

Potassium-Argon Age of the Sori Granodiorite,

Ashio Mountain Block

by

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The Sori granodiorite of the Ashio Mountain Block has been described by many authors^{2) 3) 5)}. It is an intrusive stock about 12 km long by 6 km wide and is intruded into the Paleozoic rocks producing an extensive aureole of contact metamorphism. At its northern margin it is overlain by Quaternary lavas. Petrographically, it is a coarse-grained porphyritic biotite granodiorite.

The sample was collected by Dr. K. Takahashi at the quarry of the Jomo Stone Co. Ltd. about 1 km SW of the Sori station. Biotite was isolated using a magnetic separator at the Geological Survey of Japan and the potassium-argon measurement made at the Department of Geodesy and Geophysics, Cambridge. Using the technique of isotope dilution¹⁾, the biotite yielded an age of 86 ± 4 million years which indicates that the Sori granodiorite is late Cretaceous in age¹⁾.

Results of age determinations

Reference	Total volume of argon (mm ³ N. T. P.) Weight of sample (gm)	K ₂ O (%)	Atmospheric contamination (%)	Age and error in m. yrs.
L/24 KA-153	0.0259	8.09	9.4	86 ± 4

$$\lambda\beta=4.72 \cdot 10^{-10}\text{yr}^{-1}. \quad \lambda e=0.584 \cdot 10^{-10}\text{yr}^{-1}.$$

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