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A NEW OCCURRENCE OF FERRIERITE

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Ferrierite is a rare magnesian zeolite, which first was found by Graham (1918) on the north shore of Kamloops Lake, British Columbia. A new occurrence of ferrierite was found now at Albero Bassi, by the stream running along the boundaries of the administrative areas of Santorso and Tretto [see Tavoletta (map) Schio, F° 36 II S.E. of the Istituto Geografico Militare] in the province of Vicenza, Italy. In a green weathered porphyrite near Albero Bassi, there are several fractures, a few millimeters thick, filled with a red material occurring also around the edge of the calcite masses which appear in the same porphyrite. This material is composed of a lamellar mineral, whose powder pattern agrees closely with that published by Staples (1955) for ferrierite.

From this pattern, the following lattice dimensions have been calculated with the least squares method, using Staples's indexing.

$$a=19.45\pm0.05 \quad b=14.28\pm0.05 \quad c=7.51\pm0.03\ (\text{Å}) \quad V=2085.9\ \text{Å}^3$$

This unit cell is a little larger than that of the ferrierite from Kamloops Lake.

The chemical analysis of material carefully selected under the binocular is as follows: SiO_2 56.80, TiO_2 0.10, Al_2O_3 12.71, Fe_2O_3 3.29, MgO 4.12, CaO 5.52, Na_2O 0.27, K_2O 0.82, CO_2 2.84, $+H_2O$ 10.16, $-H_2O$ 4.16, Sum 100.79%.

After the deduction of 6.46 percent of $CaCO_3$, the following chemical formula can be calculated on the basis of 72 oxygen atoms:

$$K_{0.51}Na_{0.25}Ca_{0.99}Mg_{2.98}[Fe'''_{1.20}Al_{7.25}Si_{27.50}]O_{72}\cdot 23.12H_2O$$

The divergence from the formula of a framework silicate is within experimental error. Using a microbalance, the hydrostatic method gave $D_{\text{exp}}=2.21\pm0.04$ g/cm³; the calculated density is $D_{\text{calc}}=2.18$ g/cm³, while the material from Kamloops Lake gives $D_{\text{exp}}=2.136$, $D_{\text{calc}}=2.11$ (Vaughan, 1966). For a zeolite, the iron content of this ferrierite is rather high; the Ca- and Mg-contents are somewhat higher than in the formula of Vaughan (1966). The optical data are here compared with those of Graham (1918) as reported by Winchell (1951):

	α	β	γ	$2V$
Winchell (1951)	1.478	1.479	1.482	50°25′
This paper	1.4887	∼1.489	1.4915	n.d.

The optical orientation is $\alpha \rightarrow a$ $\beta \rightarrow b$ $\gamma \rightarrow c$ in both cases, with the same crystallographic orientation (100)-cleavage, *c*-elongation. Deer, Howie and Zussman (1963) interchange *a* and *b*, so as to have a (010)-cleavage, but fail to interchange the same axes when giving the optical orientation.

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SEPARATION OF DOLOMITE FROM FINE GRAINED RECENT SEDIMENTS

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INTRODUCTION

Various methods are available for separating dolomite from ancient limestones. These include the use of acetic acid buffered with sodium acetate [Peterson, von der Borch and Bien (1966) and Goldsmith and Graf (1958)], the use of phosphoric acid [Degens and Epstein (1964) and Weber (1964)], and the use of dilute HCl [Deffeyes and Martin (1962)]. Unfortunately, these methods are not applicable to separation of dolomite from most Recent carbonate sediments. This is due to (1) the fine grained nature of such sediments, and, (2) the presence of Mg-rich calcites. These two factors result in a lack of differential solubility between carbonate phases in the reagents mentioned preventing use of these reagents in dolomite separations.

Recently a technique has been developed in this laboratory which enables separation of fine grained recent dolomites from coexisting calcite, high Mg-calcite, and aragonite using disodium ethylenediaminetetracetic acid (di-Na-EDTA). The technique makes use of information published by Hill and Runnels (1960) which points out that calcite and