Sicilian
Virus
Charts

Oct. 6, 1943

Inoculation of Acute Sandfly Fever Serum (Sicilian Material) into 4 patients at Longview Hospital (Cincinnati, O.)

Material: Frozen serum (Datoush and Carr) was thawed out just before inoculation. 2cc was withdrawn from each and mixed in a sterile ampoule. The inoculations were as follows:

0.1cc. intracutaneously flexor surface of forearm
0.75cc subcutaneously in midtriceps region

All inoculations between 3 30 and 4 P.M.

Procedures prior to inoculation:

WBC and differential
20cc of blood drawn for serum

Subjects:

1. [redacted] 4 - female
2. [redacted] 8 - "
3. [redacted] 41 - male
4. [redacted] 38 - "

105

104

103

102

101

100

99

98

0 1 2 3 4 5 6 7 8 9 10

104

103

102

101

100

99

98

97

10[illegible]

4

3

2

1

100

99

98

97

Acute Sicilian (Pappataci?) Fever Serum in Human Subjects

0.1cc intracutaneously ; 0.9cc subcutaneously – Oct. 6, 1943, 3^{30}-4^{00} p.m.

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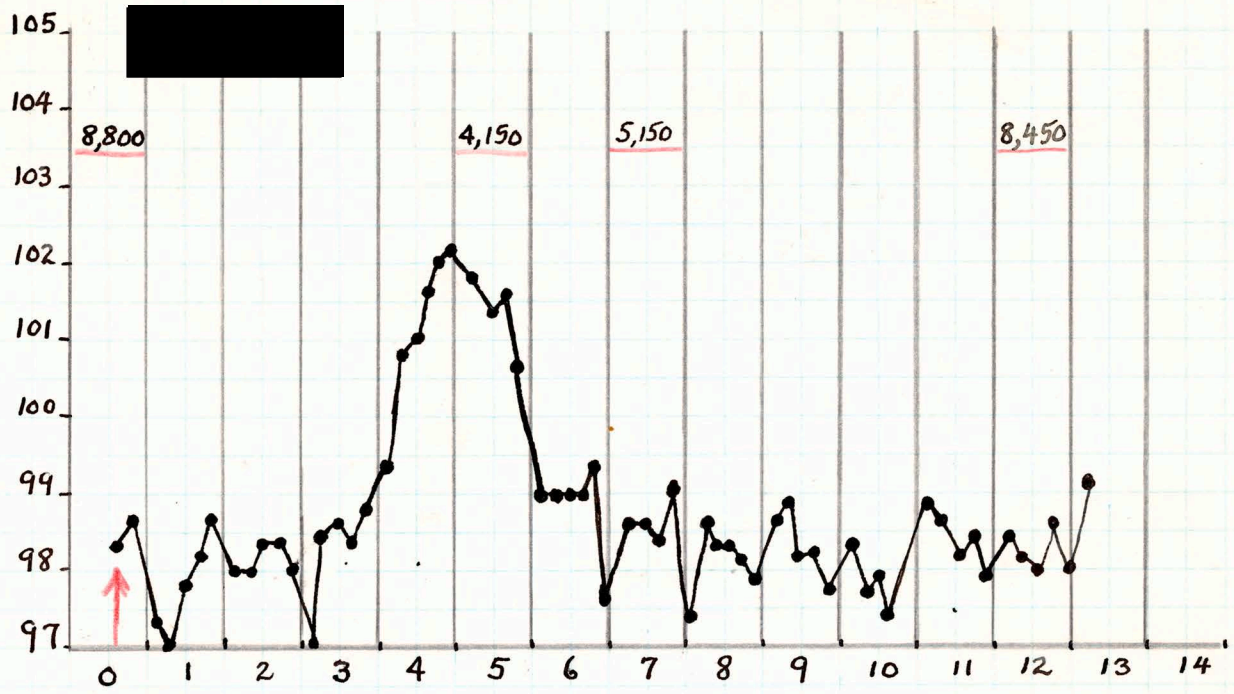

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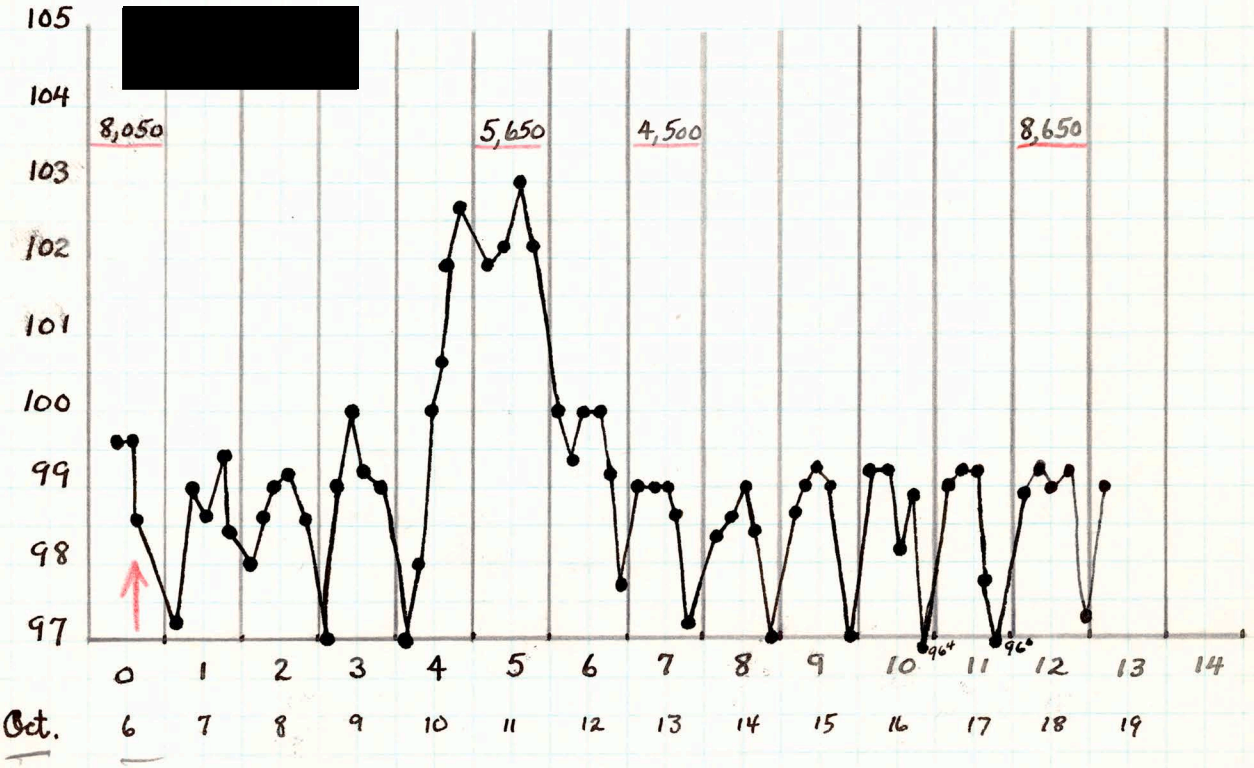

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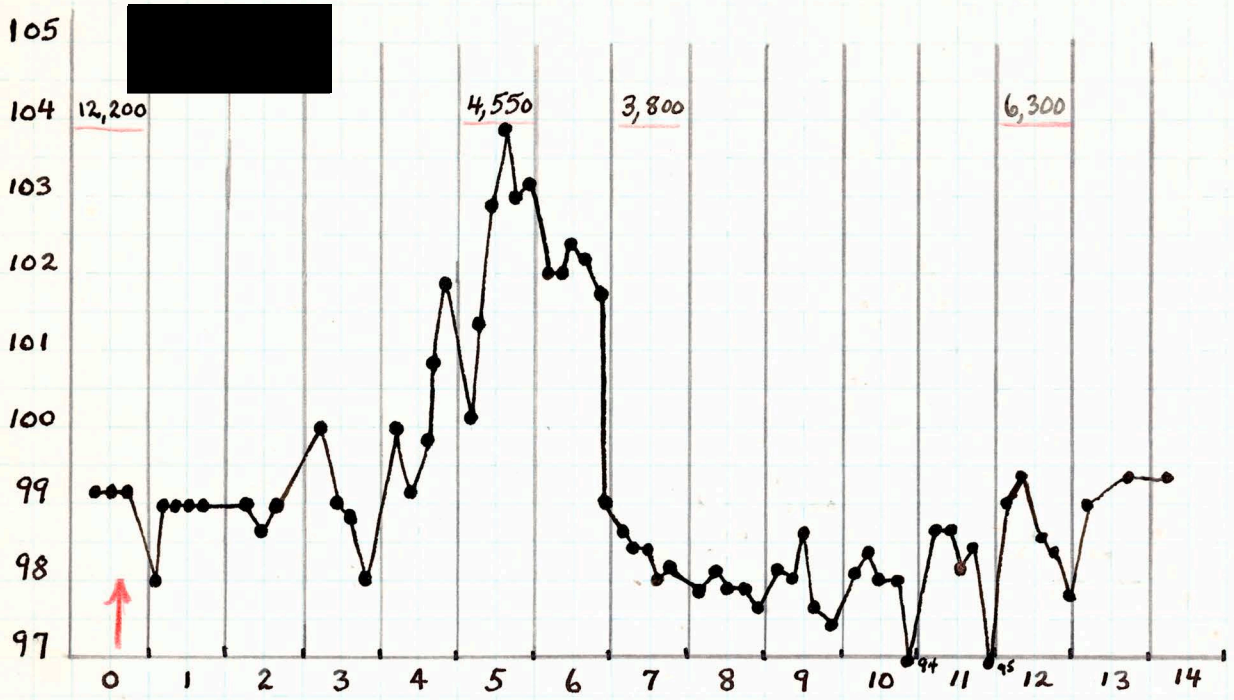

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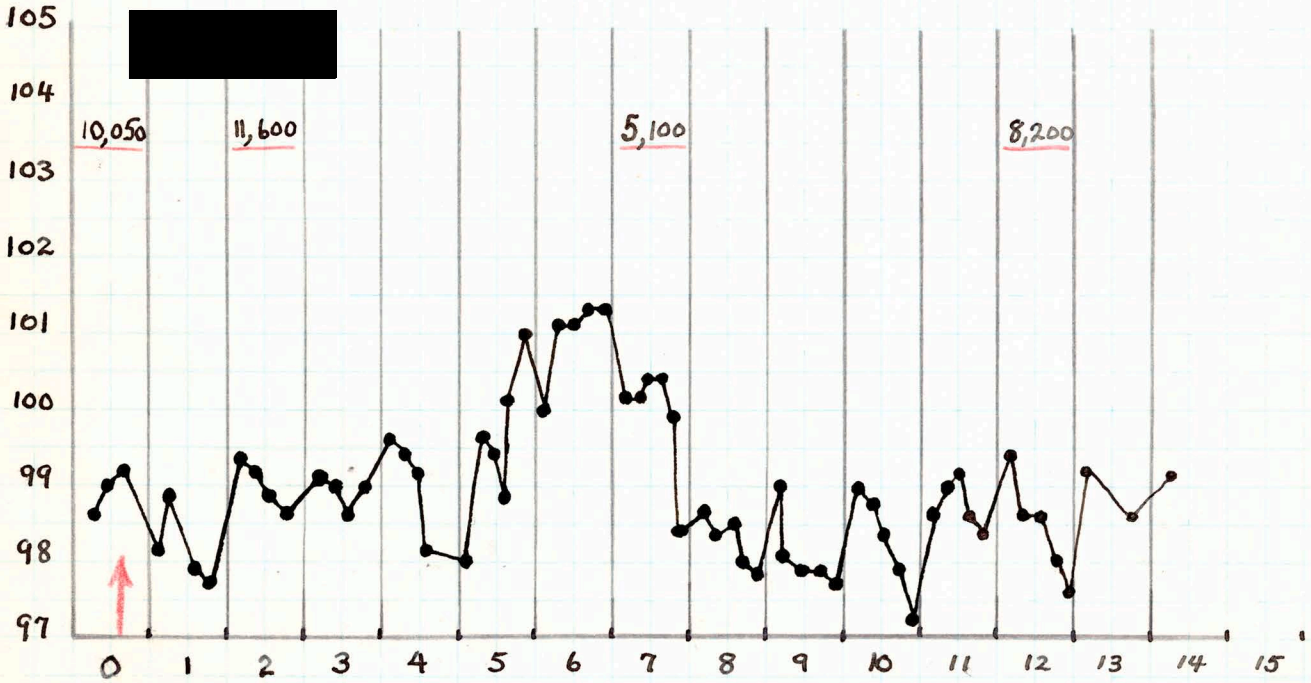


Filtration of the Sicilian Virus through Gradocol Membranes — Oct. 21, 1943

Source of Virus — Serum from first experimental passage in human beings, obtained on first day of fever. Frozen in CO_2 box since Oct. 10 or 11.

Pool made up as follows:

[redacted] — 16.5 cc
— 12.0 cc
— 12.5 cc
— 10.0 "
51.0 cc — 24 cc used for this expt. Remainder inoculated in Rhesus monkeys, cotton rats, and mice.

Preparation for Filtration — Serum diluted 1:5 in saline
24 cc serum + 96 cc saline.

Centrifuged at @ 1500 rpm for 30 minutes

GRADOCOL MEMBRANES - ELFORD Type

770 mμ membrane — obtained late in 1939 from England

309, 203, 101, 75 and 50 mμ membranes — obtained from Dr. Johannes Bauer, IHD of the Rockefeller Foundation, about a year old.

Preparation of membranes — Sterilized by steaming for 30 min. Hormone broth which was passed through a Seitz filter the day before and which had a pH of 7.8 to 7.9 was passed through each membrane prior to filtration of the diluted serum.

Procedure — It was planned to filter the centrifuged diluted serum thru the 770 mμ membrane and used this filtrate for subsequent passage thru the the 300, 200 and 100 mμ membranes. It was planned to use the 300 mμ filtrate for passage through the 75 and 50 mμ membranes. However

filtration through the 300 mμ membrane proved to be too slow to permit this. For some reason filtration thru the 200 mμ membrane was much faster, and part of this filtrate was passed through one 50 mμ membrane and 770 mμ filtrate thru another 50 mμ membrane.

770 mμ membrane — 10cc of broth under 10 lbs pressure (Nitrogen) — passed thru in continuous stream.

Total amt filtered 100cc in 4 portions
25cc — 9:32 A.M. — 30 sec
25cc — 9:35 " — "
25cc — 9:38 " — "
25cc — 9:41 " — "
Part saved — remainder used for filtration thru 300, 200, 100, 75, 50 mμ membr.

309 mμ membrane — 10cc of broth passed fairly rapidly under 10 lbs pressure
770 mμ filtrate used — 25cc added
10:00 A.M. — dropwise at 10 lbs pressure; increased to 15 lbs — but filtration still slow
1:00 P.M. — 10cc filtrate obtained. Filtration stopped

Only single membrane present. New membrane steamed and filtration repeated — but again very slow — much slower than 200 mμ.

223 mμ membrane — 10cc broth passed rapidly under 15 lbs pressure
770 mμ filtrate used.
First 12cc passed thru in 4 minutes
Subsequent 10cc required 60 minutes.
Part inoculated — 11cc used for 50 mμ membrane

101 mμ membrane — 5cc of broth under 15 lbs pressure — passed rapidly
770 mμ filtrate used
First 5cc passed thru in 5 min.
Subsequent 6cc required 2 hrs.

75 mμ membrane — 5cc of broth under 15 lbs. pressure required 30 min.
770 mμ filtrate used — Filtration slow
10cc of filtrate obtained in 6 hours.

Gradocol Membrane Filtration - Continued — Oct. 21

50 mμ membrane No. 1 — 5cc of broth under 15 lbs pressure required 3 hrs.

770 mμ filtrate used.

Started 1 P.M.

5²⁰ " — 6cc of filtrate present - 5cc removed for inoculation. Filtration continued overnight for another 15 hrs. Flask containing tube & filtrate packed in ice.

Oct. 22 8³⁰ A.M. — 6.5 cc of almost water clear filtrate collected.

50 mμ membrane No. 2 — 5cc of broth under 15 lbs. pressure. — ≈ 4cc passed in 2 hrs.

200 mμ membrane filtrate (10.8cc) used.

Started 6¹⁰ P.M. — filtration slow dropwise. Flask with recipient tube packed in ice.

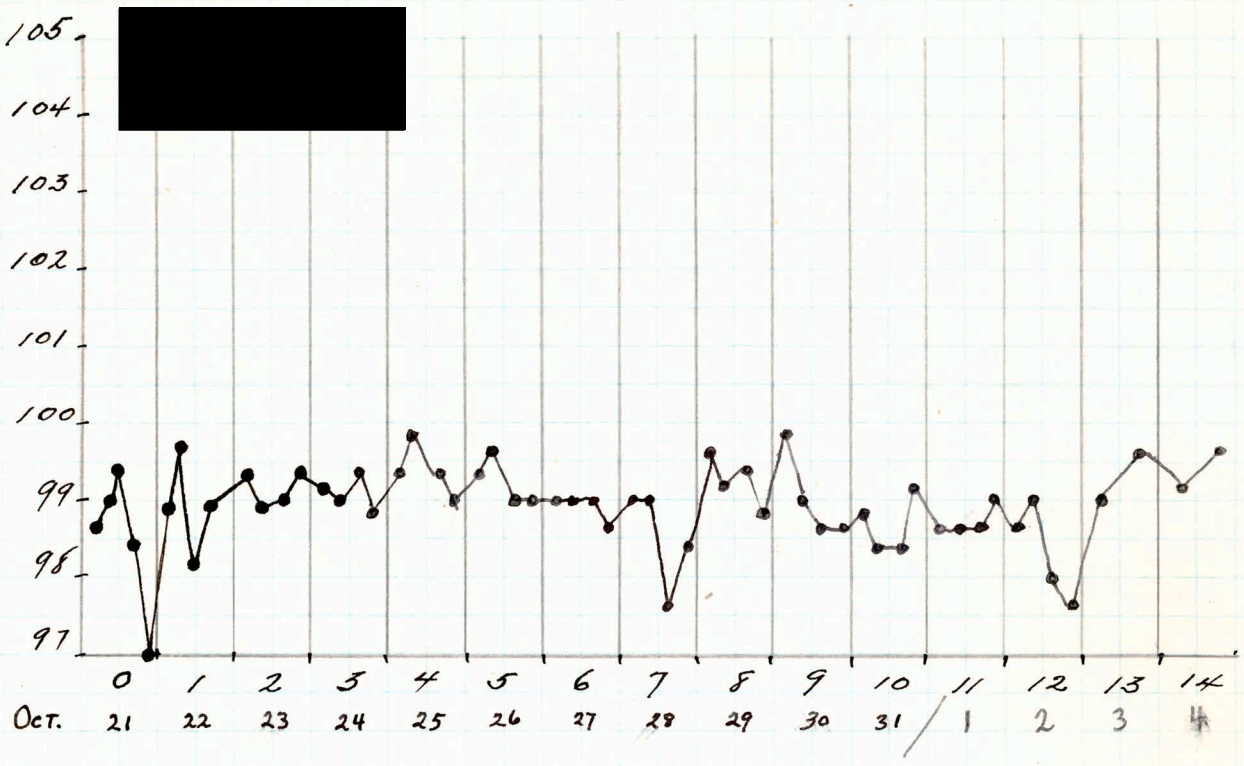
Oct. 22 8:30 AM — 10.4cc of filtrate recovered.

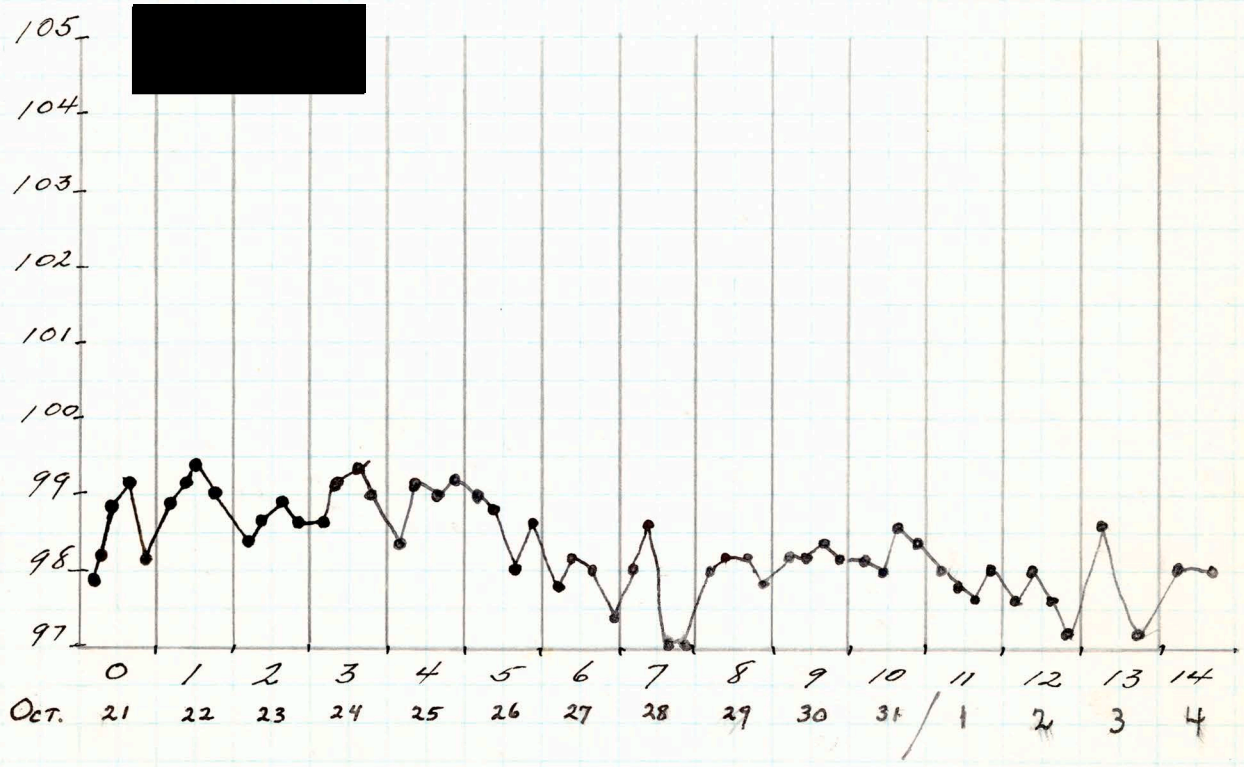
Membrane	Amt of broth passed	Material used for filtration	Pressure lbs.	Total time	Amt. of filtrate collected
770 mμ	10cc	Centrifuged serum dil. 1:5 in saline	10	2 min.	100cc
309 "	10cc	770 mμ filtrate	15	3 hrs.	10 cc
203 "	10 "	" "	"	1 hr.	22 cc
101 "	5 "	" "	"	2 "	11 cc
75 "	5 "	" "	"	6 "	10 "
50 " No. 1	5 "	" "	"	19 hr. 30 min	11.5 cc
50 " No. 2	4 "	200 mμ "	"	14 hr 20 "	10.4 cc

Inoculations - Subcut. and Intramusc.

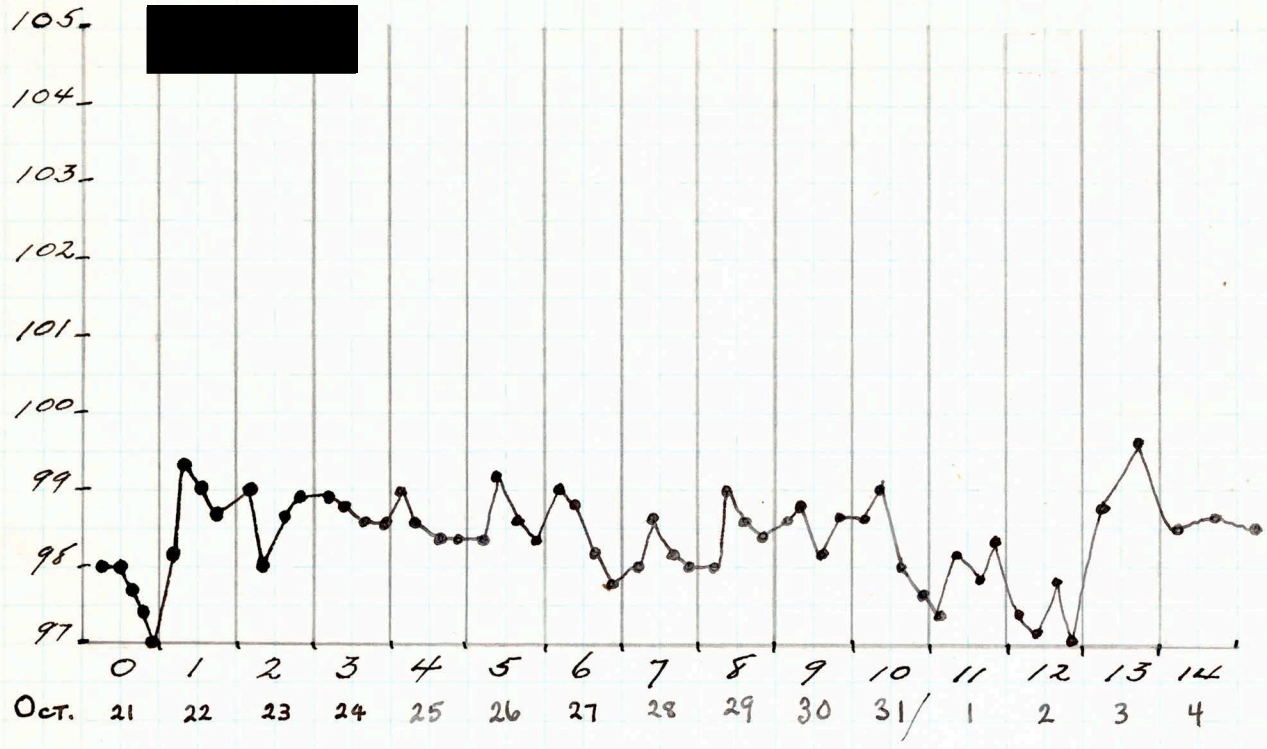
Material	Dose	Time	Name	Age
Centrifuged unfiltered serum 1:5	5cc	6:30-7 P.M; 10/21	[redacted]	– white male – 36
	5cc	" " "	[redacted]	– " " – 49
770 mμ filtrate	5cc	" "	[redacted]	– " " – 41
	"	" "	[redacted]	– " " – 43
309 mμ	5cc	" "	[redacted]	– " " – 41
	"	" "	[redacted]	– " " – 44
203 mμ	5cc	" "	[redacted]	– " " – 45
	"	" "	[redacted]	– " female – 40
101 mμ	5cc	" "	[redacted]	– " " – 46
	"	" "	[redacted]	– " " – 43
75 mμ	5cc	" "	[redacted]	– Colored " – 45
	"	" "	[redacted]	– " " – 40
50mμ (770)	5cc	" "	[redacted]	– White " – 36
" (220)	5cc	10A.M 10/22		
50mμ (770)	6cc	" "	[redacted]	– colored " – 47
" (220)	5cc	" "		

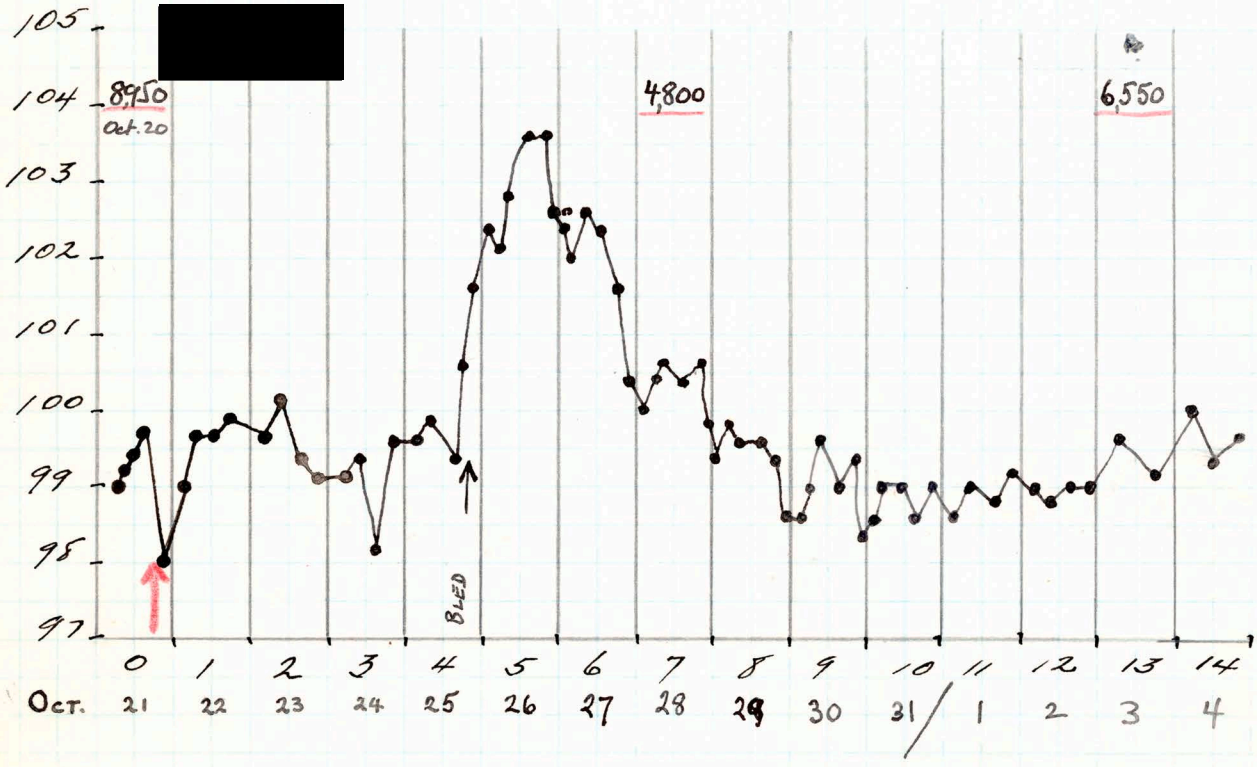
Sicilian Virus



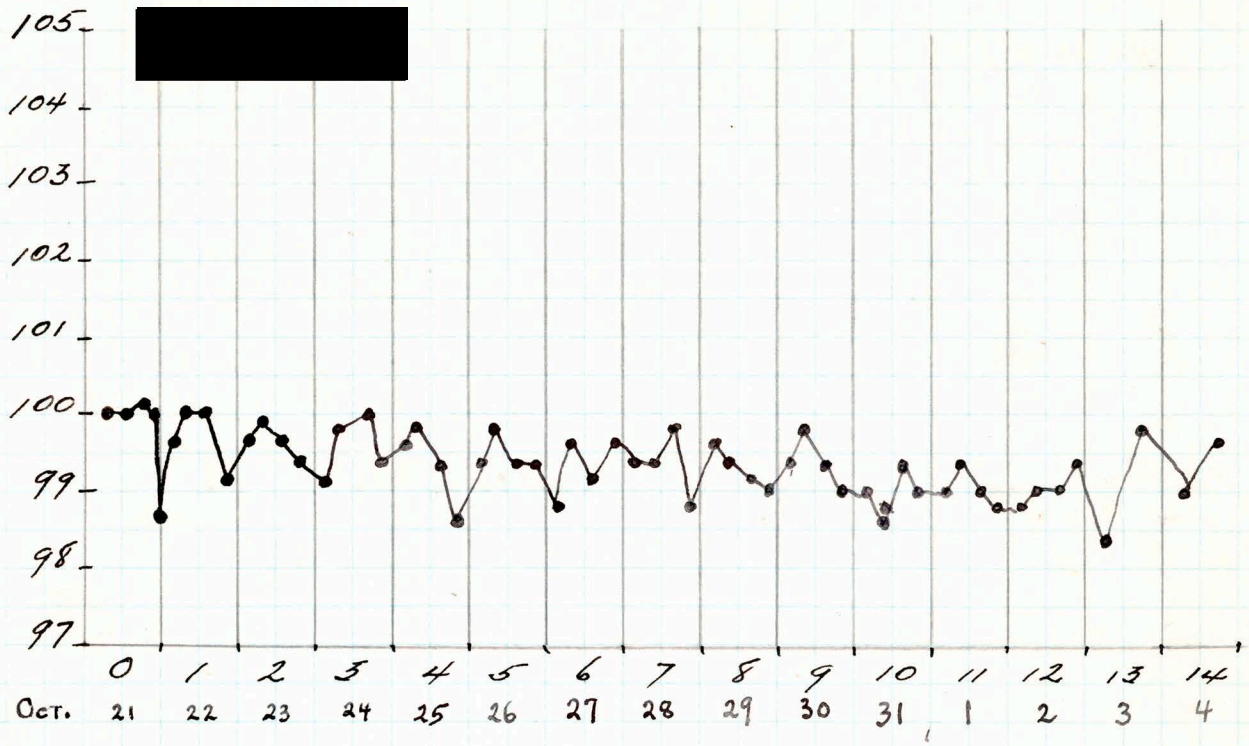


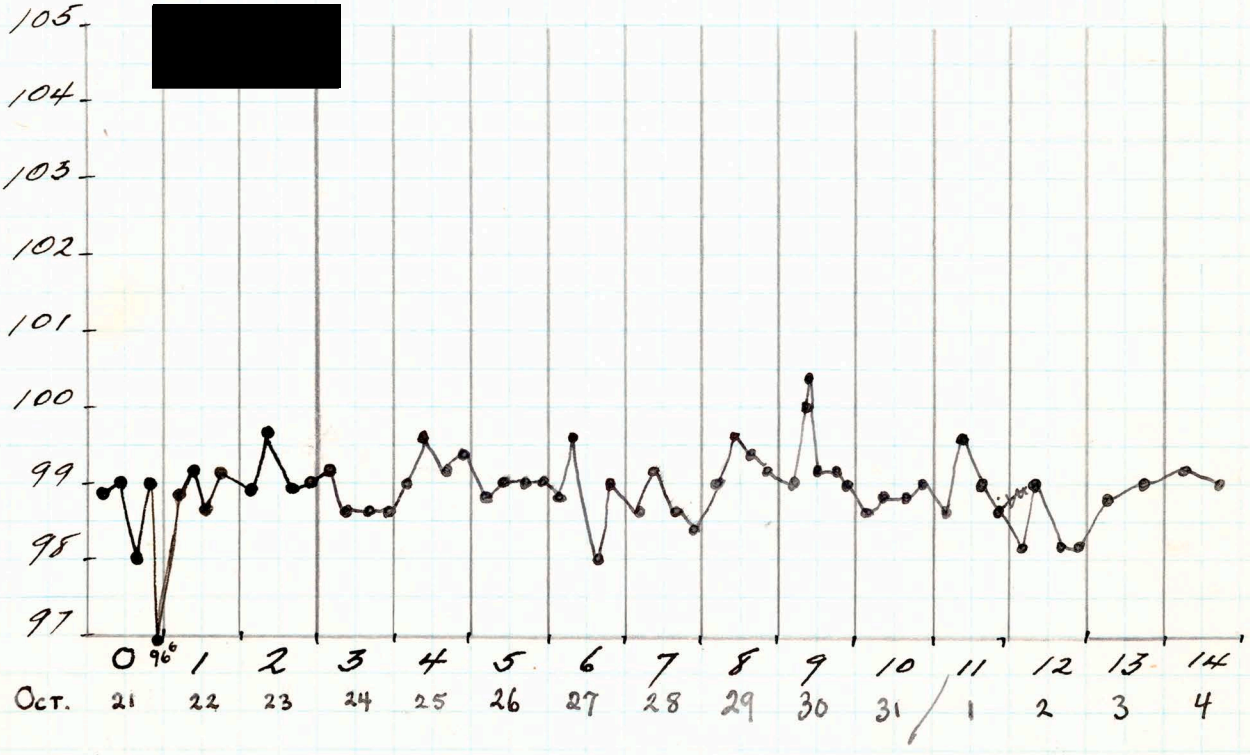
Centrifuged, Unfiltered Serum – 5cc



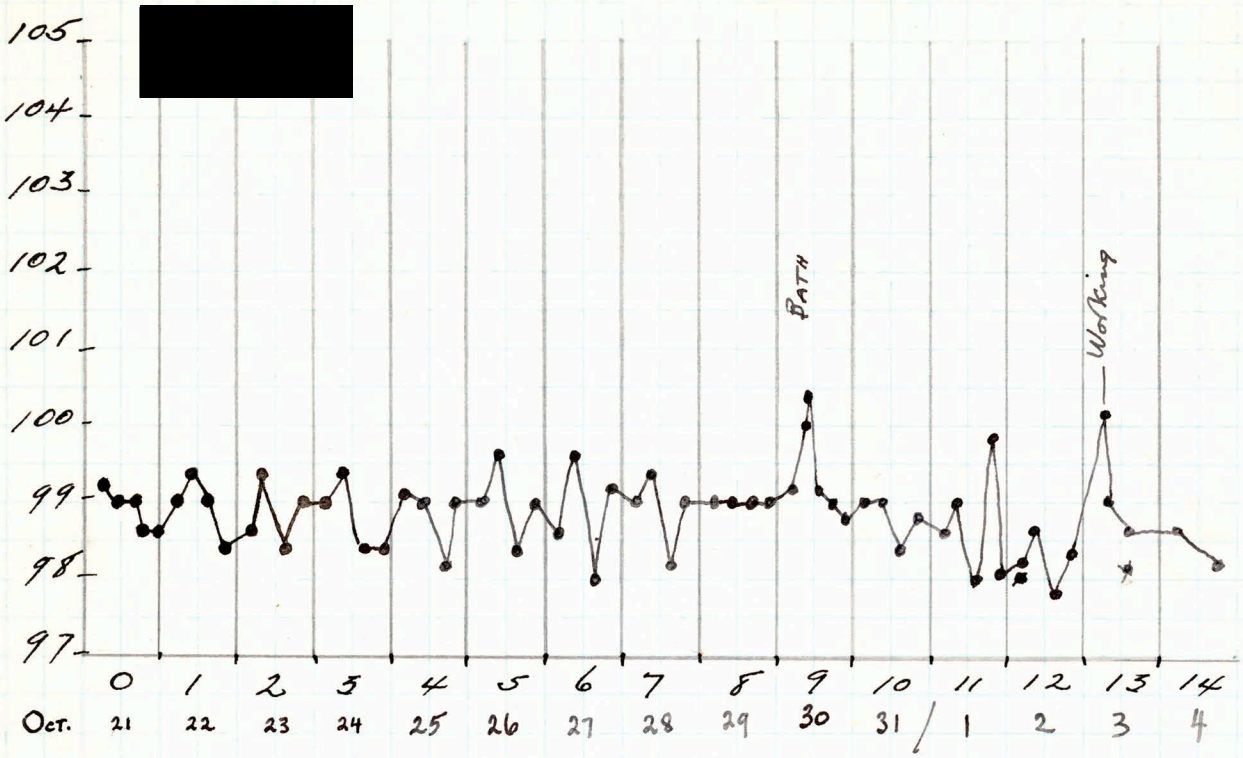


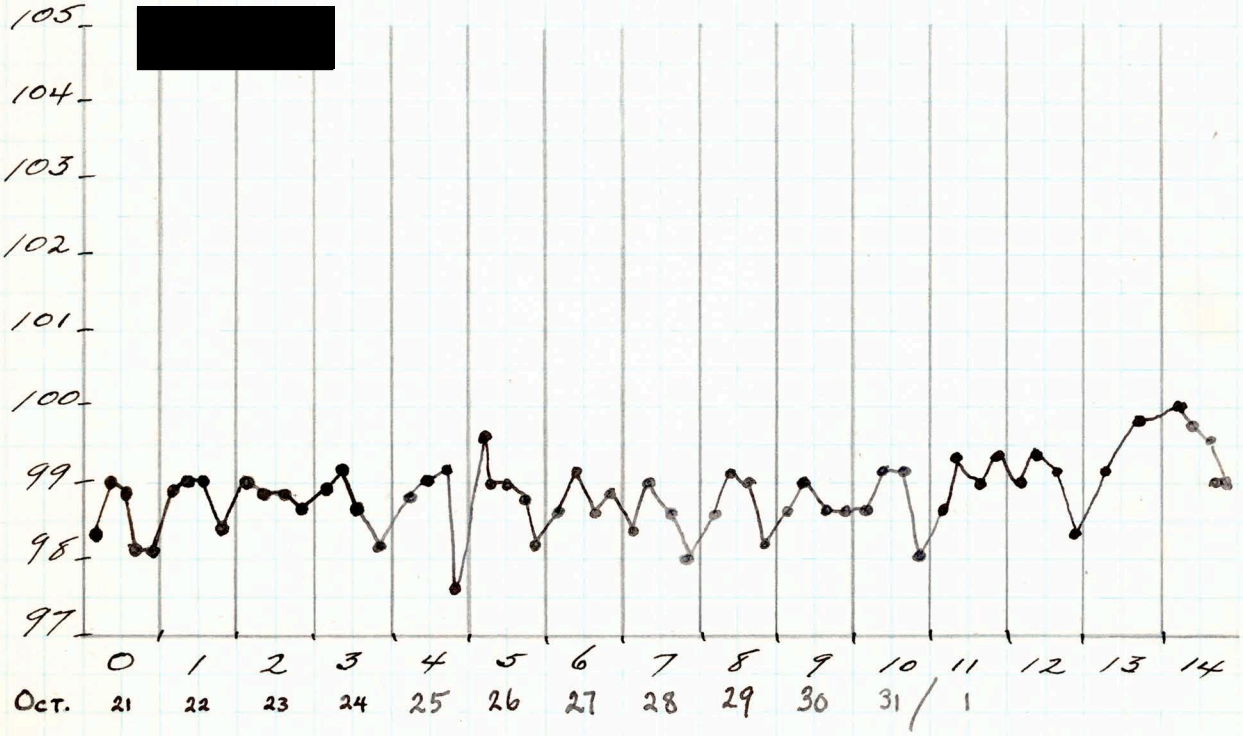
770 mμ SERUM – 5cc.



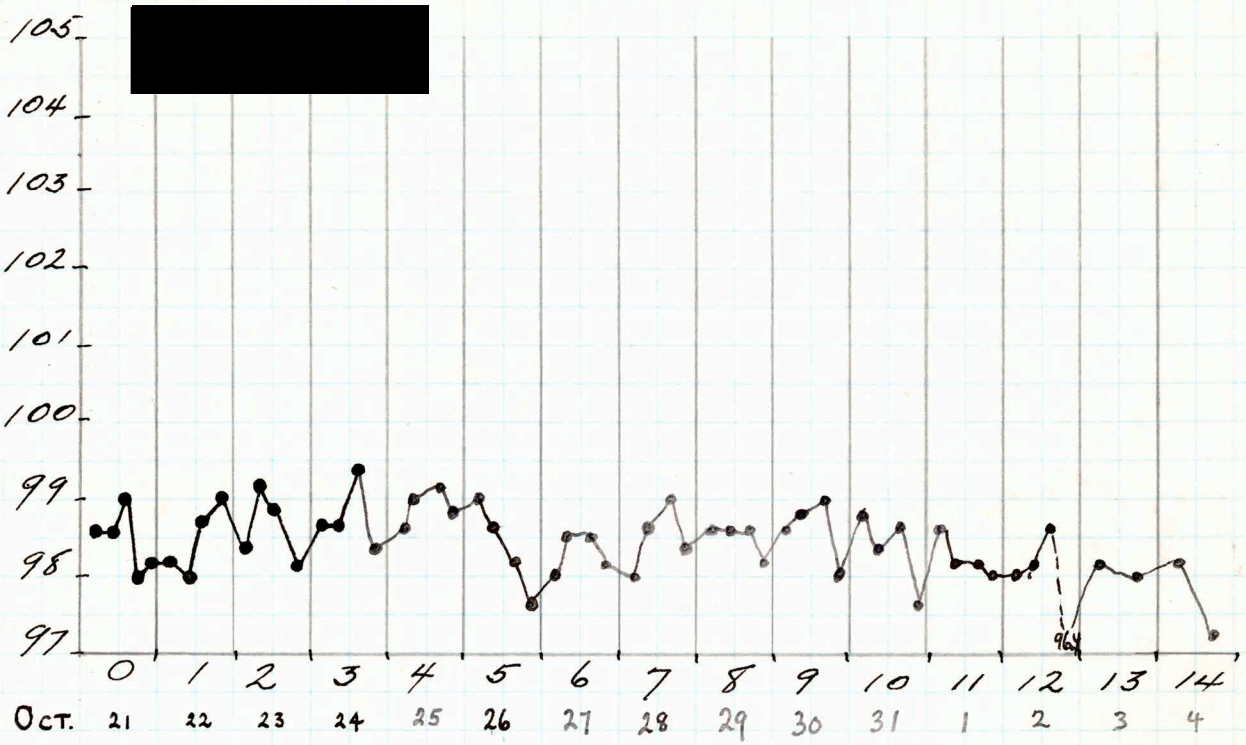


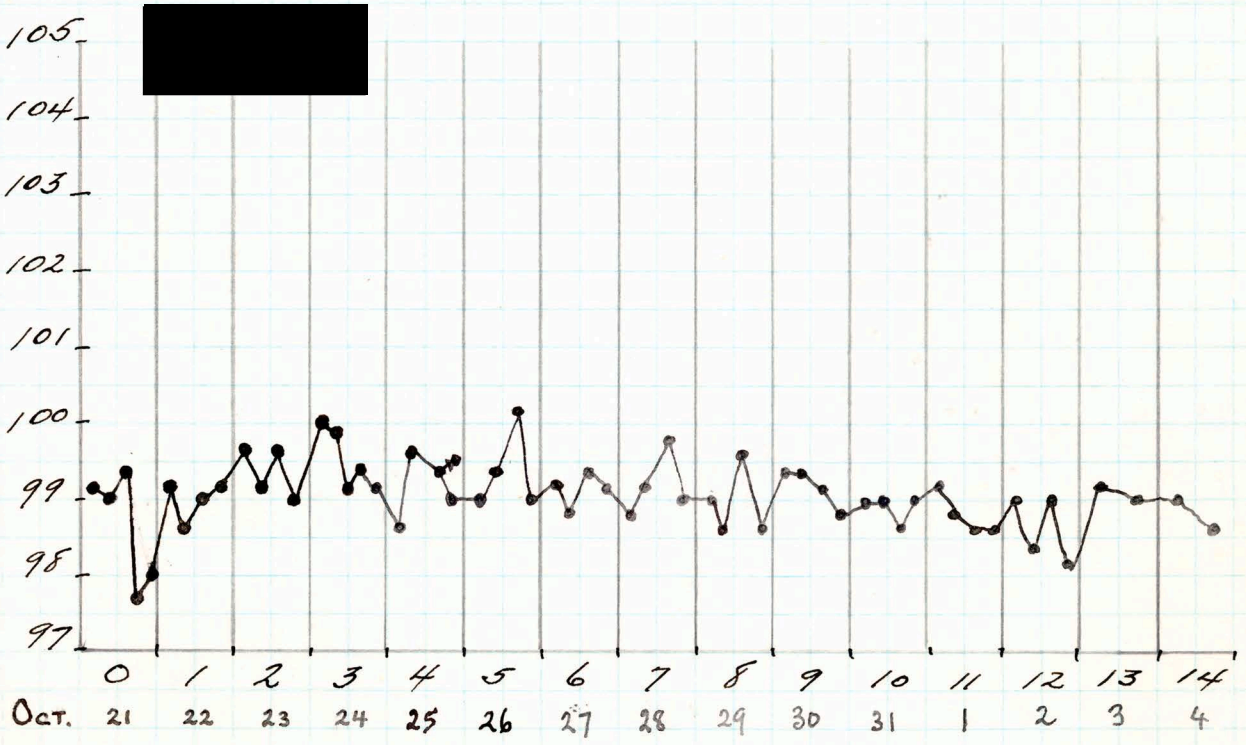
309 mμ SERUM – 5cc





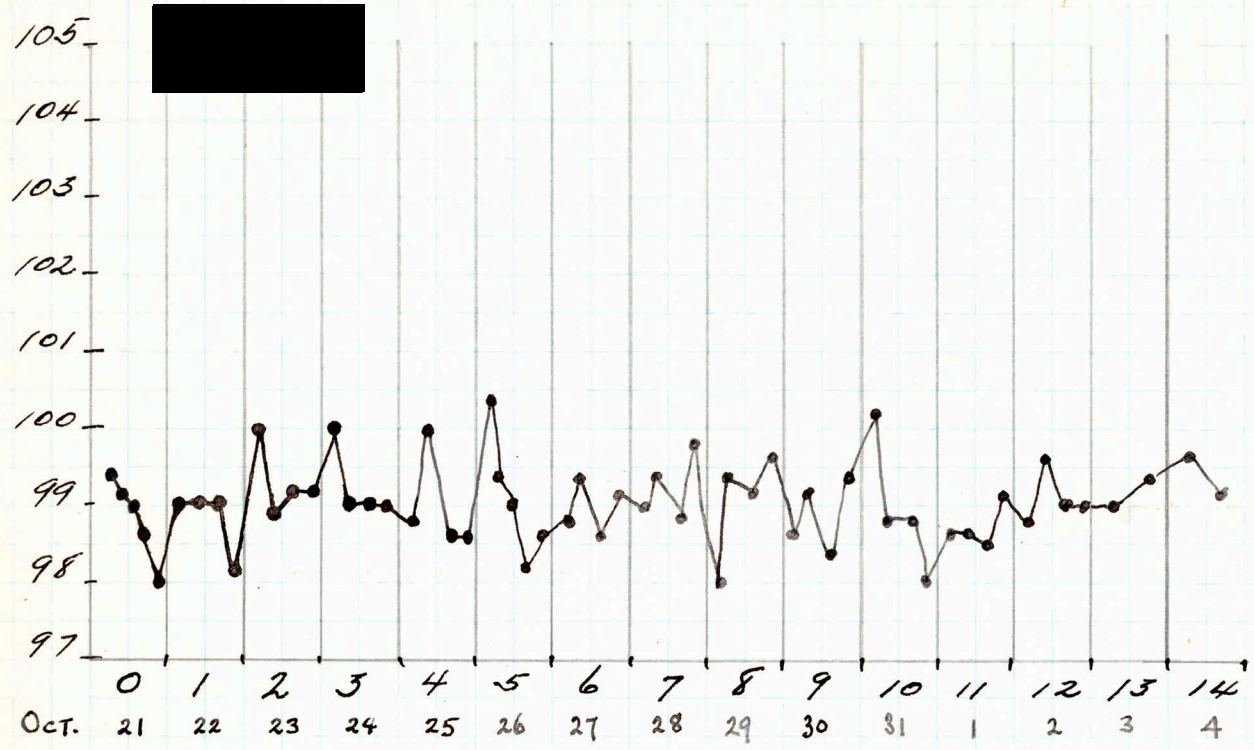
203 mμ Serum — 5cc.





101 mμ Serum – 5cc

[redacted]



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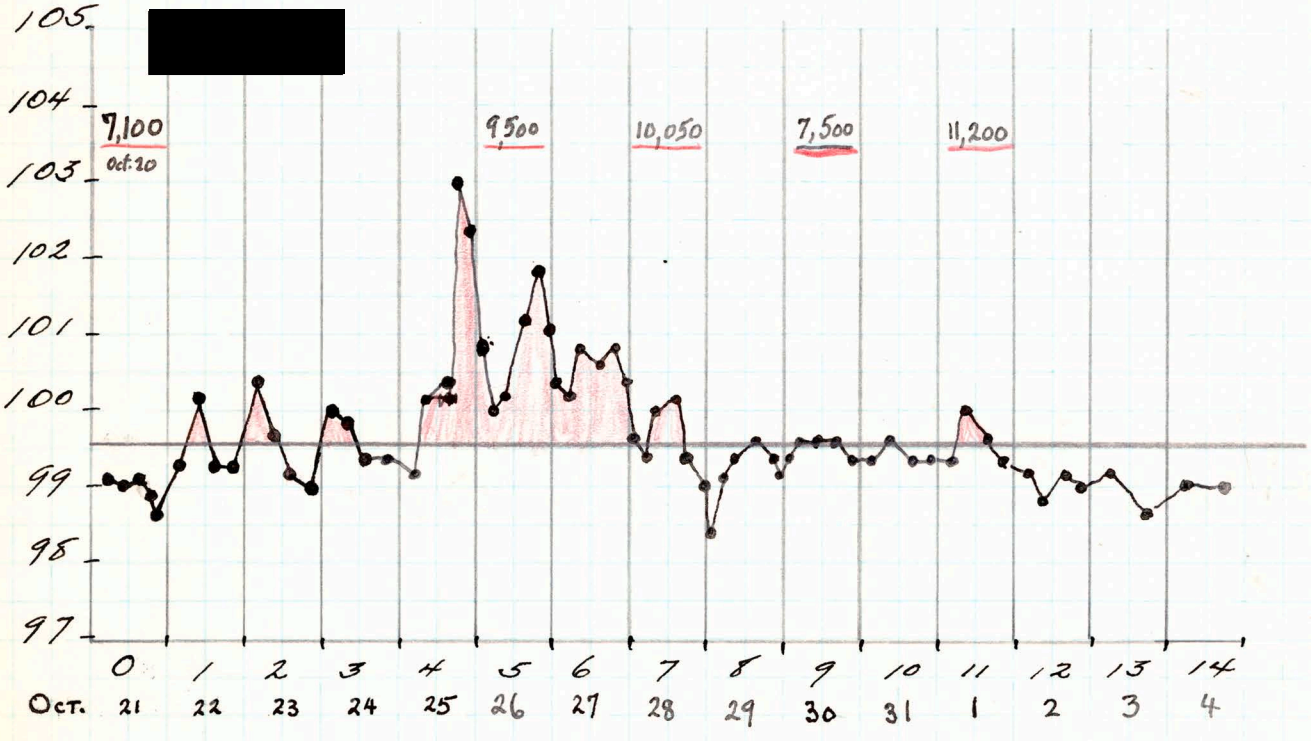
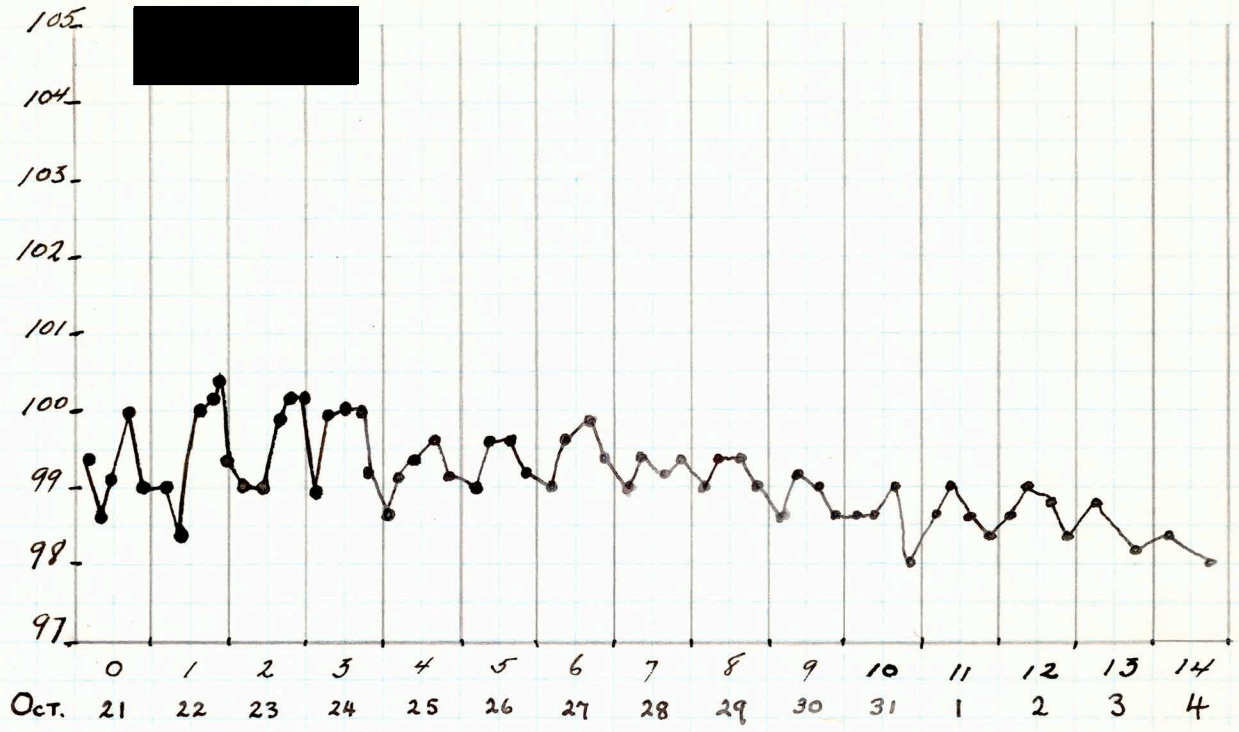
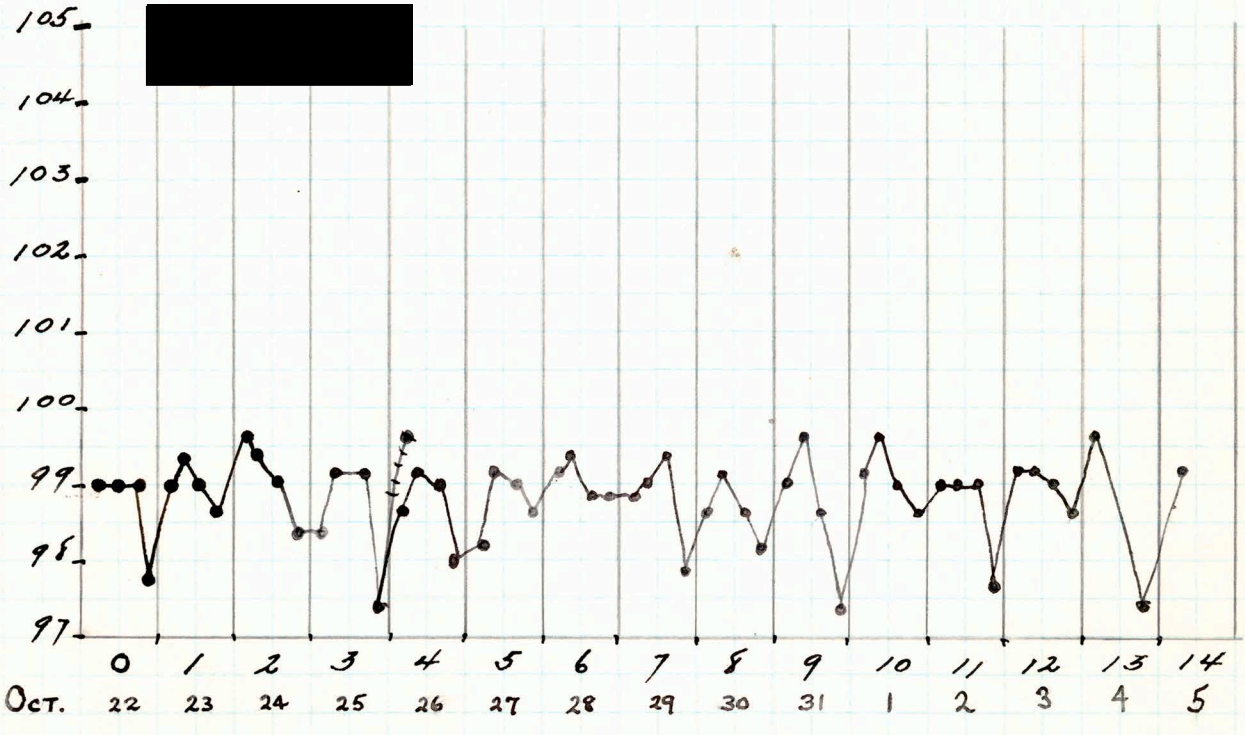


75 mμ Serum - 5cc.





50 mμ Serum – 10 cc

Oct. 21, 1943

Pathogenicity of Sicilian Virus for Rhesus Monkeys Cotton Rats and Mice

Monkeys – Small rhesus weighing less than 7 lbs.

Virus – Pool of 4 acute experimental sera used on same day in ultrafiltration tests, and tested in human subjects.

Inoculation – Each monkey was inoculated as follows: (4 P.M.)

1cc i. cer.

0.1cc i. cut. in right upper abdom. quadrant

0.9cc subcut. } in R L Q
4.0cc i.p. }

Cotton Rats

0.05cc i cer
0.3cc Subcut.
0.4cc i.p

		10/22	23	24	25	26	27	28	29	30	31	1	2	3	4	5
Male	1	–	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Male	2	–	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Male	3	–	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Fem.	4	–	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Fem.	5	–	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Fem.	6	–	O	O	O	O	O	O	O	O	O	O	O	O	O	O

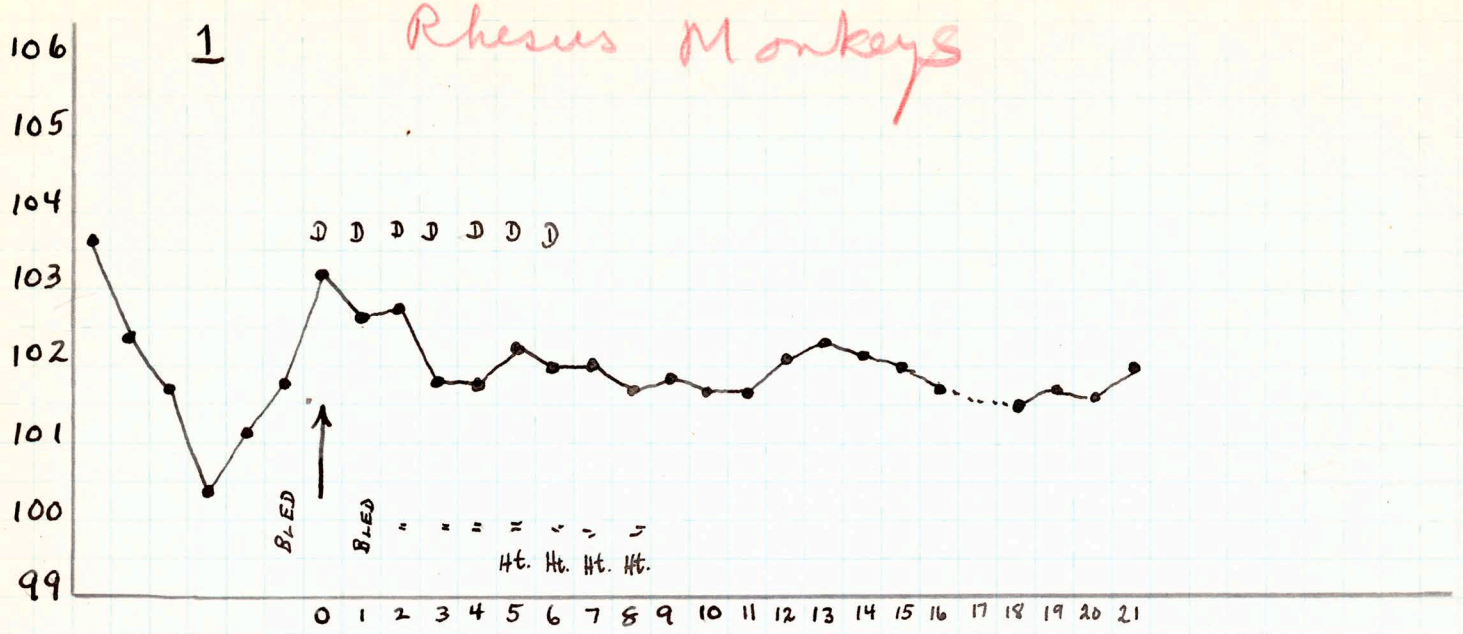
Mice

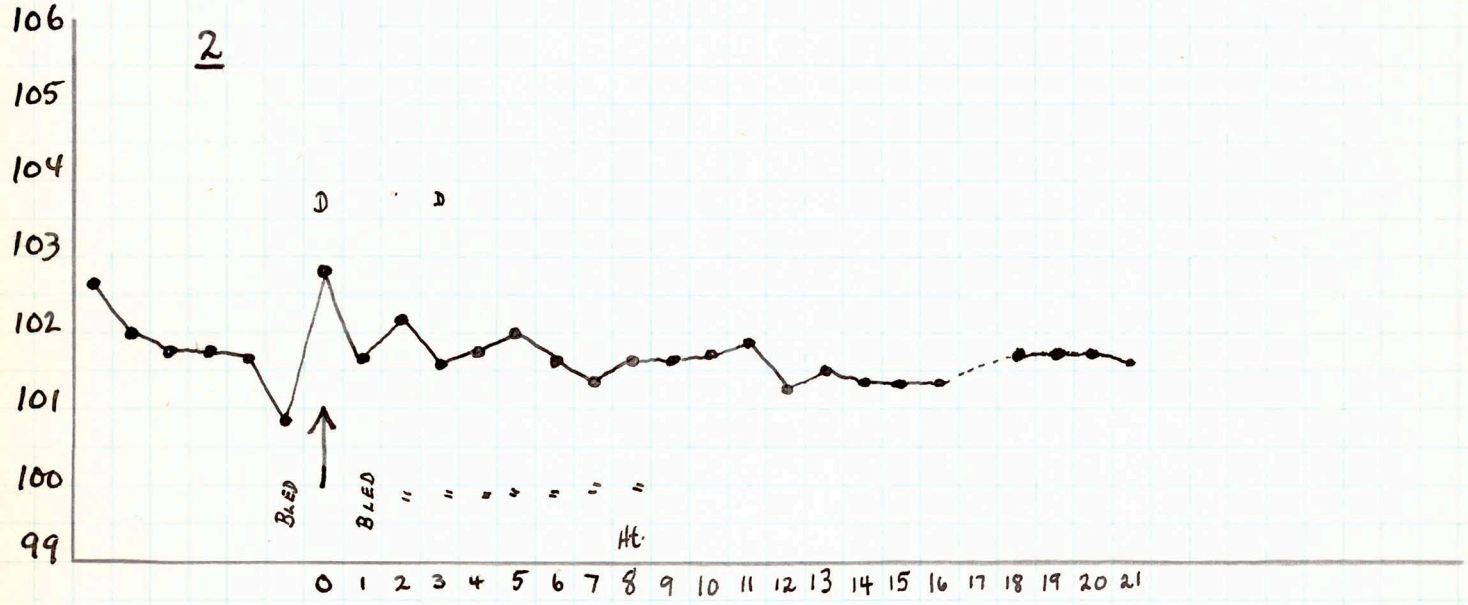
16 day old

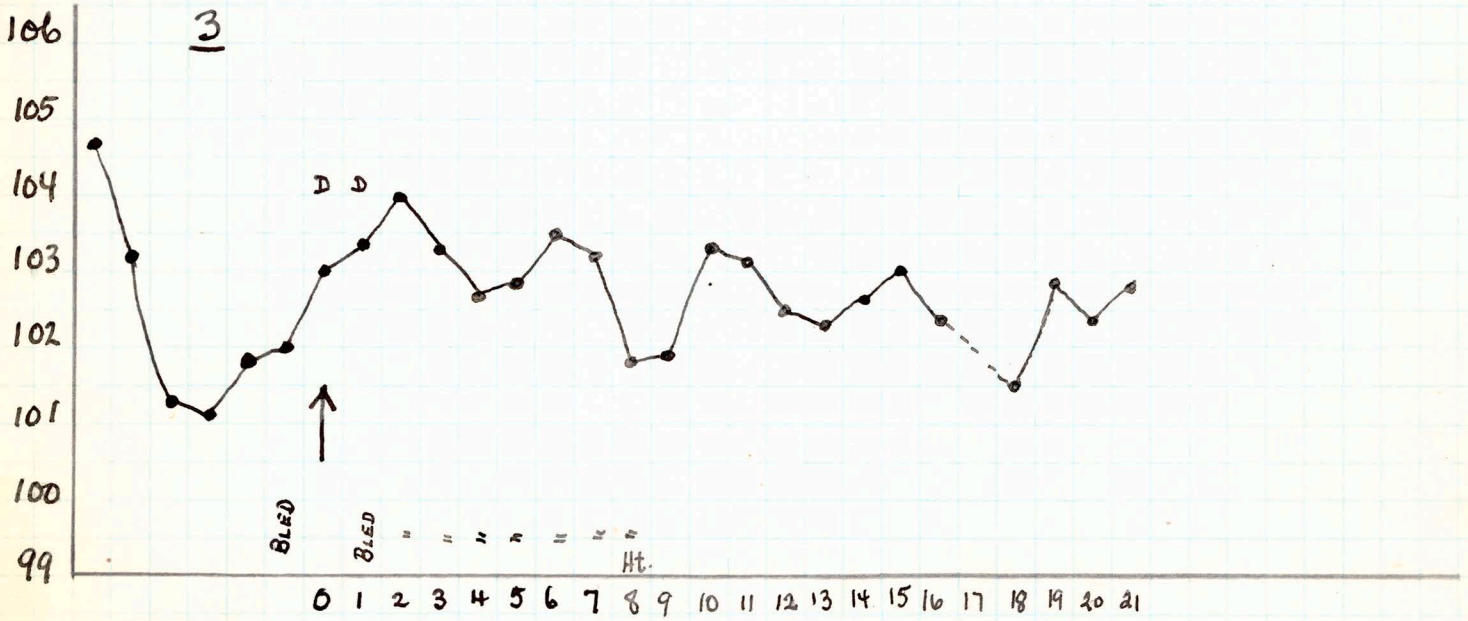
0.03cc i cer
0.4cc i.p.

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

Rhesus Monkeys







Oct. 14 15 16 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

Sicilian Virus

Nov. 1, 1943

Purpose – to determine whether passage of virus from human to human by means of serum inoculation results in attenuation of virus.

Reason – in the filtration experiment the unfiltered centrifuged virus failed to produce the disease in 2 subjects. The virus ~~was~~ must have been present since at least one of the subjects inoculated with the 770 mμ filtrate developed the typical disease. The following questions were raised:

1) Could the previous treatment have modified the response to the virus?

An analysis of the records of these patients did not lend support to this

2) Is there great individual variation in susceptibility?

3) Is the virus becoming attenuated?

The following preparations were inoculated into each of 2 volunteers:

Original – serum from cases occuring in nature (Sicily) Carr and Datoush sera thawed second time and 1.1cc removed from each for pool

1st passage – Irvin, Walters, Riggs, Morse – who developed exp. disease after inoculation with "original" serum – sera thawed first time – 0.6cc from each mixed to form pool

2nd passage – Auer's serum – developed exp. disease after inocul. with 1st passage – 770 mμ filtrate 5cc of 1:5 dilution of serum.

Inoculations – Each subject received

0.2 cc intracut. on flexor surf. of right forearm
0.8cc subcut. in right arm.

All inoculated between 2⁰⁰ and 2¹⁵ P.M.

Original — [redacted] — White male — 52
— White female — 45

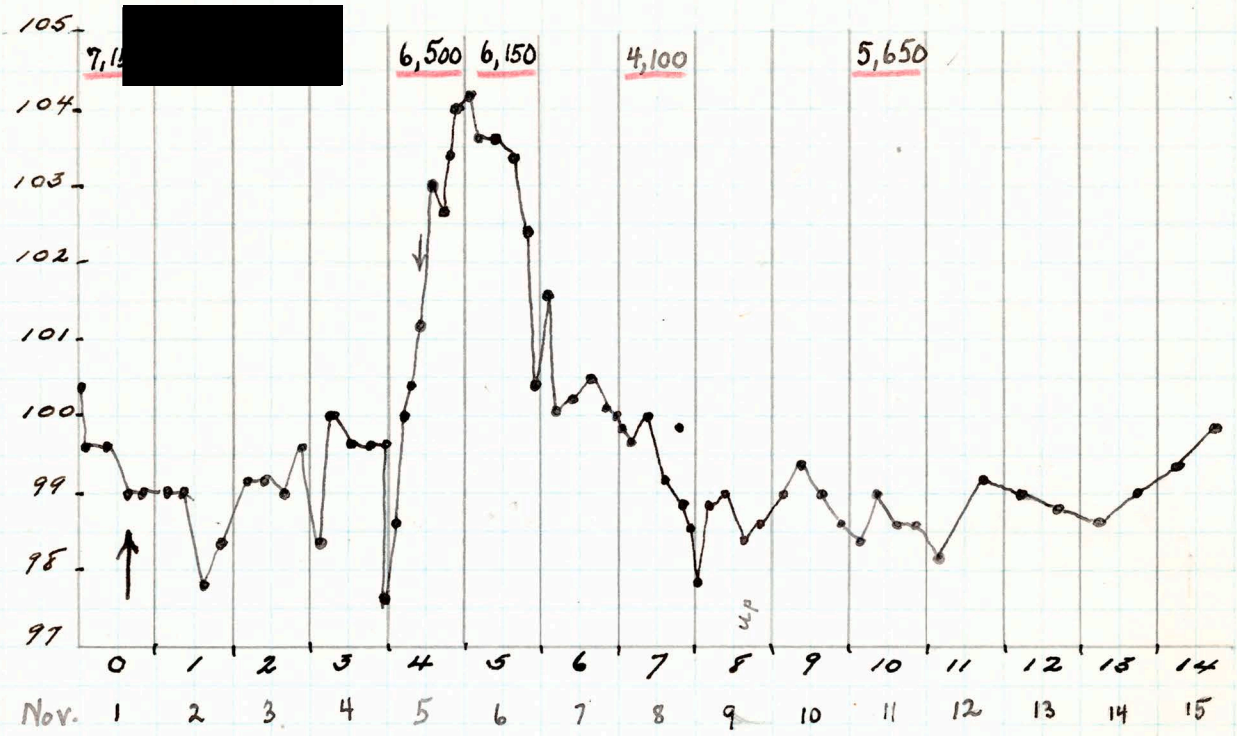
1st passage — [redacted] — White male — 48
— White female — 46

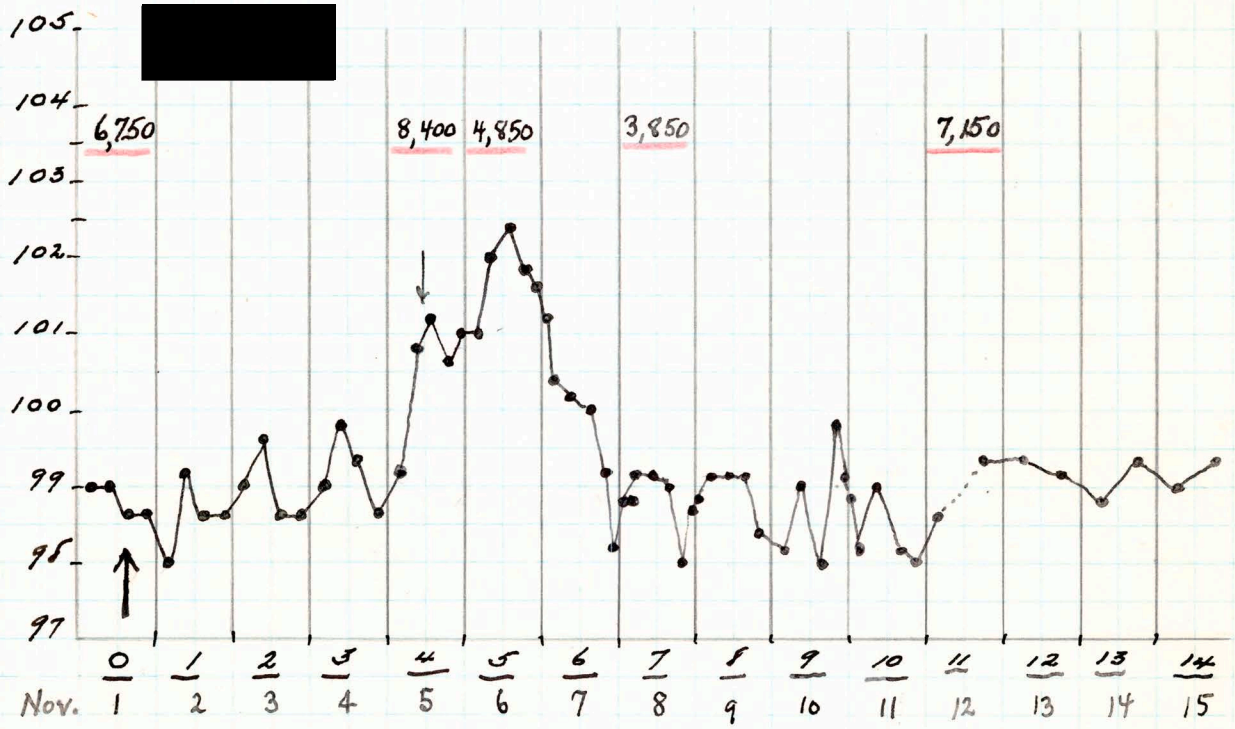
2nd passage — [redacted] White male — 41
White female — 48

Reactions to Intracutaneous Injection to 0.2cc of Above Sera

24 hours — all completely negative
48 " — " " "
72 " — " " "

Sicilian Virus



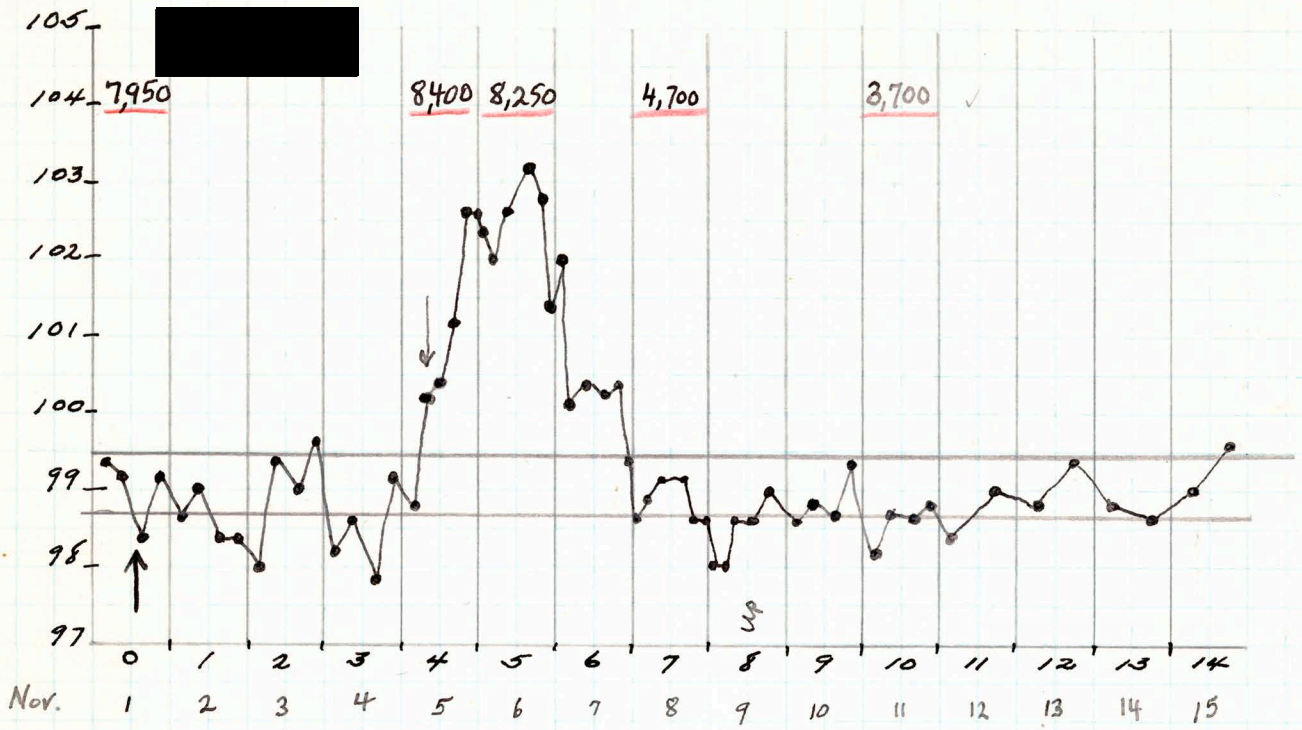


Original – 0.2 cc. i. cut.
0.8 cc. subcut.

[redacted]

Sicilian Virus

[redacted]



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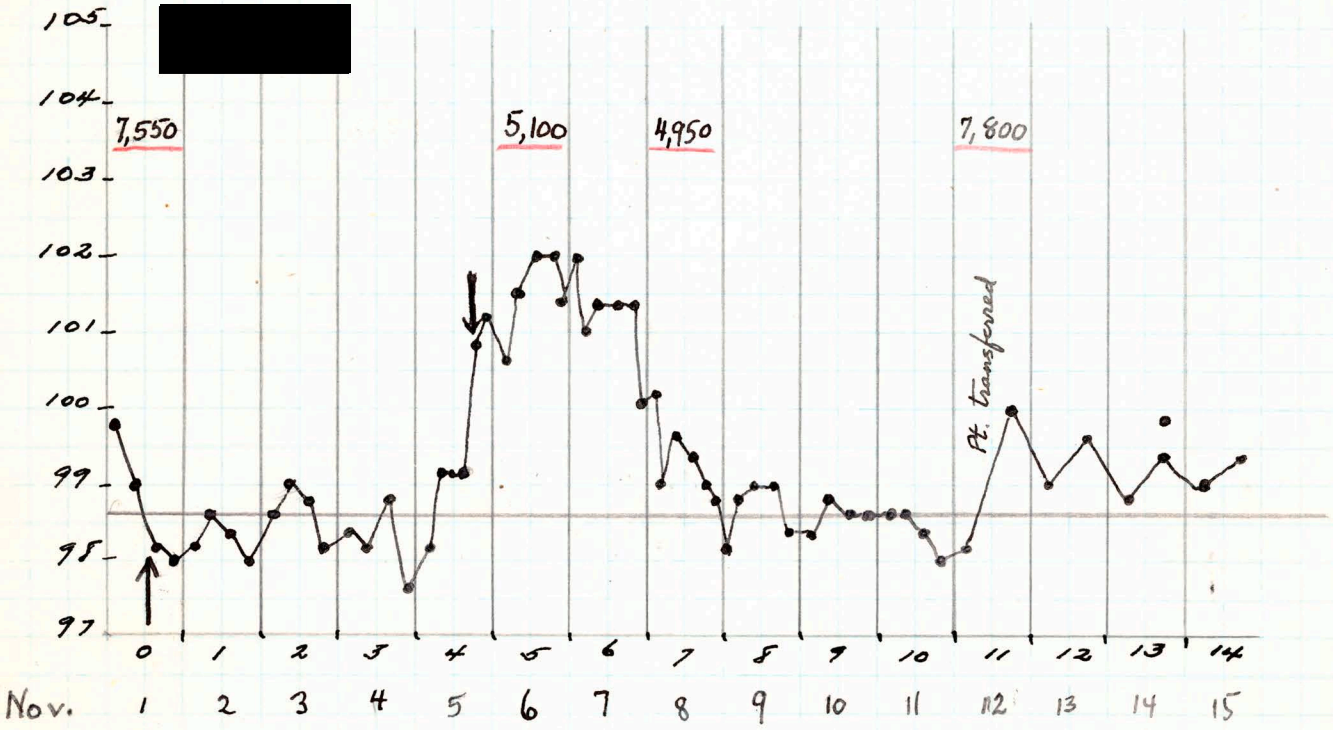
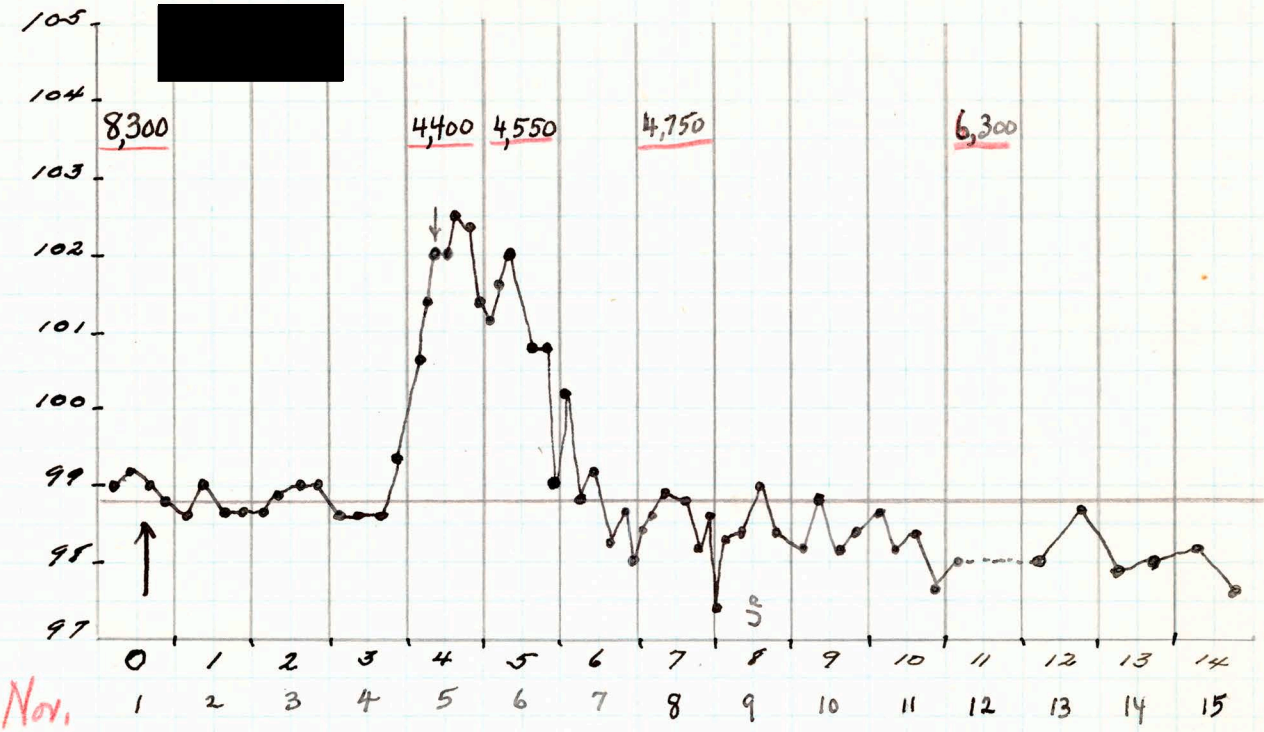


1ST PASSAGE - POOL OF [redacted]

0.2 cc i.cut.
0.8 cc subcut

Sicilian Virus

[redacted]



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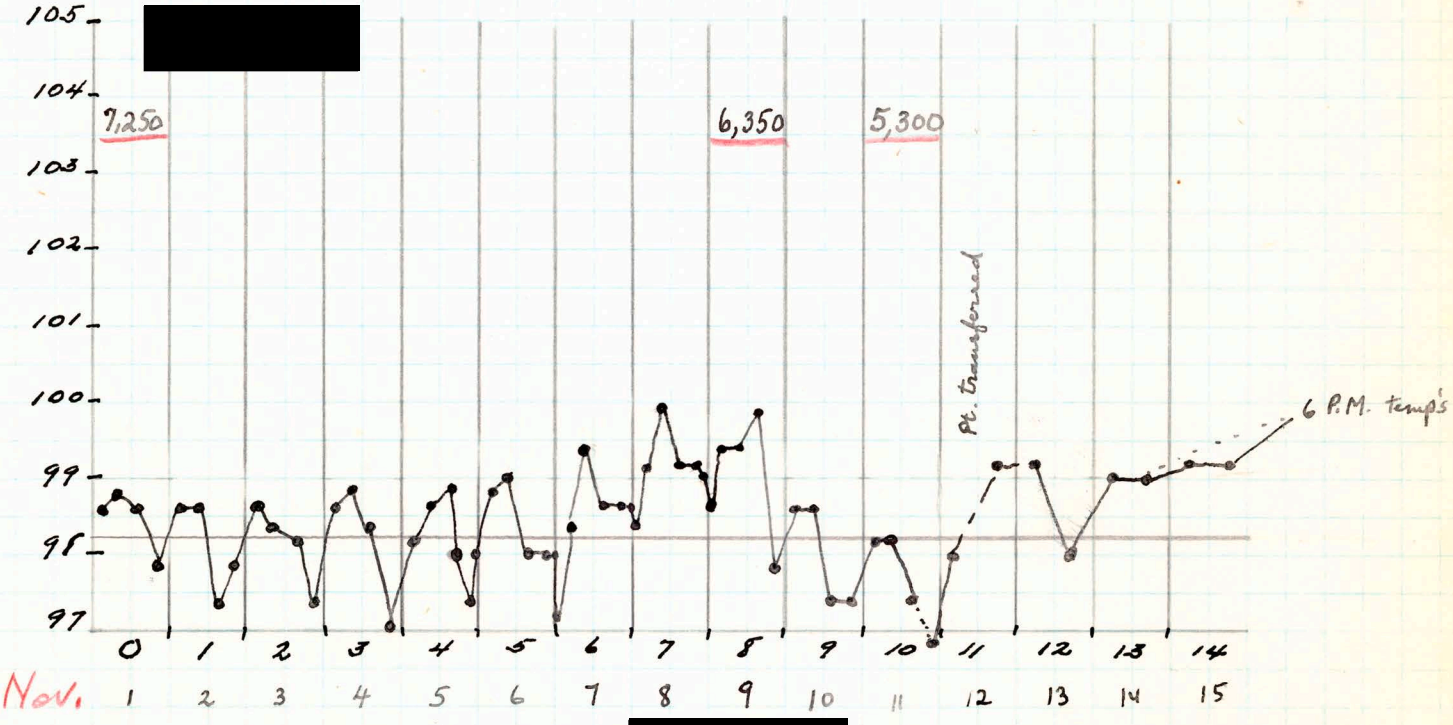


2nd Passage – [redacted] 0.2cc i.cut
0.8cc subcut.

Sicilian Virus

Nov. 9, 1943

A. Immunity to homologous virus 1 month after onset of fever

B. Influence of route of inoculation on development of disease

Virus – First passage pool made up of [redacted]

Routes of inoculation – intracutaneous – 1cc of undiluted serum intracutaneously ~~with~~ in 0.2cc amounts in 5 places on flexor surface of forearm

subcutaneous – Serum diluted 1:5 in saline 5cc of diluted serum subcut. above olecranon in arm.

intramuscular – 5cc of diluted serum into deltoid as follows: Syringe containing saline used to insert 1" 23G. needle perpendicularly into muscle – syringe was then removed and the one containing serum inserted into needle and inoculation made – syringe again removed and one c saline attached; about 0.5cc of saline injected to wash thru needle

[redacted]

Convalescents	W.M. – 41	1cc	intracutaneously left forearm
	" " – 38	"	" " "
	W.F. – 44	"	" right "
	" " – 48	"	" " "
Normal controls	W.M. – 38	"	" right "
	W.F. – 43	"	" " "
	C.M. – 43	"	(5cc 1:5) intramusc. left deltoid
	W.M. – 44	"	" " " " "
	W.F. – 42	"	" " subcut. " arm
	" " – 48	"	" " " right "

Nov. 10 – No reaction at any of the inoculated sites except in Walters who showed area of erythema 10×8 mm. at one of the 5 i.cut. sites.

Nov. 11 – all neg.

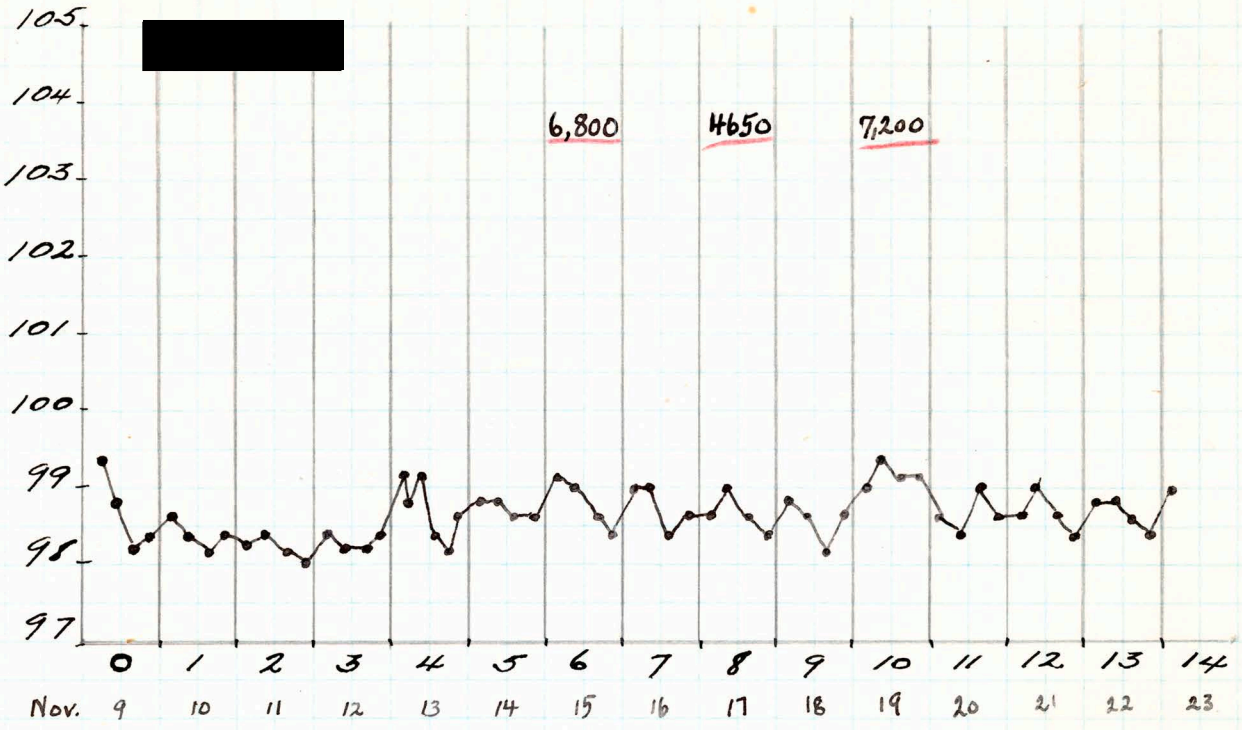
" 12 – " "

" 13 – " "

Sicilian Virus

One Month Immunity Test – Recovered Subjects

[redacted]



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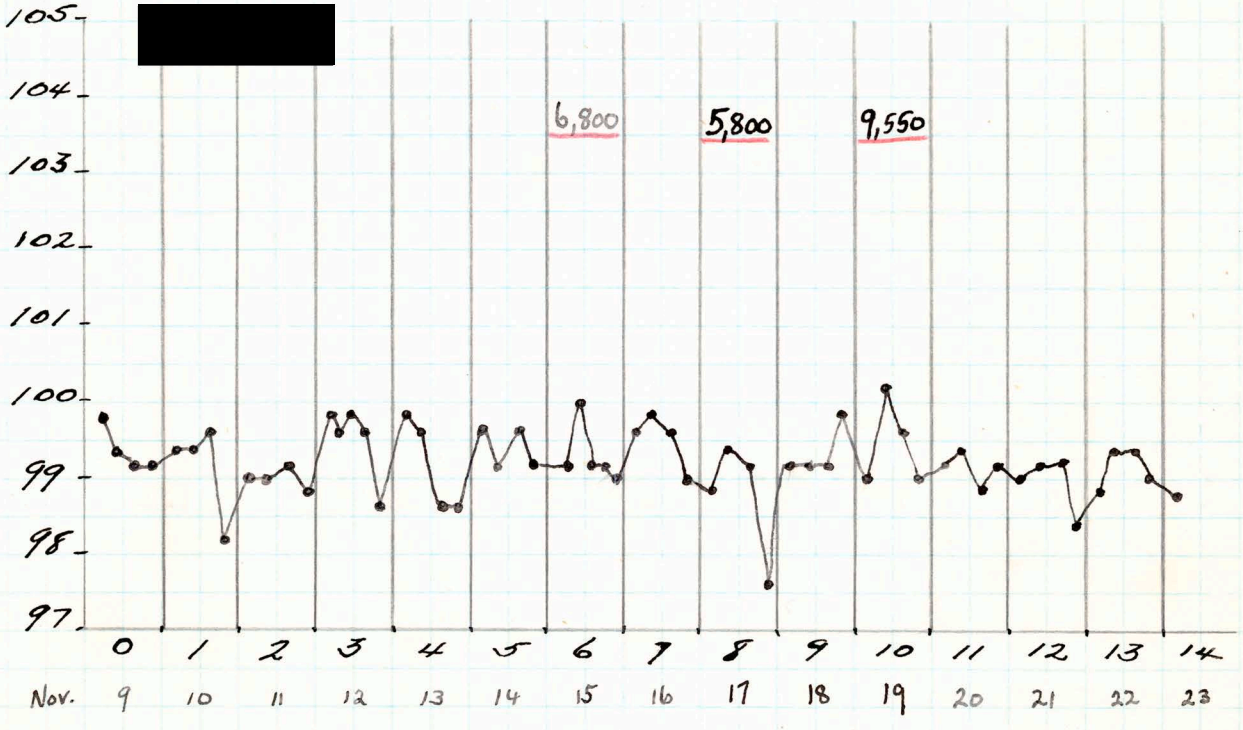
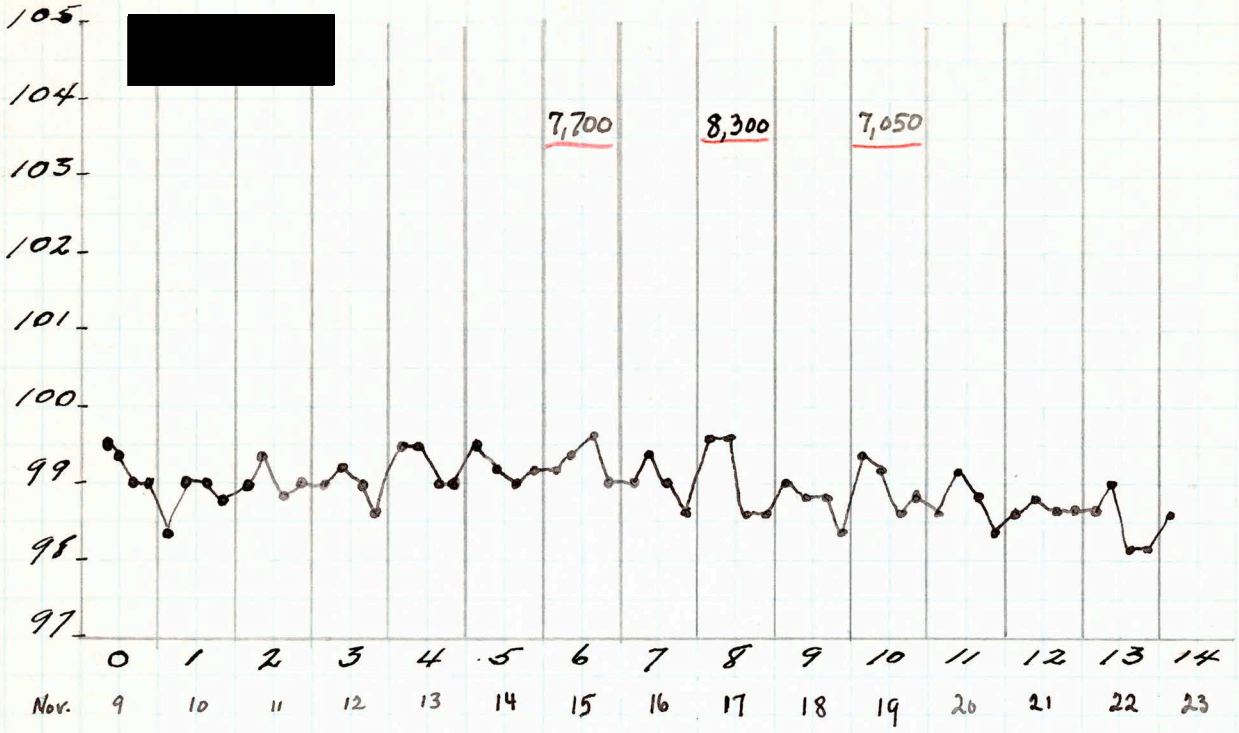
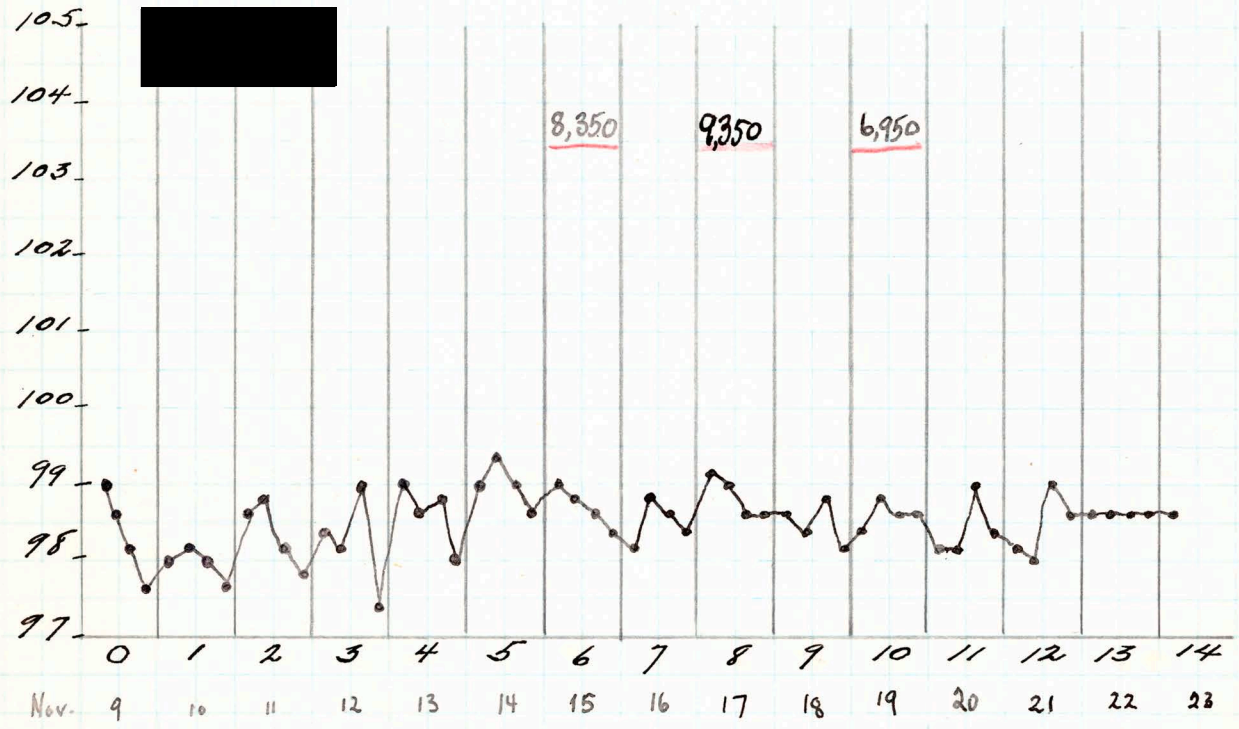


1 cc intracutaneously

First Passage Pool – [redacted]

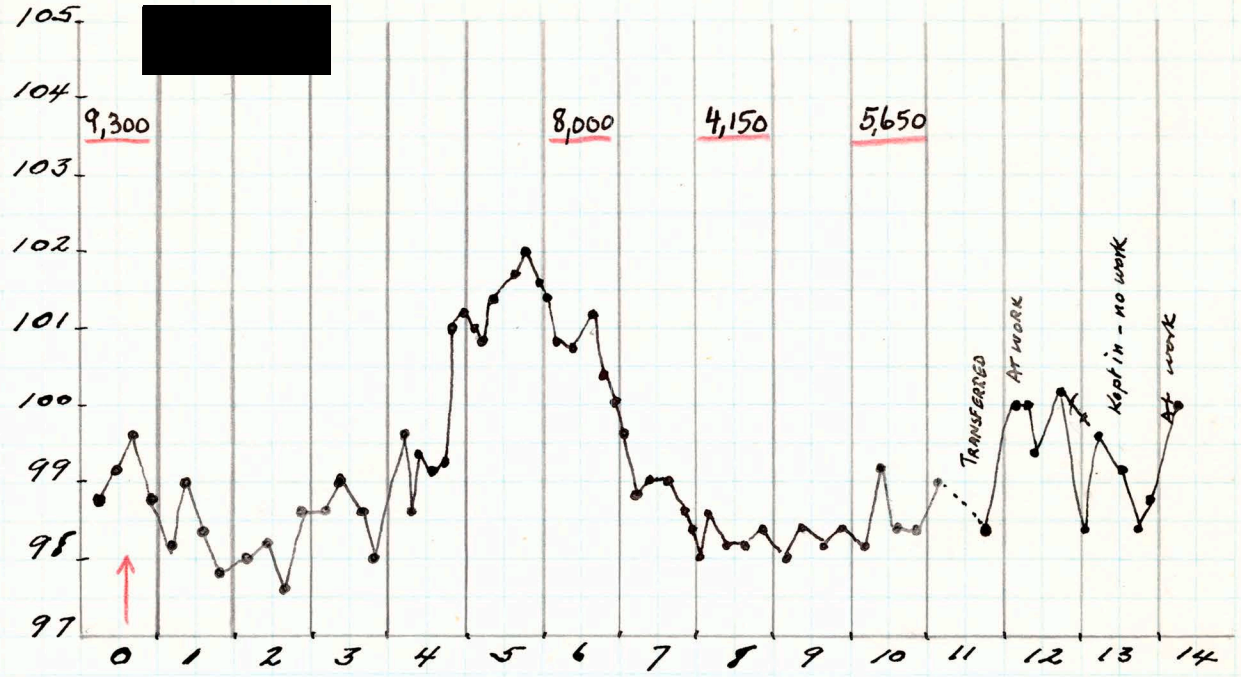
Sicilian Virus – Immunity Test – Recovered Subjects

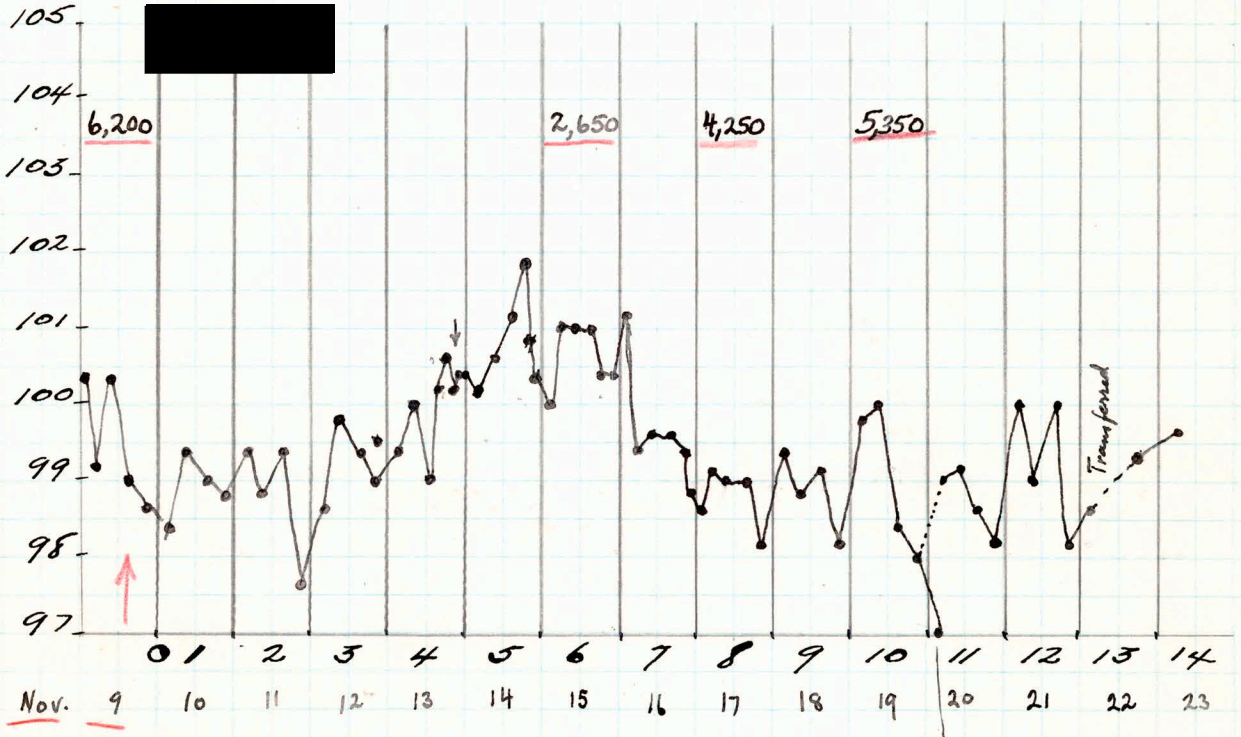




1 cc Intracutaneously

Sicilian Virus – Immunity Test – Controls



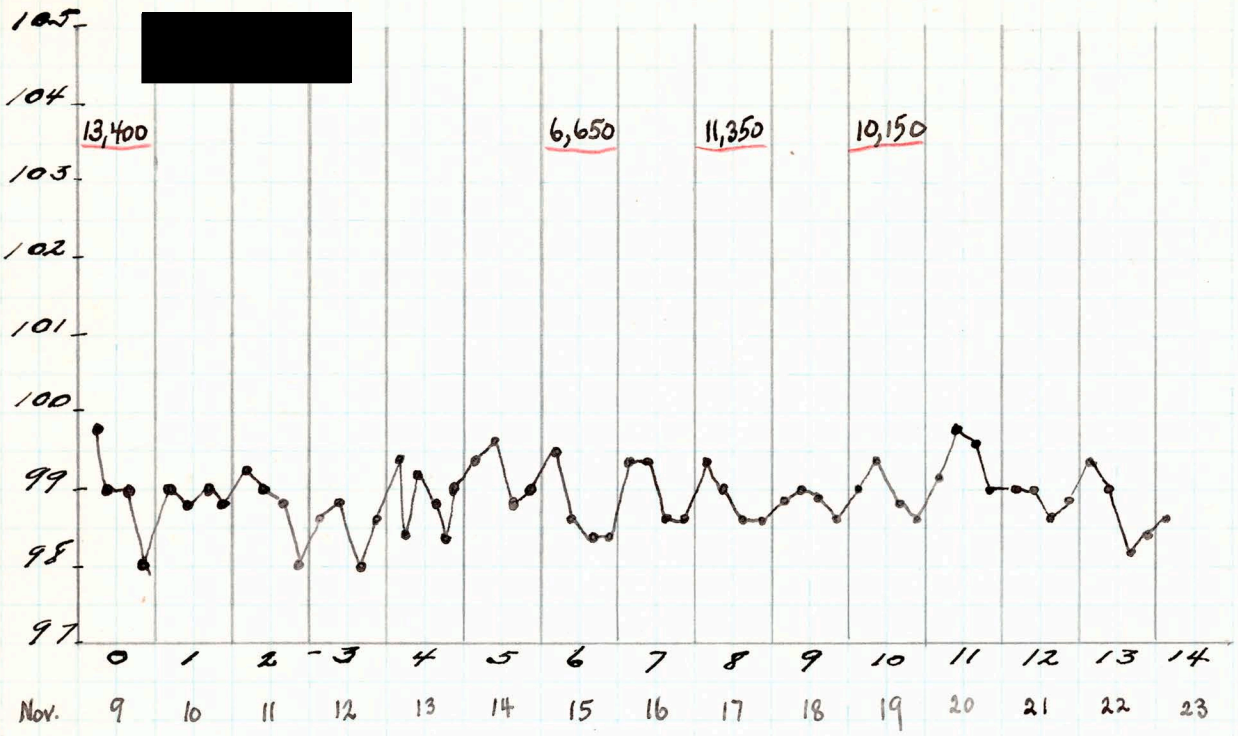


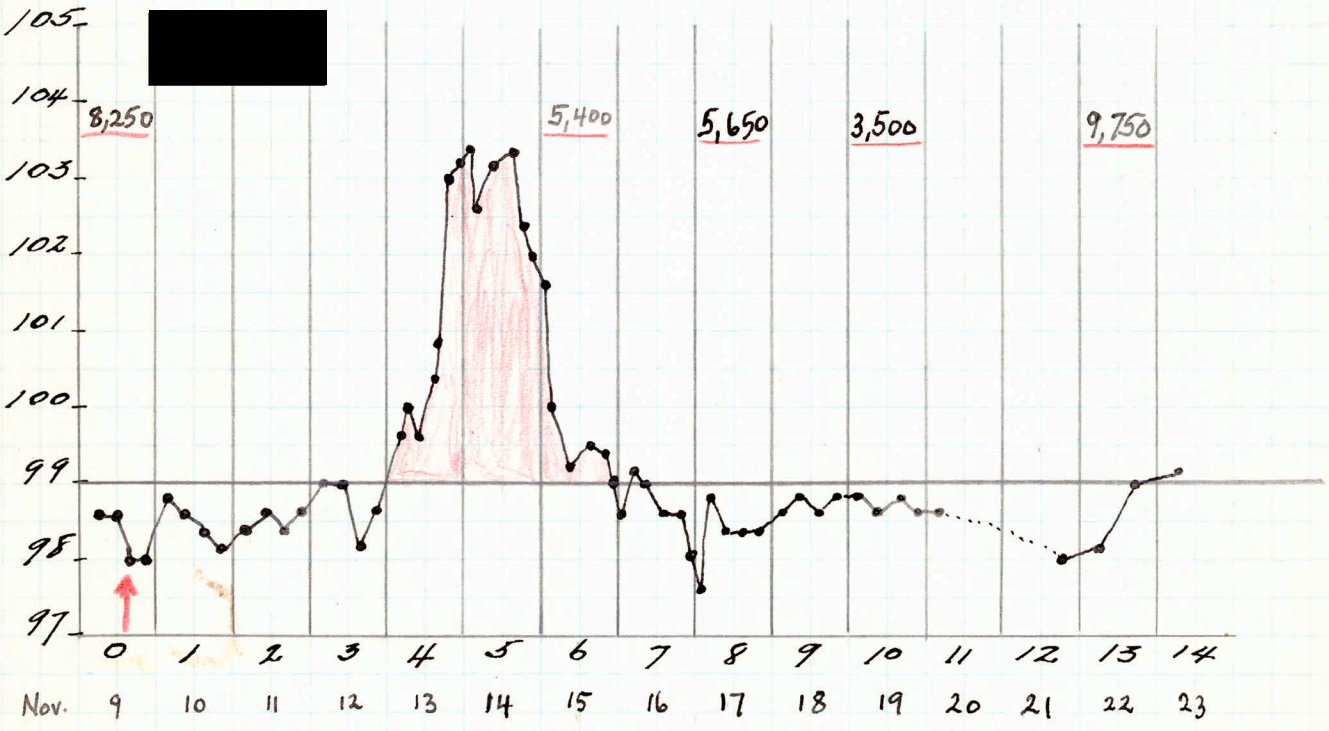
Temp. probably also influenced by activity

checked – pt. observed to pull thermometer part way out – peculiar fever curve may be due to this also

1 cc Intracutaneously

Sicilian Virus – Influence of Route of Inoculation

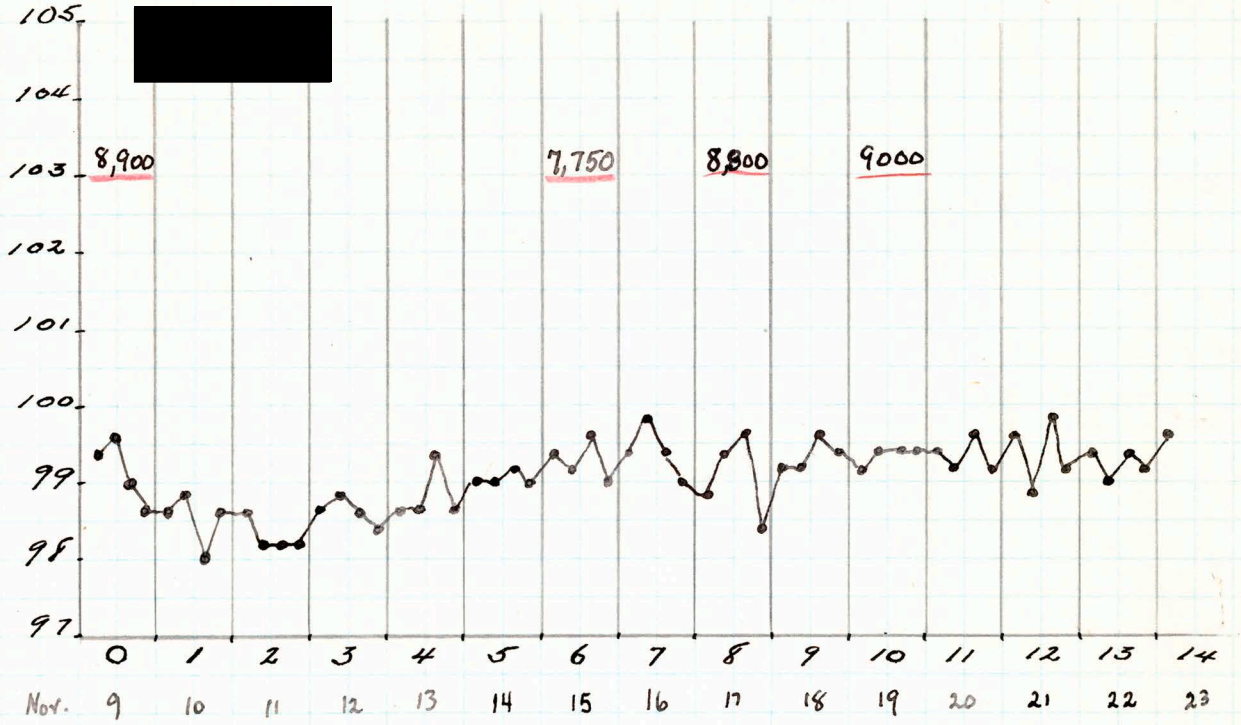


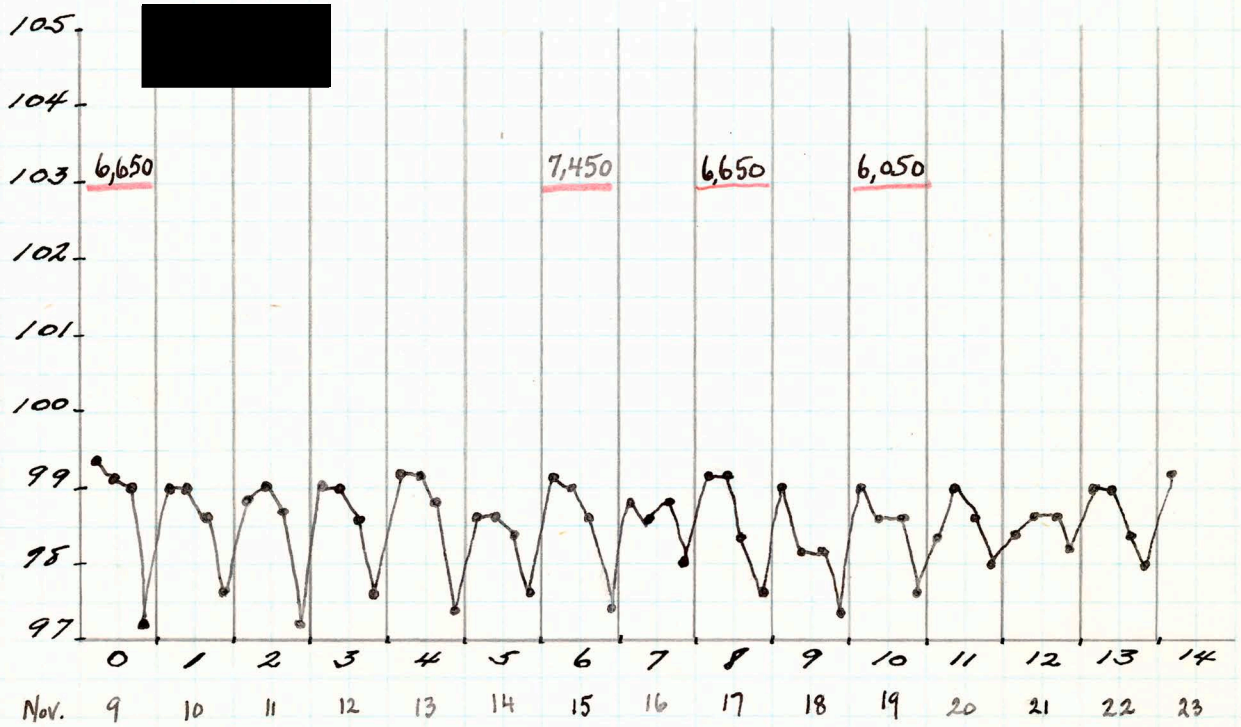


1cc (5cc of 1:5 dilution) Intramuscularly

First Passage Pool – [redacted]

Sicilian Virus – Influence of Route of Inoculation





1cc (5cc of 1:5 dilution) Subcutaneously

Nov. 30

Sicilian Virus — Cross Immunity with Middle East Virus

Immunity Following Inoculation of Diluted Virus by I.musc. or Subcut. Routes

1. Resistance of individuals recovered from and proved to be immune to the Middle East Virus to inoculation with the Sicilian Virus [redacted]
2. Does immunity follow the inoculation of an infective amount of virus by the intramuscular [redacted] or subcutaneous [redacted] routes which does not give rise to clinical manifestations of the Disease?

Virus Used — Pool of sera representing the 2nd experimental passage of the Sicilian Virus in human subjects.

Kahn - neg [redacted]

	15.0
"	21.0
"	18.0
"	17.0
"	18.2
"	23.5
	112.7

Upon mixing in flask - there was only 105.7 for distribution.
14cc. used in this experiment
91.7cc distributed - 5cc each in 18 ampules
1.7cc in one amp.
Frozen in CO_2 box.

Inoculations — 1cc intracutaneously on right forearm - 0.2cc in 5 places

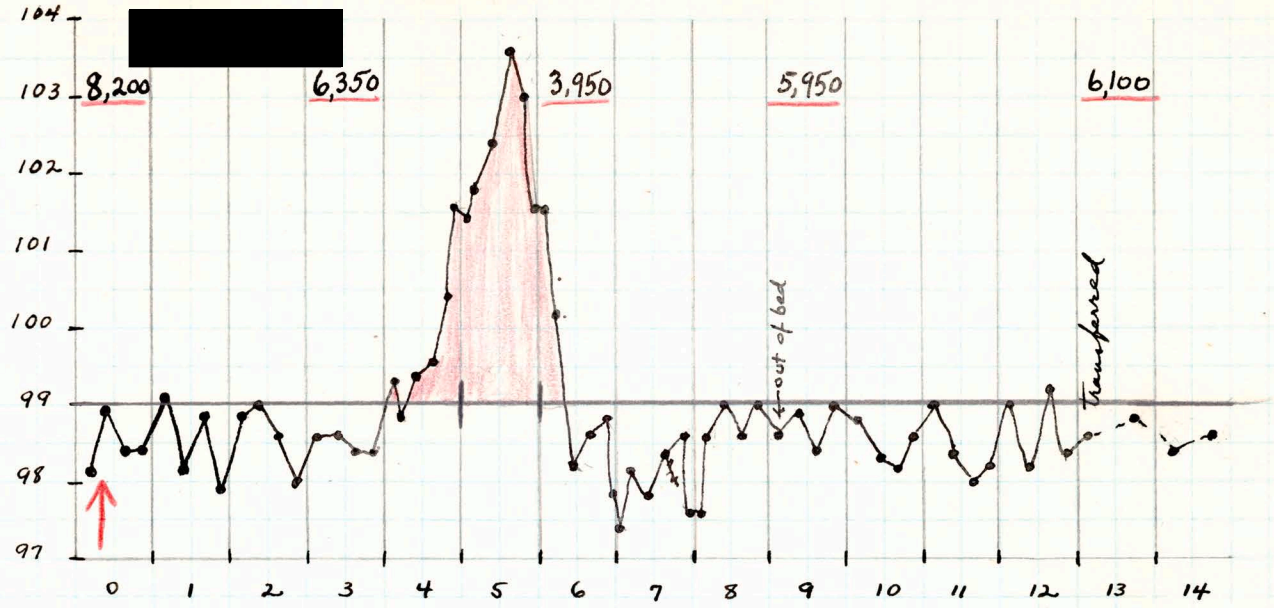
Controls [redacted] -W.M.-47
-C.F.-48
C.F.-38

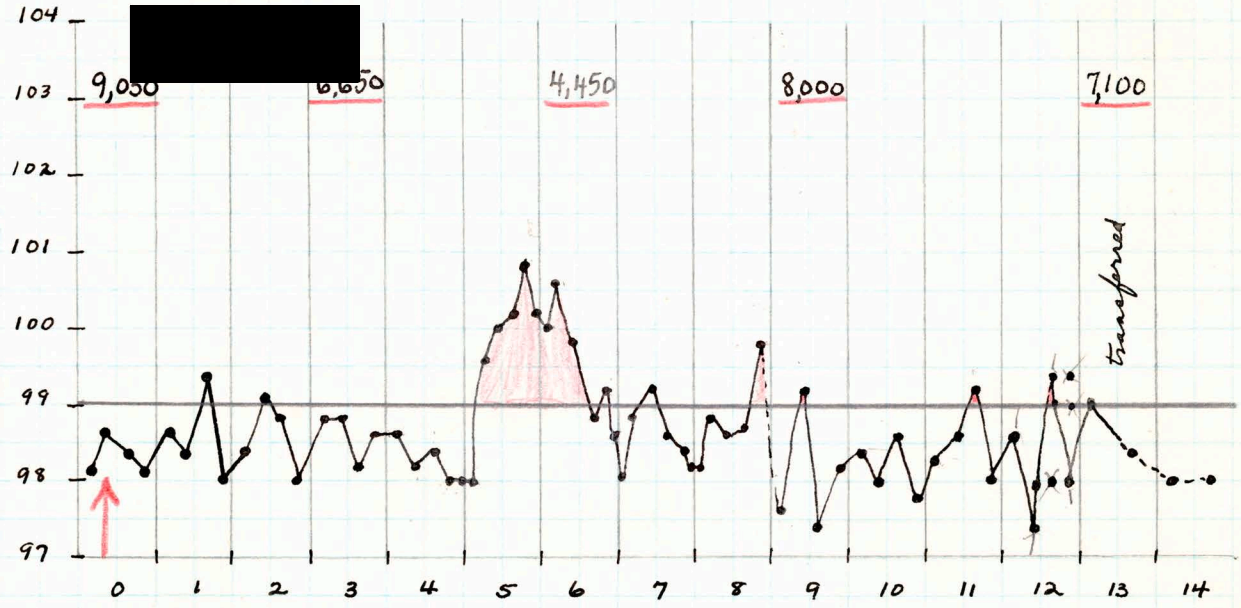
Immune to Middle East Virus { [redacted]

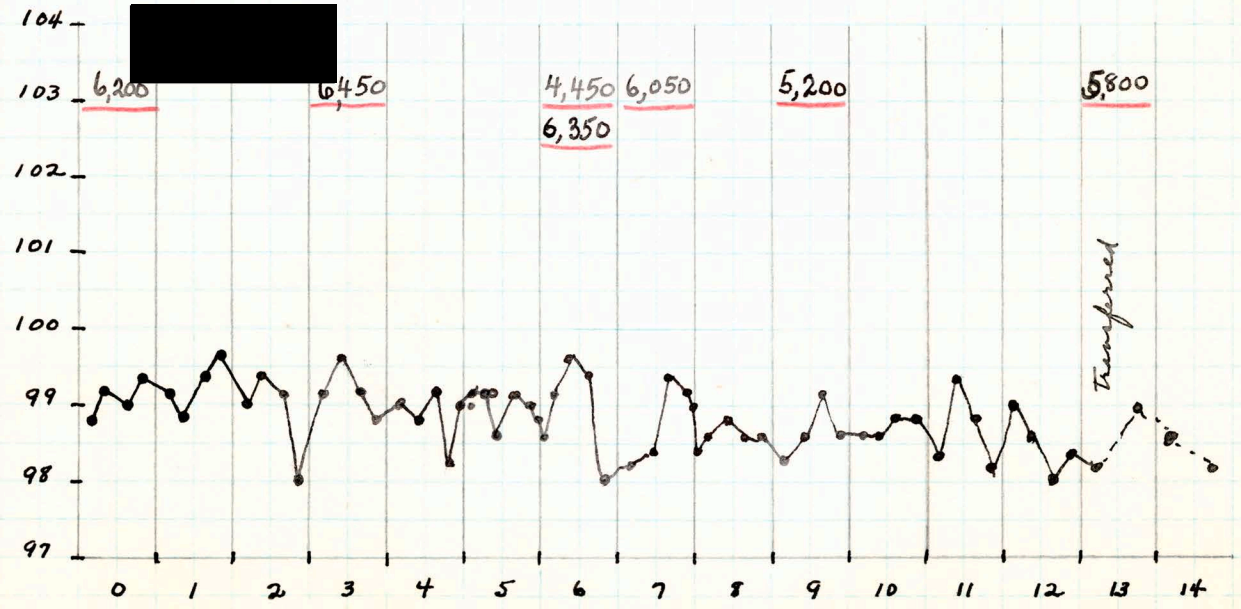
I. musc. or Subcut. Inoculation of 5cc of 1:5 virus in saline { [redacted]

Sicilian Virus - Controls for Immunity Tests

1 cc. 2nd passage pool intracutaneously



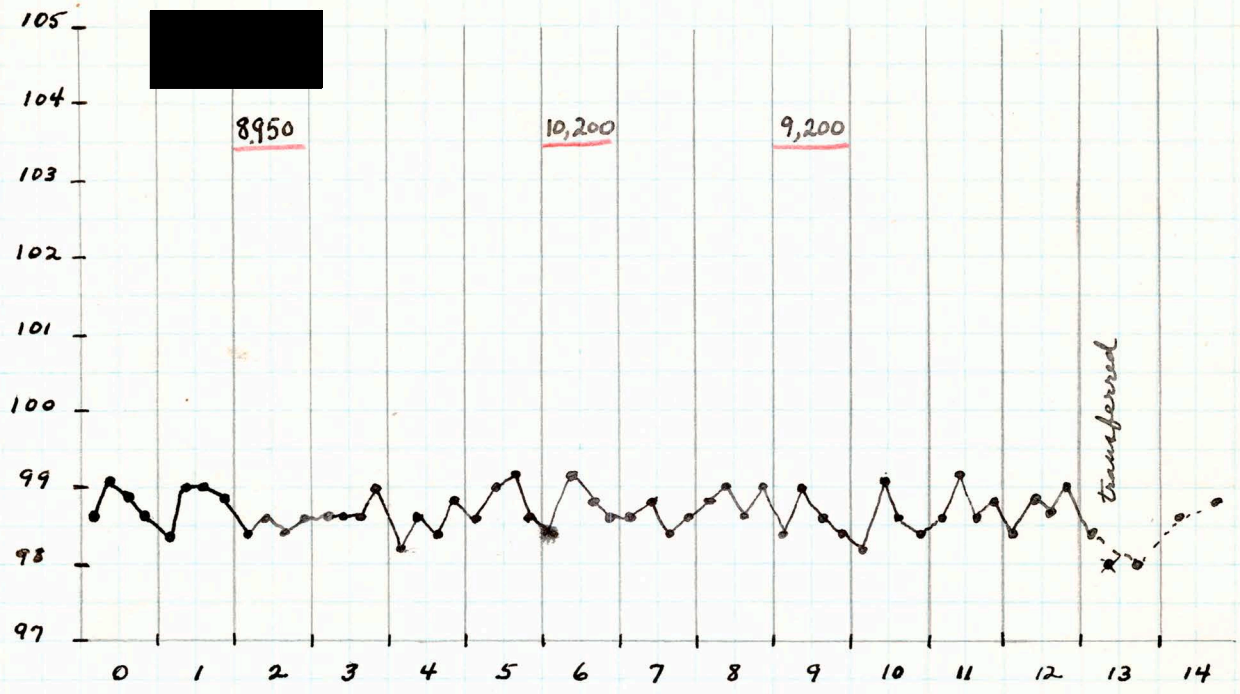


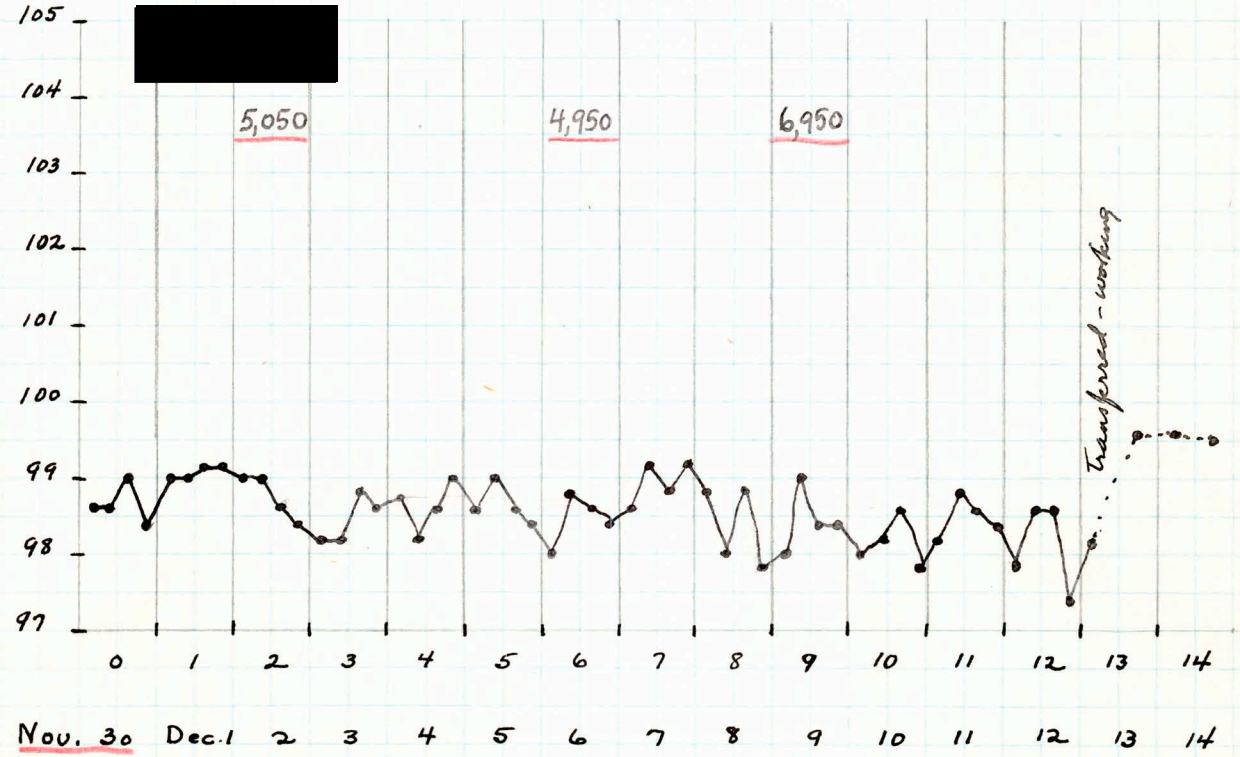


Nov. 30 Dec. 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Sicilian Virus – Cross Immunity Test

Subjects recovered from and proved immune to Middle East Virus

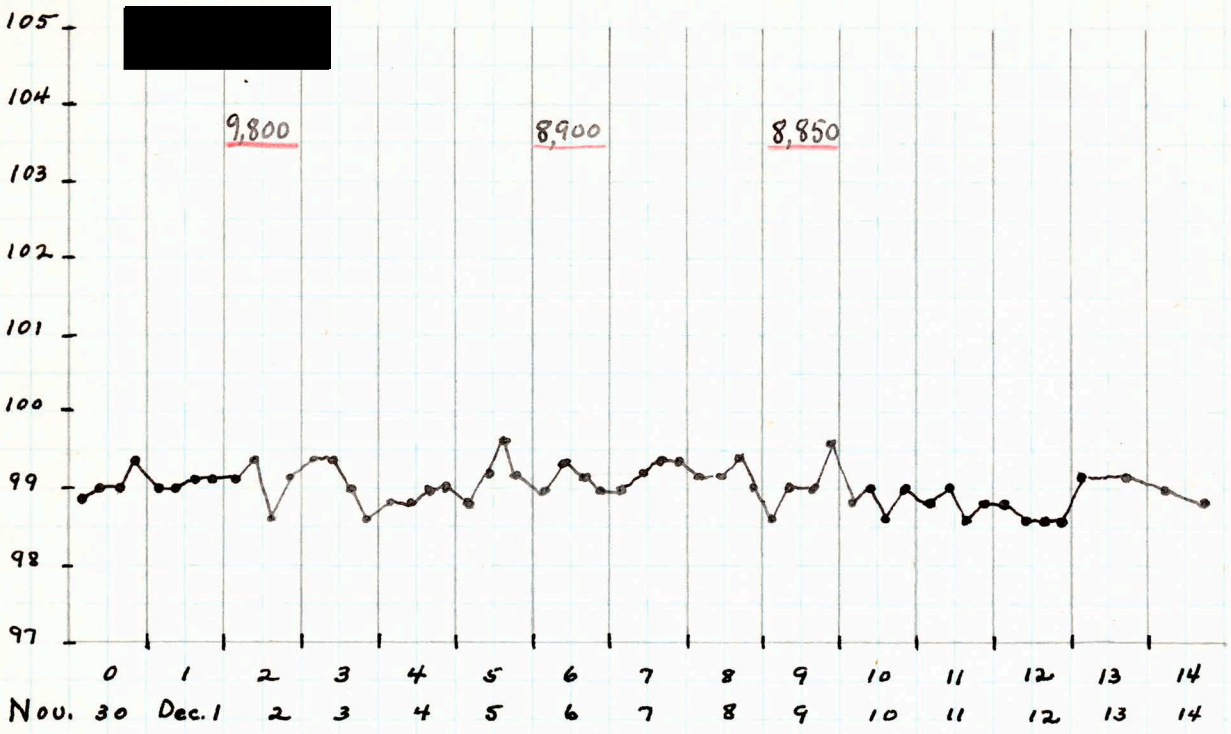


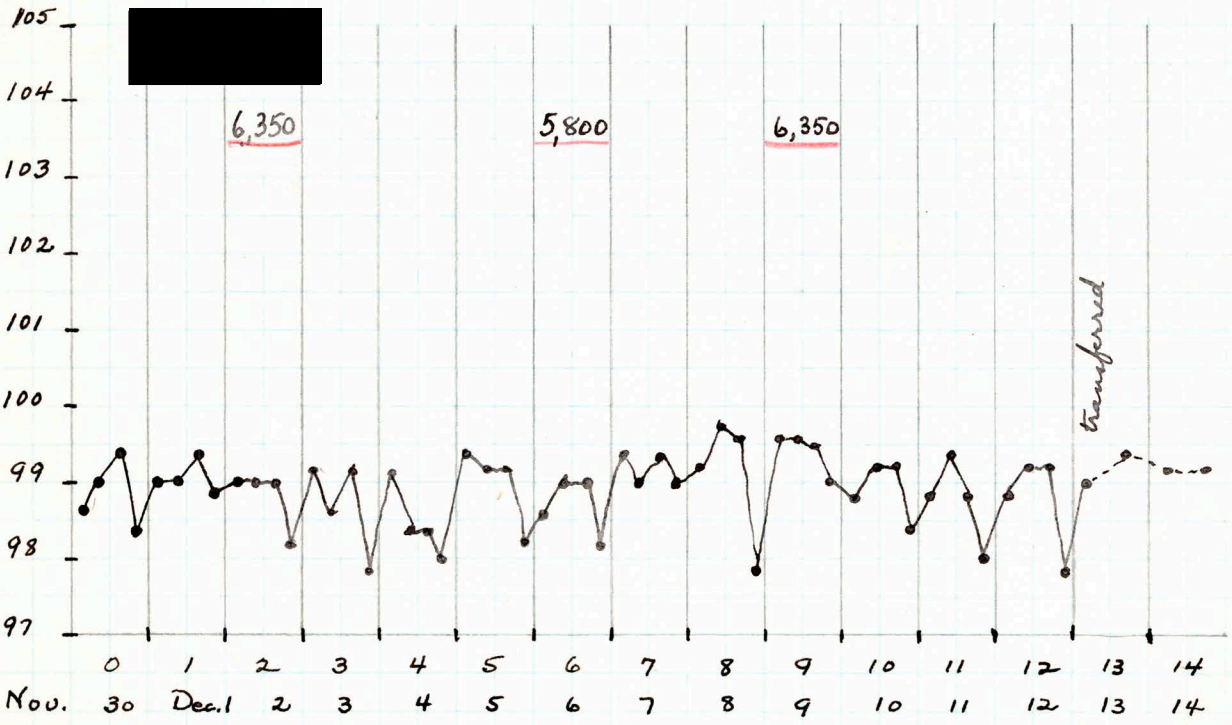


1cc 2nd passage pool intracutaneously

Sicilian Virus – Cross Immunity Test

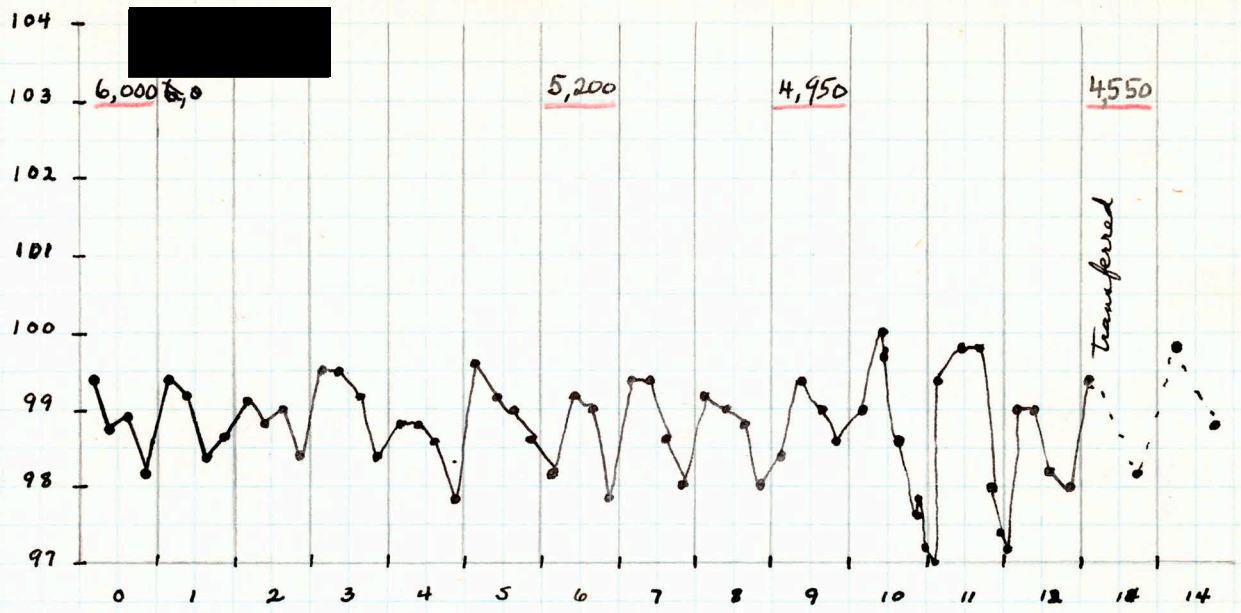
Subjects recovered from and proved immune to Middle East Virus

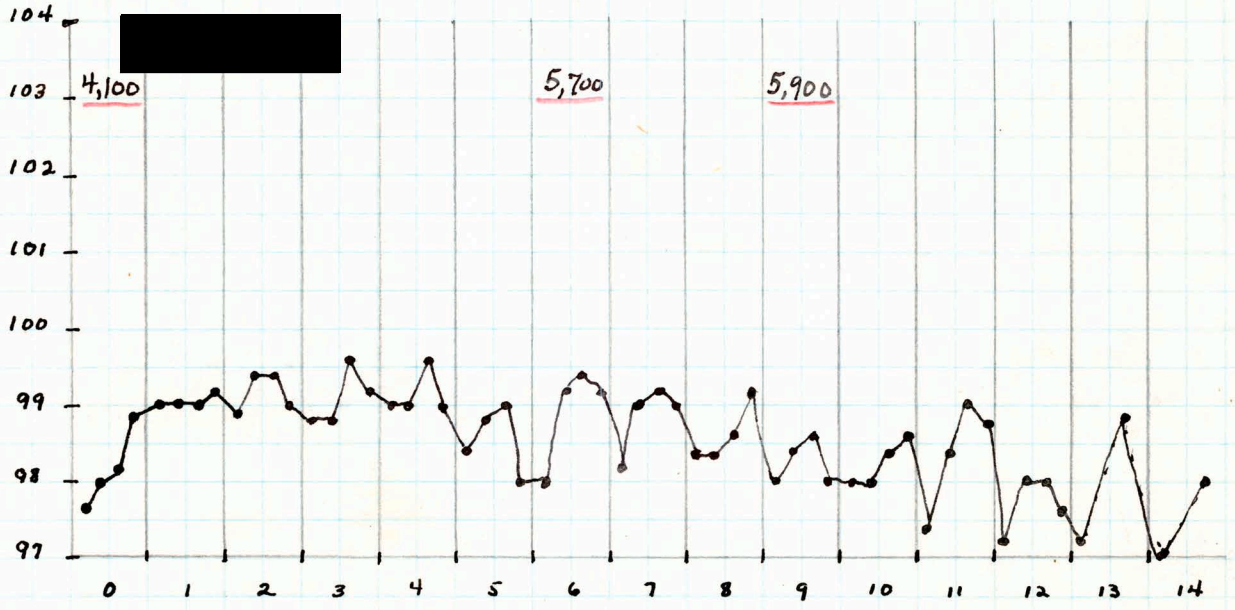


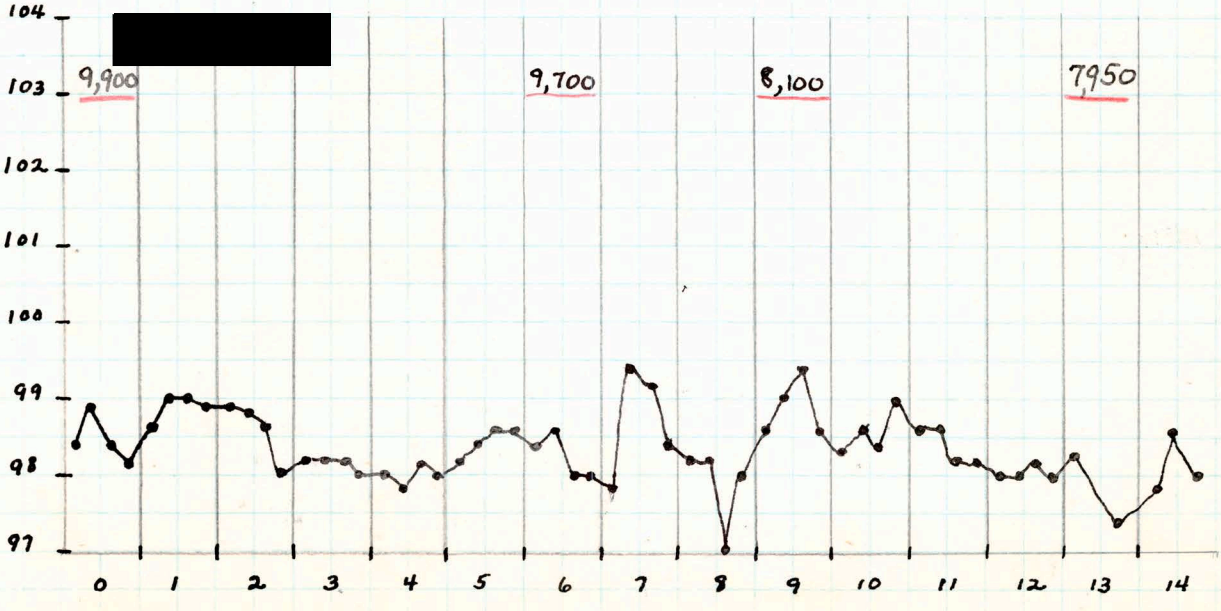


1 cc. 2ND PASSAGE POOL INTRACUTANEOUSLY

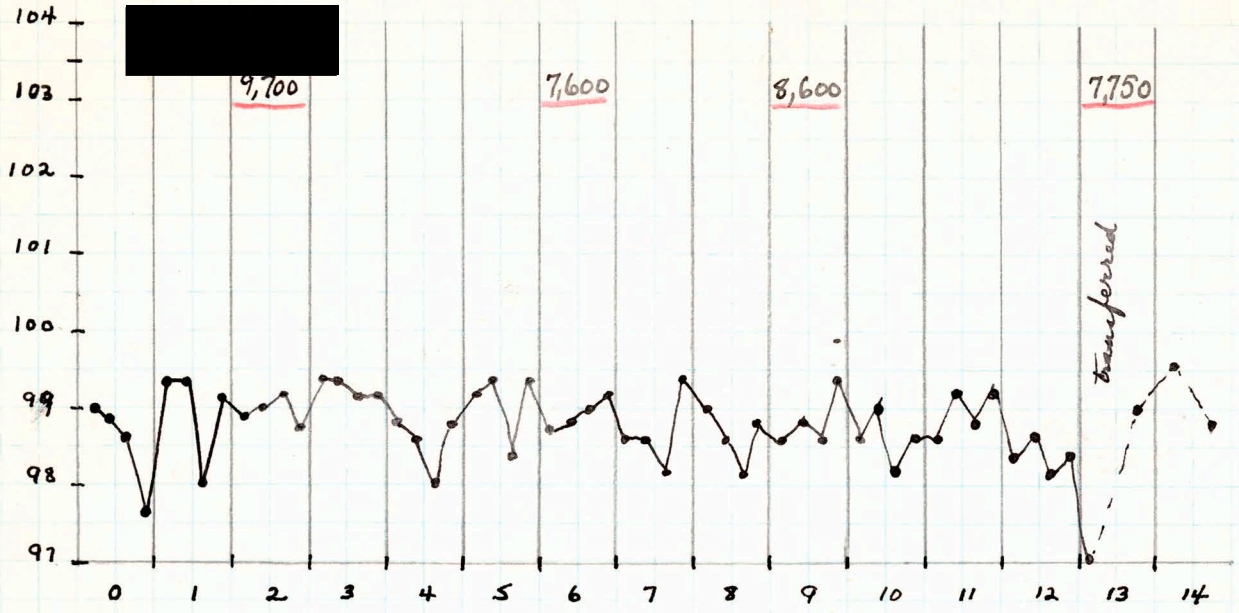
Sicilian Virus – Immunity Following Inoculation of Diluted Virus Intramuscularly and/or Subcutaneously

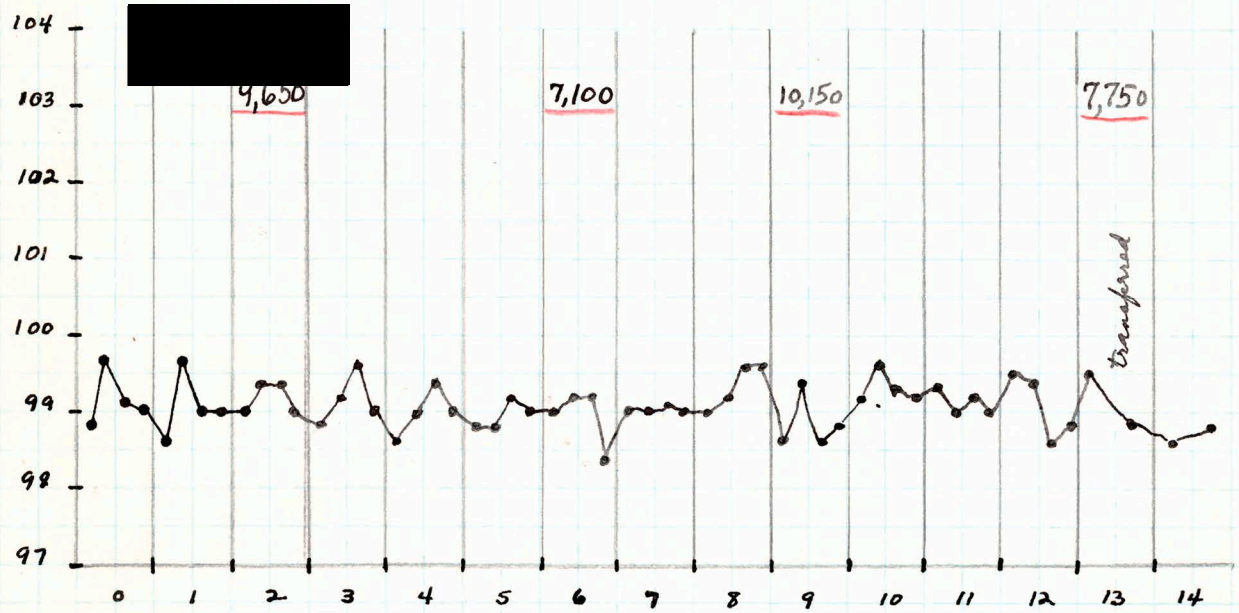


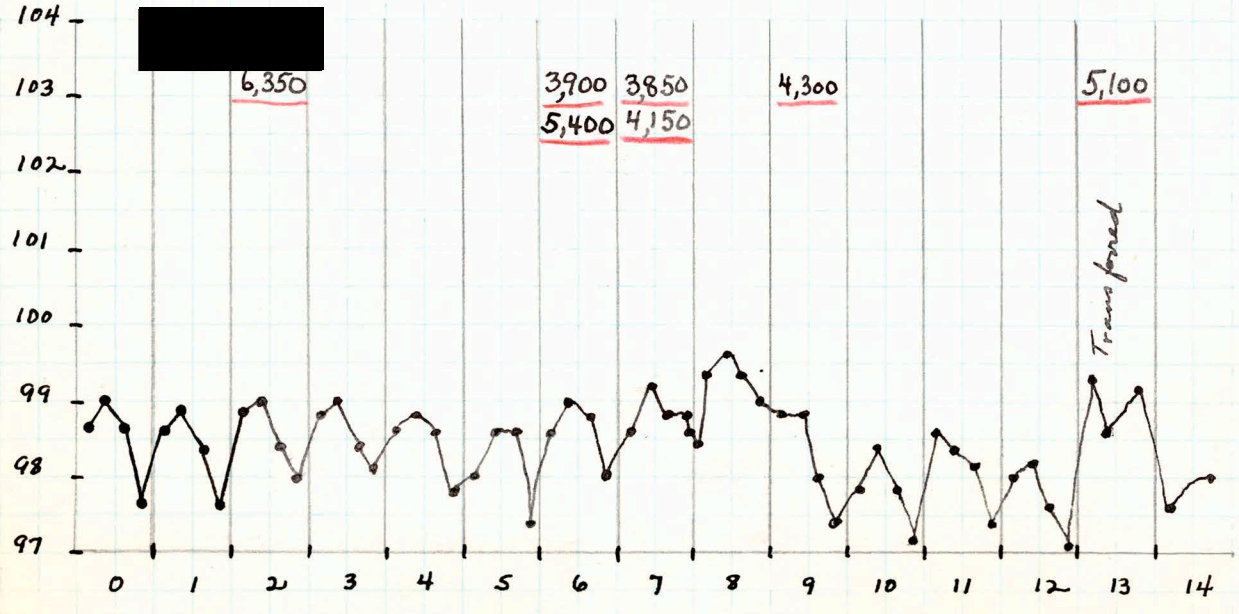




Nov. 30 Dec. 1 2 3 4 5 6 7 8 9 10 11 12 13 14







Nov. 30 Dec. 1 2 3 4 5 6 7 8 9 10 11 12 13 14

DEC. 14, 1943

SICILIAN VIRUS – 1. IMMUNITY OF INDIVIDUALS INOCULATED WITH VARIOUS GRADOCOL MEMBRANE FILTRATES

2. TO PROVIDE SUBJECTS FOR AEDES AEGYPTI TRANSMISSION EXPERIMENT

1. ON OCT. 21, 1943 the following were inoculated subcutaneously and/or intramuscularly with GRADOCOL membrane filtrates and failed to develop fever.

[redacted] – 309 mμ filtrate
– 203 " "
– 101 " "
– 75 " "
– 50 " "

[redacted] had a 3 day fever but it was associated with tonsillitis and she failed to develop a leukopenia

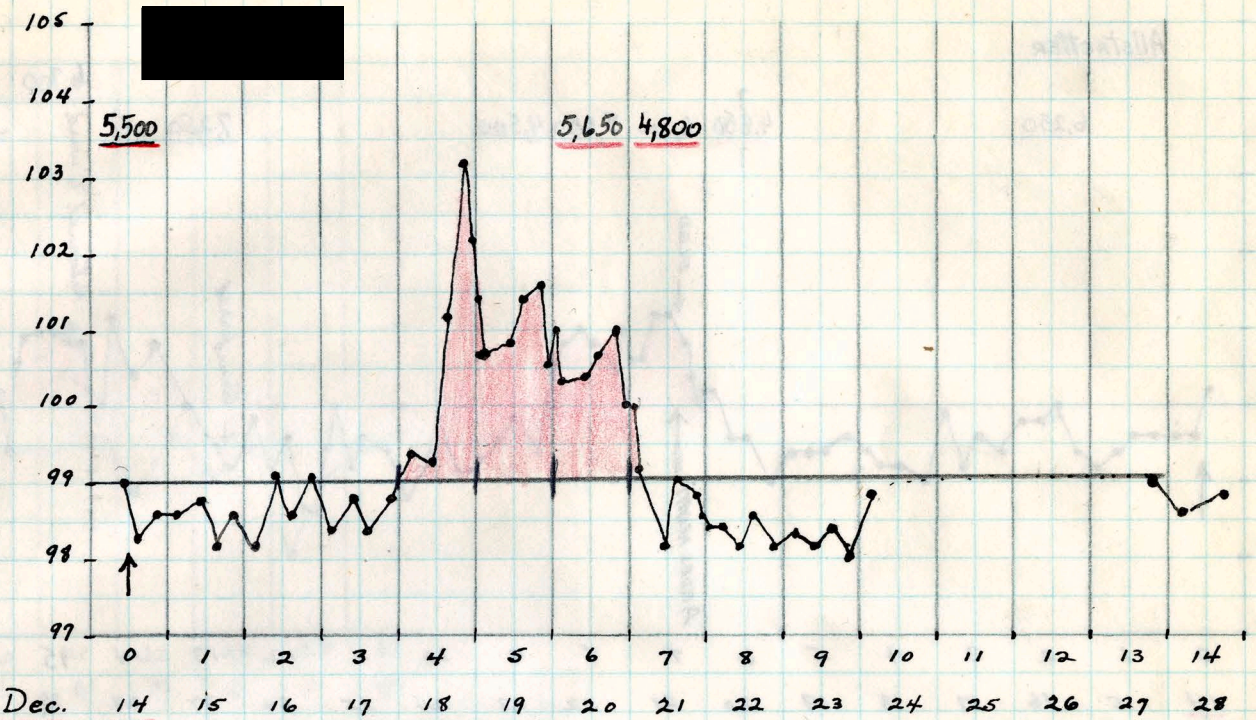
2. Controls for above – 1. [redacted] NEGRO MALE – AGE 35
2. [redacted] " " – " 45

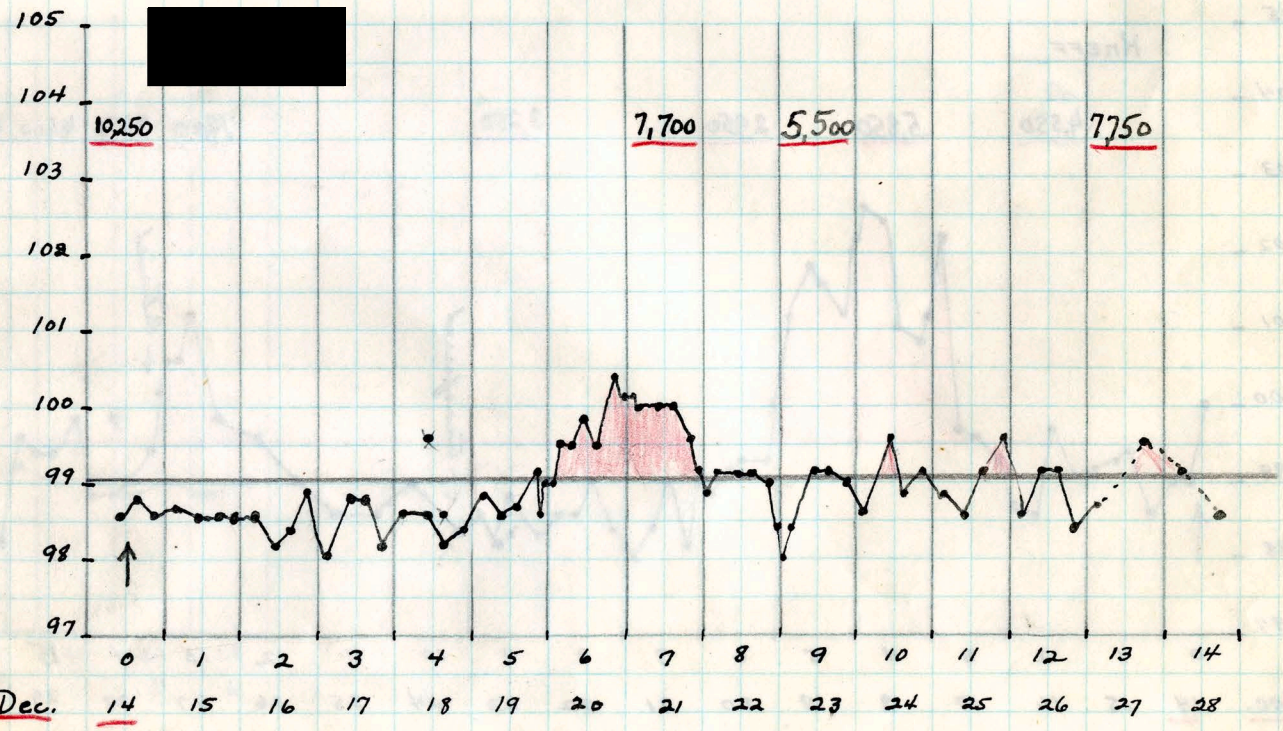
VIRUS – 2ND PASSAGE POOL prepared Nov. 30 (used on Orben, Calmeise, and Bonner)

Dose and route – 1cc intracutaneously (men on rt. forearm, women on left) – 0.2cc in 5 sites.
Inoculations @ 2 P.M.

Dec. 15 – all show papules (@ 5x5mm) and varying degrees of erythema at sites of inoculation (except Divido

Sicilian Virus – Controls for Gradocol Membrane Immunity Test and Donors for Aedes aegypti

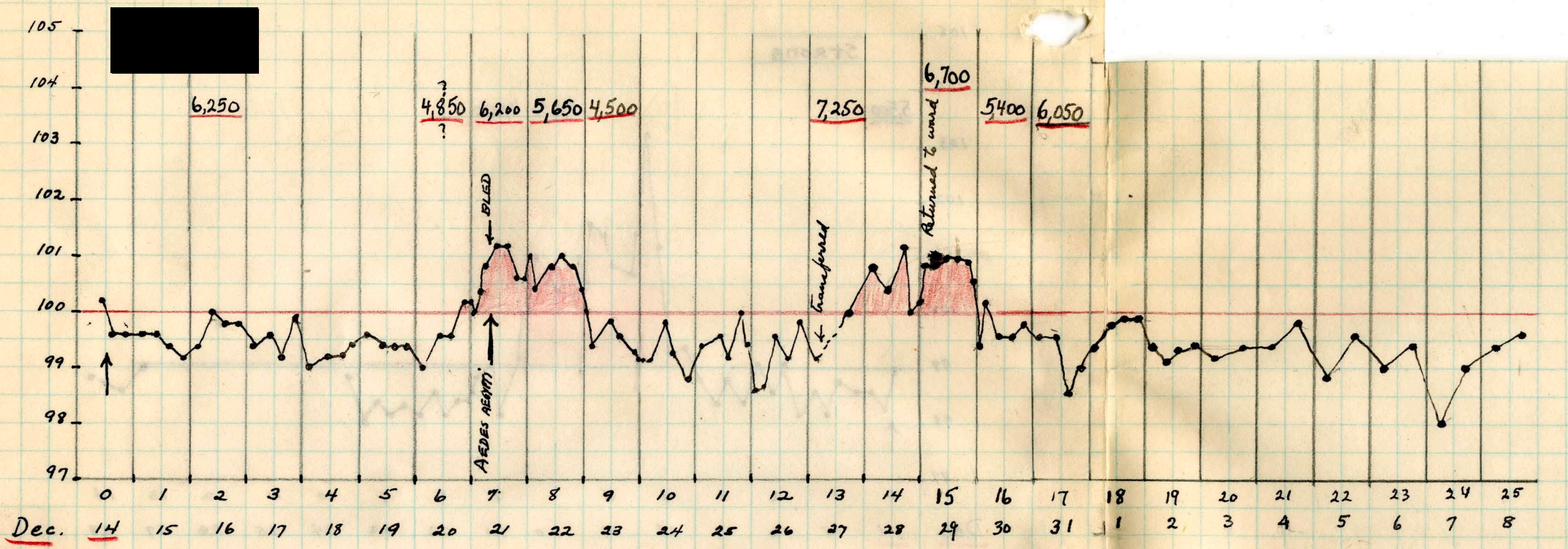




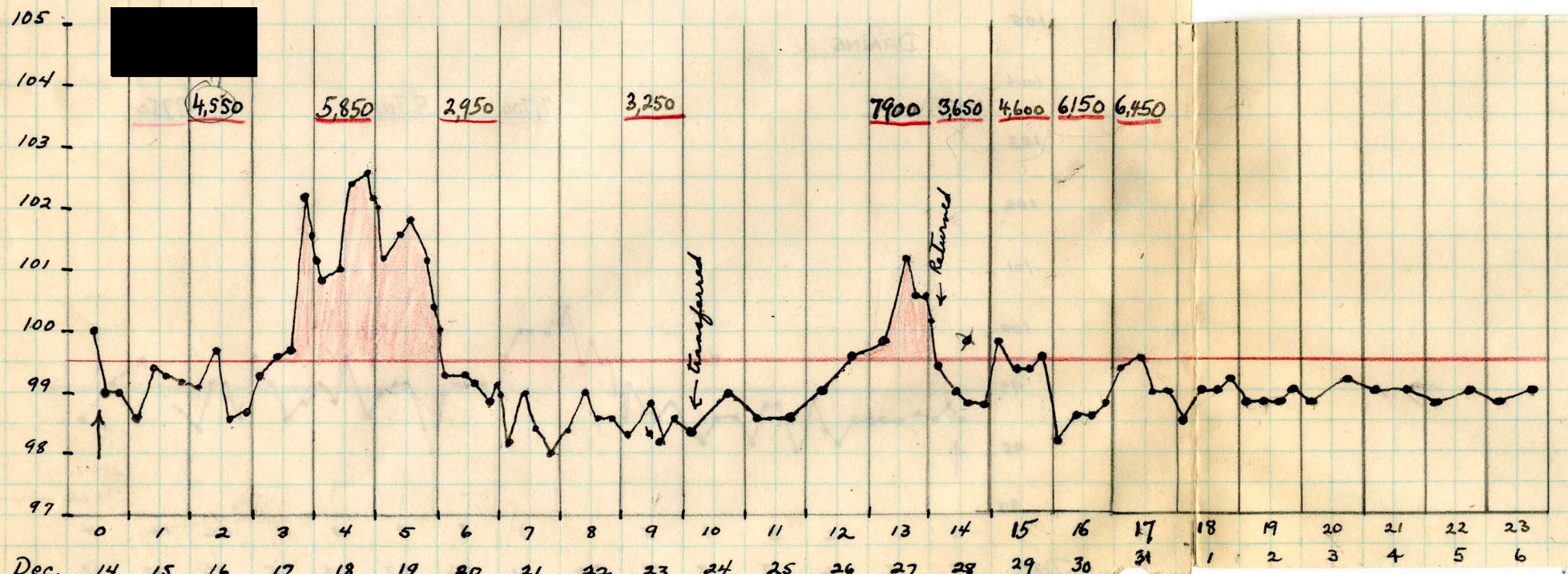
1 cc 2nd passage pool intracutaneously

Sicilian Virus – 309 mμ filtrate on Oct. 21

[redacted]

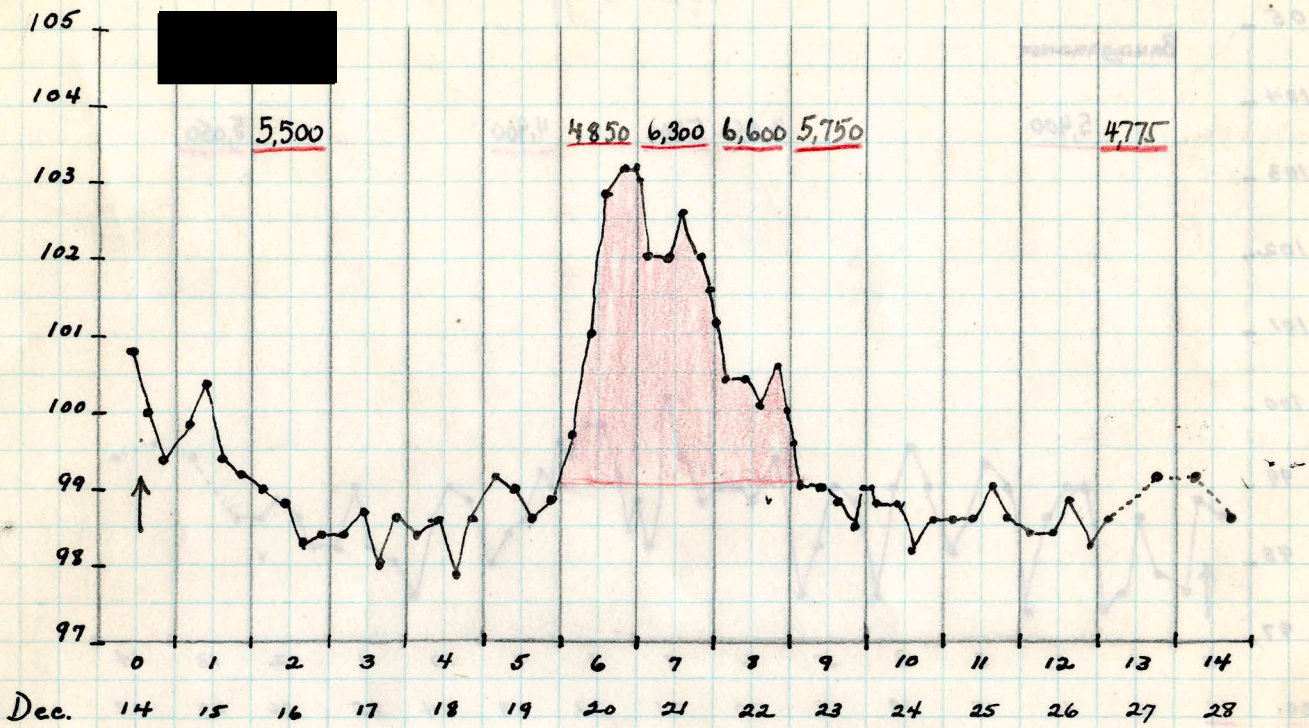


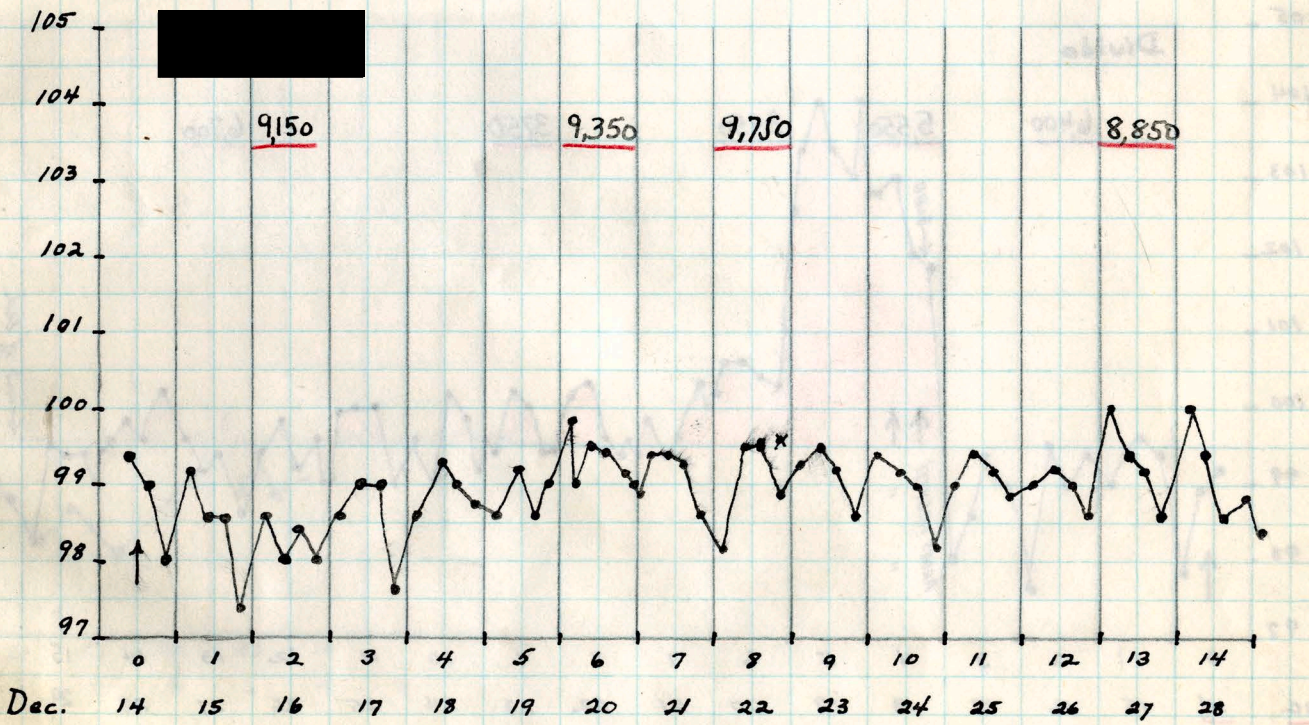
[redacted]



1cc 2ND PASSAGE POOL INTRACUTANEOUSLY

SICILIAN VIRUS — 203 mμ FILTRATE ON OCT. 21

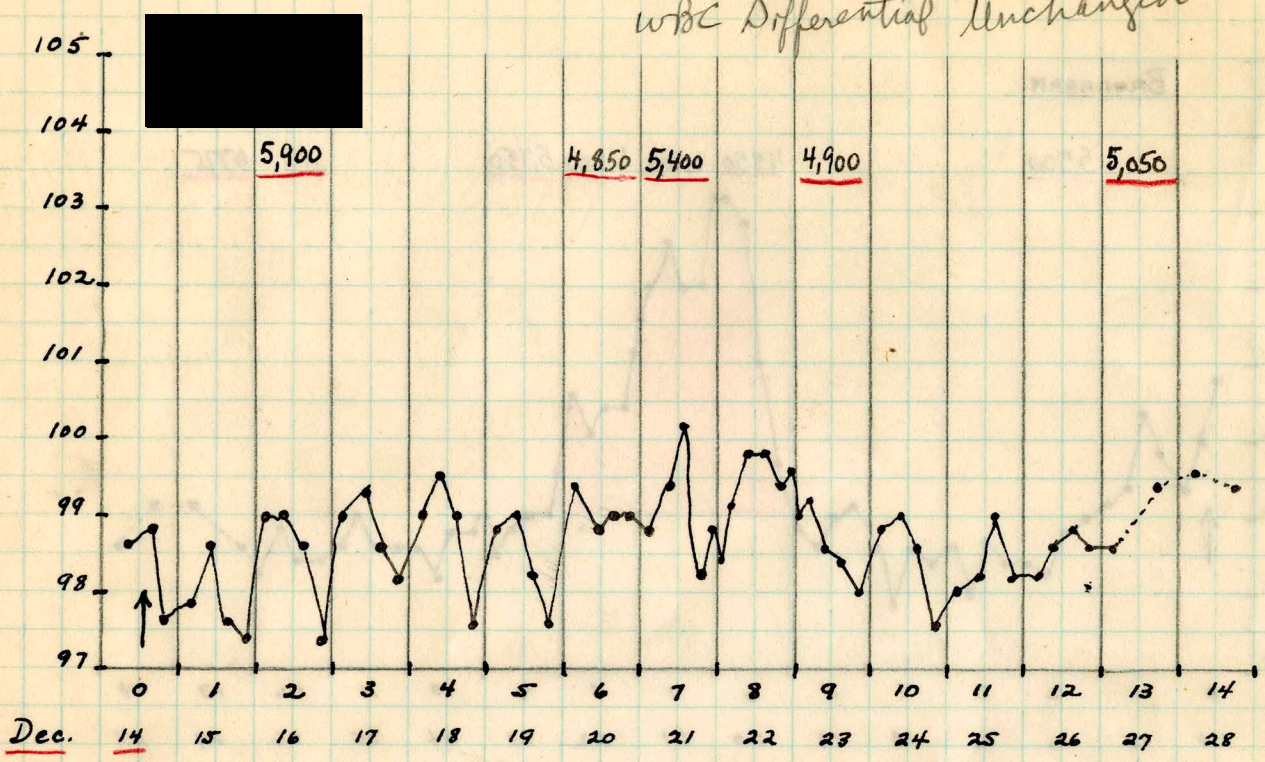


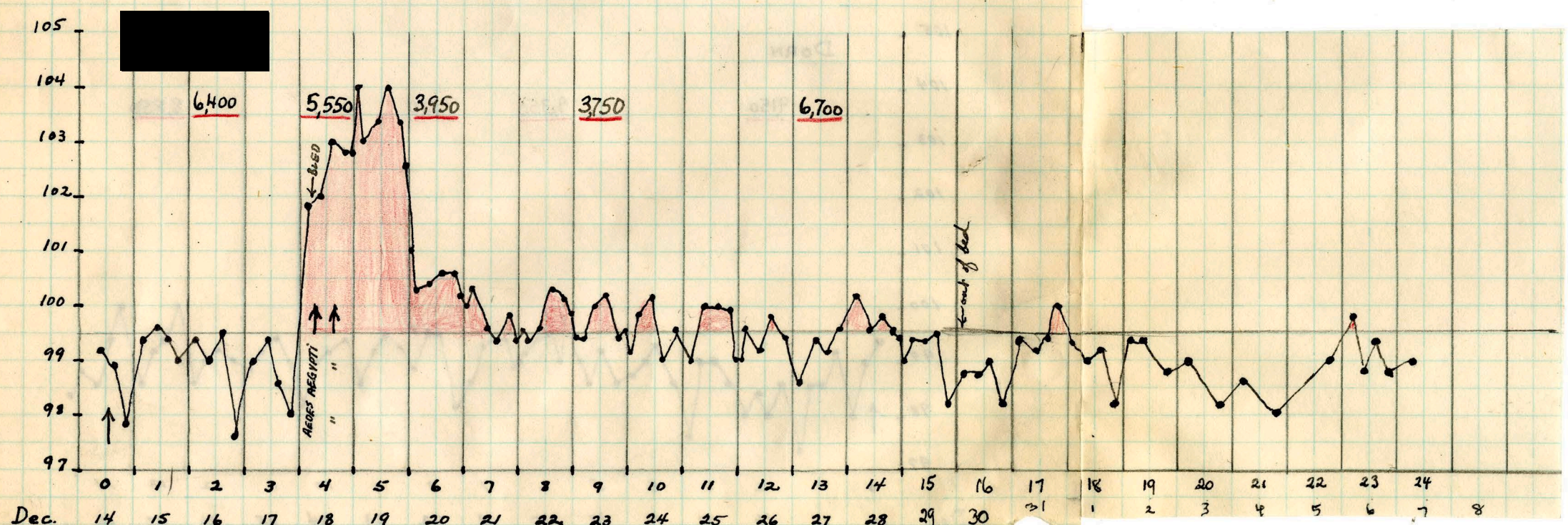


1 cc. 2ND PASSAGE POOL INTRACUTANEOUSLY

SICILIAN VIRUS — 101 mμ FILTRATE ON OCT. 21

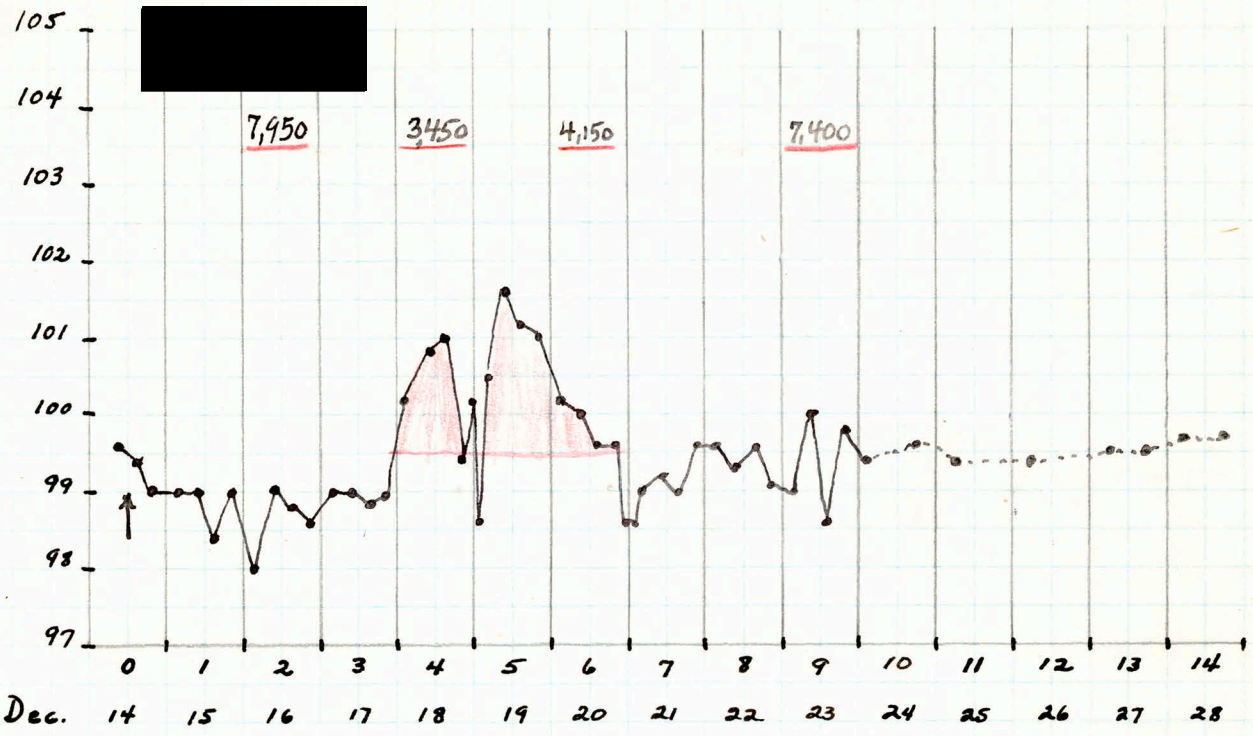
WBC Differential Unchanged

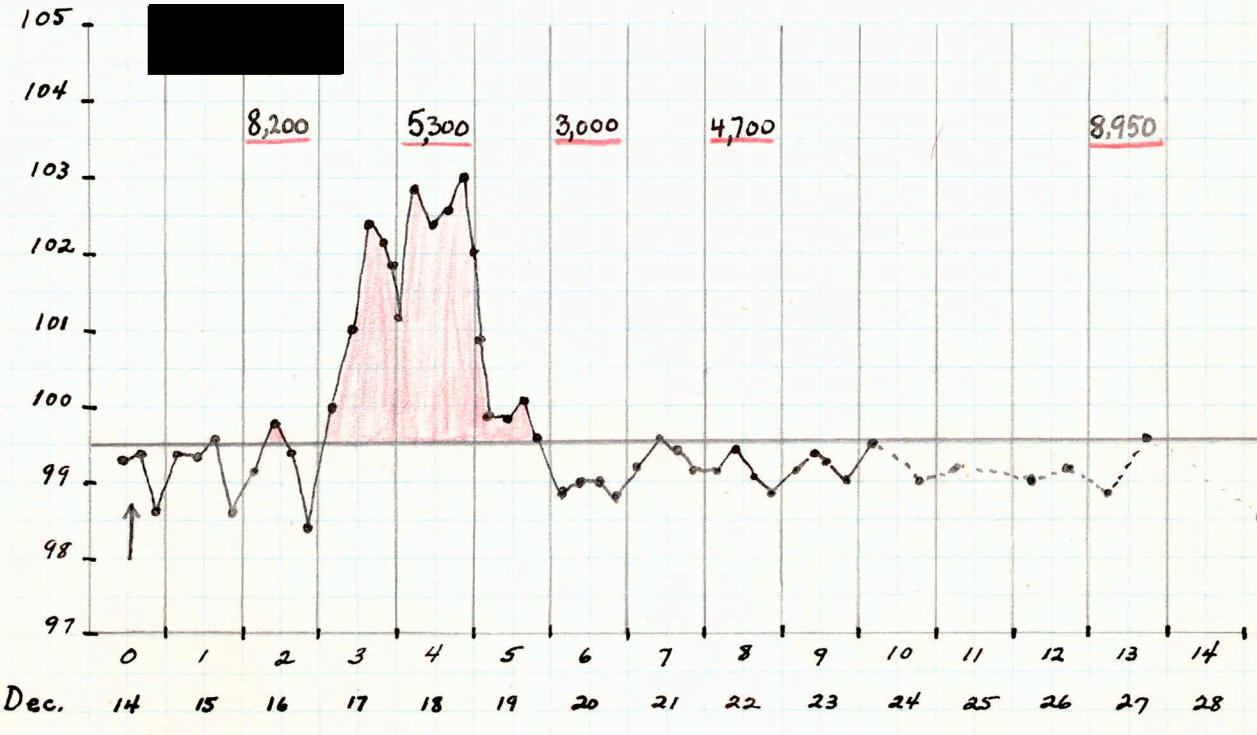




1 cc. 2ND PASSAGE POOL INTRACUTANEOUSLY

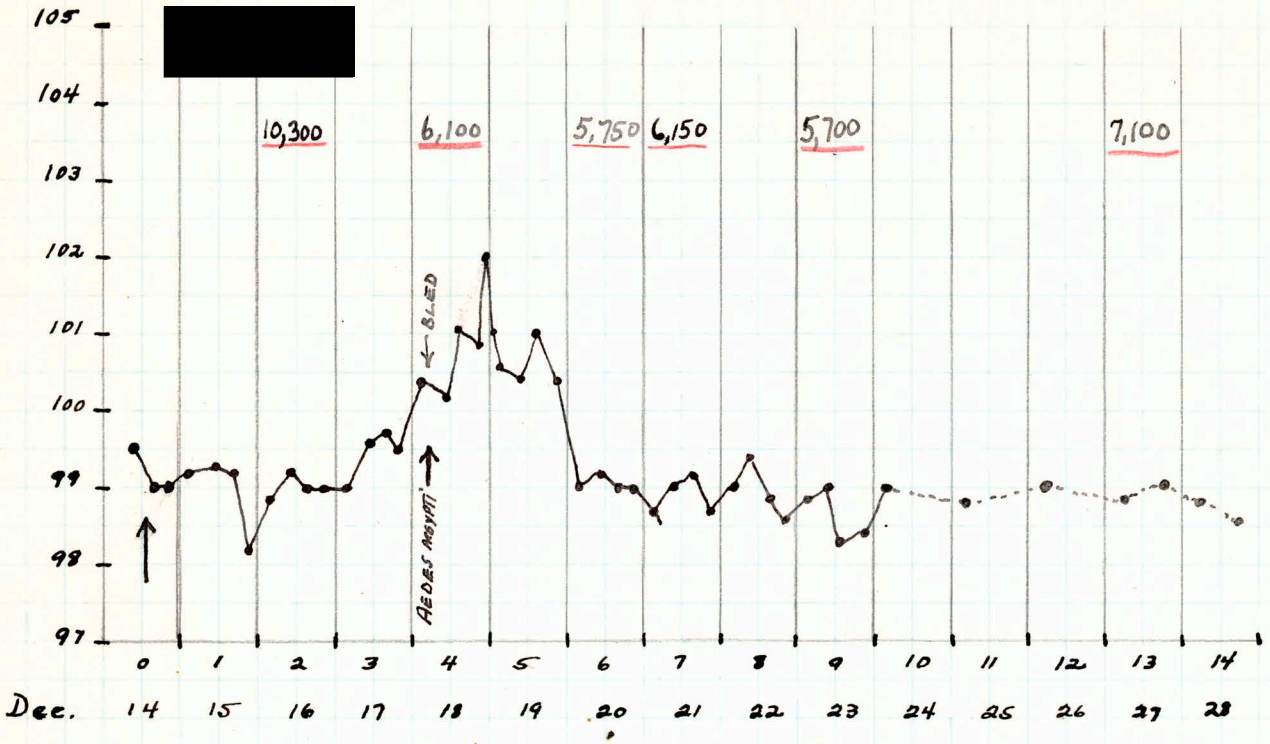
Sicilian Virus — 75 mμ Filtrate on Oct. 21

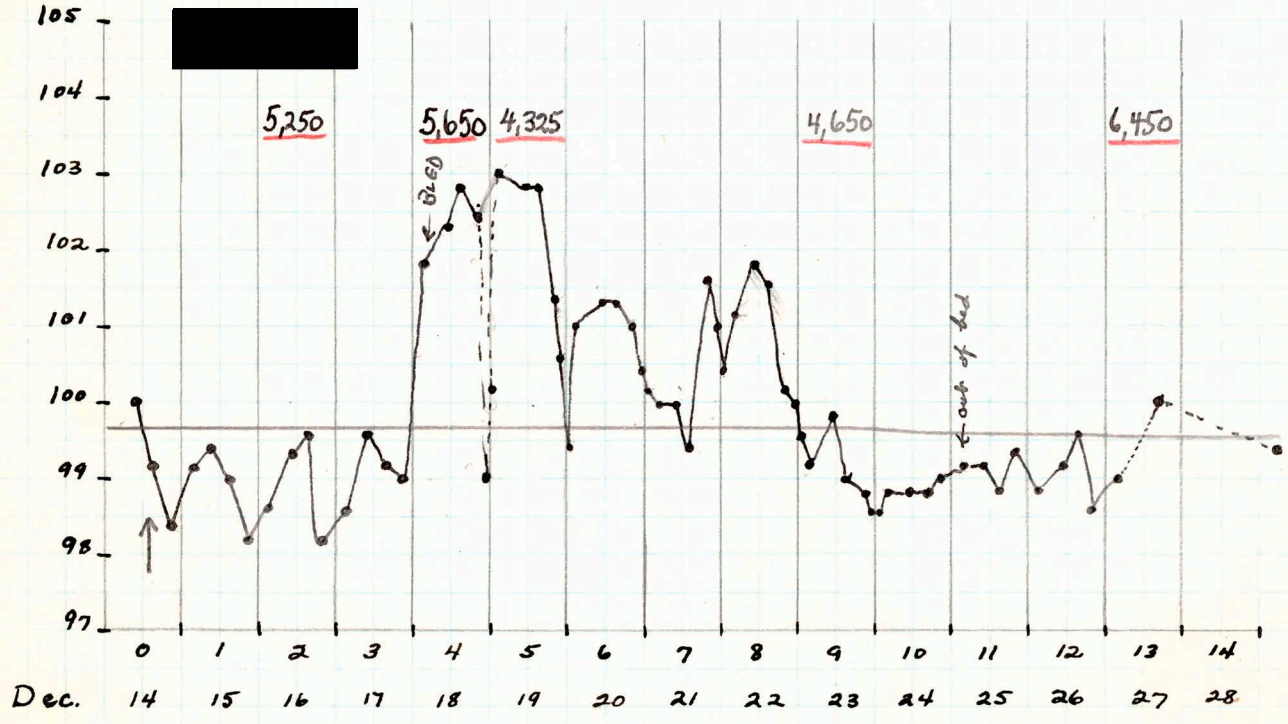




1 cc. 2nd passage Pool intracutaneously

Sicilian Virus — 50 mμ Filtrate on Oct. 21





1 cc. of 2nd passage Pool intracutaneously

SICILIAN VIRUS

DEC. 24, 1943

1. Capacity of Aedes aegypti which fed on [redacted] (DEC. 18) and [redacted] (Dec. 21) to transmit infection

SUBJECTS - [redacted] - white male - age 33

" " " " 39

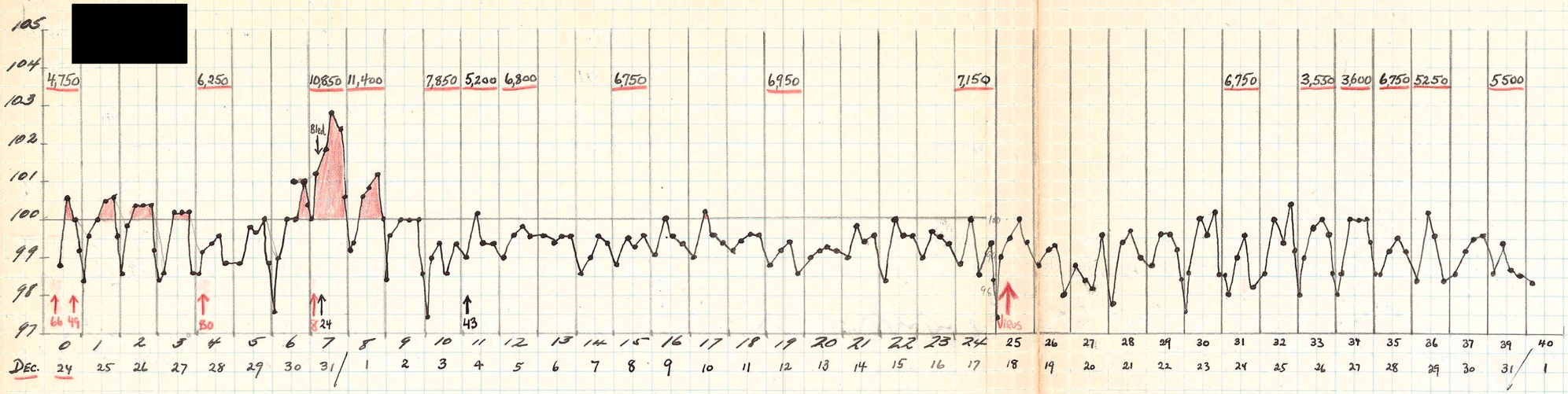
2. To establish that the blood of the donors [redacted] was infective at the time the mosquitoes engorged — and also to provide donors for feeding of additional normal mosquitoes for another test.

1cc of pool of acute [redacted] sera injected intracutaneously (11 A.M.) into:

SUBJECTS - [redacted] - white female - age 44

" male - "

Sicilian Virus – Attempted Transmission by Aedes aegypti



Dec. 24 – 115 mosquitoes engorged [redacted] lot – 6day incub) – 66 engorged at 11-11½ A.M; 49 at 7 P.M.

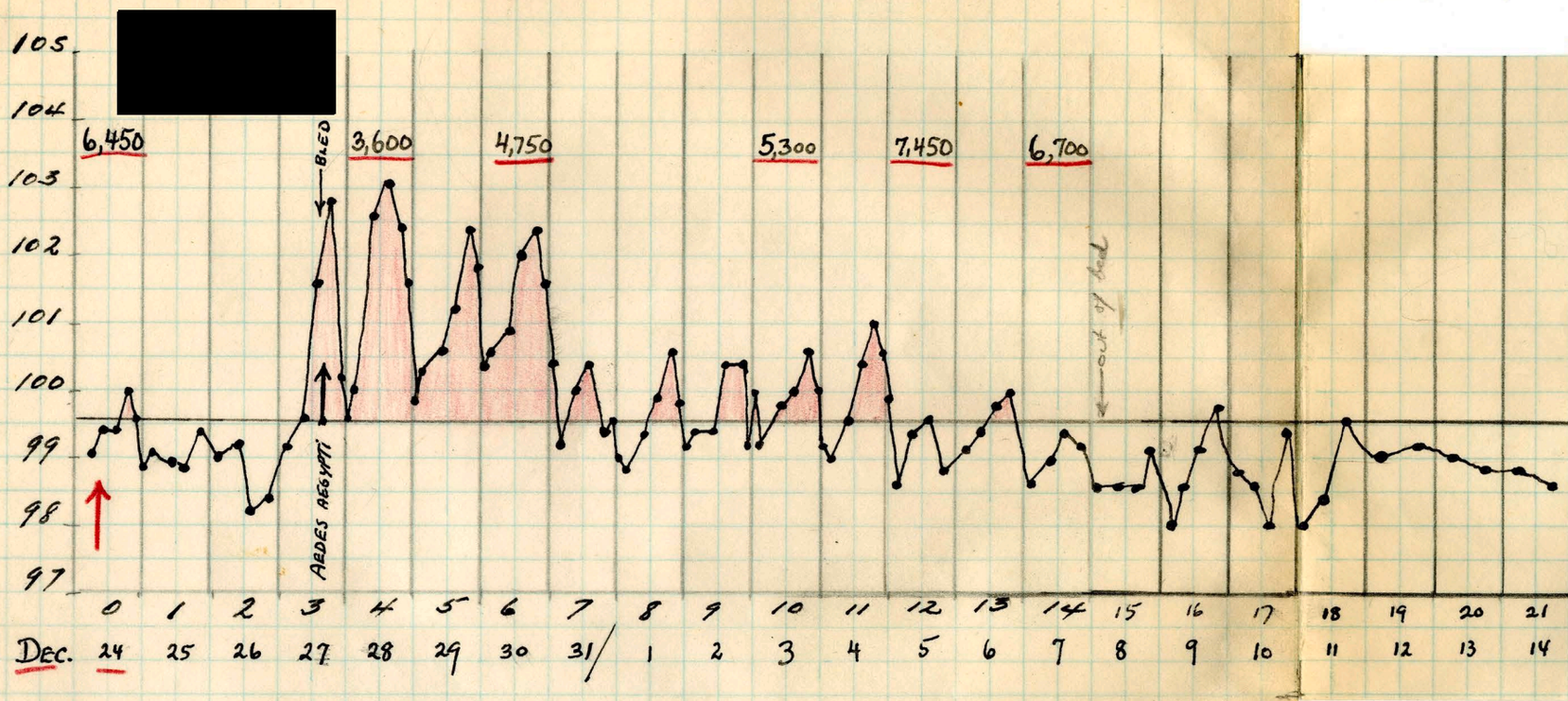
" 28 – 80 new " " (70 ten day incub. [redacted] prev. fed on [redacted] or unfed) + (10 seven day [redacted]

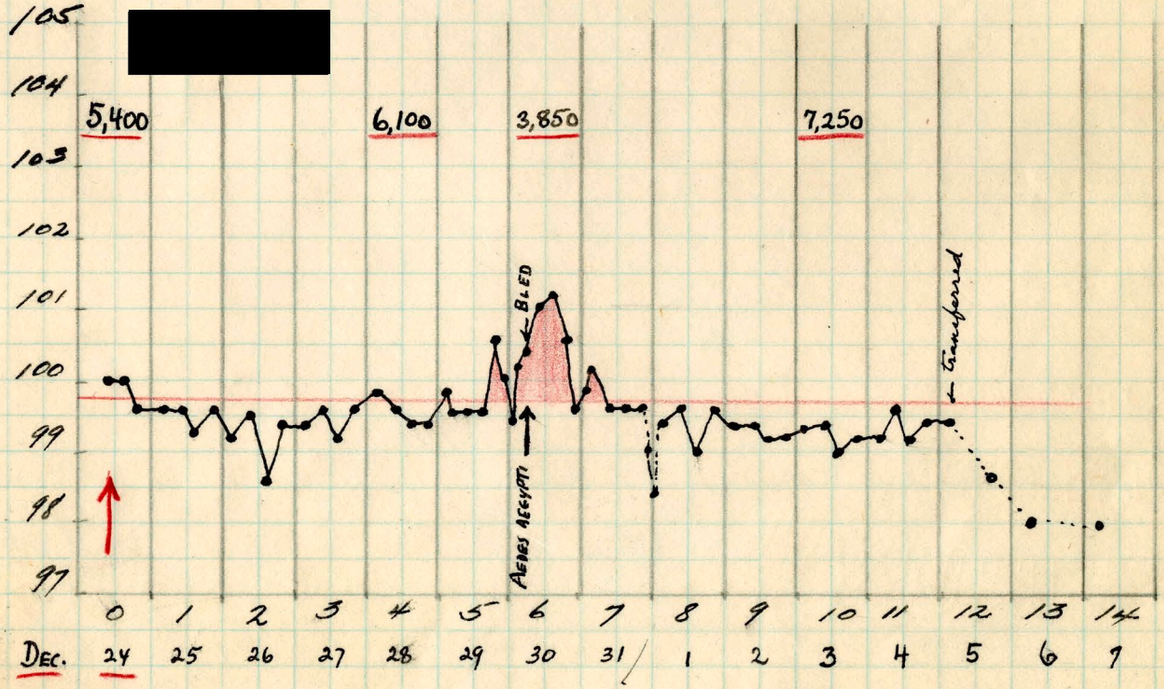
" 31 – 32 mosquitoes engorged (24 & 13 day – [redacted] lot) + (8 new – 10 day [redacted] lot prev. fed on [redacted]

Jan. 4 – 43 " " (40 – 17day [redacted] lot) + (3 – 14 day [redacted] lot)

Jan. 10 – 1cc of 3rd passage pool Sicilian Virus i.cut. on right forearm

SICILIAN VIRUS - INFECTIVITY OF BLOOD OF [redacted]
AT TIME MOSQUITOES FED ON THEM

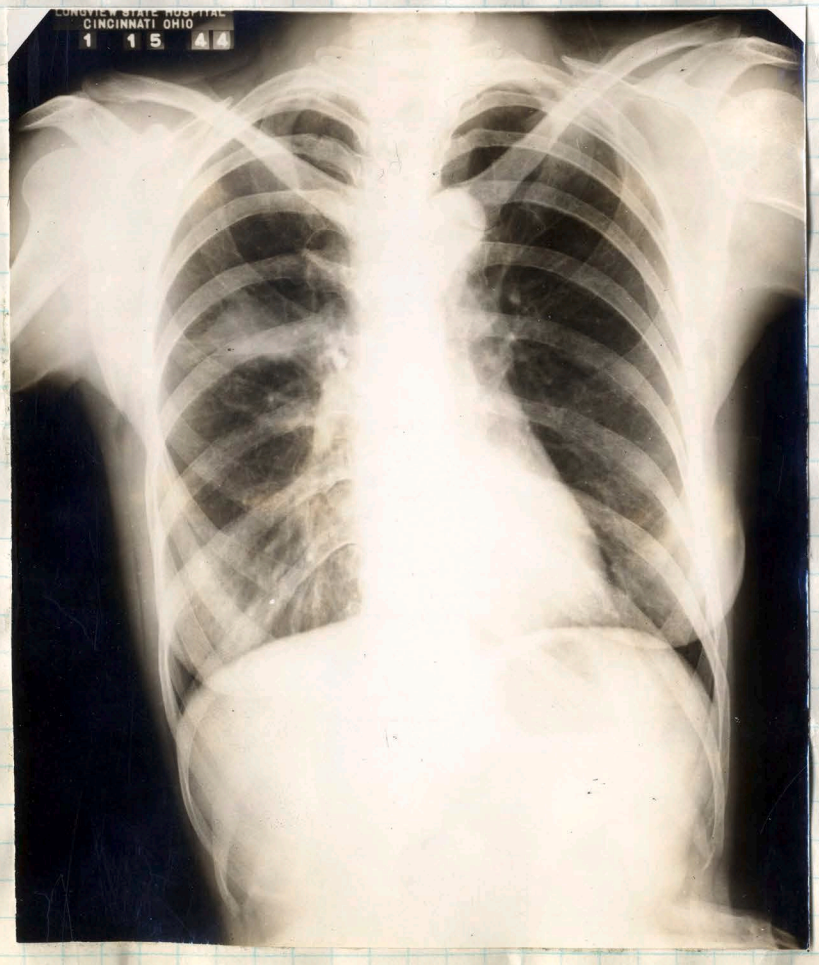




1cc. of pool of [redacted] serum intracutaneously

[redacted]


LONGVIEW STATE HOSPITAL
CINCINNATI OHIO
1 6 44


CINCINNATI OHIO
1 15 44

SICILIAN VIRUS

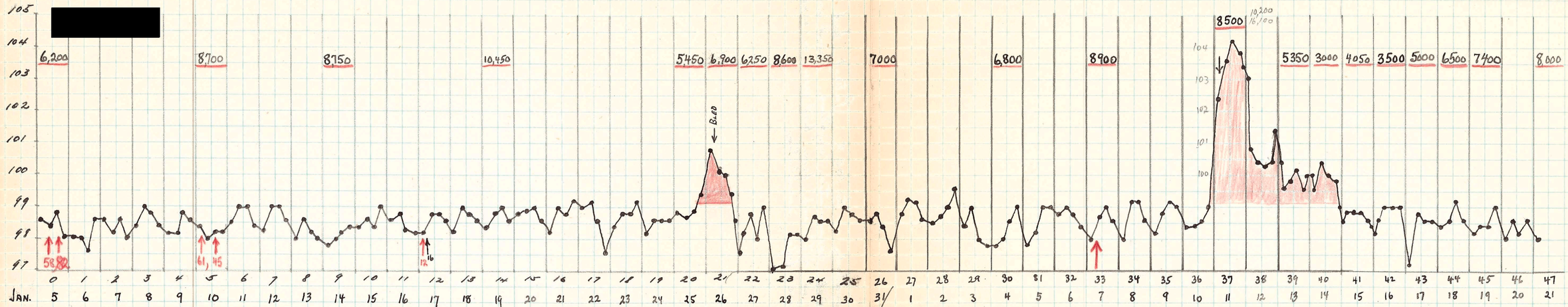
JAN. 5, 1944

CAPACITY of AEDES AEGYPTI mosquitoes which engorged on [redacted] (12/27) and [redacted] (12/30) to transmit infection.

SUBJECTS [redacted] white male – age 44

" " – " 48

SICILIAN VIRUS — ATTEMPTED TRANSMISSION BY AEDES AEGYPTI



JAN. 5 – 140 mosquitoes engorged; 10 A.M. – 31 [redacted] 9day) + 27 [redacted] 6day); 5:40 P.M. – 57 [redacted] 9day) + 25 [redacted] 6day)

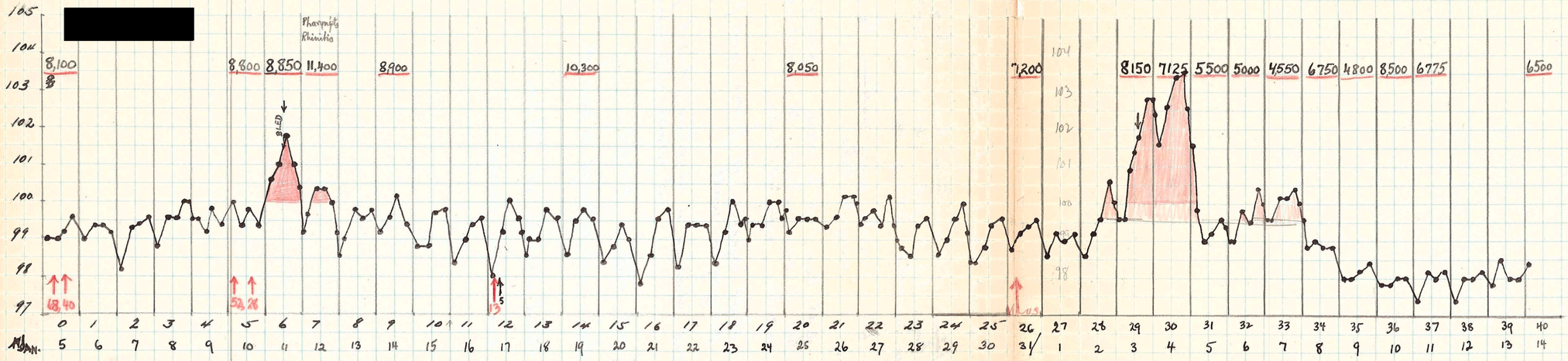
JAN. 10 – 106 new " " ; 10 A.M. – 36 (" " 14 ") + 25 (" 11 "); 4:20 P.M. – 23 (" 14 ") + 22 (" 11 ")

JAN. 17 – 28 mosquitoes engorged (12 new + 16 old); 13 [redacted] lot 21 day) + 15 [redacted] lot 18 day)

JAN. 31 — NOTE — PATIENT was not inoculated with virus at this time because of his bout of fever only 15 days before. The possibility of nonspecific interference was considered

FEB 7 — TEST FOR SUSCEPTIBILITY OR IMMUNITY — 1 cc of [redacted] POOL (used Jan. 31 on Wilhite, [redacted]) injected intracut. in 5 sites

SICILIAN VIRUS – ATTEMPTED TRANSMISSION BY AEDES AEGYPTI



JAN. 5 – 108 mosquitoes engorged; 10 A.M. – 48 [redacted] 9day) + 2c [redacted] 6day); 5[40] P.M. – 23 ([redacted] day) + 17 [redacted] 6day)

JAN. 10 – 80 new " " ; 10 A.M. – 35 (" –14 ") +17 (" –11 "); 4[20] P.M. –19 (" – 14 ") +9 (" – 11 ")

JAN. 17 – 18 mosquitoes engorged (13 new + 5 old); 15 [redacted] or –21day) + 3 [redacted] or – 18 day)

JAN. 31 – TEST FOR SUSCEPTIBILITY OR IMMUNITY – 1cc of [redacted] POOL (SERA of JAN. 22, 1944) injected intracutaneously – 0.2cc in 5 places

JAN. 11 – 10 A.M. – patient was up and about and overheard as usual

1 P.M. – Temp. 101 – patient still maintains here is nothing wrong with him. Put to bed. General physical examination revealed nothing significant.

Skin – hot – presents severe reactions to mosquito bites

Eyes – slight lemon tinge to sclerae – impression was that it was natural. No conjunctival injection, eyes not tender.

Mouth – slight injection of fauces and post. pharyngeal wall.

Chest and abdomen – negative; liver + spleen not palpable; no tenderness

Neck – not stiff or painful

Lymph nodes – not enlarged or painful

WBC + blood drawn at 130 P.M.

JAN. 12 – DEFINITE PHARYNGITIS AND RHINITIS PRESENT

INFECTIVITY of blood of rhesus monkeys 3 and 4 days after inoculation with Sicilian virus by various routes.

The serum of Rh. monkeys 1, 2, and 3 which were bled on Oct. 24 and Oct. 25 and which had been frozen since then, was thawed and pooled.

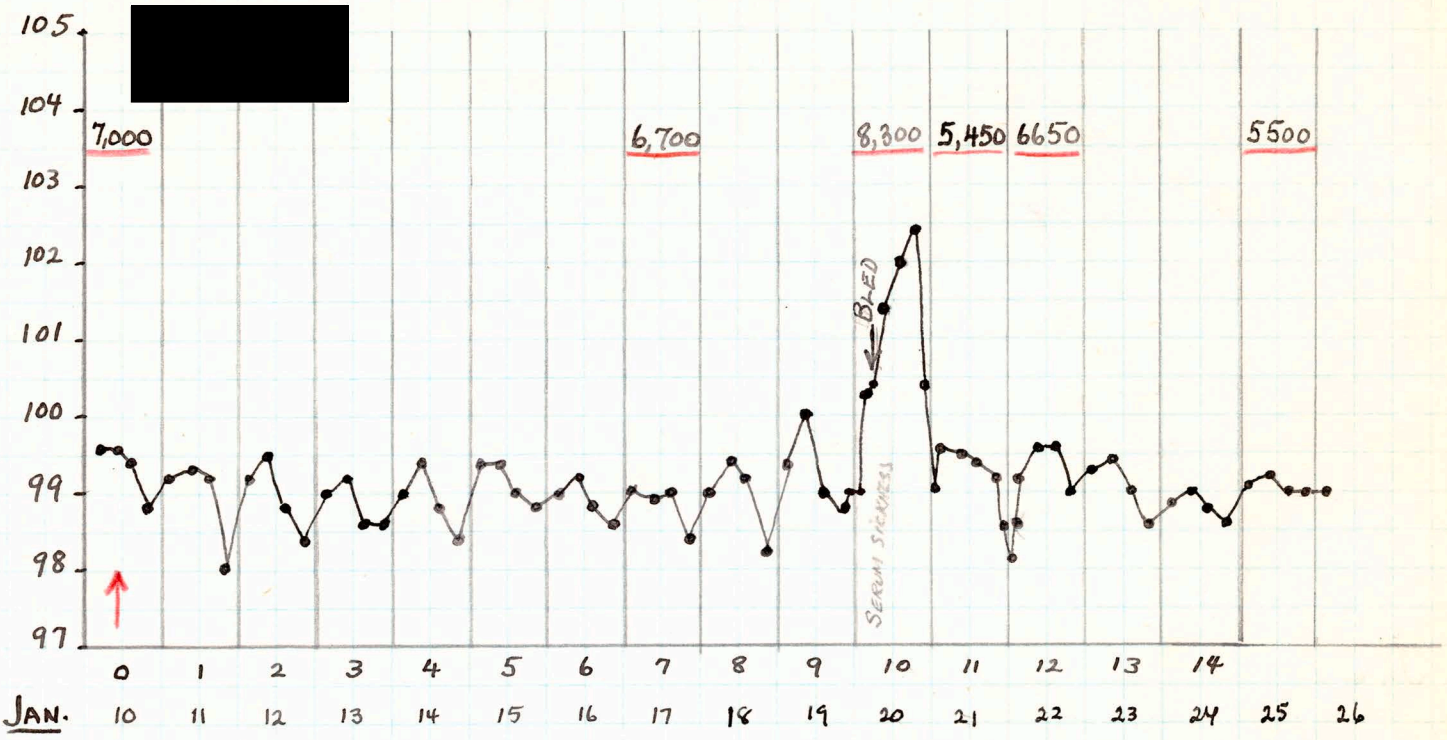
2cc was injected intracutaneously (0.25cc in 8 sites) into each of the following 2 subjects:

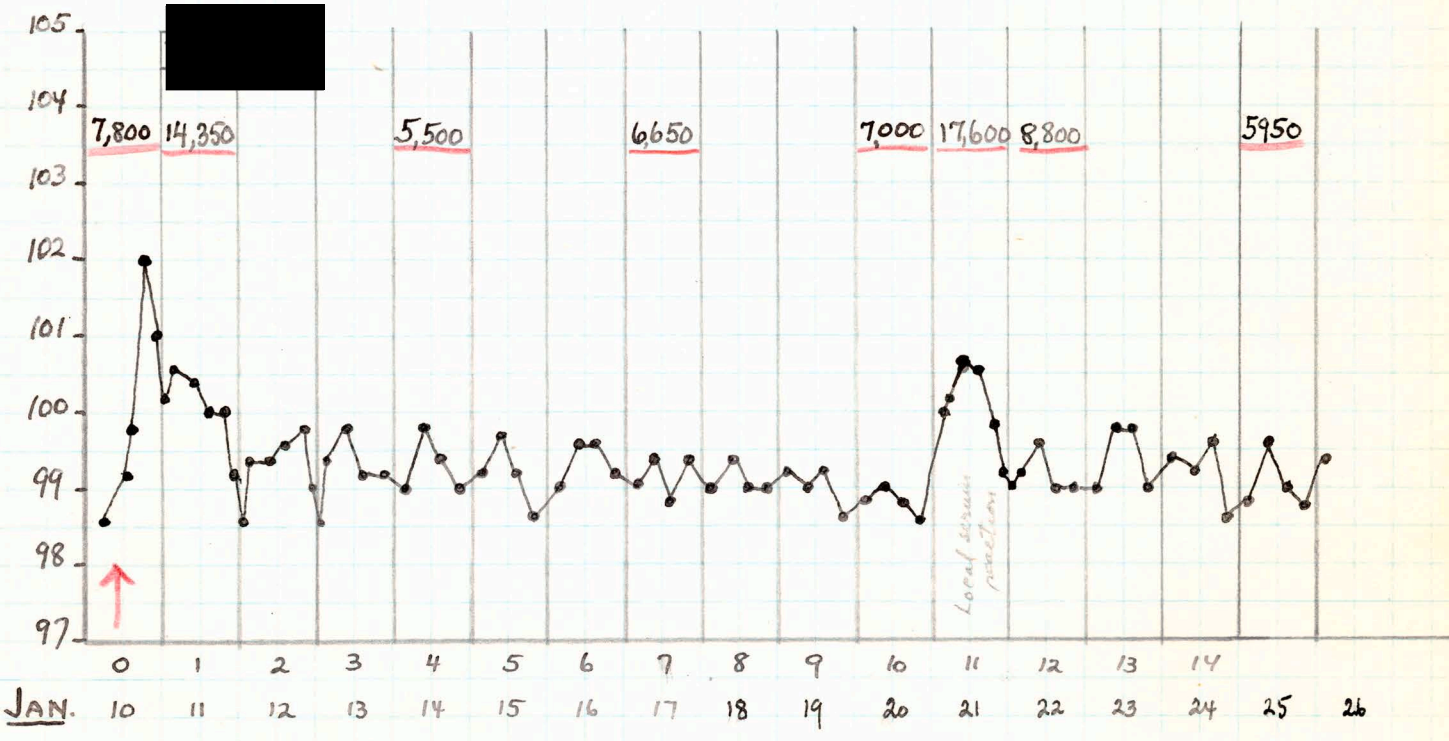
[redacted] — white male — age 46

[redacted] — " " — " 51

Inoculation — 11 A.M.

JAN. 11 — No reaction at sites of i.cut. inoculations





NOTE: [redacted] had an acute pharyngitis associated with his fever which developed on the day he was admitted – Jan. 10.

2 cc. Rhesus serum intracutaneously

10·30 AM

JAN. 20 – [redacted] – flexor surface of left forearm – site of inoculation of Rhesus serum, presents an inflamed area about 10 cm × 8 cm. suggestive of a receding urticarial reaction. Patient states that earlier this morning this area itched but not now. No other complaints. Physical examination negative, except for some injection of the throat which almost everyone seems to present at this time.

JAN. 21 – [redacted] – generalized urticarial reaction has appeared ... the entire flexor surface of the left forearm ... presents a confluent inflammatory reaction with ... local raised areas suggestive of receding wheals. ... Itching present. No other complaints.

... whose inoculated arm was negative yesterday presents a diffuse inflammatory reaction similar to, but less marked than that of Wallace. Itching present – no urticaria anywhere else.

JAN. 22 – [redacted] – local reaction still present. Still no generalized eruption or other signs

– nothing beyond local reaction which is mild and shows signs of scratching.

JAN. 23 – [redacted] – only large area of erythema left

– multiple wheals over entire area more marked than before

JAN. 24 – All clear in both Wallace and Backhurst

SICILIAN VIRUS — JAN. 18, 1944

REPETITION OF WORK WITH ULTRAVIOLET LIGHT ~~Exp.~~

IRRADIATED VIRUS

In view of the fact that 5 subjects who had been inoculated with virus (MIDDLE EAST) inactivated by ultraviolet light proved to be immune to reinoculation with active virus, it was desirable to extend the data

VIRUS USED — A new pool of virus consisting of 3rd passage sera obtained on Dec. 18, 1943 — all Kahn negative — was prepared:

3RD PASSAGE POOL { [redacted] — 23.5cc; — 20.0 "; — 15.0 "; — 4.0 " = 62.5cc — slightly opalescent - lipoids

19cc used for irradiation
3.5cc " untreated for inoculating controls
Remainder put in vials in 5cc amounts and refrozen

IRRADIATION with ULTRAVIOLET LIGHT — 15 MINUTES

SAME PROCEDURE AS USED ON Nov. 24

7cc removed for inoculation; remainder frozen

1cc intracutaneously (left forearm) { [redacted] — white male - age 31; — " " — " 42; — colored female — " 29

1cc subcutaneously (above left olecranon) { [redacted] — white male — " 33; — " female — " 47; — colored " — " 37

All inoculations 12-11 AM

CONTROL — UNTREATED VIRUS

1cc. intracutaneously [redacted] — white male - age 51; — " female — " 49; — " male — " 39

(over)

JAN. 19 – No reaction at any of the inoculated sites in any of the subjects

JAN. 31 REINOCULATION OF [redacted]

to determine a) whether failure to develop disease was due to inoculation of subinfective amounts of virus the first time in which case they should be susceptible to reinoculation

b) to completely inapparent infection or resistance the first time in which case they should be immune or again resistant to inoculation.

VIRUS USED – Pool of frozen serum of Lakeman and [redacted] – obtained JAN. 22, 1944

1cc intracutaneously – 0.2cc in ~~two~~ five sites

INOCULATION TIME – 11 A.M.

OTHERS INOCULATED SIMULTANEOUSLY – WITH SAME DOSE [redacted]

SICILIAN VIRUS – 3RD PASSAGE POOL – ULTRAVIOLET 15 MINUTES

[redacted]

7,190 5,550 7,800 7750 7100 7250 7700 8500

CONJUNCT Rt. Eye | Rt. Eye purulent disch | Bilat Conjunct | Improved | OK

[redacted]

7950 8750 3075 4,400 5300 10,550

BLED

Headache Morning after

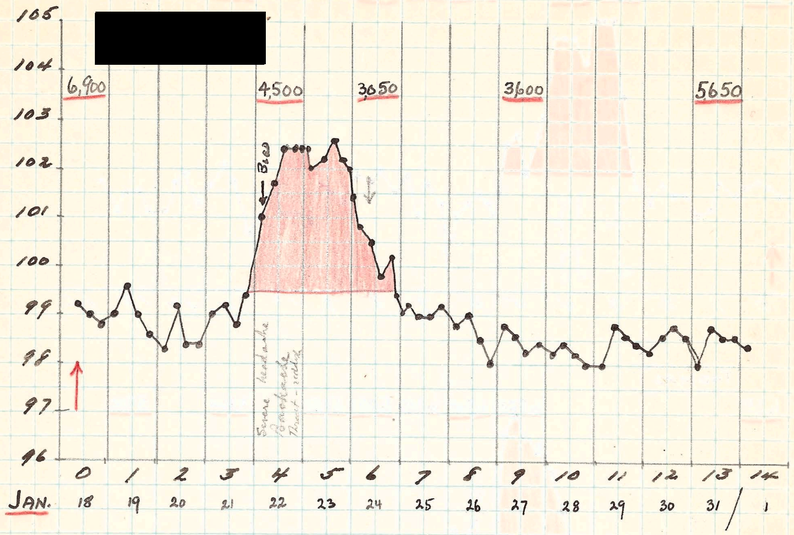
[redacted]

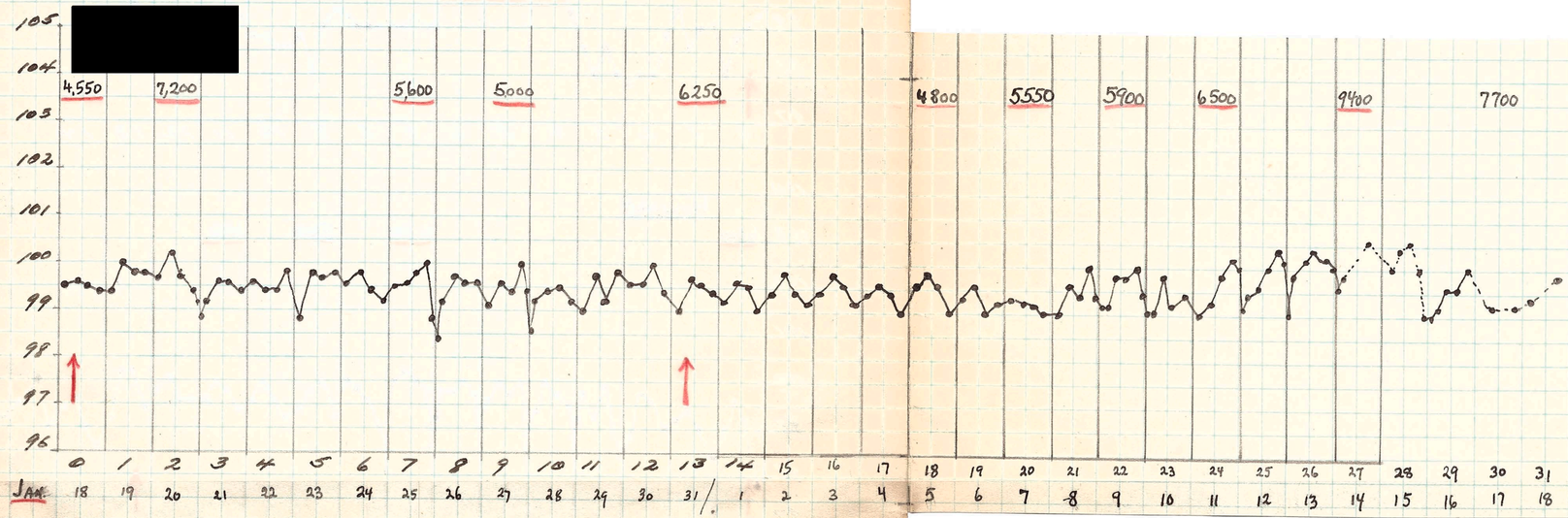
6,150 4650 4,250 6050

JAN. 18 19 20 21 22 23 24 25 26 27 28 29 30 31 / 1

1cc. IRRADIATED SERUM SUBCUTANEOUSLY

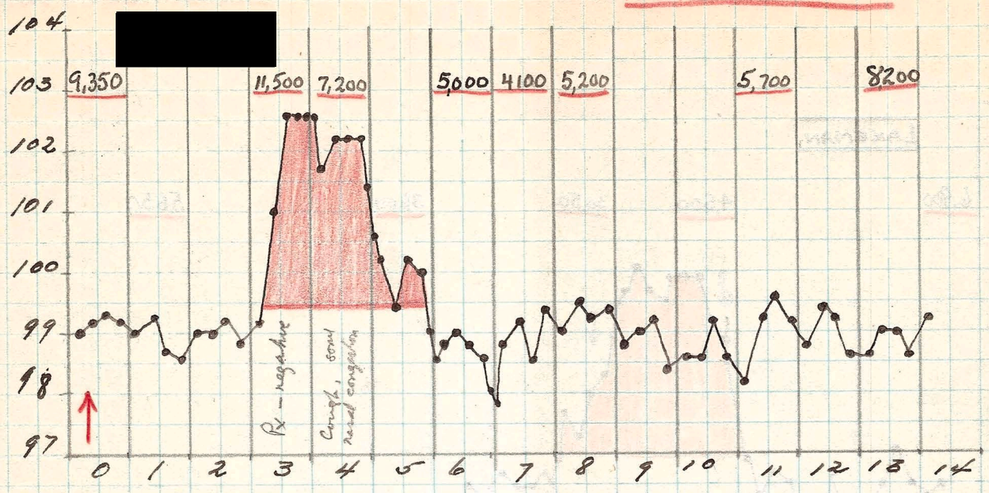
Sicilian Virus – 3rd Passage Pool – Controls for Ultraviolet Irradiated Material

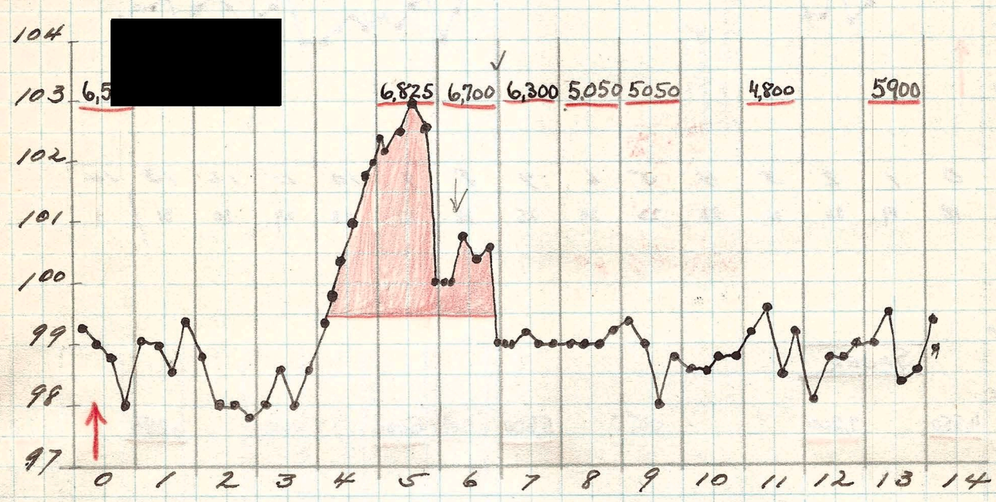


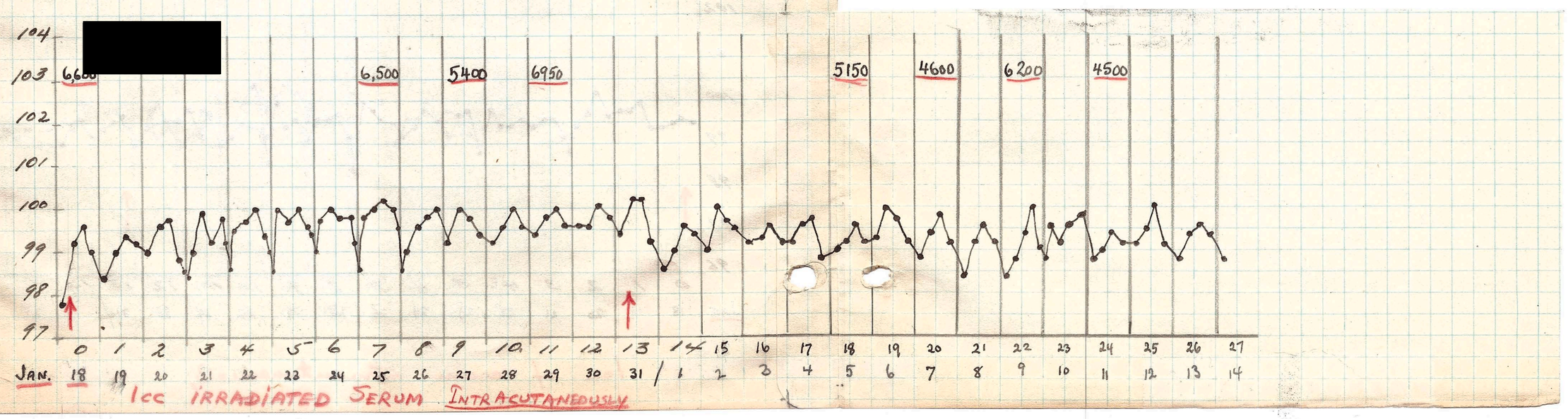


1cc of serum intracutaneously

SICILIAN VIRUS – 3RD PASSAGE POOL – IRRADIATED WITH ULTRAVIOLET LIGHT FOR 15 MIN.







1cc IRRADIATED SERUM INTRACUTANEOUSLY

SICILIAN VIRUS JAN. 24, 1944

REPETITION of ULTRAVIOLET IRRADIATION

SINCE it became evident that the virus irradiated for 15 minutes on JAN. 18 was not inactivated, it was ~~to~~ deemed desirable further to irradiate the same preparation (which was frozen on JAN. 18.)

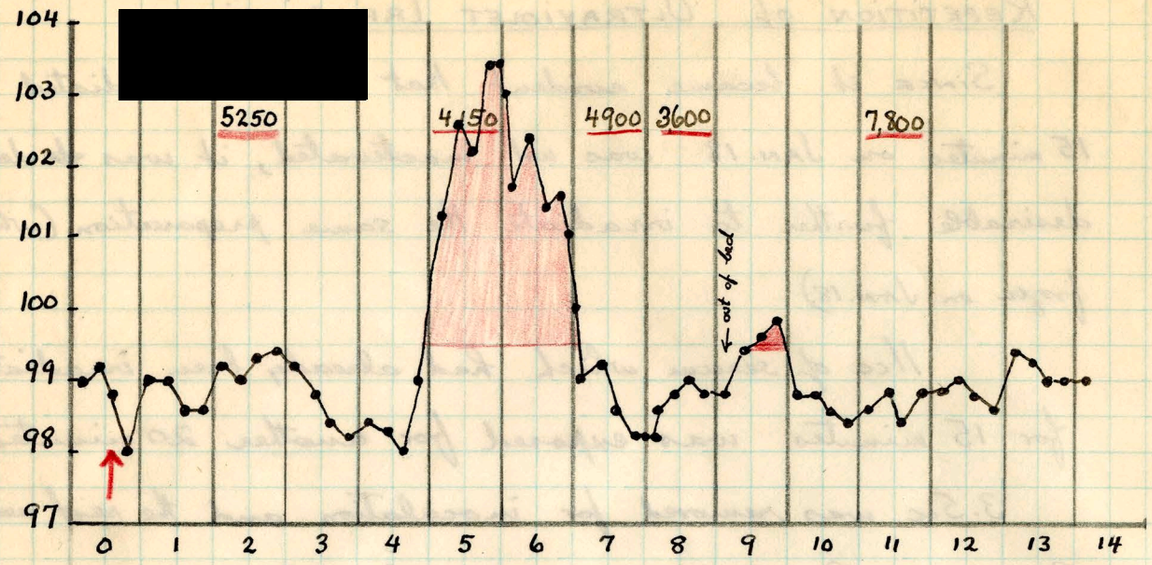
11cc of serum which had already been irradiated for 15 minutes was exposed for another 20 minutes.

3.5cc was removed for inoculation and the rest was frozen

SUBJECTS: [redacted] white male – age 29
" female – " 42
negro " – " 40

1cc intracutaneously on the left forearm – 3:30 P.M.

[redacted]



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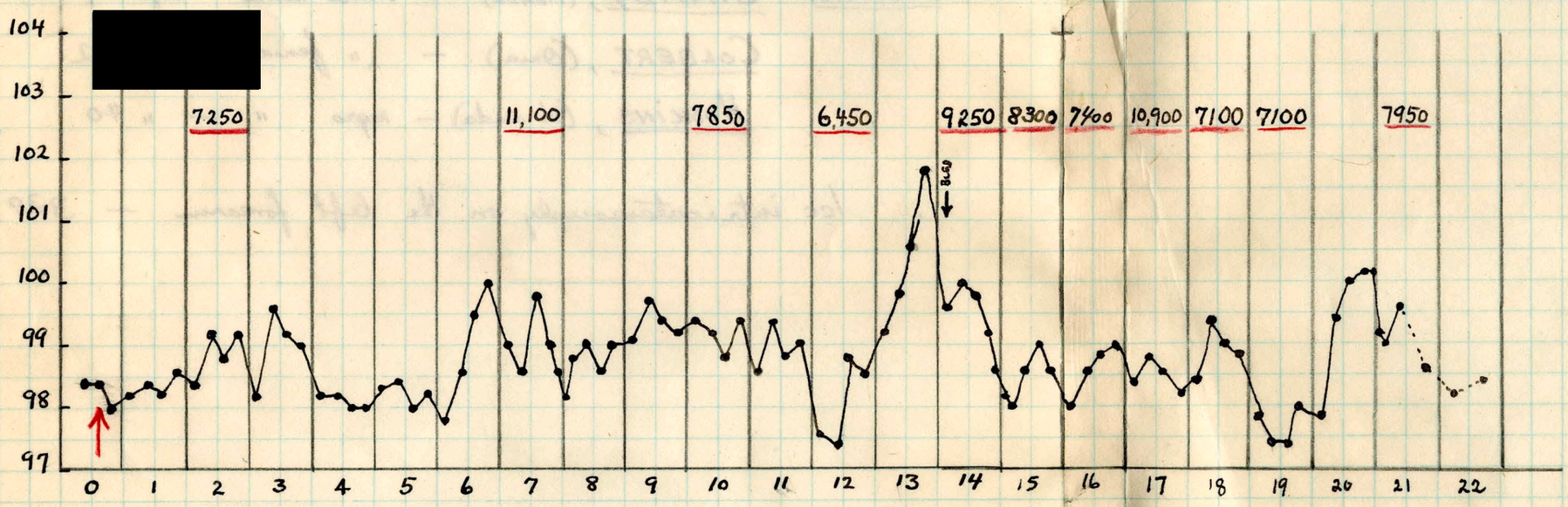
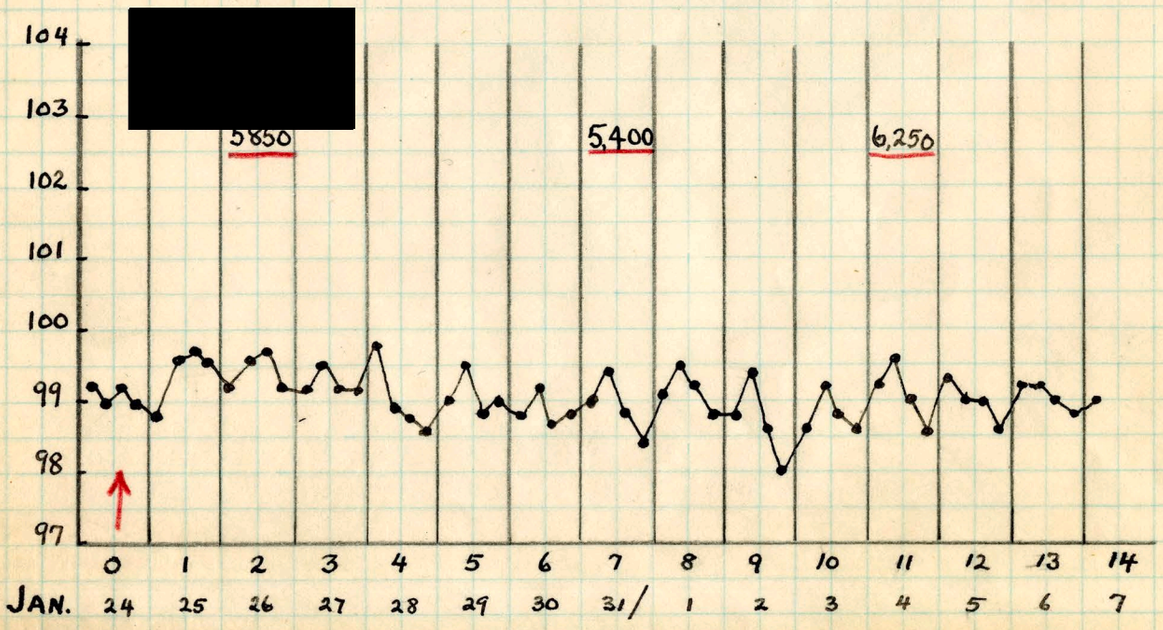
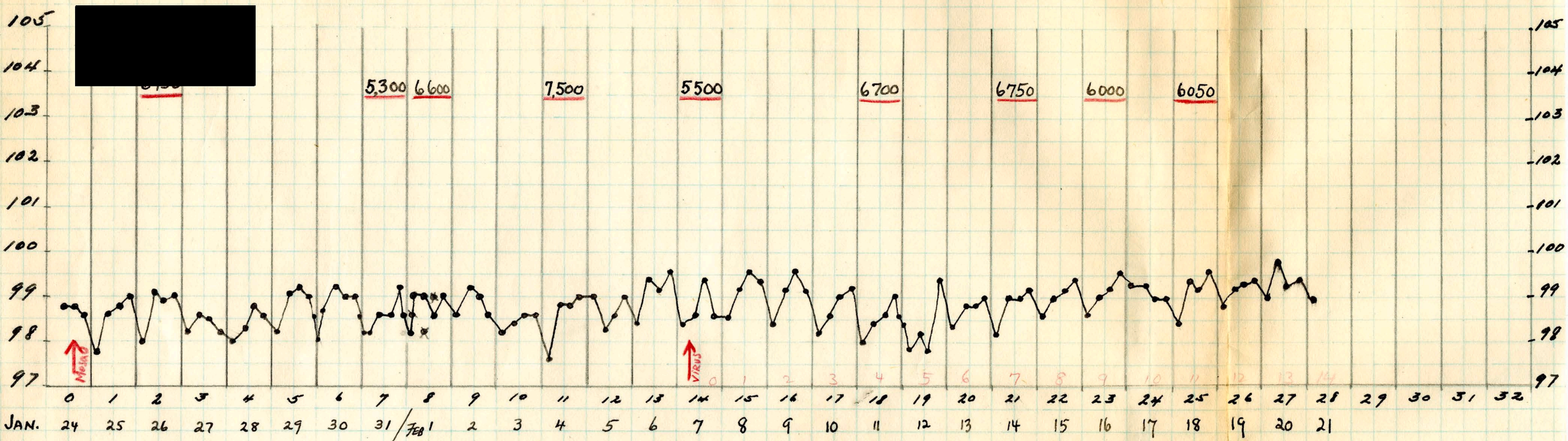


[redacted]



Test for Virus in Filtered Suspension of Mosquitoes used in Transmission Tests



JAN. 24 – 2cc of filtrate injected intracutaneously (0.25cc in 8 sites on left forearm) at 3 30 P.M.
" 25 – area somewhat "dusky" and warm – patient complains of local itching
" 26 – negative

PREPARATION OF MOSQUITO FILTRATE: JAN. 22 – 80 mosquitoes of [redacted] lots frozen on JAN. 14 24-27 days after engorging on S.F. patients were mixed with 69 mosquitoes of the Barbour-Gonia lots 23 to 26 days after original feeding. Total weight – 0.4 Gm. Ground with sand in 6cc of a 10% normal human serum (Carrol) - saline diluent, centrifuged at @ 2000 rpm. and sn. liquid put over 770mμ membrane (saturated with broth). After first 1cc – no more would pass. The fluid in the filter was then diluted further – 4cc + 8cc saline – centrifuged for 40 min. and put over a new 770 mμ membrane – Again filtration was very slow despite 15 lbs pressure (nitrogen). Total amount filtered – 4cc. 0.1cc amounts cultured immediately – remainder frozen

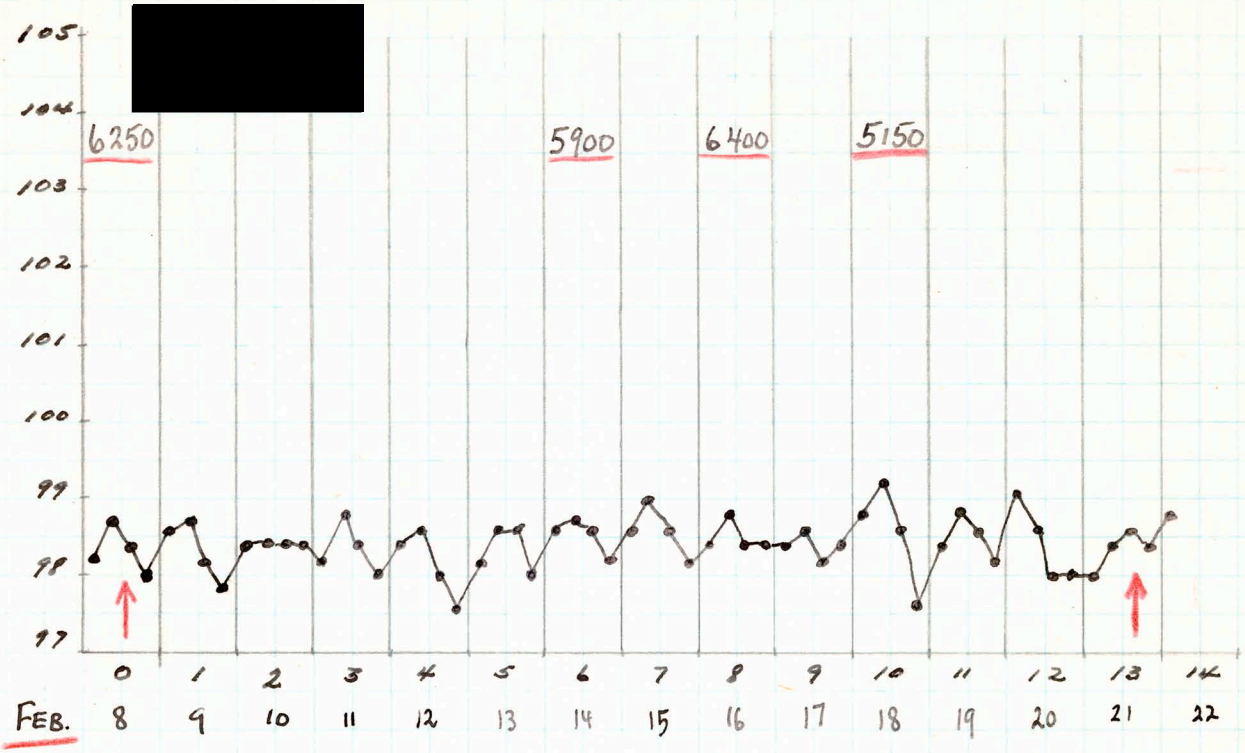
CULTURES:

BAP	I	– 0 0 0 0
"	II	– 0 0 0 0
Broth	I	– 0 0 0 0
"	II	– 0 0 0 0
Anaerobic medium	I	– 0 0 0 0
	II	– 0 0 0 0

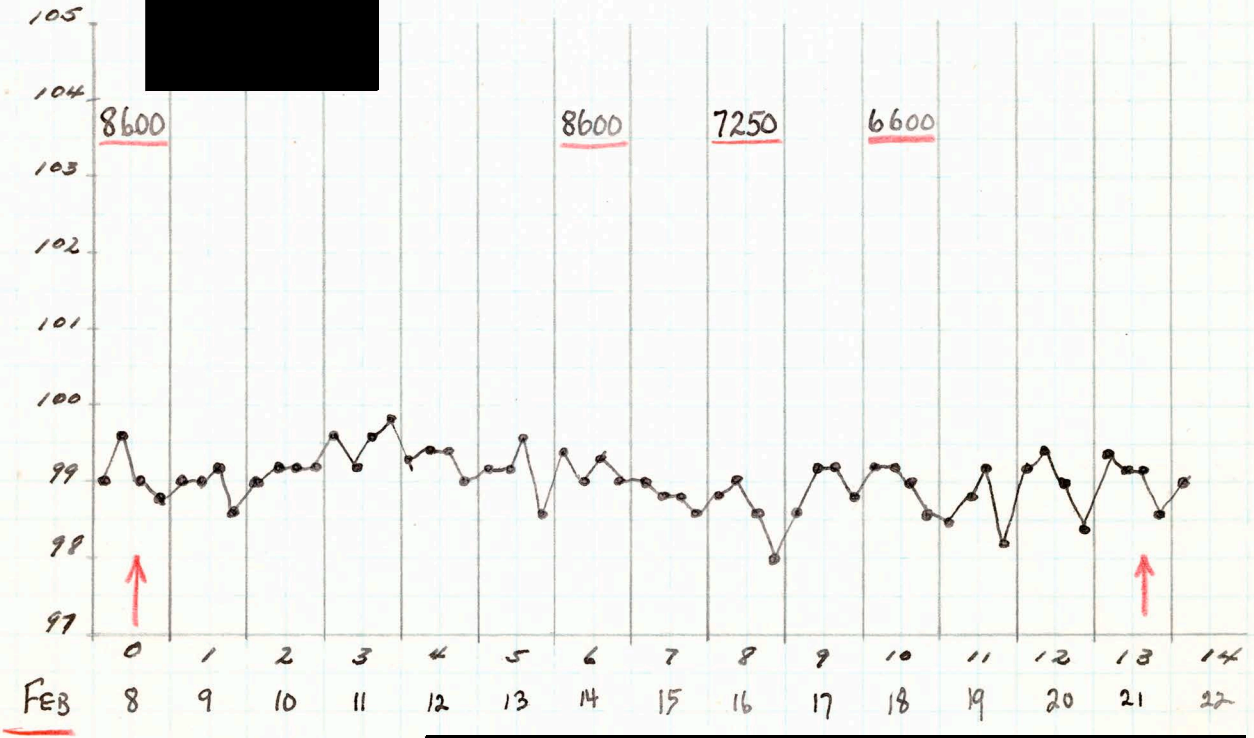
SUBJECT – CLARENCE CARTER – NEGRO MALE – AGE 51

SICILIAN VIRUS — TEST FOR PRESENCE OF VIRUS 48-54 HOURS AFTER ONSET OF FEVER

[redacted]



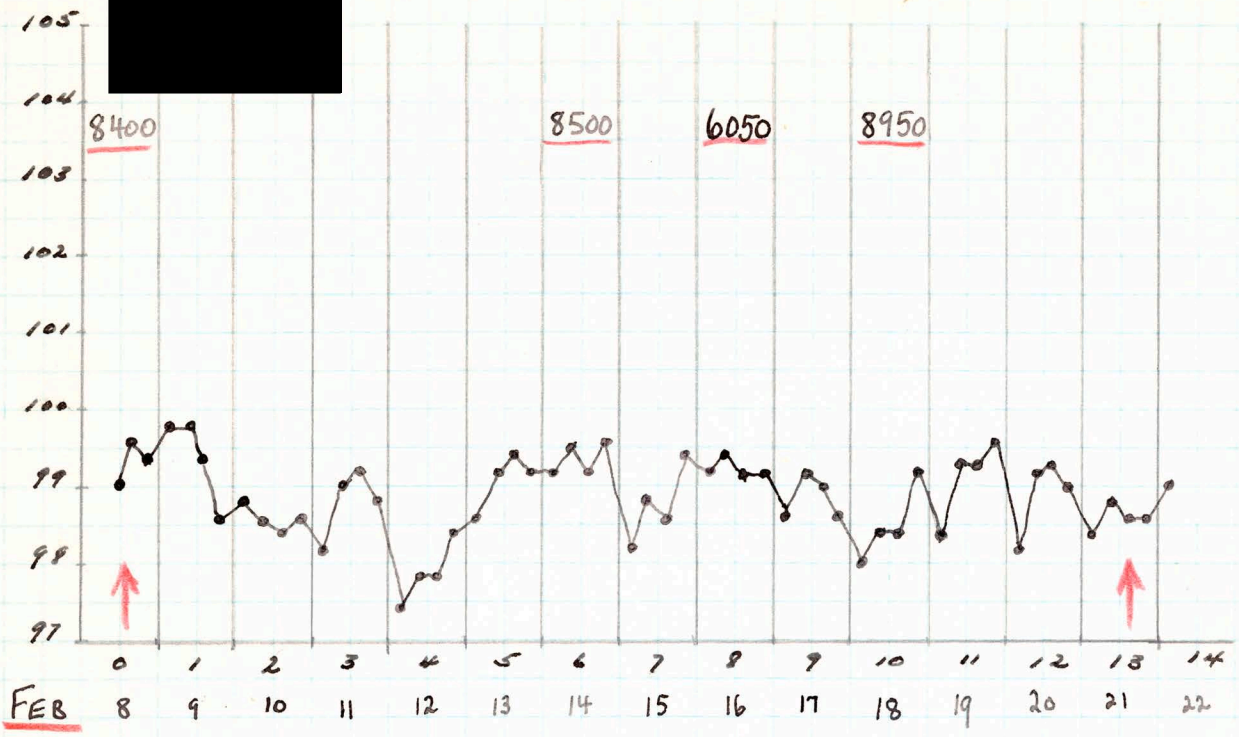
[redacted]



1.5cc OF [redacted]

Test for Presence of Virus in Serum of Patients with "Intercurrent" Fevers during course of Aedes aegypti Tests

[redacted]



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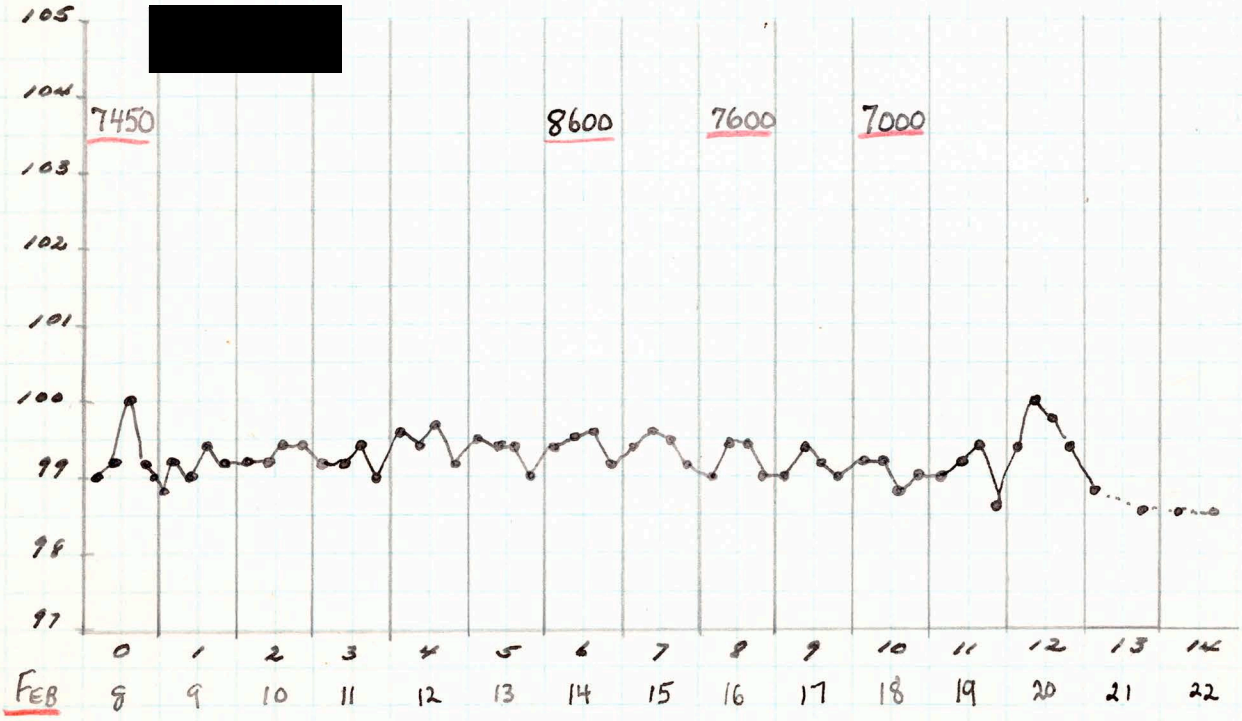


1.5 cc of [redacted] Pool

Inocul

Inoculations FEB. 15, 1944 10⁴⁵ - 11¹⁵ A.M.

[redacted] SERUM
UNTREATED
1cc INTRACUT.

[redacted]

[redacted] ERUM
IRRADIATED WITH ULTRAVIOLET LIGHT FOR ONE HOUR
1cc. INTRACUT.

Pass IV

[redacted]
— C.M.-[redacted] AGE 31
— W.M — " 44
— C.F. — " 39
— W.F. — " 47

[redacted] SERUM
24 HOURS BEFORE ONSET OF FEVER
1cc INTRACUT.

— [redacted] — W.F. — AGE 50

[redacted] SERUM
[redacted] days after irrad. virus
1cc INTRACUT

— [redacted] — C.M. — AGE 50

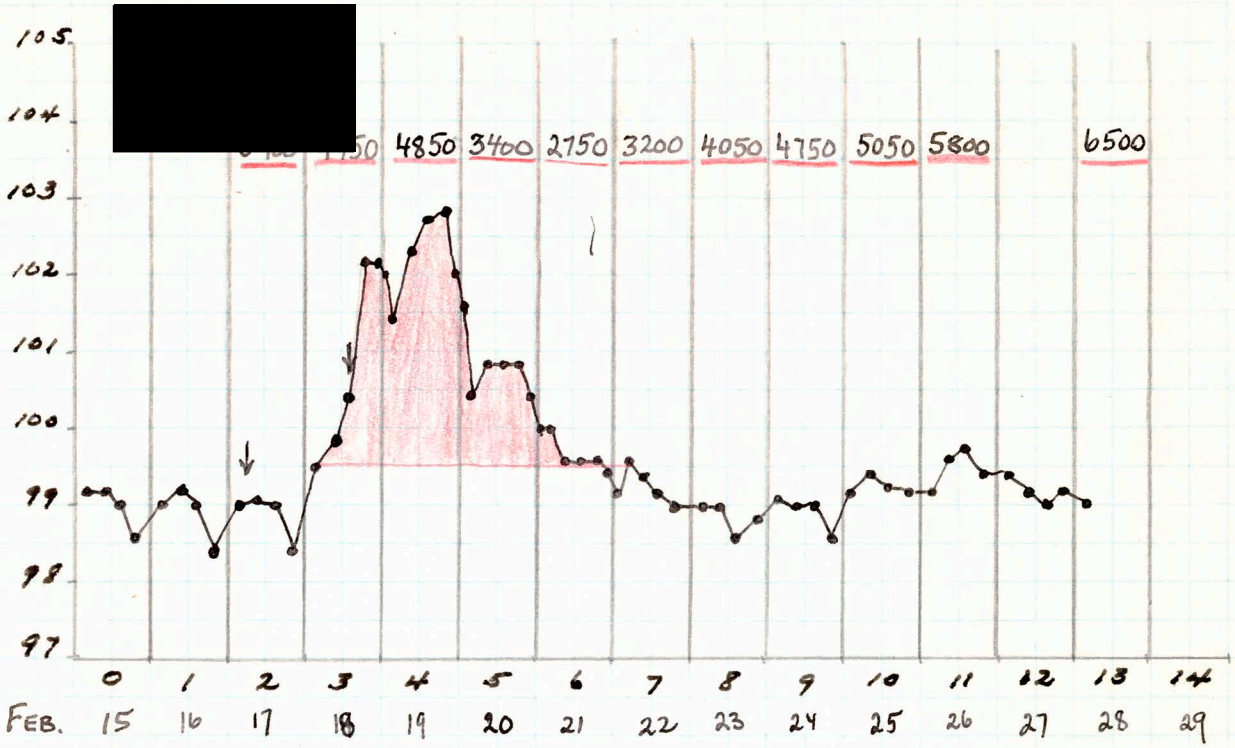
3RD PASSAGE CHICK EMBRYO
20% SUSPENSION
2cc. INTRACUT.

[redacted]
W.M. — AGE 52
C.F. — " 43

SICILIAN VIRUS — CHECK ON SUSCEPTIBILITY

CONTROLS FOR ULTRAVIOLET IRRADIATION

[redacted]



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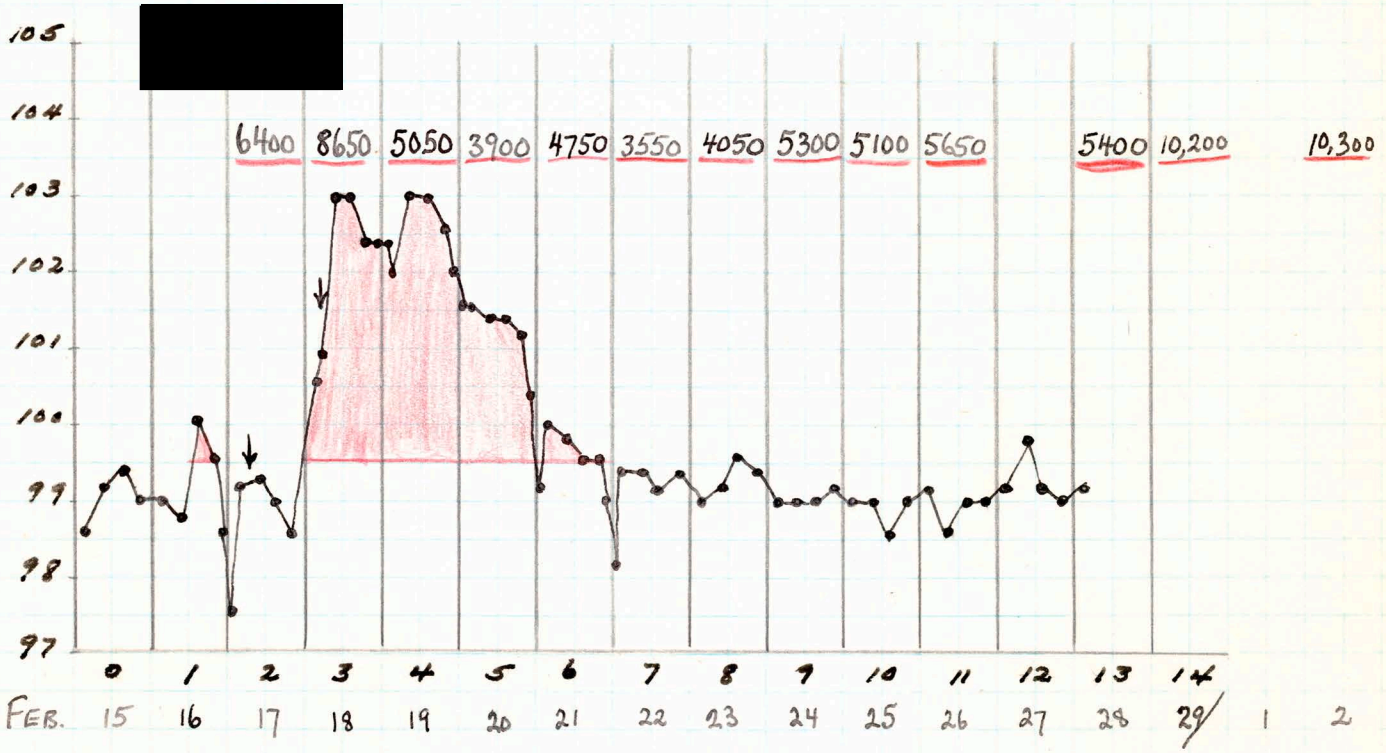
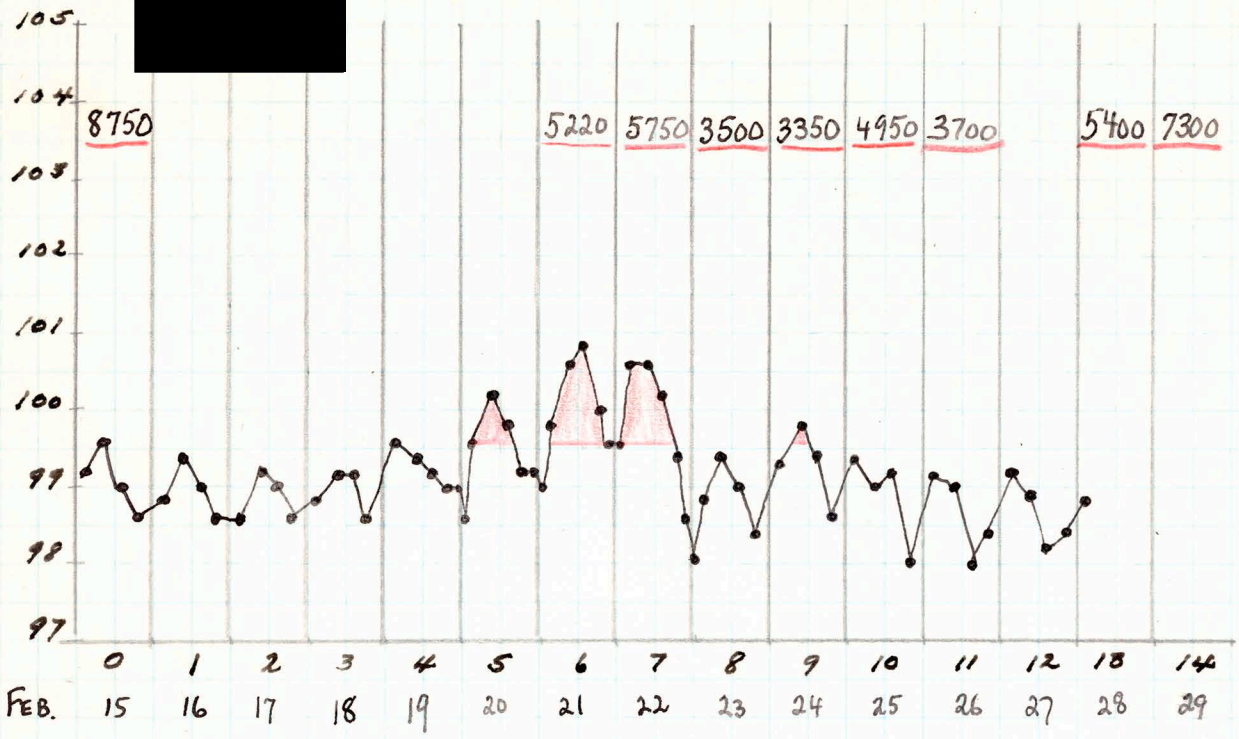


1cc [redacted] (4TH PASSAGE) SERUM I. CUT.

MIDDLE EAST VIRUS – TEST FOR PRESENCE OF VIRUS IN SERUM OBTAINED 24–28 HOURS BEFORE ONSET OF FEVER

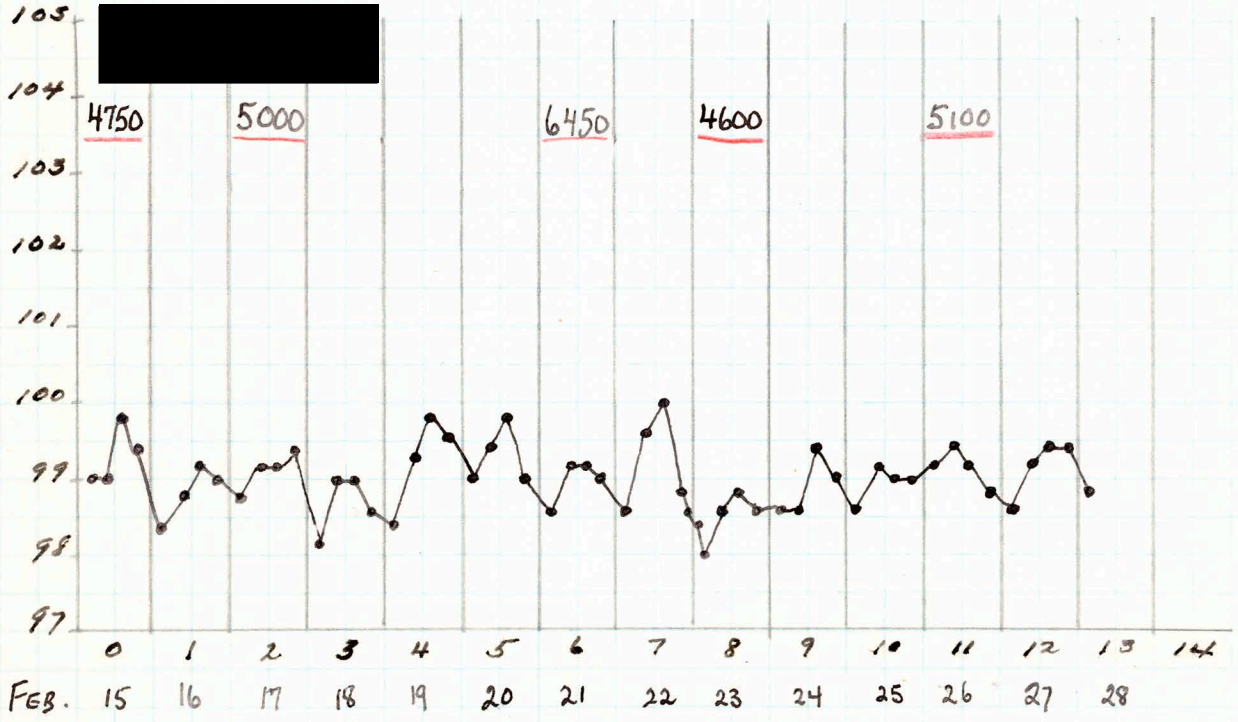
1 cc. HOLLAND SERUM I. CUT.

[redacted]



TEST FOR PRESENCE OF VIRUS IN COLBERT SERUM
(FEVER 13 DAYS AFTER INOCULATION OF IRRADIATED VIRUS)

[redacted]

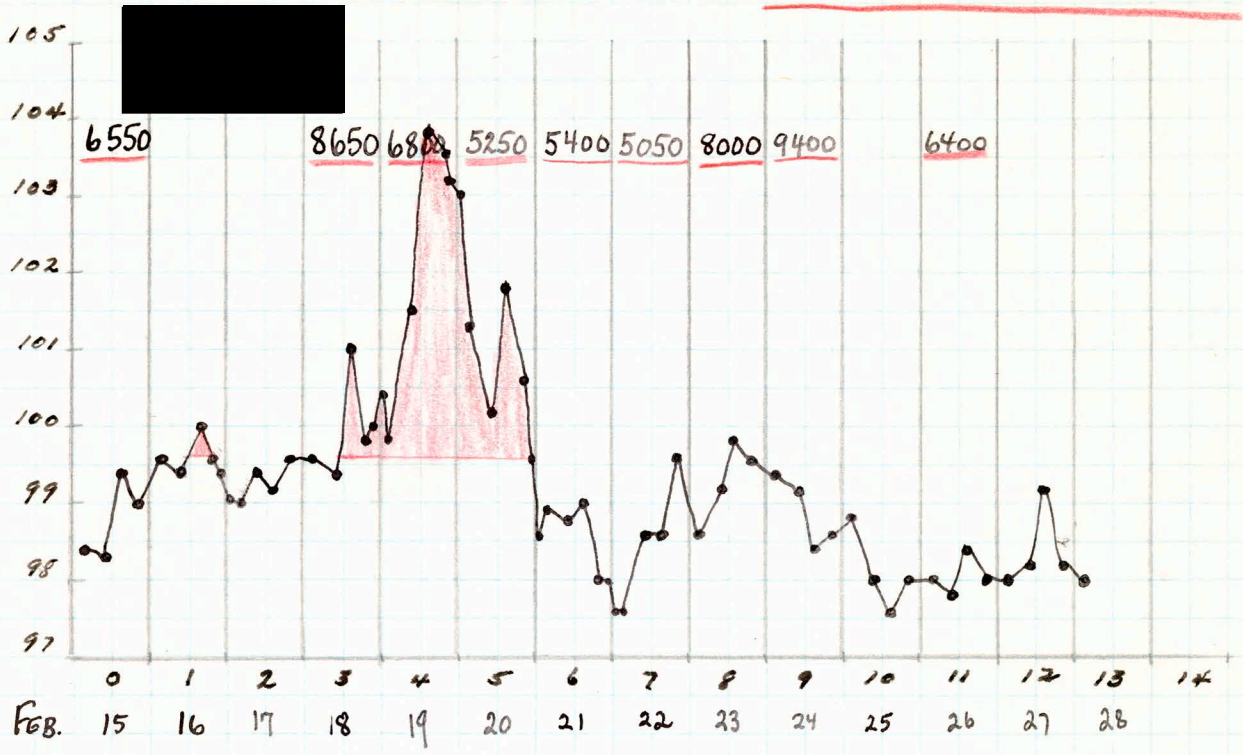


1 cc COLBERT SERUM I. CUT.

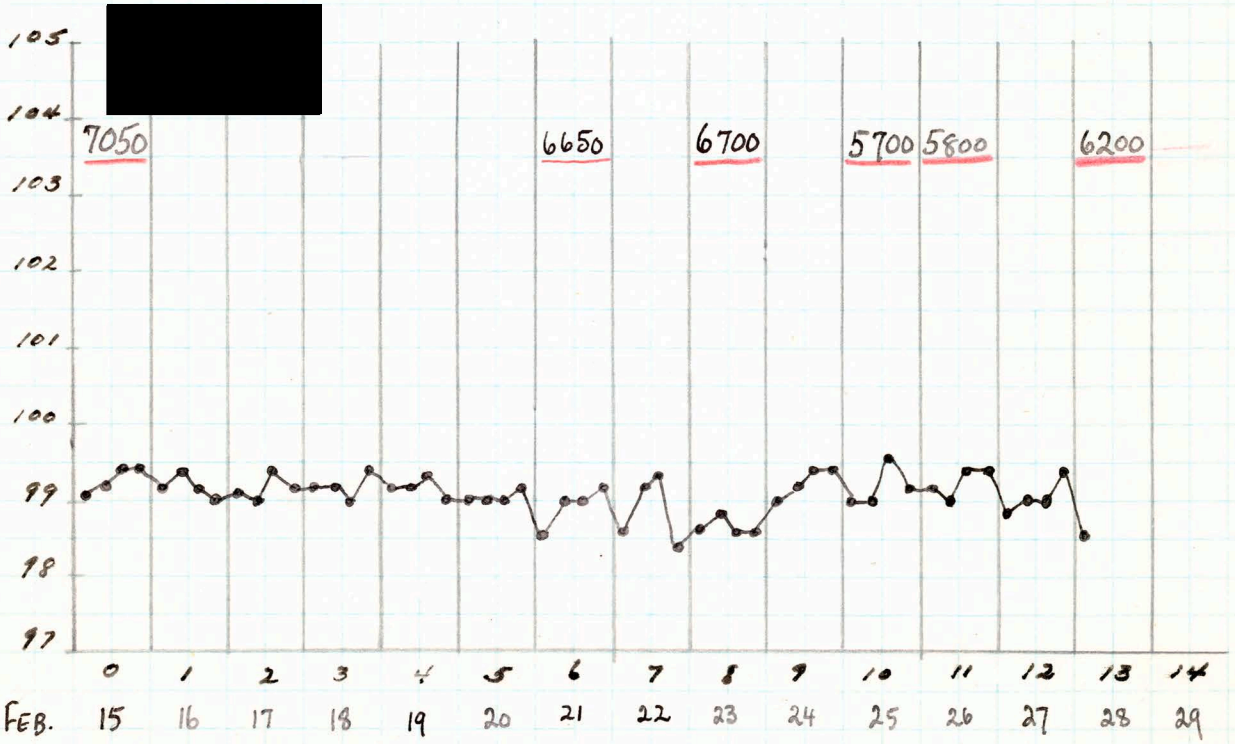
SICILIAN VIRUS — 4TH PASSAGE LAKEMAN-BOGART SERUM

IRRADIATED WITH ULTRAVIOLET LIGHT FOR ONE HOUR

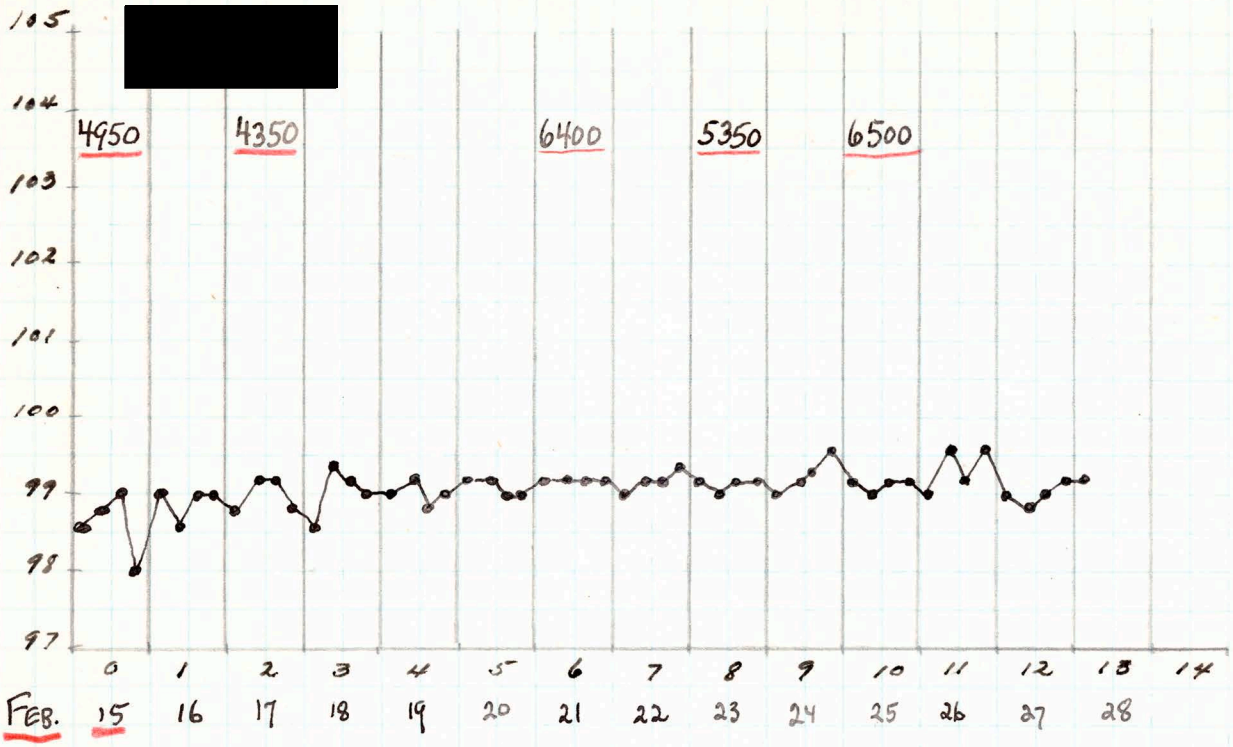
[redacted]

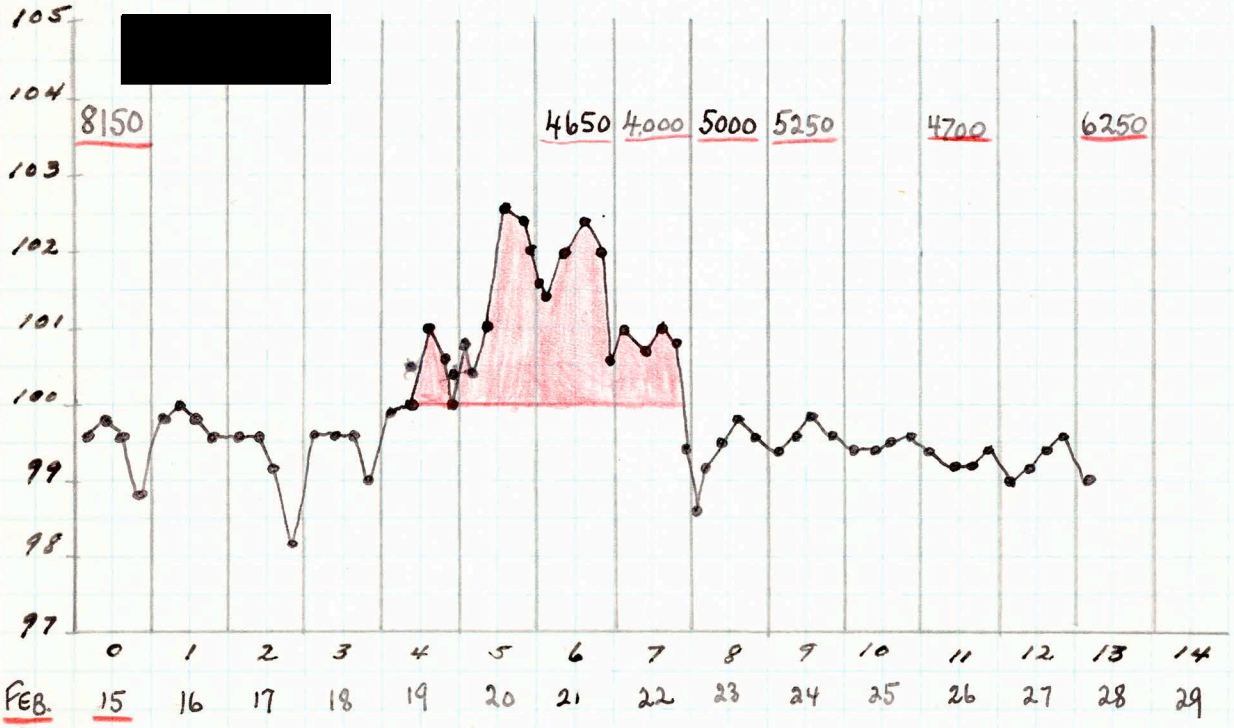


[redacted]



1 cc of IRRADIATED SERUM INTRACUTANEOUSLY





1cc OF IRRADIATED SERUM INTRACUTANEOUSLY

ESTIMATION OF SIZE OF PHLEBOTOMUS FEVER VIRUS BY FILTRATION THROUGH GRADOCOL MEMBRANES

PRELIMINARY NOTES ON GRADOCOL MEMBRANE FILTRATION

FEB. 21, 1944

VIRUS – USE SICILIAN STRAIN – 5TH PASSAGE SERA

1. [redacted] since FEB. 3 – 10cc
   " " " " – 7cc
   " " " 11 – 10cc
   " " " 17 – 10cc
   " " " 18 – 6.9cc

   36.9cc

2. DILUTE 1:4 WITH SALINE, I.E. ADD 3 VOLUMES OF SALINE to 1 of SERUM

3. CENTRIFUGE DILUTED SERUM ON HORIZONTAL CENRIFUGE FOR 15 min. at about 2000 rpm.

   SAVE 20cc for control inoculation

4. SET UP 600 mμ, 206.9 mμ, and 100 mμ filters
5. Pass 10cc of broth through each of these
6. Filter 110 – 120cc through the 600 mμ membrane

   (NOTE – if the filtrate does not pass rapidly – change to a 770 mμ membrane for the stock filtrate.

7. ~~Rack~~ about Set aside 20cc of the 600 mμ filtrate
8. Pass about 22cc of the 600 (or 770 mμ) filtrate through the 100, 200, 300, and 400 mμ membranes
9. Each of two subjects is to receive – 2cc intracutaneously
   6cc intravenously
   or the equivalent of 0.25cc undil. ser. i.cut.
   = 1.75cc " " i.VEN.

Notes on actual filtration on Feb. 21, 1944

600 mμ membrane – 10cc of broth passed rapidly

25cc of centrifuged diluted serum passed in 3 minutes, but second portion of 25cc was going thru dropwise slowly at 14-15 lbs. pressure

It was therefore decided to pass the remainder of the serum thru a 770 mμ membrane as a preliminary to other filtrations

770 mμ – 10cc of broth passed thru rapidly under pressure

Remaining 74cc of diluted serum passed thru in about 4-5 min. of filtration time at 14-15 lbs.

400 mμ – 10cc of broth passed rapidly under pressure.

About 26cc of 770 filtrate passed rapidly at 14 lbs. requiring only 2 to 3 minutes

17.5cc saved for inoculation – 8cc used for 101 mμ membrane

310.6 mμ – Same as 400 mμ membrane – 770 filtrate used
About 22cc filtered in 3 to 4 min.
17.5cc for inoculation – 3cc saved for 101 mμ

206.9 mμ – 10cc of broth passed rapidly

About 25cc of 770 mμ filtrate filtered at 15 lbs.
15cc passed in first 3 minutes
20cc " " " 5 minutes
25cc " " " 8 "

17.5cc saved for inoculation – 7cc for 101 mμ

101 mμ – Membrane "A" – 10cc Broth passed rapidly within 3 minutes
25cc of 600 mμ filtrate used at 15 lbs.
Filtration dropwise – slow – 6cc in first hour
10cc " " 3 hours

Membrane "B" – Broth as above. Fluid previously passed thru 400 mμ (8cc), 310 mμ (3cc), 207 mμ (7cc) was pooled (total 18cc) and filtered thru at 14 lbs.
Filtration relatively rapid though dropwise
10cc in first 5 minutes
15cc in " 15 "

Sicilian Virus — Gradocol Membrane Filtration Test

Inoculations — Feb. 21, 1944

Unfiltered Virus
Serum 1:4 – centrifuged
2 cc intracut.
6 cc intraven.
[redacted]

600 mμ Filtrate
2 cc intracut.
6 cc intraven.
[redacted]

400 mμ Filtrate
2 cc intracut.
6 cc intraven.
[redacted] – W. M. – Age 56
– C. F. – " 32

300.6 mμ Filtrate
2 cc intracut
6 cc intracut
[redacted] – W. M. – Age 48
– C. F. – " 35

206.9 mμ Filtrate
2 cc intracut
6 cc intraven
[redacted] – C. M. – " 37
– C. F. – " 46

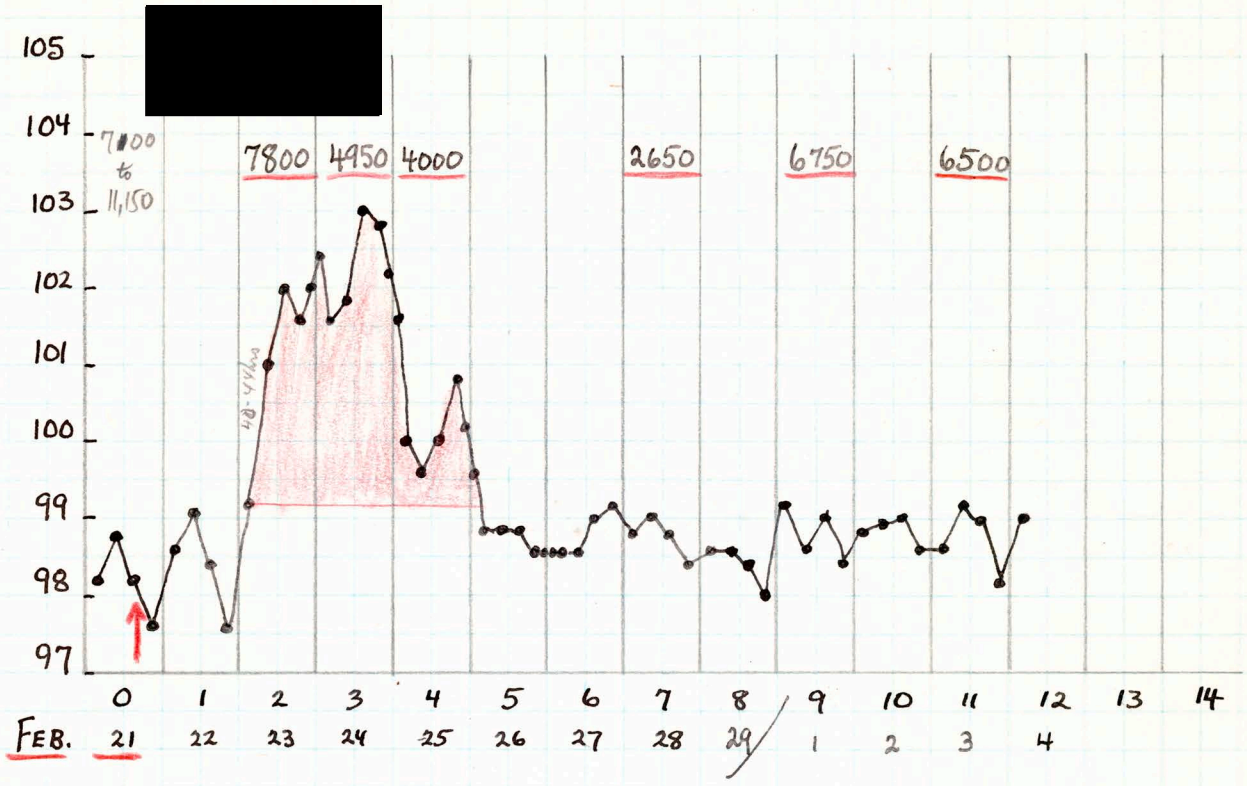
101 mμ Filtrate
2 cc "B." intracut
10 cc (A+B) intraven.
[redacted] – C. M. – " 45
– W. F. – " 15

8.5 cc

Men 345 – 445 P.M. Women 450 – 545

SICILIAN VIRUS – UNFILTERED, DILUTED, CENTRIFUGED VIRUS

[redacted]



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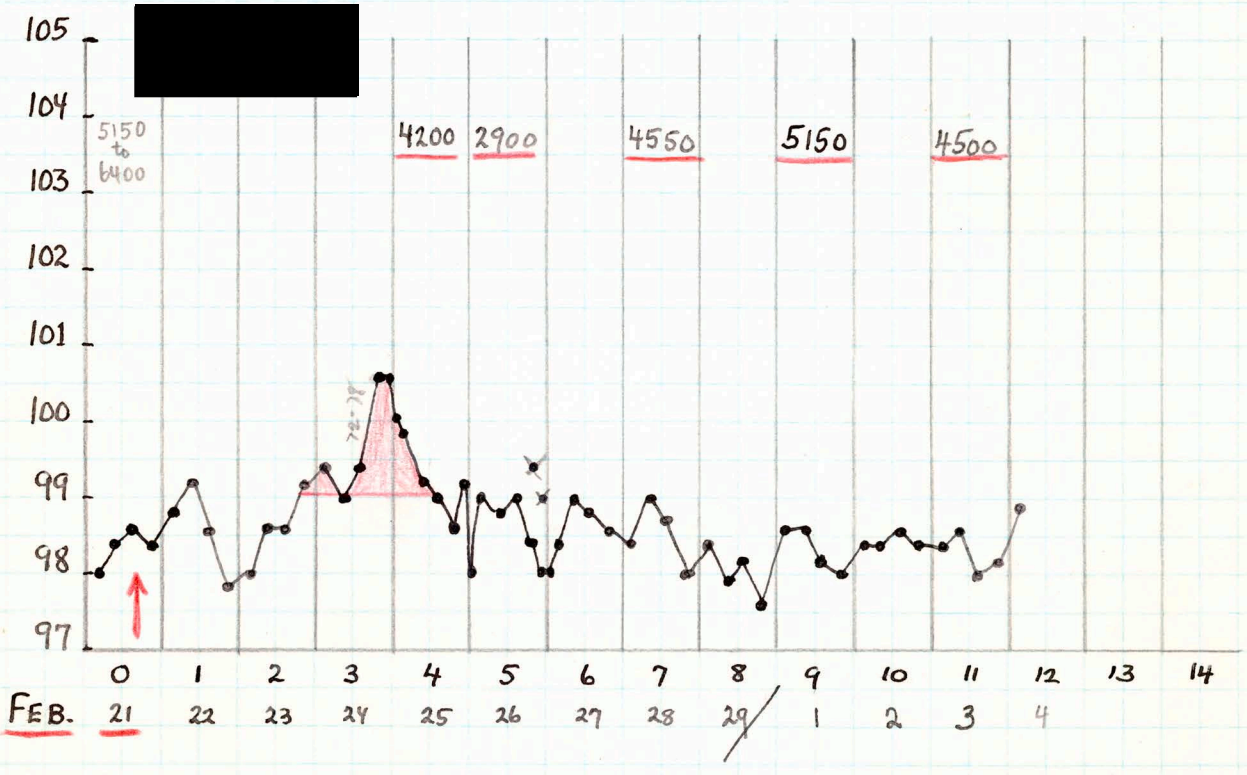
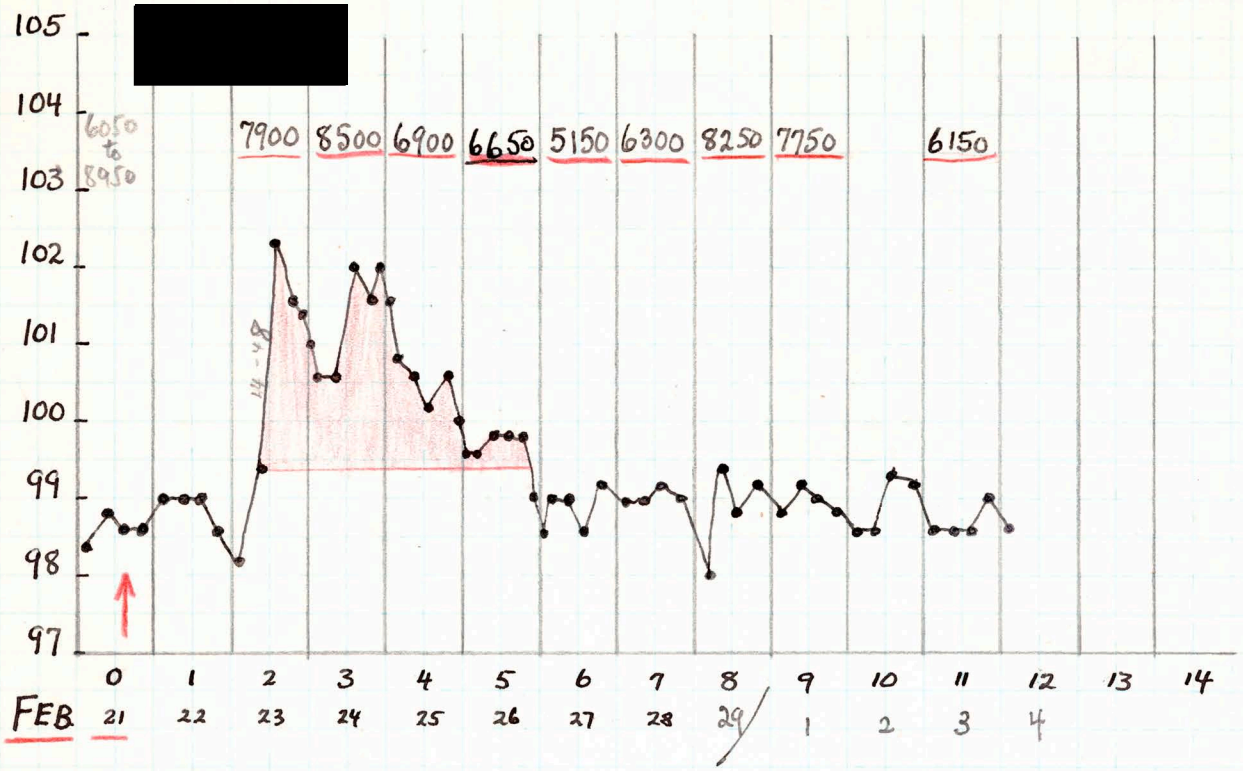
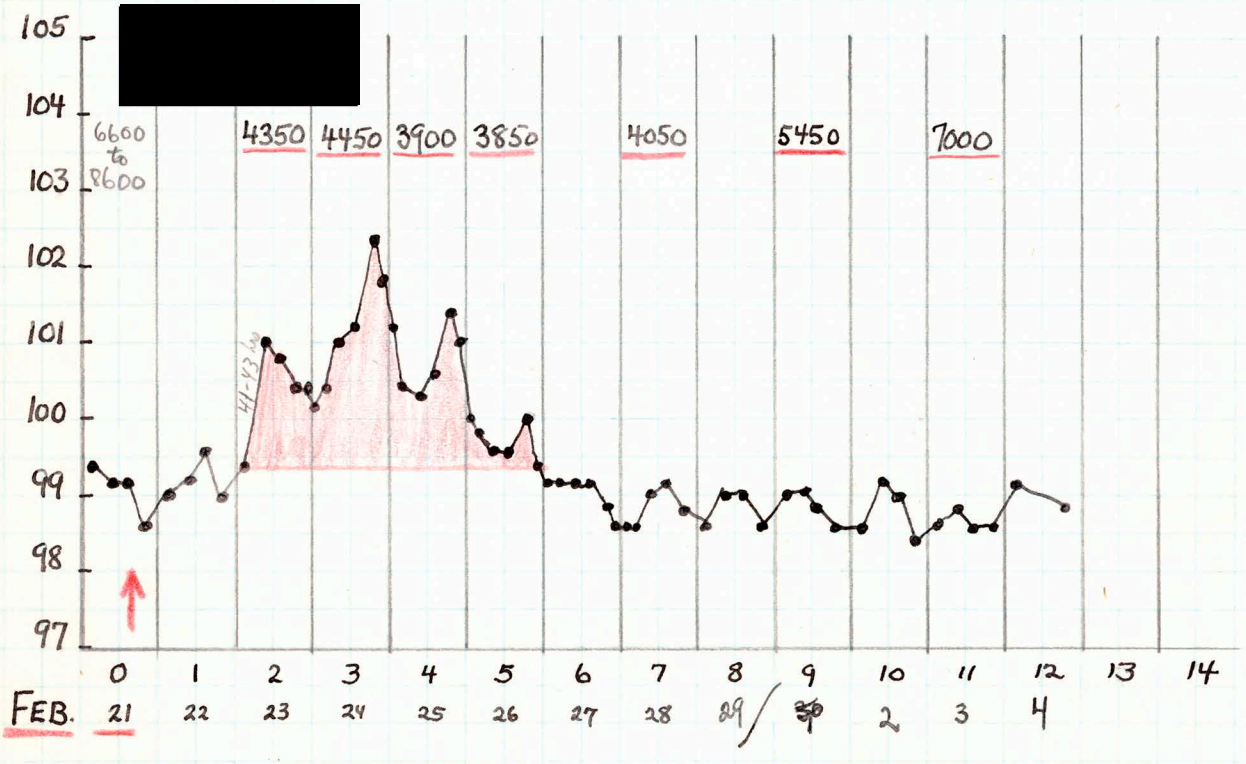


2 cc INTRACUT
6 cc INTRAVEN

SICILIAN VIRUS

600 mμ FILTRATE

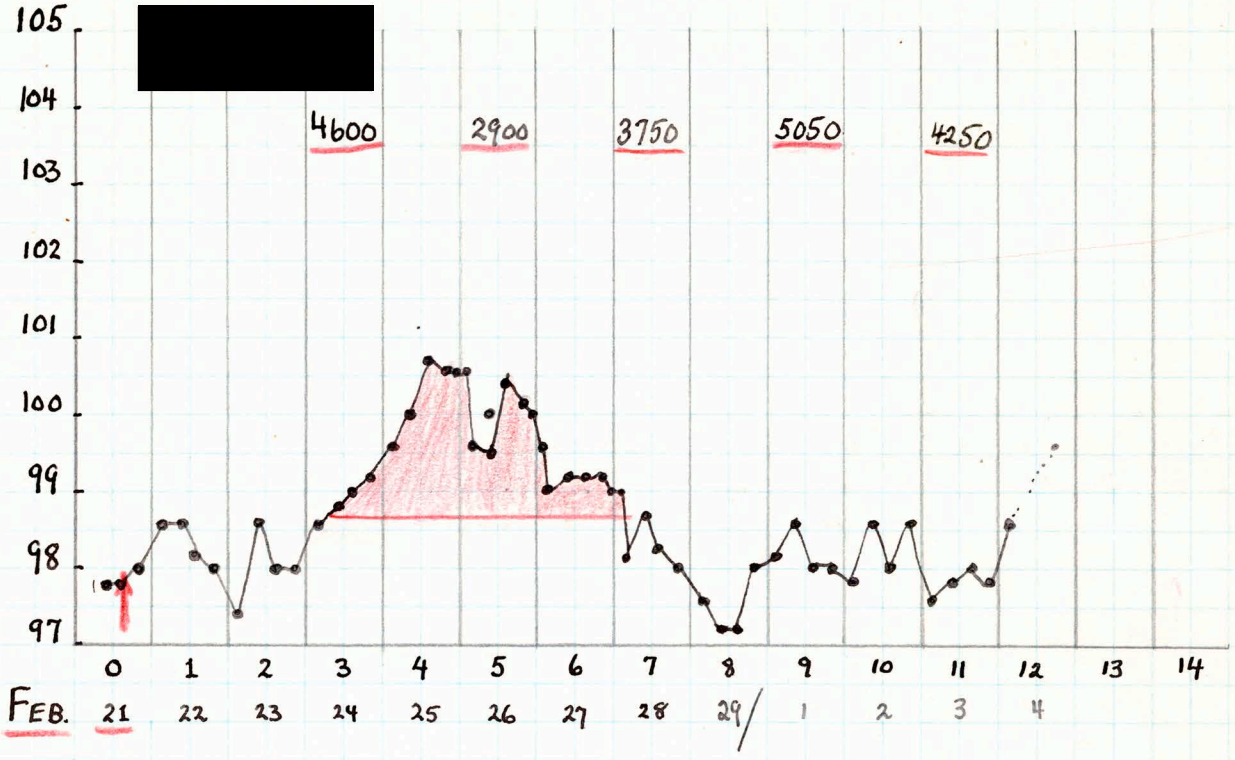


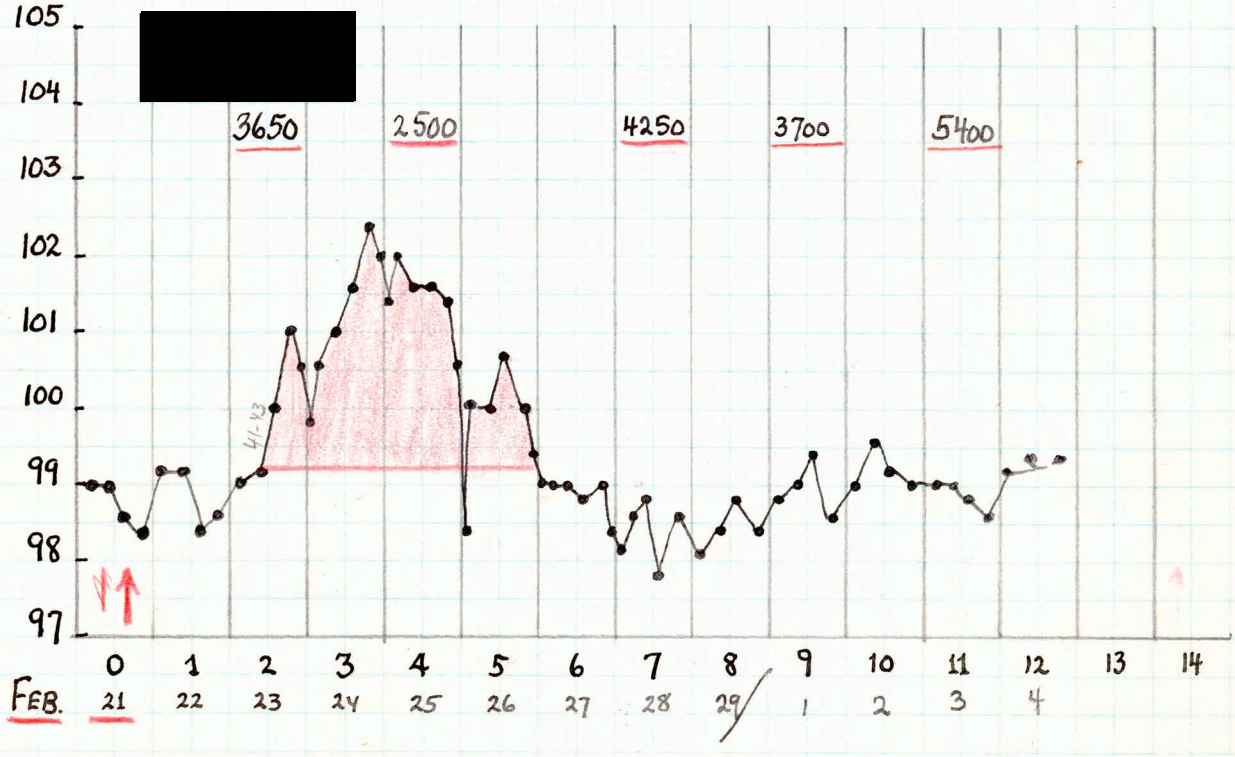


2 cc INTRACUT.
6 cc INTRAVEN.

SICILIAN VIRUS

400 mμ FILTRATE

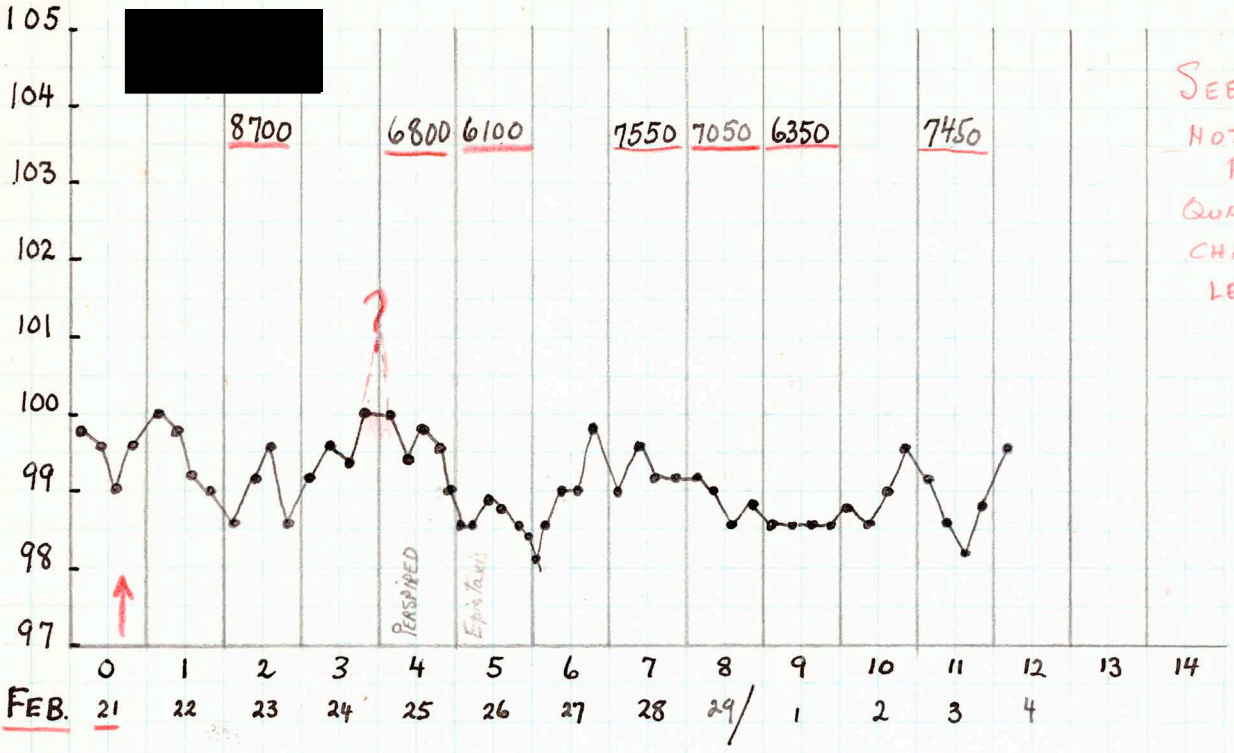




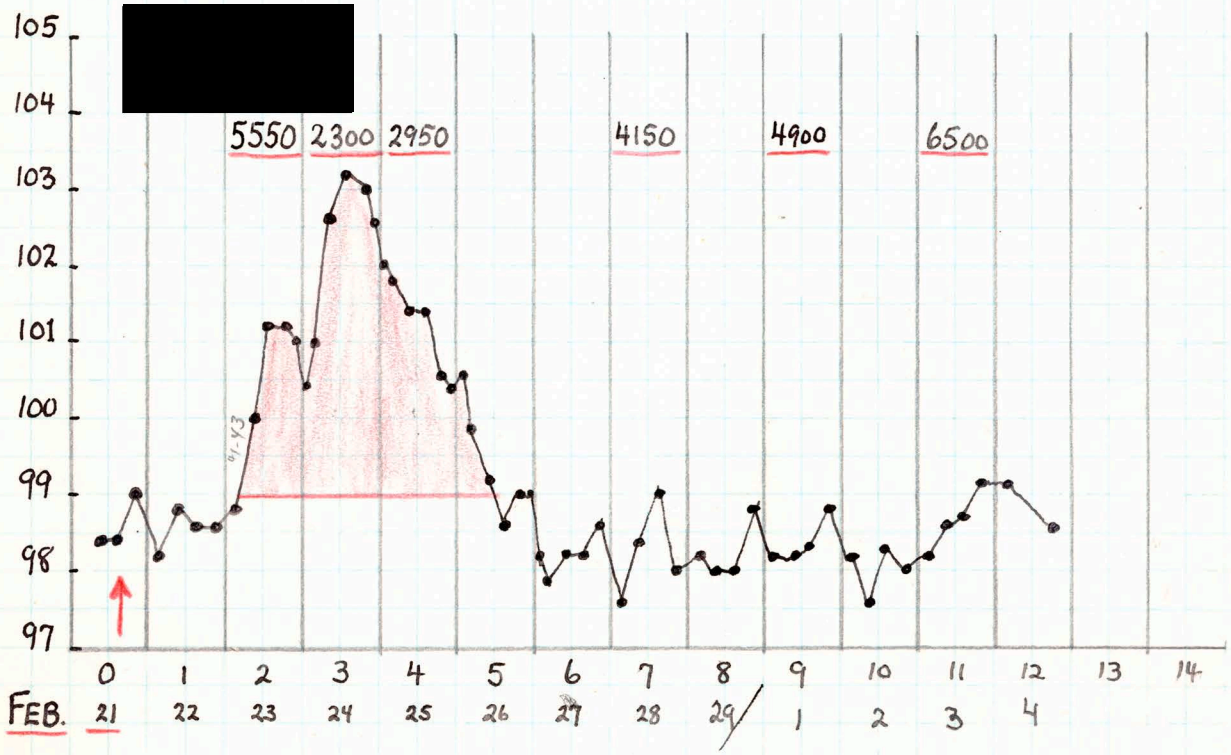
2 cc INTRACUT
6 cc INTRAVEN.

SICILIAN VIRUS

311 mμ FILTRATE



SEE OTHER NOTEBOOK FOR QUALITATIVE CHANGES IN LEUKOCYTES

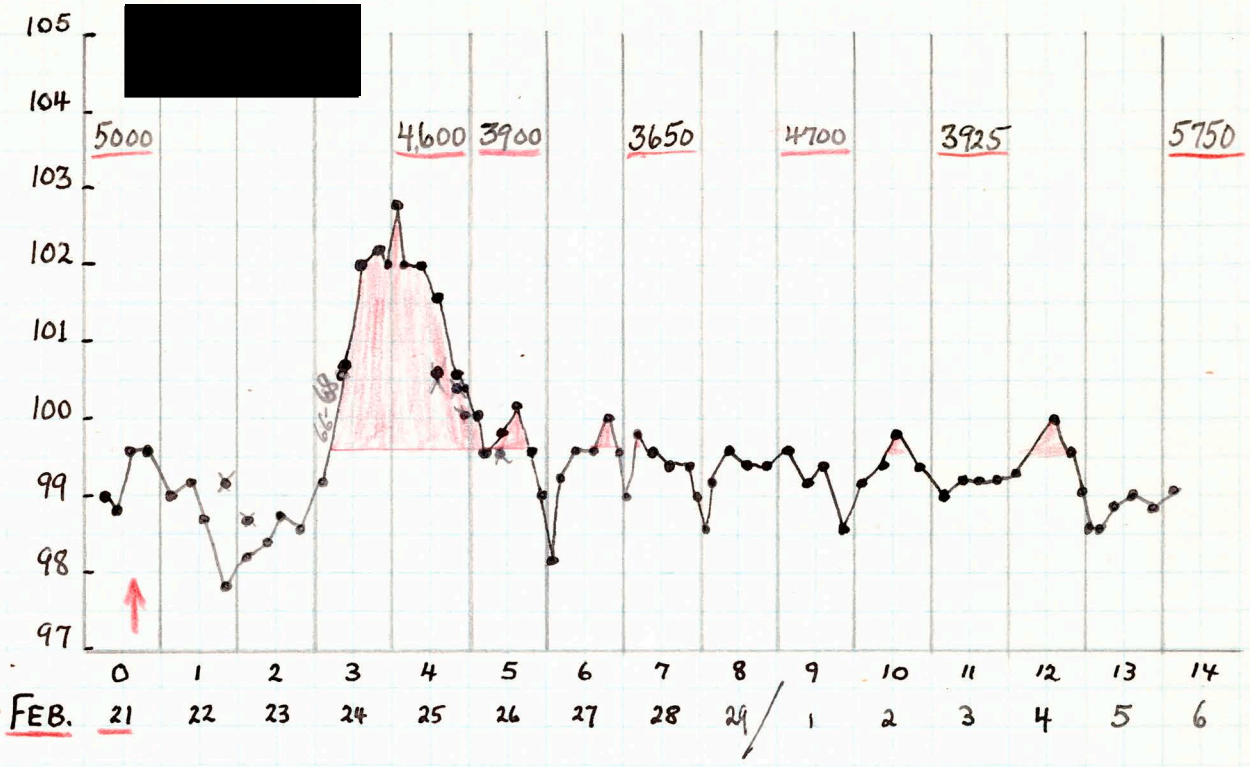


2 cc INTRACUT
6 cc INTRAVEN

SICILIAN VIRUS

207 mμ FILTRATE

[redacted]



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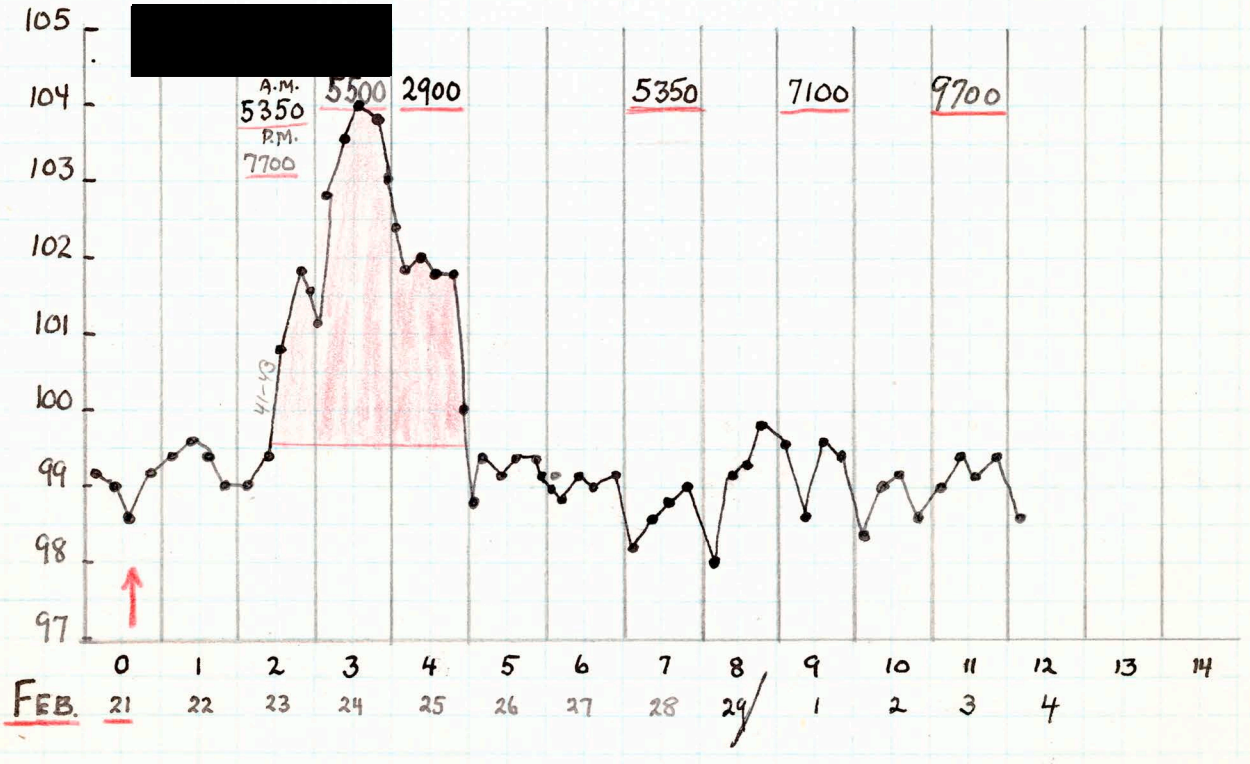
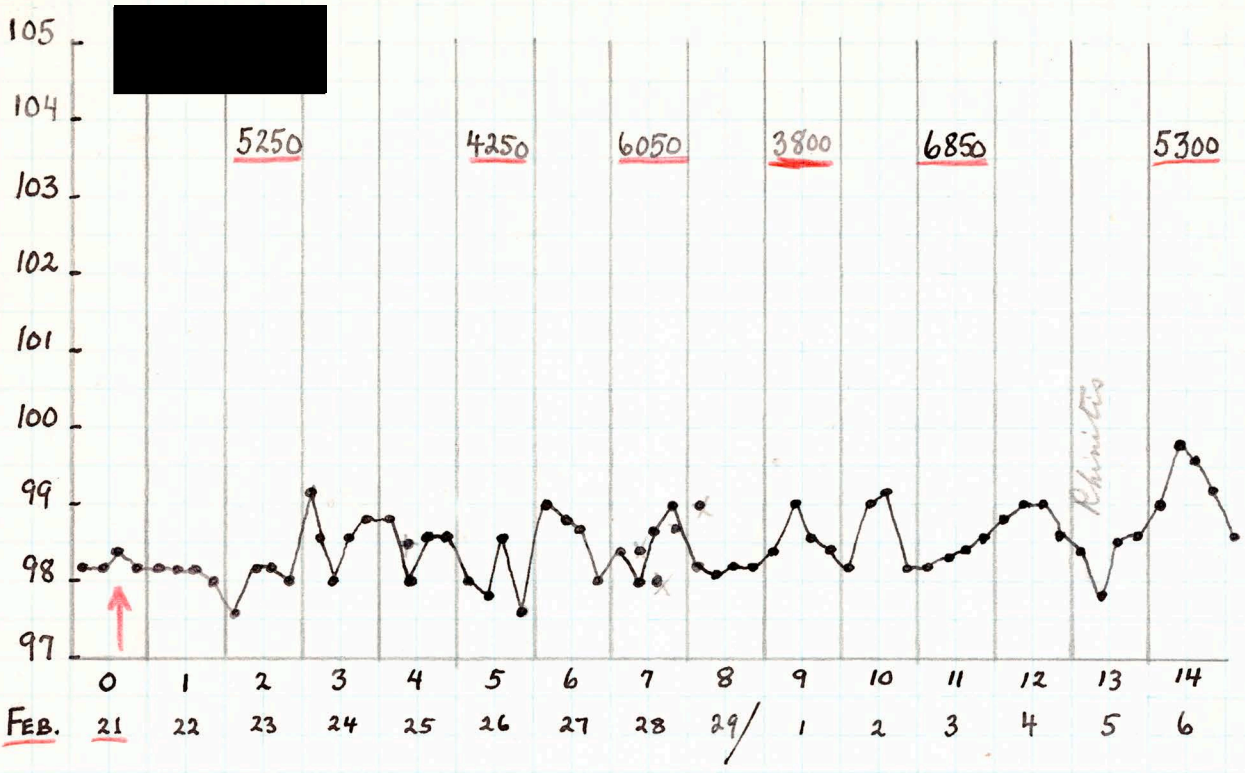


2 cc INTRACUT,
6cc INTRAVEN.

SICILIAN VIRUS

101 mμ FILTRATE

[redacted]



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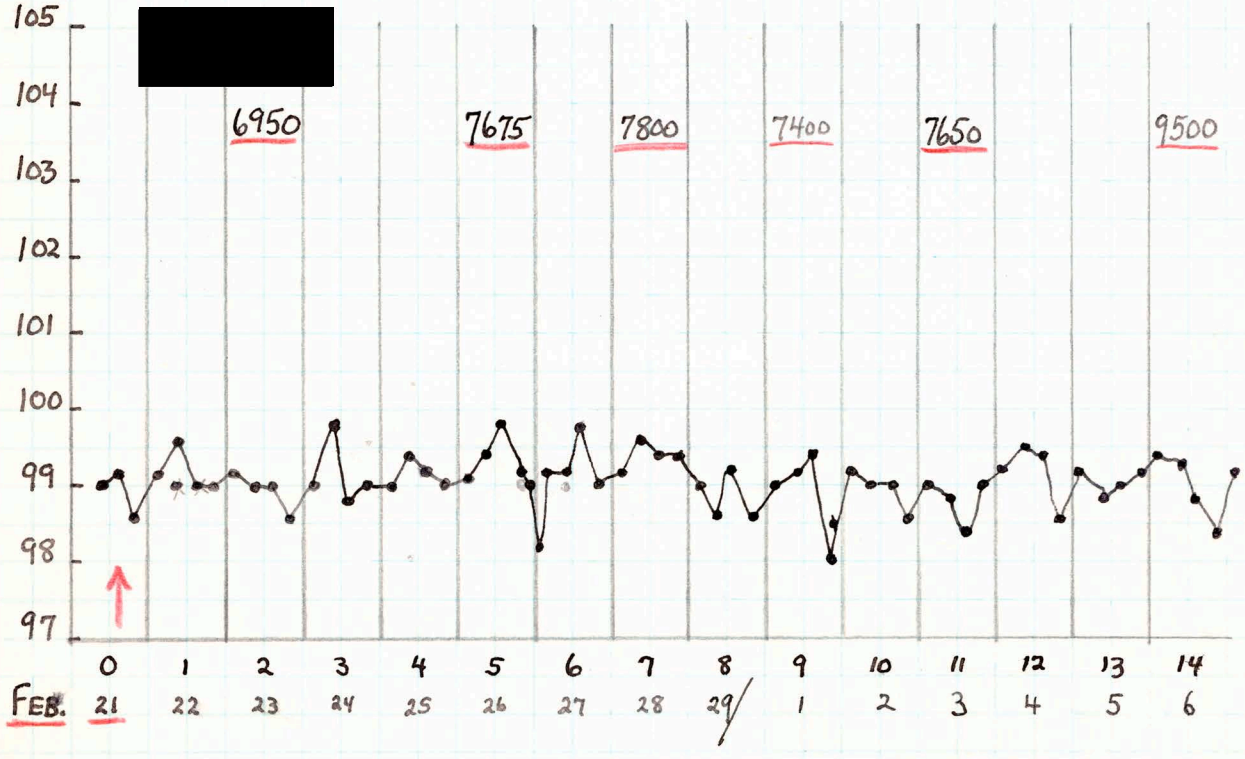


2 cc INTRACUT.
10 cc INTRAVEN.

1. CONCENTRATION OF VIRUS IN POOL USED FOR GRADOCOL MEMBRANE FILTRATION TEST

VIRUS — POOL OF SNAPP, GILBERT, BOCKHORST, WALLACE AA 1:10,000 and 1:100,000 dilutions prepared in saline shortly before inoculation

1cc, 1:10,000 intraven. { [redacted] — white male — age 49; [redacted] — colored female — " 37

1cc, 1:100,000 i.ven. { [redacted] — " male — " 34; [redacted] — " female — " 35

2. TEST FOR NEUTRALIZING ANTIBODY IN SERA of RECOVERED, IMMUNE PERSONS

"IMMUNE" SERUM — SAME AS USED in PREVIOUS TEST, i.e. POOL OF IRVIN, WALTERS, MORSE, RIGGS (frozen ampules - not previously thawed)

VIRUS — POOL USED ABOVE

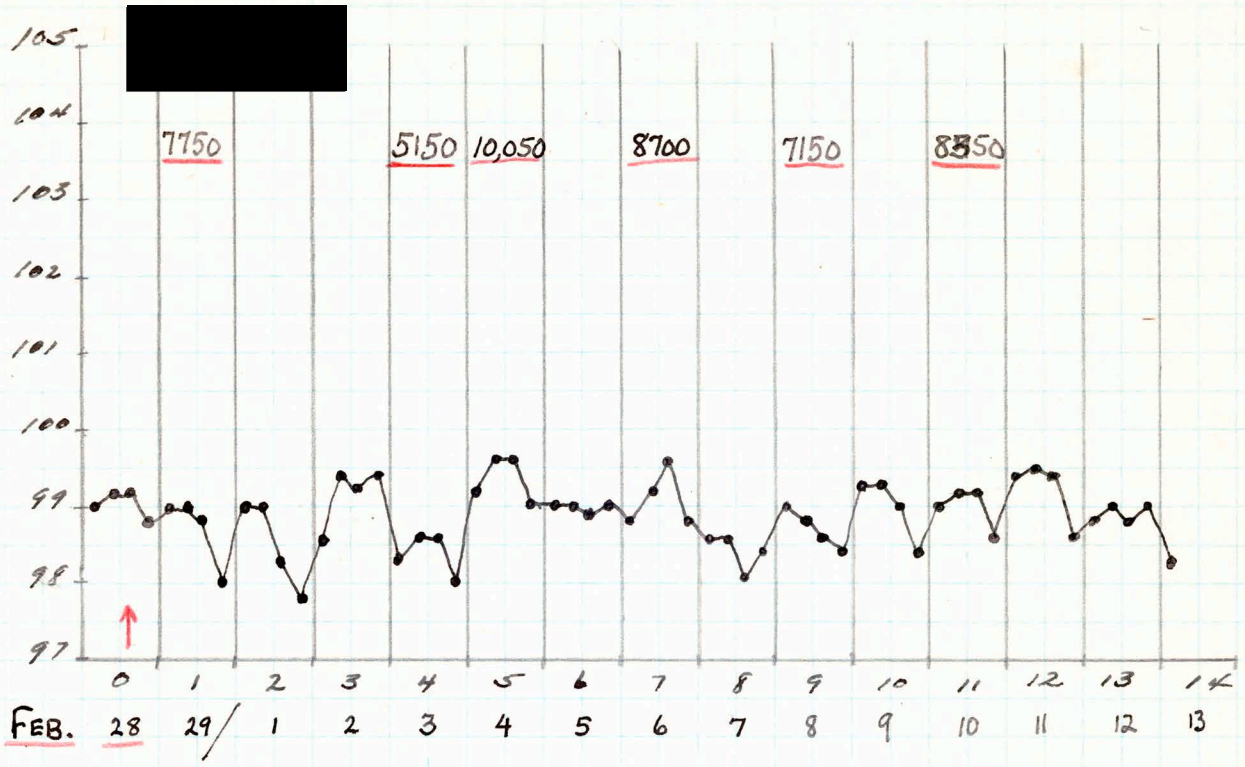
2.2cc serum + 1.1cc virus — mixed at 12:30 P.M. left at room temp. until inoculation 2:50 P.M.

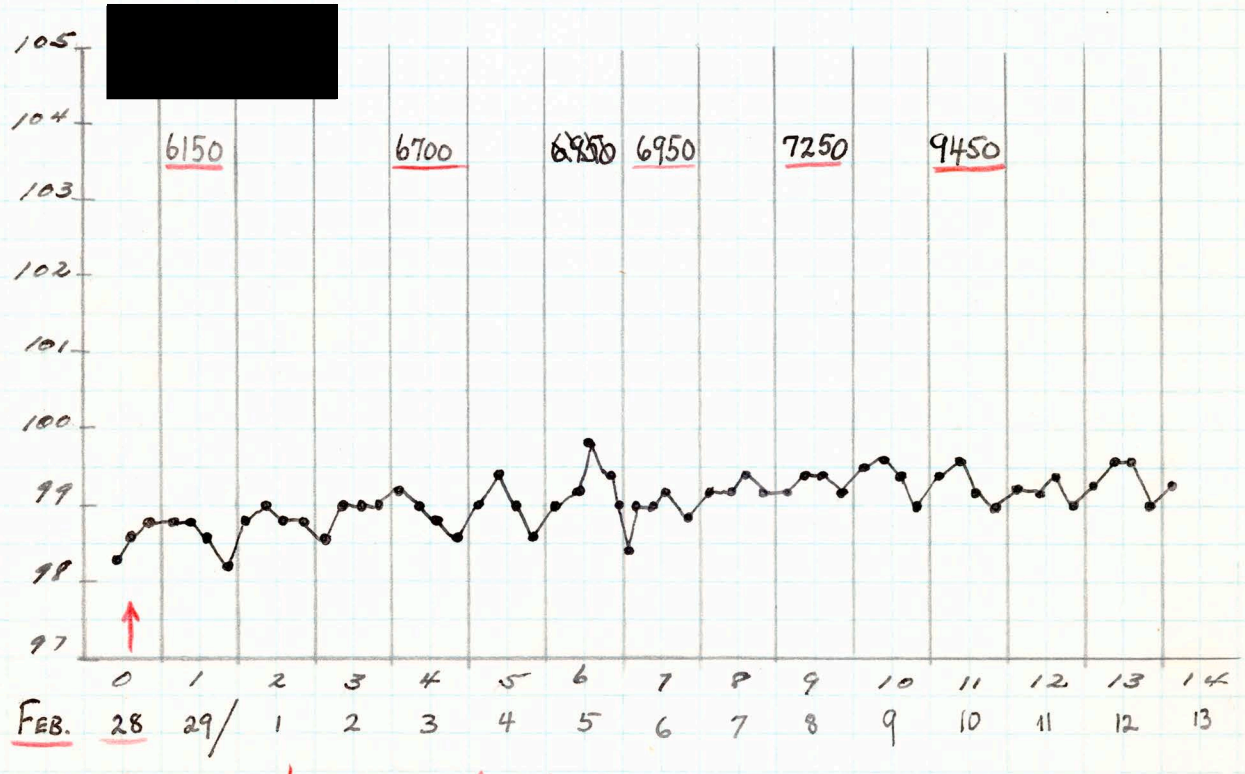
1.5cc of mixture intracutan. { [redacted] — WHITE MALE - AGE 39; [redacted] — COLORED " — " 40

3. TEST FOR SUSCEPTIBILITY AND CONTROL FOR ABOVE

0.5cc of above virus i.CUTAN. — [redacted] — WHITEE FEMALE - AGE 50

Sicilian Virus — 5th Passage Pool — Concentration of Virus

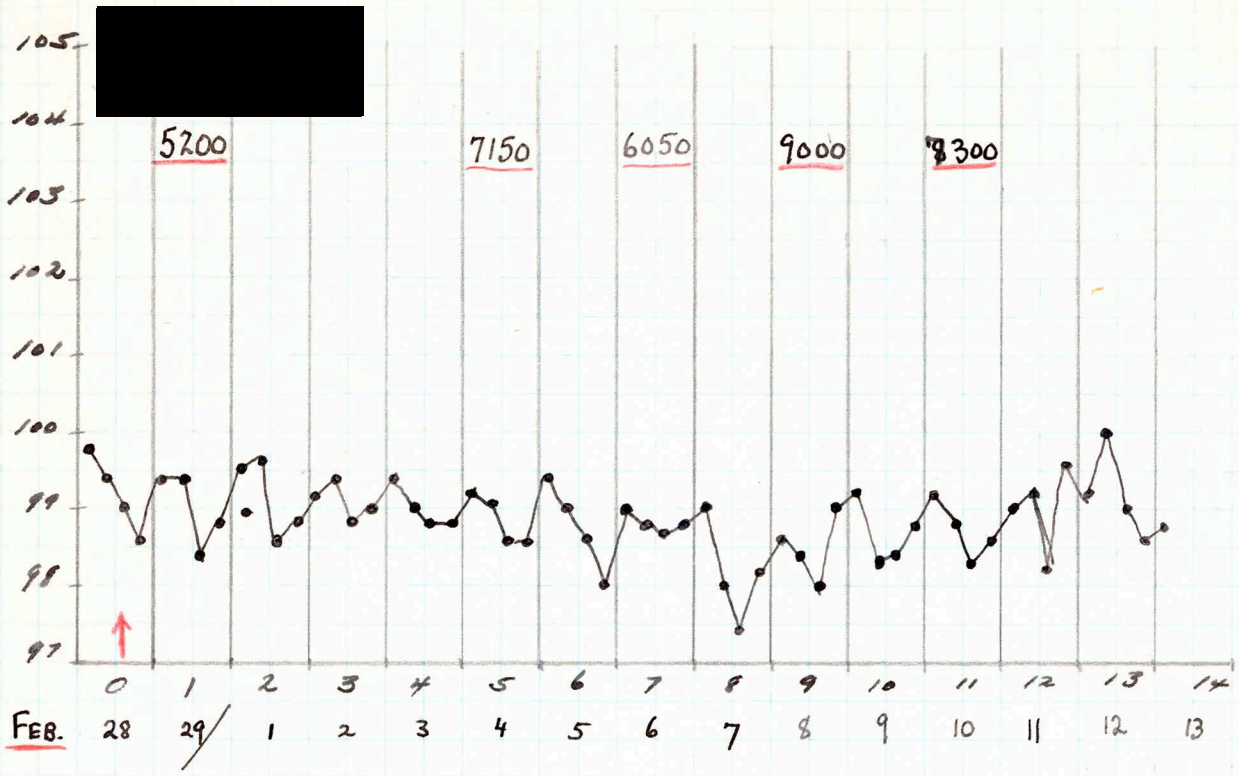




1cc of 1:10,000 intravenously

SICILIAN VIRUS – 5TH PASSAGE POOL — CONCENTRATION OF VIRUS

[redacted]



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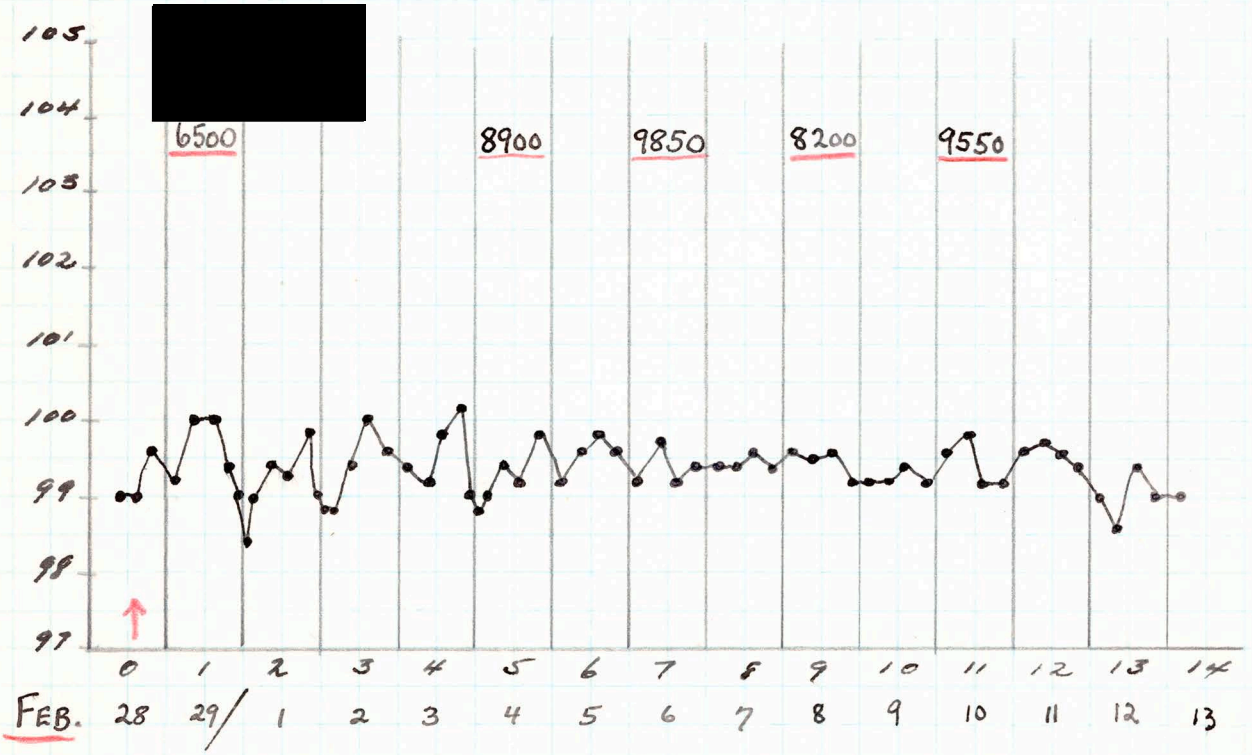
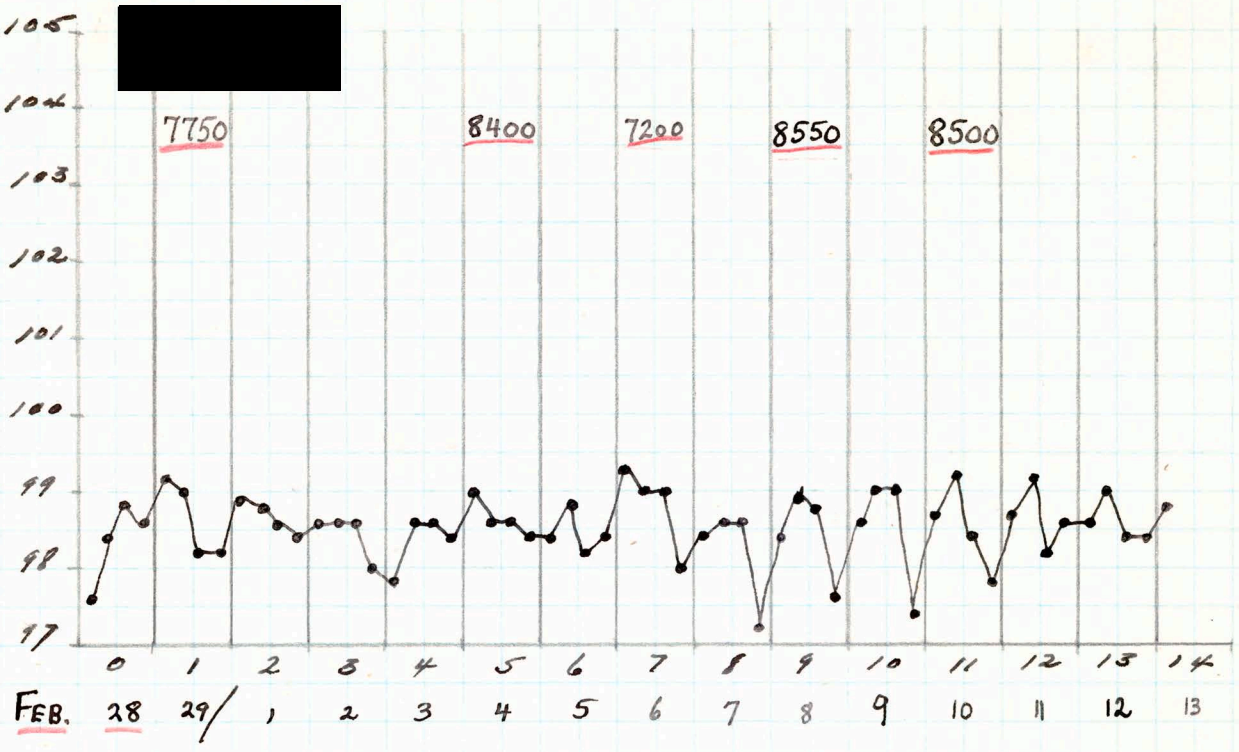


1/cc of 1:100,000 INTRAVENOUSLY

Sicilian Virus — Test for Neutralizing Antibody

[redacted]



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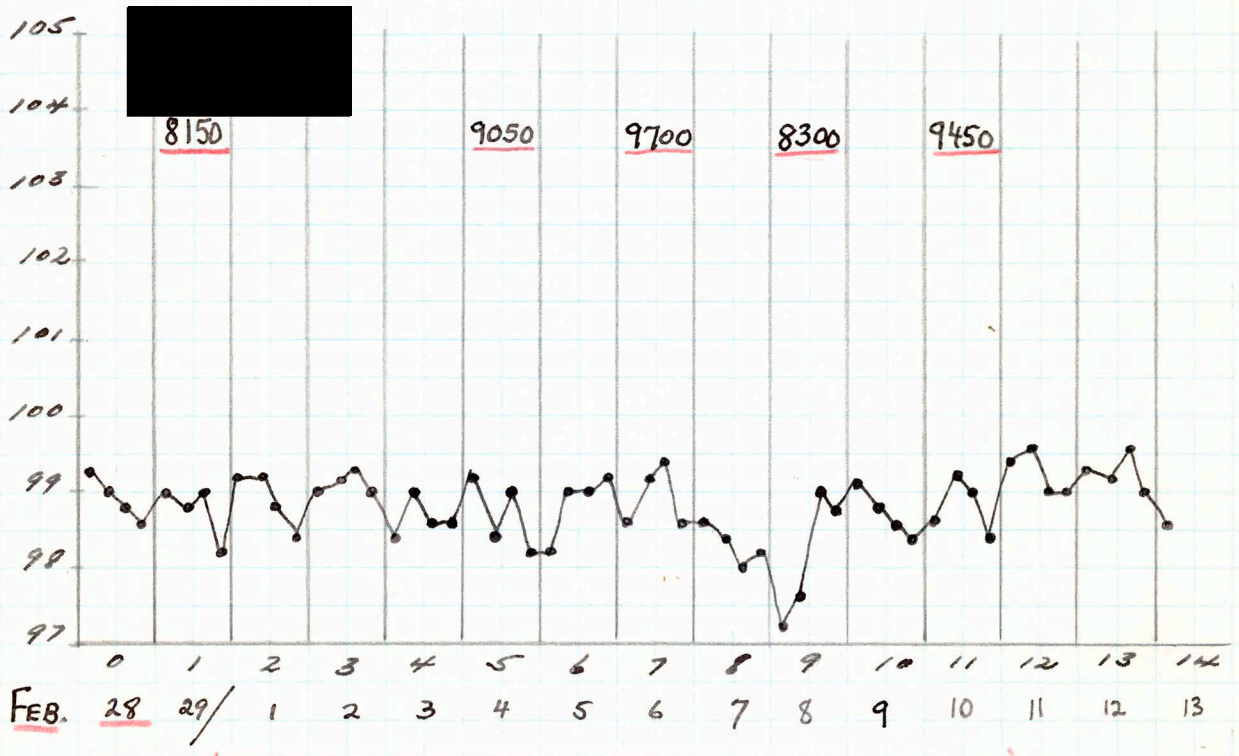
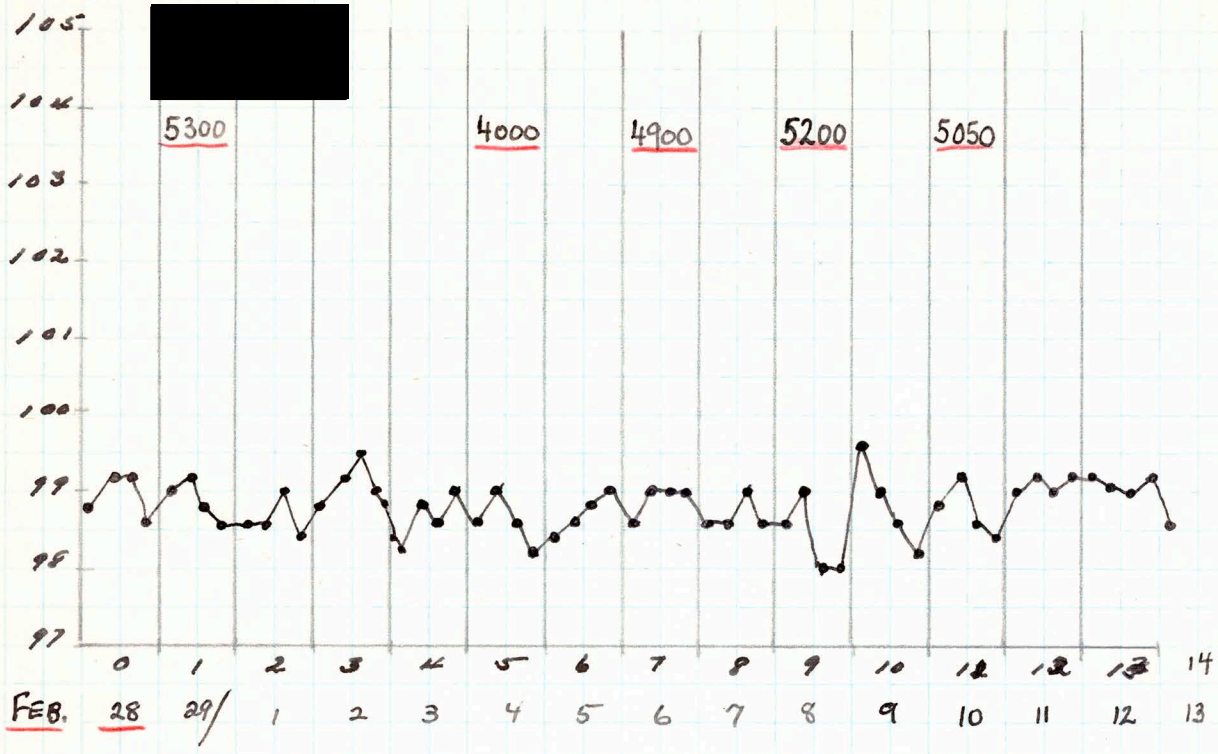


1.5 cc of convalescent serum-virus mixture intracutaneously

(1cc of immune serum + 0.5cc virus)

SICILIAN VIRUS — TEST FOR SUSCEPTIBILITY

0,5cc 5TH PASSAGE POOL INTRACUTAN.



SICILIAN VIRUS — MARCH 7, 1944

1. FOUR MONTH IMMUNITY TEST

2. TEST FOR SUSCEPTIBILITY OF SUBJECTS INOCULATED WITH 100 mμ FILTRATE

VIRUS USED — POOL OF 5TH PASSAGE SERA USED IN FILTRATION AND NEUTRALIZING ANTIBODY TESTS

[redacted]

4.0 cc
4.5 cc
4.7 cc
2.7 cc
15.9 cc

PREVIOUS INOCULUM	1ST FEVER DATE	NAME	TEST DOSE
SICILIAN	OCT. 25/43	[redacted] W.M. - AGE 43	1 cc
"	NOV. 5 "	" " - " 41	"
"	" "	" " - " 48	"
"	" "	" " - " 52	"
"	" "	W.F. - " 45	"
"	NOV. 13	" " - " 43	"
MIDDLE EAST	NOV. 7	W.M. - " 42	"
" "	" "	C.M. - " 55	"
" "	" "	W.F. - " 39	"
" "	NOV. 6	" " - " 46	"
0.01 cc " "	NO FEVER OCT. 11	[redacted] - W.M. - " 46	0.5 cc
0.001 cc " "	OCT. 11 - NO FEVER	- W.F. - " 50	"
101 mμ FILTRATE		[redacted] C.M. - " 45	1 cc
" "		W.F. - " 15	"

All inoculated intracutaneously 10 to 11 A.M.

MARCH 8, 1944 — No reaction at any of the inoculated sites

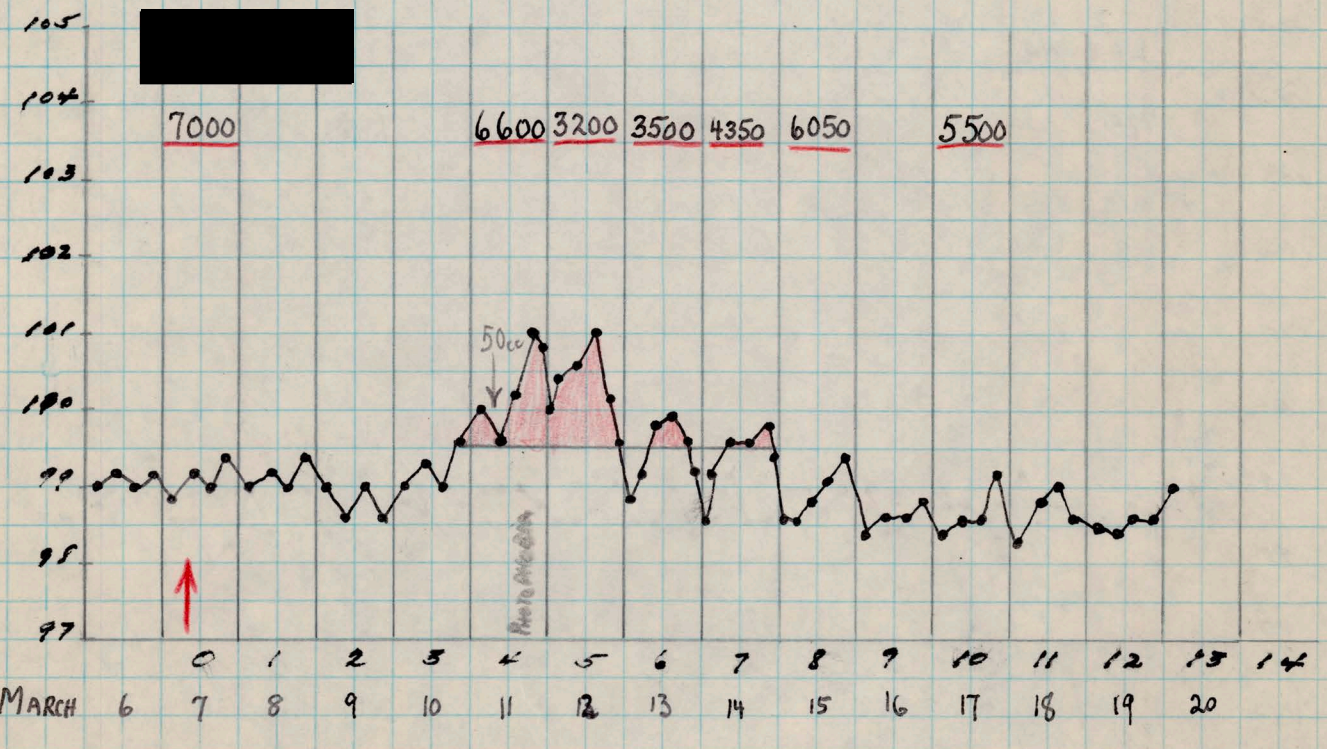
SICILIAN VIRUS – CONTROLS FOR a) 4 MONTH IMMUNITY TEST

b) 100 mμ subjects' IMMUNITY TEST

c) Check on infectivity of 0.5cc dose used in neutralization test 3/28/41

[redacted]

[redacted]

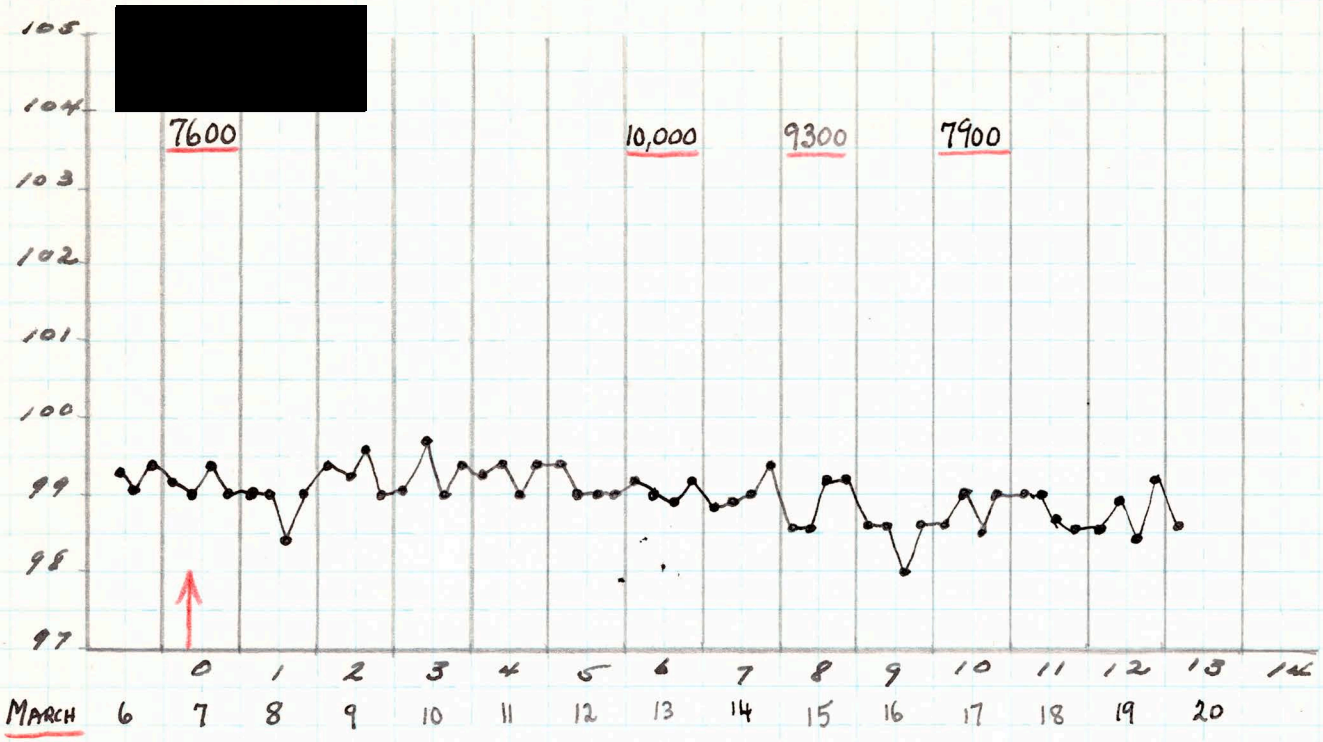


0.5cc 5th PASSAGE VIRUS INTRACUTANEOUSLY

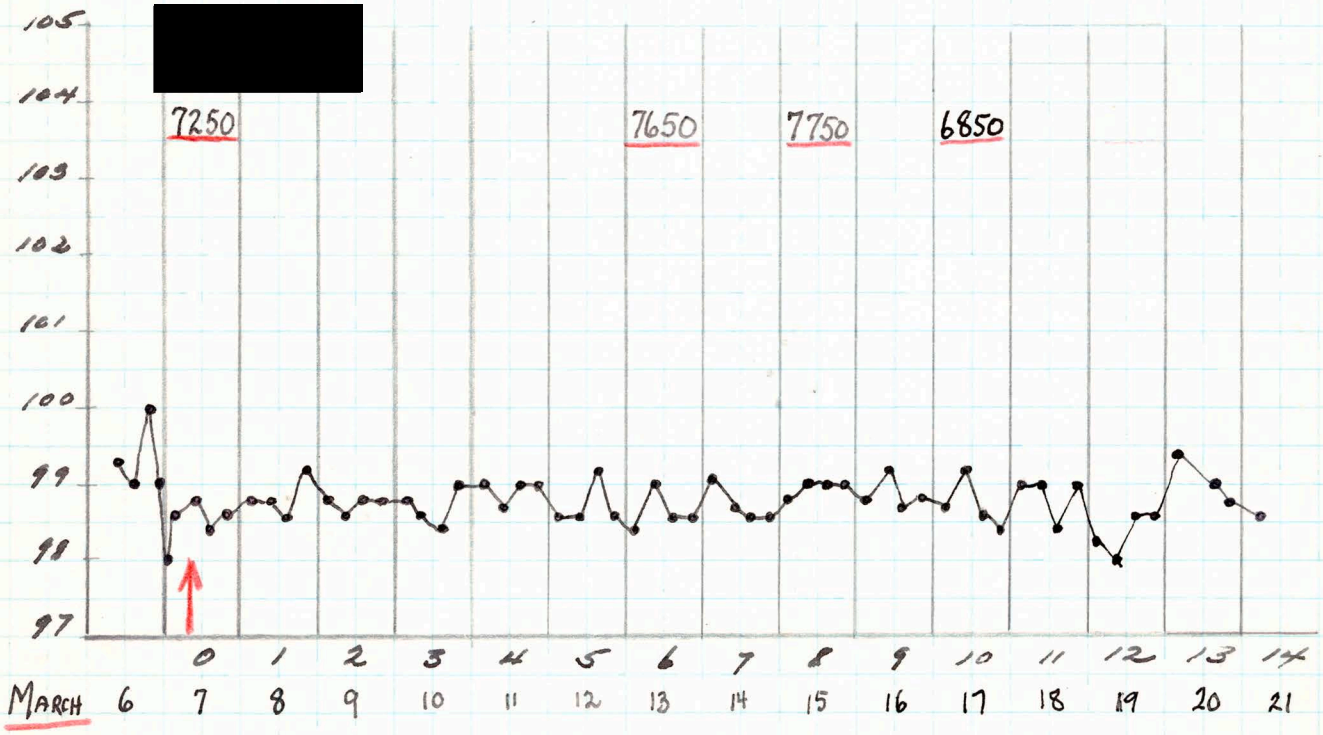
Sicilian Virus — Sicilian Virus Attack 4 months ago

1944

[redacted]

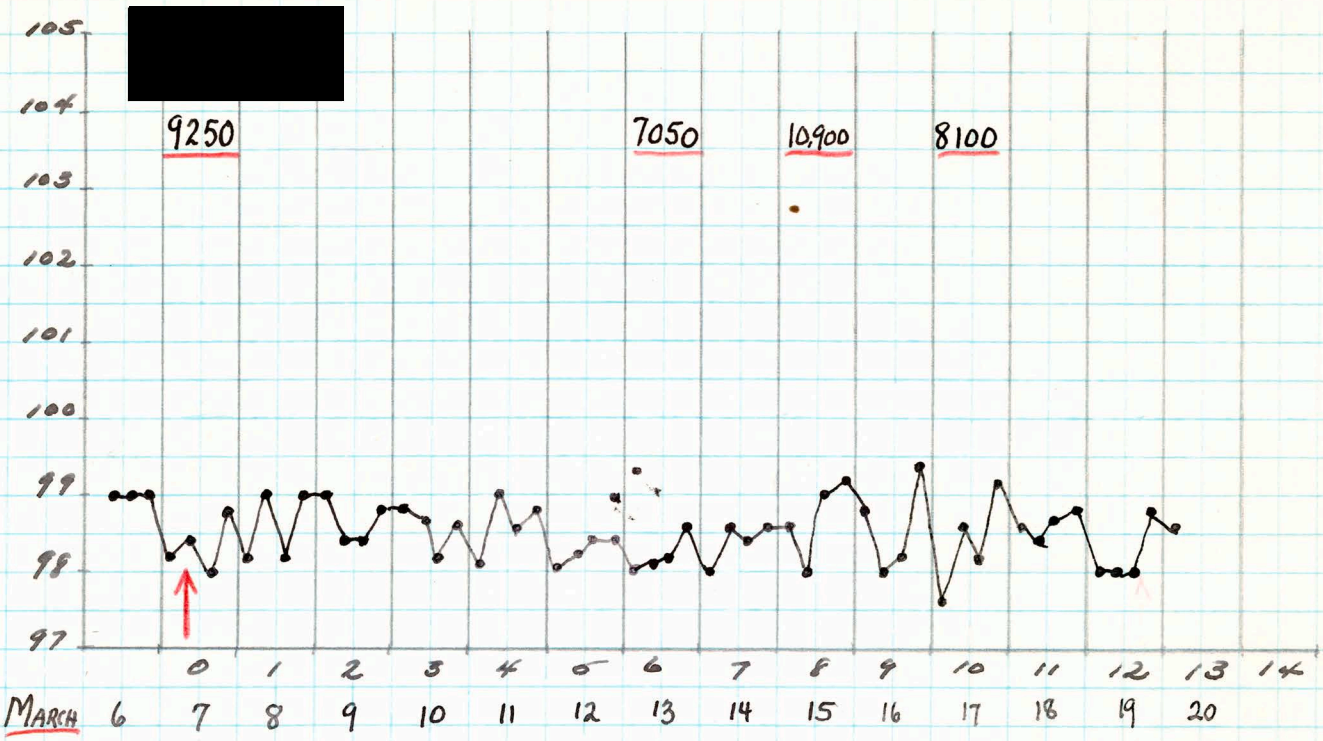


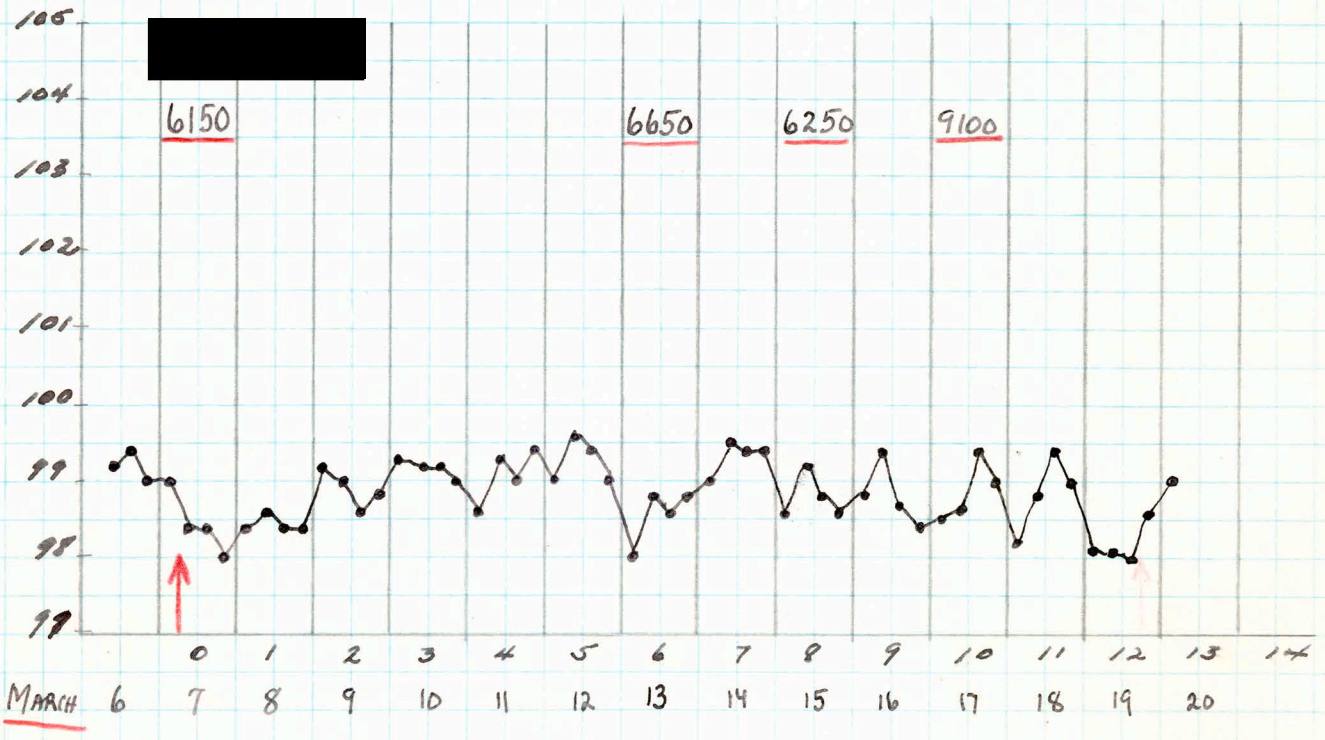
[redacted]



1cc 5th Passage Virus Intracutaneously

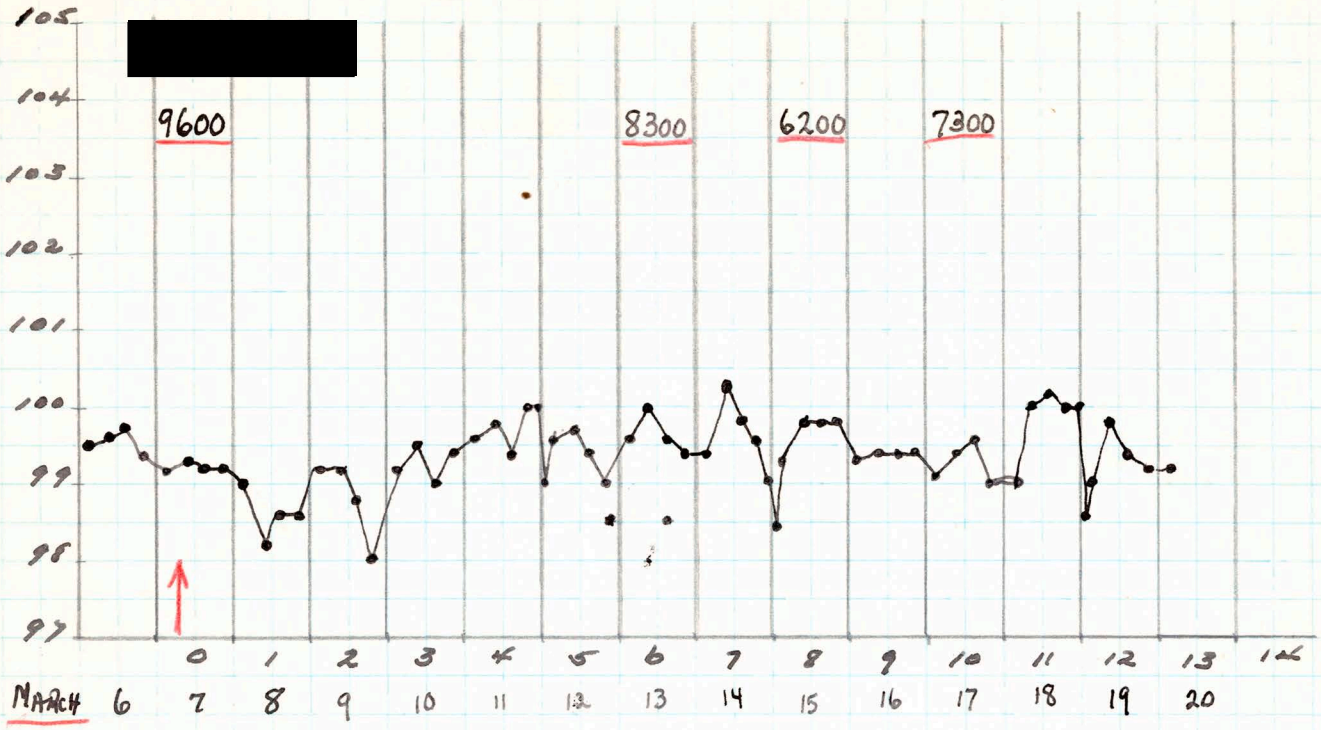
Sicilian Virus – Sicilian Virus Attack 4 months ago

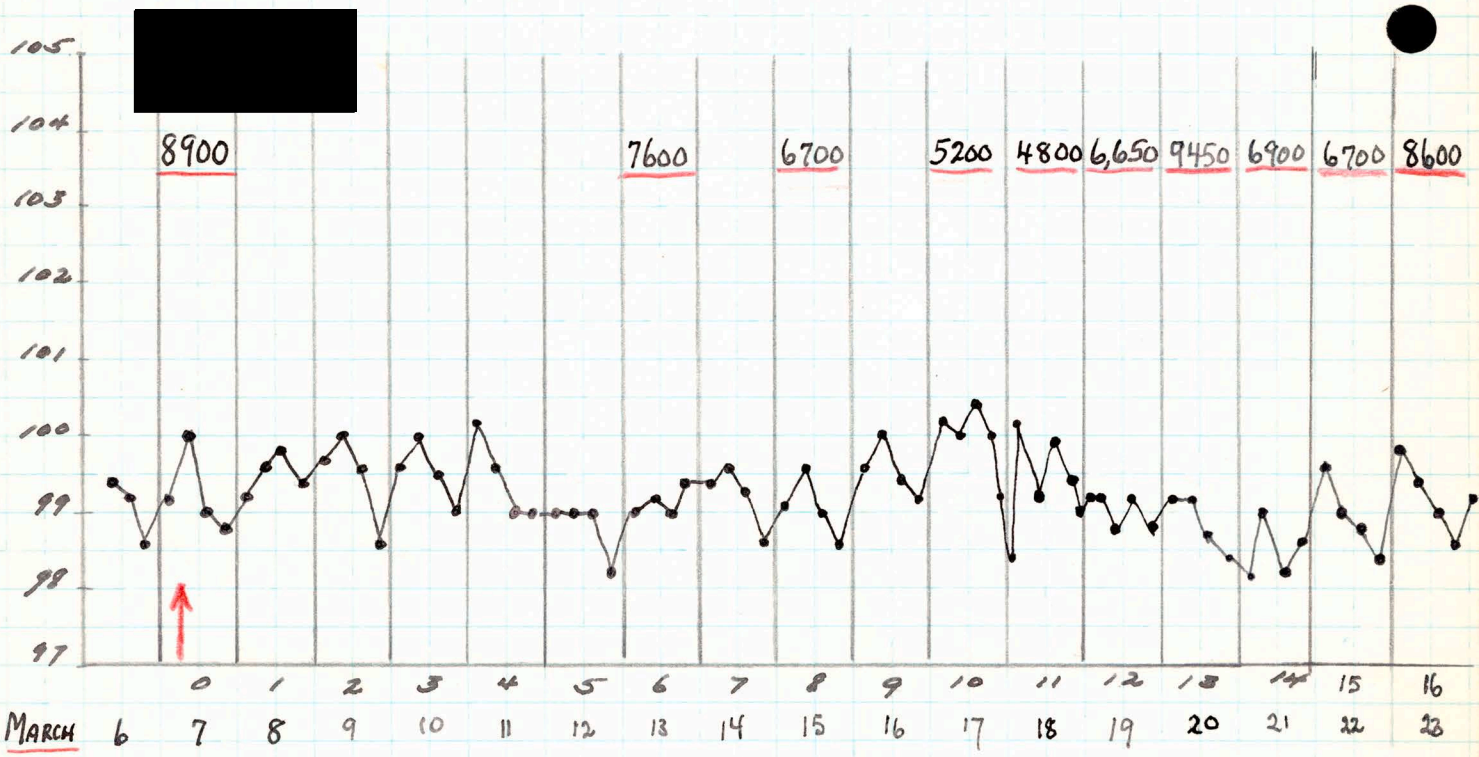




1cc 5th Passage Virus Intracutaneously

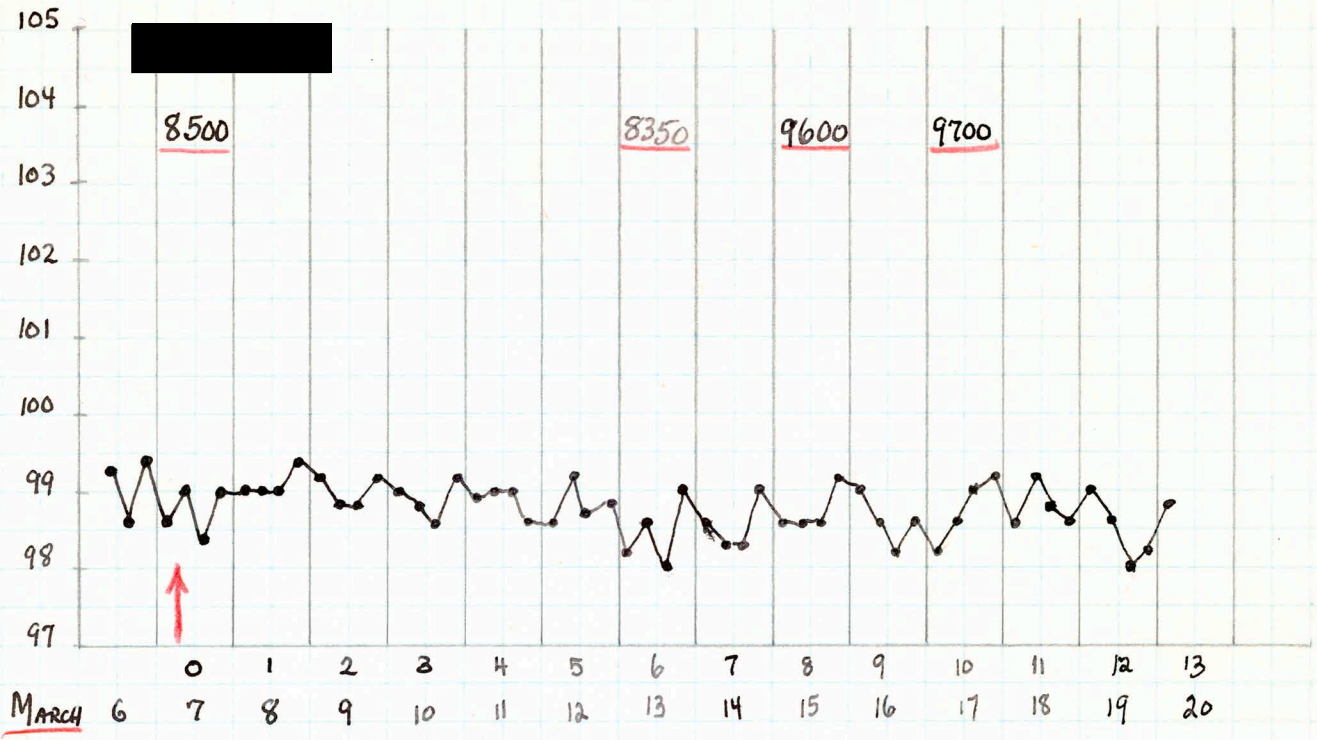
SICILIAN VIRUS - SICILIAN VIRUS ATTACK 4 MONTHS AGO

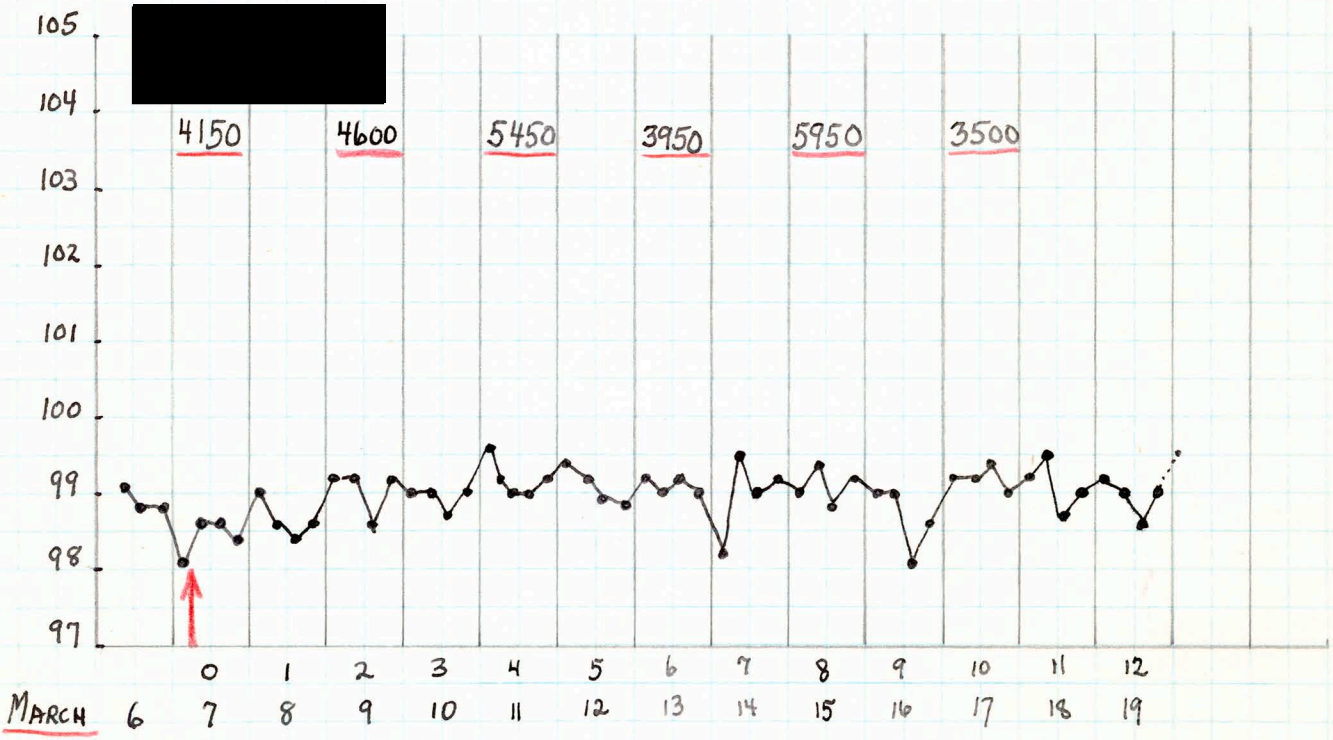




1 cc. 5TH PASSAGE VIRUS INTRACUTANEOUSLY

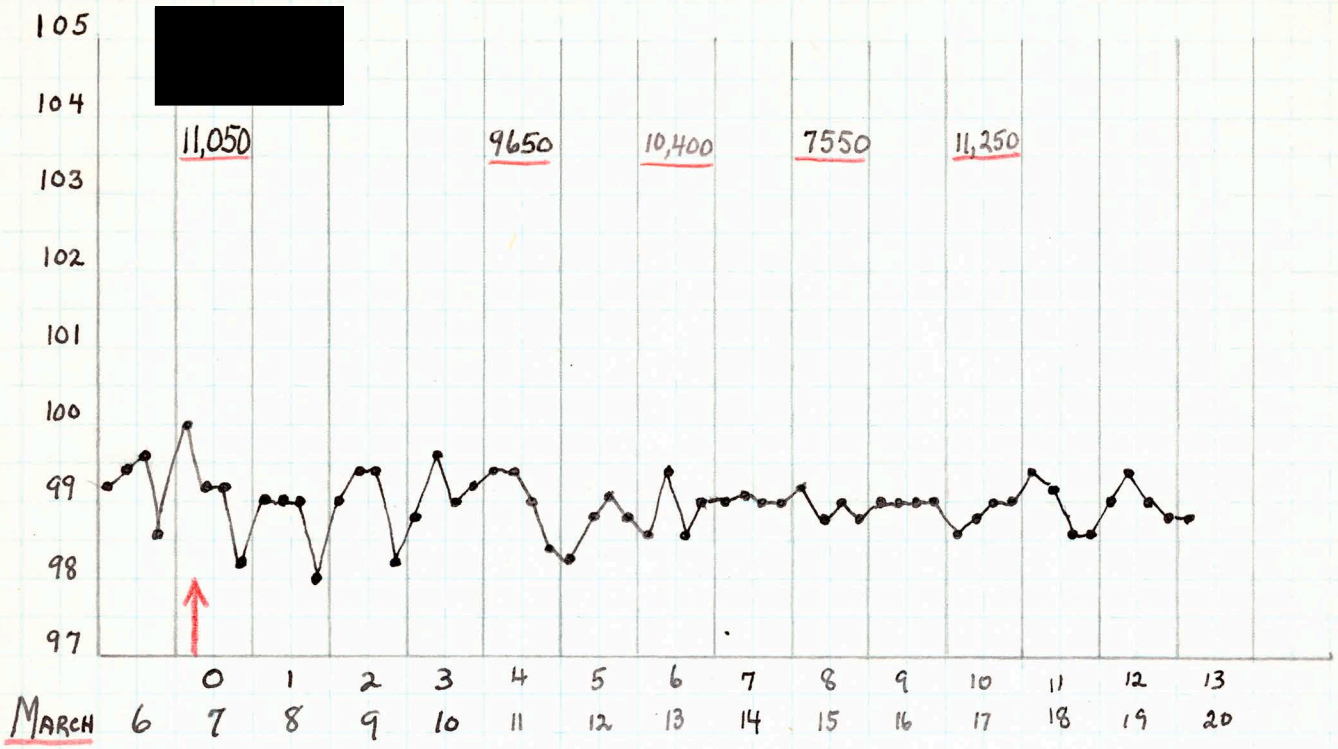
Sicilian Virus – Middle East Virus Attack 4 months ago

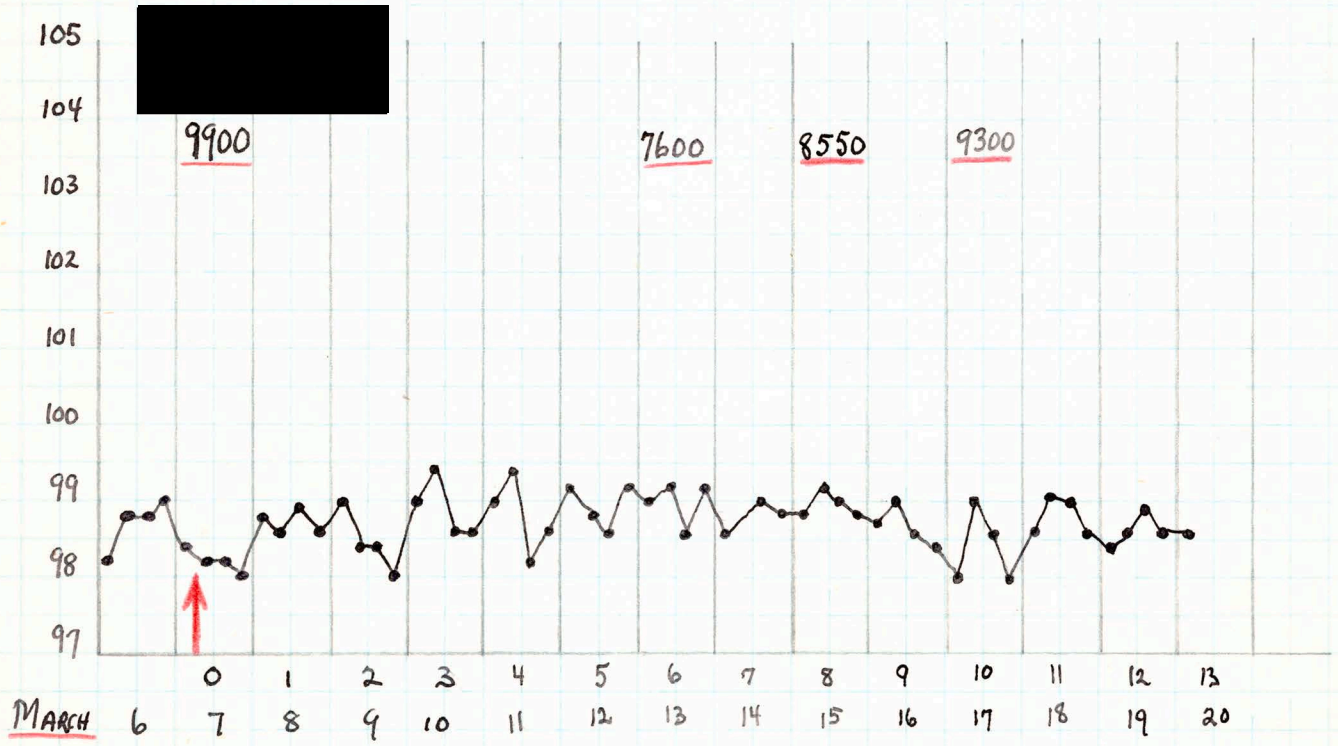




1cc 5th Passage Virus Intracutaneously

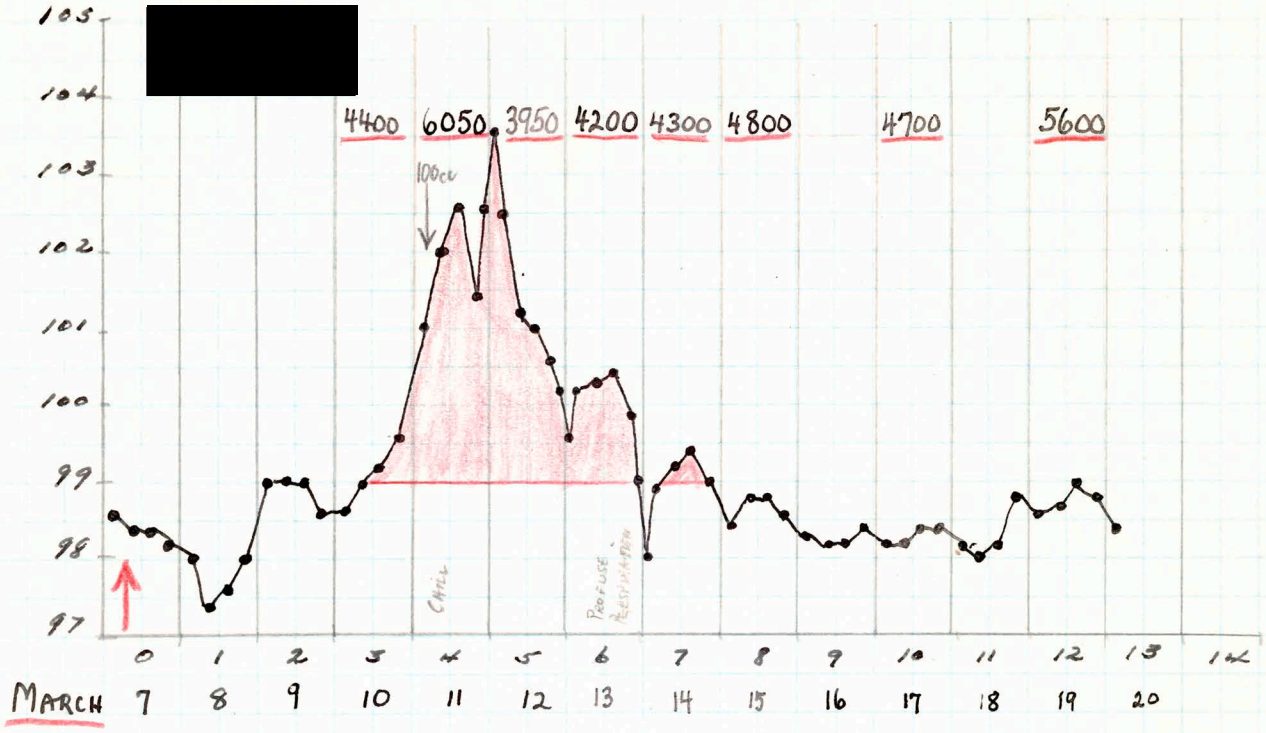
Sicilian Virus - Middle East Virus Attack 4 months ago

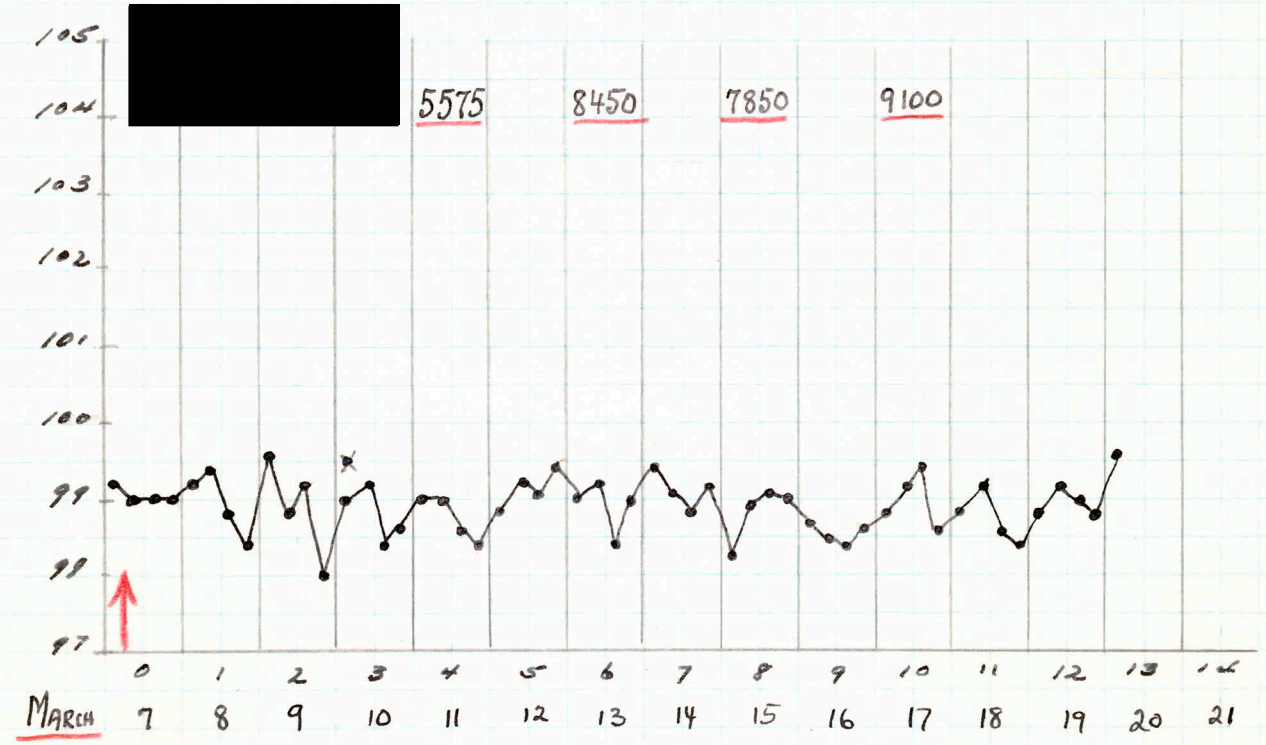




1cc 5th Passage Virus Intracutaneously

Sicilian Virus – 10⁻¹ mμ Filtrate 2 weeks ago





1cc 5th Passage Virus Intracutaneously

Sicilian Virus — March 20, 1944

1. Immunity of Subjects who did not develop disease following inoculation of ultraviolet irradiated virus

[redacted] 1cc irradiated virus on Feb. 15, 1944

1cc " " on Jan. 24, 1944

2. Immunity of subjects who did not develop disease following inoculation of convalescent serum—virus mixture

[redacted] nvalescent serum-virus on Feb. 28, 1944

— " " " Dec. 20, 1943

3. Test for presence of virus in serum of patient who succumbed following inoculation with 207 mμ filtrate.

This serum - from [redacted] - used as virus in these tests. Control subjects had previously been inoculated with 1:10,000 (Sloan) and 1:100,000 (Ross) dilutions of virus on Feb. 28, 1944

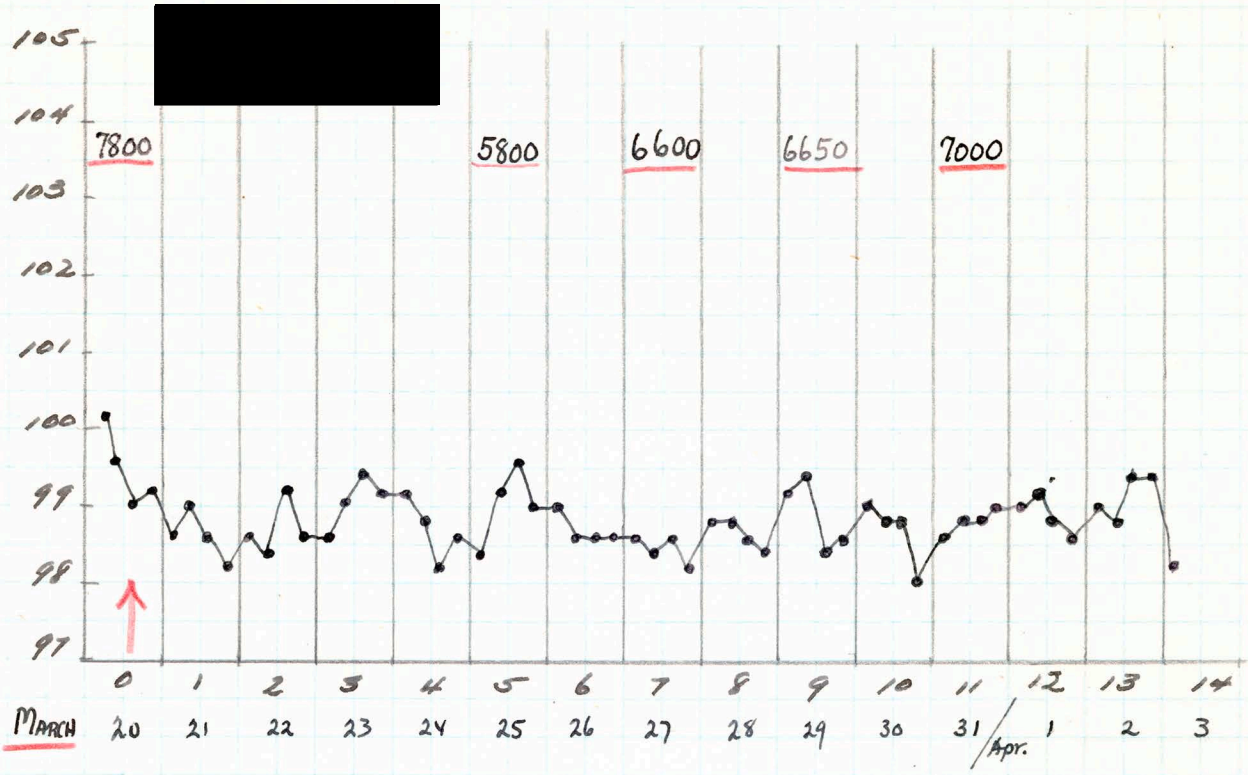
[redacted]

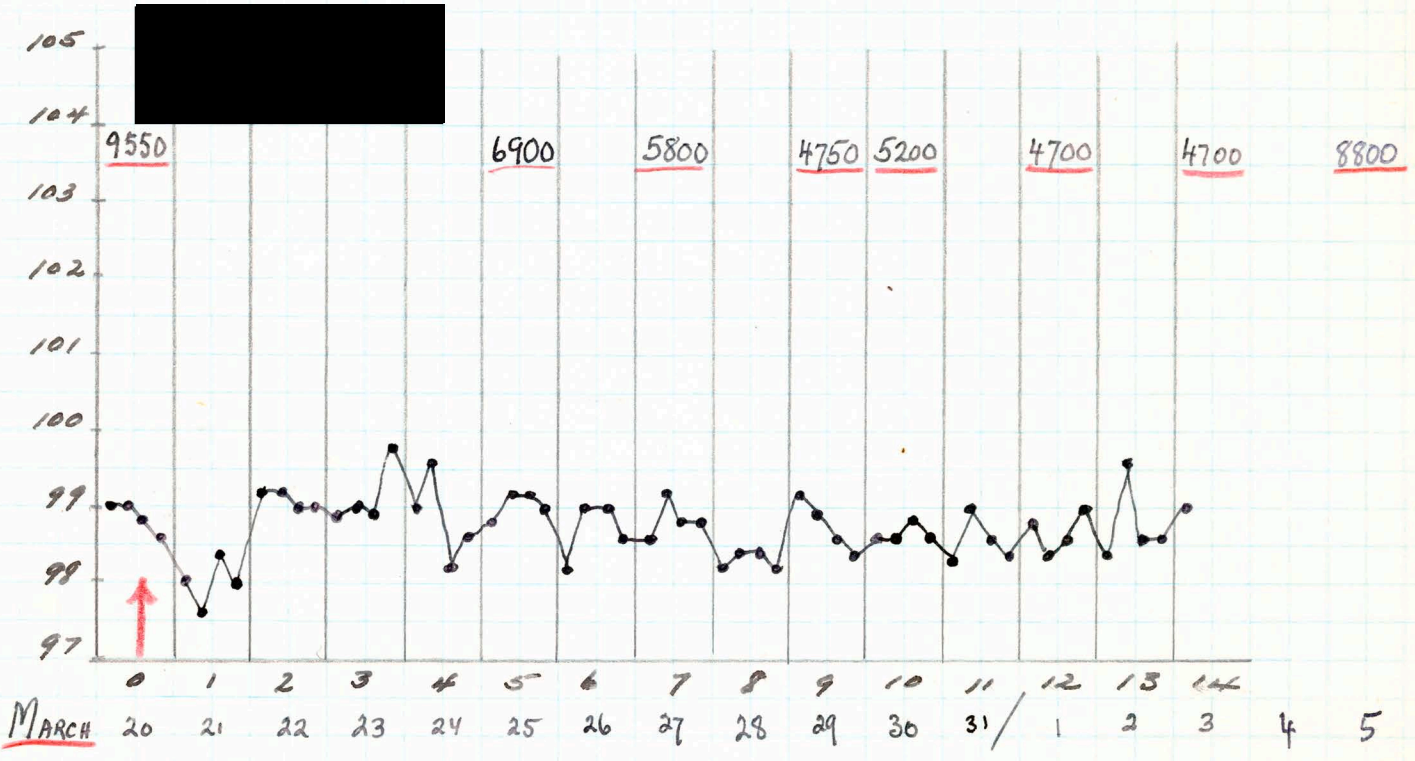
[redacted]

Virus — All subjects inoculated with 1cc of [redacted] serum — 0.2cc i.cut. in each of 5 sites 2 P.M.

3-21-44 — No reaction at any of inoculated sites

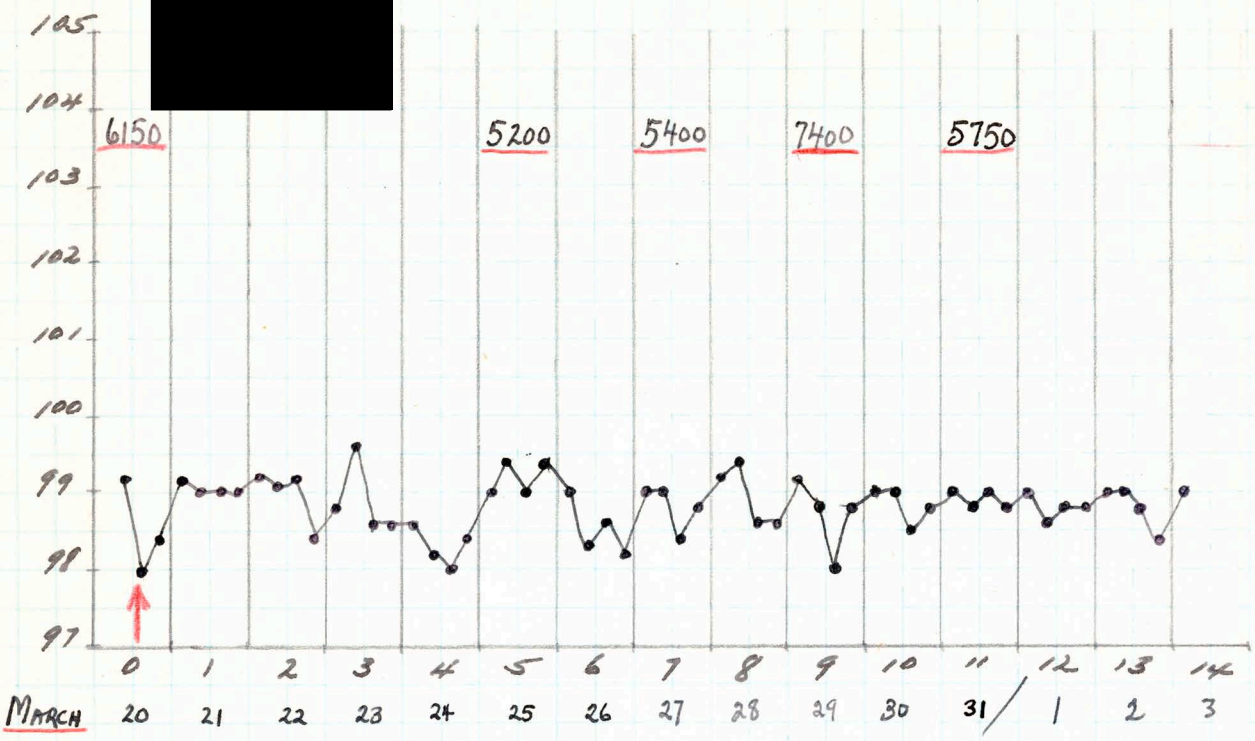
Sicilian Virus – Test for Immunity Following Ultraviolet Irradiated Virus on Feb. 15, 1944



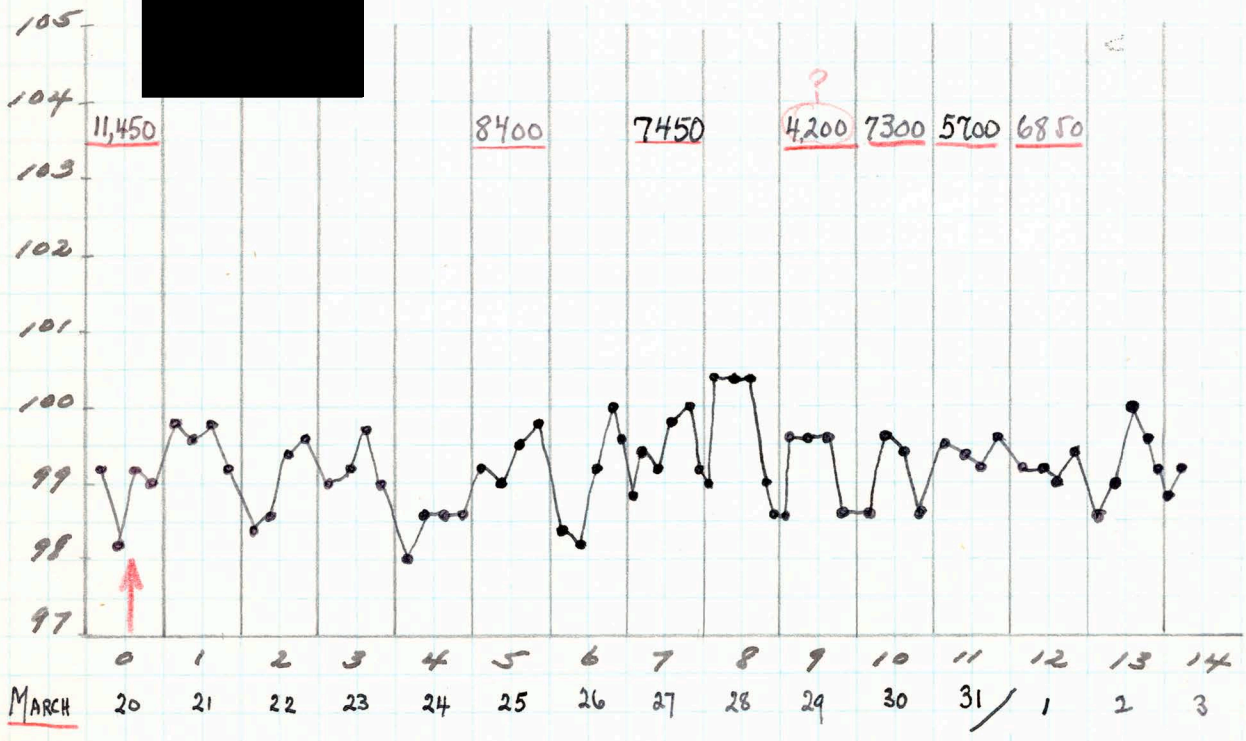


Sicilian Virus – Test for Immunity Following Ultraviolet Irradiated Virus ~~on~~ Jan. 24, 1944

[redacted]

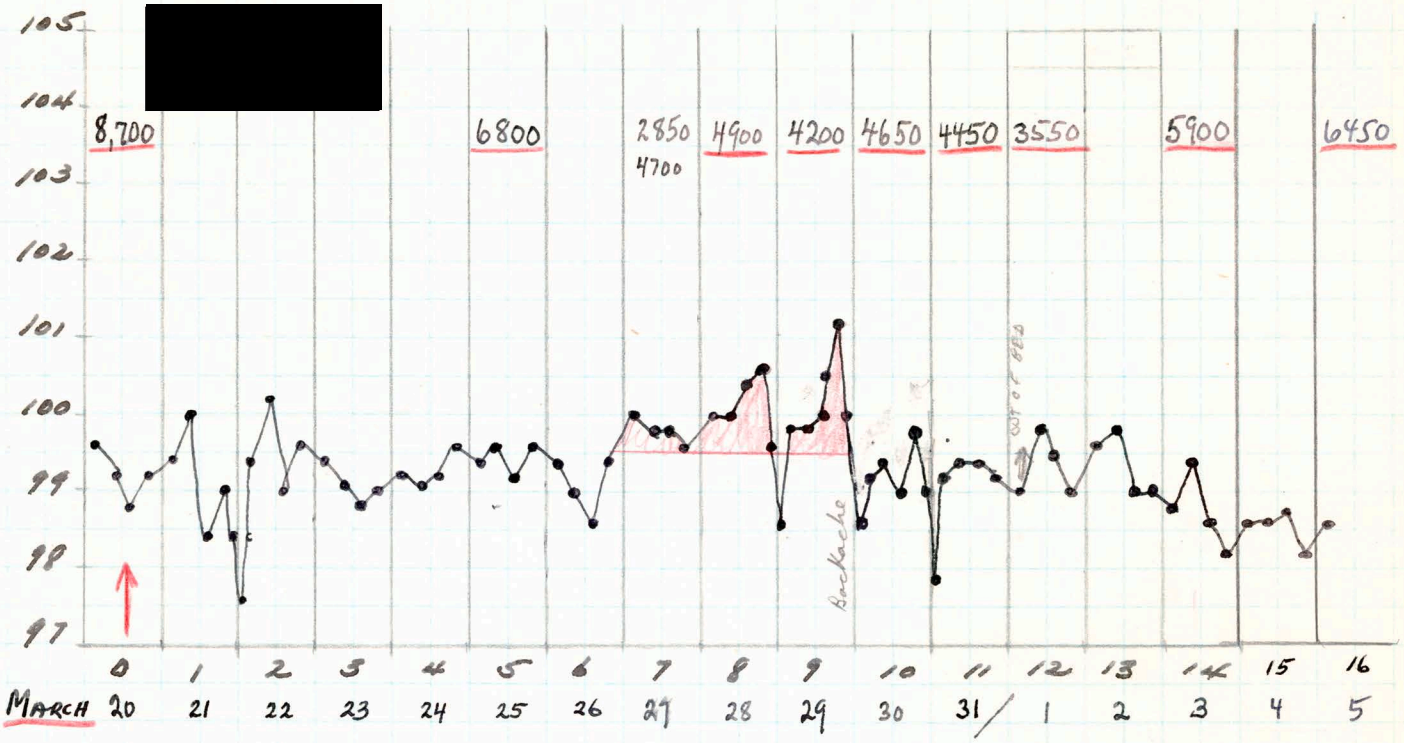


[redacted]

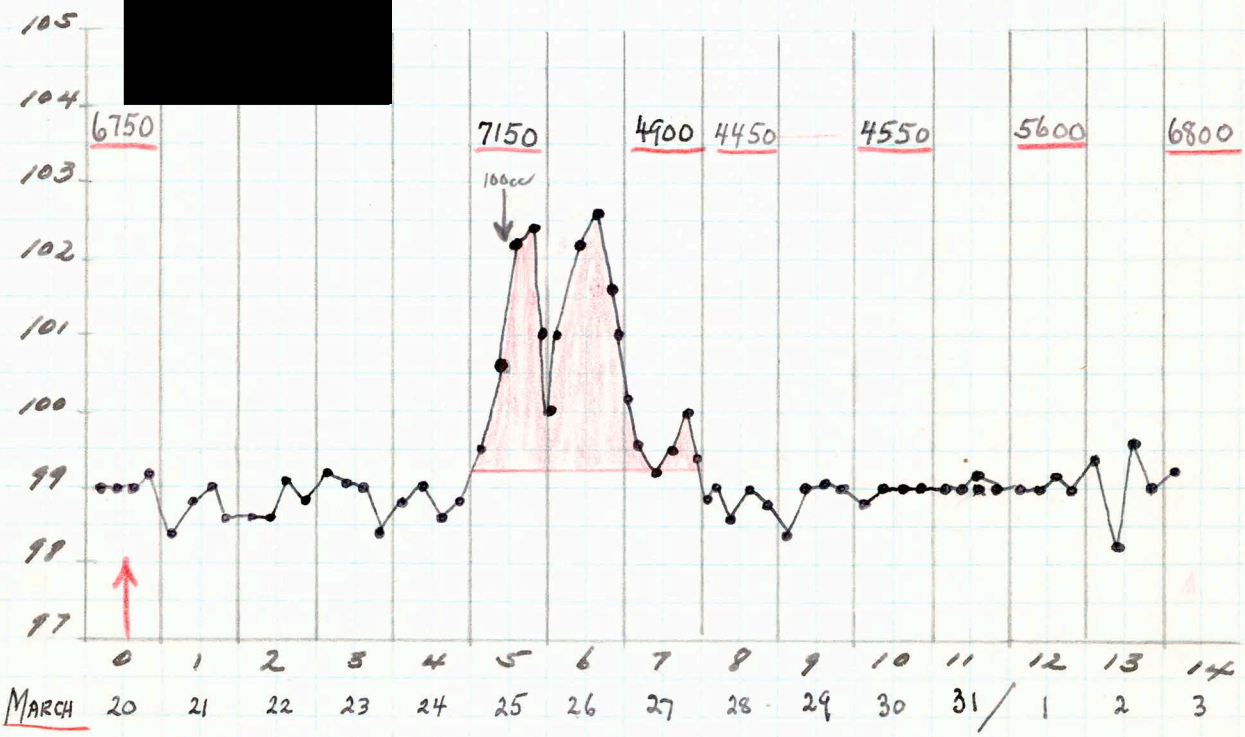


Sicilian Virus — Controls for Immunity Tests

[redacted]

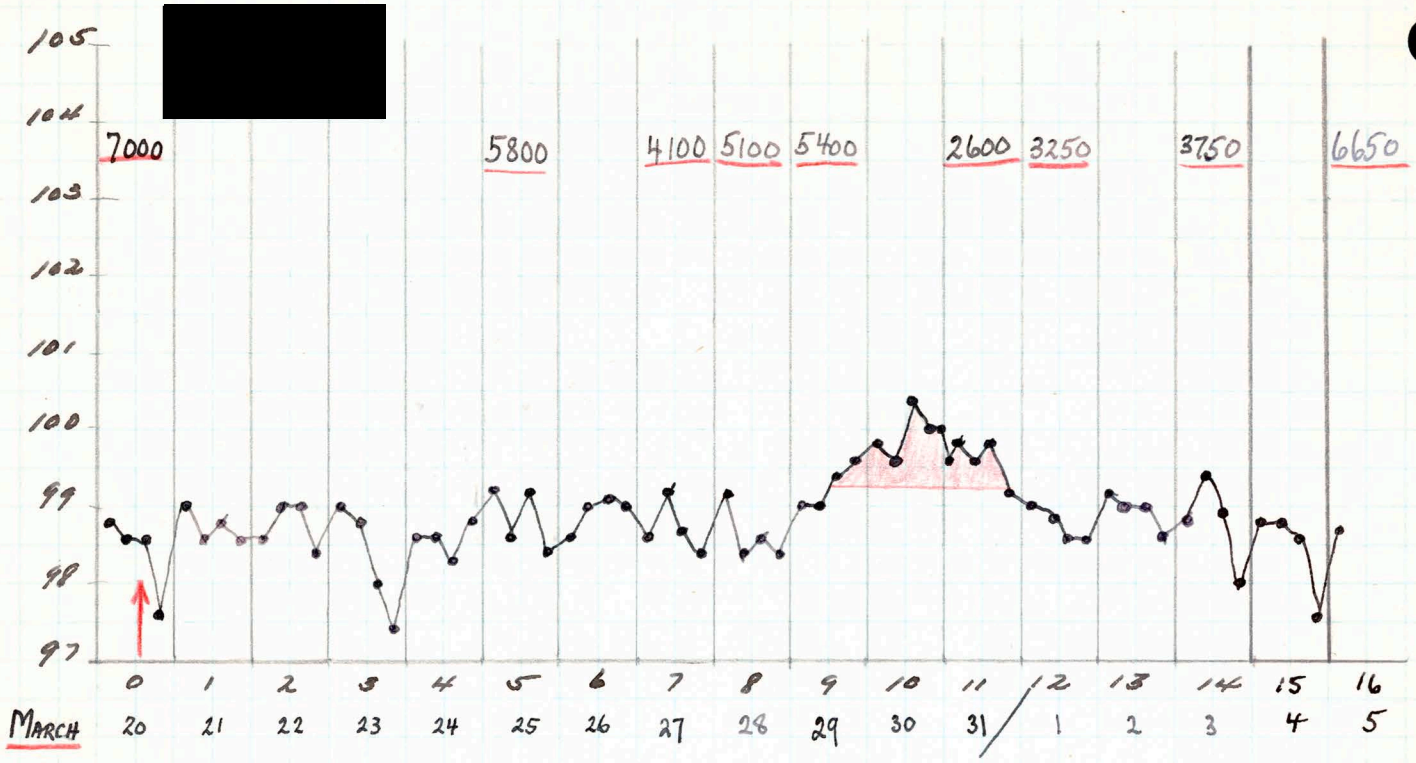


[redacted]



SICILIAN VIRUS – TEST FOR IMMUNITY FOLLOWING CONVALESCENT SERUM–VIRUS MIXTURE ON FEB 28 '44

[redacted]



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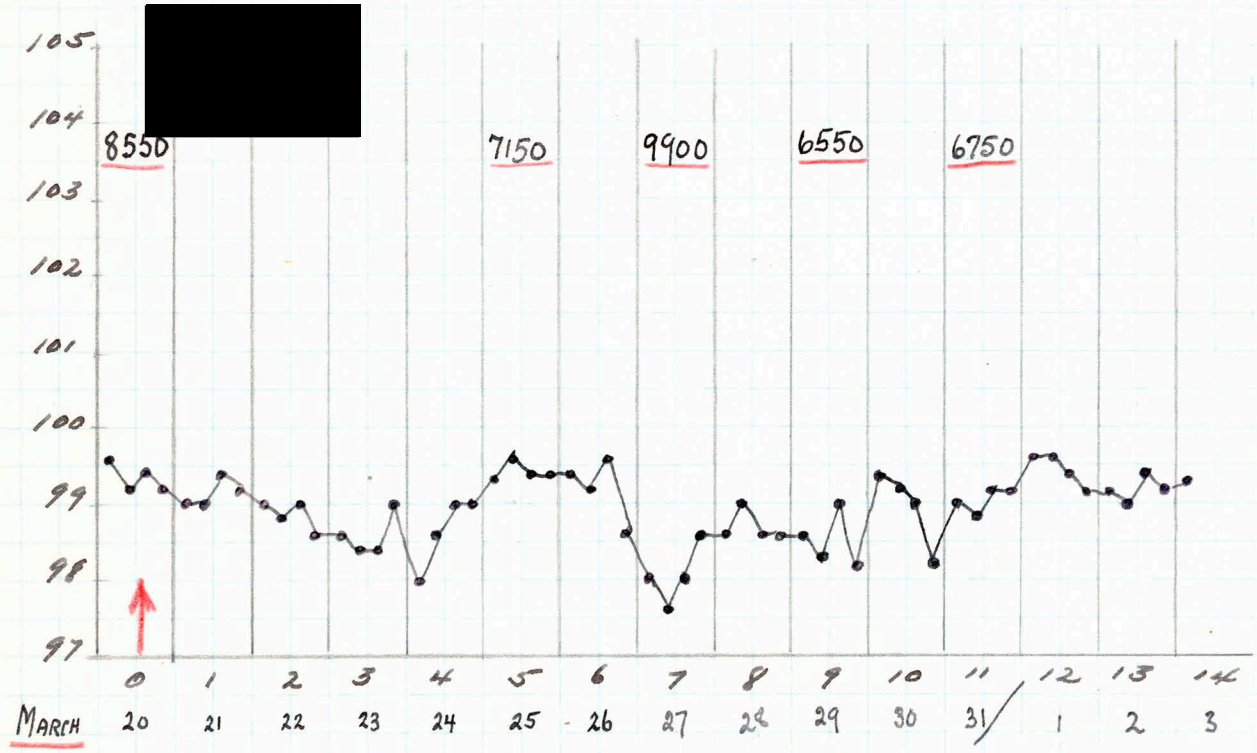
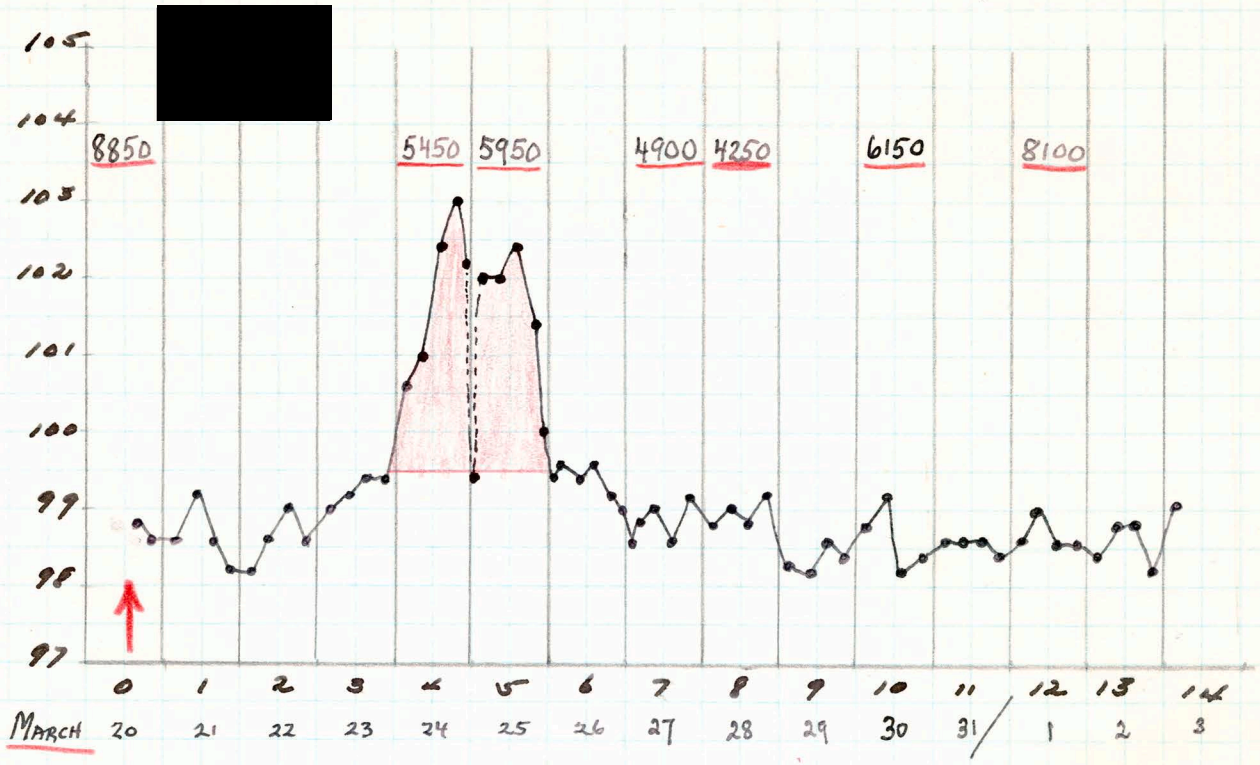


Sicilian Virus – Test for Immunity Following Convalescent Serum-Virus Mixture on Dec. 20, 1943



Patient	Date	Procedure	Cephalin Floc.
[redacted]	2-2	INOCULATED P. FALCIPARUM	
	2-4		0
	2-6	THICK SMEAR POSITIVE	0
	2-8	FIRST FEVER. CINCHONINE STARTED	++
	2-10		+++
	2-11	THICK SMEAR NEGATIVE AFEBRILE	[illegible]
	2-12		0
	2-14		++
	2-17		++
	2-20		++
	2-29		0
	3-7		0
[redacted]	2-8	INOCULATED P. FALCIPARUM	
	2-10		0
	2-11		+
	2-12	THICK SMEAR POSITIVE	
	2-14		++
	2-16	FIRST FEVER. THERAPY STARTED	++
	2-20	AFEBRILE. THICK SMEAR NEG	
	2-22		++
	2-23		+++
	3-1		+++
[redacted]	2-[illegible]	INOCULATED P. FALCIPARUM	
	2-11		++
	2-13	THICK SMEAR POSITIVE	
	2-14	FIRST FEVER	
	2-15	THERAPY STARTED	+++
	2-17	AFEBRILE	+
	2-19	THICK SMEAR NEG	
	2-20		++++
	2-22		+++
	2-23		++++
	3-1		++++

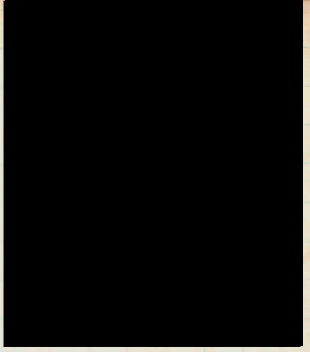
PATIENT	DATE	PROCEDURE	CEPH FLOC
[redacted]	2-14	INOCULATED P. FALCIPARUM	
	2-19		+
	2-22		0
	2-23	THICK SMEAR POSITIVE	+
	2-24	FIRST FEVER. THERAPY STARTED	
	2-25		++
	2-26	AFEBRILE	++
	2-29	THICK SMEAR NEGATIVE	
	3-6		0
[redacted]	2-17	INOCULATED P. FALCIPARUM	
	2-19		0
	2-21	THICK SMEAR POSITIVE	
	2-22	FIRST FEVER	0
	2-23	THERAPY STARTED	0
	2-24		+++
	2-25		0
	2-27	AFEBRILE AND THICK SMEAR NEG	
	2-28		0
	3-6		+++
[redacted]	2-17	INOCULATED P. FALCIPARUM	
	2-19		0
	2-22	THICK SMEAR POSITIVE	0
	2-23		0
	2-24	FIRST FEVER	
	2-27	LARGE DOSES OF ATABRINE FOR FULMINATING INFECTION	
	2-28		++
	3-6		+++

PATIENT	DATE	PROCEDURE	CEPH FLOC.
[redacted]	1-27	INOCULATED P. VIVAX	
	2-3	THICK SMEAR POSITIVE. FIRST FEVER	O
	2-6	THERAPY STARTED	
	2-8	AFEBRILE	O
	2-11	THICK SMEAR NEG	
	2-13		O
	2-15		O
	2-18	THICK SMEAR POSITIVE AND RECURRENCE OF FEVER	O
	2-22		+++
	2-25	ATABRINE STARTED	
	2-26		+++
	2-29		++++
	3-1		+++
[redacted]	1-31	INOCULATED P. VIVAX	
	2-4	THICK SMEAR POSITIVE	
	2-6	FIRST FEVER	
	2-7		O
	2-9	THERAPY STARTED FEVER NOT INTERRUPTED BY Rx	+++
	2-10		++++
	2-13		+++
	2-18		+++
	2-22		++++
[redacted]	2-18	INOCULATED P. VIVAX	
	2-19		O
	2-22		O
	2-23	THICK SMEAR POSITIVE	● O
	2-24	FIRST FEVER	
	2-25		O
	2-26		+
	← 2-27	THERAPY STARTED	
	2-28		+++
	3-2		++++

PATIENT	DATE	PROCEDURE	CEPH FLOC.
[redacted]	1-31	INOCULATED P. VIVAX	
	2-4	THICK SMEAR POSITIVE AND FIRST FEVER	
	2-7	THERAPY STARTED	O
	2-9	[redacted]	+++
	2-10	THICK SMEAR NEGATIVE	
	2-11	AFEBRILE	++++
	2-13		++++
	2-17		+++
	2-19		+
	2-25	RE-INOCULATED	
	2-29	THICK SMEAR POSITIVE RECURRENCE OF FEVER	O +
	3-3		+++
[redacted]	2-26	4	+
	2-27	INOCULATED P. VIVAX	
	3-1		O
	3-2	THICK SMEAR POSITIVE	
	3-3		++
	3-4		+++
	3-5	FIRST FEVER	
	3-6		+++
[redacted]			

HAD SORE THROAT ON 2-8 AND WAS THOUGHT AT THE TIME TO HAVE INFECTIOUS MONONUCLEOSIS. HOWEVER SMEARS WERE NEVER TYPICAL AND SHEER-CELL AGGLUTINATION WAS REPEATEDLY NEGATIVE.

Unpublished data
Third (New York University) Research Service
Goldwater Memorial Hospital



Sicilian

JAN. 7, 1944

Inoculations — 61

People — 37

+4 (ME imm)

Infected — 28

Leuk. only

M. E.

presumptuous
impertinent
insolent

73

S.A. III

56

S.A. III

4 Sicil

30

III

Total inoculated = 96

Mosquito subj. = 6

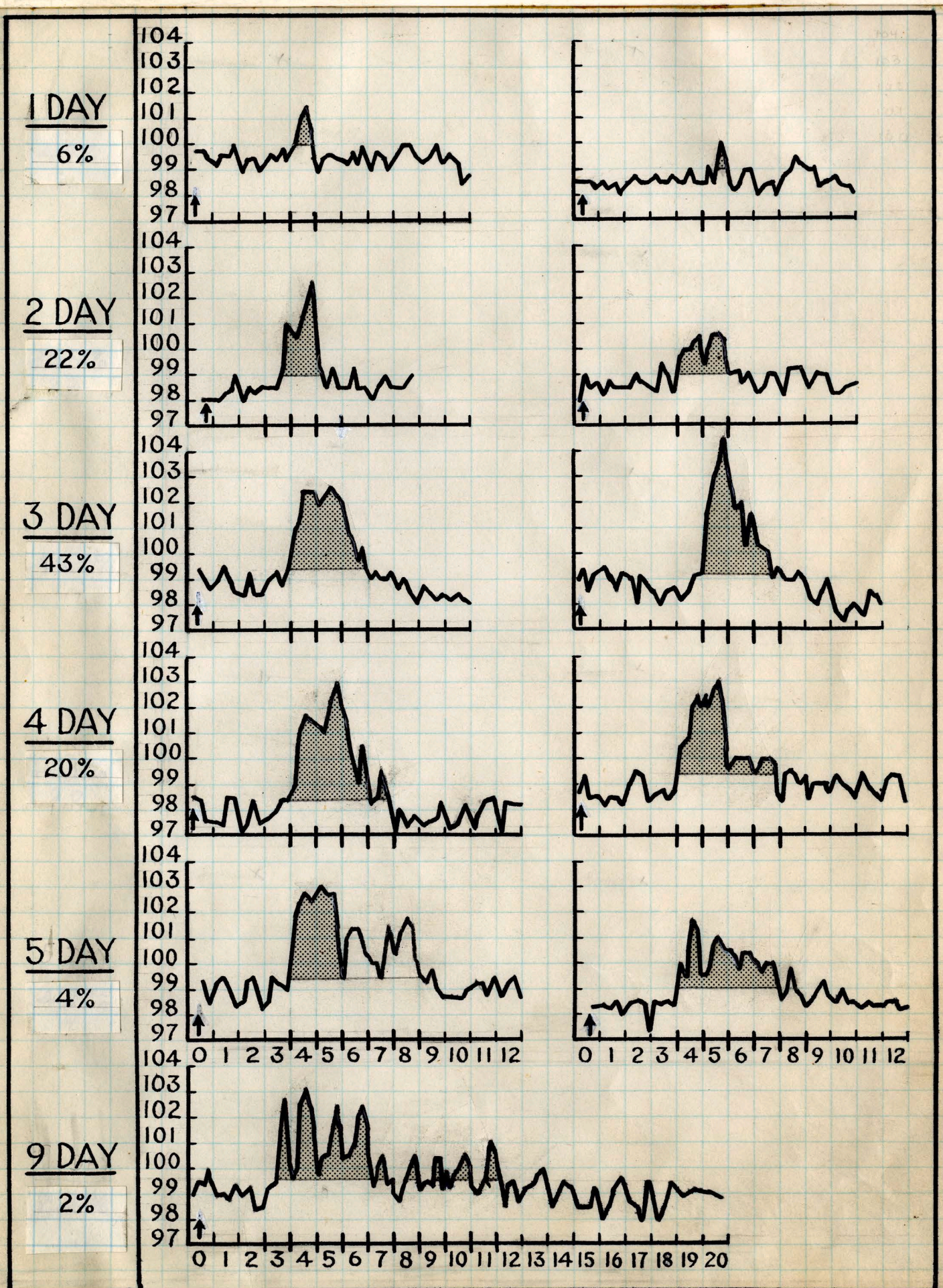
102

137 inoculations

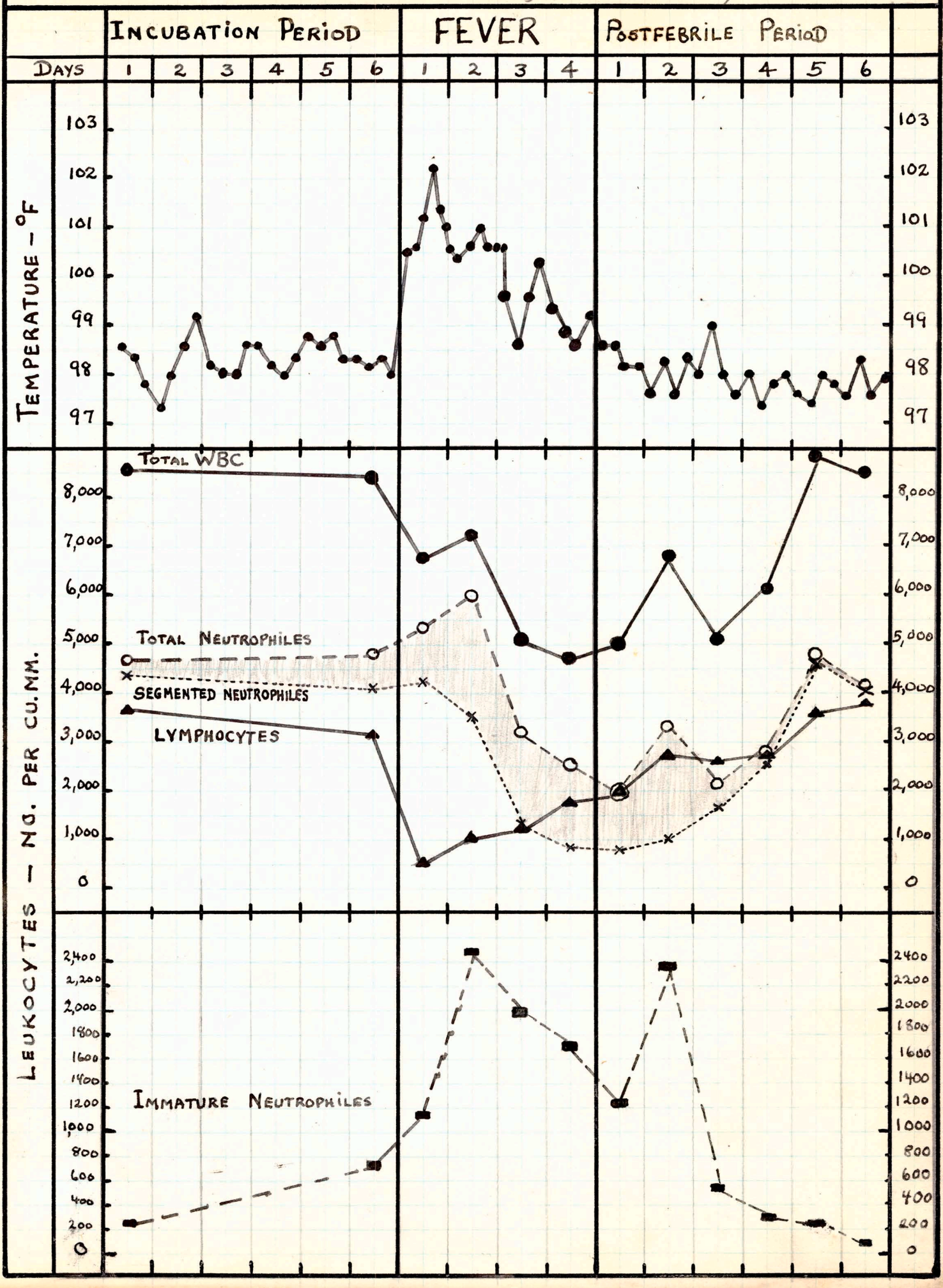
58 exp. S. F. excl. M.E. up to Feb. 18 35

137

VARIOUS TYPES OF FEVER PRODUCED BY EXPERIMENTAL INOCULATION OF PHLEBOTOMUS FEVER VIRUS IN HUMAN BEINGS



Experimental Sandfly (Phlebotomus) Fever — F. Gr. — Colored Male — Age 50

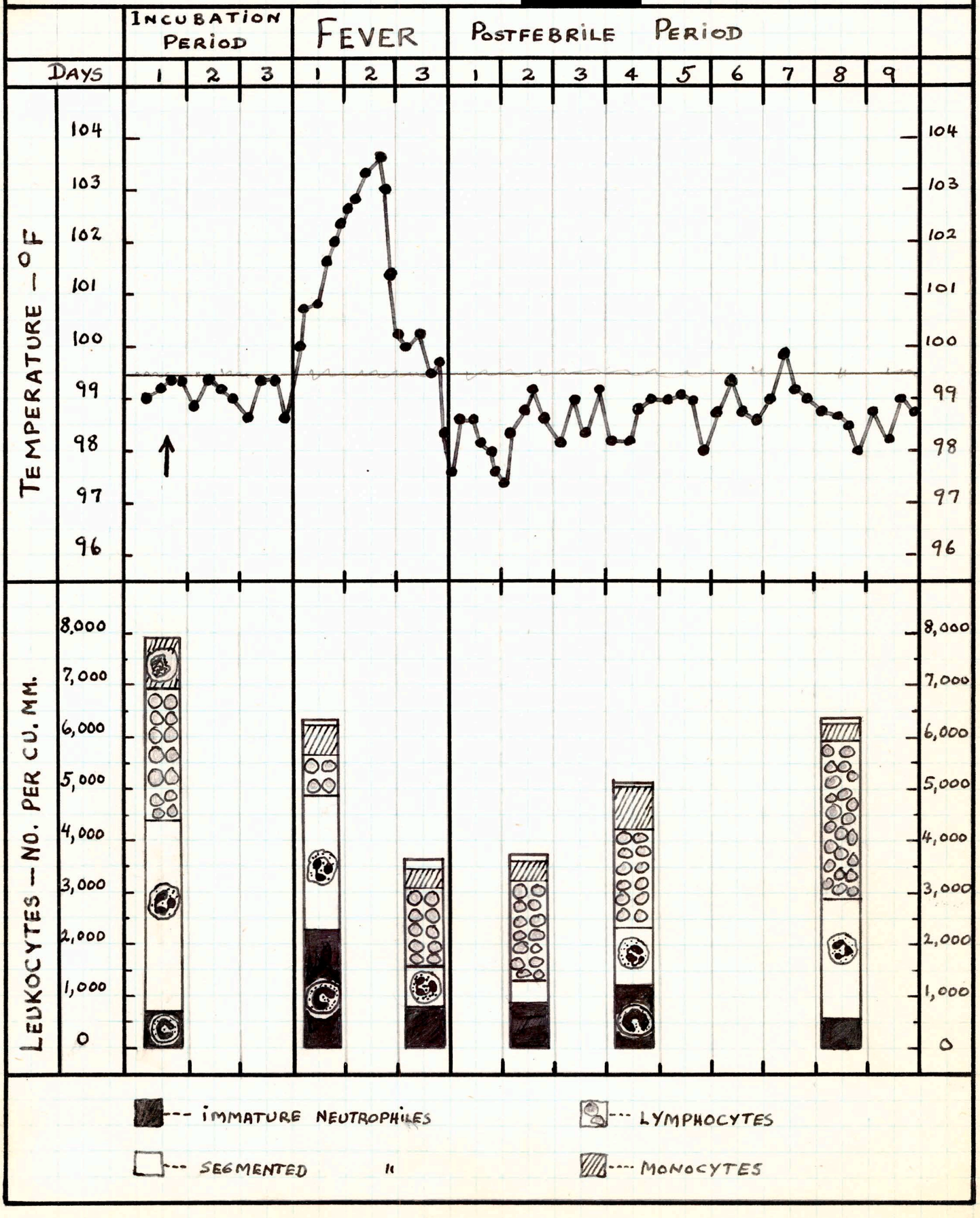


	12/8/43	12/13	12/14	12/15	12/16	12/17	12/18	12/19	12/20
Total WBC –	8,550	8,400	6,850	7,250	5,100	4800	5,000	6,800	5,100
" neutrophiles –	4,702 (55%)	4,872 (58%)	5411 (79%)	6,017 (83%)	3315 (65%)	2592 (54%)	2,050 (41%)	3400 (50%)	2193 (43%)
" lymphocytes –	3,676 (43%)	3,192 (38%)	548 (8%)	1,015 (14%)	1275 (25%)	1776 (37%)	2,050 (41%)	2720 (40%)	2601 (51%)
" immature neutrophiles –	256 (3%)	756 (9%)	1164 (17%)	2,465 (34%)	1989 (39%)	1728 (36%)	1,250 (25%)	2380 (35%)	561 (11%)
" monocytes –	171 (2%)	168 (2%)	753 (11%)	217 (3%)	510 (10%)	384 (8%)	550 (11%)	612 (4%)	153 (3%)
Segmented neutrophiles –	4446 (52%)	4116 (49%)	4247 (62%)	3552 (49%)	1326 (26%)	864 (18%)	800 (16%)	1020 (15%)	1632 (32%)

	12/21	12/22
Total WBC	6,100	8,950
" neutrophiles	2928 (48%)	4922 (55%)
" lymphocytes	2745 (45%)	3,580 (40%)
" immature neutroph	305 (5%)	268 (3%)
" monocytes	244 (4%)	90 (1%)
Segmented neutroph	2623 (43%)	4654 (52%)

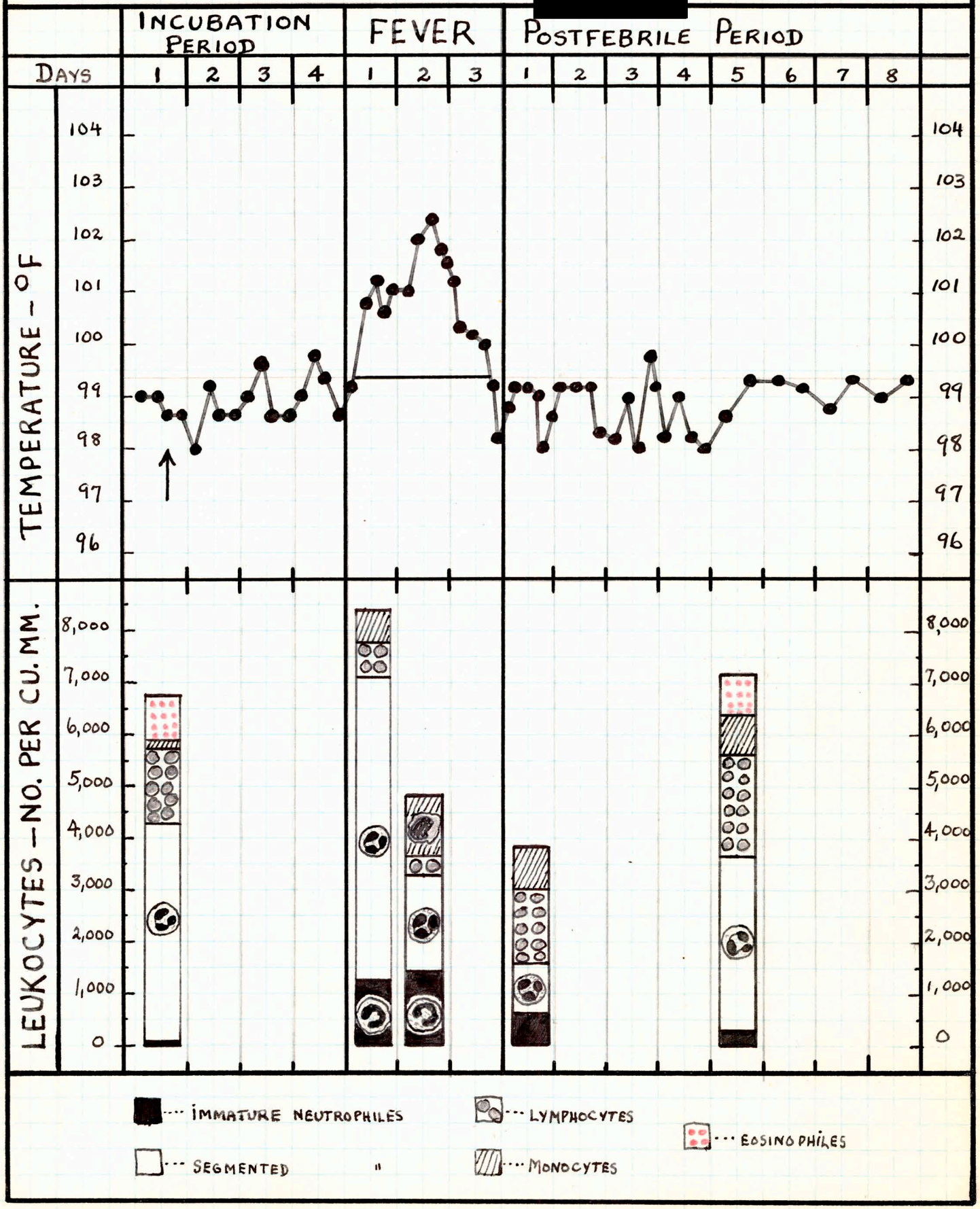
PHLEBOTOMUS

EXPERIMENTAL SANDFLY FEVER – [redacted] WHITE MALE, AGE 18

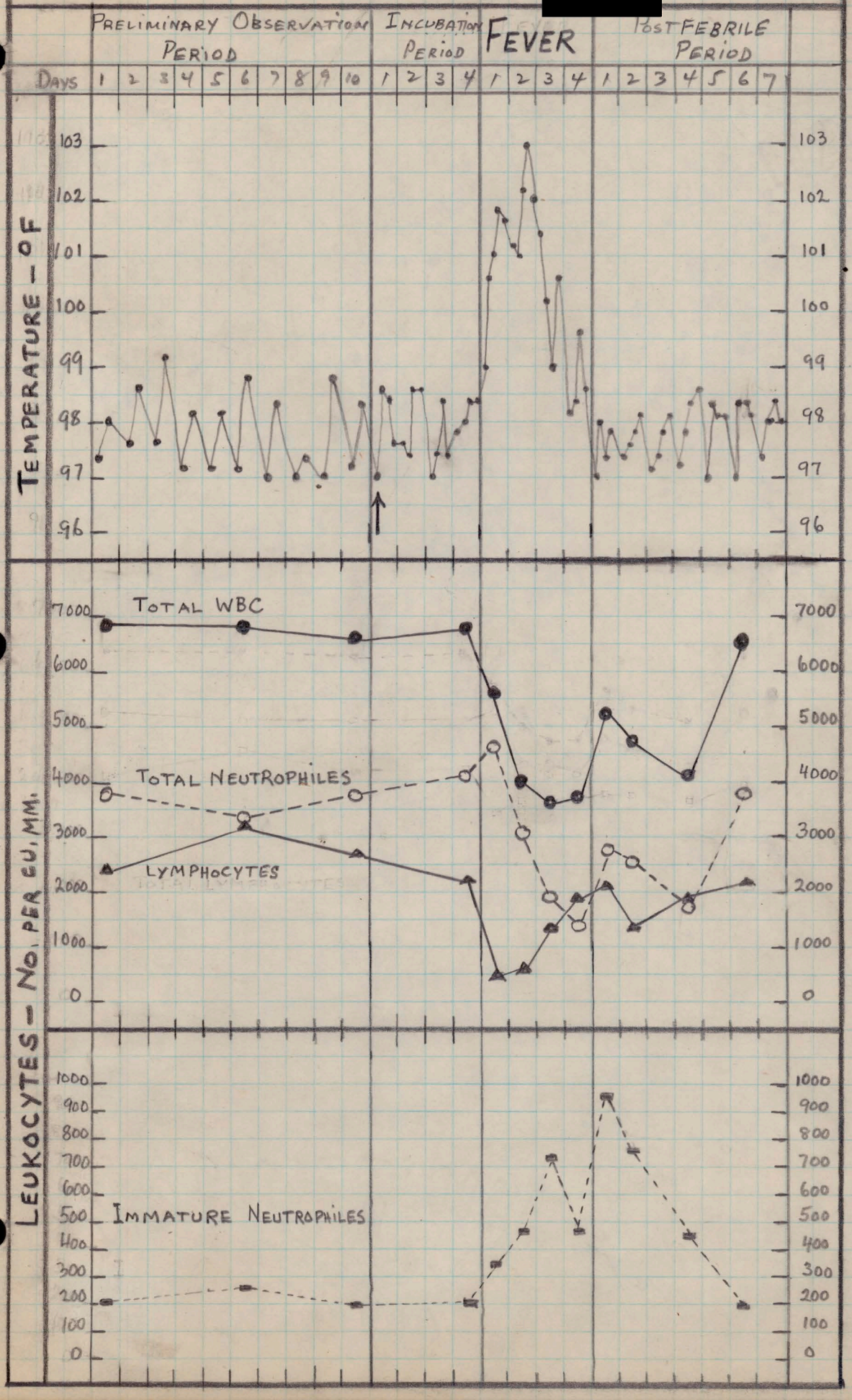


A.O.

EXPERIMENTAL SANDFLY FEVER [redacted] WHITE FEMALE, AGE 45

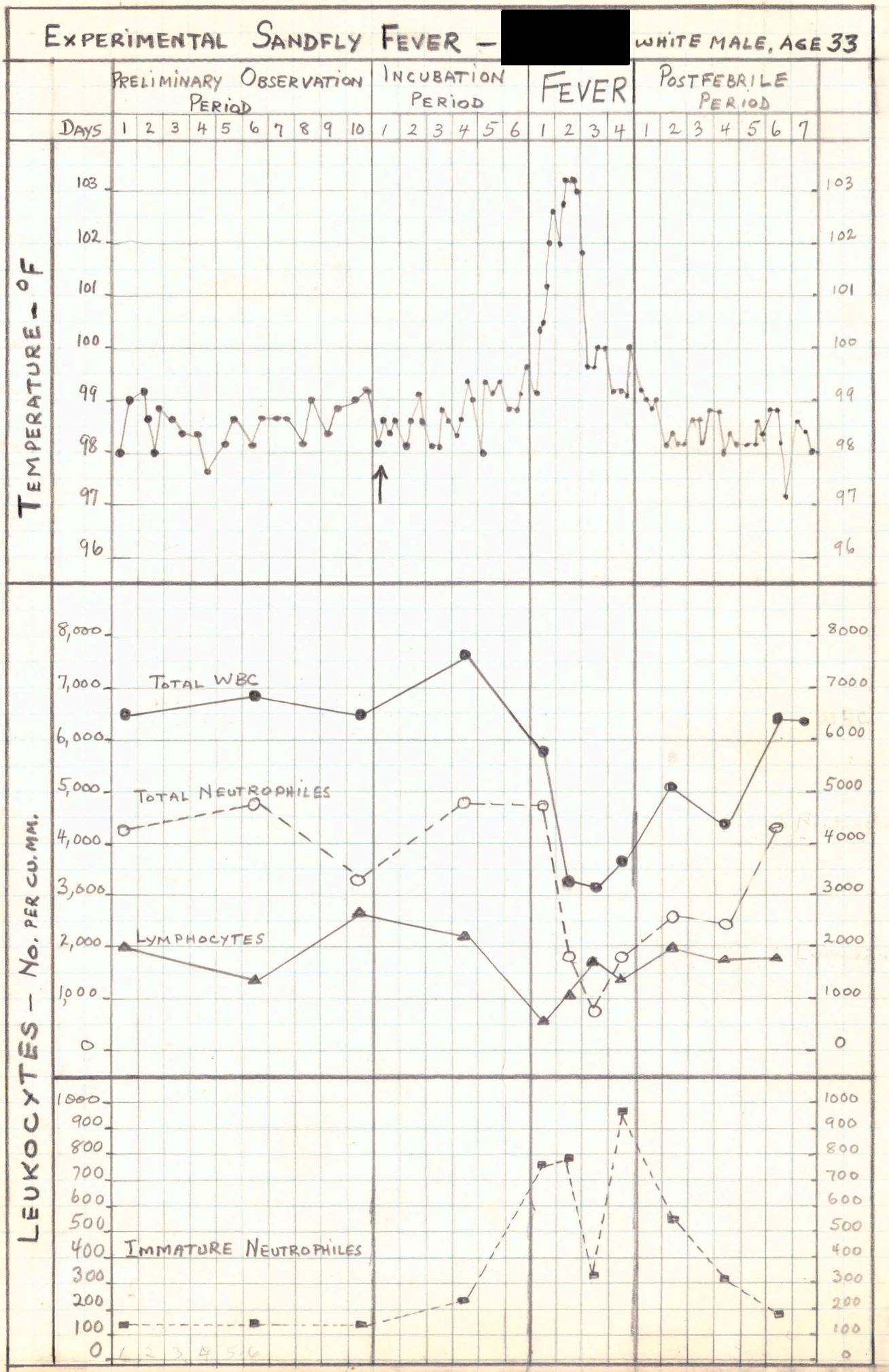


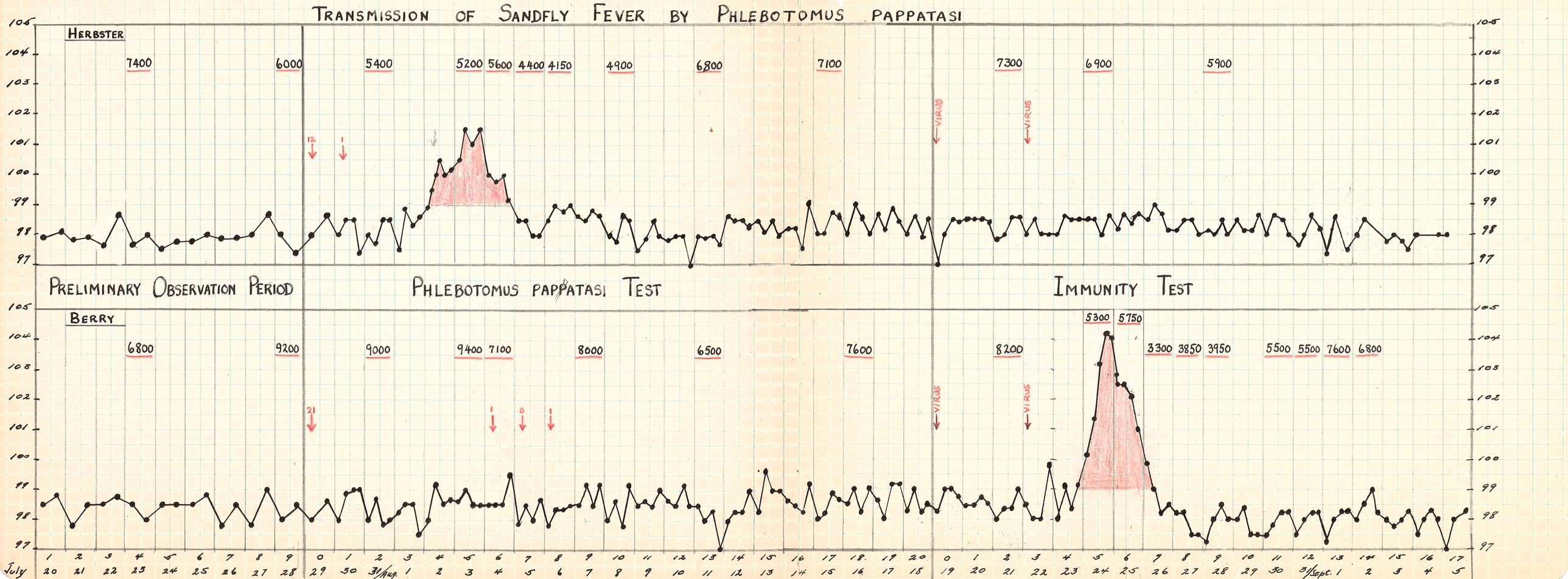
EXPERIMENTAL SANDFLY FEVER – [redacted] WHITE MALE, AGE 31



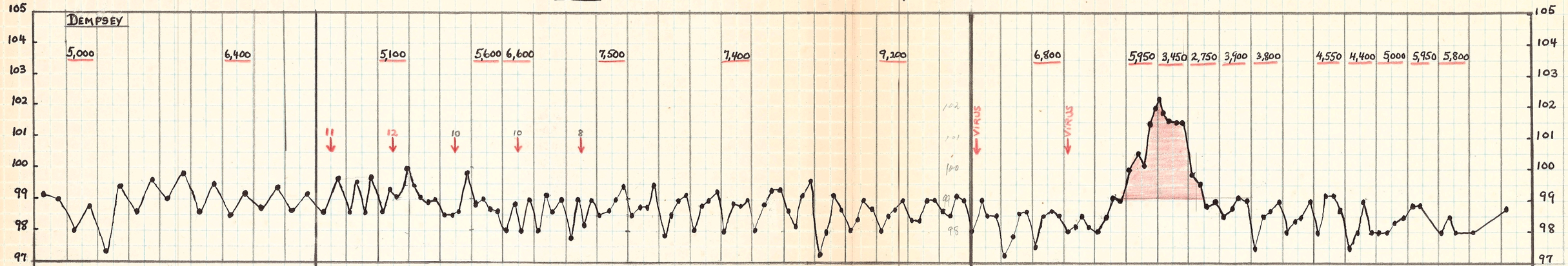


EXPERIMENTAL SANDFLY FEVER – [redacted] WHITE MALE, AGE 33

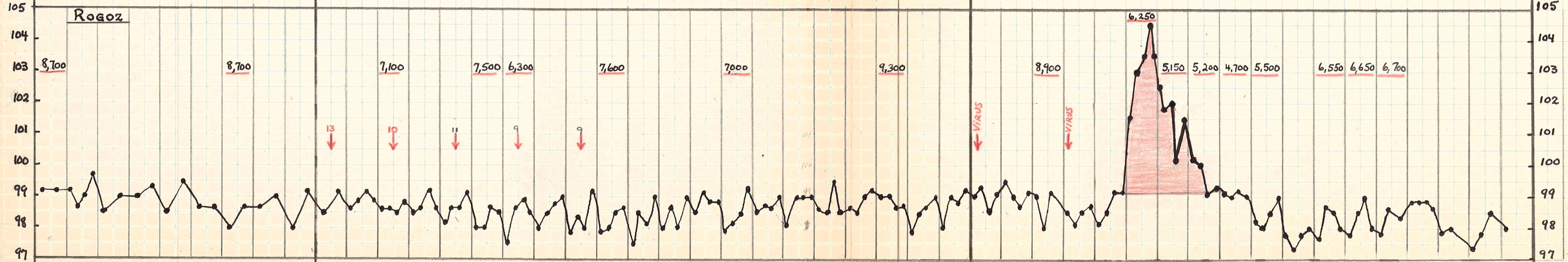



TRANSMISSION OF SANDFLY FEVER BY PHLEBOTOMUS PAPPATASI
HERBSTER
7400
6000
5400
5200
5600
4400
4150
4900
6800
7100
7300
6900
5900
12
1
VIRUS
VIRUS
PRELIMINARY OBSERVATION PERIOD
PHLEBOTOMUS PAPPATASI TEST
IMMUNITY TEST
BERRY
6800
9200
9000
9400
7100
8000
6500
7600
8200
5300
5750
3300
3850
3950
5500
5500
7600
6800
21
VIRUS
VIRUS
July
Aug.
Sept.

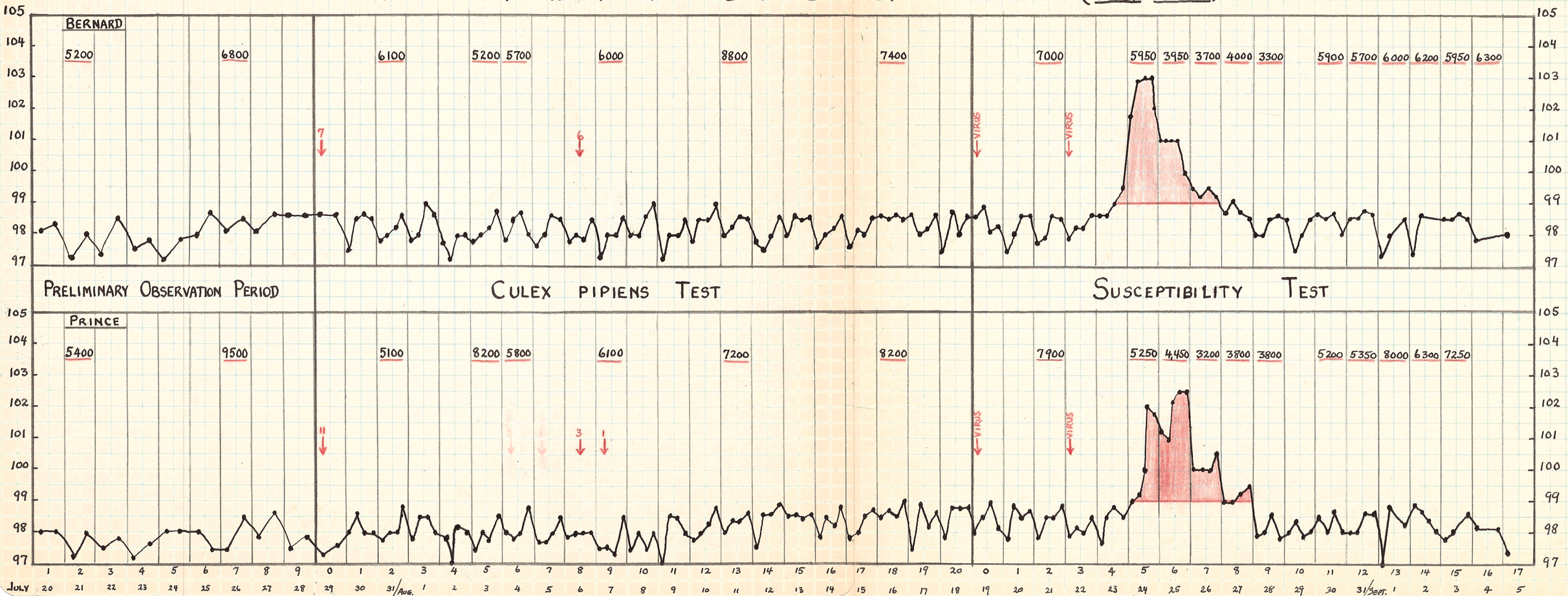
Can Human Fleas (Pulex irritans) Transmit Sandfly Fever ?



Preliminary Observation Period | Pulex irritans Test | Susceptibility Test



Attempted Transmission of Sandfly Fever by Mosquitoes (Culex pipiens)

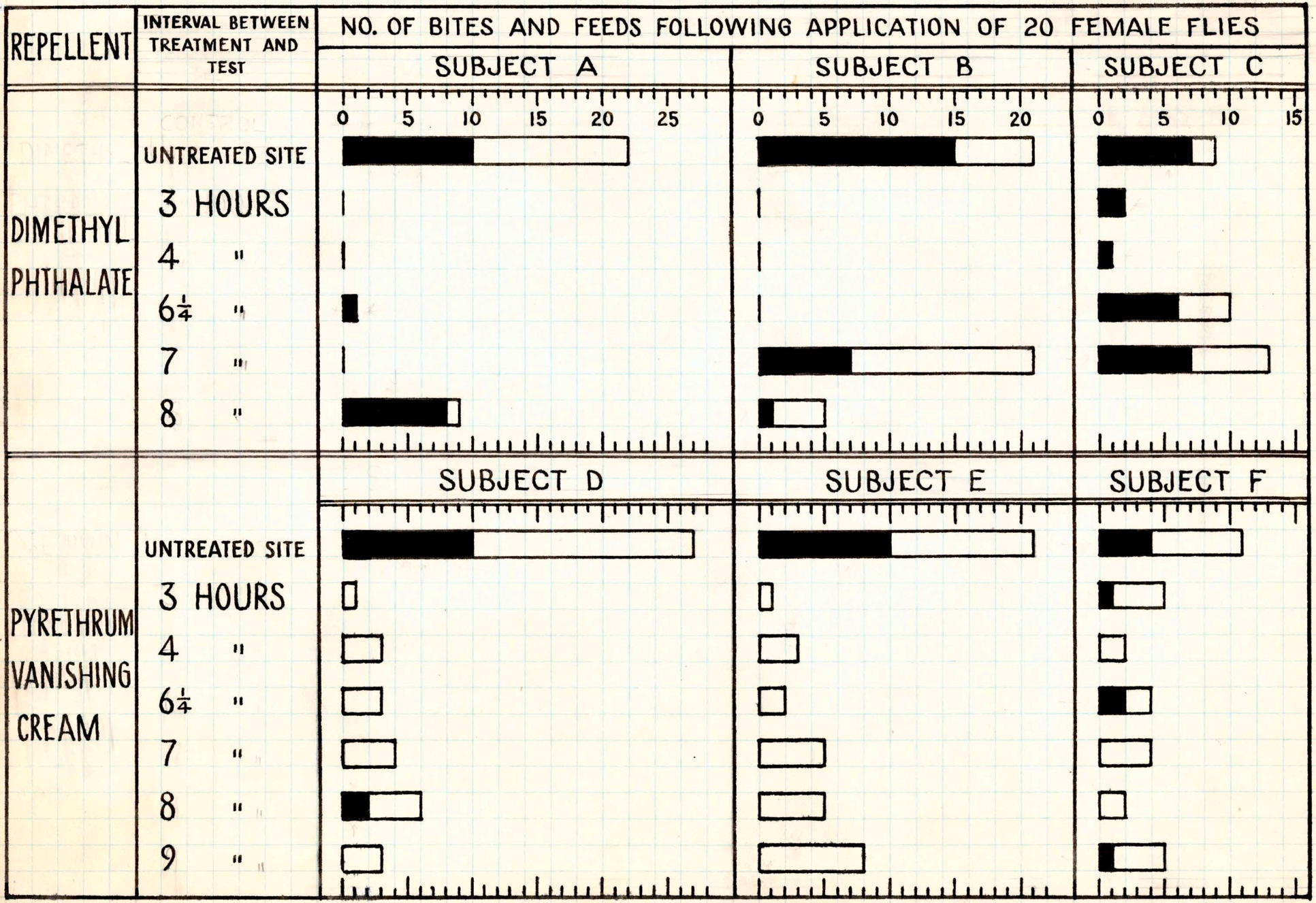


Preliminary Observation Period

Culex pipiens Test

Susceptibility Test

PROTECTIVE EFFECT OF TWO REPELLENTS AGAINST PHLEBOTOMUS PAPATASI



TOTAL BAR = NO. OF BITES; SHADED AREA = NO. OF FEEDS, (NO. OF FLIES ENGORGED)

Erythrocyte Sedimentation Rates in Patients with Experimental Sandfly Fever

Rourke-Ernstene Method with Correction for Cell Volume (Normal .0.08 – 0.35 mm./min.)

Date	Name	Days after onset of ~~of Fever~~	Corrected E.S.R – mm/min.
Jan. 24	[redacted]	3rd	0.72 → 0.88 10th
		"	0.63 → 0.46 10th
Jan. 25		3rd	0.62 → 0.56 9th
		4th	1.35 — 1.14 9th
		5th	0.62
Jan. 26		1st (not S.F. - 1day fever)	0.58 → 0.97 7th
Jan. 31		2ND	0.64 → 0.56 9th
		10th	1.14
		3rd	0.22
		10th	0.46
		9th	0.56
		10th	0.88
Feb. 3		1st	1.04
Feb. 7		5th	0.90
		9th	0.56
		5th	0.30
		5th	1.22

over

[redacted]

Feb. 17	6 TH	0.10	
	7 TH	0.75	
	7 TH	0.97	
	Before fever	0.32	
	" "	0.50	
Feb. 18	1 ST	0.20	(oxalate)
Feb. 19	2 ND	0.26	
	2 ND	0.54	
Feb. 23	6 TH	0.64	
	6 TH	0.45	
	6 TH	0.64	

Phosphatase Determinations on Patients with Experimental Sandfly Fever

Jan. 25, 1944

[redacted]

		Bodansky Units per 100cc	Inorganic P
1st day	– frozen –	4.4	3.2
3rd "	– " –	4.5	3.0
" "	– " –	5.4	2.9
" "	– fresh –	2.1	3.7
4th "	– " –	3.1	3.6
5th "	– " –	2.7	3.3
Normal control	– frozen –	3.7	3.7

CEPHALIN - CHOLESTEROL (HANGER) FLOCCULATION TEST

JAN. 24, '44

		16 hrs	24	40	48	64
±	[redacted] 3RD DAY S.F. - fresh	- O	O	O	O	±
+	" " " - "	- O	O	O	O	±
#	" " " - " - hemolyzed	- ##	##	##	##	#
#	2ND " " - frozen	- ±?	O-±?	+	+	#
##	- INFECT. HEPAT. - first day jaundice - frozen	- ###	###	###	###	
O	- normal control - fresh	- O	O	O	O	O
O	- control	- O	O	O	O	O

DESIGNATION OF READINGS

O = uniform suspension

± = fine granularity without sedimentation - uniformly dispersed

\+ = coarse granularity with sedimentation

\# = large floccules - sedimented and in suspension but considerable opalescence remaining

\## = well packed - sedimented ppt. - only faint opalescence remaining

\### = complete flocculation - sn. liquid clear.

Note - On JAN. 22 Dr. Wasserman tested two sera for me

	24 hrs	48 hrs
[redacted] st day S.F. - fresh	- O	O (±?)
" " - frozen	- O	O (±?)

Cephalin-Cholesterol Flocculation Test (Hanger)

Jan. 25, 1944

66 hrs

		15 hrs.	24	40	48
±	[redacted] th day S.F. – fresh	– 0	0	±	±
0	[redacted] th day S.F. – "	– 0	0	0	0
0	[redacted] 3rd " S.F. – " Some hemolysis	– 0	0	0	0
0	[redacted] 1st " S.F – frozen	– 0	0	0	0
+	[redacted] 1st " S.F. – "	– 0	0	+	+
±±	Mustart – Hepatitis – frozen	– ±±	±±	±±	±±
0	Pool I [redacted] bled 6/14 – frozen 6/16	– 0	0	0	0
0	bled 7/7 – frozen 7/8	– 0	0	0	0
0	bled 7/7 – frozen 7/8	– 0	0	0	0
±	bled 7/7 – frozen 7/8	– +	+	±	±
±	bled 6/26 – frozen 6/27	– ±	±±	±±	±±
±	hemolysed; bled 7/2 – frozen 7/2	– ±	±	±	±±
±	hemolyzed fatty; bled 7/1 – frozen 7/2	– +	+	±	±
0	fatty ; Bled 6/18 – frozen 6/19	– 0	0	0	0
0	bled 7/7 – frozen 7/8	– 0	0	0	0
±	Bled 6/18 – frozen 6/19	– ±	±	±	±
±	Bled 6/14 – frozen 6/16	– ±	±±	±±	±±
+	[redacted] – 39 days – 8/27 – frozen (Hep 9/28)	– 0	0	0	0
0	– 34 " 9/22 – " (Hep 10/26)	– 0	0	0	0
±	– 19 " 9/7/43 – "	– +	+	±	±
0	[redacted] – frozen – normal serum control	– 0	0	0	0
0	Saline control	– 0	0	0	0

Mixtures set up at 5.40–5.50 P.M.

Cephalin-Cholesterol Flocculation Test (Hanger) — Jan. 27

All sera frozen in CO_2

		18 hrs.	24	45	70
[redacted]	(7-19-43)	− ++++	++++	++++	
	(7-20-43) – fatty	− ++++	++++	++++	
	(7-21-43) sl. hem.	− +	+±	++++	
	(8-2-43) sl. fatty	− ++++	++++	++++	
	(8-24-43) mod. hem.	− 0	0	0	±
	" sl. hem.	− 0	0	0	+
	" " "	− 0	0	+	++
	" mod "	− ±?	0?	+	++
	" " "	− +	+	++++	
[redacted]	(10-10-43) sl. fatty	− 0	0	+	++
	"	− ?	0?	0	+
	(10-12-43)	− ++++	++++	++++	
	(10-16-43) sl. hemol.	− +	+±	++++	
	(10-20-43)	− 0	0	0	+
	(11-18-43)	− 0	0	0	0
[redacted]	(11-22-43)	− 0	0	0	0
	(8-31-43)	− 0	0	++++	++++
	(8-20-43)	− +	+	++++	
	(9-3-43) very fatty	− ?	0	++++	
[redacted]	– Normal control	− 0	0	0	0
Saline Control		− 0	0	0	0

Mixtures at 4:30 P.M.

Cephalin - Cholesterol Flocculation Test (Hanger)

Jan. 28, 1943
1944

All sera frozen in CO_2

				21	46	
Normal Preinoculation Sera	[redacted]	(7-5-43)		-	++++	++++	
		"	fatty	-	++++	++++	
		"		-	+++	+++	
		(7-20-43)	sl. fatty	-	†++++	++++	
		"	fatty	-	++++	++++	
		"	sl. "	-	++++	++++	
		"	" "	-	++++	++++	
		"		-	0	+	++ (70 hrs)
	[redacted]	(8-11-43)	fatty	-	++++	++++	
Preinoculation Sera	[redacted]	(10-11-43)		-	±	++	
		(10-6-43)		-	+	++	
		"		-	0	±	++ (70hrs)
		"		-	†++++	++++	
		"	12-7-43	-	++++	++++	
	[redacted]	— NORMAL CONTROL		-	0	0	± (70hrs)
	Saline Control			-	0	0	0

Mixtures made at 3:45 P.M.

† marked flocculation in 2 hours

Cephalin-Cholesterol Flocculation Test (Hanger)

Jan. 29

Control tests on freshly ~~drawn~~ "normal" sera and one acute S.F. serum

	21	46
[redacted]	− 0	0
	− 0	0
	− 0	0
	− 0	0
(S.F. − 1st day)	− 0	+
Saline Control	− 0	0

Mixtures set up at 4 P.M.

Flocculation Test

Feb. 3, 1944

		24	48	72
[redacted]	an. 11 − U.R. Infection) − frozen −	0	0	0
	B.3 − 1st day S.F. − fresh −	0	0	0
	" − " " − " −	0	±	+
	" − " " − " −	0	+	+
Saline Control	−	0	0	0

Mixtures set up at 5 P.M.

Cephalin - Cholesterol Flocculation Test (Hanger) Feb. 7

All freshly drawn sera (except positive control)

		24	48	72
[redacted] — S.F. - 5th day	-	0	0	0
— " — " "	-	0	±	+
— " — 10th "	-	0	+	+
— " — 5th "	-	0	0	0
— " — 9th "	-	0	0	0
— F.U.O.	-	0	±	+
— Susp. inf. mononucleosis	-	+	++	++
— Positive Jaundice serum	-	++++*	++++	++++
Saline Control	-	0	0	0

Mixtures set up at 2 45 PM

* ++++ in 2 hours

Flocculation Test Feb. 11

		24hrs	48
[redacted] — 1st DAY (fresh)	-	0	+
Saline control	-	0	0

CEPHALIN – CHOLESTEROL FLOCCULATION TEST — FEB. 17

TESTS ON FRESH SERA

	17 hrs	24	48	72
[redacted] – 2 days after inoc – before fever –	0	0	0	0
– " " " " " –	0	0	0	0
– S.F. – 6th day –	0	0	0	0
– " – 7th " –	0	0	±	+
– " – 7th " –	0	±	+	#
POSITIVE CONTROL –	###			
SALINE CONTROL –	0	0	0	0

Mixtures set up 4 15 P.M.

FEB. 18

TESTS ON FRESH SERA

	20	44
[redacted] – S.F. – 1st day –	0	0
– S.F. – " " –	0	0
– S.F. – 1st day –	0	0
SALINE CONTROL –	0	0

Mixtures set up 6 P.M.

TESTS ON FRESH SERA

FEB. 23

	24	48
[redacted] S.F. – 6th day –	0	0
F. – " " –	0	0
– " " –	0	0
SALINE CONTROL –	0	0

SET UP AT 2:30 P.M.

Summary of Cephalin-Cholesterol Flocculation Tests on Patiens with Experimental Phlebotomus Fever

* All tests on freshly drawn sera

Name	Days from onset of fever	Result 24	Result 48
[redacted]	1st	0	0 to ±
	5th	0	0
	4th	0	±
	1st	0	+
	10th	0	+
	1st	0	±
	~~15~~ 5th	0	0
	1st	0	+
	5th	0	±
	1st	0	0
	5th	0	0
	3rd	0	0
	3rd	0	0
	3rd	0	0
	9th	0	0
	1st	0	+
	7th	0	±
	6th	0	0
	7th	±	+
	Before fever	0	0
	1st	0	0
	6th	0	0
	Before fever	0	0
	1st	0	0
	6th	0	0
	1st	0	0
	6th	0	0

Code for Cross Immunity Charts

[redacted]

1
1
1

1
1
1
1

1
1
1
2

2
2
2
2