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May 8, 1956

Quarterly Progress Report  
January, February, March, 1956

#### Environmental Surveys

Ninety-one soil samples, 91 vegetation samples and 18 water samples were collected and analyzed for radioactivity during the first quarter of 1956. The sampling stations were located in Downey, SHE site area, Canoga Park area, and Simi Valley. The first quarterly progress report of 1955 gives the location of the sampling stations for each area except Simi Valley. The Simi Valley sampling stations are given in the fourth quarter report for 1955.

The type of sampling, processing, etc. has been explained in previous reports and the details are omitted at this time.

The water samples at the reactor site showed a maximum activity of  $197 \times 10^{-9}$   $\mu\text{c/cc}$   $\text{Bx}$  and  $11.6 \times 10^{-9}$   $\mu\text{c/cc}$  of  $\text{L}$ . Other results are given in Figs. 1 through 8.

The automatic air sampler at Santa Susana was in continuous operation until February 11. Since that date the air monitor has been shut down for repairs. Results are shown on Fig. 10. A continuous air monitor has been in operation inside the Vanowen plant since March 19, results are shown on Fig. 9.

#### Selection of a Radioactive Waste Disposal Site at Santa Susana

Most of the rock underlying the NAA Santa Susana property consists of the Chico formation. This rock is a rather well cemented and highly jointed sandstone. The cemented nature of this rock would hinder percolation of waste liquid and the joint system would allow rapid transport of the waste along the joints. The joint system also offers a preferred direction of flow and would make it

impossible to estimate the direction and rate of flow of the waste liquid in the ground. Water wells in the vicinity also draw their supplies from this rock and there would be danger of contamination. For these reasons it was not considered advisable to locate a disposal site in areas which are underlain by this rock.

A small area in the western part of the property is underlain by shale of the Santa Susana-Martinez formation. Percolation rates in this rock are low, but the rock appears to be unfractured and ion exchange properties of shale are usually very good. The formation is bounded by a rather large fault, but all the faults in the area appear to be closed and probably would not act as conduits for rapid movement of liquid underground. There are no wells in the area. For these reasons it was decided to recommend the disposal site be located in the area underlain by this shale.

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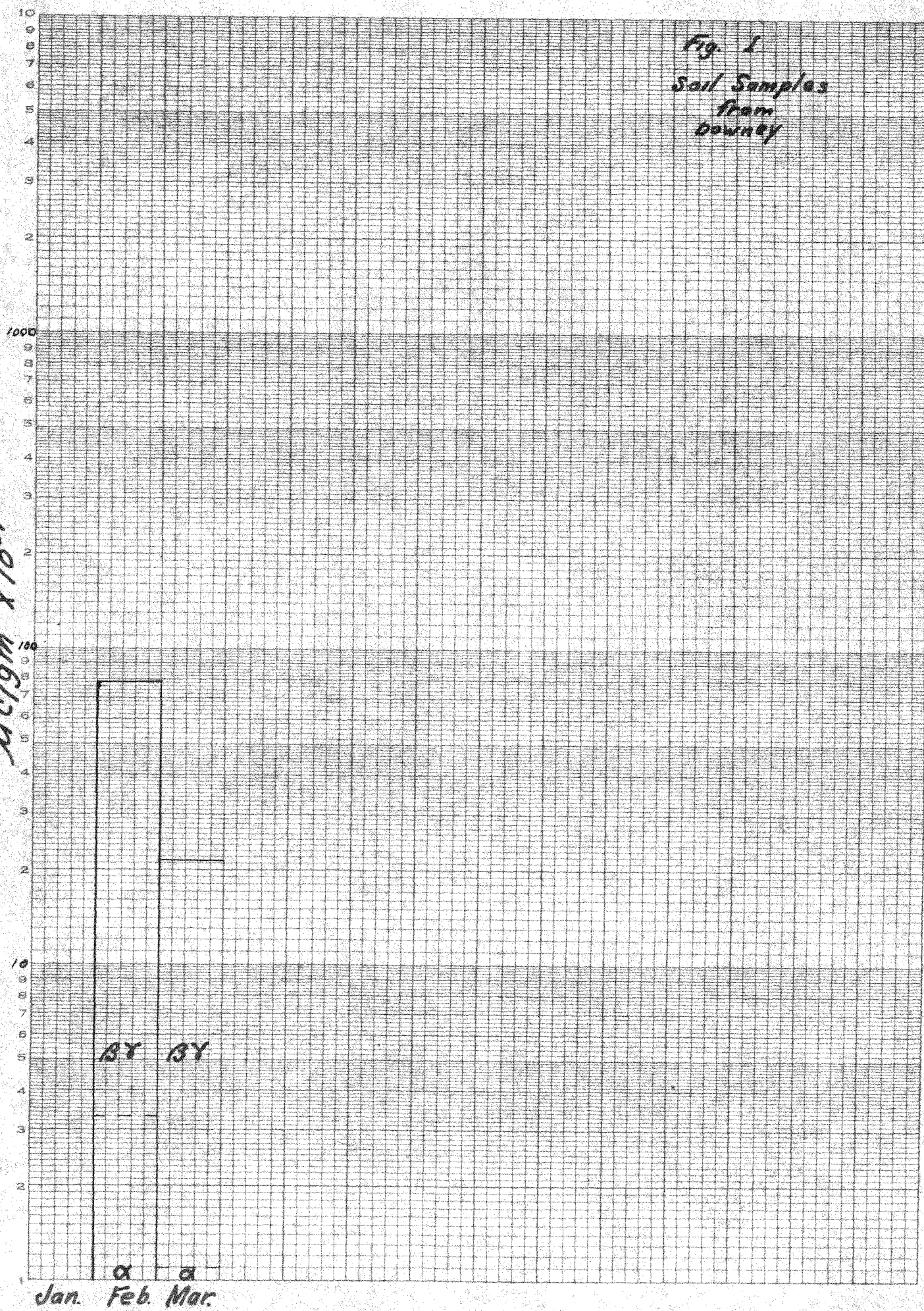
J. N. Roth

JNR:jb

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Fig. 1  
Soil Samples  
from  
Downey

$\mu\text{C/gm} \times 10^{-7}$



Jan. Feb. Mar.



Fig. 2  
Vegetation Samples  
from  
Downey

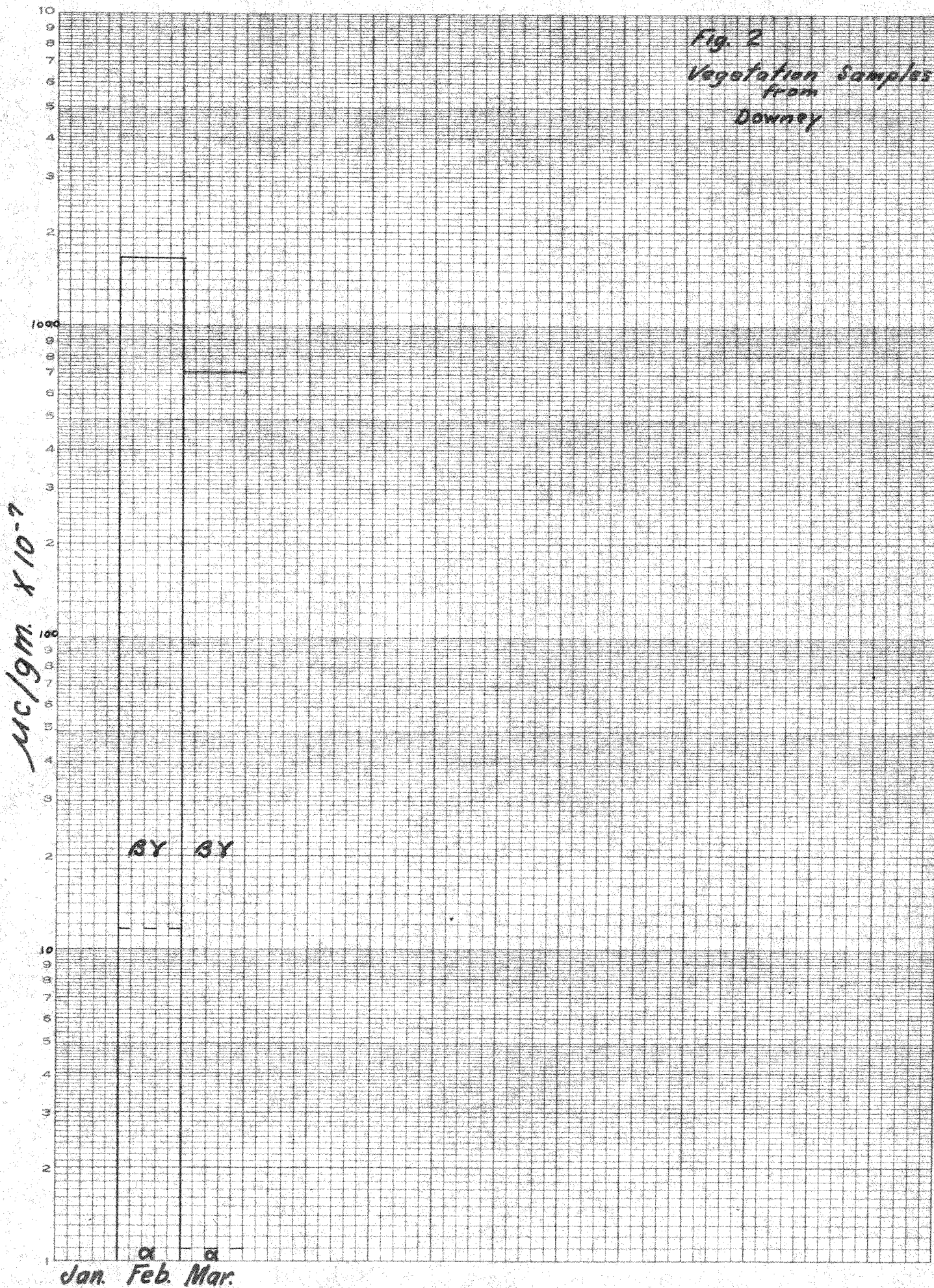
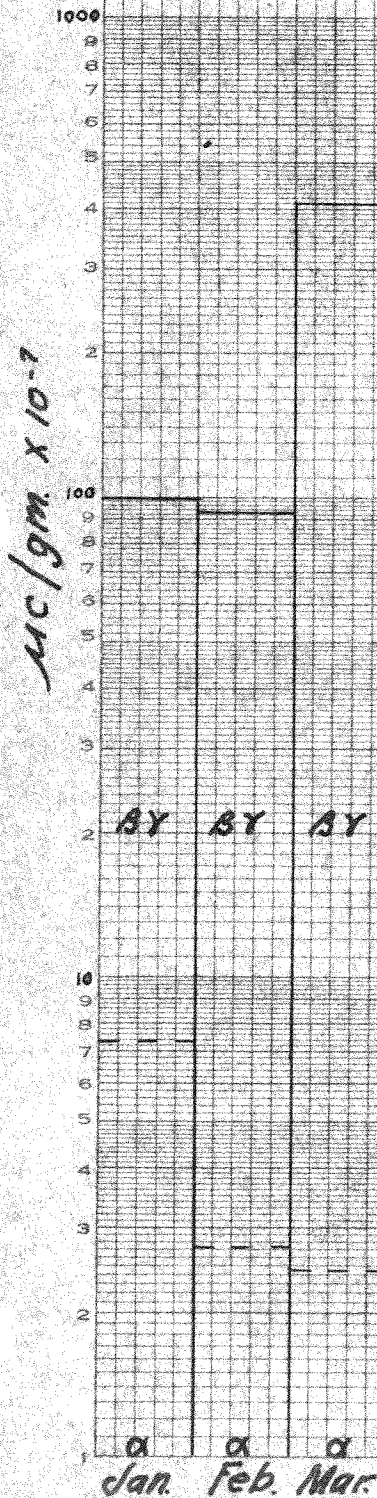




Fig. 3  
Soil Samples  
from  
Canoga Park





$\mu\text{C/gm} \times 10^{-7}$

Fig 4  
Vegetation Samples  
from  
Canoga Park

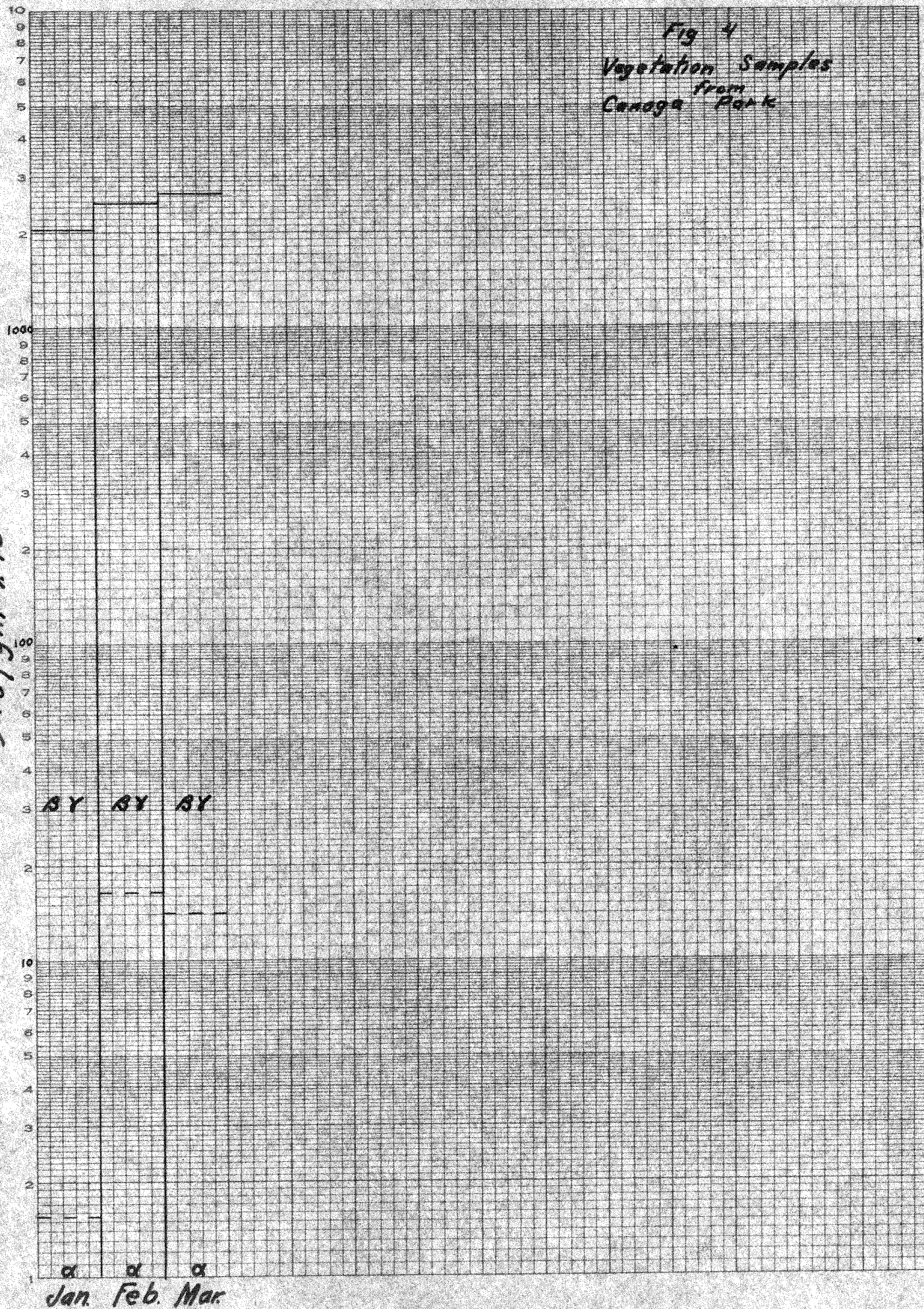




Fig. 5  
Soil Samples  
from  
Santa Susana

$\mu\text{c/gm} \times 10^{-7}$

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Fig. 6  
Vegetation Samples  
from  
Santa Susana

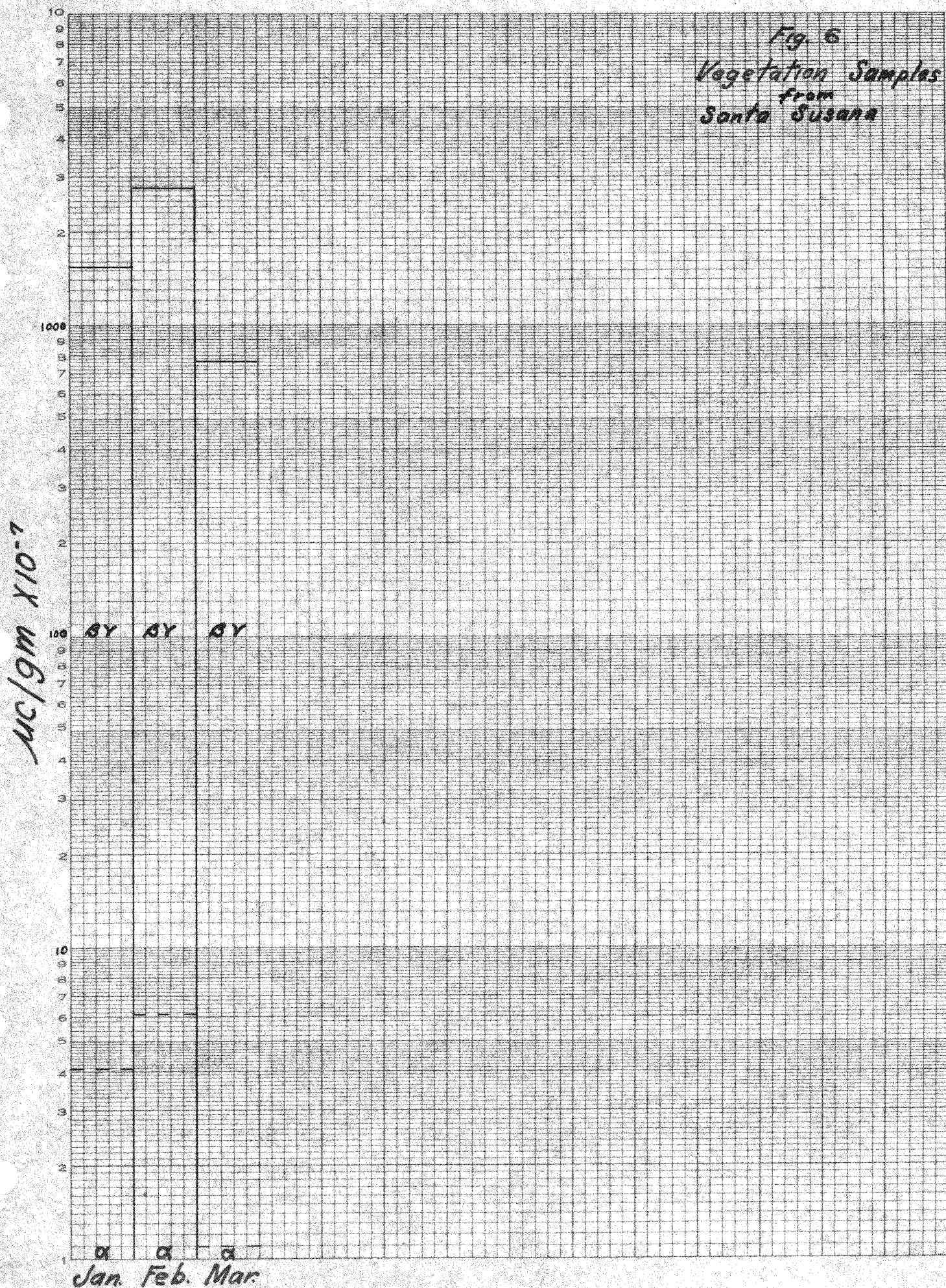




Fig. 7  
Soil Samples  
from  
Simi Valley

$\mu\text{c/gm} \times 10^{-7}$

Jan. Feb. Mar.

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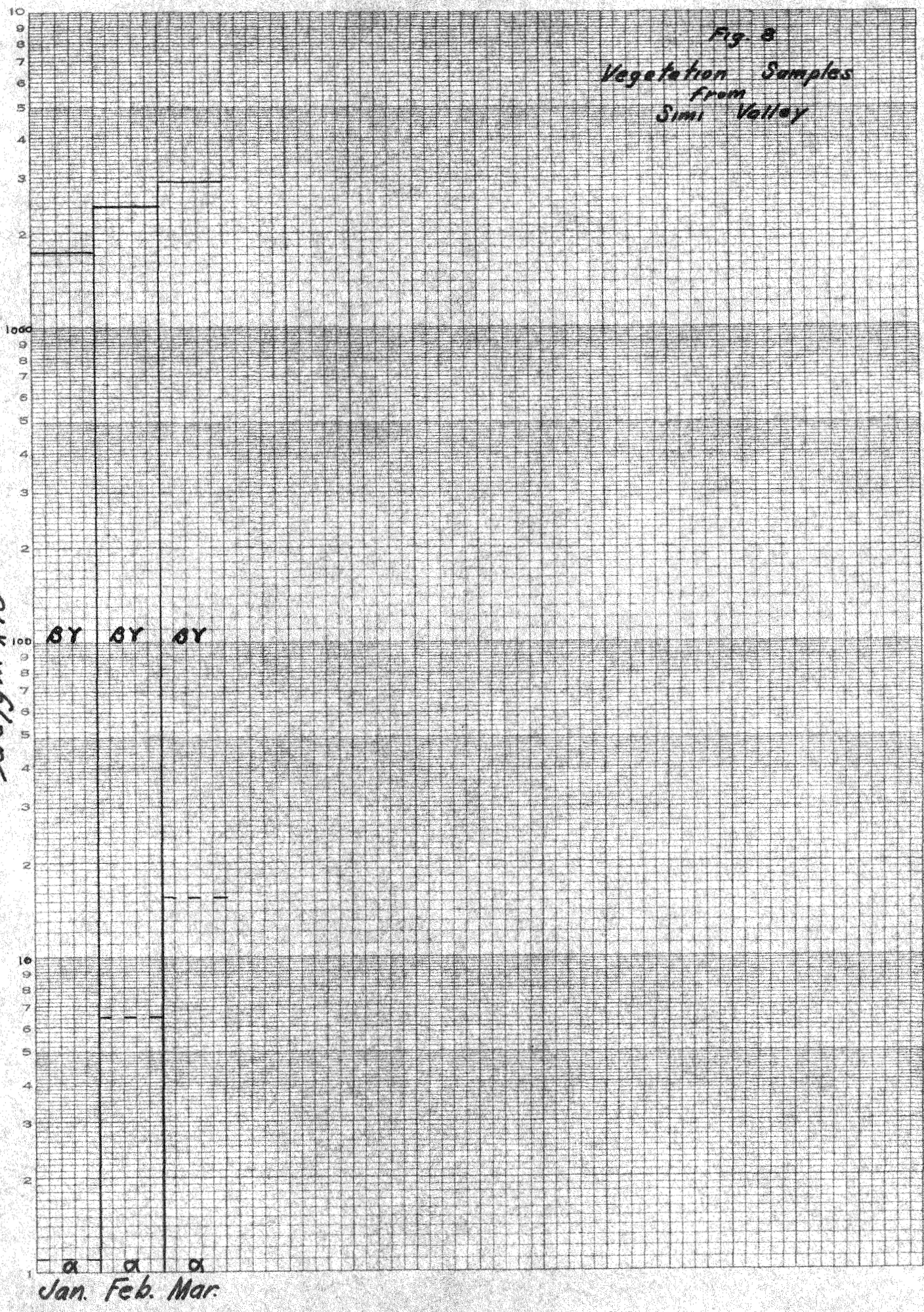




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Fig. 8  
Vegetation Samples  
from  
Simi Valley

$\mu\text{c/gm} \times 10^{-7}$

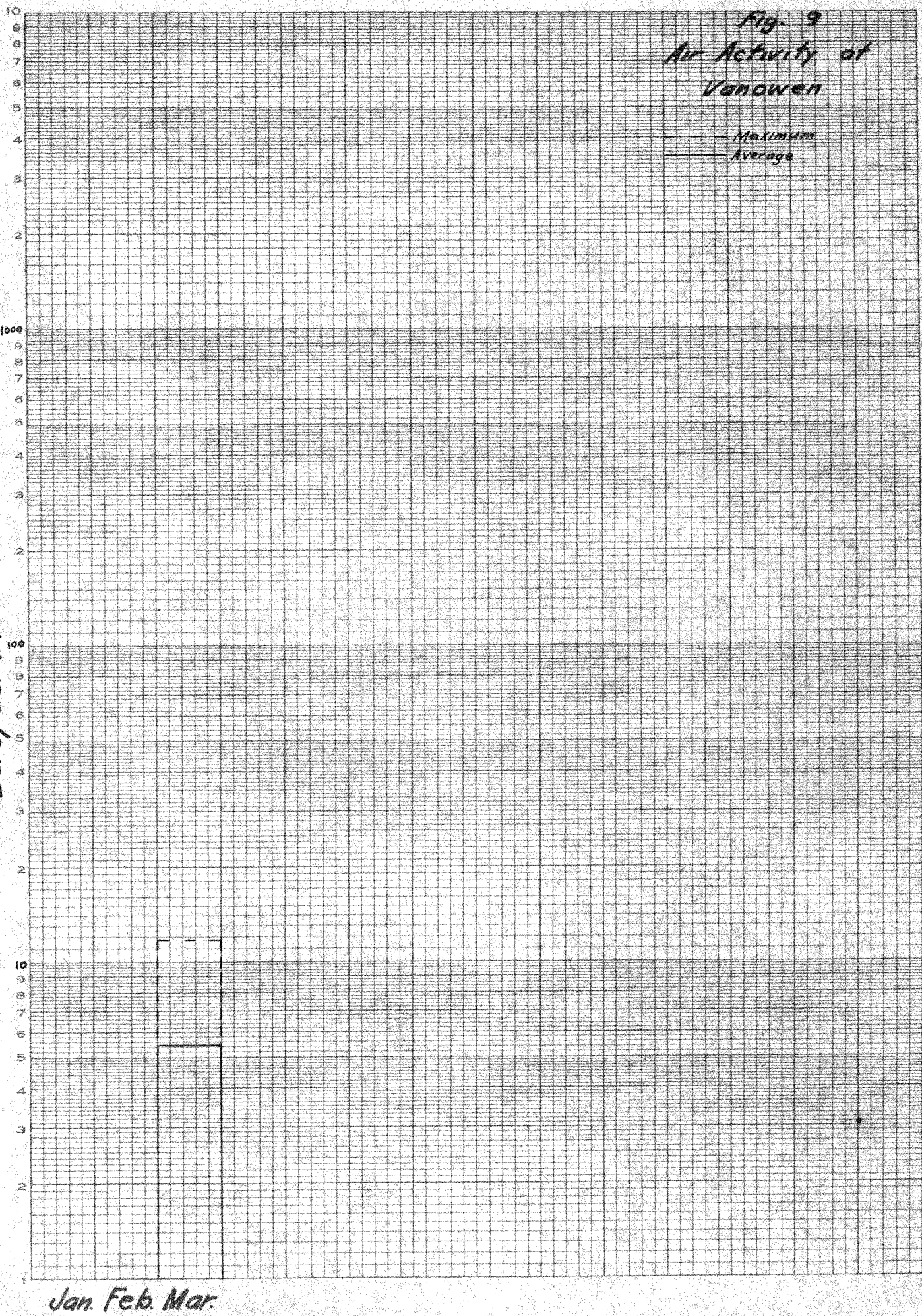




$\mu\text{C/cc} \times 10^{-12}$

Fig. 9  
Air Activity at  
Vanowen

--- Maximum  
--- Average





mc/cc x 10<sup>-18</sup>

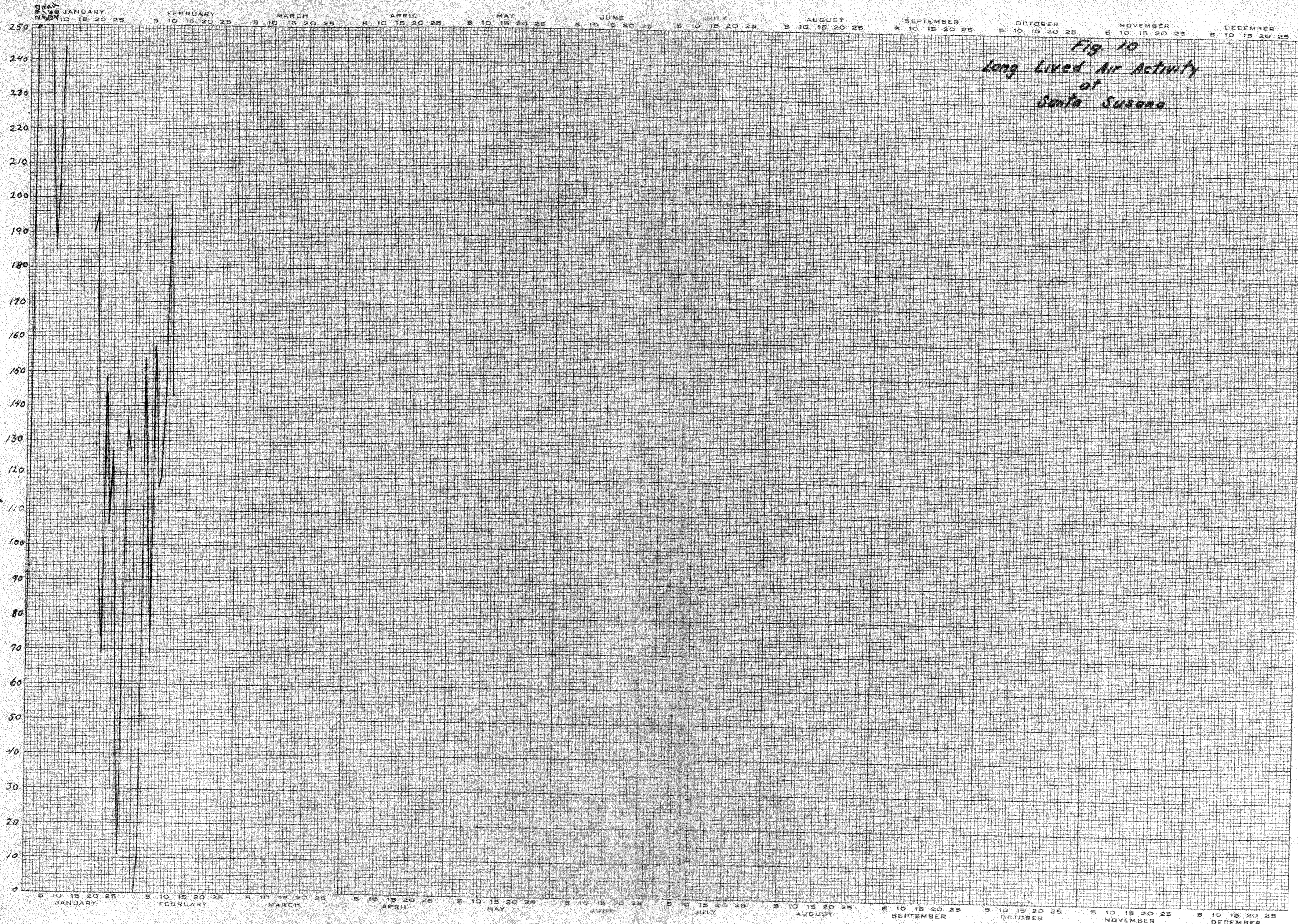


Fig. 10  
Long Lived Air Activity  
at  
Santa Susana