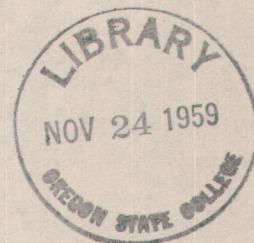


MAY 1, 1938

INSTRUCTOR

W. F. McCULLOCH



S I L V I C U L T U R E

FOR. 342

A DETERMINATION OF THE MOISTURE
RETAINING CAPACITY OF BARK

TERM PROJECT

Submitted by:

JOHN B. HALVERSON

SILVICULTURE PROJECT

MAY 1, 1938

JOHN B. HALVERSON

Name of project:

A DETERMINATION OF THE MOISTURE RETAINING CAPACITY OF BARK

Purpose:

The purpose is to determine accurately the difference between the moisture loss of peeled and unpeeled samples of wood.

Description of procedure:

Nineteen different species of wood were chosen for the experiment. The size of the samples were fairly uniform, ranging from two and one-half inches to three inches in length and approximately one-half to three-quarters inches in diameter.

For each species two samples were chosen which were identical as to size and origin. The bark was carefully removed from one and the other left untouched.

To prevent loss from the ends of the samples a uniform coating of wax was applied to the ends of both peeled and unpeeled samples.

The pieces were weighed and then subjected to room temperature by laying them out in an open container in my room. Weighing was done every two or three days over a period of nineteen days. Weights were taken on a scale which gave weights in grams.

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Results:

A table showing the weights obtained at various times is included in the report. A graph was made for each species which gives an accurate picture of the comparative moisture loss for peeled and unpeeled samples.

Peeled samples lost moisture rapidly during the first several days and later remained at a relatively even weight. Some fluctuation resulted because of the lack of an absolute uniform temperature and humidity conditions.

Unpeeled samples dried slowly and steadily. The drop is noticeably less than the decline for peeled samples.

John B. Hal verson

Data Chart

		4-9		4-11		4-13		4-16		4-18		4-20		4-23		4-25		4-28	
1	<i>Alnus rubra</i>	14	18	10.4	17.1	9.7	16.6	10.0	16.4	10.0	16.2	10.0	16.0	9.9	15.7	9.8	15.5	9.9	15.2
2	<i>Fraxinus americana</i>	4.7	7.2	2.8	5.9	2.75	5.8	2.9	5.75	2.9	5.6	2.9	5.5	2.9	5.4	2.9	5.3	3.0	5.2
3	<i>Crataegus douglasii</i>	10.1	10.6	7.4	9.8	7.1	9.5	7.0	9.2	7.5	9.15	7.2	9.0	7.2	8.9	7.2	8.8	7.1	8.6
4	<i>Juglans nigra</i>	10.4	12.4	8.0	12.0	7.6	11.8	7.6	11.8	7.5	11.6	7.45	11.4	7.4	11.2	7.4	11.1	7.4	11.1
5	<i>Abies grandis</i>	6.7	10	5.2	9.8	5.0	9.7	5.2	9.7	5.2	9.5	5.2	9.4	5.2	9.2	5.2	9.1	5.2	9.0
6	<i>Populus tremuloides</i>	5.2	12	3.6	11.6	3.5	11.5	3.5	11.2	3.55	11.1	3.6	10.8	3.6	10.5	3.5	10.2	3.55	9.9
7	<i>Acer macrophyllum</i>	8.4	11	6.7	10.3	6.4	10.0	6.3	9.6	6.3	9.3	6.2	9.0	6.15	8.7	6.1	8.5	6.15	8.4
8	<i>Pinus contorta</i>	5.7	9.2	5.0	8.7	4.9	8.7	4.9	8.4	4.9	8.2	4.9	8.0	4.9	7.8	4.9	7.5	4.9	7.3
9	<i>Quercus garryana</i>	8.75	12.1	6.5	11.0	6.4	10.9	6.3	10.7	6.2	10.5	6.2	10.45	6.2	10.3	6.2	10.15	6.2	10.1
10	<i>Ulmus americana</i>	6.5	9.2	5.5	9.0	5.0	8.6	4.8	8.2	4.85	8.1	4.9	7.95	4.85	7.7	4.9	7.6	4.9	7.55
11	<i>Picea sitchensis</i>	7.4	10.7	5.5	9.5	5.3	9.0	5.35	8.7	5.4	8.5	5.3	8.2	5.3	8.1	5.3	8.0	5.3	7.9
12	<i>Osmaronia cerasiformis</i>	6.0	7.6	4.7	7.3	4.3	7.1	4.3	7.0	4.4	6.9	4.3	6.7	4.3	6.6	4.3	6.5	4.3	6.3
13	<i>Pinus ponderosa</i>	6.5	10.7	3.3	9.5	3.2	9.3	3.35	9.2	3.3	9.1	3.25	8.95	3.3	8.9	3.3	8.8	3.3	8.5
14	<i>Pseudotsuga taxifolia</i>	9.0	16.2	6.0	15.8	5.9	15.4	6.0	15.25	6.1	15.0	6.05	14.8	6.0	14.5	6.0	14.4	6.0	14.1
15	<i>Pinus attenuata</i>	5.3	7.4	2.9	6.2	2.7	6.0	2.8	5.9	2.8	5.6	2.8	5.4	2.8	5.2	2.8	5.0	2.8	4.8
16	<i>Libocedrus decurrens</i>	7.2	11.2	4.4	11.0	4.2	10.8	4.1	10.4	4.1	10.2	4.1	10.0	4.1	9.8	4.1	9.6	4.1	9.3
17	<i>Thuja plicata</i>	7.3	10.5	5.0	9.6	4.9	9.4	5.0	9.2	4.95	9.0	4.95	8.9	4.95	8.7	4.9	8.6	4.9	8.4
18	<i>Betula papyrifera</i>	7.4	10.0	5.0	9	4.9	8.7	5.0	8.6	5.05	8.4	5.0	8.2	5.0	8.0	5.0	7.9	5.1	7.7
19	<i>Chamaecyparis nothofensis</i>	6.5	8.4	4.7	8	4.6	7.8	4.65	7.7	4.6	7.55	4.65	7.4	4.6	7.2	4.6	7.1	4.6	7.0

Brown is unpeeled sample

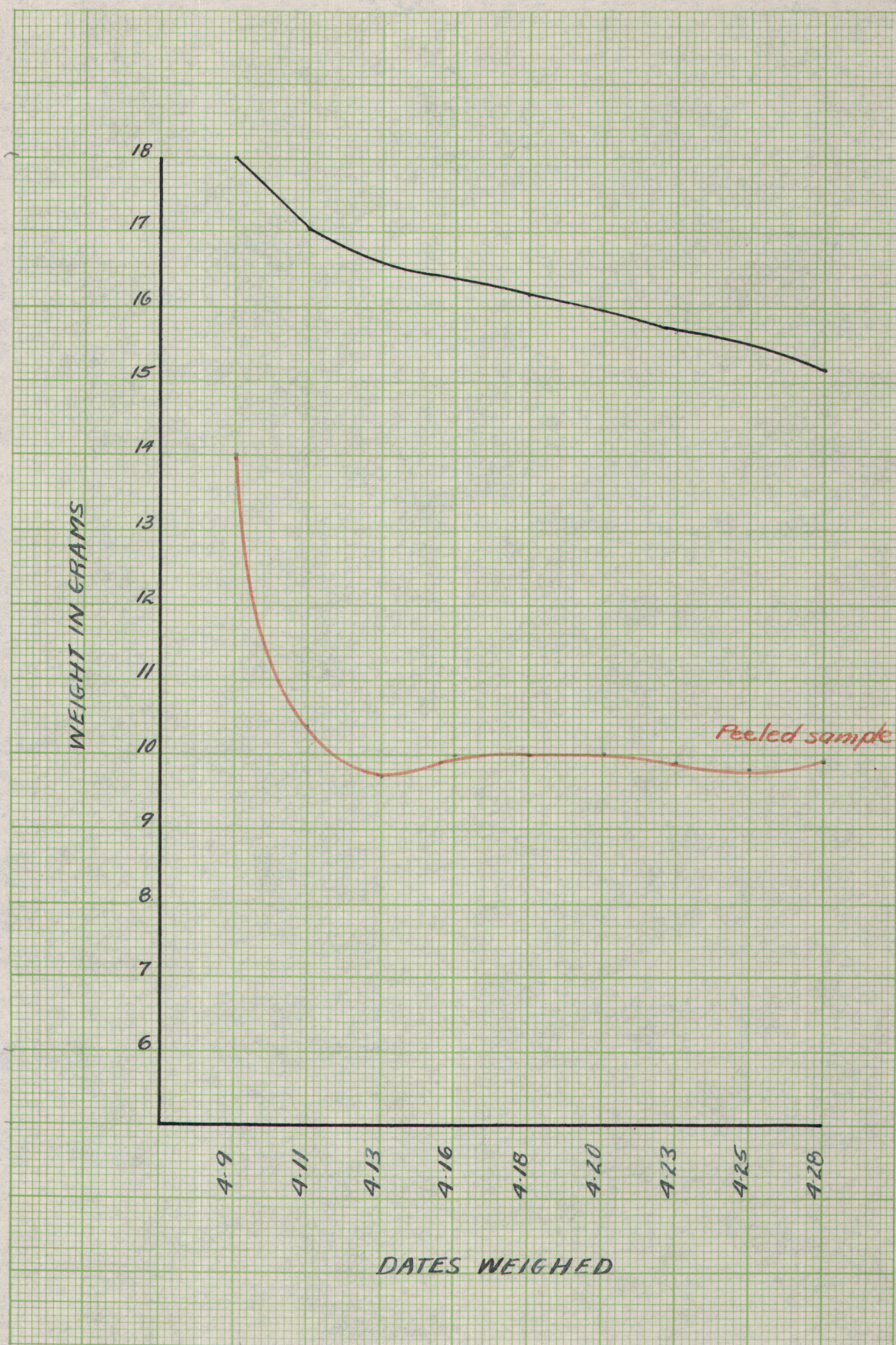
Section *Alnus rubra*

Name

JOHN B. HALVERSON

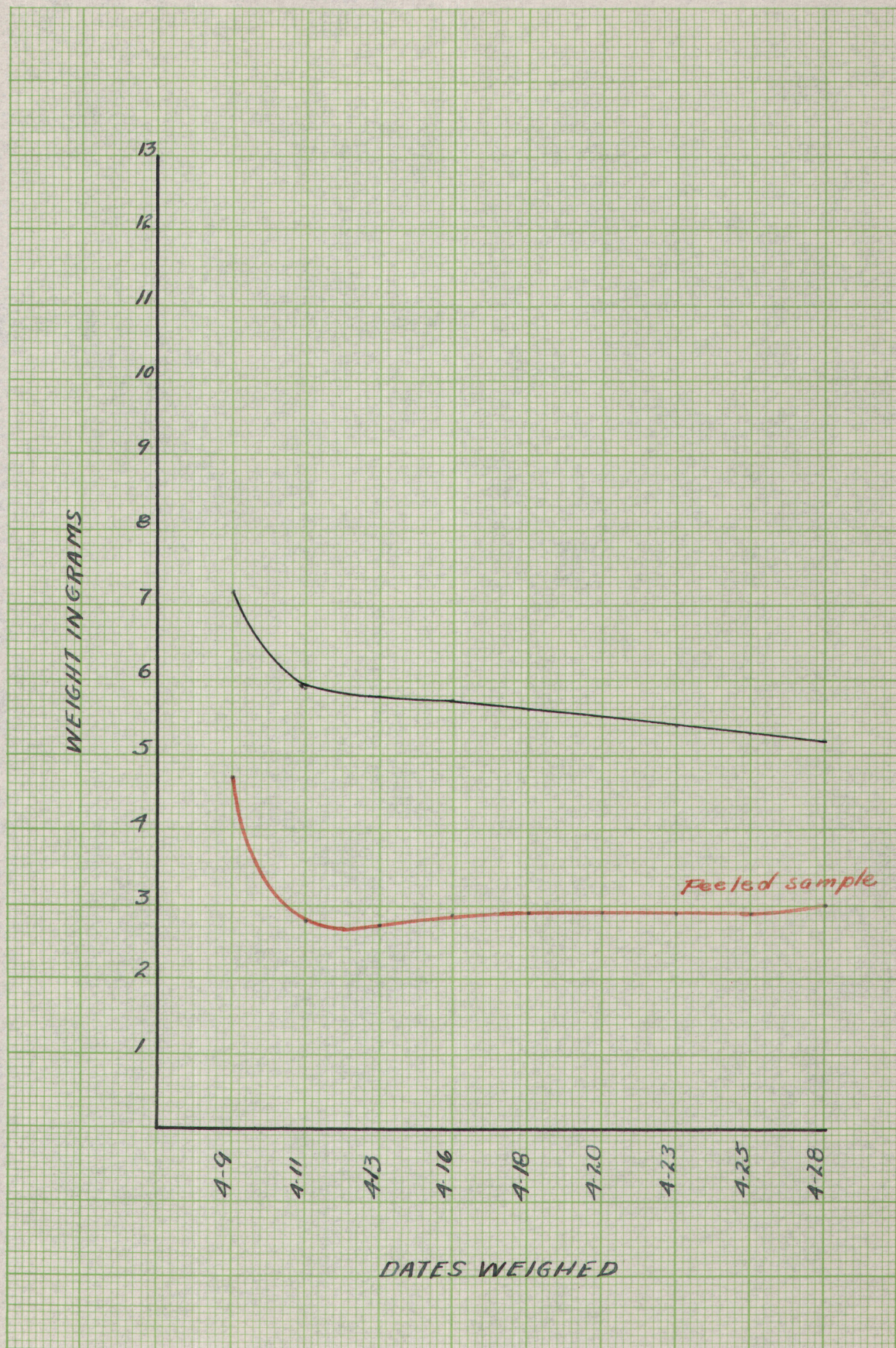
Date 5-1-38

Experiment No. 1



Section Fraxinus americana Name JOHN B. HALVERSON

Date 5-1-38 Experiment No. 2



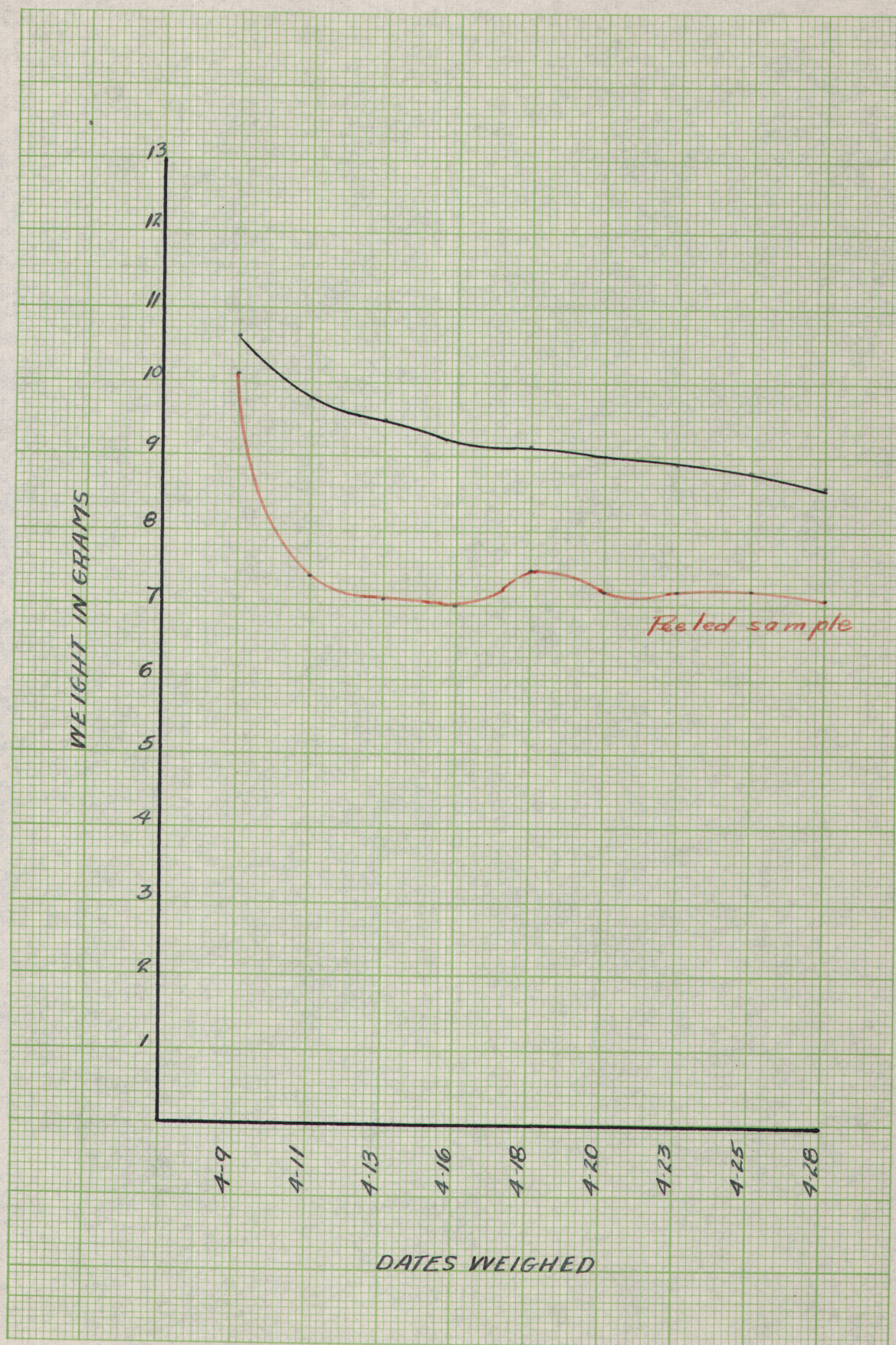
Section *Crataegus douglasii*

Name

JOHN B. HALVERSON

Date 5-1-38

Experiment No. 3



Section *Juglans nigra*

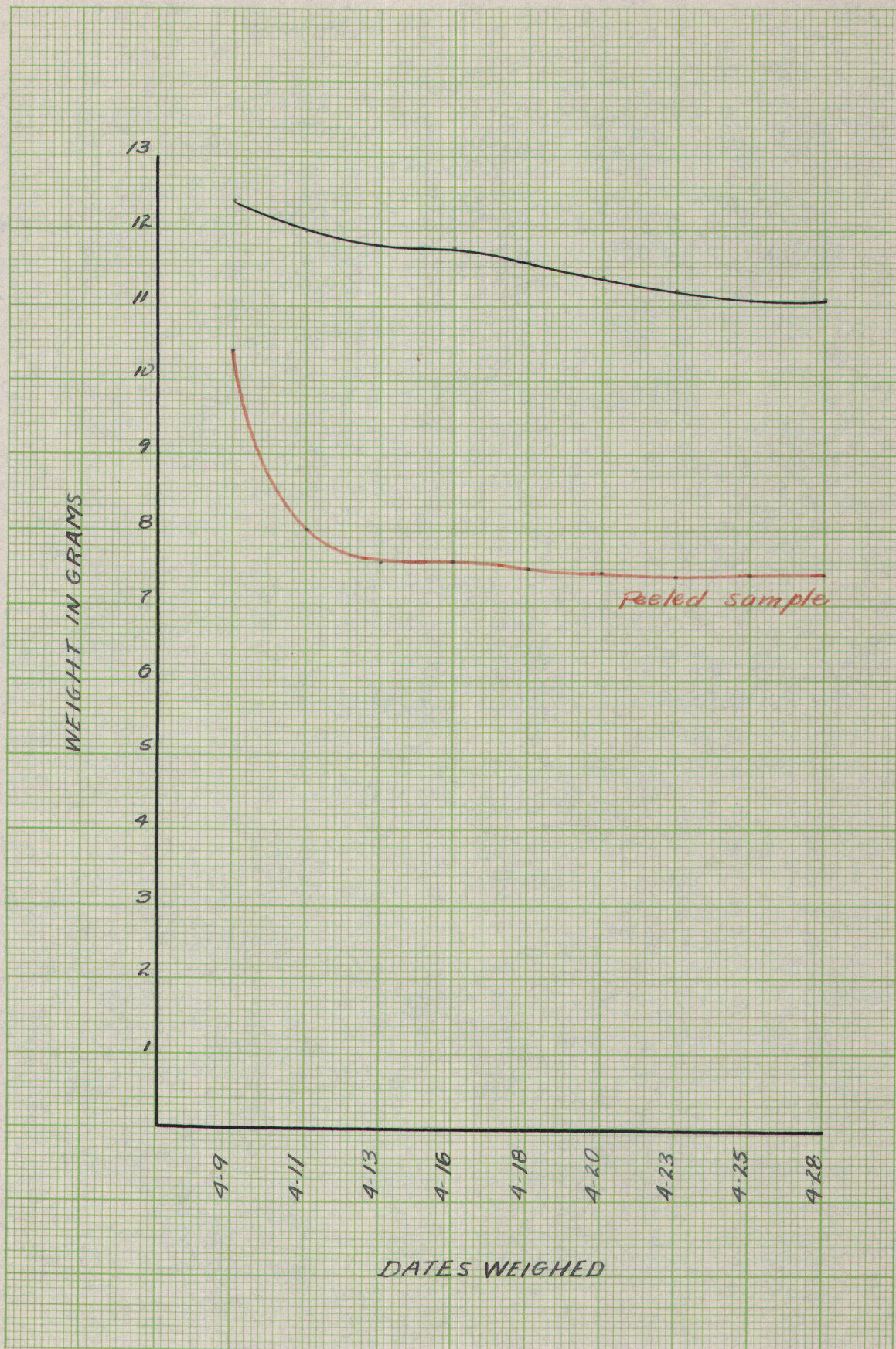
Name

JOHN B. HALVERSON

Date 5-1-38

Experiment No.

4

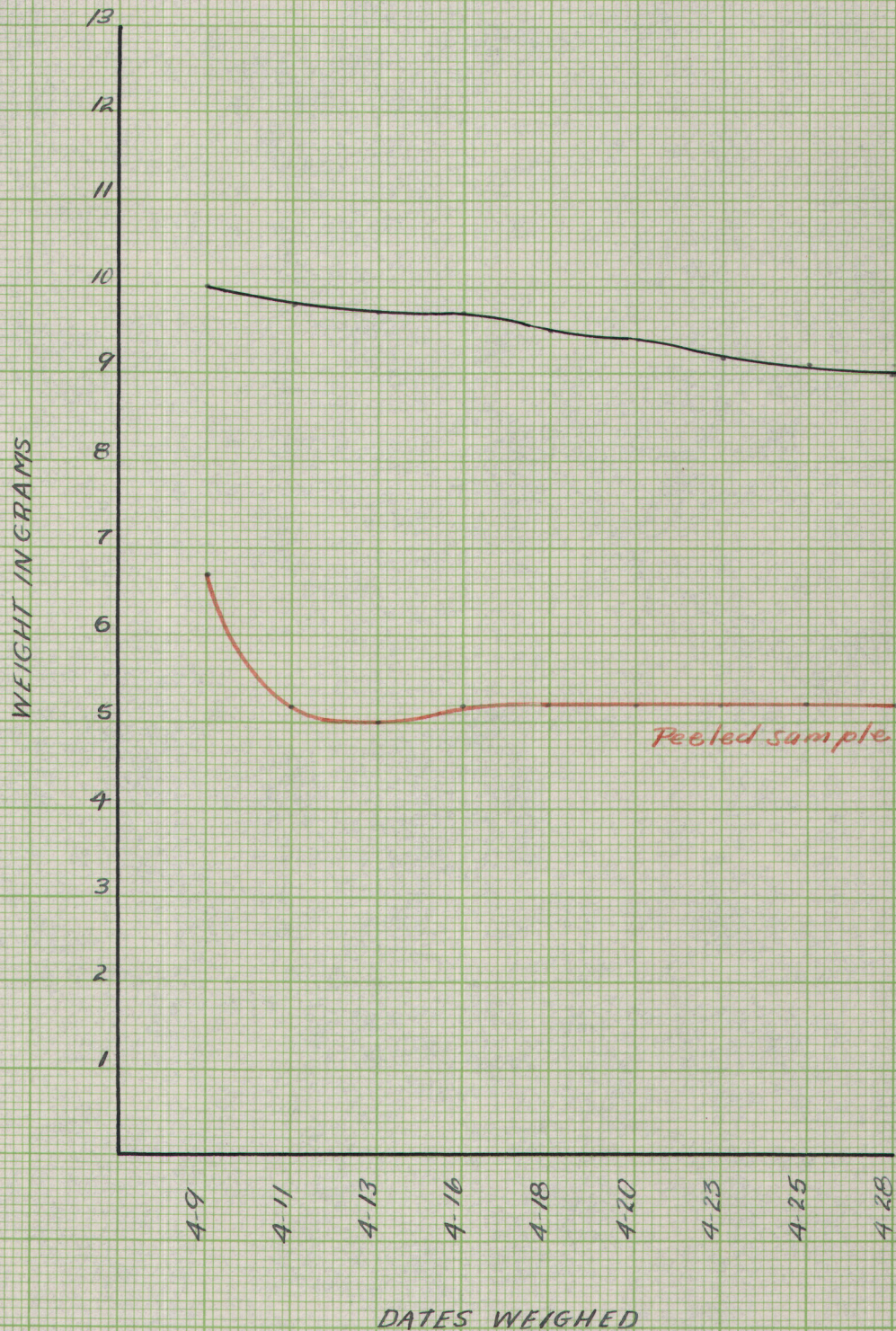


Section *Abies grandis*

Name JOHN B. HALVERSON

Date 5-1-38

Experiment No. 5



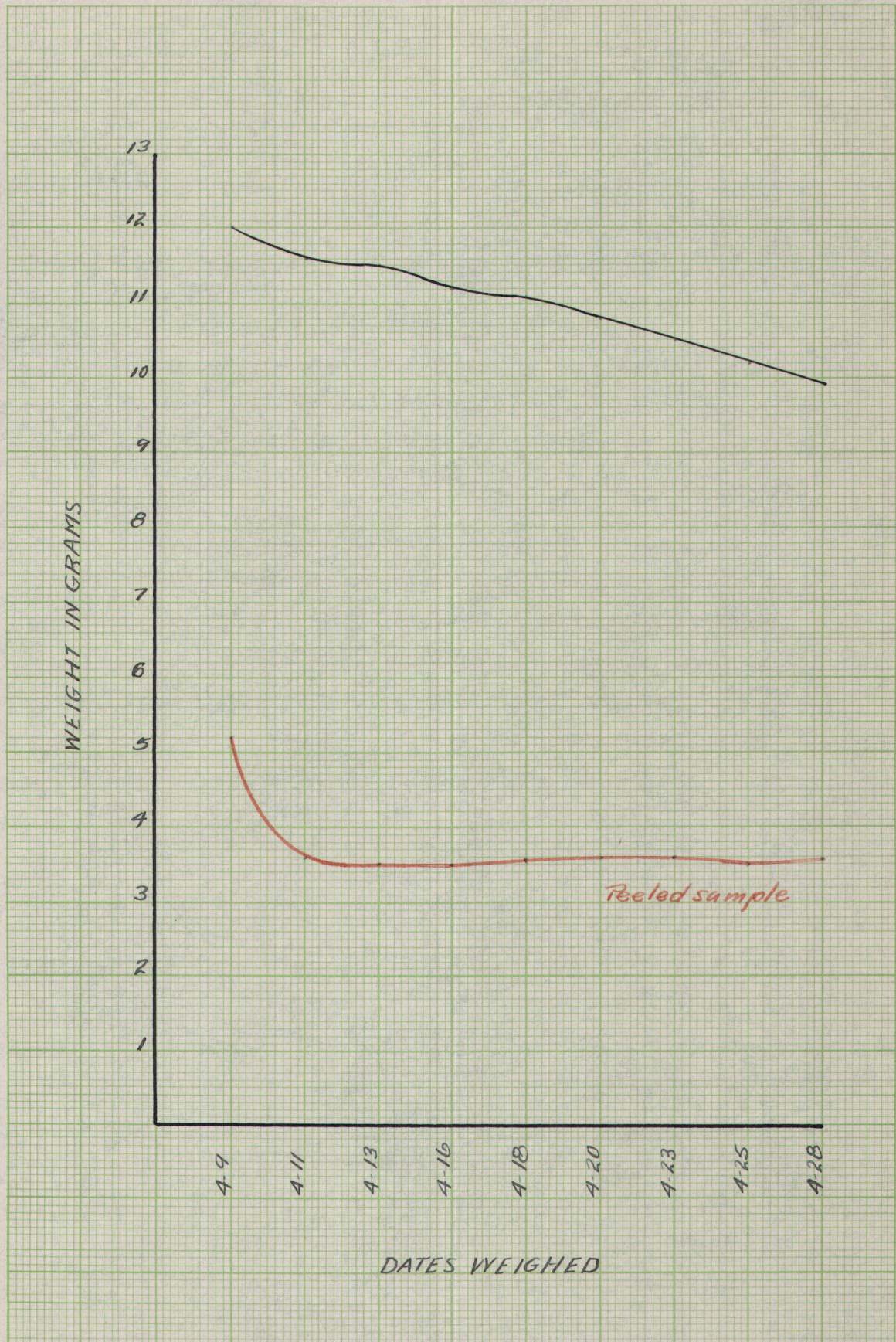
Section *Populus tremuloides*

Name

JOHN B. HALVERSON

Date 5-1-38

Experiment No. 6



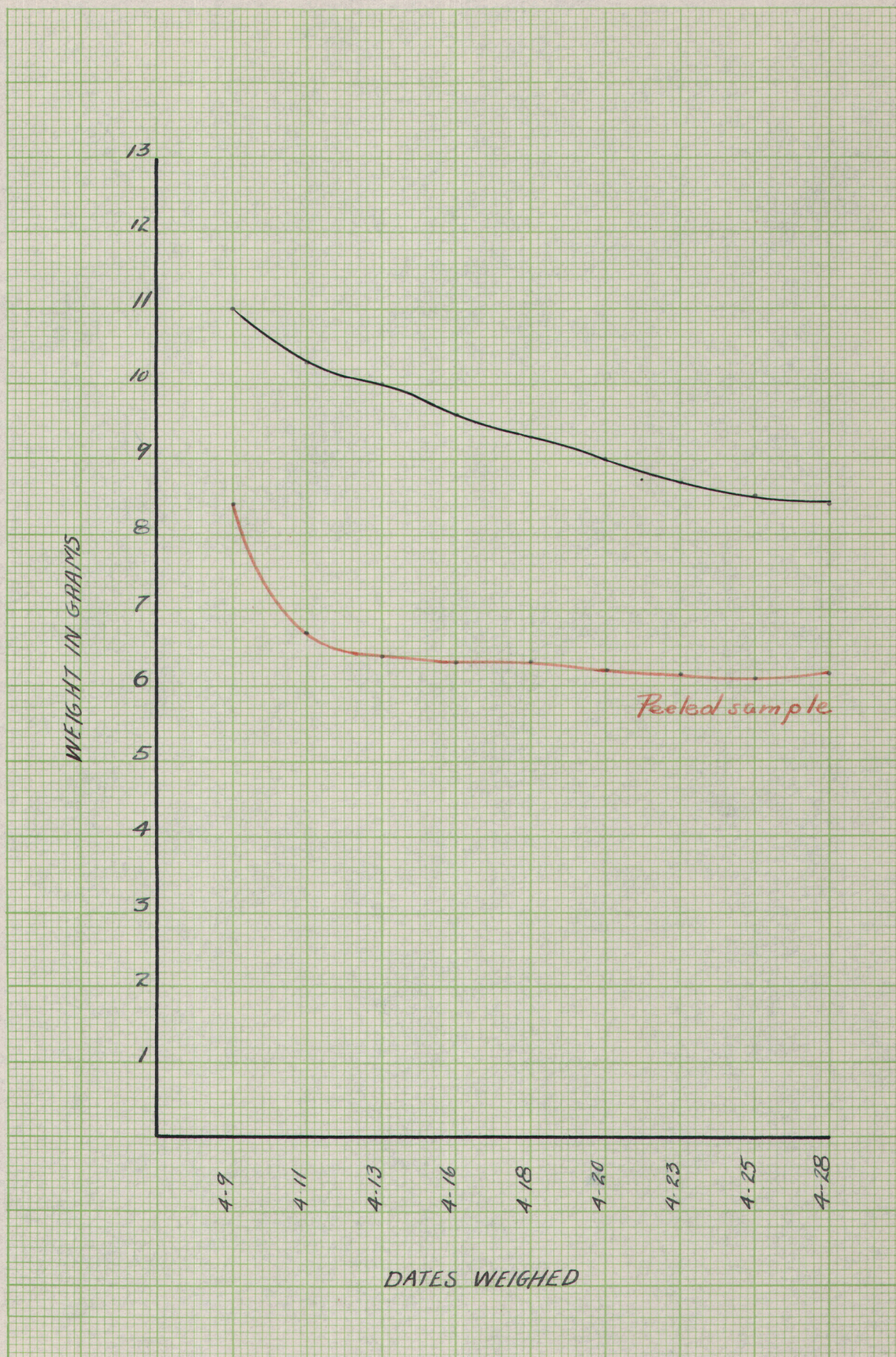
Section *Acer macrophyllum*

Name

JOHN B. HALVERSON

Date 5-1-38

Experiment No. 7

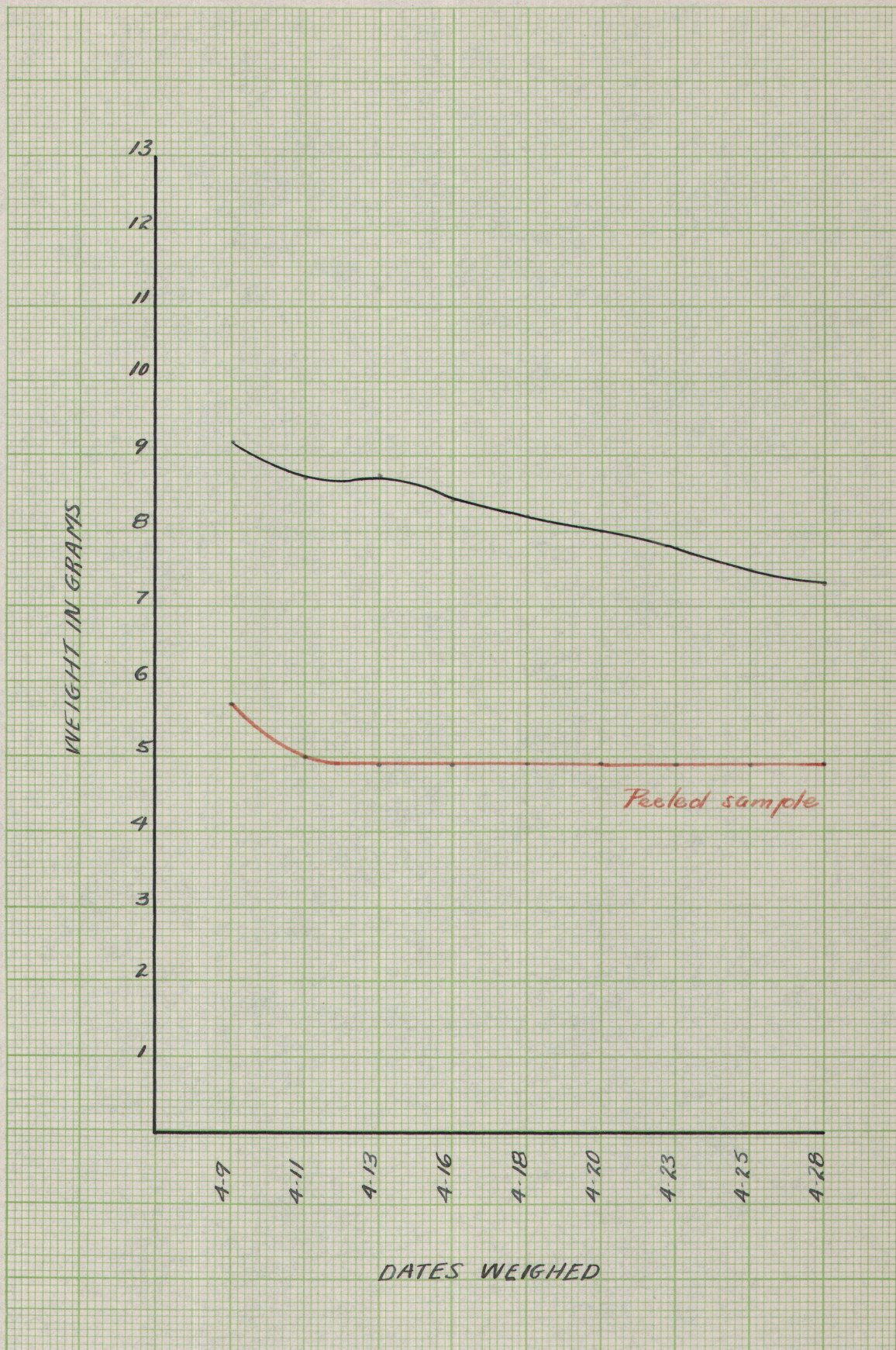


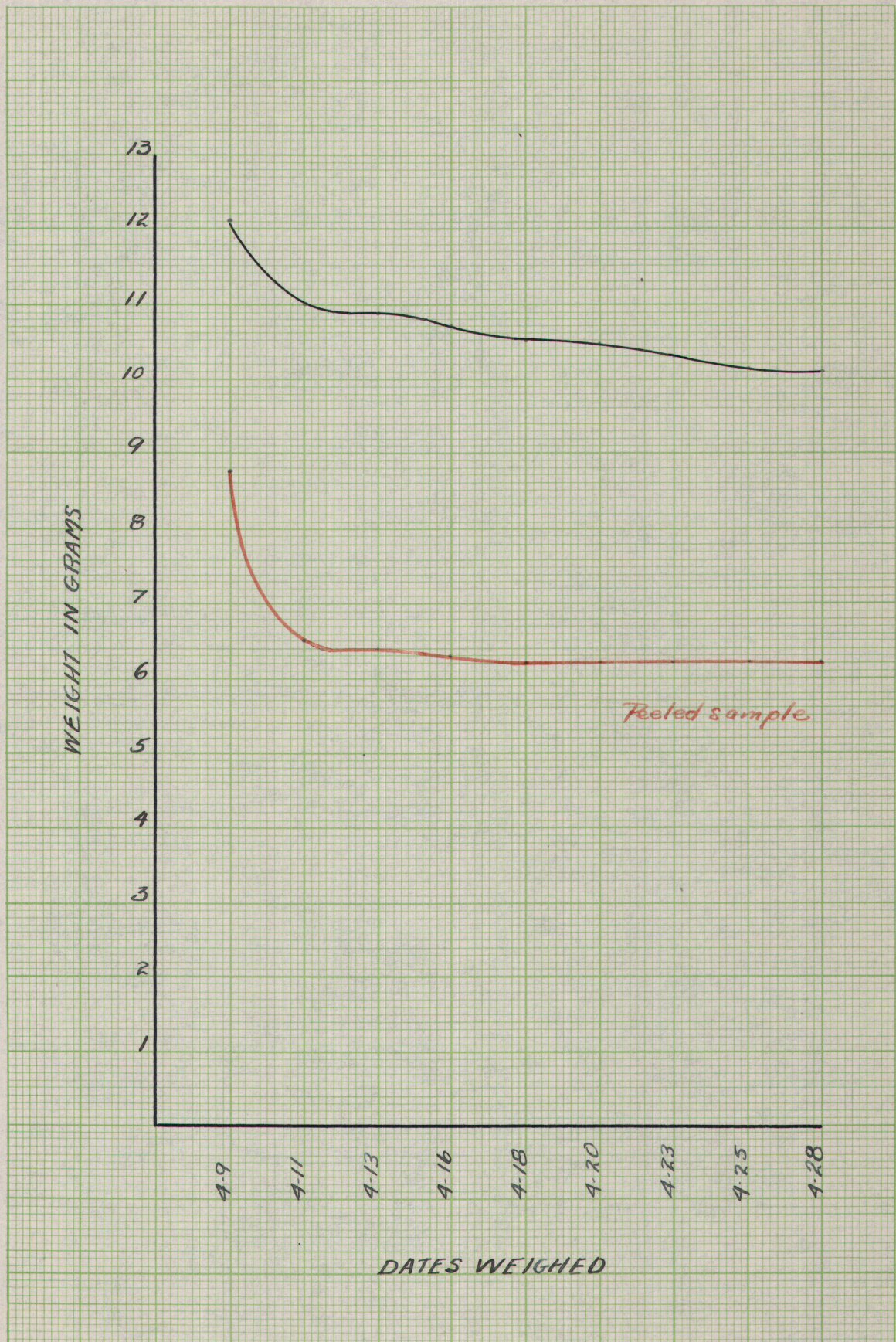
Section *Pinus contorta*

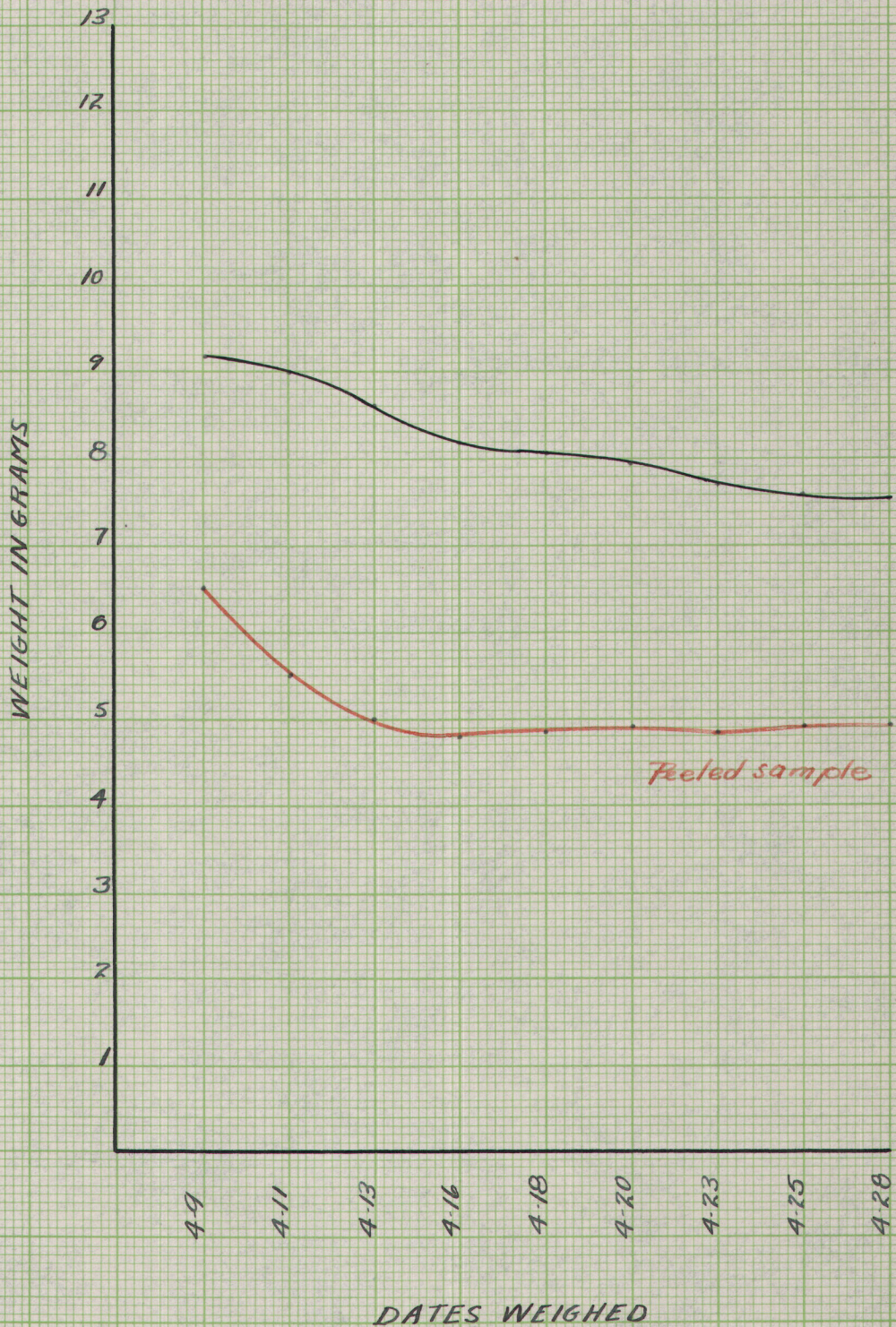
Name JOHN B. HALVERSON

Date 5-1-30

Experiment No. 8



Section *Quercus garryana* NameDate *5-1-38* Experiment No. *9*

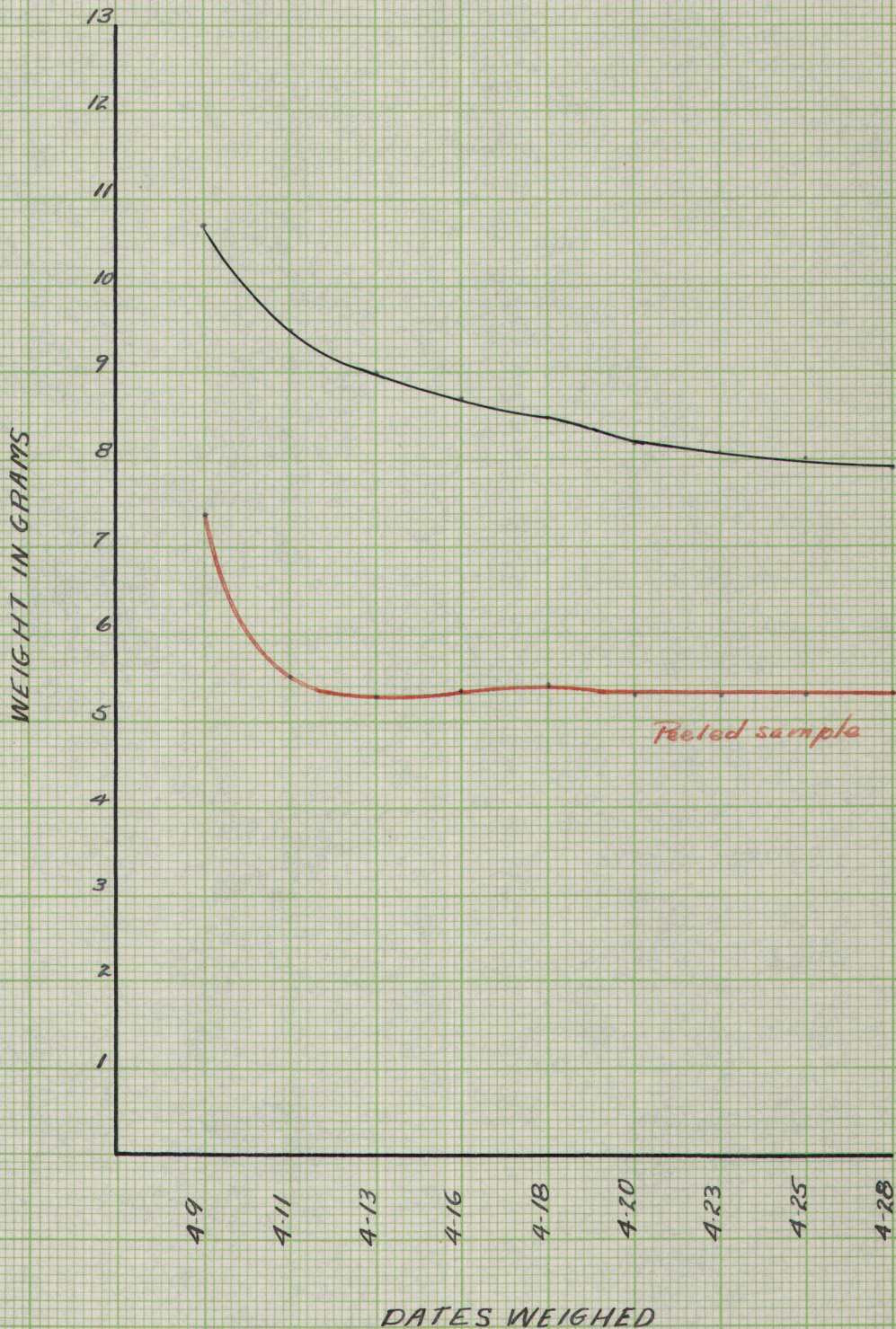
Section Ulmus americana Name _____Date 5-1-38 Experiment No. 10

Section *Picea sitchensis*

Name

Date 5-1-38

Experiment No. 11

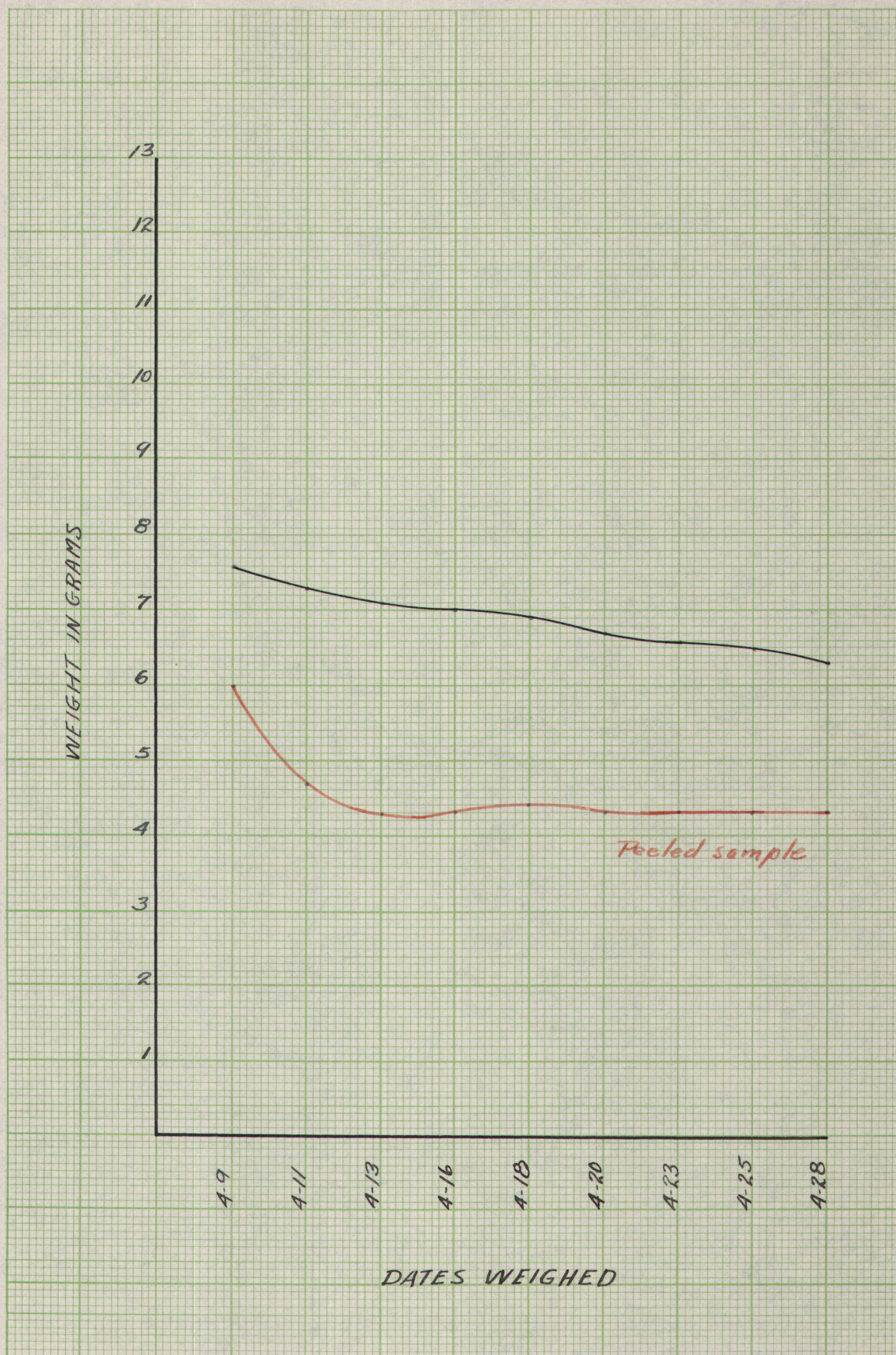


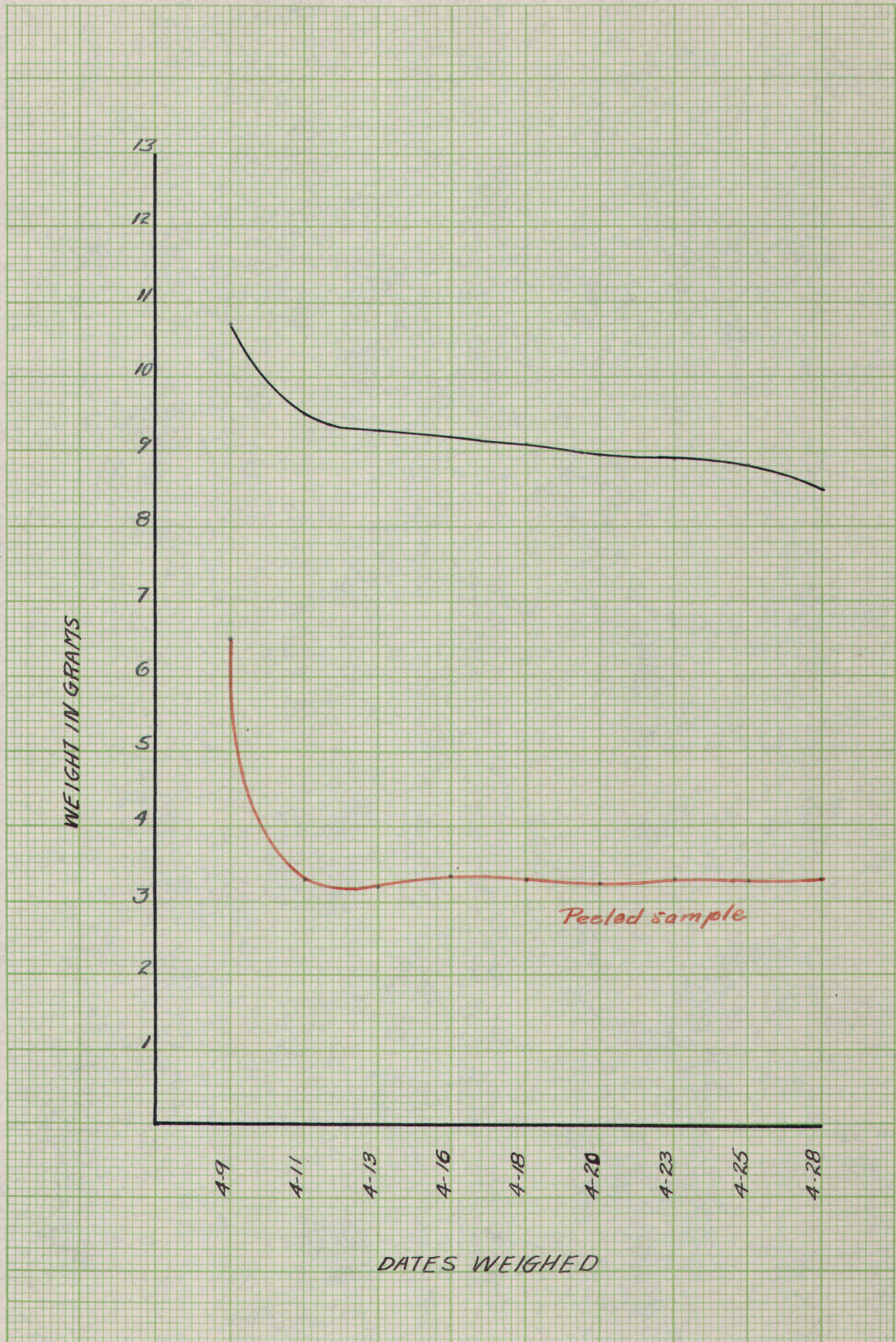
Section *Osmaronia cerasiformis* Name

JOHN B. HALVERSON

Date 5-1-38

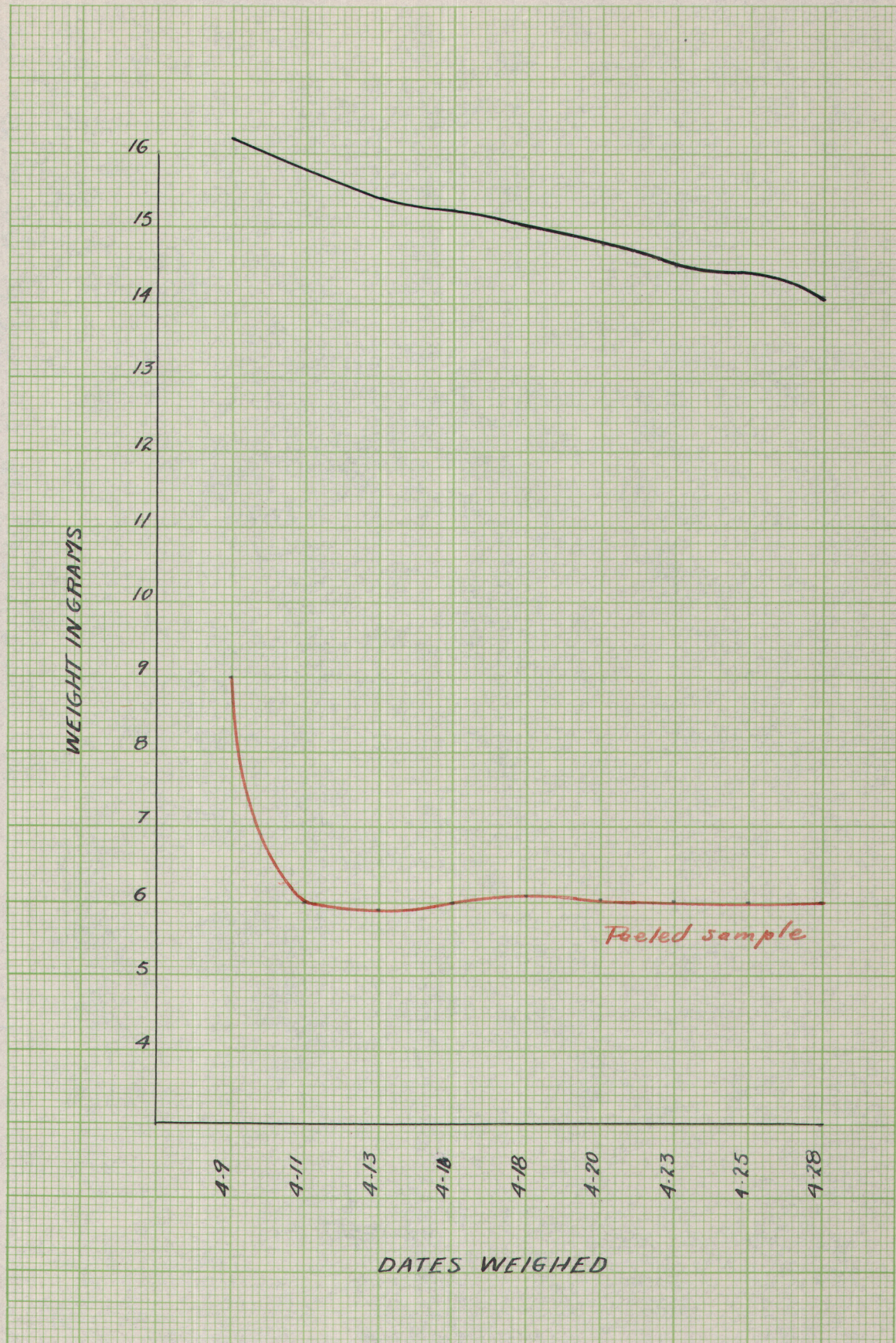
Experiment No. 12



Section Pinus ponderosa Name _____Date 5-1-38 Experiment No. 13

Section *Pseudotsuga taxifolia* Name John Halverson

Date 5-1-38 Experiment No. 14



Section Pinus attenuata

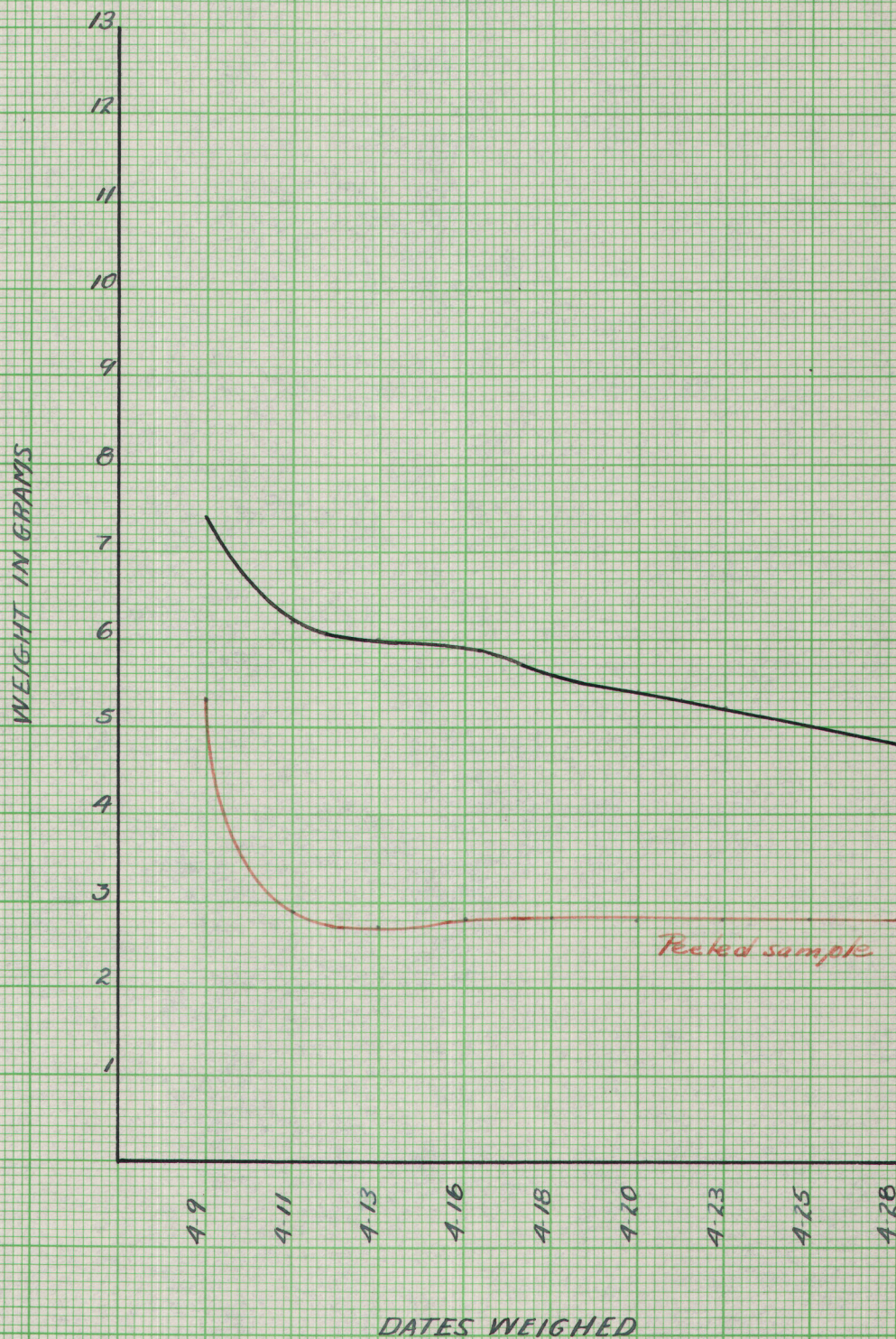
Name

JOHN B. HALVERSON

Date

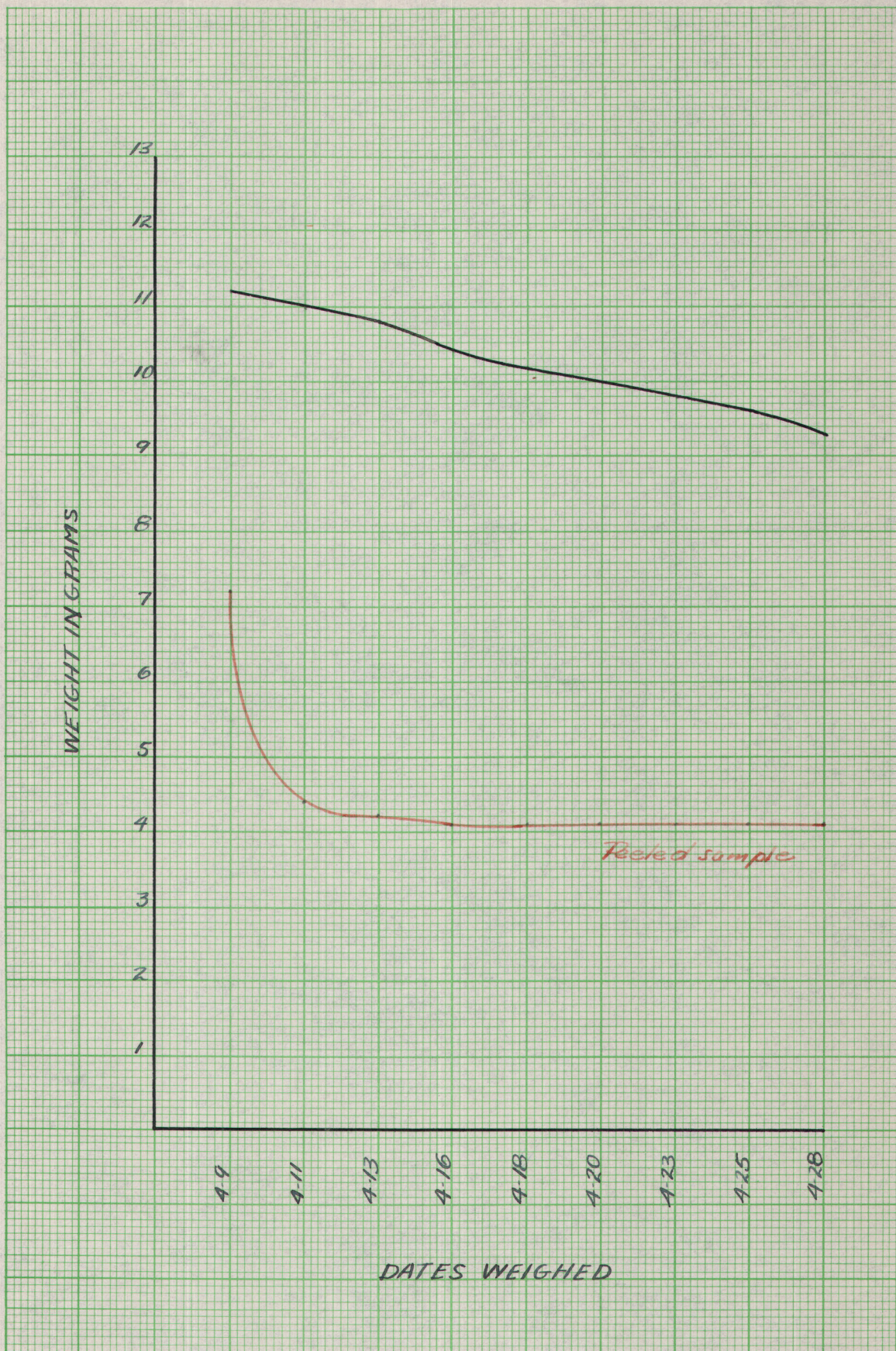
5-1-38

Experiment No. 15



Section Libocedrus decurrens Name JOHN B. HALVERSON

Date 5-1-38 Experiment No. 16

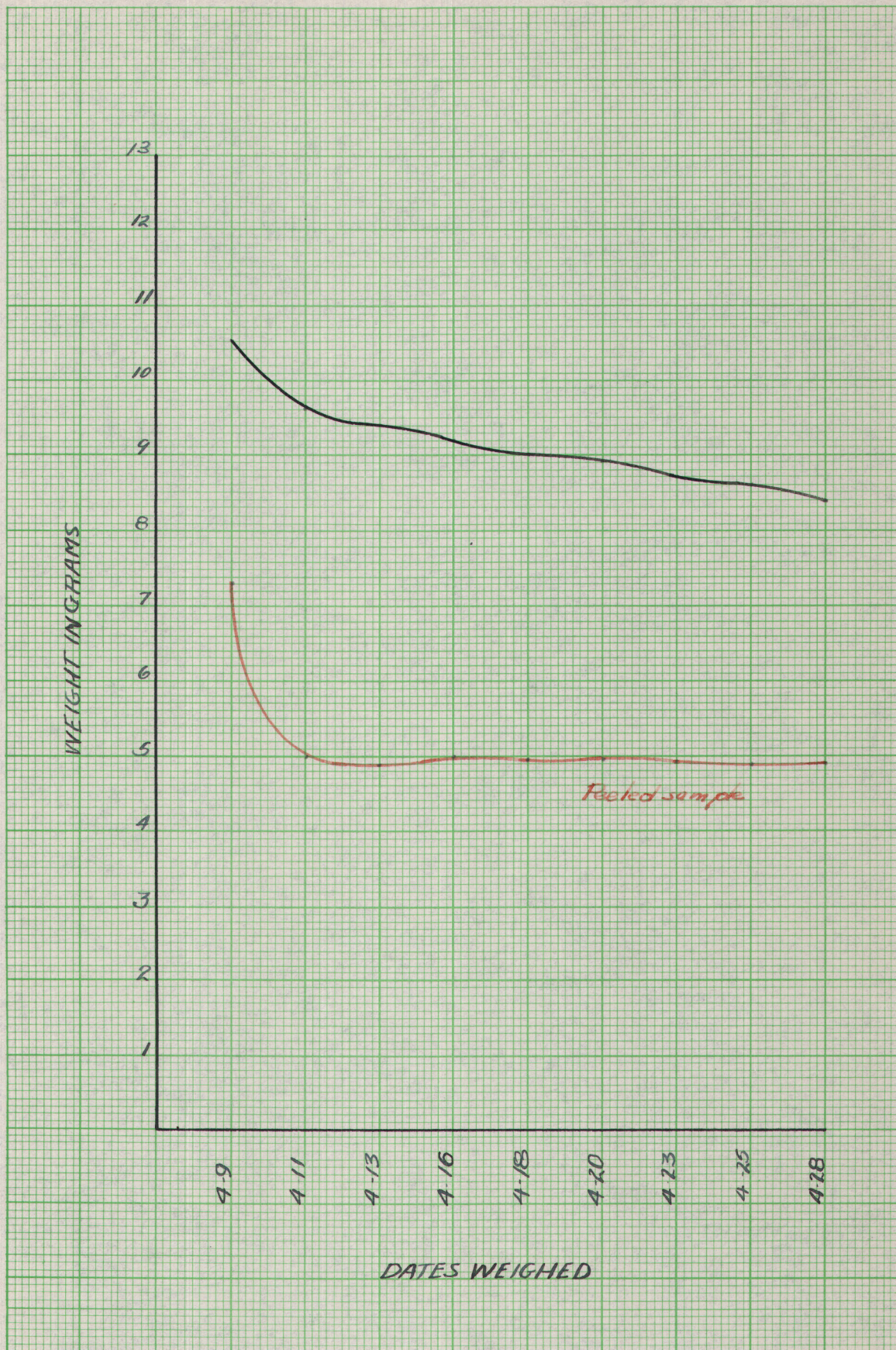


Section *Thuja plicata*

Name

Date 5-1-38

Experiment No. 17



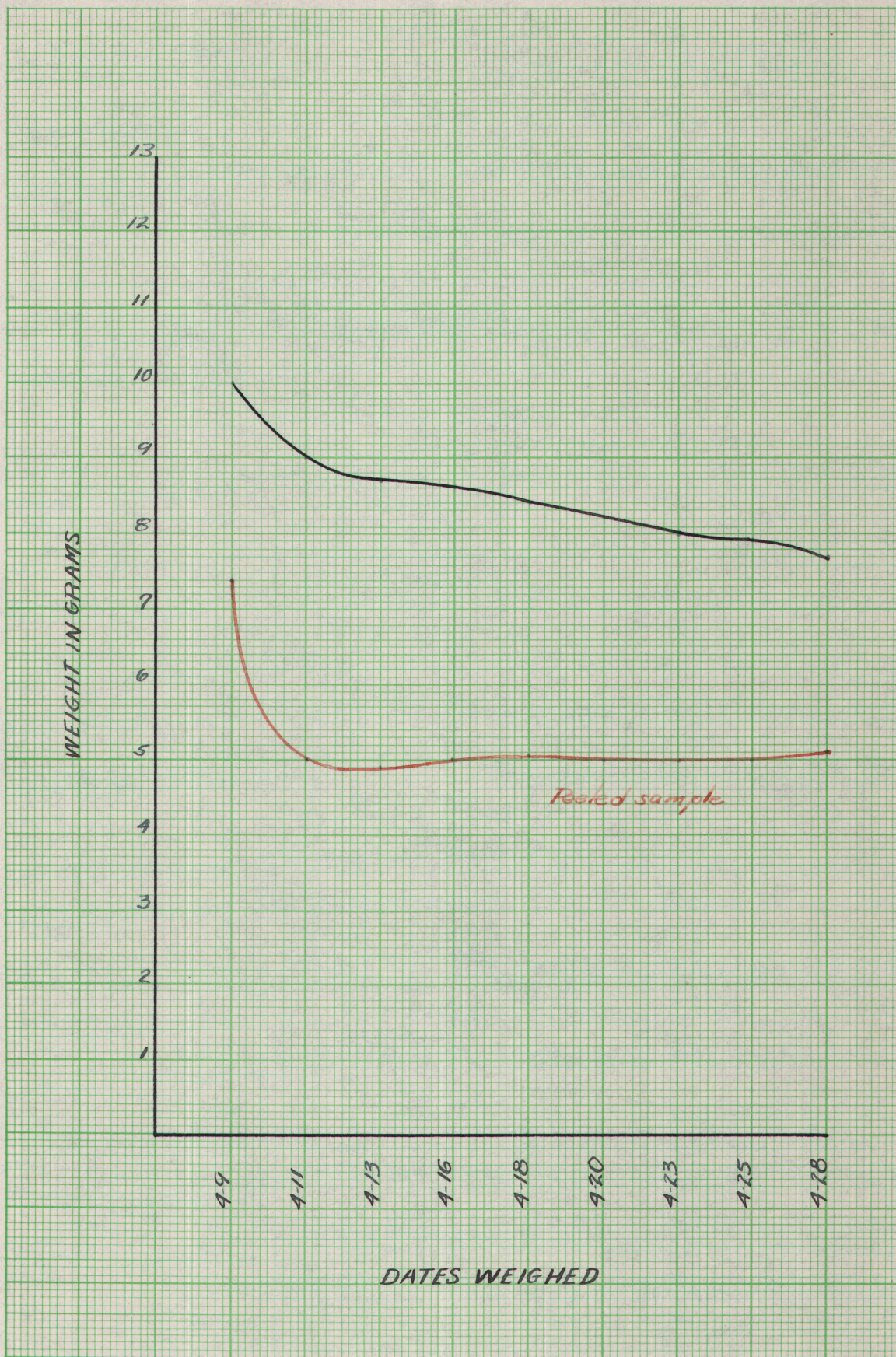
Section *Betula papyrifera*

Name

JOHN B. HALVERSON

Date 5-1-38

Experiment No. 18



Section *Chamaecyparis nothofensis* Name.....

JOHN B. HALVERSON

Date 5-1-38 Experiment No. 19

