/30/49 - weighing 0.56 gm. ground in 5cc saline and centrifuged.

0.3cc used for making dilutions and rest frozen (B-6-5)  
1cc of each dilution inoculated into each of 2 monkeys (Malanic region) as indicated.

Date	Days after inoculation	$10^{-2}$		$10^{-3}$		$10^{-4}$	
		Rh 1337	Rh 1338	Rh 1339	Rh 1340	Rh 1341	Rh 1342
11-15-49-0		103.4	103.6	103.4	103.0	102.8	102.6
11-16-49-1		104.0	102.3	103.6	103.2	102.7	102.8
11-17-49-2		102.8	102.4	103.4	103.0	102.0	101.0
11-18-49-3		102.4	103.0	103.0	102.8	101.8	101.6
11-19-49-4		102.2	101.6	103.1	102.0	102.8	102.0
11-20-49-5		102.8	102.6	103.0	102.4	103.4 <sup>o</sup>	100.6
11-21-49-6		102.6	102.6	102.6	102.4	103.2 <sup>o</sup>	101.0
11-22-49-7		102.4	102.5	102.8	102.2	103.8	102.0
11-23-49-8		103.0	102.2	102.6	102.0	103.6	101.6
11-24-49-9		102.6	102.2	102.4	102.2	103.0	101.2
11-25-49-10		102.2	102.4	102.4	101.7	102.4	100.8
11-26-11		103.0	103.0	103.0	102.2	102.0	102.4
11-27-12		102.4	103.0	102.6	102.8	102.4	101.6
11-28-13		103.2	103.0	103.0	103.0	103.0	102.2
11-29-14		102.0	102.8	103.0	102.0	102.4	101.6
11-30-15		102.2	102.2	103.0	102.2	102.6	101.0
12-1-16		101.7	102.0	103.0	102.6	103.4	102.0
12-2-17		102.4	102.6	103.6	102.4	103.2	100.6
12-3-18		102.0	102.2	102.6	102.0	103.0	101.6
12-4-19		102.4	103.0	103.4	102.4	102.8	102.0
12-5-20		102.0	102.4	103.0	102.4	103.0	101.8
12-6-21		101.8	103.0	103.8	103.2	103.0	102.0
12-7-22		102.8	103.0	104.2 <sup>o</sup>	102.8	103.0	102.6
12-8-23		103.2	103.0	104.8 <sup>(oxy. 1)</sup>	103.0	103.8	103.4
12-9-24		102.6	102.2	104.4	103.2	103.2	102.2
12-10-25		102.4	102.6	103.6	103.2	103.8	101.6
12-11-26		102.0	102.8	103.2	102.2	102.4	101.6
12-12-27		102.6	103.2	103.4	103.6	103.4	102.6
12-13-28		102.2	102.4	103.4	103.0	103.0	101.8

These monkeys sent to Schmidt on 12/16 for use in Toxicity studies on de-ethylated isoplasmodid.

STANDARD B & P "Notepad"

# Test for Virus in CNS of Rh 1314

NOV 23 1949  
NOV 25 1949

10% susp. of spinal cord + 10% centrif. susp. of medulla.

Inoculum - Ice into right thalamic region

Medulla 10<sup>-1</sup>

Spinal Cord 10<sup>-1</sup>

Date	Days after inoculat.	Medulla 10 <sup>-1</sup>		Spinal Cord 10 <sup>-1</sup>	
		Rh 1335	Rh 1336 - Rh 1343	Rh 1343	Rh 1344
11/25	0	98.4	102.6	103.0	102.4
11/26	1	99.4	102.0	103.4	103.2
11/27	2	97.2	103.4	102.6	103.0
11/28	3	97.2	101.8	102.8	102.6
11/29	4	98.0	102.4	102.6	102.8
11/30	5	97.6	102.6	102.6	103.2
12/1	6	<94 (thin)	102.4	102.6	103.0
12/2	7	<94 "	102.8	103.0	103.4
12/3	8	Dead	102.6	102.8	103.0
12/4	9		102.8	103.0	103.0
12/5	10	Histology neg.	102.6	102.4	103.2
12/6	11		102.4	103.2	103.0
12/7	12		102.2	102.8	103.2
12/8	13		102.4	103.6	103.2
12/9	14		103.0	102.8	102.6
12/10	15		102.0	102.8	102.6
12/11	16		102.2	103.8	102.4
12/12	17		101.2	103.8	104.6
12/13	18		101.6	102.4	102.8
12/14	19		101.6	103.2	102.8
12/15	20		103.2	103.2	102.8
12/16	21		102.4	102.2	101.8
12/17	22		101.8	102.6	102.0
12/18	23		102.0	102.2	102.6
12/19	24		102.6	103.0	102.2
12/20	25		101.8	102.8	102.0
12/21	26		103.0	103.4	102.4
12/22	27		102.0	102.8	102.4
12/23	28		102.0	103.0	102.6

Effect of ISOPLASMOCID, Given after the Virus,  
on Time of Development of Poliomyelitis in Monkeys.

DEC 8 1949

ISOPLASMOCID - Newly synthesized compound used in exp. of 10-15-49.

Polio Virus - Same material and ampoule used in all other experiments  
[REDACTED] STRAIN (GEN II) frozen since 2-26-48.  
B-8-9 - Amp. 4

0.5 cc of 1:5 (20%) + 49.5 cc saline = 1:500  
1 cc given into right thalamic area

Monkeys - Larger than previous expt. Arrived 12-7-49 from Okatie Farms.

Inoculations - begun at 9:45 AM - with Rh 1374 working back to untreated controls 1345 being last - completed at 10:45 AM.

DOSE - Drug made up in distilled water but this time kept in a brown bottle in refrigerator.

1st dose - given 6 hours after virus = 12mg base/keto

2nd " - " 22 " " " = 12 mg " "

3rd " - " 30 " " " = 6mg/ " "

Subsequent dosage 6mg base/keto at 8 AM + 4 PM.

NOTE: The marked toxicity of the drug in this experiment came as a complete surprise

The 24mg base/keto for the first 24 hrs. can hardly account for it - since similar dosage in previous tests did not kill so rapidly. It seemed that the large size of the monkeys might have had something to do with it - the total dose being very much larger. Toxicity may not be proportional to body weight within certain limits

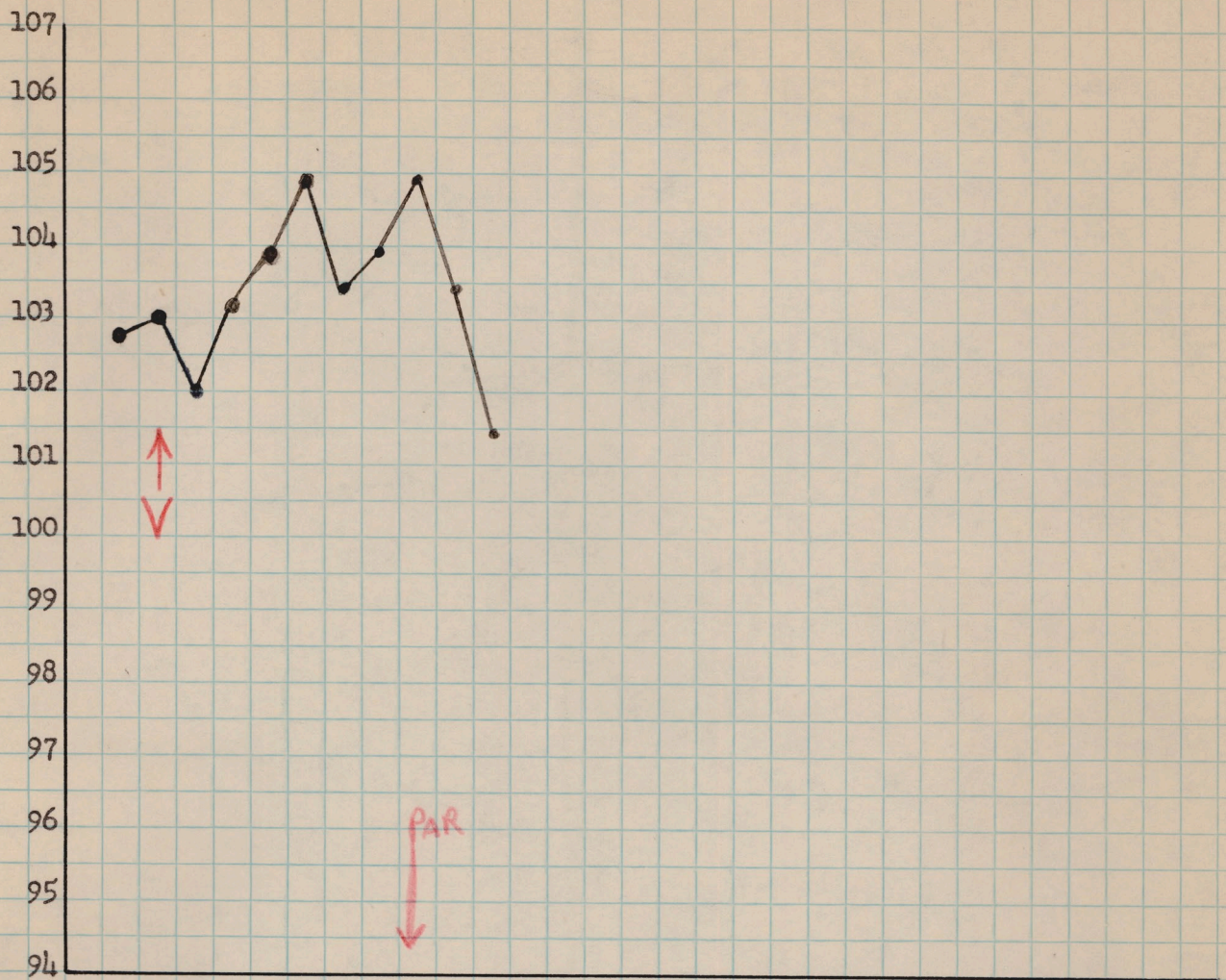
GROUP	Monkey No.	WEIGHT		MG. Base 12mg./kilo	Stock Sol. per 6mg. dose cc.	Day of Par	
		POUNDS	GRAMS				
<u>CONTROLS</u>	1345	7.0	3178			7	K
	1346	6.12	2778			4 <sup>h</sup>	K
	1347	8.12	3686			5	K
	1348	6.5	2951			7	K
	1349	7.0	3178			5	K
	1350	7.12	3232		5.7	6	K
	1351	7.5	3405			7	K
	1352	6.12	2778			5	D7
	1353	7.12	3232			5	D6 - Polio
	1354	8.0	3632			6	K
ISOPHARMOXID  AFTER VIRUS	1355	7.0	3178	38.1	1.9	8	K
	1356	6.5	2951	35.4	1.77	-	D7 - <del>No Pol</del>
	1357	9.12	4140	49.7	2.49	-	D6 - <del>No Pol</del>
	1358	8.5	3859	46.2	2.31	-	D4 - <del>No Pol</del>
	1359	7.0	3178	38.1	1.9	-	D5 - <del>No Pol</del>
	1360	9.12	4140	49.7	2.49	-	D4 - " "
	1361	6.5	2951	35.4	1.77	5	D6 - Polio
	1362	6.0	2724	32.7	1.64	7	D9 Polio
	1363	7.12	3232	38.8	1.94	-	D3 - <del>No Pol</del>
	1364	6.0	2724	32.7	1.64	-	D4 - <del>No Pol</del>
	1365	7.0	3178	38.1	1.9	-	D8 - <del>No Pol</del>
	1366	6.0	2724	32.7	1.64	-	D7 - <del>No Pol</del>
	1367	6.5	2951	35.4	1.77	-	D5 - <del>No Pol</del>
	1368	8.12	3686	44.2	2.21	-	D4 - " "
	1369	7.25	3292	39.5	1.98	9	K
	1370	7.12	3232	38.8	1.94	-	D6 <sup>7</sup> / <sub>7</sub> <del>No Pol</del>
	1371	6.0	2724	32.7	1.64	6	D7
	1372	8.0	2778	43.5	2.18	6	K
	1373	5.5	2497	30.0	1.5	-	7 - <del>No Pol</del>
	1374	8.0	3632	43.5	2.18	-	7 - <del>No Pol</del>

Drug Used

<u>Date prepared</u>	<u>Amount</u>
12-8-49	3774 mg (200cc)
12-9-49	3774 mg (200cc)
12-10-49	3774 mg (200cc)

Controls - 5 days - 5/10 = 50%  
 6 " - 7/10 = 70%  
 7 " - 10/10 = 100%

STANDARD B & P "NOTES"



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

Dec. 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

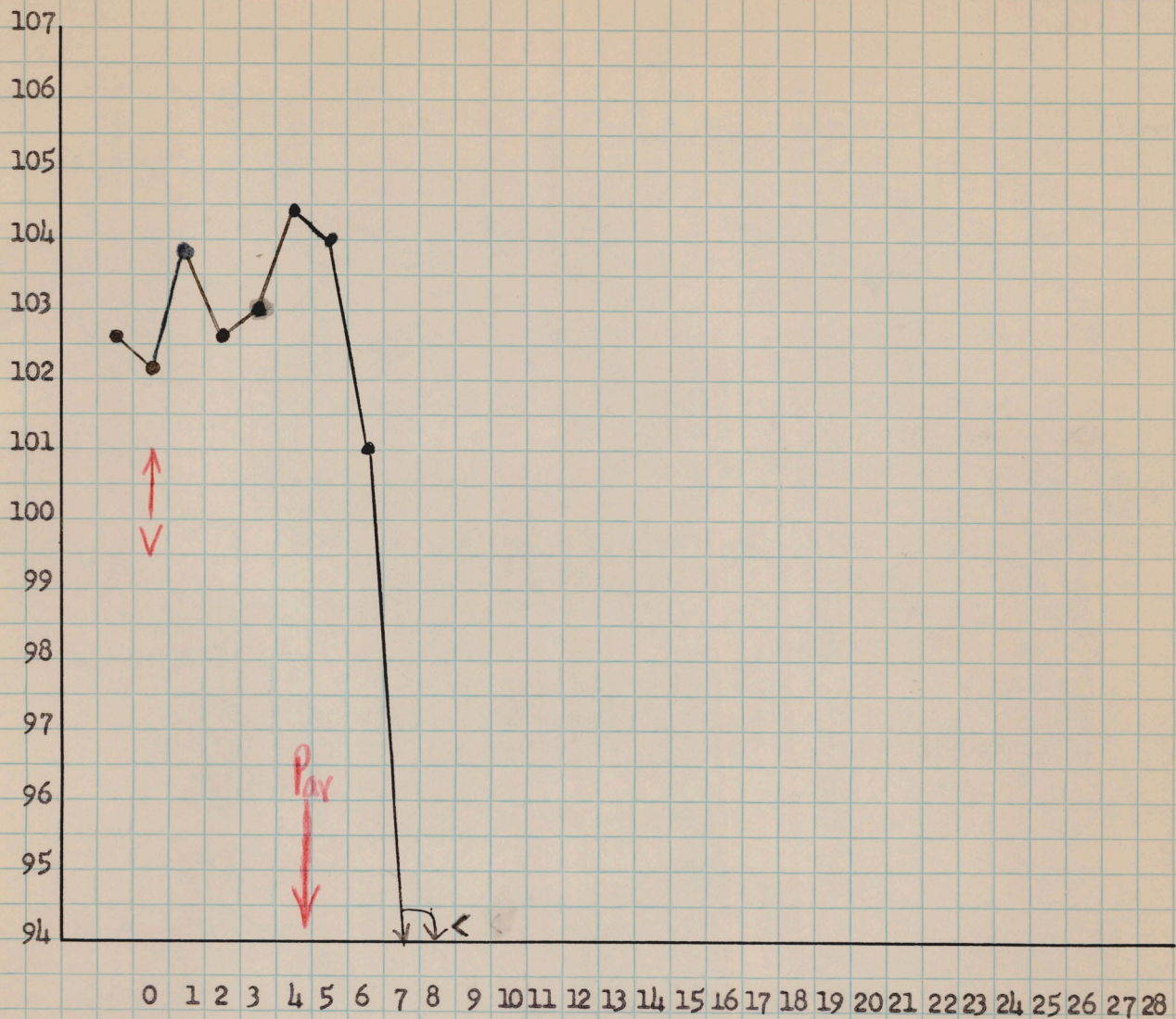
Dec. 13 - 4:30 PM - Excited

Dec. 14 - 9:00 AM - Excited - 3:30 PM - Same

Dec 15 - 9:00 AM - Partial Paralysis of left upper  
4:30 PM - Same

Dec 16 - 9:00 AM - Same

Dec 17 - 11:00 AM - Partial Paralysis of lower & left upper



Dec. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Dec. 12 - A.M. - Excited

10 PM - Partial paralysis arms, ataxic  
can't climb

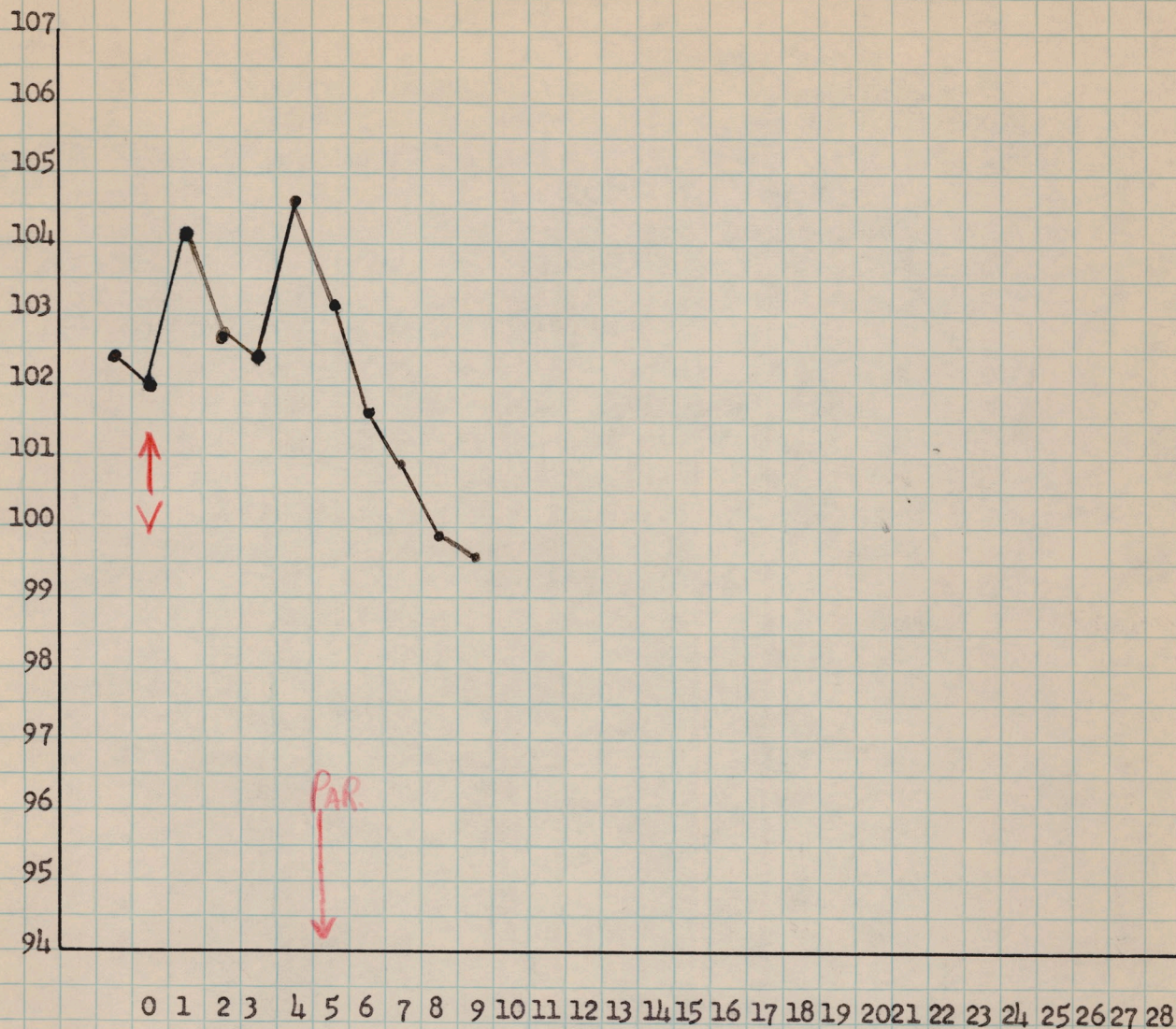
Dec. 13 - 9:00 A.M. - Partial Paralysis of arms; ataxic  
4:30 P.M. - Sits up, hunched

Dec. 14 - 9:00 A.M. - Prostrate; Partial paralysis of legs, Complete back, + almost complete arms  
3:30 P.M. - almost complete lower

Dec 15 - 9:00 A.M. - Prostrate - 4:30 P.M. - Same

Dec 16 - 9:00 A.M. - Prostrate

Dec 17 - 11:00 A.M. - Prostrate



Dec. 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

Dec. 12 - A.M. - Excited 10 PM Pilo motor, very excited - peculiar behavior - no paralysis

Dec. 13 - 9:00 A.M. - Pilo motor, Partial paralysis right arm.  
4:30 PM - Partial Paralysis of both arms, can stand up

Dec. 14 - 9:00 A.M. - Partial paralysis of arms; weak legs; sits up  
3:30 PM - Same

Dec 15 - 9:00 A.M. - Partial paralysis of both lowers; Complete paralysis of both upper  
4:30 PM - Prostrate

Dec 16 - 9:00 AM - Prostrate - Partial lowers, almost complete back hump

Dec 17 - 11:00 AM - Same



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

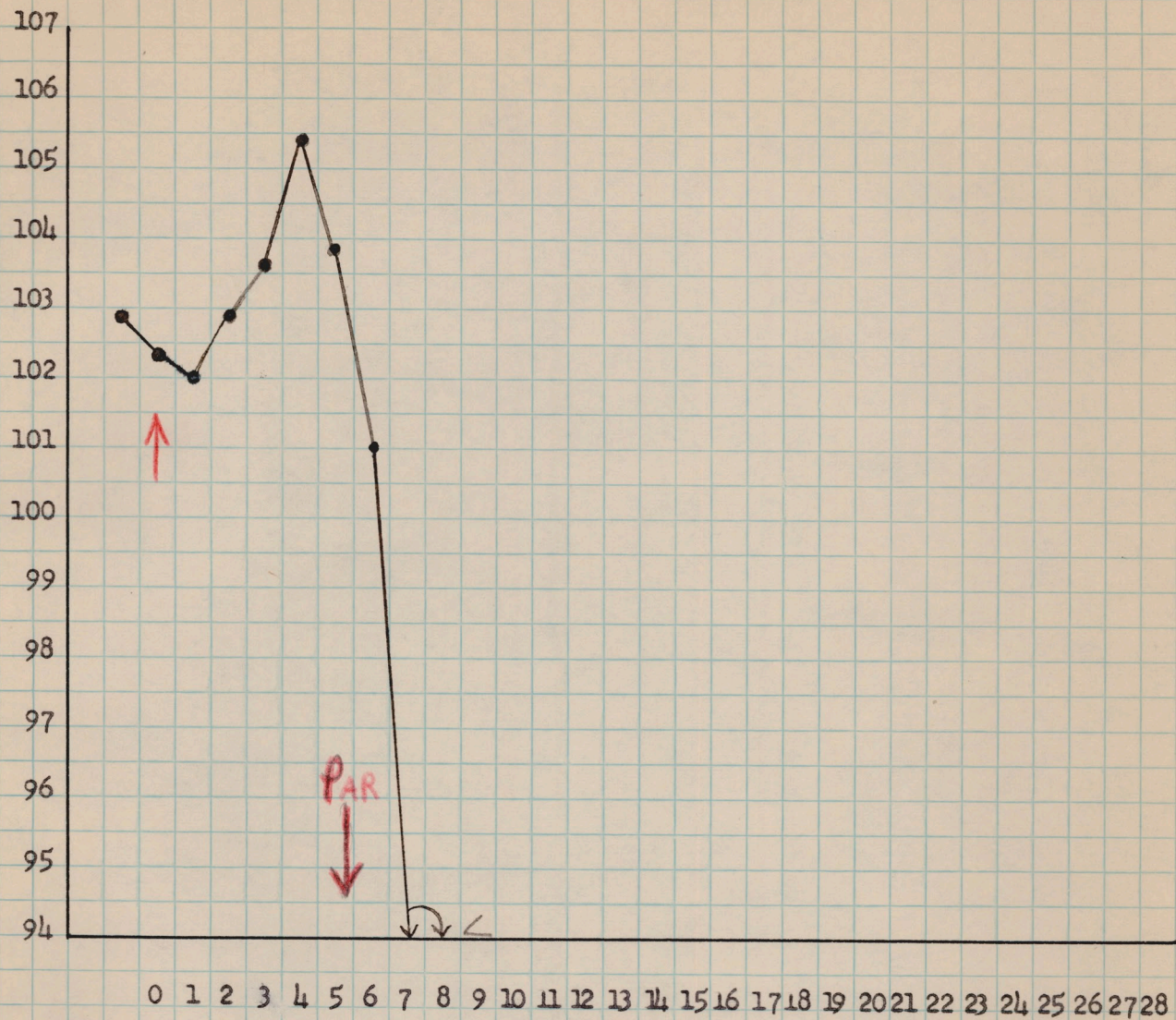
Dec. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Dec 14 - 9:00 AM - OK - 3:30 PM - OK

Dec 15 - 9:00 AM - Partial paralysis of left upper 4:30 PM - Same

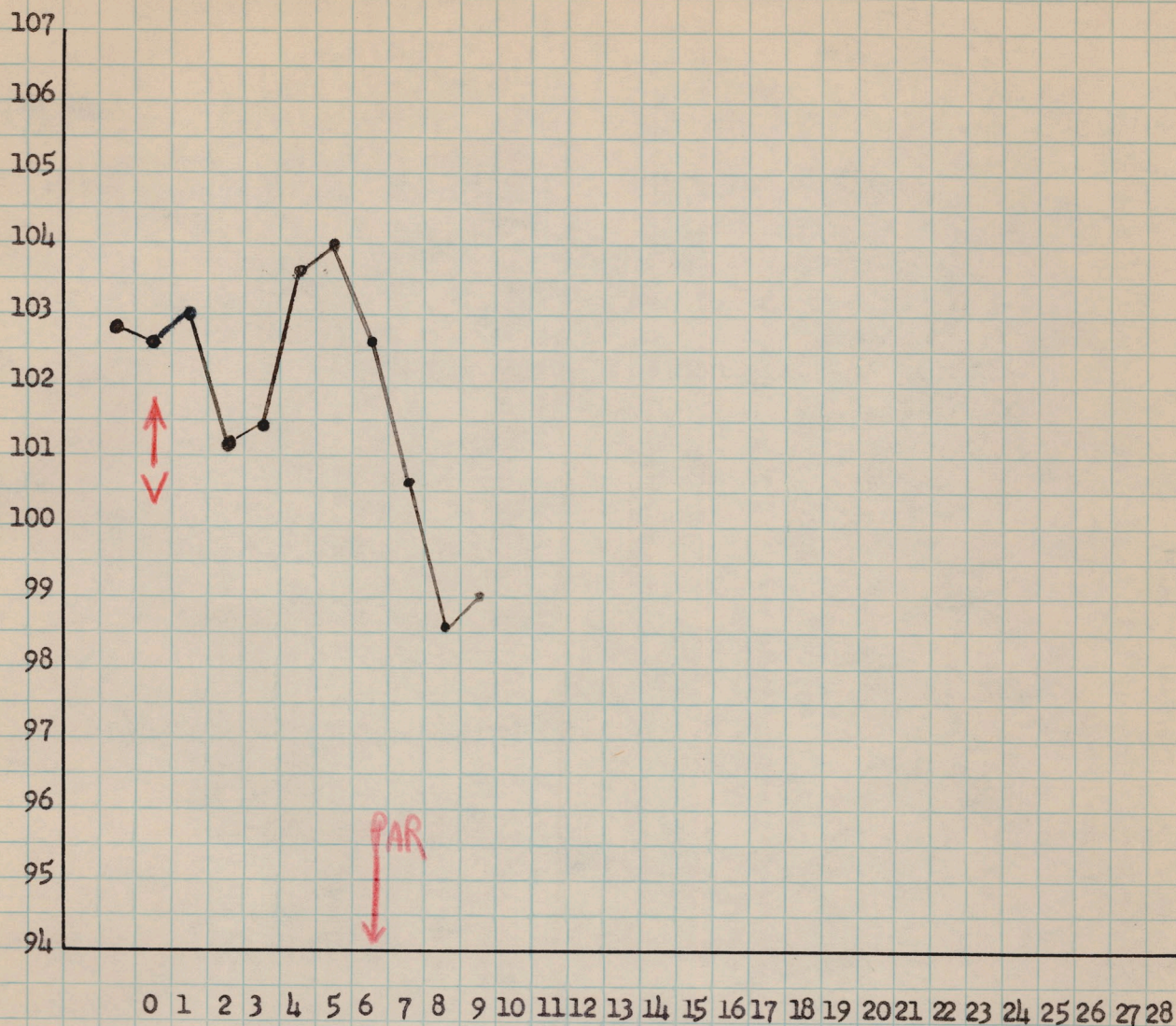
Dec 16 - 9:00 AM - Prostrate; can raise head

Dec 17 - 11:00 AM - Prostrate



Dec. 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

- Dec. -13 - 4:30 PM - Notable to climb well; left deltoid paralysis
- Dec. 14 - 9:00 AM - Down on floor; partial paralysis of upper, lower, + back; raised head.  
3:30 PM - Paralysis of 4 limbs almost complete
- Dec 15 - 9:00 AM - Prostrate - 4:30 PM - Same
- Dec 16 - 9:00 AM - Prostrate; complete paralysis
- Dec 17 - 11:00 AM - Prostrate



Dec. 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

Dec. 13 - 9:00 AM - Excited

4:30 PM - Tremor, clings well

Dec. 14 - 9:00 AM - Marked tremor

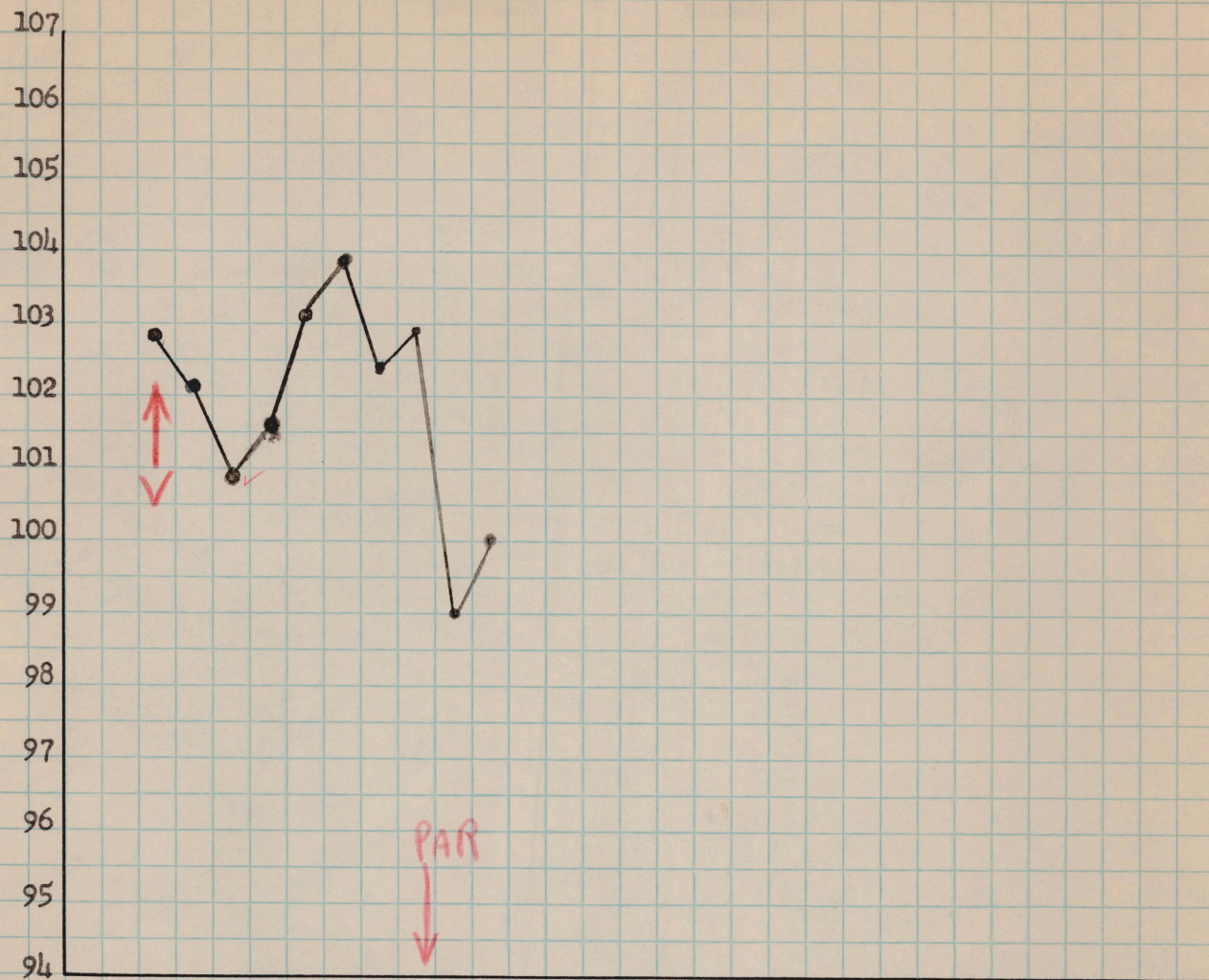
3:30 PM - Partial Paralysis left upper; other extremities weak

Dec 15 - 9:00 AM - Partial paralysis of left upper and both lowers.

4:30 PM - Same

Dec 16 - 9:00 AM - Almost complete lowers; partial of upper + back; can barely sit up

Dec 17 - 11:00 AM - Partial paralysis of all extremities; raise head



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

Dec. 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

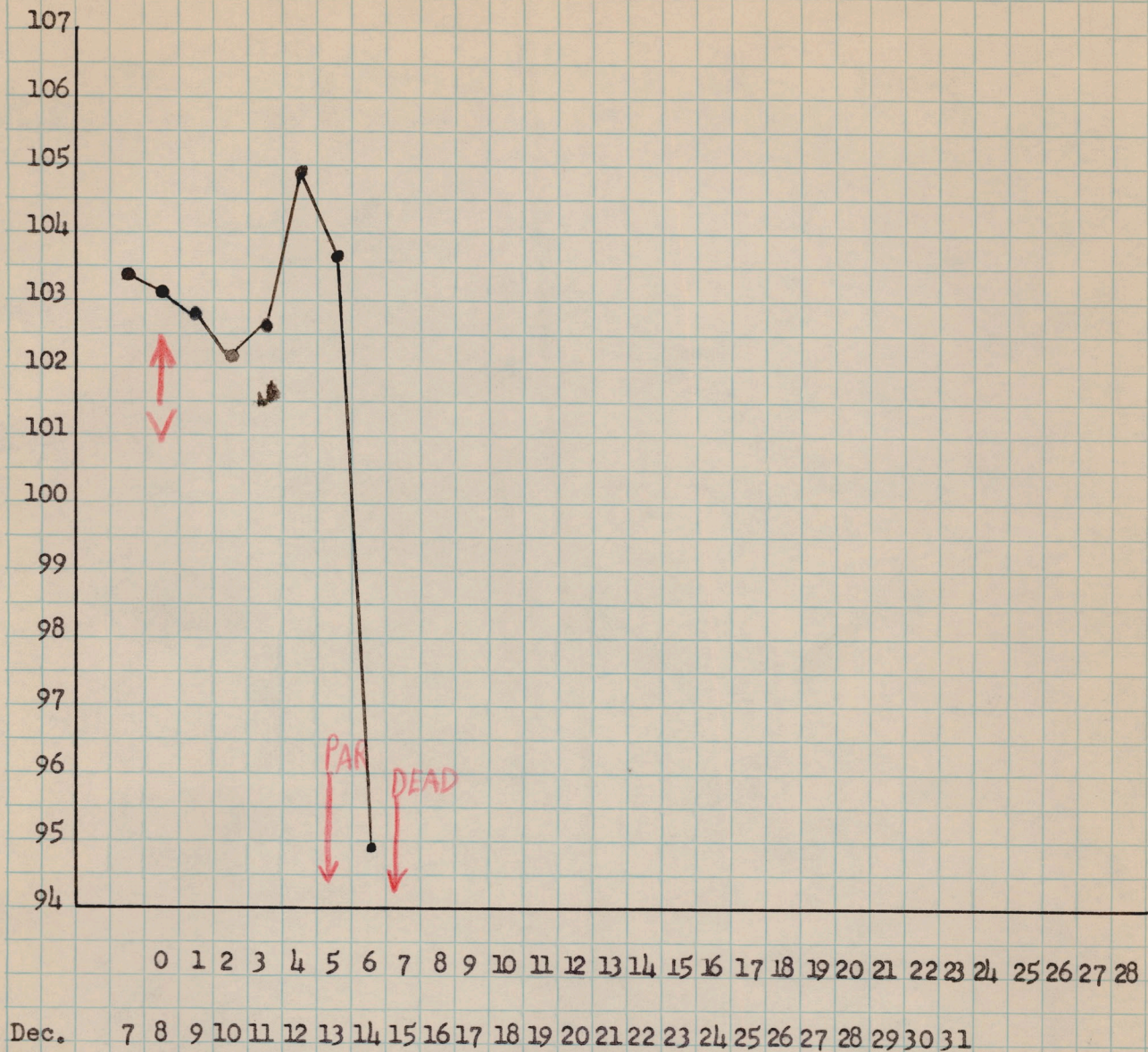
Dec. 13 - 4:30 PM - Pilomotor

Dec. 14 - 9:00 AM - Pilomotor  
3:30 PM - Marked tremor + Pilomotor

Dec 15 - 9:00 AM - Pilomotor, both lowers weak; climbs poorly  
4:30 PM - Partial paralysis of lowers

Dec. 16 - 9:00 AM - Almost complete lowers; partial upper + back; raised head but can not sit up.

Dec. 17 - 11:00 AM - Almost complete lowers + partial upper; raised head



Dec 12 - A.M. - Excited

10 PM - Weak uppers, refuses to climb or run

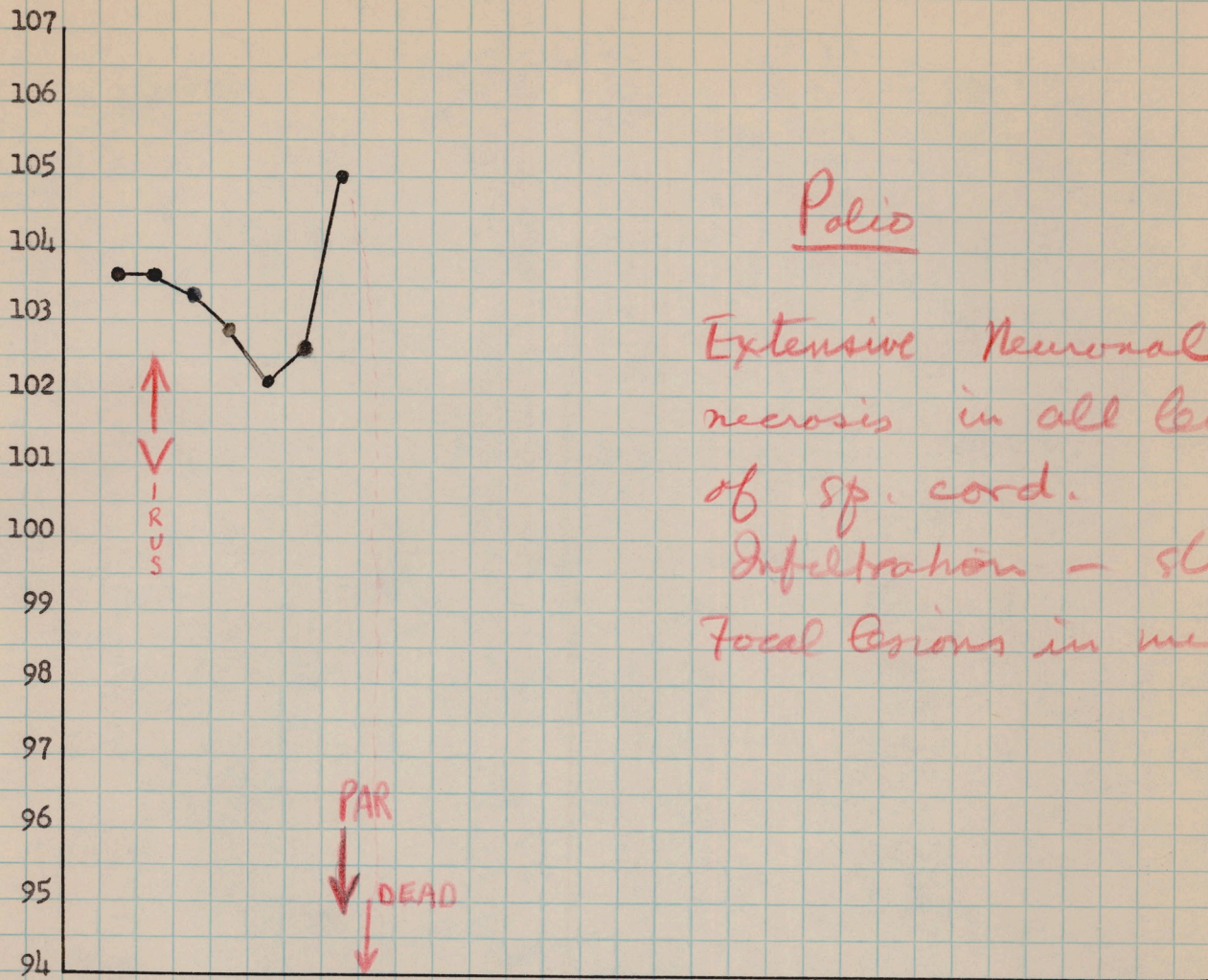
Dec 13 - 9:00 A.M. - Partial Paralysis of arms; weak legs

4:30 PM - Sits in Hunched position; Completely Paralytic in left upper  
Partial Paralysis of lowers

Dec 14 - 9:00 AM - Prostrate; almost complete paralysis of arms, legs, + back.

3:30 PM - same

Dec 15 - 8:05 AM - Dead - discarded



Polio

Extensive Neuronal  
necrosis in all levels  
of sp. cord.  
Infiltration - slight  
Focal lesions in medulla.

PAR  
↓  
DEAD  
↓

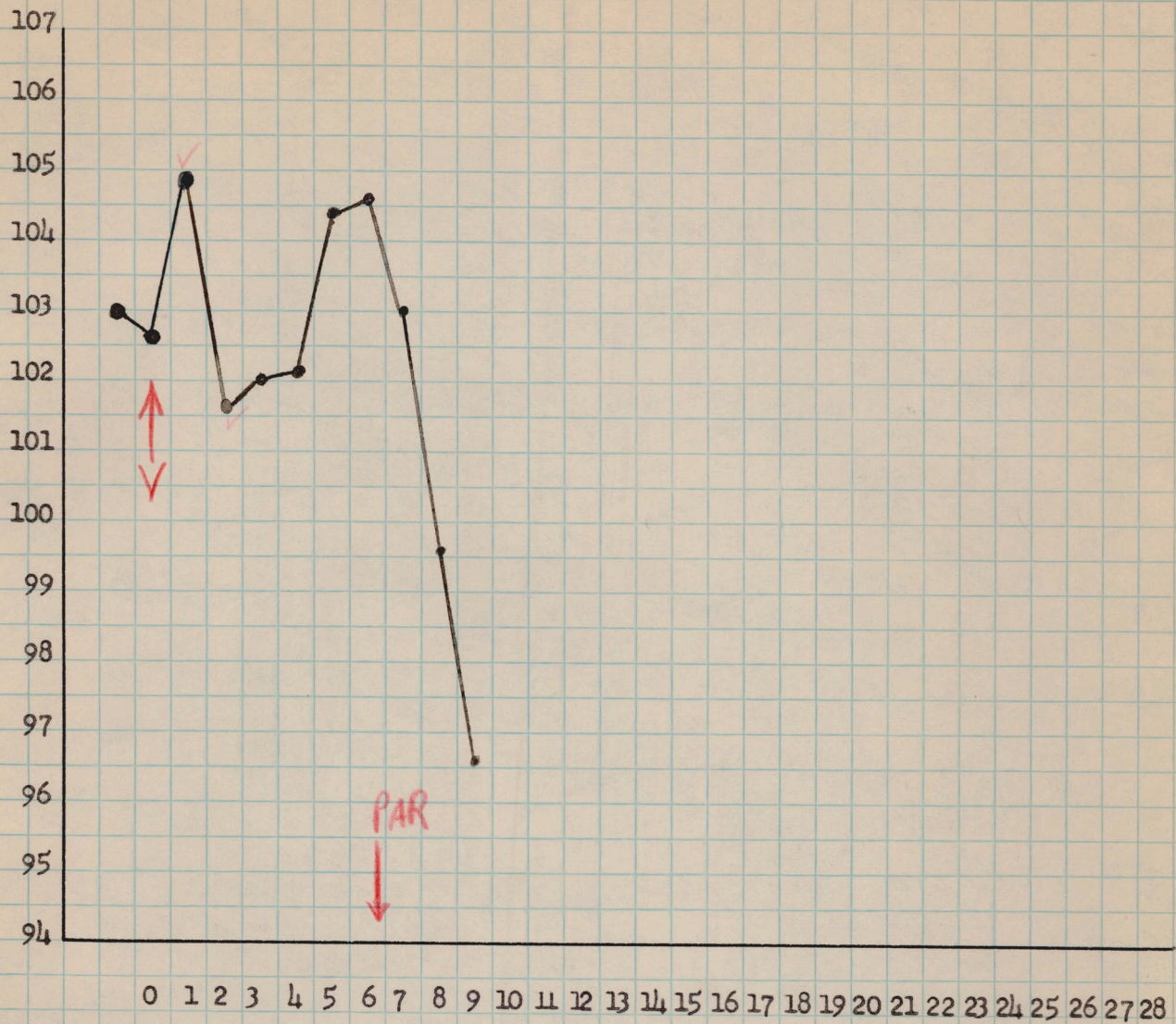
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Dec. 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

Dec. 13 - 9:00 A.M. - ataxic, weak arms, poor coordination  
4:30 PM - Tremor, Partial Paralysis of upper; sits up; Cant climb

Dec. 14 - 8:15 AM. - Dead  
9:30 A.M. - Necropsy - viscera - OK

CNS in Z.A.



Dec. 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

Dec. 8 - Female in heat

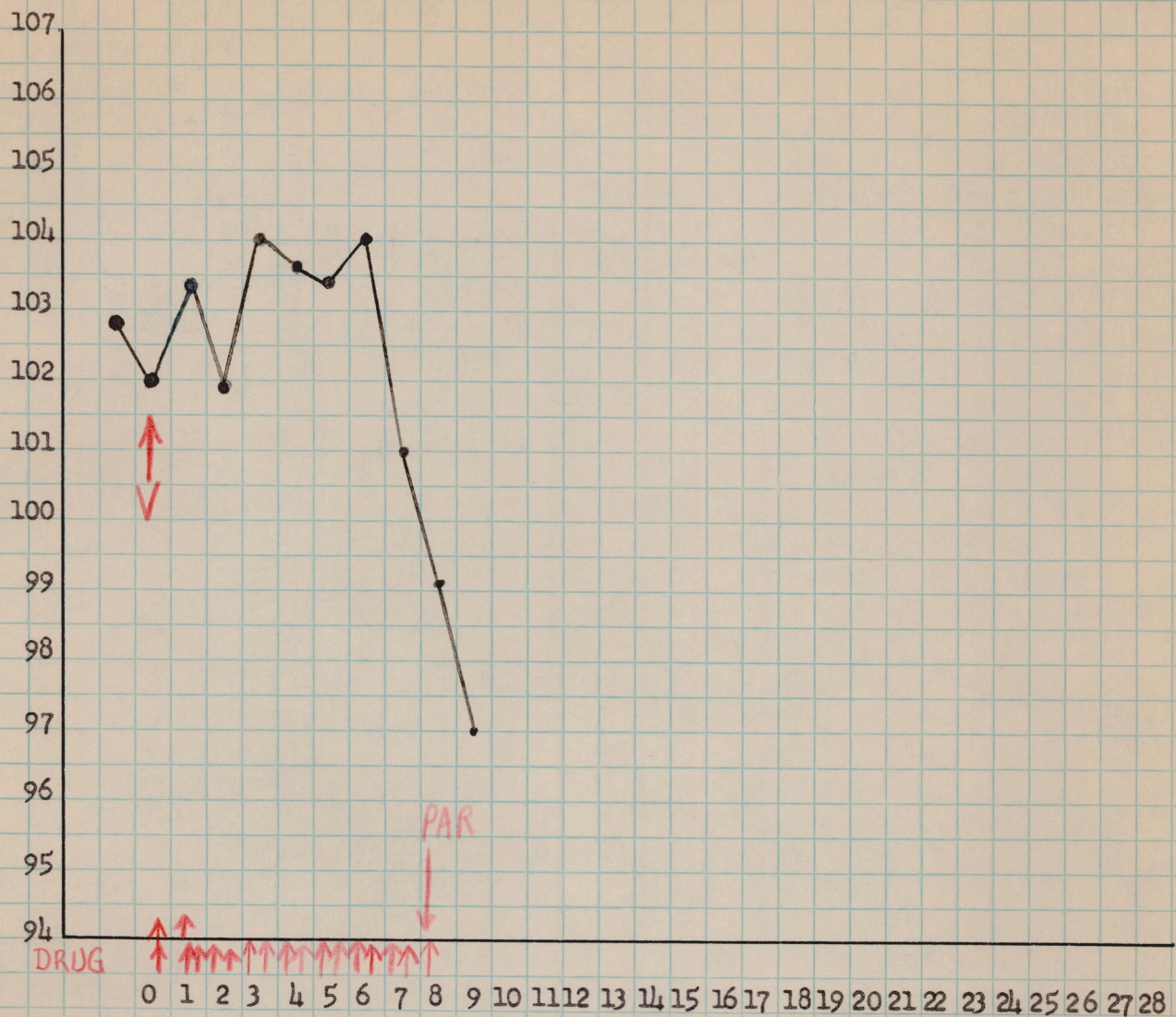
Dec. 13 - 9:00 A.M. - Excited  
4:30 P.M. - Extremely excited

Dec. 14 - 9:00 A.M. - Questionable left arm  
3:30 P.M. - Partial paralysis of both arms

Dec. 15 - 9:00 A.M. - Complete paralysis of both uppers; weak lowers  
4:30 P.M. - Same

Dec 16 - 9:00 A.M. - almost complete paralysis of lowers, back, +  
uppers; can hold up head.

Dec 17 - 11:00 A.M. - Prostrate



Dec. 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

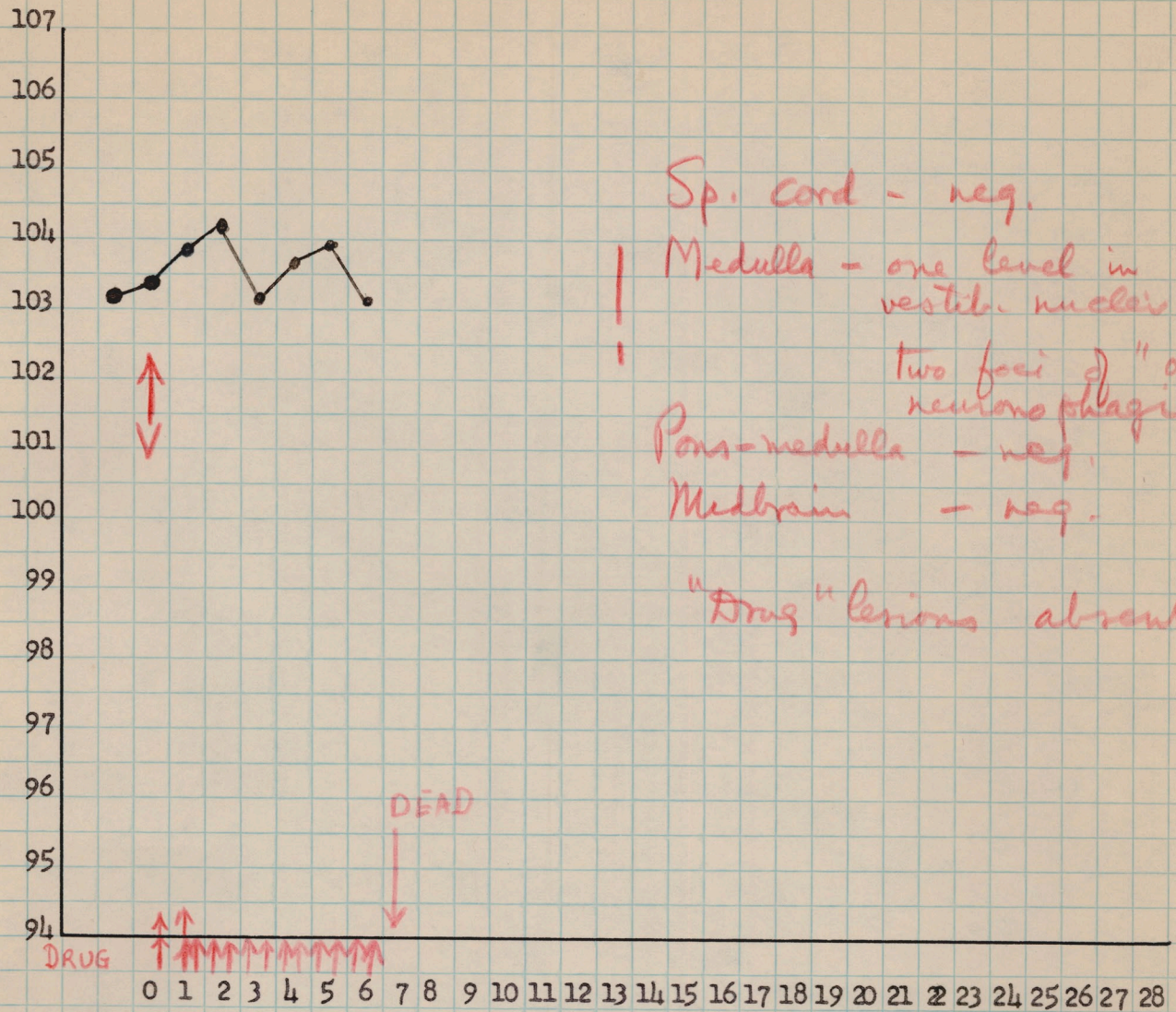
Dec. 13 - 9:00 A.M. - Ashen appearance, active

Dec. 14 - 9:00 A.M. - OK - 3:30 P.M. - OK

Dec. 15 - 9:00 A.M. - OK - 4:30 P.M. - Hunched, weak

Dec 16 - 9:00 A.M. - Partial paralysis of left upper; weak lower

Dec 17 - 11:00 A.M. - Partial paralysis of lower + left upper, can not get back in cage; sits up.



Sp. cord - neg.  
 Medulla - one level in med. vestib. nuclei  
 two foci of "old" neuronophagia  
 Pons-medulla - neg.  
 Medbrain - neg.  
 "Drug" lesions absent

Dec. 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

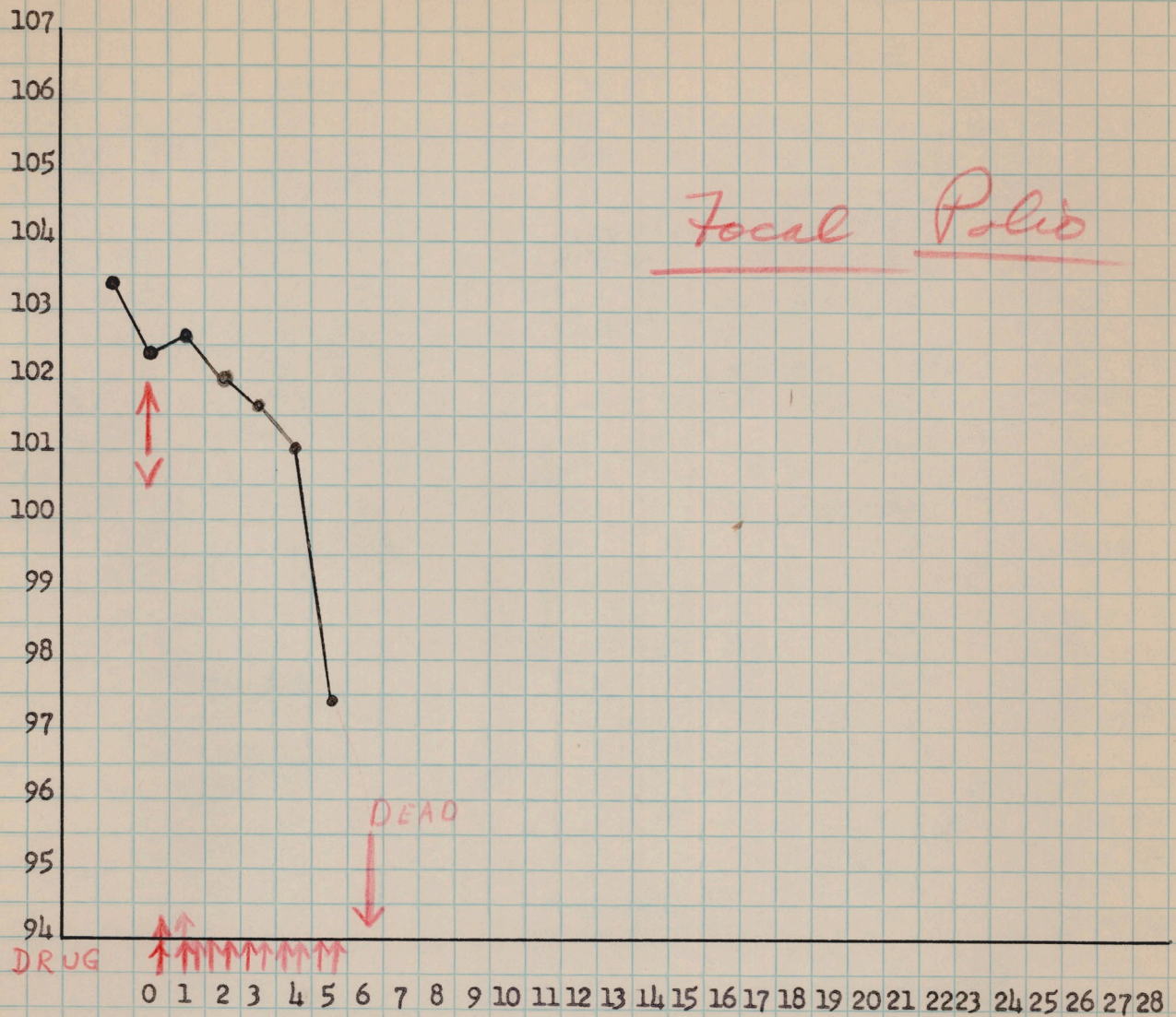
Dec. 13 - 9:00 AM - Ashen appearance, active.

Dec. 14 - 9:00 AM - Looks sick - 3:30 PM - Same

Dec. 15 - 8:05 AM - Dead  
 9:30 AM - Necropsy - Virus ok

CNS in 2. A.

STANDARD B&P "NOTEBOOK"



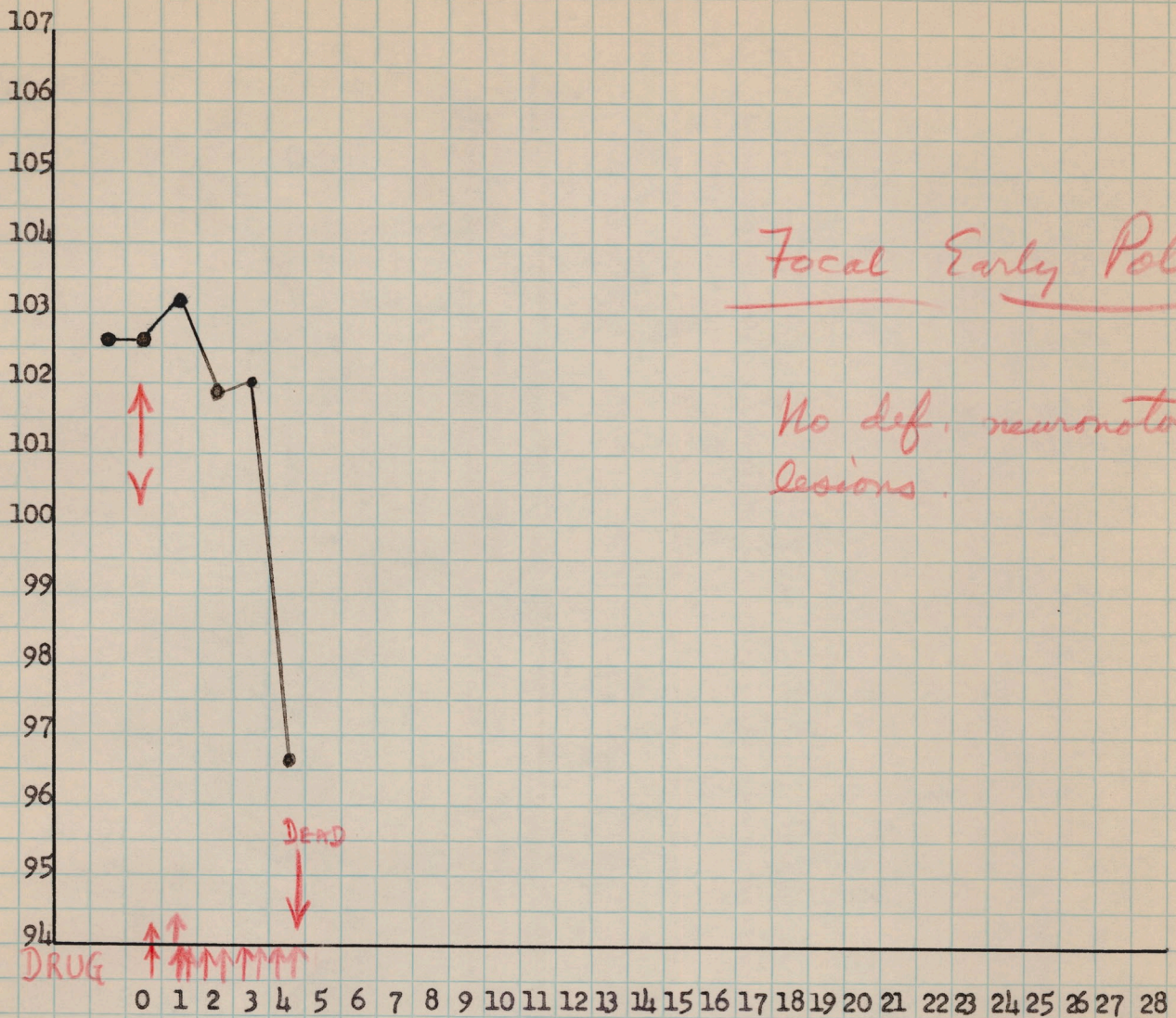
Dec. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Dec. 13 - 9:00 A.M. - Asken, hunched  
4:30 P.M. - Sits up, dyspnea

Dec. 14 - 8:20 A.M. - Dead  
10:00 A.M. - Necropsy - Entire right lung consolidation & consolidation of upper left lung lobe. almost complete adhesion of right lung to walls of pleural cavity. other viscera OK.

CNS in Z.A.

Focal lesions in medulla & few in sp cord.



Focal Early Polio

No def. neuronotopic lesions.

Dec. 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

Dec 12 - A.M. - Weak - sit up

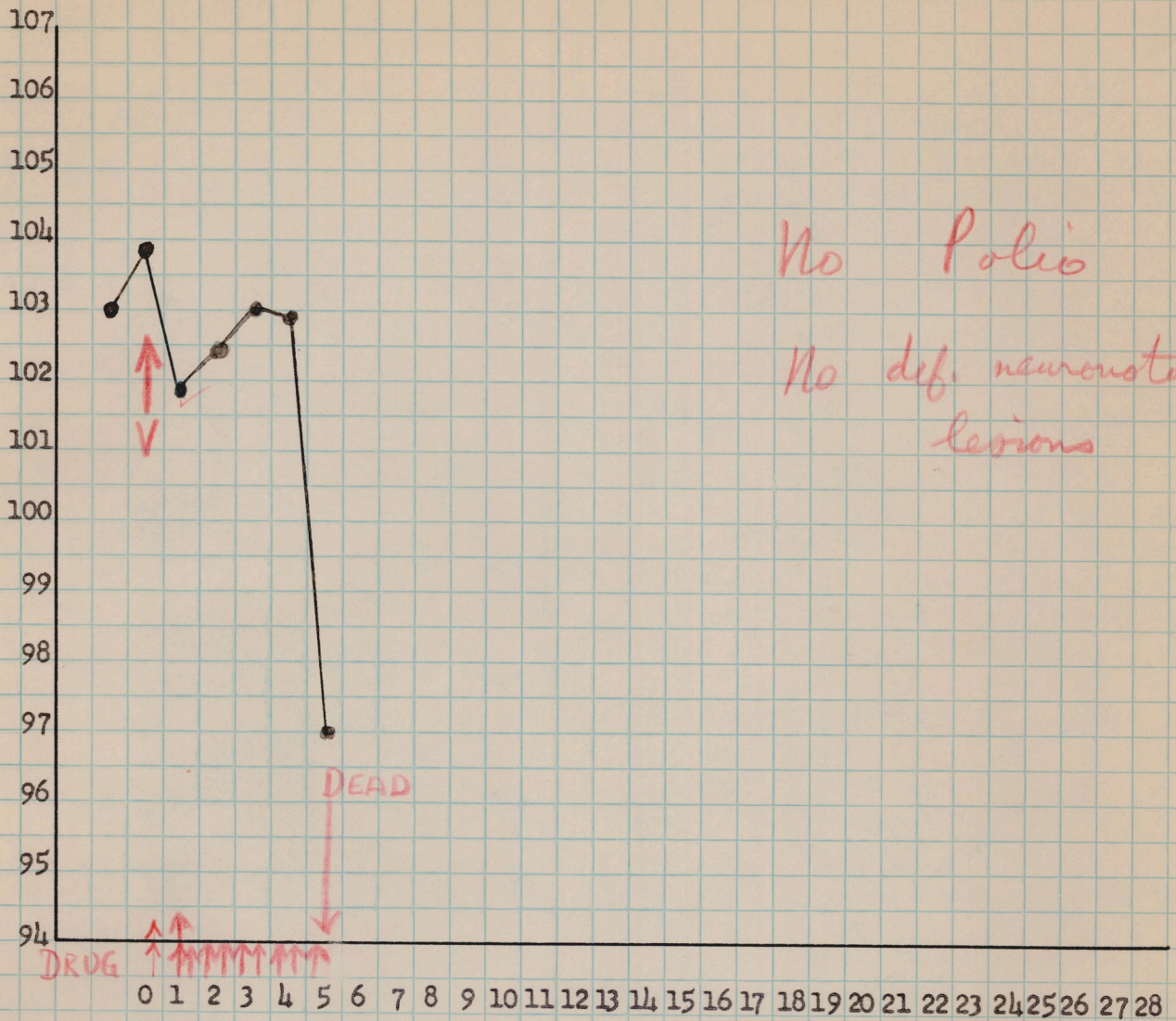
4:30 P.M. - Terminal 5:30 PM - Dead

Necropsy - 8:15 PM - Viscera ok.

Sections of CNS in 2A.

Few focal lesions in cervical + thoracic esp. post. horns. - lumbar neg  
Focal lesions also in midbrain

STANDARD B&P "NOTEAR"



No Polio

No def. neurotoxic lesions

Dec. 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

Dec. 12 - P.M. - Ashen blue color

Dec. 13 - 9:00 AM - Weak, sick tends to lie down.

3:50 PM - Terminal

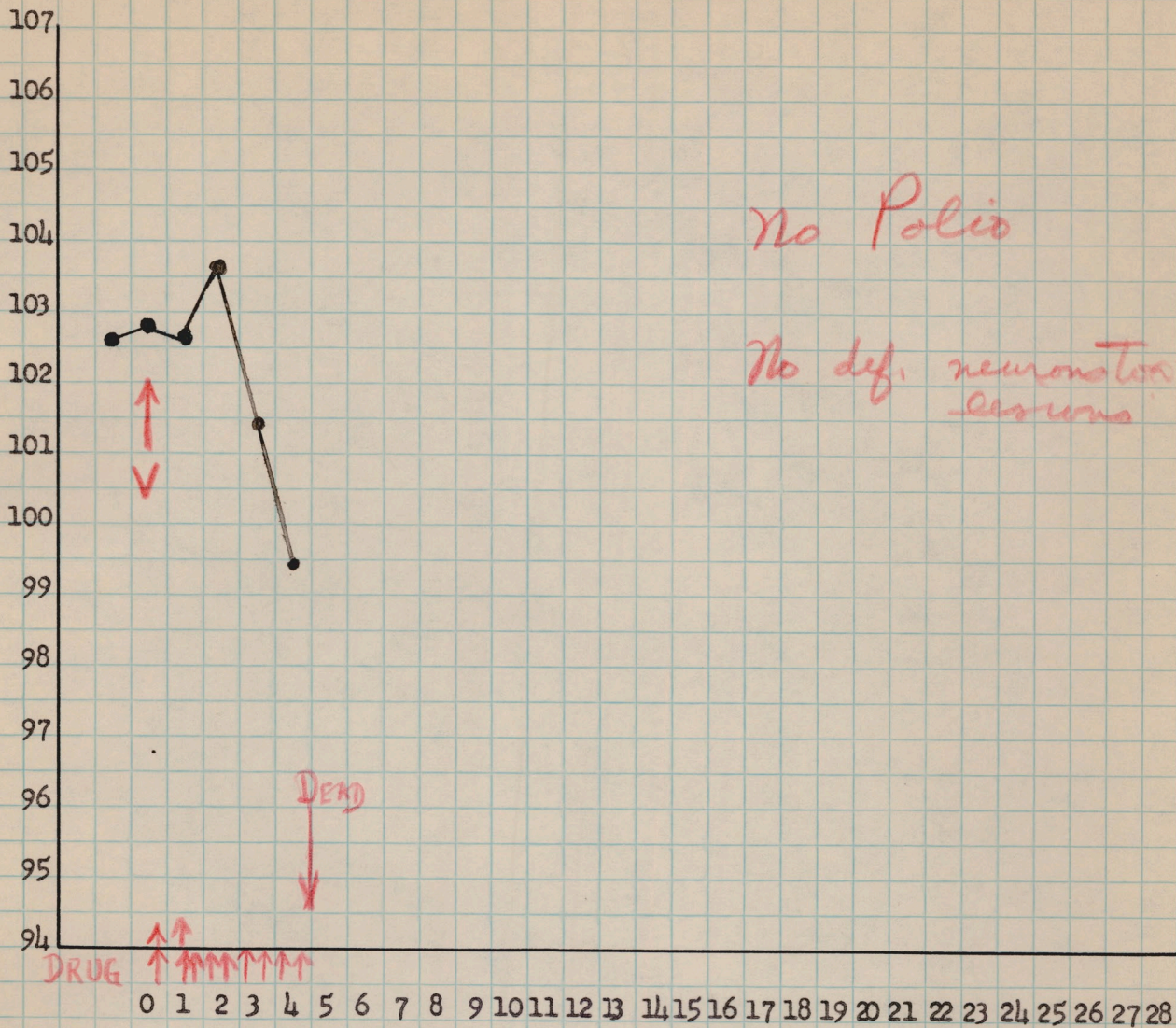
4:00 PM - Dead

5:00 PM - Necropsy - viscera OK

CNS in Z.A.

No polio lesions in spinal cord, medulla, midbrain or thalamus-hypoth.

No def. chromat. lesions in oculomotor nucleus of type seen in drug toxic.



No Polio

No def. neurotoxic lesions

Dec. 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

Dec. 12 - A.M. - Hunched; coughs

P.M. - Lying down

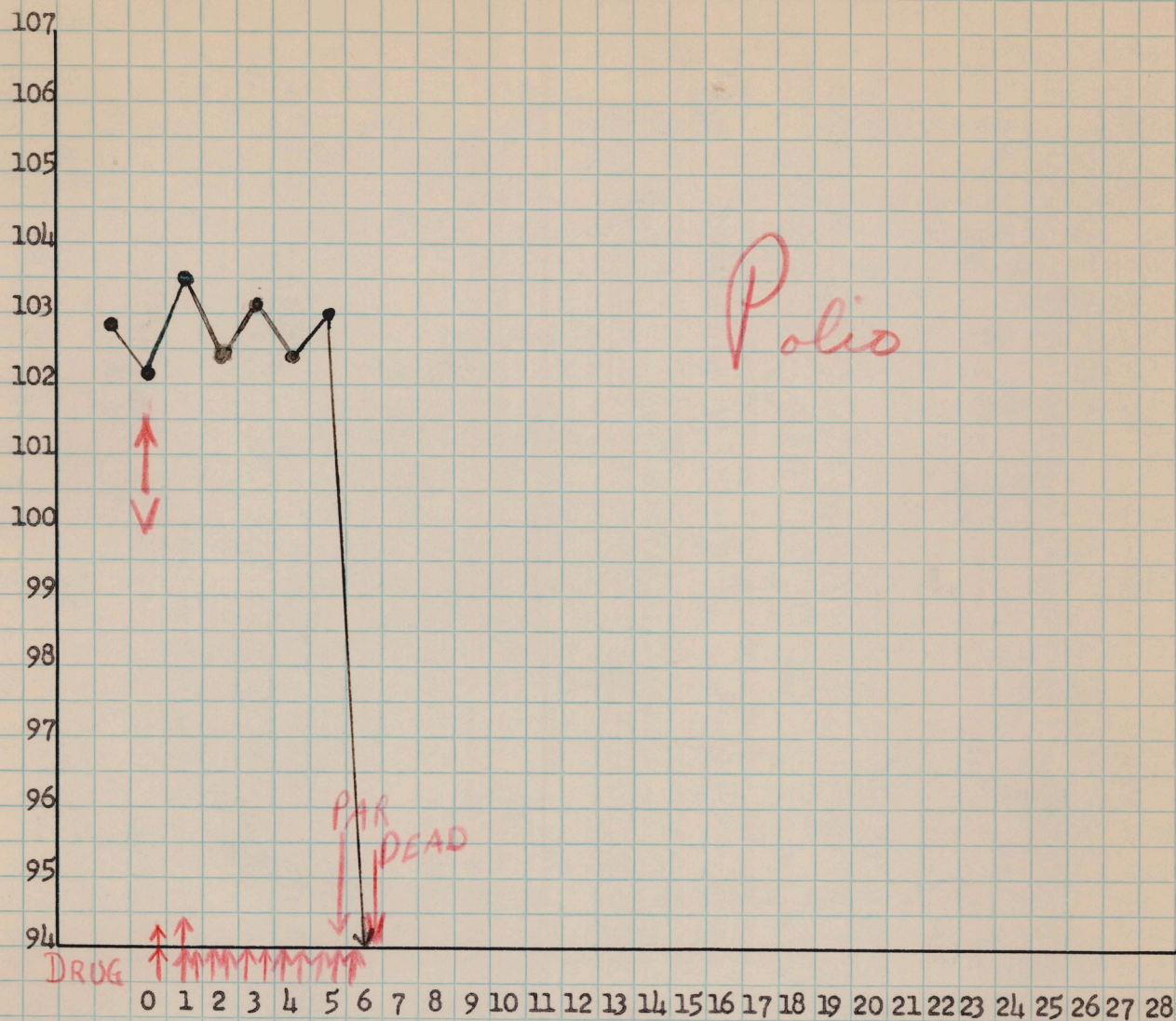
8 PM - alive

9:30 PM - dead.

- Immediate autopsy

Viscera o.k. - CNS in 2.A.

Sp. cord, medulla, medbrain, thalam - hypothalam - neg.



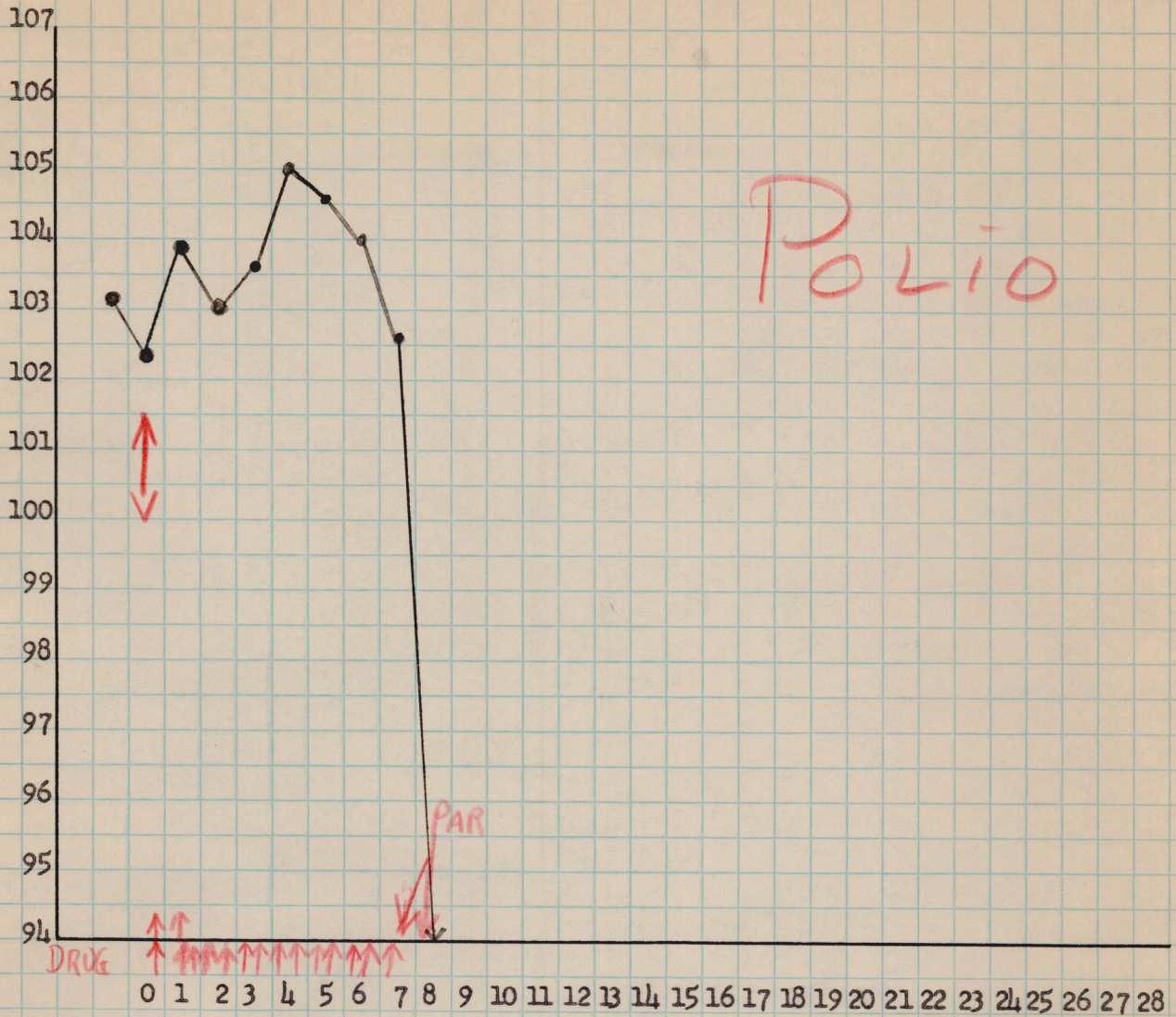
Dec. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Dec 13 - 9:00 A.M. - weak right arm  
4:30 P.M. - Partial Paralysis of right arm

Dec. 14 - 9:00 A.M. - Prostrate; Complete Paralysis of arms + back; partial paralysis of lower  
2:00 P.M. - Found dead  
2:30 P.M. - Necropsy - viscera OK

CNS in Z. A.

Extensive polio lesions affecting all levels of sp. cord - focal in medulla



POLIO

Dec. 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

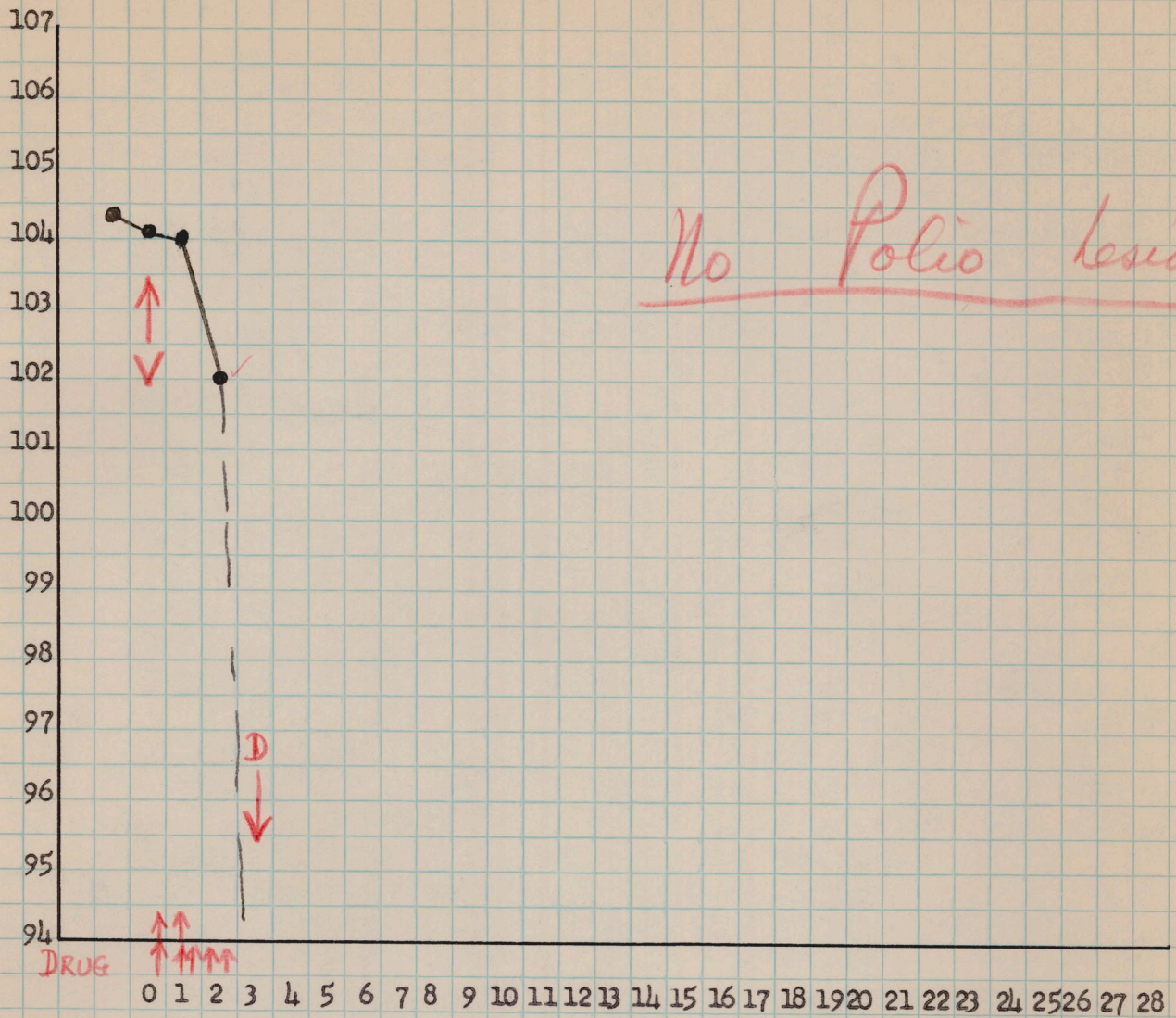
Dec 14 - 9:00 AM - OK - 3:30 PM - OK

Dec 15 - 9:00 AM - lunched, weak - 2:00 PM - very weak, prefer to lie down; questionable night upper.  
4:30 PM - Prostrata

Dec 16 - 9:00 AM - Prostrata; Complete paralysis

Dec 17 - 8:20 AM - Found dead  
9:00 AM - Necropsy - viscera OK  
CNS in 2. A.

STANDARD B&P "NOTEAR"



No Polio lesions

Dec. 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

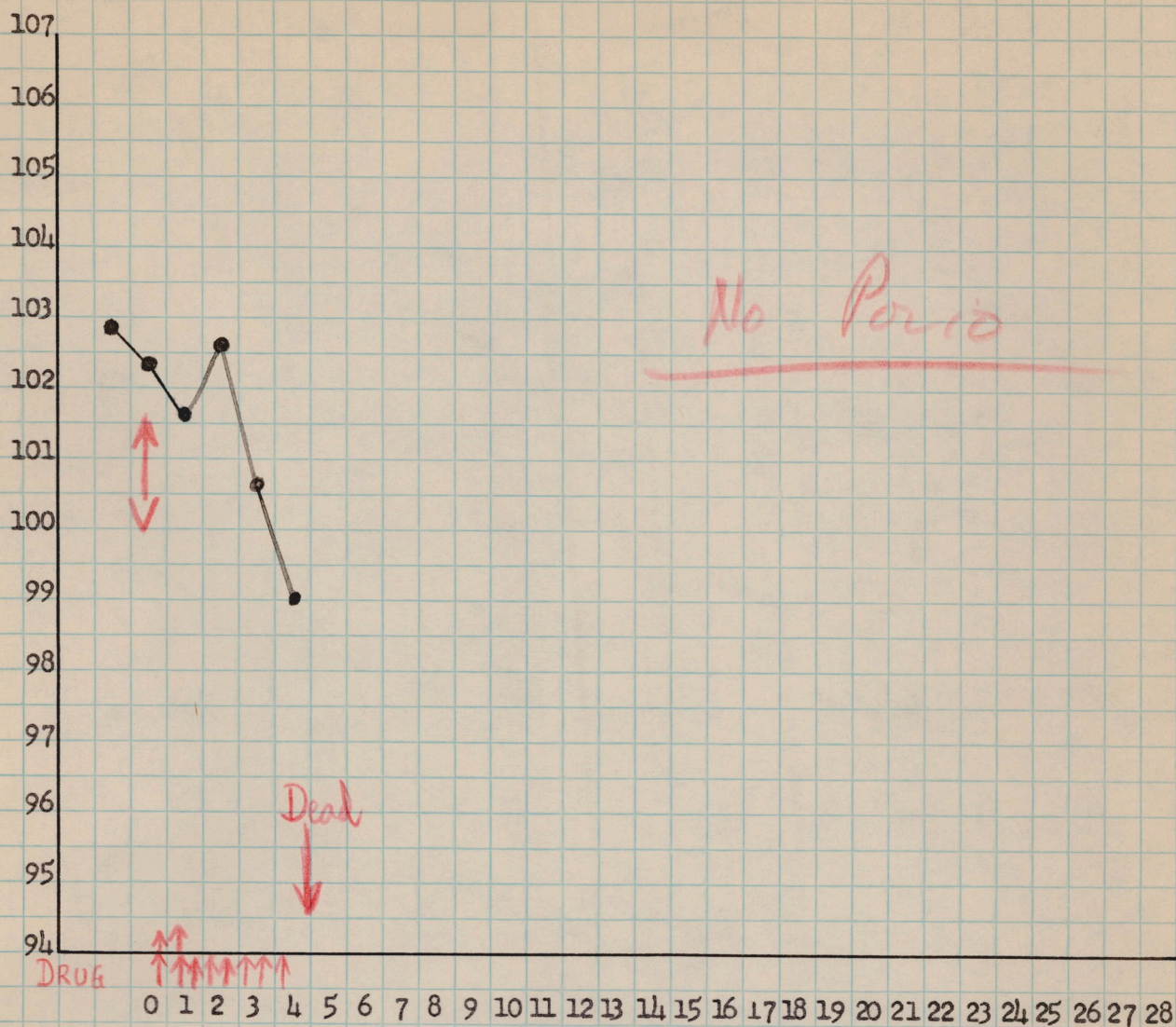
- Dec. 10 - P.M. - appeared well
- " 11 - 8:15 AM - prostrate appears terminal - drug not given
- 10:30 AM - found dead
- 12 noon - necropsy

Large destructive "inoculation injury" in right corpus striatum with hemorrhage. Lumbar cord - soft

Viscera - OK. CNS in 2-A.

Hemorrhage

STANDARD B&P "NOISEAR"



Dec. 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

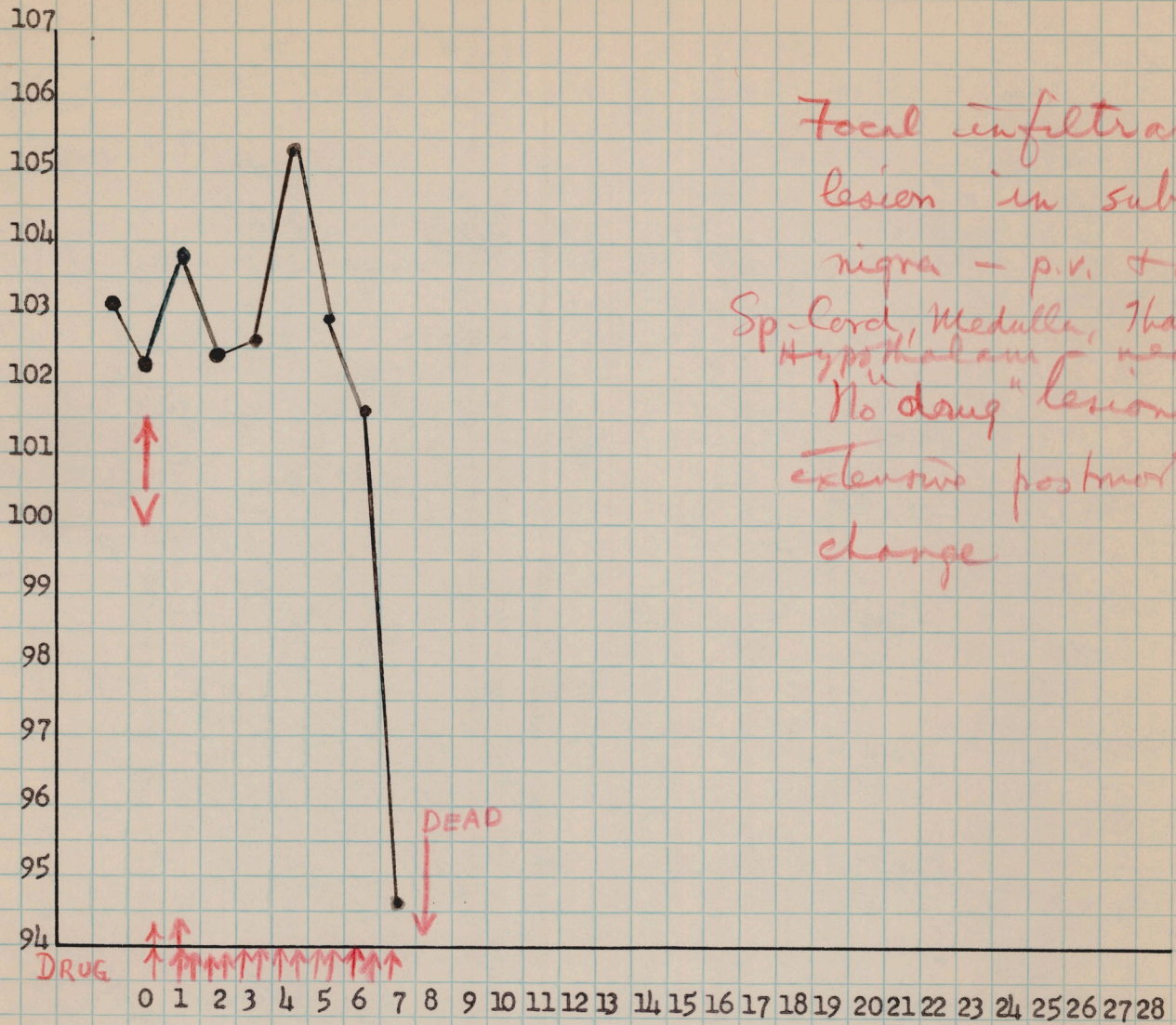
Dec. 12 - A.M. - Sick ; his down

5:30 P.M. - Terminal

8 P.M. Dead

Immediate necropsy - Viscera ok.

STANDARD B&P "NOISE"



Focal infiltrative lesion in substantia nigra - p.v. + interstitial  
 Sp. Cord, Medulla, Thalamus  
 Hypothalamus neg.  
 No "dang" lesions but extensive postmortem change

Dec. 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

Dec. 13 - 9:00 AM - Sick  
 4:30 PM - Cough, Sick

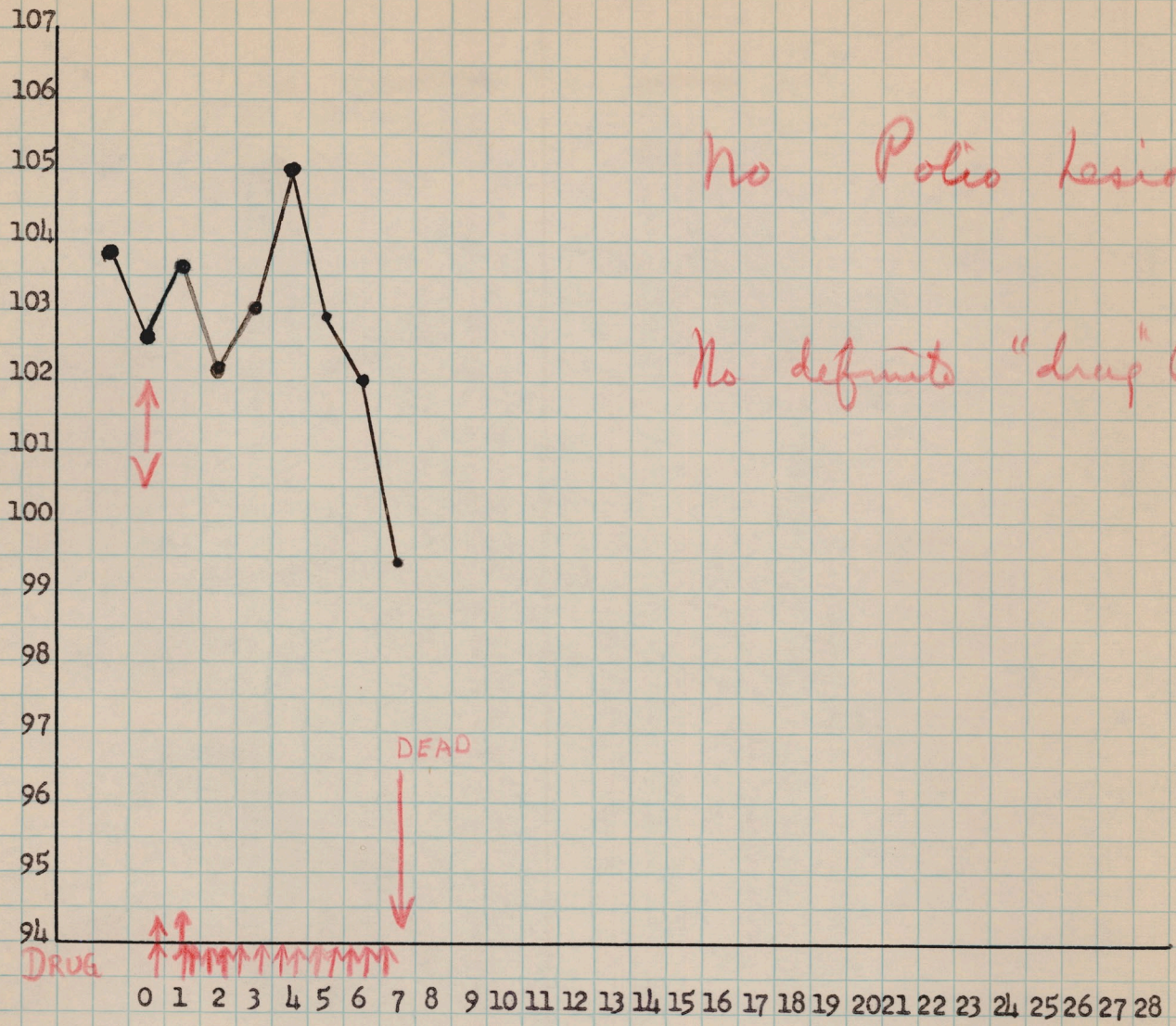
Dec. 14 - 9:00 AM - Hunched, weak 3:30 PM - Same

Dec 15 - 9:00 AM - Hunched, weak, toxic 4:30 PM - Prostrate

Dec 16 - 8:15 AM - Found dead  
 9:30 AM - Necropsy - Viscera - Entire right lung consolidated. other viscera ok.

CNS in Z.A.

STANDARD B&P "No. 100"



No Polio lesions

No definite "drug" lesions

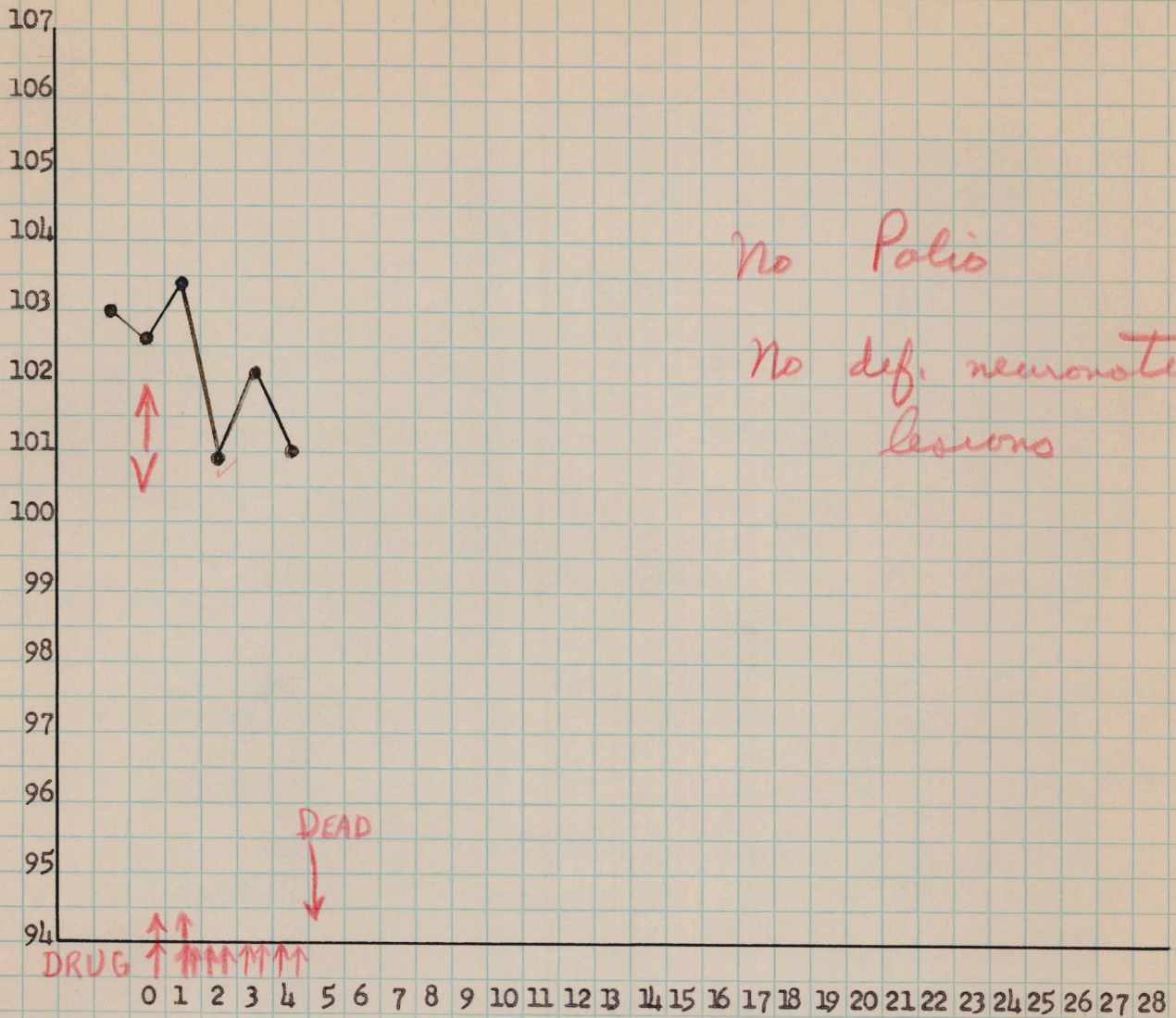
Dec. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Dec. 14 - 9:00 A.M. - Hunched; very weak; fur has sticky appearance  
3:30 P.M. - Same

Dec 15 - 9:00 AM - Hunched; weak; hunched; fur has sticky appearance  
4:00 PM - Very weak; sits up; catheter inserted for feeding  
but three attempts to force drug through tube failed + monkey was returned to cage.  
4:35 PM - Found dead.  
8:00 PM - Necropsy - Virus OK

CNS in Z. A.

STANDARD B&P "NOTEPAPER"



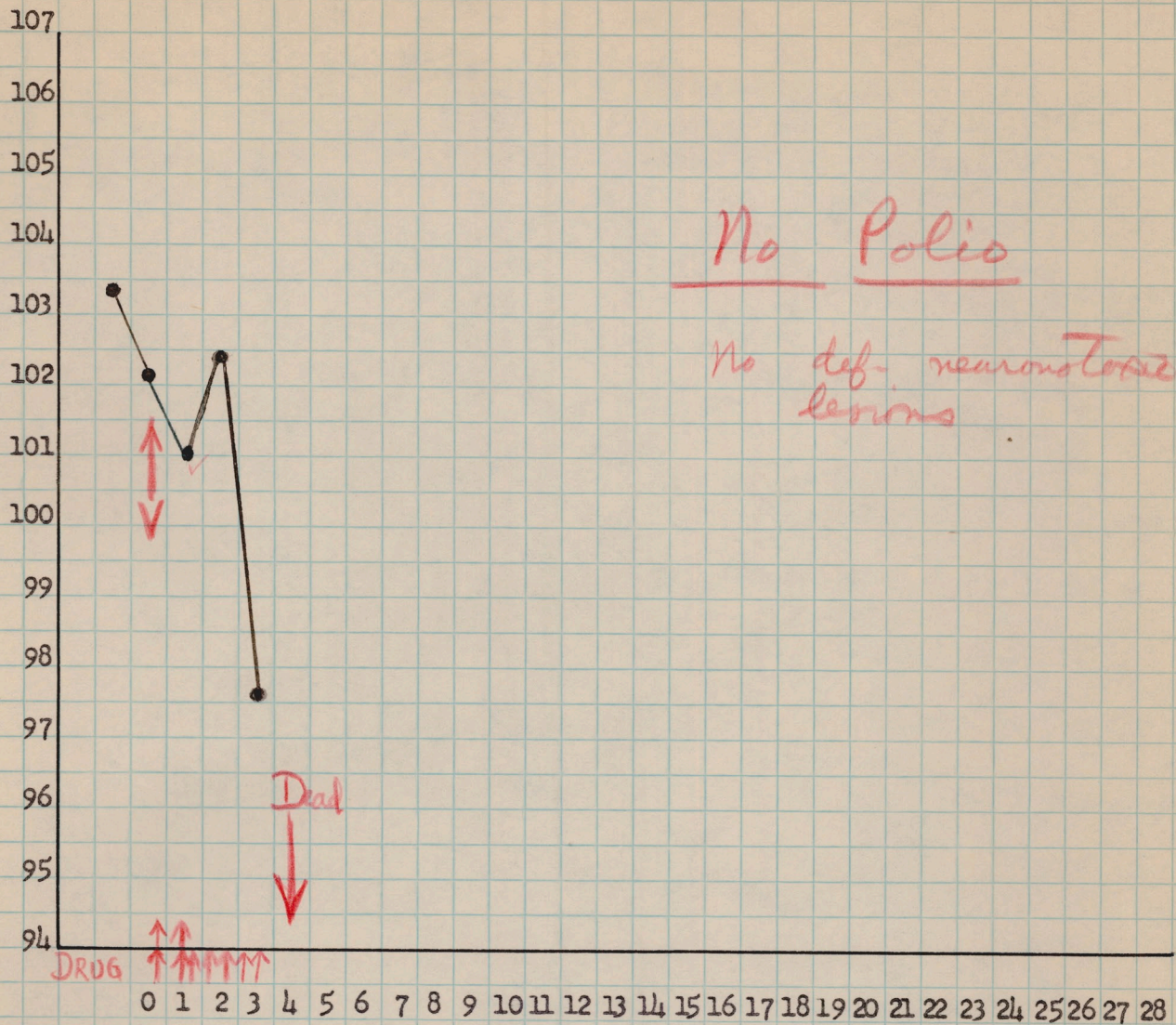
No Polio

No def. neuronotoxic lesions

Dec. 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

Dec. 12 - A.M. - Quiet  
P.M. - Droopy; prefers to lie down; appears to lie

Dec. 13 - 8:15 A.M. - Dead. 9:30 A.M. - Necropsy - Virus OK  
CNS in Z.A.



Dec. 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

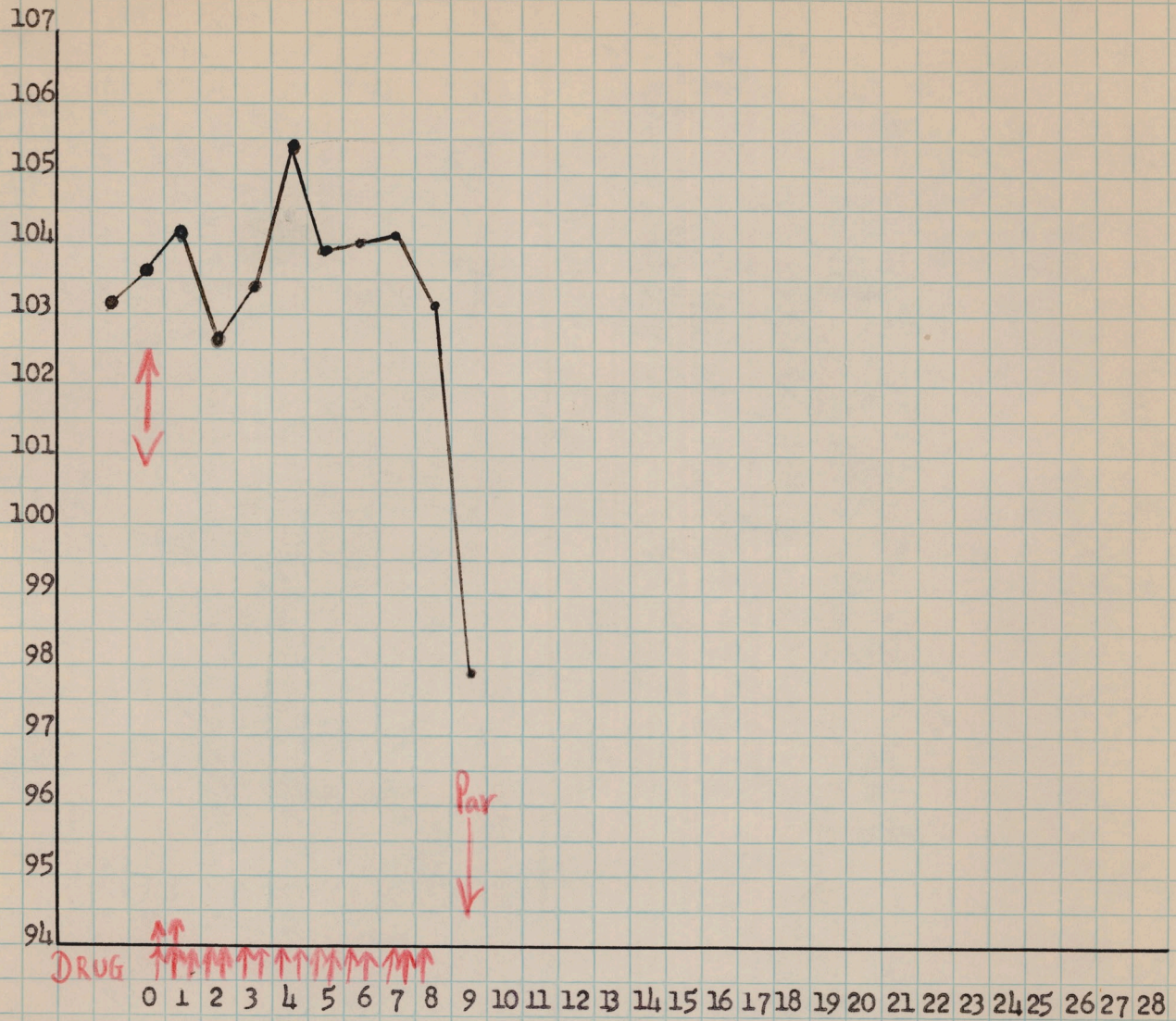
Dec. 11 - AM - Prefers to lie down - but gets up - appears toxic

Dec. 12 - Dead at 8 AM - in rigor (put in cold room)  
Necropsy 9:30 AM

Viscera OK. - spleen small

CNS - no evidence of gross lesion.

Sections in 2.A.



Dec. 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

Dec. 12 - A.M. - Right angle of mouth swollen

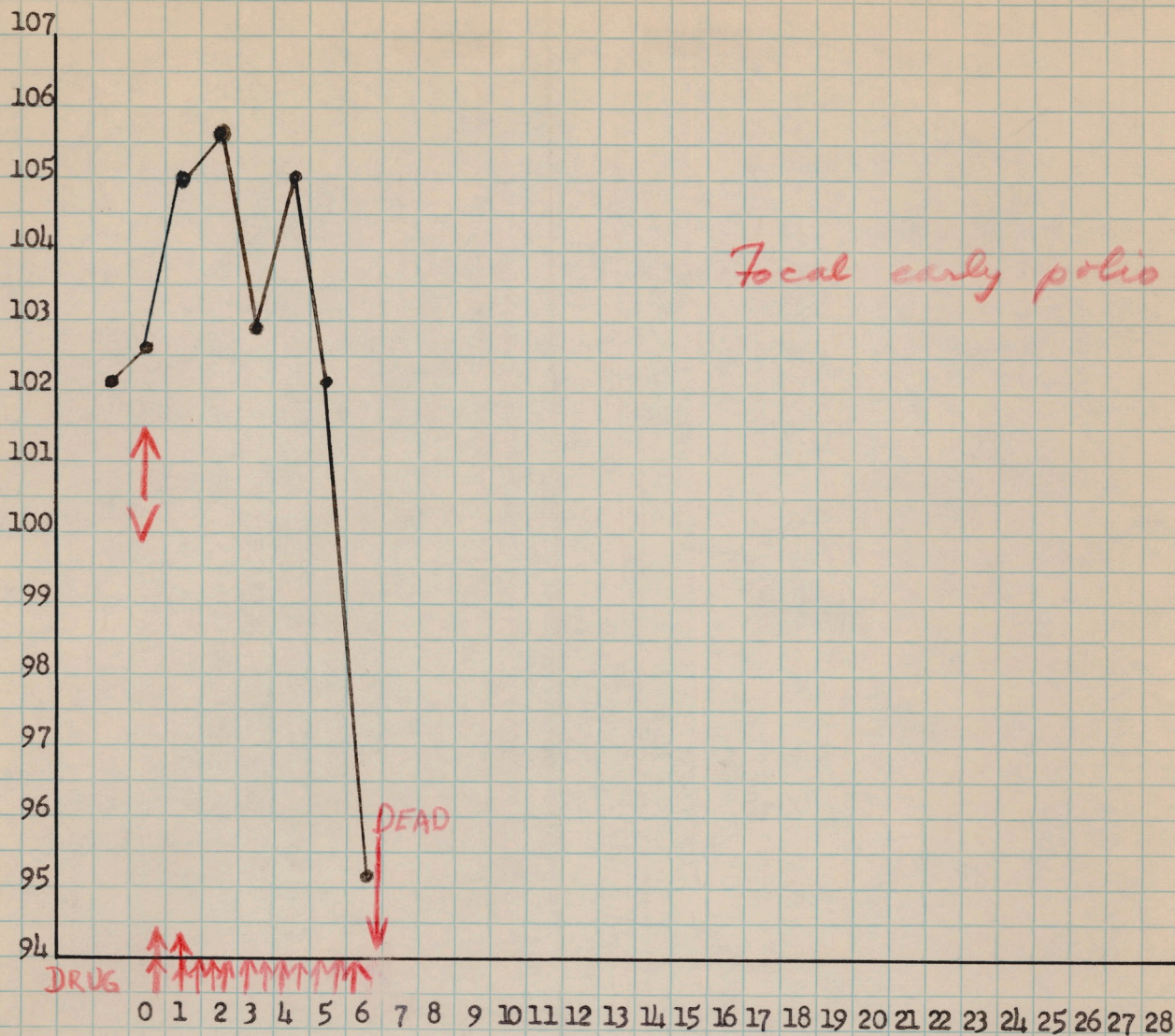
Dec. 14 - 9:00 AM - OK except for lesion at right corner of mouth.  
3:30 PM - Same

Dec. 15 - 9:00 AM - OK except for lesion at right corner of mouth  
4:30 PM - Same

Dec. 16 - 9:00 AM - Severe cellulitis involving right angle of mouth

Dec. 17 - 11:00 AM - Complete paralysis of both upper & back; Partial Paralysis of lower.

STANDARD B&P "NO-BEAR"



Focal early polio

DEAD

DRUG

Dec. 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

Dec. 13 - 4:30 PM. - Hemorrhage from site of inoculation

Dec. 14 - 9:00 A.M. - Hunched; weak; toxic; lesion at right base of mouth.

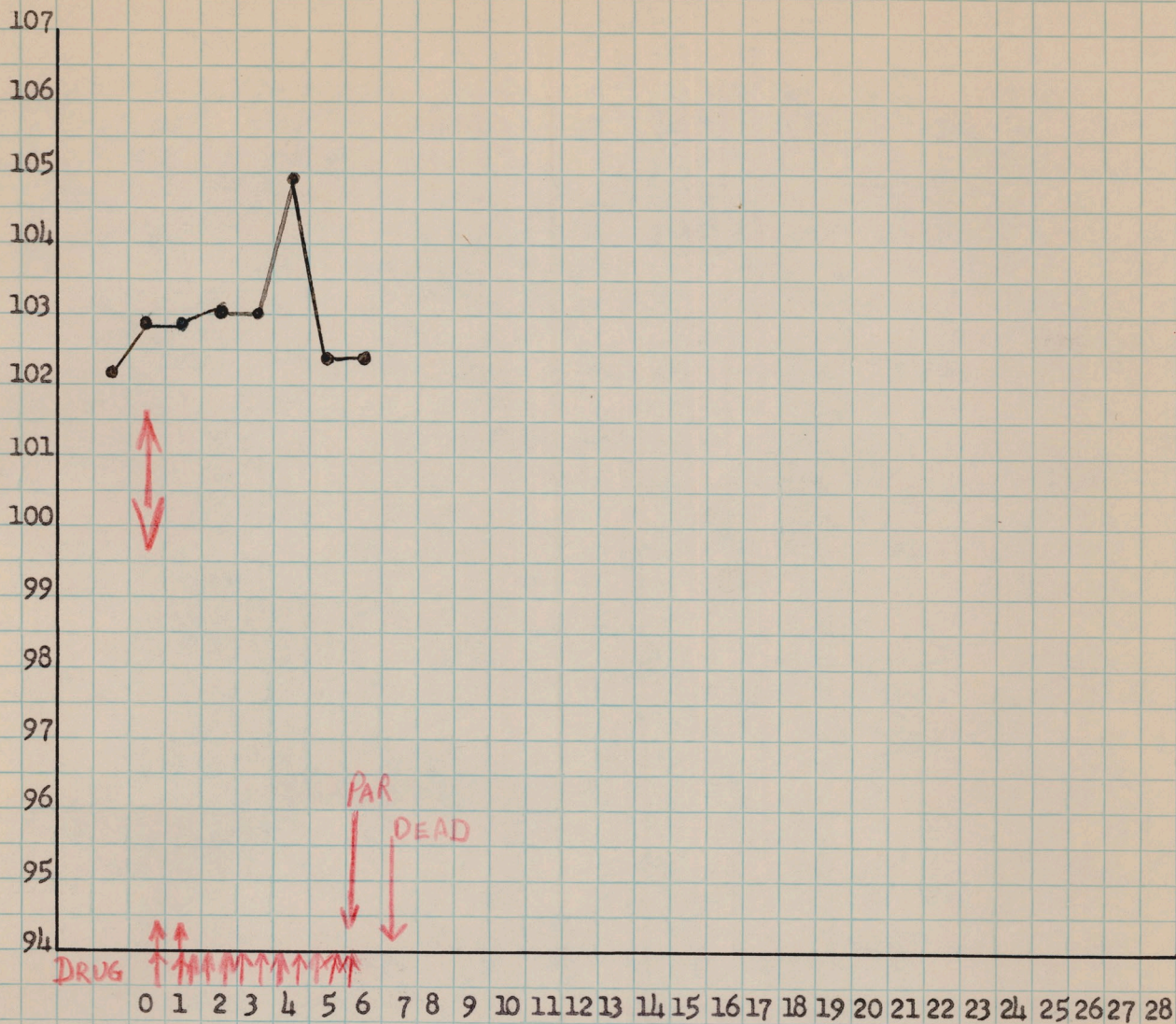
3:30 PM - Found dead

3:45 PM - Necropsy - Virus OK

CNS in Z.A.

Focal neuronophagia + perivasc. infiltration in cervical cord. lumbar - OK  
Focal infiltr. lesion in medulla  
Many chromatolytic neurones in nuclei usually affected by drug

STANDARD B&P "NOTEAR"

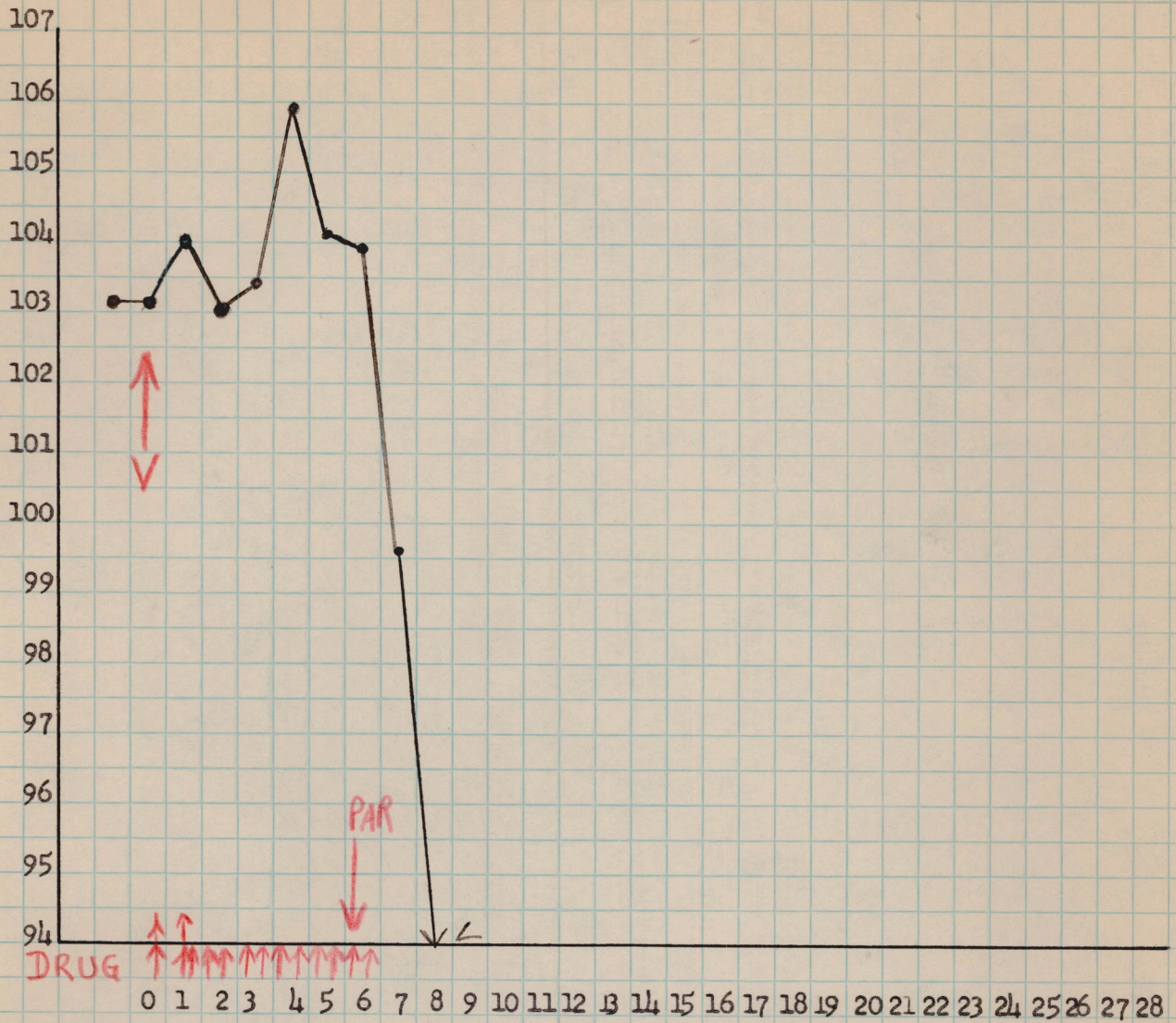


Dec. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Dec 13 - 9:00 A.M. - Excited  
 4:30 P.M. - Weak, Questionable Paralysis of neck + shoulder muscles

Dec 14 - 9:00 A.M. - Partial paralysis of upper and back.  
 3:30 P.M. - Paralysis of left facial muscles Complete

Dec 15 - 8:05 A.M. - Dead - discarded



Dec. 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

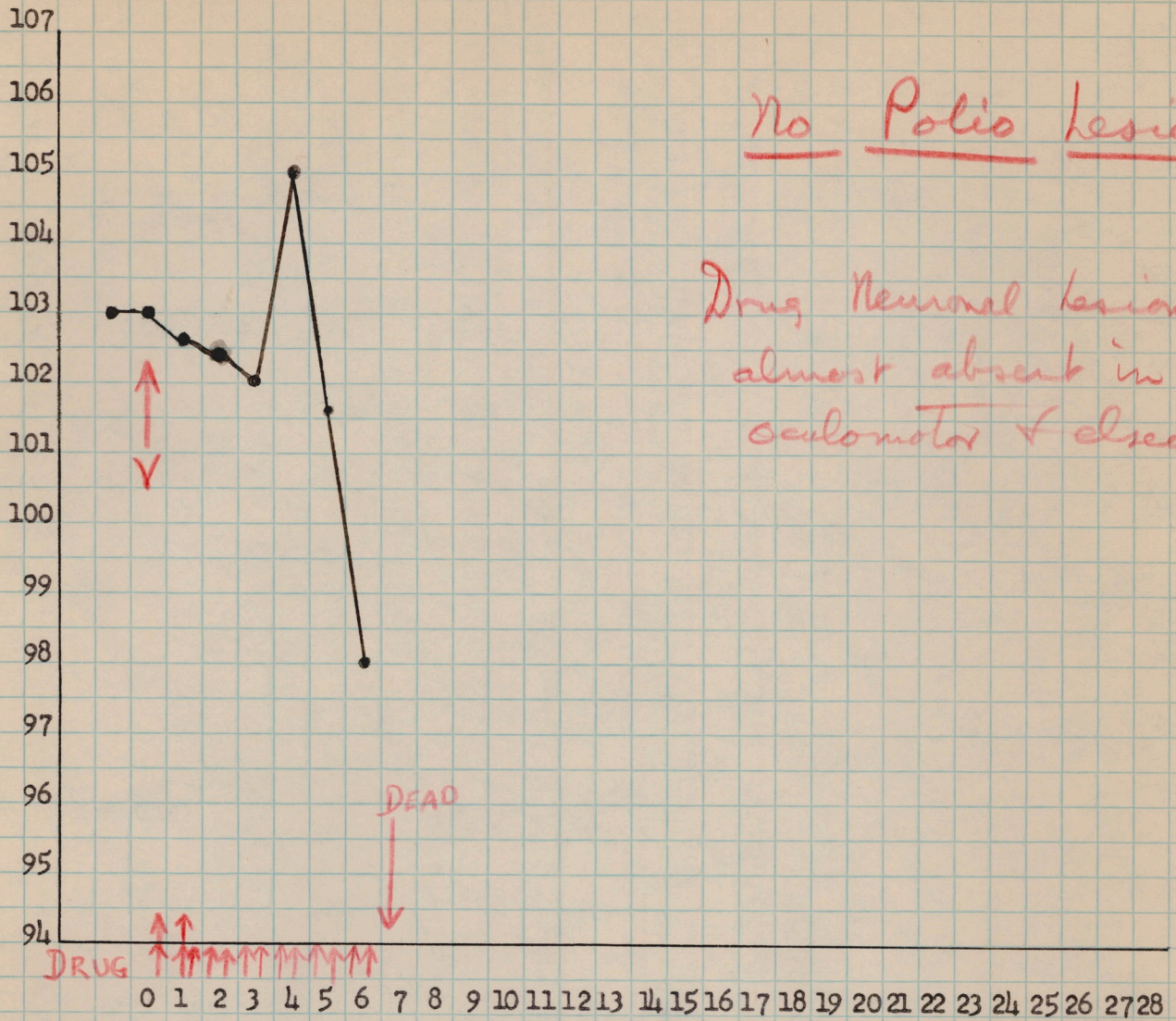
Dec. 13 - 9:00 AM - Excited  
 4:30 PM - Questionable tremor

Dec. 14 - 9:00 AM - Excited; tremor  
 3:30 PM - Partial Paralysis of left upper

Dec 15 - 8:05 AM - Prostrate 4:30 PM - Same

Dec 16 - 9:00 AM - Complete Paralysis of Extremities + back;  
 Prostrate.

Dec 17 - 11:00 AM - Prostrate



No Polio Lesions

Drug Neuronal lesions almost absent in oculomotor & elsewhere

Dec. 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

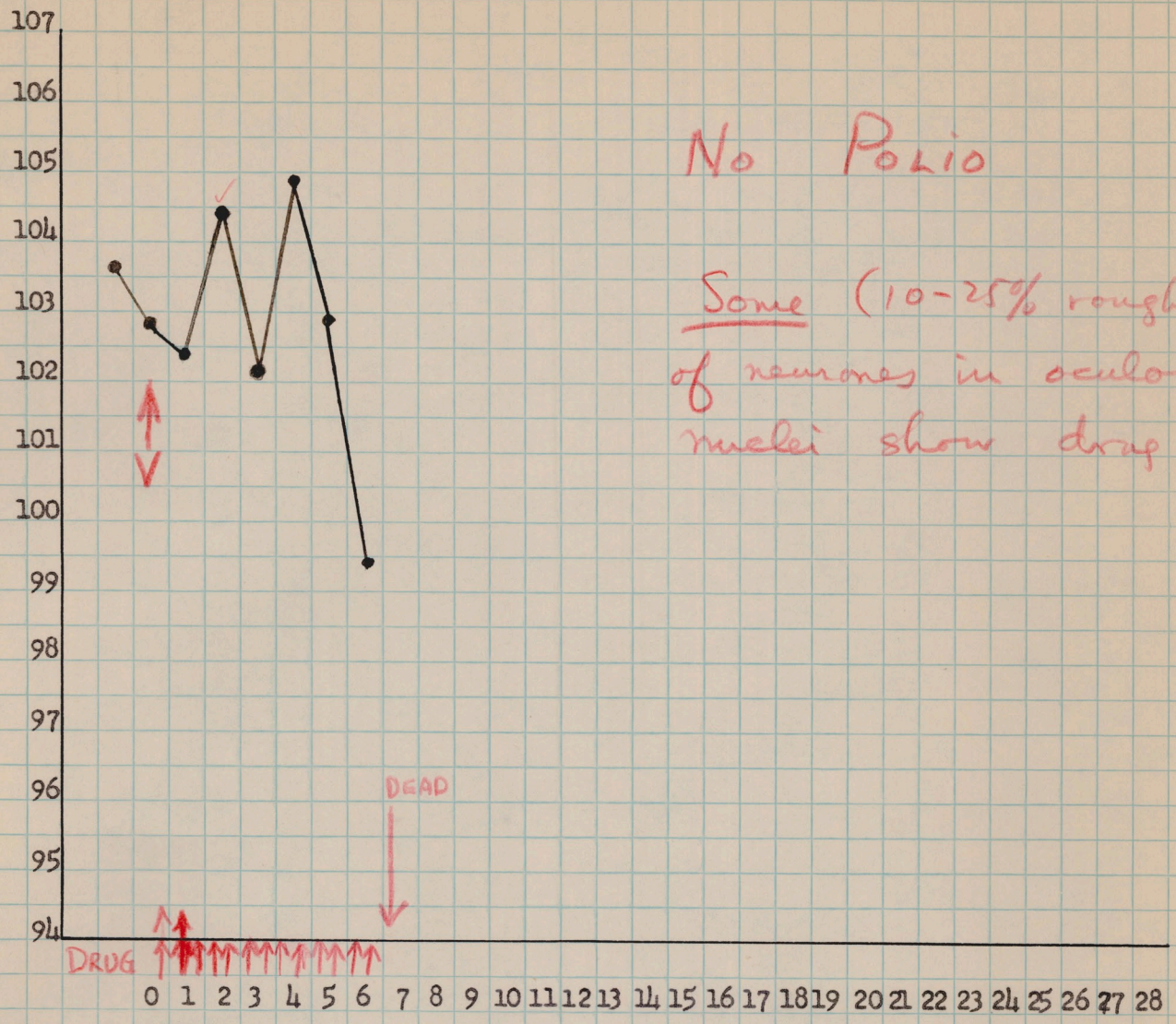
Dec. 13 - 9:00 A.M - E fainted

Dec. 14 - 9:00 AM - Weak; toxic - 3:30 PM - Same; dyspneic

Dec. 15 - 8:05 AM - Dead

10:15 AM - necropsy - viscera OK

CNS in Z.A.



No Polio

Some (10-25% roughly) of neurones in oculomotor nuclei show drug effect

Dec. 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

Dec. 14 - 9:00 AM - Weak; topic 3:30 PM - Same

Dec. 15 - 8:05 AM - Dead  
11:00 AM - necropsy - viscera OK

CNS in Z.A.

Concentration of CN 1100 in Plasma Following  
Repeated Oral Doses of Drug

Monkey Number	Daily Dose Mg./Kg.	Days of Treatment	Mg. Drug/Liter Plasma	
			Low	High
3286	96	6	<0.01	0.230
3288	96	6	<0.01	<0.01
2860	192	3	<0.01	0.930
3289	384	3	<0.01	0.080

Summary of Toxicity of CN 1100 for the Monkey

Monkey Number	Daily Dose Mg./Kg.	Days of Treatment	Wt. in Kg. at Start of Treatment	Effects on Weight, General Well-Being and Formed Elements of Blood
2748	12	8	3.2	No effects
2855	24	8	2.5	" "
2849	48	8	2.2	" "
2860	96	8	2.1	" "
3287	96	3	2.4	" "
3289	96	3	2.2	" "
3290	96	3	2.8	" "
3291	96	3	2.4	" "
3286	96	10	2.1	" "
3288	96	9-1/2	2.1	Slight weight loss
2860r	192	6-1/2	2.1	No effects
3289r	384	6-1/2	2.0	" "

Daily dose of CN 1100 administered in 2 fractions at 8 A. M. and 4:30 P. M.

Concentration of CN 1100 in Plasma Following  
Single Intramuscular Administration of Drug

Monkey Number	Dose Mg./Kg.	Mg. Drug/Liter Plasma as CN 1100			
		Minutes after Injection			
		15	30	60	120
EDC extractable material					
2925	12	0.99	1.20	0.53	<0.01
2670	48	2.61	3.54	2.97	0.66
Total diazotizable material					
2925	12	9.85	15.88	14.12	3.82
2670	48	23.82	63.97	87.32	53.83

Monkey 2925 -- 12 mg./kg.

Monkey 2670 -- 48 mg./kg.

- △ - - - - △ EDC extractable material
- ▲ - - - - ▲ Total diazotizable material
- - - - - ○ EDC extractable material
- - - - - ● Total diazotizable material

Mg. CN 1100 per Liter Plasma

Mg. CN 1100 per 1000 cc plasma

<0.01

<0.01

Minutes after Injection

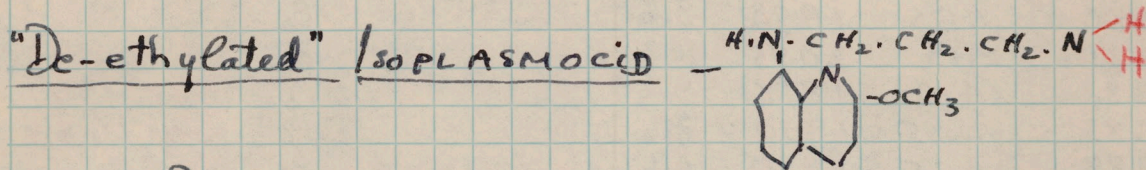


JAN. 9, 1950

A) Effect of "De-ethylated Isoplasmodid" ON POLIOMYELITIS  
given before and after virus

B) Effect of Isoplasmodid GIVEN AFTER VIRUS

Monkeys - Arrived 1/4 Arrived from NFIP farm on 1/4/50  
Weighed on 1/9/50



Drug is 70% base, i.e. 1.429 Gm drug = 1 Gm Base

Stock Solution - 10 mg/cc of base = 1% base

∴ 100cc of stock has 1.429 Gm drug.

250cc of stock prepared as follows:

3.573 Gm of drug ground in glass mortar  
with 10.9cc of M/1 phosphoric acid (6.8cc of conc  
C.P. phosphoric dilut. to 100cc in dist. H<sub>2</sub>O) (i.e. 3.05cc  
per Gm of drug - not base) - distilled water added  
to 250cc - stored in brown bottle <sup>in refig</sup>. Prepared  
on Jan. 10 - A.M.

NOTE: because drug went into solution poorly, the stock  
solution was changed on 1/13/50 to 20% base,  
First dose given 4 PM on JAN. 10 i.e. 3.573 Gm  
of drug in 50cc

JAN. 14, 1950

VIRUS - Same preparation and vial used in previous  
experiments - Hoferkamp, Genit of 2/26/48  
vial # 4 - stored in B-8-8  
0.5cc of 20% (1:5) in 49.5cc saline = 1:500  
1cc into right thalamic area - started 10 AM

1375-1386 - finished 10<sup>20</sup> AM

1387-1396 - " 10<sup>38</sup> "

1397-1406 - " 10<sup>50</sup> "

Group	MONKEY No.	Weight		Mg. Base per dose 2X a day			Day	%
		POUNDS	GRAMS					
"De-ethylated"	1375	4.5	2045	10.2	P7			
	1376	5.0	2270	11.3	P7	D20		
Isoplasmodin	1377H	4.5	2045	10.2	P5	D8	5	16.7
	1378	4.75	2157	10.8	P8		6	25
100 mg. base/kilo/day	1379	4.5	2045	10.2	P10		7	58.3
	1380	4.25	1930	9.6	P8		8	91.7
4 days before virus + after virus	1381	4.5	2045	10.2	P8		9	"
	1382	4.0	1818	9.1	P5	D17	10	100%
	1383	4.25	1930	9.6	P6	D9		
	1384	4.25	1930	9.6	P7	D15		
	1385	5.0	2270	11.3	P8			
	1386	3.0	1362	6.8	P7			

Isoplasmodin	1387	2.5	1135	12.3	No Polio	D4		
	1388	3.5	1589	9.5	P8	D11		
12mg base/kilo per day after virus	1389	4.5	2045	12.3	No Polio	D9		
	1390	4.5	2045	12.3	No Polio	D5		
	1391	4.75	2157	12.9	P8			
	1392	4.25	1930	11.6	Focal Polio	D6		
	1393	5.25	2384	14.3	P8			
	1394	3.5	1589	9.5	Questionable Polio? K23	Polio		
	1395	4.5	2045	12.3	Focal Polio?	D6 - no		
	1396	4.5	2045	12.3	Focal Polio	D10		

Virus only	1397H	4.5	2045		P5	D25	3	10
	1398	5.0	2270		P5		5	30%
	1399	3.25	1476		P7		6	40%
	1400	3.5	1589		P13		7	60%
	1401	4.25	1930		P8		8	90%
	1402	3.75	1703		P7		9	"
	1403	6.5	2957		P8		10	"
	1404	6.0	2724		P8		11	"
	1405H	6.0	2724		Polio 3	D5	12	100%
	1406H	5.25	2384		P6	D10	13	100%

CN-100 used

CN-1100 used

Isoplasmodin - started 6 hrs. after virus

- 1/10 - 3.573/250cc
- 1/11 - 3.573/250cc
- 1/12 - 3.573/250cc
- 1/13 - 3.573/500cc
- 1/14 - 3.573/500cc
- 1/15 - 3.573/500cc
- 1/16 - 3.573/500cc
- 1/17 - 3.573/500cc
- 1/18 - 3.573/500cc
- 1/19 - 3.573/500cc

- 1/20 - 2.8784/400cc
- 1/21 - 3.573/500cc
- 1/22 - 2.8784/400cc

- 1/14 - 1887mg per 100cc
- 1/18 - 1887mg per 100cc

H = hemorrhage during virus inoculation





2/3 ahead







1/31	6:30 PM	Same
2/1	4:30 PM	Same
2/2	3:15 PM	Same
2/3	4:30 PM	Same
2/10	11:30 AM	Partial of lowers & uppers; sets up - very active







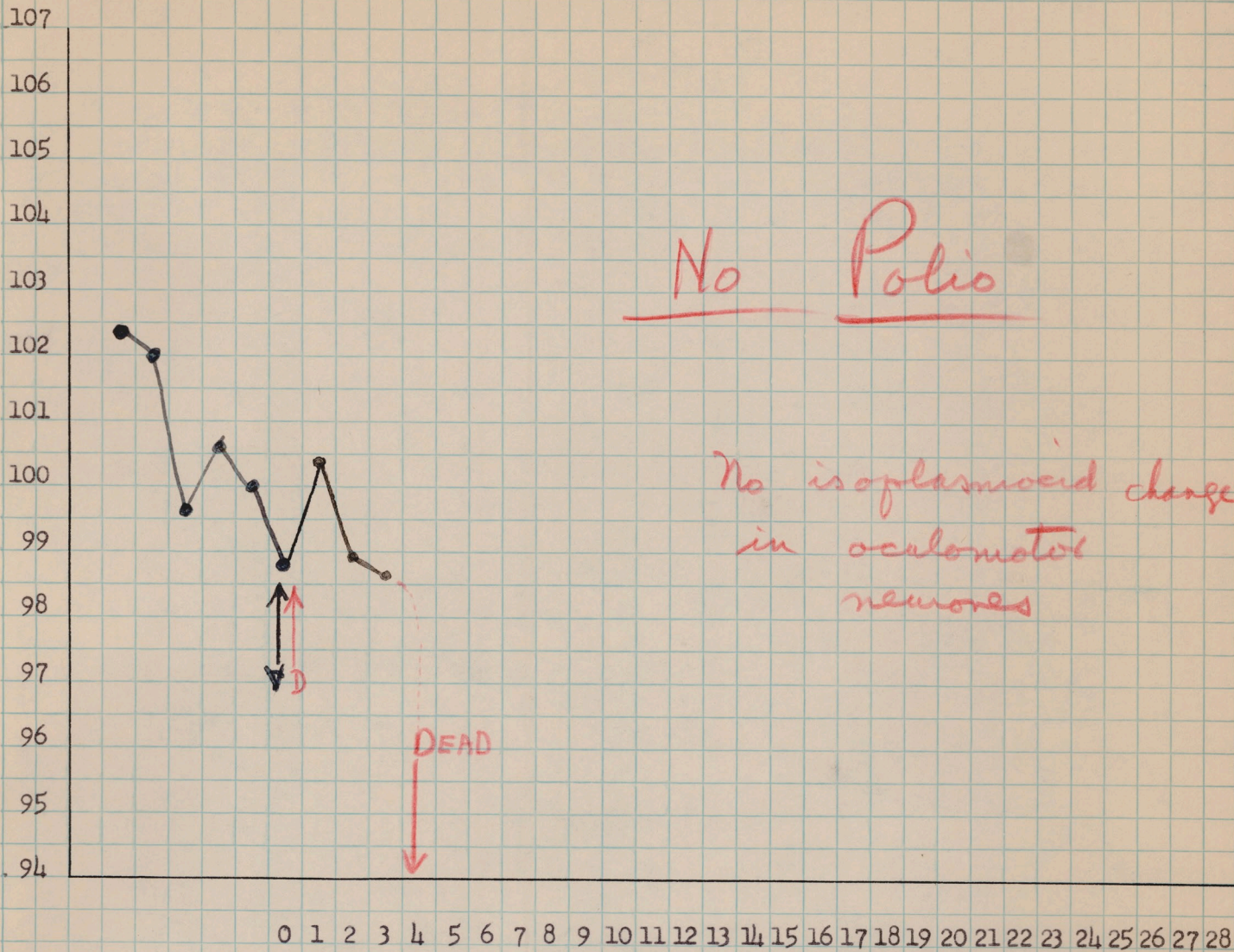








2/1	4:30 PM	Same
2/2	3:15 PM	Same
2/3	4:30 PM	Same
2/10	11:30 AM	Same



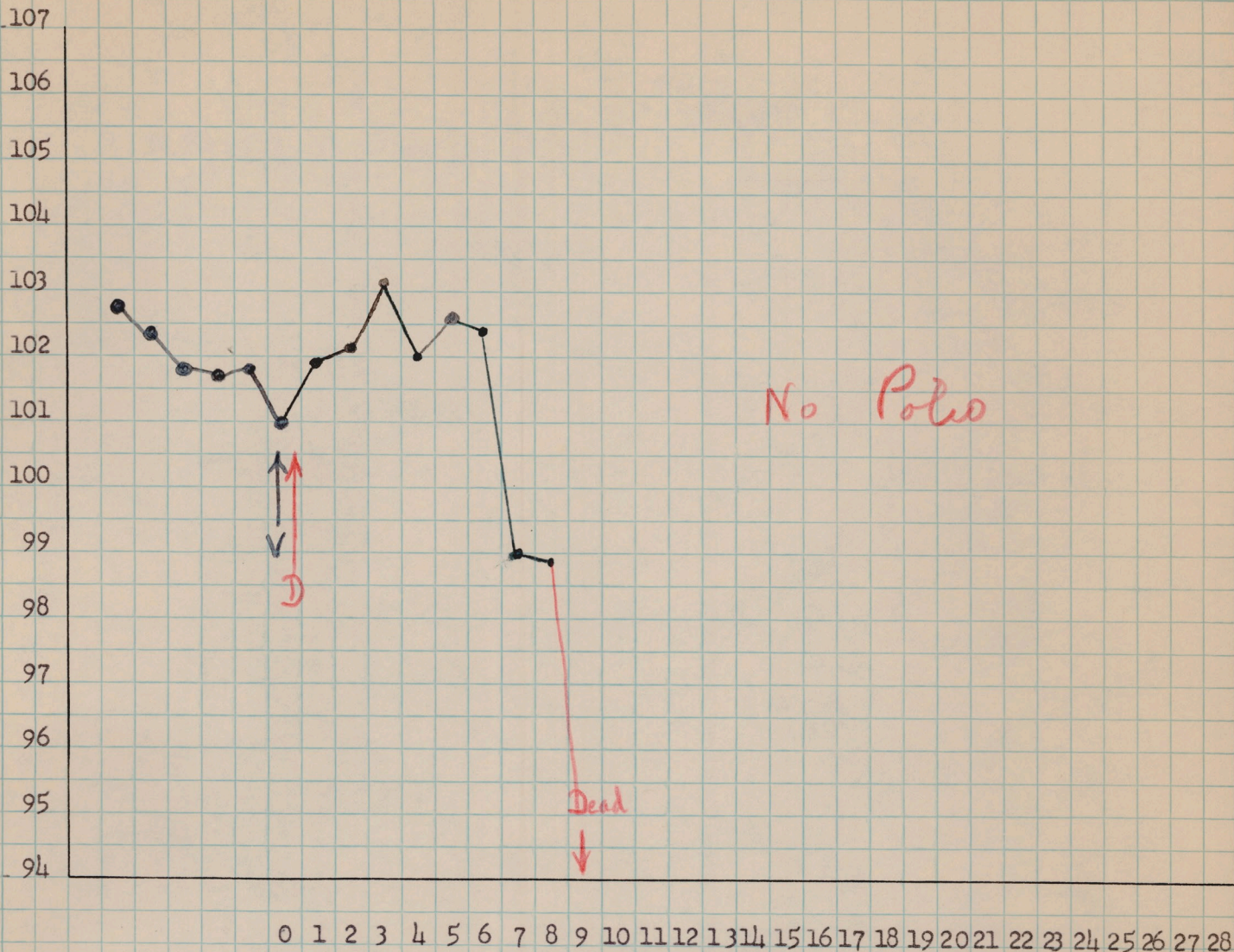
Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

DRUG                    ↑↑↑↑↑

- 1/16 - Severe diarrhea. Animal had some diarrhea when received.
- 1/17 - Diarrhea
- 1/18 - 8:45 A.M. - Animal died while drug was being given.
- 10:00 A.M. - Necropsy - Viscera - OK.

CNS in Z.A.





Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

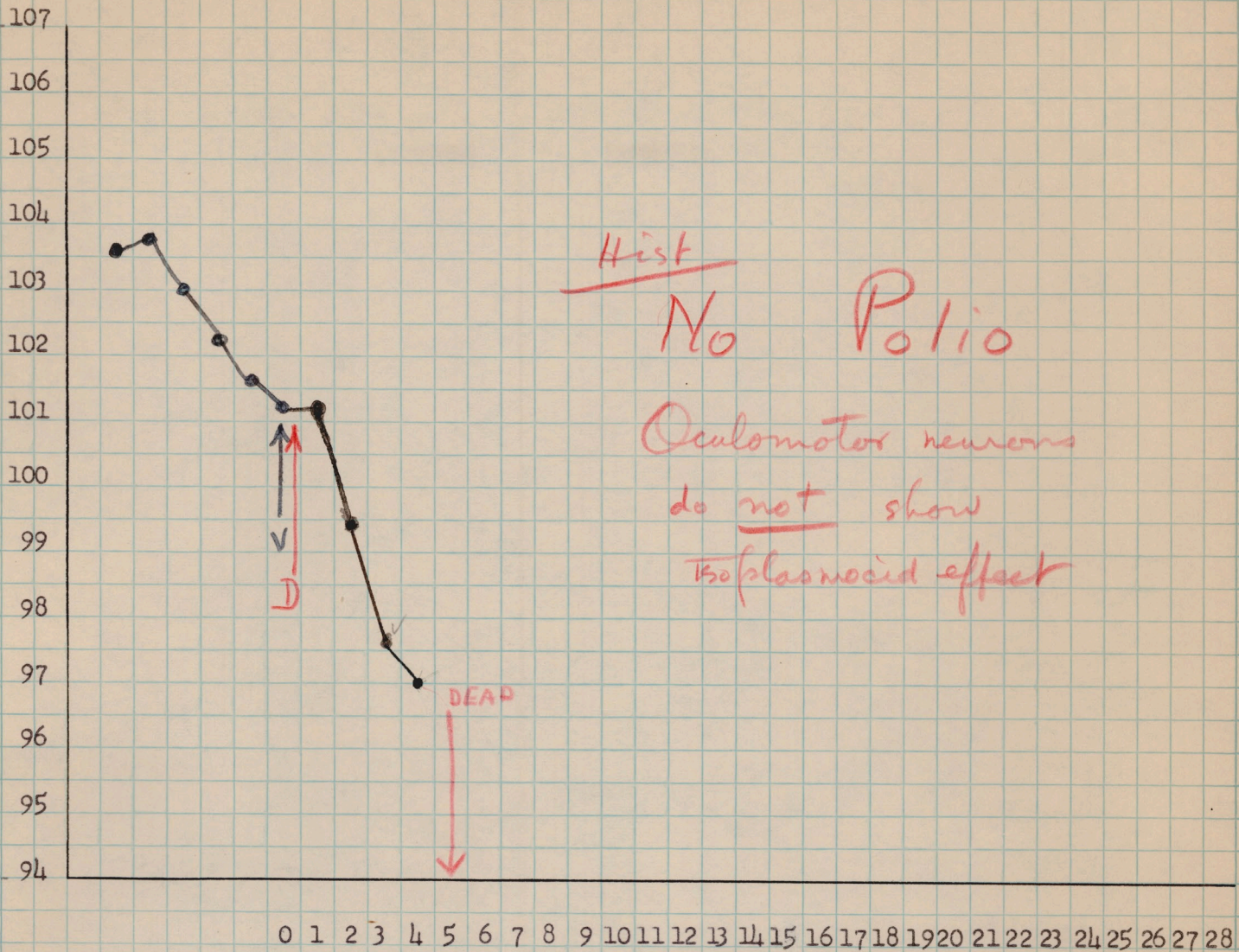
DRUG

↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑↑

- 1/19 - 8:45 AM - hunched
- 1/20 - 3:30 PM - skin
- 1/21 - 9:00 AM - Sick, weak, gray.
- 3:30 PM - same
- 1/22 - 9:00 AM - Looks toxic, weak, gray, hunched
- 3:00 PM - very weak, hunched, mucous nasal secretion; no drooping in PM.
- 1/23 - 8:00 AM - Dead.
- 9:00 AM - necropsy - Consolidation of left lower lobe of lung; adhesion of this lobe to the diaphragm. other viscera OK.

CNS in Z A.

21 levels of spinal cord - negative  
 5 levels of medulla neg. - except for  
 one <sup>small</sup> infiltrative focus at one level  
 Midbrain & Thalamus - neg



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

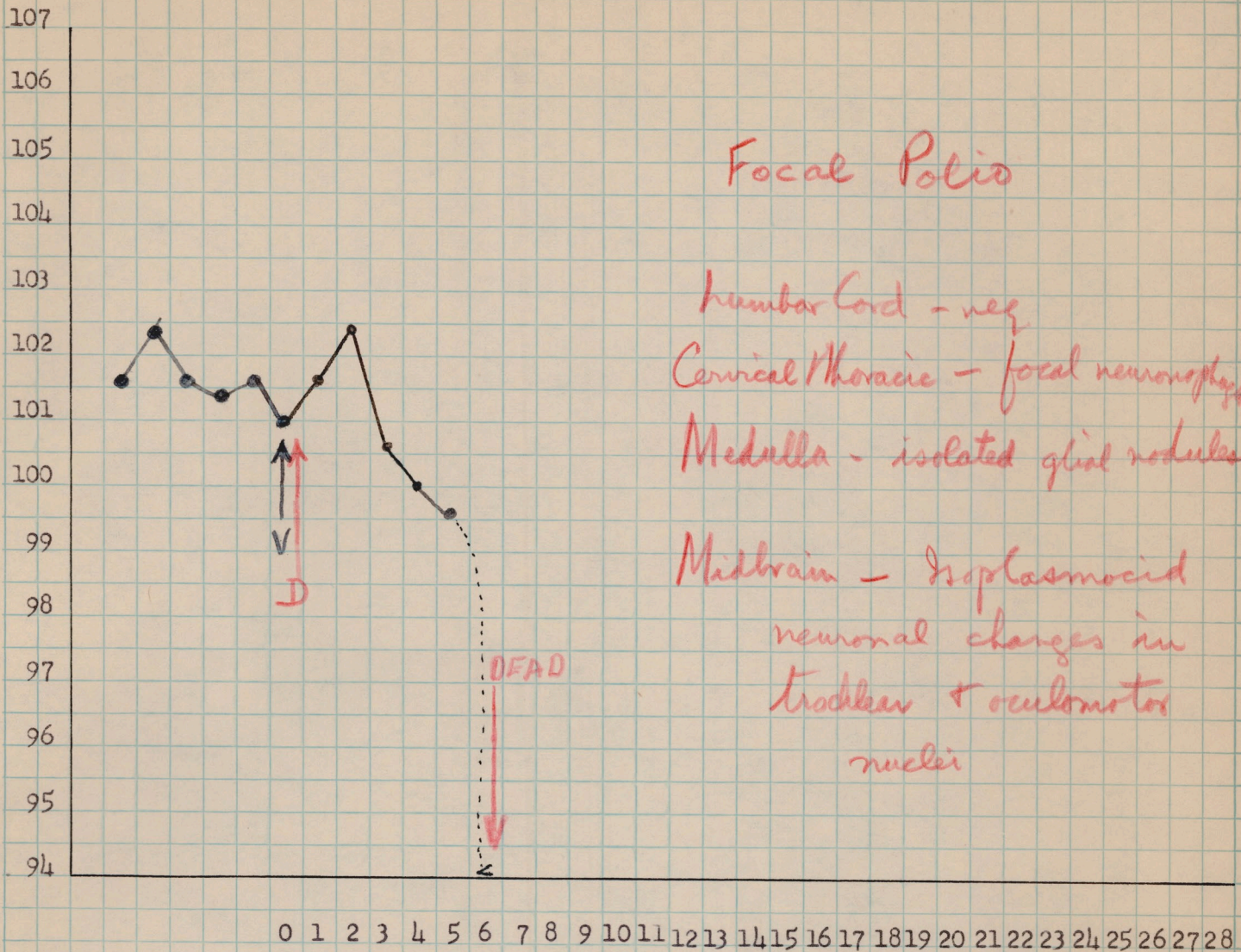
DRUG ↑↑↑↑↑↑↑↑

- 1/16 - Severe diarrhea - Animal had slight diarrhea when received
- 1/17 - Diarrhea
- 1/18 - Diarrhea - 4:30 P.M. - weak, hunched,
- 1/19 - 8:00 AM Dead 10:00 AM - necropsy - viscera OK

CNS in Z.A.

STANDARD B&P "NOTEAR"





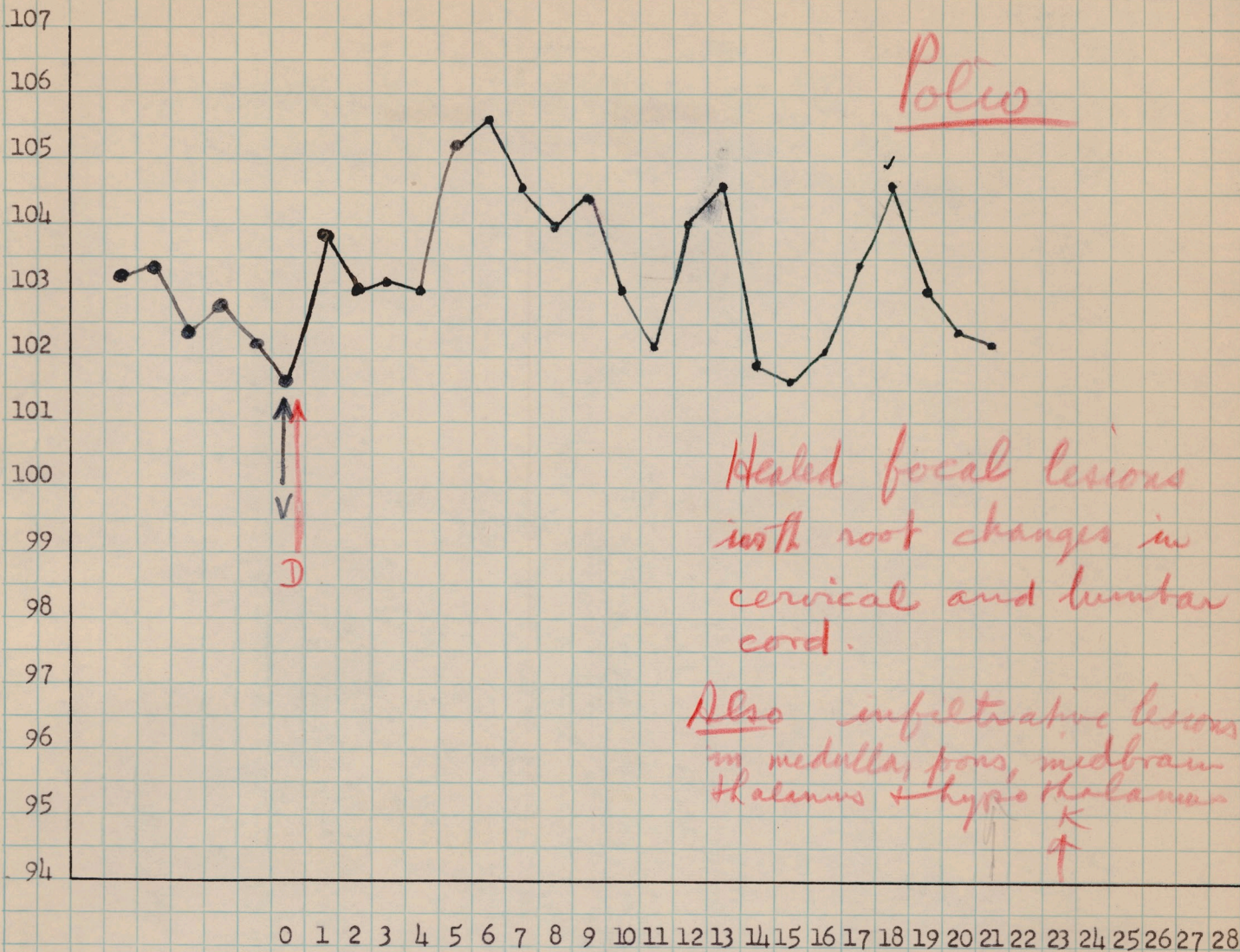
DRUG

MMMMMMMM

- 1/16 - Diarrhea  
 1/17 - 11:00 AM - Ptosis of left eye lid ; diarrhea  
 1/18 - Same  
 1/19 - A.M. Diarrhea ; weak  
 3:30 PM - Thin ; diarrhea ; weak ; Partial ptosis of left eye lid (Can close but Can not open fully) ; active  
 1/20 - 9:00 AM - Prostrate ; does not move by thymidine ; no drug received.  
 1:00 PM - Dead - Immediate necropsy - Viscera OK.

CNS in ZA.





Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6

DRUG

- 1/20 - 3:30 PM - OK
- 1/21 - 3:30 PM - OK
- 1/22 - 9:00 AM - OK
- 1/23 - 3:00 PM - OK
- 1/24 - 3:00 PM - weak right upper; no definite paralysis
- 1/25 noon - alert - active; cannot make out definite paralysis; uses right upper well.
- 1/26 - Same
- 1/27 - A.M. - appears OK.
- 1/27 5:00 PM - Same
- 1/28 - 8:30 PM - Although there is no obvious paralysis in any extremity - monkey does not behave normally - awkward in running which he is disinclined to do - hangs on but does not climb - and right arm still questionable.
- 1/29 4:30 PM - Same
- 1/30 - 4:00 PM Same
- 1/31 - 5:30 PM Same

STANDARD B&P "NOTEBOOK"

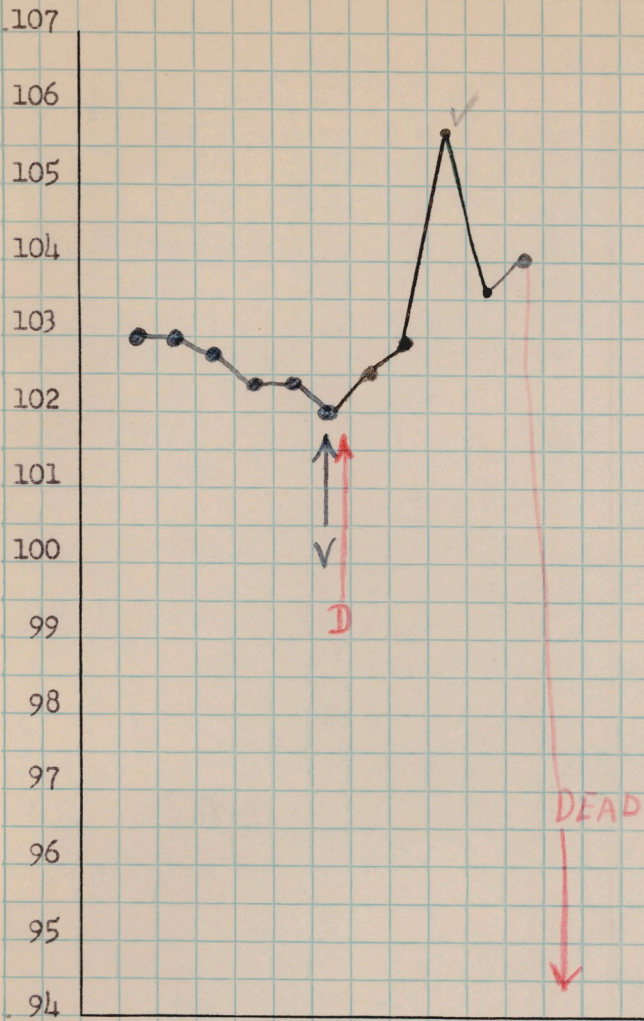
2/1 4:30 PM Same

2/2 3:15 PM Same

2/3 4:30 PM Same

2/6 AM - Keweenaw - Vienna OK

CNS in ZA.



Focal Polio?

18 levels of spinal cord - neg  
2 glial foci in one level of medulla  
 3 other levels of medulla - neg  
 Midbrain + thalamus-hypothal.  
 neg.

Isoplasmicid neuronal change-?

DEAD

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

Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

DRUG ↑↑↑↑↑↑↑↑

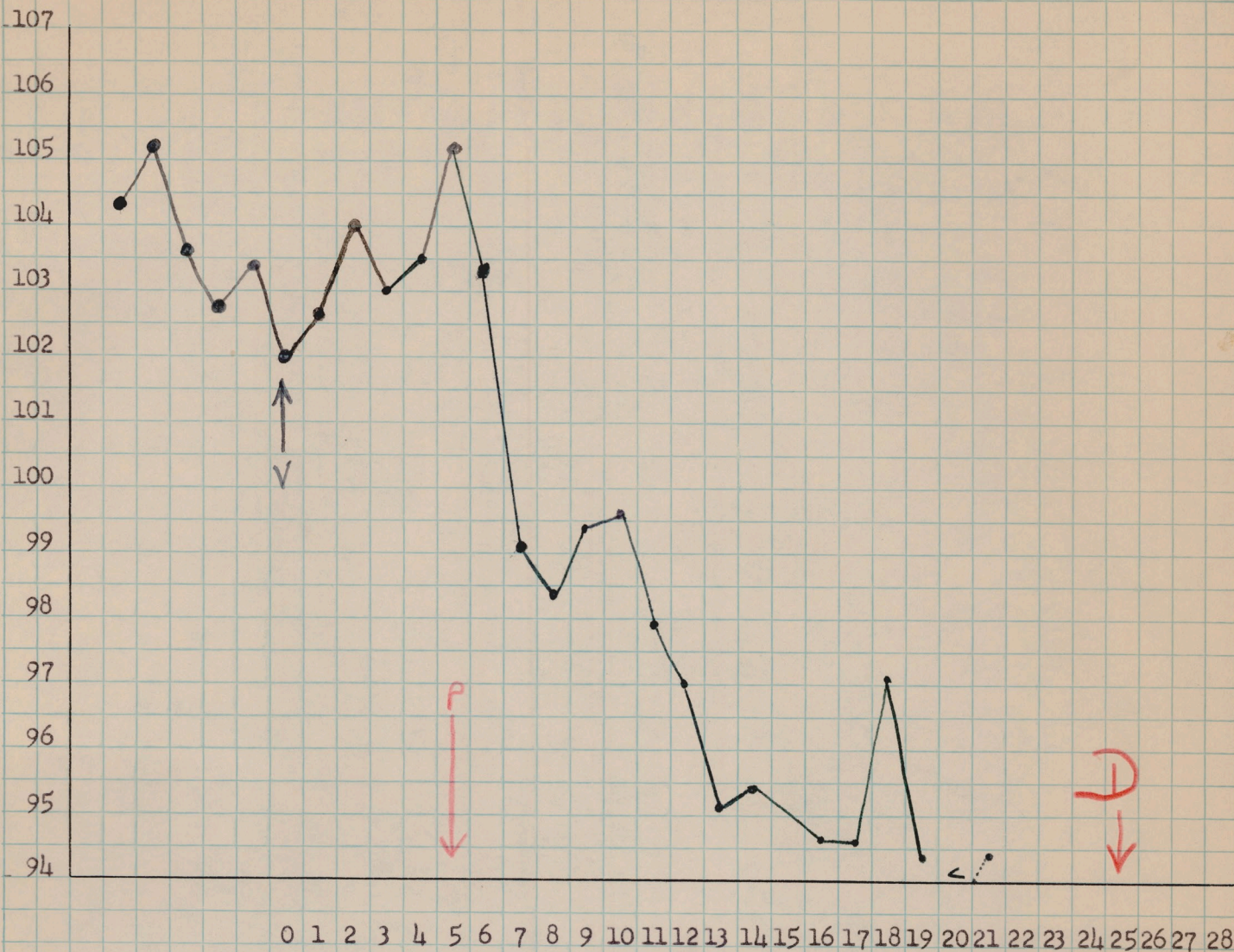
1/19 - 3:30 PM. - Looks toxic; sits up; achen gray; difficult irregular respiration; Sero. mucous secretion from nose, possible pneumonia. no paralysis. no drug in P.M.

1/20 - 9:00 AM - Dead - 10:00 AM - Necropsy - Viscera OK

CNS in 2.A.

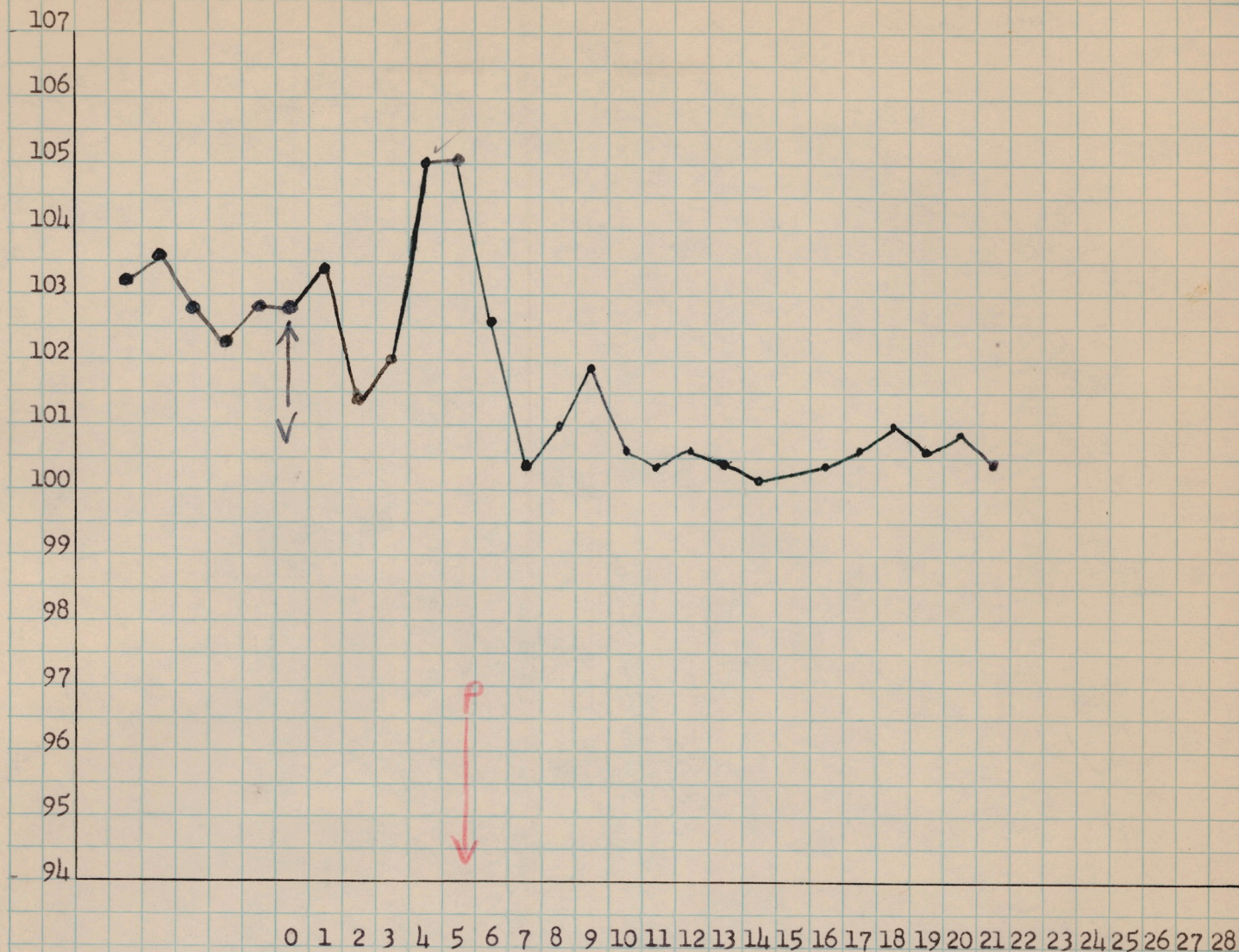
STANDARD B&P "NOTEBOOK"





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  
 Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8

- 1/19 - 3:30 P.M. - Questionable paralysis of right upper; can climb.  
 1/20 - 9:00 AM - Partial paralysis of right upper, other extremities weak; does not hold on well; Can not climb.  
 3:30 PM - Partial paralysis of all extremities; sits up.  
 1/21 - 9:00 AM - Prostrate  
 3:30 PM - Prostrate; alert; Can raise head  
 1/22 - 9:00 AM - Same  
 1/23 - 3:00 PM - Same  
 1/24 - 3:00 PM - Same  
 1/25 3:00 PM - Same  
 1/26 5:30 PM - Same  
 1/27 5:00 PM - Same  
 1/28 11:00 AM - Same  
 1/29 4:30 PM - Same  
 1/30 4:00 PM - Same  
 1/31 5:30 PM - Same  
 2/1 4:30 PM - Same  
 2/2 3:15 PM - Same  
 2/3 4:30 PM - Same  
 2/8 9:00 AM - Dead

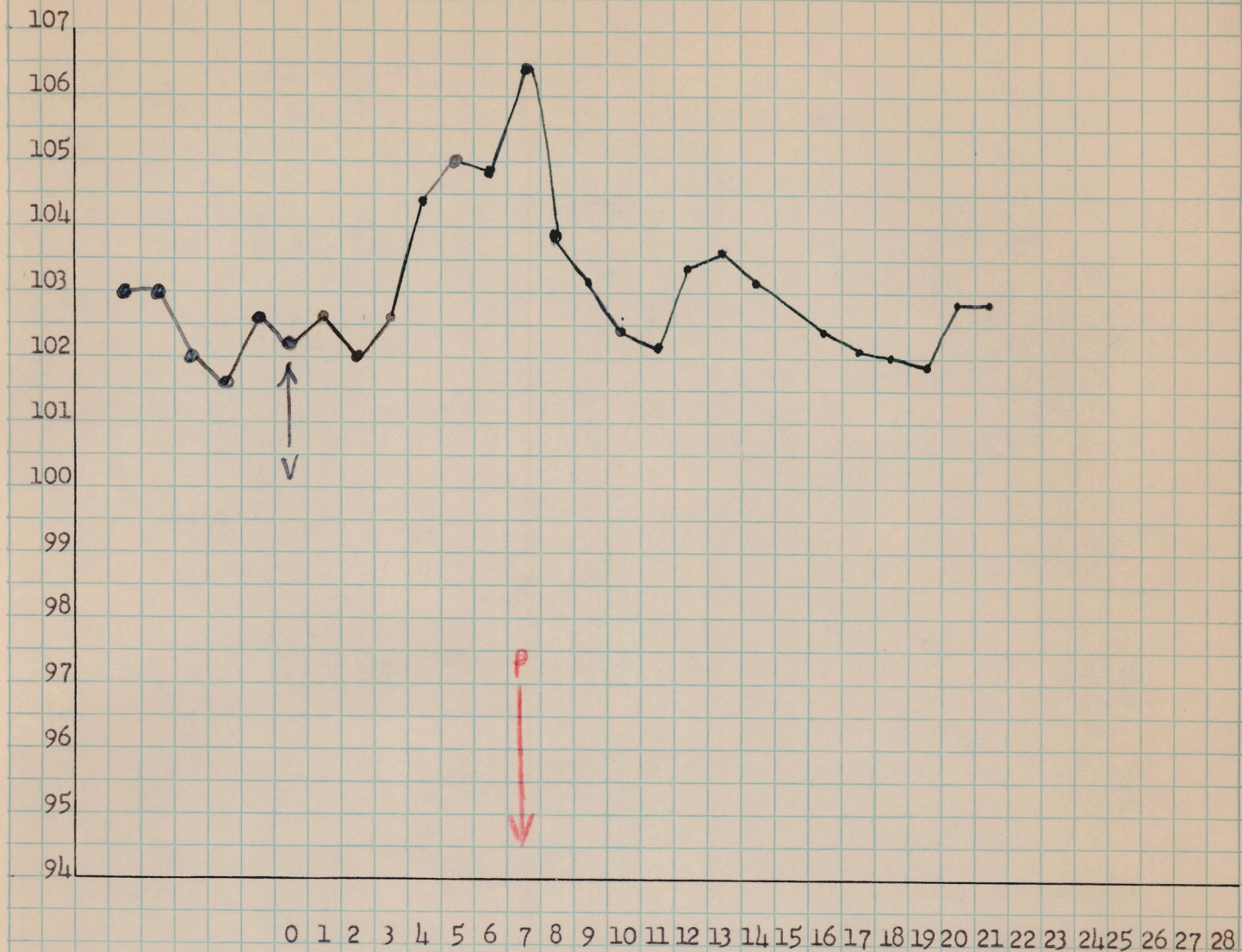


Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

- 1/19 - 8:45 AM - Tremor  
 3:30 PM - Severe tremor; ataxic; partial paralysis of right lower; cannot climb.
- 1/20 - 9:00 AM - Partial paralysis of both lowers; tremor.  
 3:30 PM - Almost complete paralysis of lowers & left facial muscles; weak uppers, tremor.
- 1/21 - 9:00 AM - Prostrate  
 3:30 PM - Partial paralysis of uppers; crawls on belly.
- 1/22 - 9:00 AM - Prostrate; lowers complete; uppers partial; moves head & shoulders.
- 1/23 - 3:00 PM - Uses right arm
- 1/24 - 3:00 PM - Same
- 1/25 - 8:00 PM - Same
- 1/26 - 5:30 PM - Same
- 1/27 - 5:00 PM - Same
- 1/28 - 11:00 AM - Same
- 1/29 - 4:30 PM - Same
- 1/30 - 4:00 PM - Same
- 1/31 - 5:30 PM - Same
- 2/1 - 4:30 PM - Same
- 2/2 - 3:15 PM - Same

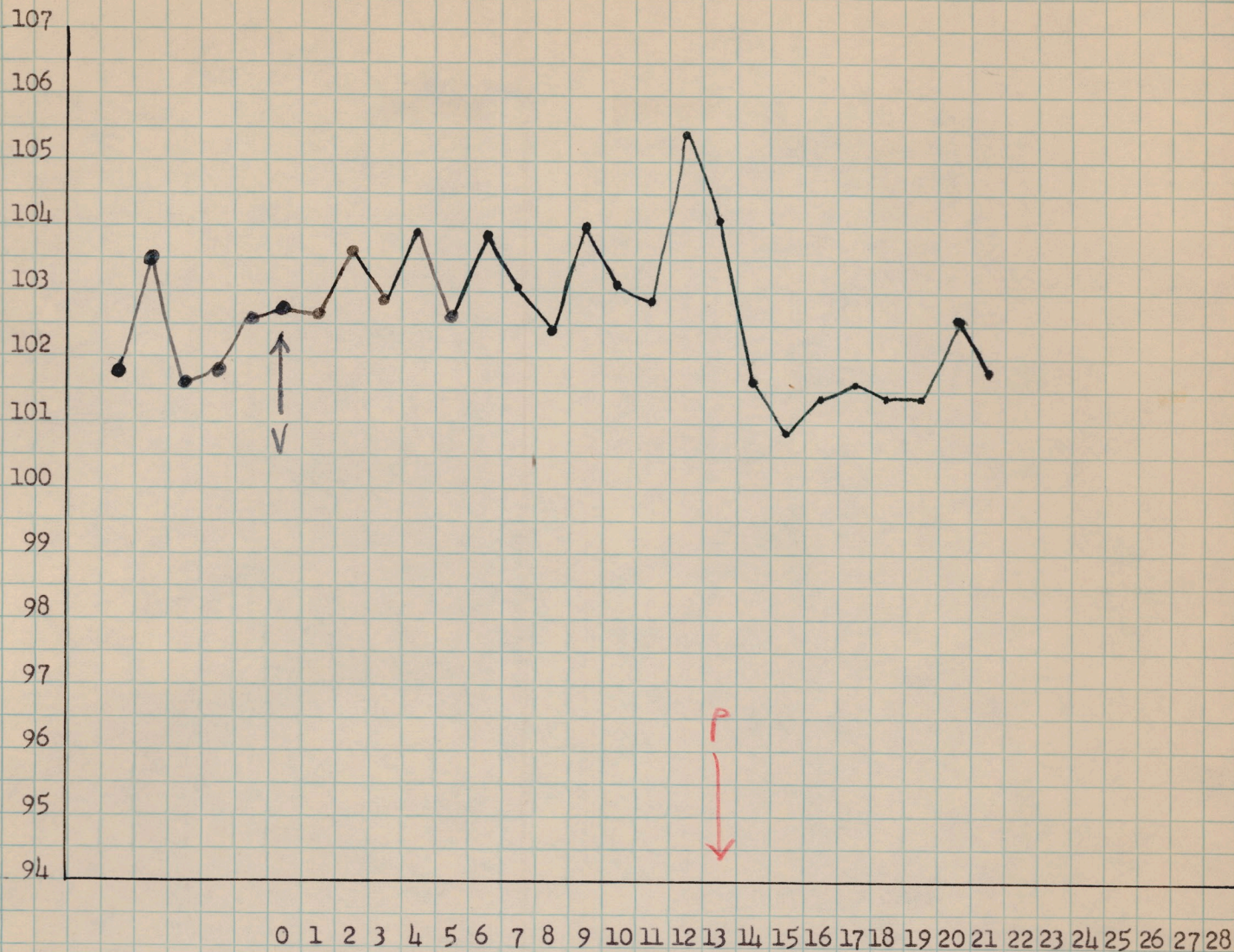
2/3 - Same

2/10 11:30 AM Same



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

- 1/20 - 3:30 PM - ok  
 1/21 - 3:30 PM - Paralysis of right facial; tremors  
 1/22 - 9:00 AM - Same  
 1/23 - 3:00 PM - Partial lowers + uppers; can not climb  
 1/24 - 3:00 PM - same  
 1/25 3:00 PM - Same  
 1/26 5:30 PM - Same - sets up  
 1/27 5:00 PM - Same  
 1/28 11:00 AM - Same  
 1/29 4:30 PM - Same  
 1/30 4:00 PM - Same  
 1/31 5:30 PM - Same  
 2/1 4:30 PM - Same  
 2/2 3:15 PM - Same  
 2/3 4:30 PM - Same  
 2/10 11:30 AM - Same



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1/20 - 3:30 PM - OK

1/21 - 3:30 PM - OK

1/22 - 9:00 AM - OK

1/23 - 3:00 PM - OK

1/24 - 3:00 PM - OK

1/25 - Noon - OK

1/26 - 5:30 PM - ~~OK~~ excited pilot motor

1/27 10:30 AM - partial paralysis lowers evident when he tries to run does not climb but can hang on in fixed position

1/27 5:00 PM Same; uppers also affected

1/28 11:00 AM Same; bilateral deltoid paralysis

1/29 4:30 PM Same

1/30 4:00 PM Same

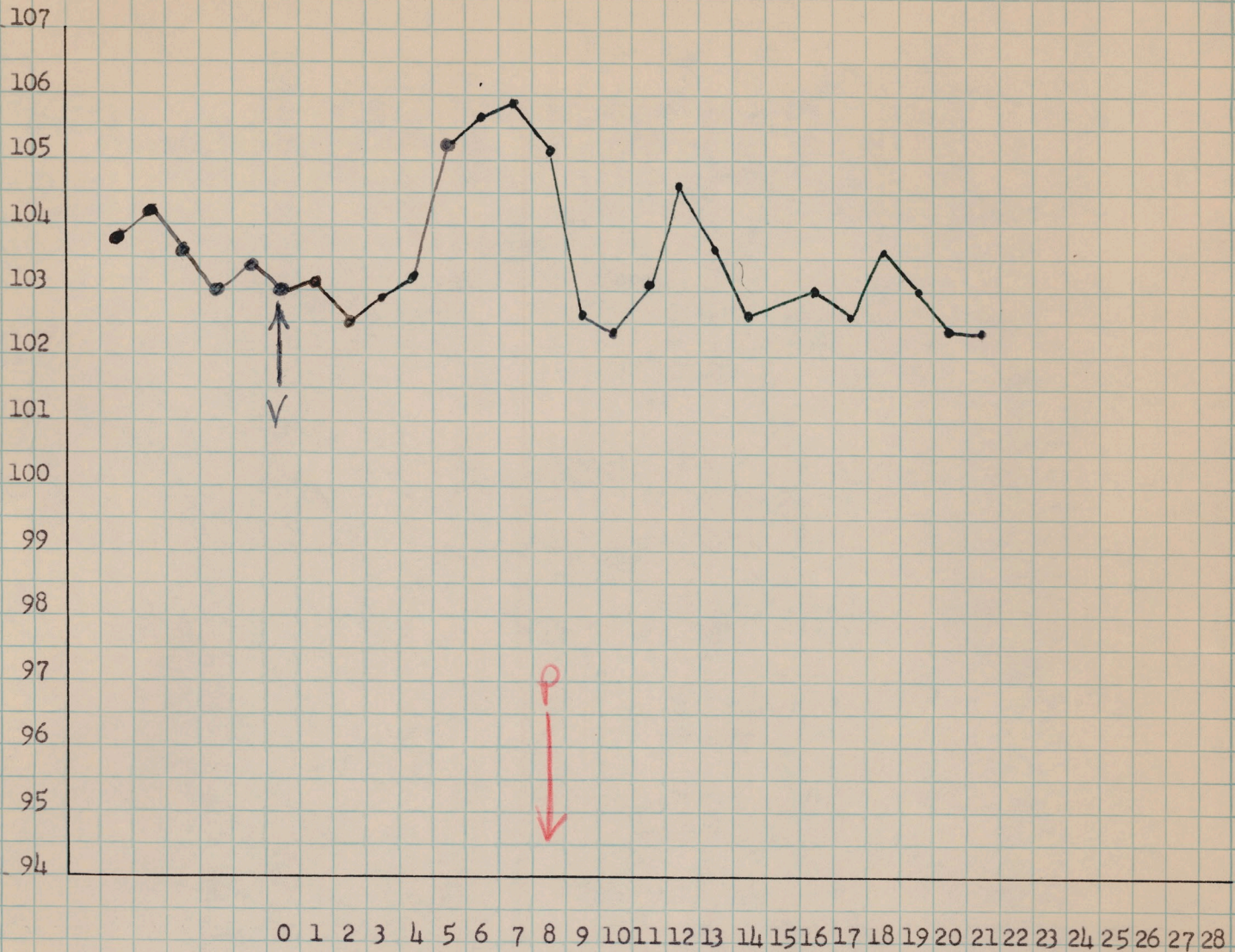
1/31 5:30 PM Same

2/1 4:30 PM Same

2/2 3:15 PM Same

2/3 4:30 PM Same

2/10 11:30 AM Same



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1/20 - 3:30 PM - OK

1/21 - 3:30 PM - Excited, tremor

1/22 - 9:00 AM - OK

3:00 PM - Paralysis of left deltoid, weak lower

1/23 - 3:00 PM - Partial paralysis of lower & left upper; sit up.

1/24 - 3:00 PM - Same

1/25 - 3:00 PM - Same

1/26 - 5:30 PM - Same

1/27 5:00 PM Same

1/28 11:00 AM Same

1/29 4:30 PM Same

1/30 4:00 PM Same

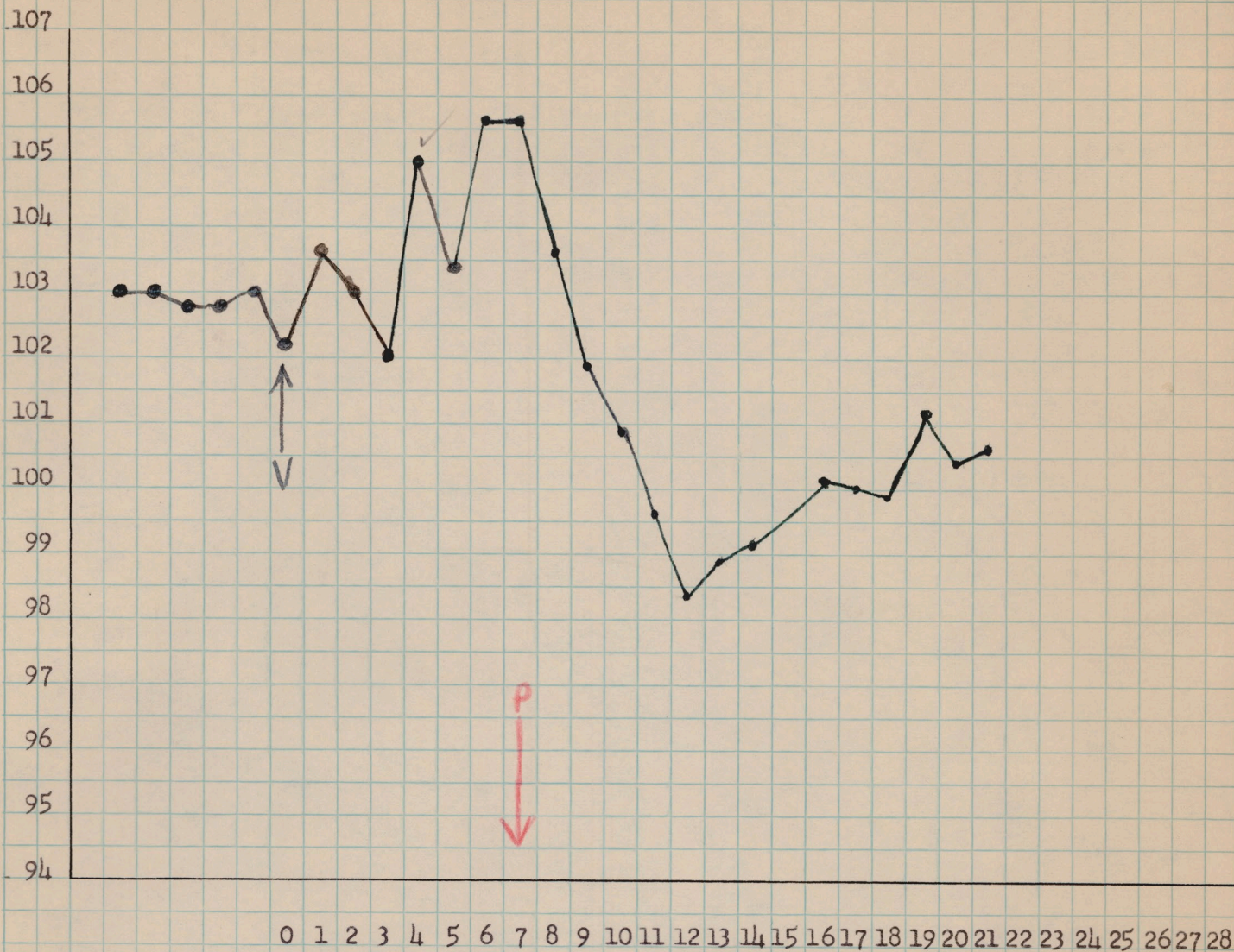
1/31 5:30 PM Same

2/1 4:30 PM Same

2/2 3:15 PM Same

2/3 4:30 PM Same

2/10 11: AM Prefers to lie down



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1/19 - 3:30 PM - Excited

1/20 - 9:00 AM - Excited

3:30 PM - Excited

1/21 - 3:30 PM - Partial paralysis of upper + lower; tremor; Can right himself, but can not climb

1/22 - 9:00 AM - Partial paralysis of upper + lower; sit up

1/23 - 3:00 PM - Prostrate; crawl on belly

1/24 - 3:00 PM - Same

1/25 3:00 PM - Same

1/26 5:30 PM - Same

1/27 5:00 PM - Same

1/28 11:00 AM - Same

1/29 4:30 PM - Same

1/30 4:00 PM - Same

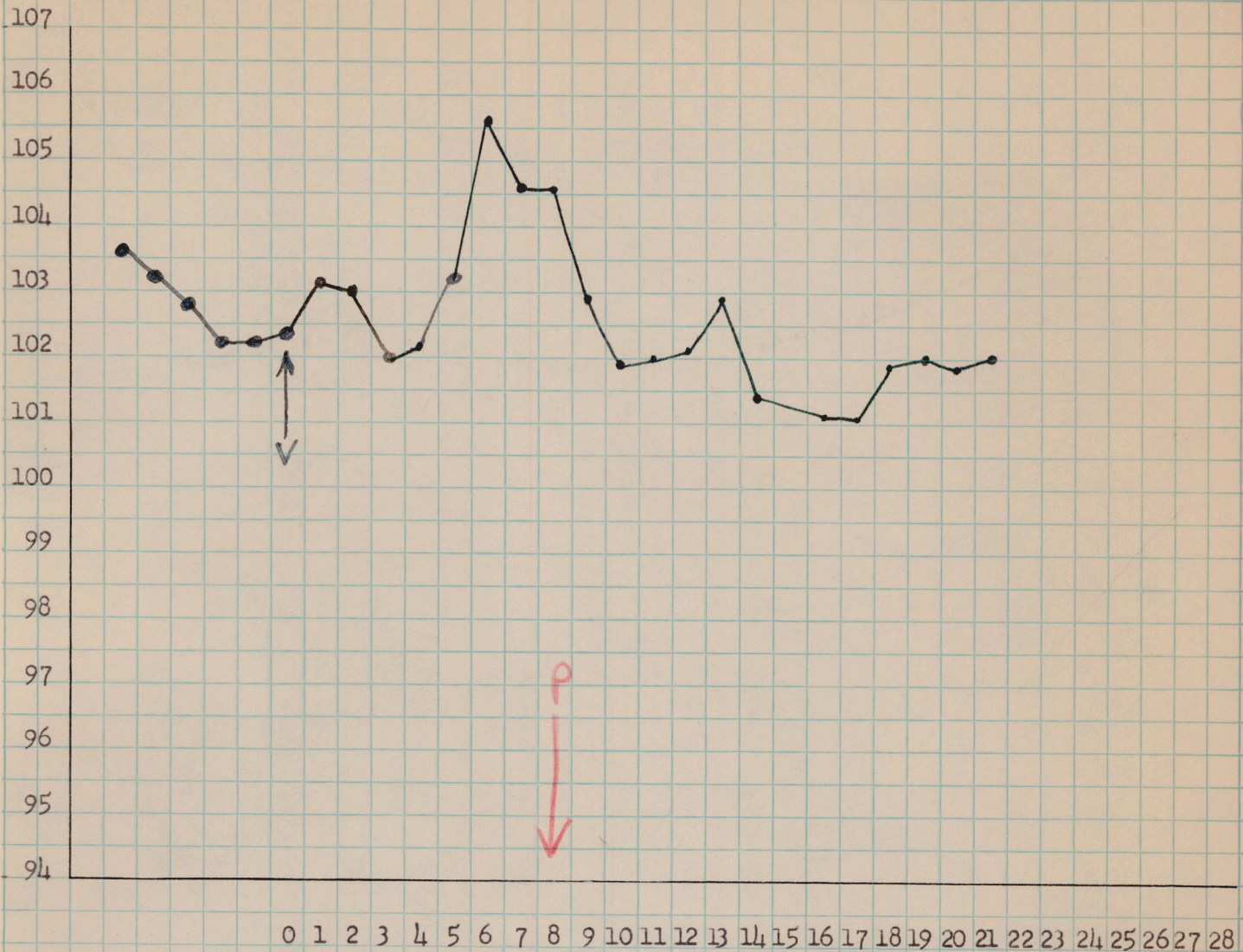
1/31 5:30 PM - Same

2/1 4:30 PM - Same

2/2 3:15 PM - Same

2/3 4:30 PM - Same

2/10 11:30 AM - Same



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1/20 - 3:30 PM - OK

1/21 - 3:30 PM - OK

1/22 - 9:00 AM - OK

3:00 PM - Partial paralysis of right upper; weak lower

1/23 - 3:00 PM - Complete paralysis of right upper; partial lower; sits up

1/24 - 3:00 PM - Same

1/25 3:00 PM Same

1/26 6:30 PM Same

1/27 5:30 PM does not sit up

1/28 10:00 AM Same

1/29 4:30 PM Same

1/30 4:00 PM Same

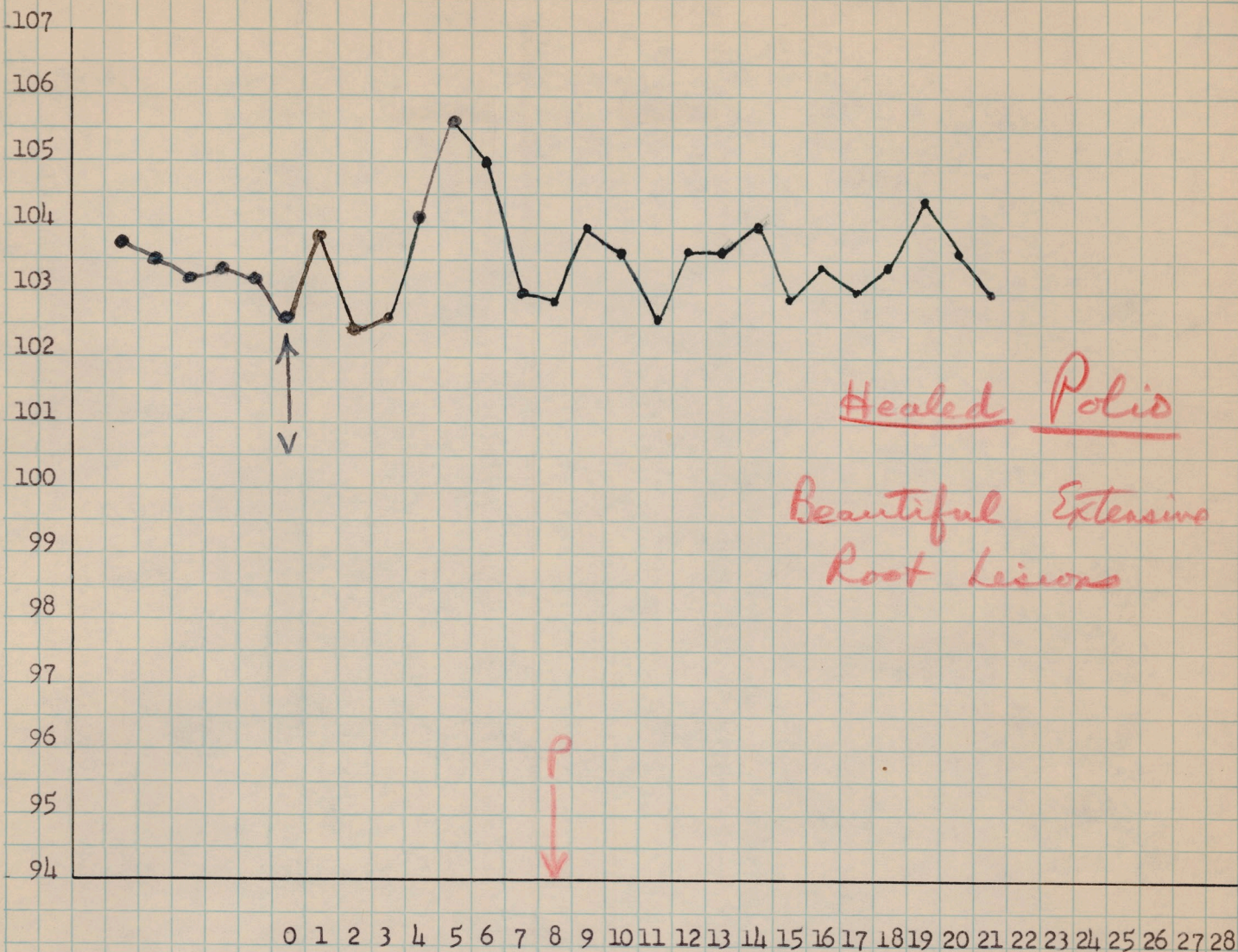
1/31 5:30 PM Same

2/1 4:30 PM Same

2/2 3:15 PM Same

2/3 4:30 PM Same

2/10 11:30 AM Sets up



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1/19 - 3:30 PM - Severe tremor

1/20 - 9:00 AM - Excited; tremor

3:30 PM - Excited; tremor

1/21 - 3:30 PM - Tremor; stiff movements; climbs well.

1/22 - 9:00 AM - Weak lower.

3:00 PM - Weakness or partial paralysis of left lower

1/23 - 3:00 PM - Climbs, but left lower is very weak or partially paralyzed

1/24 - 3:00 PM - Same; no definite paralysis

1/25 - noon - this monkey has only a mild involvement of the lower extremities which becomes evident in running & in climbing - he climbs mostly with his uppers.

1/26 8:30 PM Same

1/27 5:00 PM Same

1/28 11:00 AM Same

1/29 4:30 PM Same

1/30 4:00 PM Same

1/31 5:30 PM Same

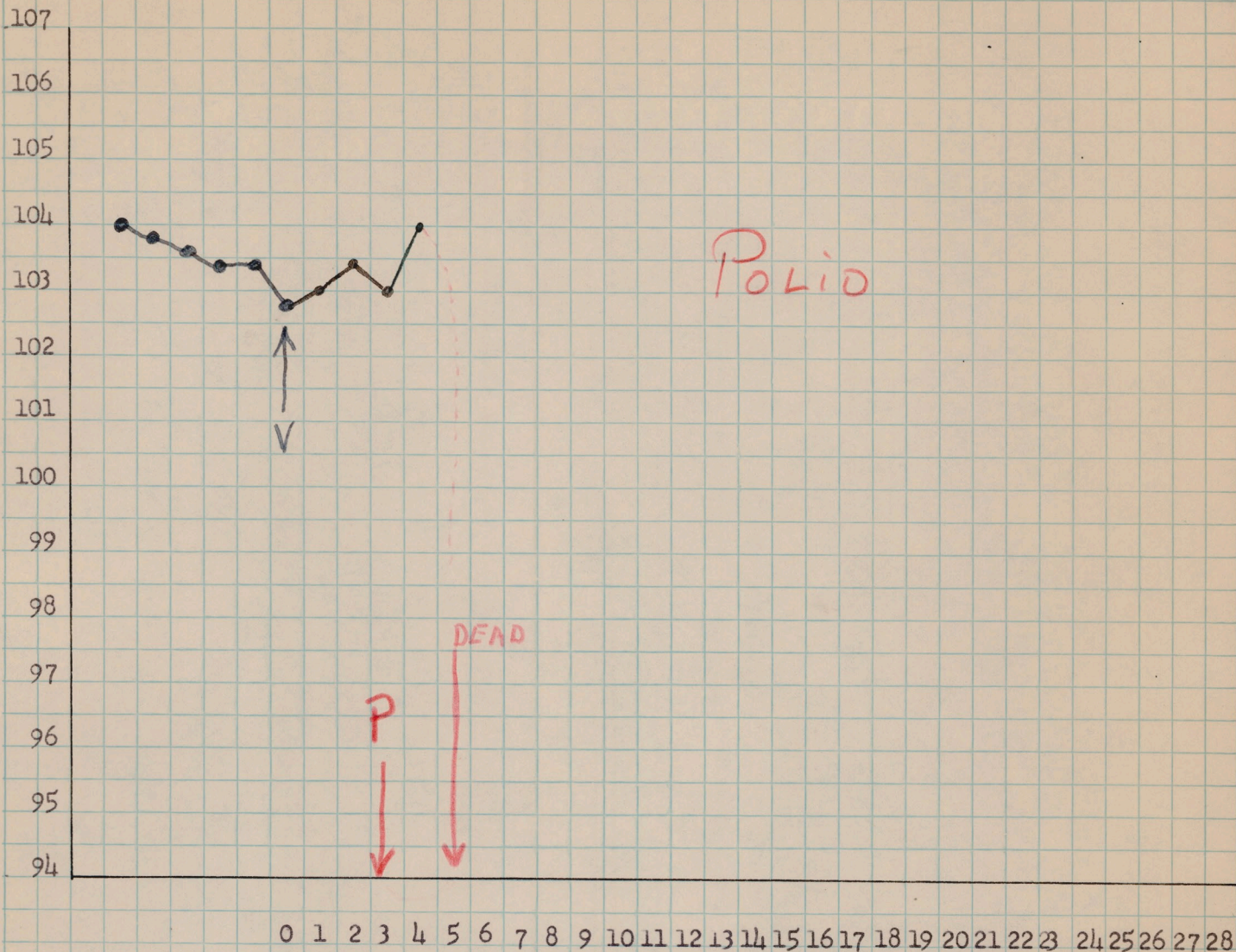
2/1 4:30 PM Same

2/2 3:15 PM Same

2/3 - 4:30 PM - Same

2/6 - AM - Necropsy - viscera OK

CNS in Z.A.



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1/17 - 11:00 AM - Prostrate; unable to move lower, upper weak.

1/18 - 9:00 AM - Prostrate; unable to move lower or upper.

4:30 PM - Same

1/19 - 8:00 AM - Dead

11:00 AM - Necropsy - Evidence of stroke  
hemorrhage in anterior portion of right  
cerebral hemisphere, *clot in caudate nucleus*  
Viscera - OK

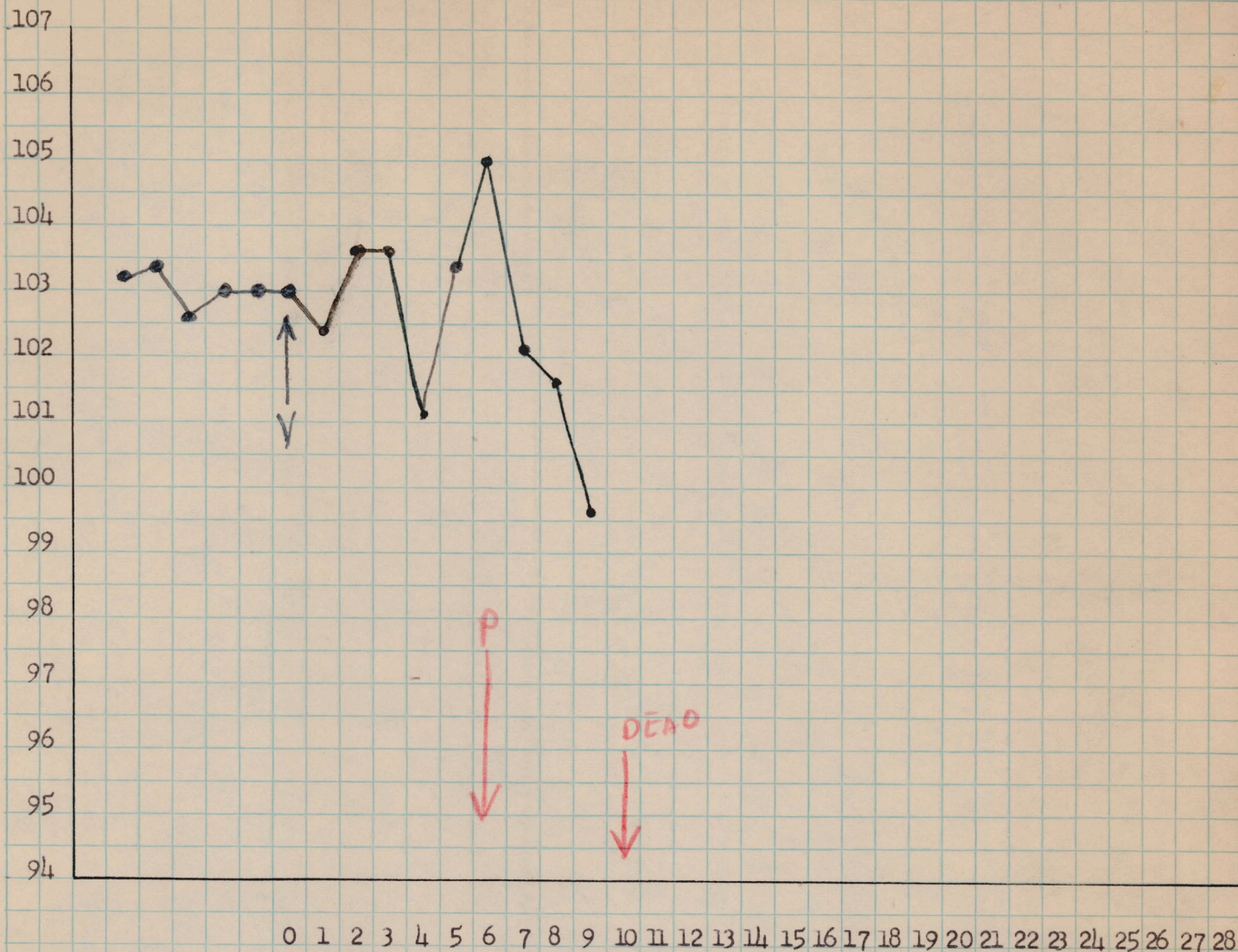
CNS in Z A

2/4/50

Extensive neuronal necrosis and neuronophagia  
affecting the entire spinal cord.

Many localized lesions in medulla, midbrain  
thalamus and hypothalamus.

Age of lesions in the spinal cord entirely  
compatible with 3-day incubation period.



Jan. 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1/19 - 3:30 P.M. - Excited; pilomotor

1/20 - 9:00 A.M. - Excited

3:30 P.M. - Right facial paralysis; partial paralysis of left upper; tremor.

1/21 - 9:00 A.M. - Prostrate

3:30 P.M. - Complete paralysis of lower, back, and upper.

1/22 - 9:00 A.M. - Same

1/23 - 3:00 P.M. - Same

1/24 - 8:00 A.M. - Dead