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Quarterly Progress Report
April, May, June 1956

Environmental Surveys

One hundred and seventeen soil samples, 117 vegetation samples, and six water samples were collected and analyzed for radioactivity during the second quarter of 1956. The sampling stations in Canoga Park, Downey Santa Susana and Simi Valley are at the same locations as stated in previous progress reports. In April, a new environmental survey was instituted in order to afford environmental coverage in areas to the west and south of the SRE. Six sample stations were set up on a perimeter of approximately ten miles from the SRE site. This survey is entitled "Russell Valley and Vicinity". Fig. 12 is a location map showing the sampling points.

The type of sampling, processing, etc. has been explained in previous reports.

The water samples taken at Santa Susana showed a maximum activity of 93×10^{-9} c/cc and 8.74×10^{-9} c/cc. Other results are given in Figs. 1 through 10.

The continuous air sampler has been in operation at Vanowen. Results are shown on Fig. 11.

Tests were conducted from May 10 to June 6 to determine if any fallout from the Pacific A Bomb tests reached the Canoga Park area. The tests consisted of catching dust in ponds of water, filtering on ashless filter paper, ashing the residue and counting. Sheets of sticky paper were also used to collect fallout, and radioautographs were made. The continuous air monitor at Vanowen was also used in conjunction with these tests. No conclusive evidence of fallout was obtained.

The automatic sump sampler was connected with the chemistry lab sump and tests were conducted to determine the ability of the pump to lift the sump liquid from the sump and pump it into laboratory 231, where the sampler is to be installed.

Waste Disposal Pit Site

Further study of the radioactive waste disposal pit site at Santa Susana was undertaken. Percolation characteristics of the soil in the vicinity were carried out. These tests indicated that if a volume of 1000 gallons of liquid waste per week is to be disposed of, a pit 15 feet square and five feet deep would be adequate.

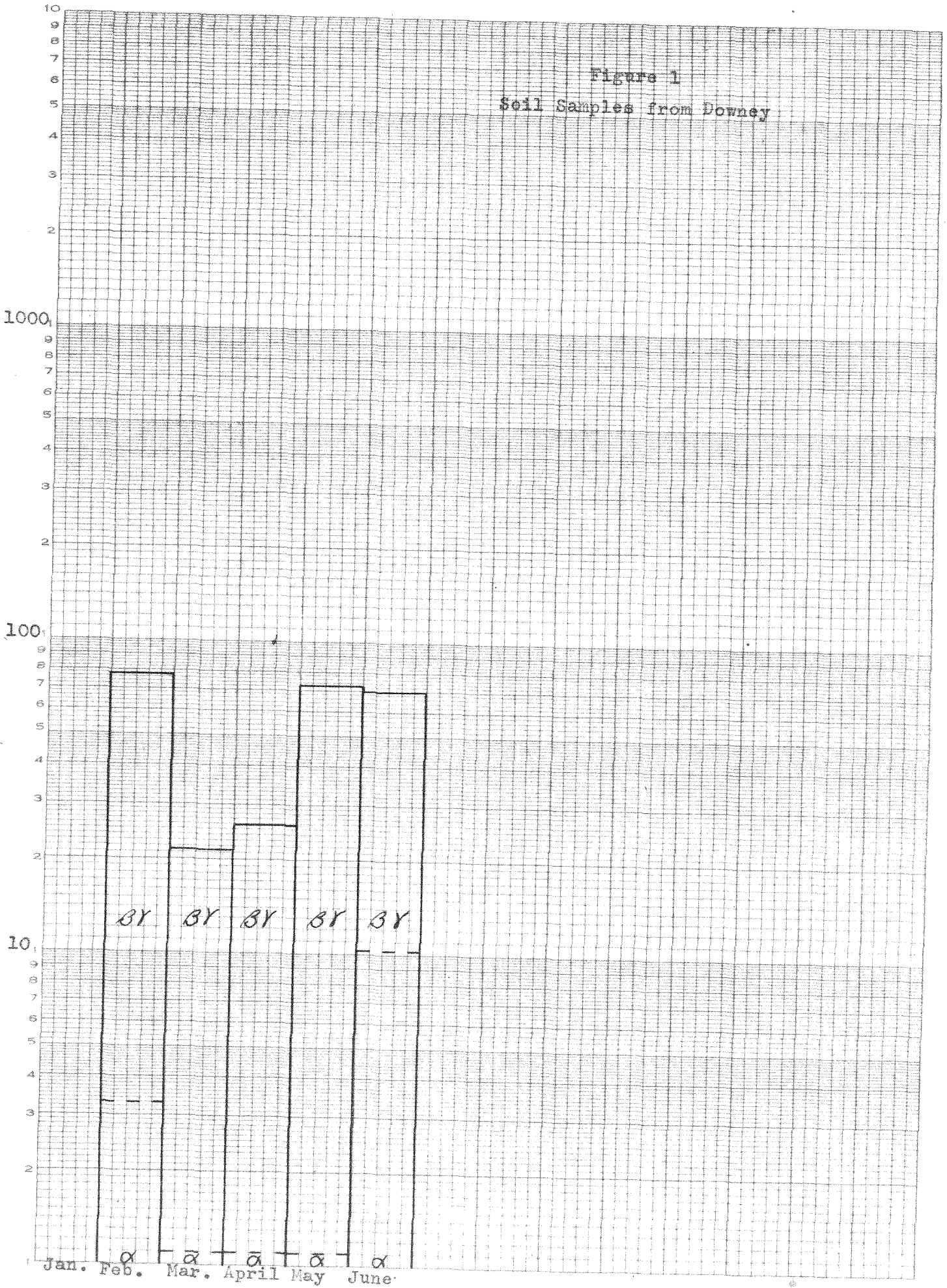
When the liquid waste reaches the ground water, it moves with the ground water in the direction of the hydraulic gradient, therefore, to determine the depth to ground water and the hydraulic gradient, the drilling of two observation wells was recommended. Since the ground water gradient usually reflects the slope of the ground surface, the first well site was located about 300 feet downslope from the site. The dip of the strata in the area of the site is northerly, and since the dip of the strata may also influence the direction of ground water movement, the drilling of another well about 300 feet north of the disposal site was recommended. It was estimated that these wells would be about 300 feet deep and cost about \$3000 each. If, after the drilling of these wells, the construction of a disposal pit appeared feasible, the wells would be utilized for monitoring the ground water.

Cost estimates were made for the construction of the pit. The estimate amounted to \$4,015, or a total of \$10,015 including the two monitor wells.

Estimates of the cost of storing waste in tanks vary from \$0.50 to \$1.00 per gallon. If the waste can be concentrated and the tanks reused, the cost can be lowered to about \$0.25 per gallon. The disposal of AI liquid waste by sea burial has been estimated at \$1.07 per gallon. Cost estimates of disposal by other methods vary from \$0.581 to 1.267 per initial gallon.

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

Figure 1
Soil Samples from Downey



NO. 100-1010 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
DIVISIONS PER INCH

EUGENE DIETZGEN CO.
MAGL. 2, 2 1/2, 3, 4

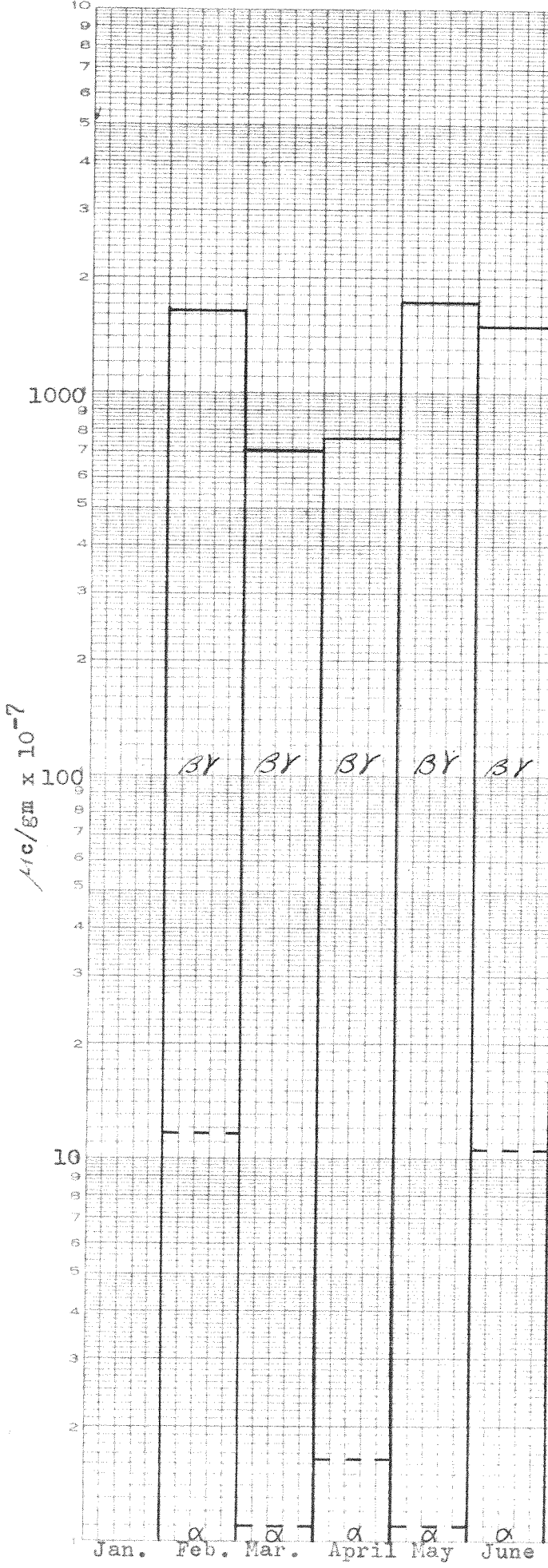


Figure 2
Vegetation Samples from Downey

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

Figure 3
Soil Samples from Canoga Park

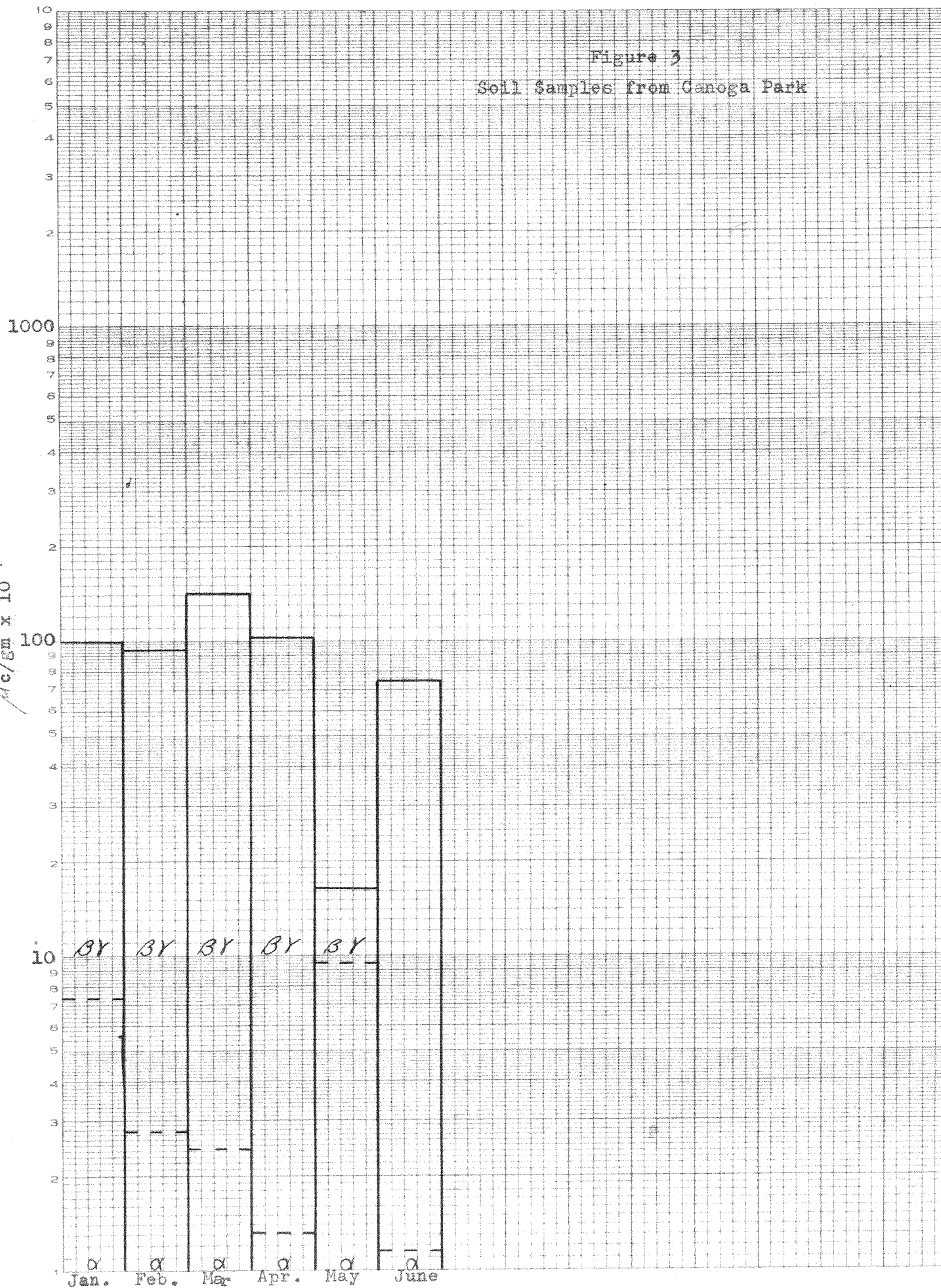


Figure 4
Vegetation Samples from Canoga Park

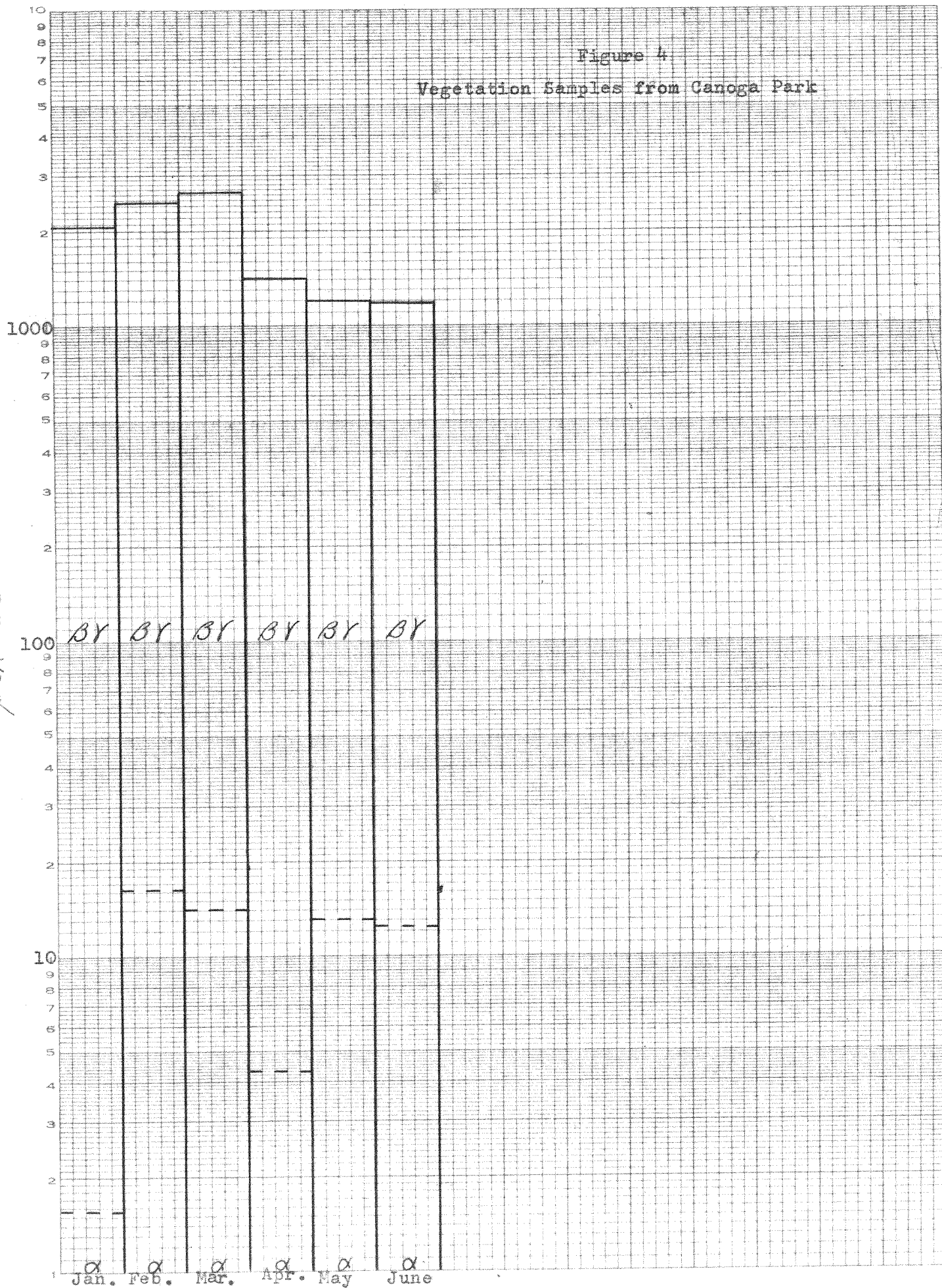
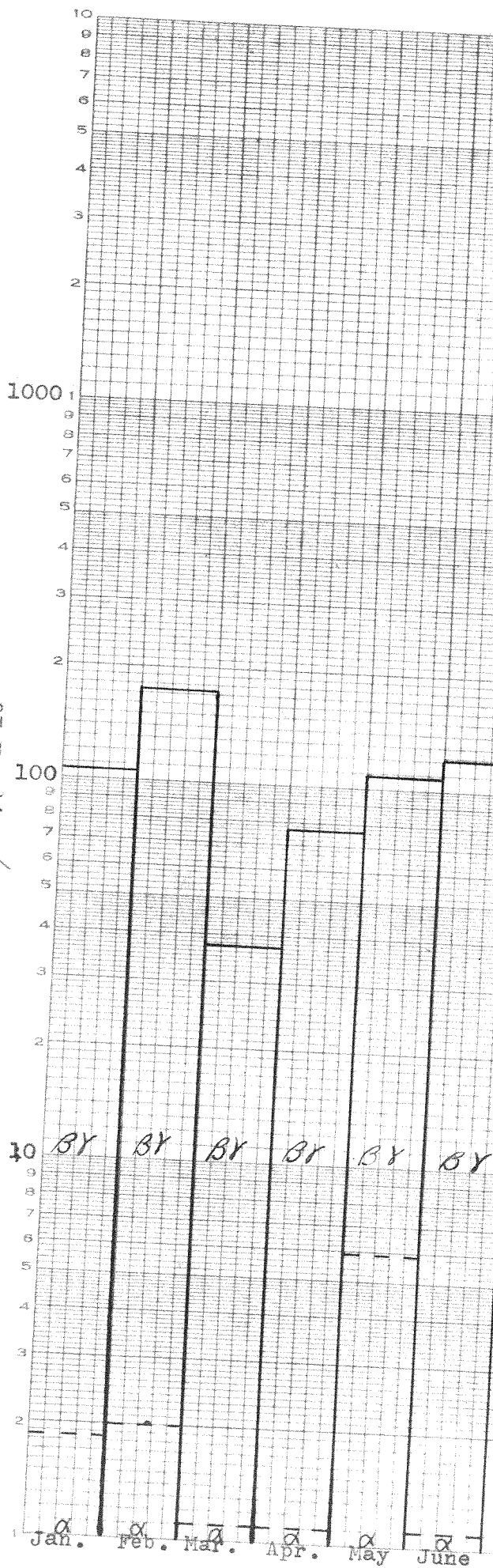


Figure 5
Soil Samples from Santa Susana

EUGENE DIETZEN CO.
MADE IN U.S.A.

VALUES X 10 DIVISIONS PER INCH

$\mu\text{Ci} \times 10^{-7}$



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

Figure 6
Vegetation Samples from Santa Susana

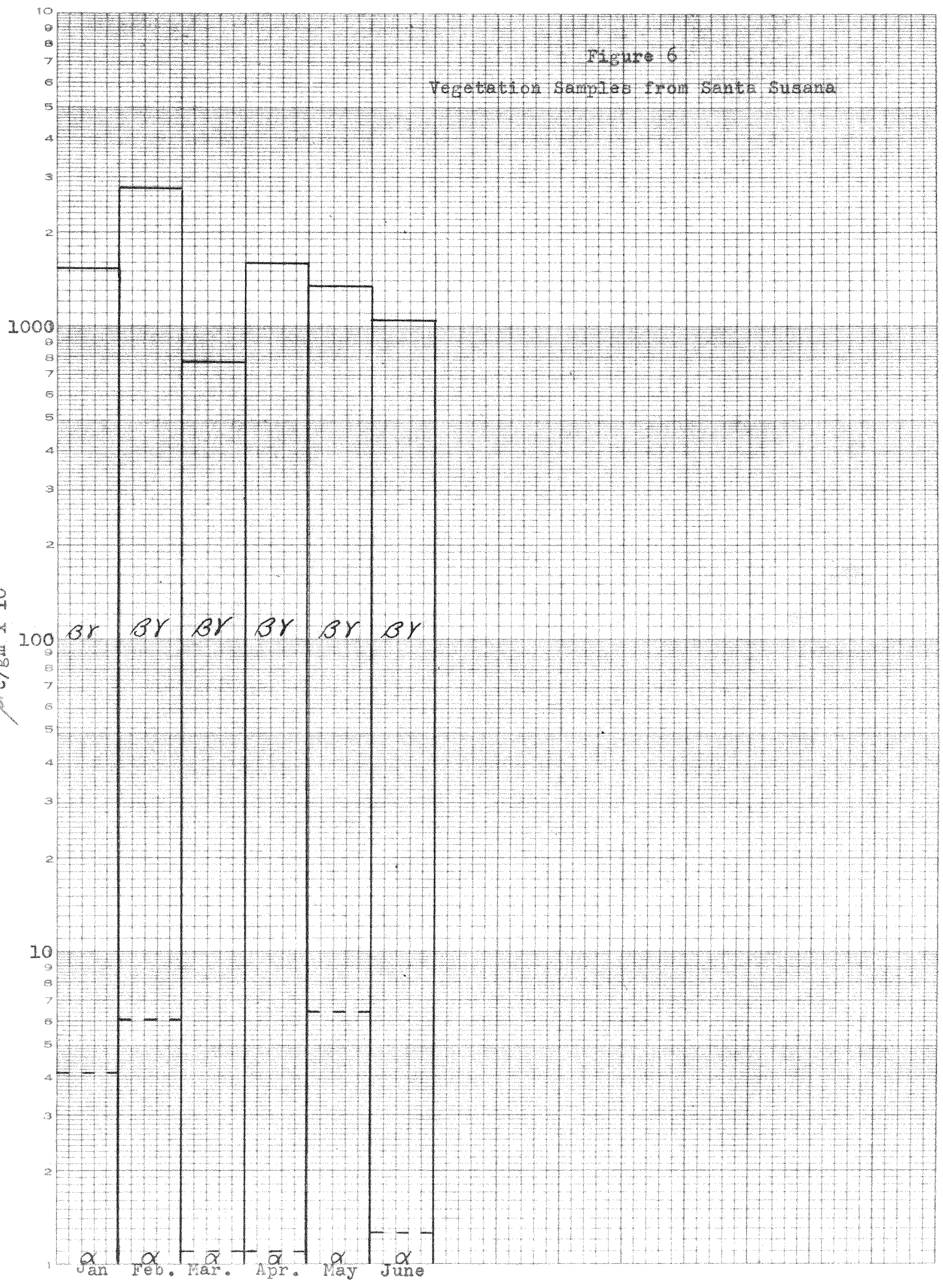


Figure 7
Soil Samples from Simi Valley

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

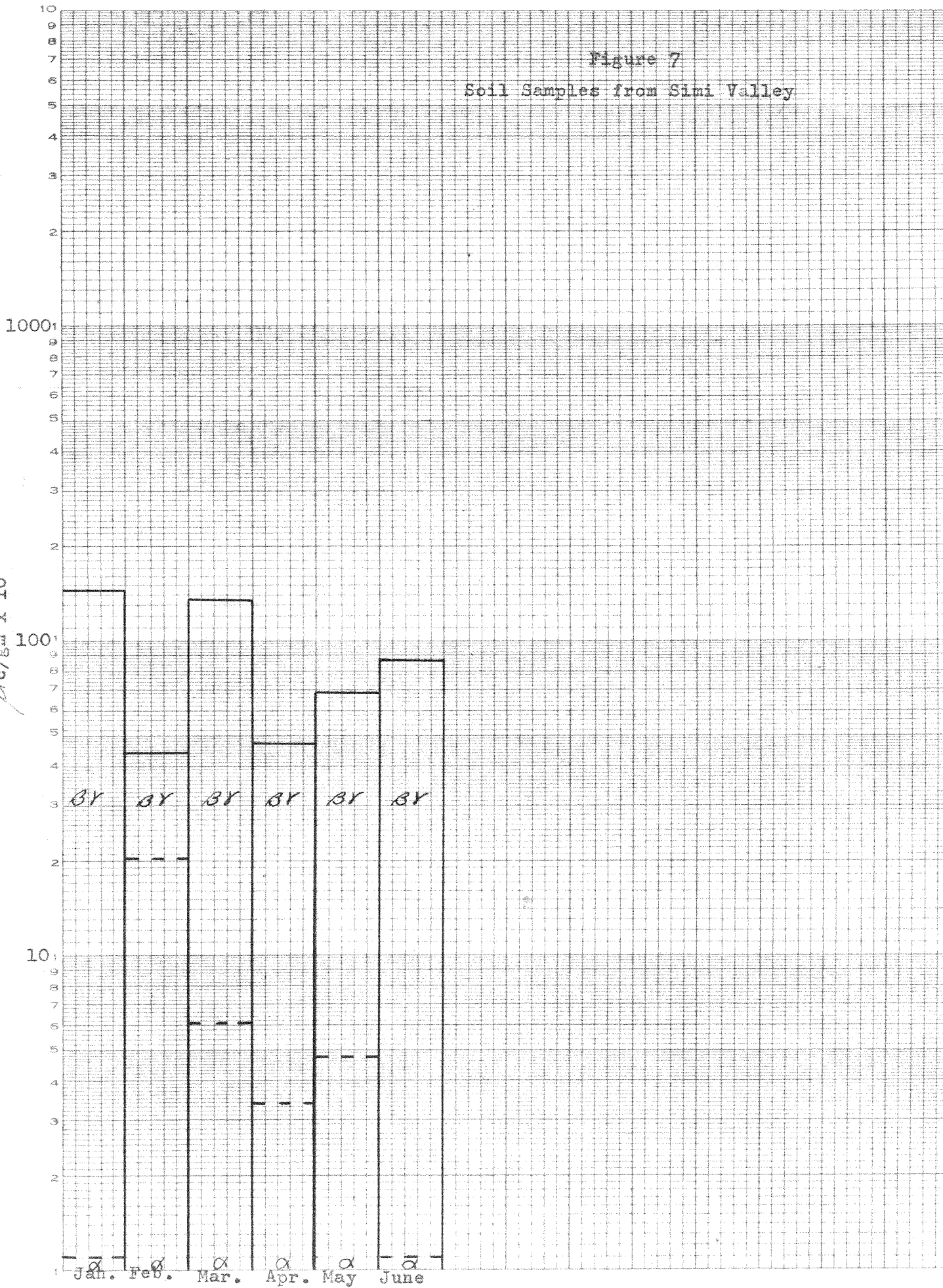
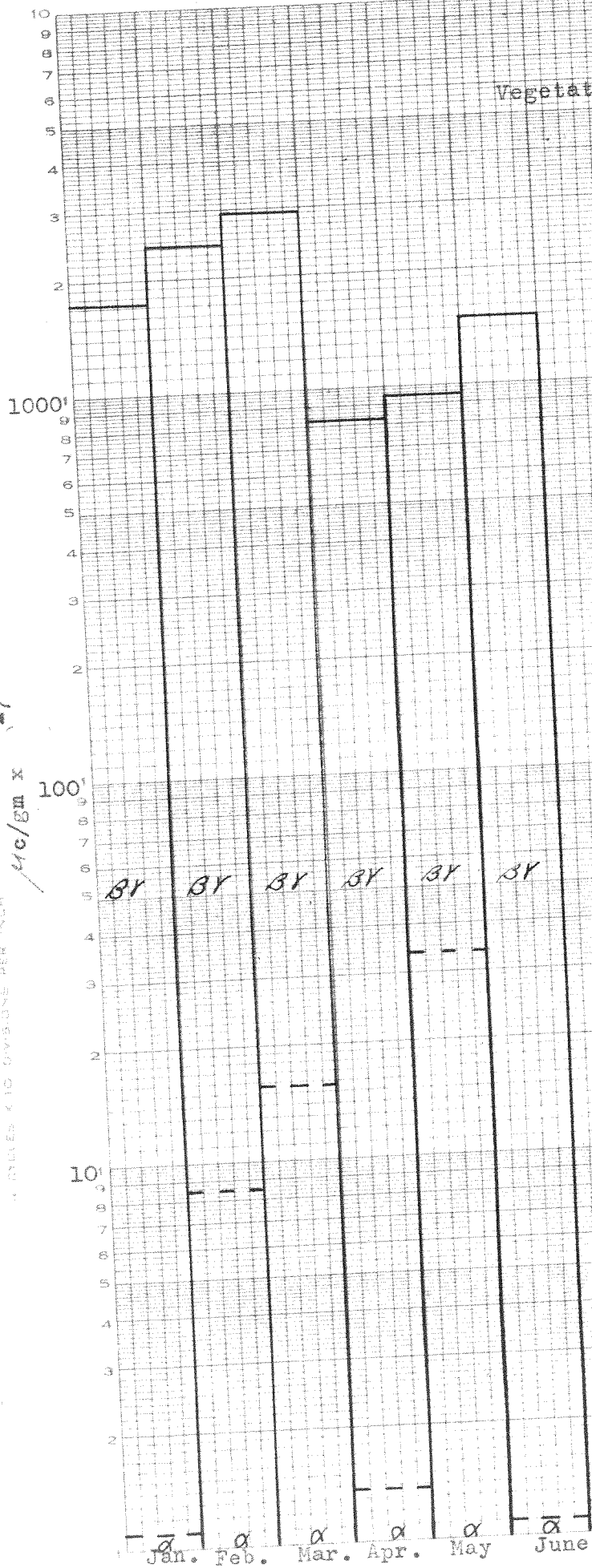
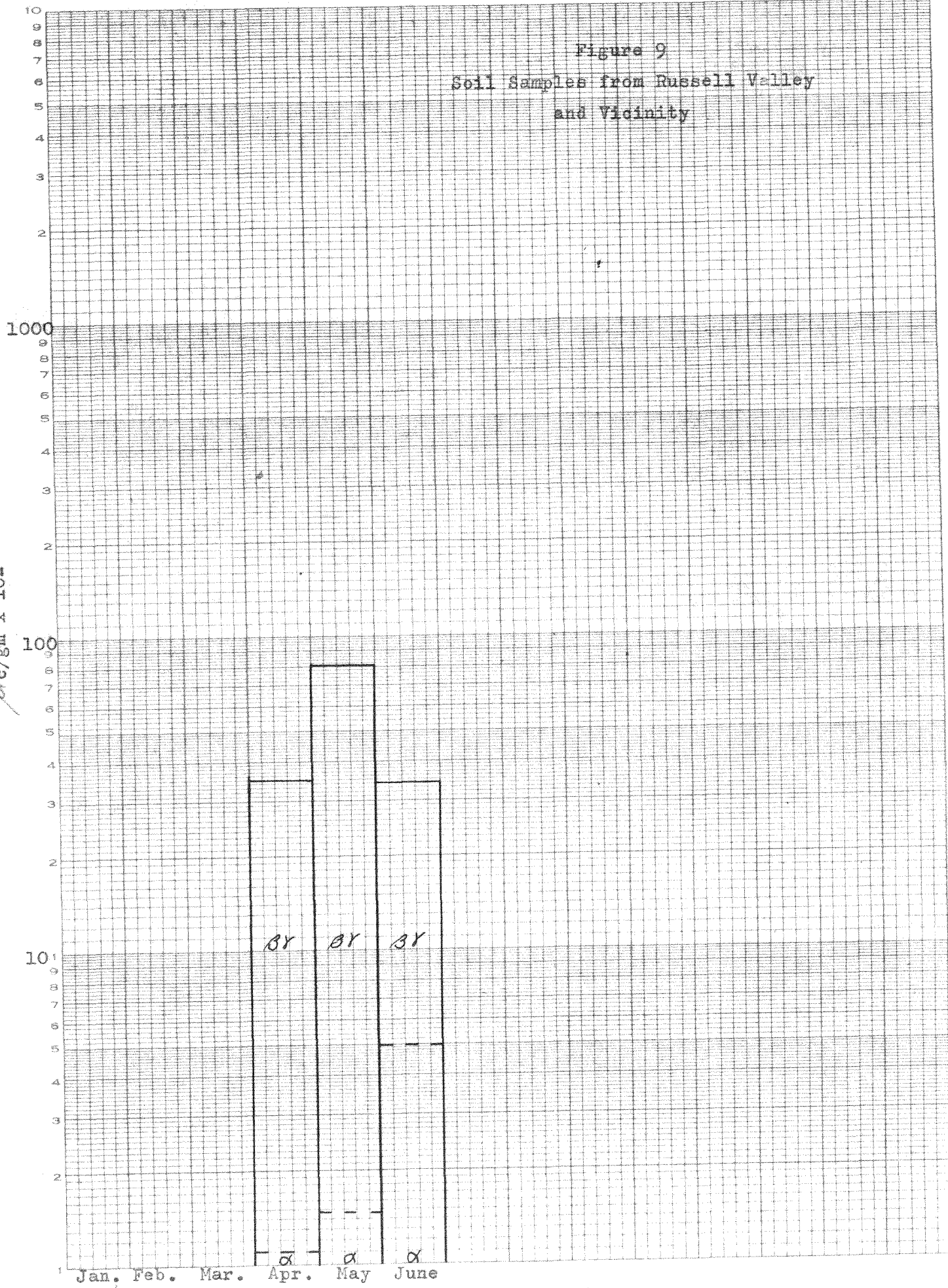


Figure 8
Vegetation Samples from Simi Valley



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

Figure 9
Soil Samples from Russell Valley
and Vicinity



EUGENE DIETZEN CO.
MADE IN U.S.A.

NO. 340-4410 DIETZEN GRAPH PAPER
SEMI-LOGARITHMIC
4 CYCLES X 10 DIVISIONS PER INCH

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

Figure 10
Vegetation Samples from Russell
Valley and Vicinity

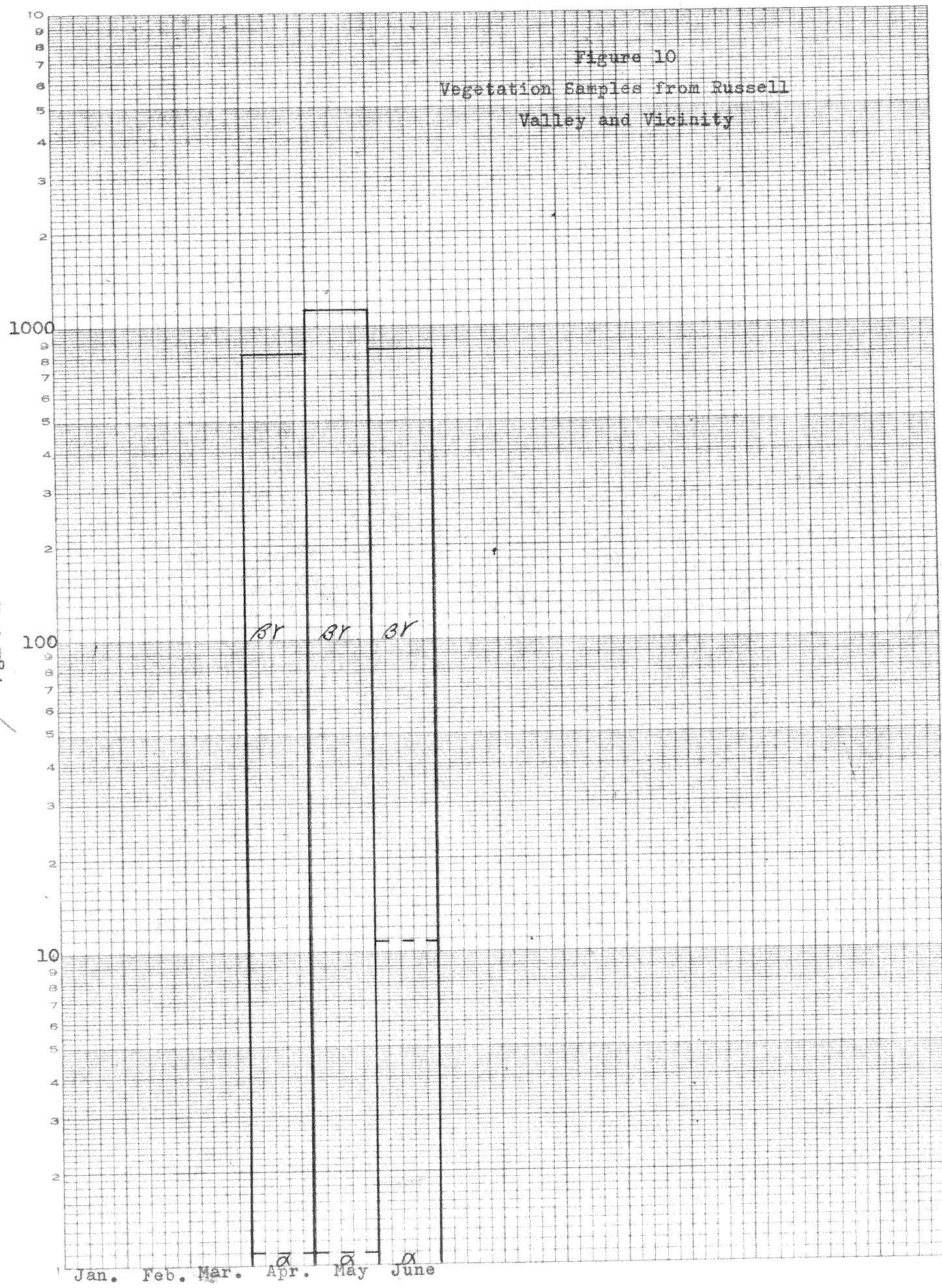


Figure 11
Air Activity at Vanowen

Maximum
Average

