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K-Ar AGE OF THE CEDAR MOUNTAIN PLUTON, MINERAL COUNTY, NEVADA

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Mesozoic rocks of the core area of the northern Cedar Mountains range from the middle Upper Triassic Luning Formation to the Jurassic Dunlap Formation. The Cedar Pass pluton intrudes these mostly nonclastic sediments. Overlying part of the Cedar Pass pluton's southern exposure is a series of the volcanic rocks composed of ashfall tuffs, dikes, and breccias that vary in composition from rhyodacite to basalt. Field evidence indicates these intrusive and extrusive rocks form an igneous complex center that was active over a short time. Muller and Ferguson (1936), Ross (1961) and Mottern (1963) have mapped the Cedar Pass pluton as Mesozoic and the overlying volcanic rocks as part of the Luning Formation. An age date on the Cedar Pass pluton was obtained to verify the Triassic age assigned by previous authors; with this date the igneous complex is redefined as active during the late Oligocene.

Potassium analyses were done on a flame photometer using a lithium internal standard. Argon analyses were made using standard techniques of isotope dilution.

Constants used in the age calculation include: $\lambda_\epsilon = 0.581 \times 10^{-10}\ yr^{-1}$; $\lambda_\beta = 4.963 \times 10^{-10}\ yr^{-1}$.

SAMPLE DESCRIPTION

1. *CY81-5* K-Ar
Minor-phase quartz monzodiorite of the quartz monzonite Cedar Pass pluton (38°07'01''N, 117°01'02''W; NE1/4 S22,T38N,R40W; Cedar Mountain 15' quad; Mineral Co., NV). Medium-grained; plagioclase (An 24-57), quartz, orthoclase, biotite, and hornblende. Accessory magnetite, apatite, and sphene; a few per cent of the biotite is altered to chlorite. *Analytical data:* K_2O = 7.46%, 7.64%; $*Ar^{40} = 2.653 \times 10^{-10}$ mole/gm; $*Ar^{40}$ = 45%. *Collected by:* S. A. Pullman. *Analysed by:* (K) D. Vivit, U.S. Geol. Survey; (Ar & age calculation) E. Sims, M. L. Silberman, U.S. Geol. Survey. *Comments:* The quartz monzodiorite is, in the area of the sample, 2–5 m wide and shows foliation. The foliation is approximately concordant and in contact with limestones of the middle Upper Triassic Luning Formation.
(biotite) 24.2 ± 1.0 m.y.

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