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A preliminary note on eucolite from Oldoinyo Lengai, Tanzania

IN the preliminary account of the geology of the active carbonatite volcano Oldoinyo Lengai, northern Tanzania, Dawson (1962) recorded the presence of sodalite-group minerals and aegerine in the phonolite and nephelinite lavas; they have subsequently been found in ejected plutonic blocks in the pyroclastics that form the bulk of the volcano. The presence of these minerals, together with high (Na+K)/Al ratios in some of the lavas, indicates that the rocks have agpaitic affinities. This evidence has been reinforced by the finding of the agpaitic mineral eucolite in two blocks of melanocratic syenite collected by the writer on the lower, southern slopes of the volcano in 1966. The cherry-red, xenomorphic eucolite is associated with nepheline, cancrinite, orthoclase, sodic pyroxene, wollastonite, apatite, sphene, and pyrrhotine. The agpaitic coefficient (Na+K)/Al of one of the eucolite-bearing syenites is 1.84.

The eucolite is optically negative; ϵ 1.612 ± 0.001 , ω 1.616 ± 0.001 . The X-ray powder pattern is almost identical with that for eudialyte from SW. Greenland (A.S.T.M. Powder Diffraction File 8-355) save for slight, but consistent, peak shifts; the three strongest lines are at 2.85, 3.40, and 4.30 Å.

The agpaitic paragenesis at Oldoinyo Lengai is of interest since agpaitic rocks are not normally found in genetic association with carbonatites (Heinrich, 1966). This is also the first record of a mineral of the eudialyte-euolite series in East Africa.

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