smaller temperature range than expected in the case of the San Cristobal material are attributed to the presence of impurities.

Weissenberg patterns of the Plumas County tridymite were taken just above the inversion. In addition to the pattern to be expected from the hexagonal silica framework, there was found superimposed an orthorhombic pattern of satellite reflections which varied in their distribution in a definite manner with temperature, but not with time. The sequence was not reversible, and once it had been carried through to completion, it could not be obtained again on the same crystal. A similar, but less complicated, sequence was found using the material from San Cristobal. The presence and the behavior of the satellite reflections can be explained by the migration of the impurity atoms from positions taken at the time of formation of the crystals, when electrostatic forces only were satisfied, to positions taken during heating that are more compatible with packing requirements. It appears that both the Plumas County and the San Cristobal tridymite must have formed below 121° and 127° C., respectively, inasmuch as the temperature inversions are irreversible.

CLIFFORD FRONDEL, *Secretary*

NEW MINERAL NAMES

Cadwaladerite

SAMUEL G. GORDON: Cadwaladerite, a new aluminum mineral from Cerro Pintados, Chile. *Notulae Naturae Acad. Nat. Sci. Phila.*, no. **80**, 4 pp. (1941).

NAME: For Mr. Charles M. B. Cadwalader, President of the Academy of Natural Sciences of Philadelphia.

CHEMICAL PROPERTIES: A basic aluminum chloride. Analysis by William Pitman on 0.43 g. gave: Al_2O_3 27.50, CaO 2.07, Na_2O 1.85, K_2O 0.90, Cl 22.96, SO_3 0.82, H_2O- 25.13, H_2O+ 24.99; sum 106.22 (given 106.32) less $(O=Cl_2)$ 5.18 = 100.94. After deduction of gypsum, halite, KCl and $CaCl_2$, this gives $AlOCl \cdot 5H_2O$ or $Al(OH)_2Cl \cdot 4H_2O$. This mineral is somewhat less hygroscopic than the accompanying halite.

PHYSICAL PROPERTIES: Amorphous, optically isotropic with n (Hg yellow light) = 1.513 (variable). Color lemon yellow (Ridgway); transparent to translucent; luster vitreous. Fracture conchoidal. Gr. 1.66 (by immersion in benzol-bromoform mixtures).

OCCURRENCE: Found as grains and small masses in colorless, granular and columnar halite on the old dumps of Cerro Pintados, Province of Tarapaca, Chile. This is the type locality for pickeringite, tamarugite and trudellite. Iron sulfates (botryogen, copiapite, etc.) also occur there.

DISCUSSION: X-ray study would be desirable. It seems probable that this mineral, like many others which are "amorphous" by optical tests, will prove to be crystalline.

MICHAEL FLEISCHER

NEW DATA

Slavikite, Butlerite

SAMUEL G. GORDON: Slavikite, butlerite, and parabutlerite from Argentina. *Notulae Naturae Acad. Nat. Sci. Phila.*, no. **89**, 8 pp. (1941). Slavikite occurs with other Fe sulfates at the Mina "Santa Elena" (see sarmientite, above). The crystals were found to be hexagonal, rhombohedral, with $c = 1.389$. A new analysis gives the formula $MgFe(SO_4)_4(OH)_3 \cdot 18H_2O$. The magnesium content was apparently overlooked in the original analysis. Butlerite occurs as oriented intergrowths with parabutlerite. Crystallographic study shows butlerite to be monoclinic, not triclinic.

M. F.