

B3 BRÜGGENITE, $\text{Ca}(\text{IO}_3)_2 \cdot \text{H}_2\text{O}$, A NEW SALINE MINERAL FROM THE CHILEAN NITRATE DEPOSITS.
 Mary E. Mrose, George E. Ericksen, and John W. Marinenko, U. S. Geological Survey,
 Washington, D. C.

Brüggerite, a new hydrous calcium iodate mineral, $\text{Ca}(\text{IO}_3)_2 \cdot \text{H}_2\text{O}$, one of three known phases in the system $\text{Ca}(\text{IO}_3)_2 - \text{H}_2\text{O}$, is found intimately associated with lautarite, $\text{Ca}(\text{IO}_3)_2$, in veins of high-purity fibrous soda-niter at Pampa Pique III, Oficina Lautaro, Chile, the type locality for lautarite and dietzeite, $\text{Ca}(\text{IO}_3)_2(\text{CrO}_4)$. It occurs as long columnar anhedral crystals intergrown with fibrous soda-niter and as encrusting crystalline masses and short columnar crystals at vein borders.

The new mineral is colorless to bright yellow, translucent to transparent, with vitreous luster; hardness is about 3 1/2; it is brittle and shows conchoidal fracture; the mineral is slightly soluble in water, but insoluble in acetone, xylene, and alcohol. It is biaxial negative (-) with $2V = 88^\circ$, $\alpha = 1.773$, $\beta = 1.797$, $\gamma = 1.814$ (Na, at 25°C); $Z = \underline{b}$, $X_a = +9^\circ$; elongation negative; $r > v$, moderate to strong.

Brüggerite is monoclinic, space group $P2_1/c$; $a = 8.505 \text{ \AA}$, $b = 10.000 \text{ \AA}$, $c = 7.498 \text{ \AA}$, $\beta = 95^\circ 15'$; $Z = 4$; $D(\text{calc.}) = 4.267 \text{ g/cm}^3$, $D(\text{meas.}) = 4.24 \text{ g/cm}^3$. Strongest indexed X-ray powder lines are: 031, $3.048 \text{ \AA}$ (100); 220, $3.232 \text{ \AA}$ (71); 200, $4.235 \text{ \AA}$ (50); 022, $2.992 \text{ \AA}$ (50); 231, $2.517 \text{ \AA}$ (50); 412, $1.746 \text{ \AA}$ (50). Data on ASTM card 1-0386 are for synthetic Brüggerite, not lautarite.

Deducting lautarite, $\text{Ca}(\text{IO}_3)_2$, as the contaminant, the chemical analysis of Brüggerite gave (in weight percent): CaO 14.1, SrO 0.4, I_2O_5 81.2, H_2O 4.1, corresponding to $\text{Ca}(\text{IO}_3)_2 \cdot \text{H}_2\text{O}$. This composition was confirmed by an analysis of synthetic Brüggerite.

The mineral is named for Juan Brügger M. (1887-1953), whose broad investigations in Chilean geology, including the nitrate deposits, are fundamental to modern geological studies in Chile; it has been approved by the Commission on New Minerals and Mineral Names, I.M.A.