A more detailed paper on the occurrence and genesis of these vermiforms is in preparation.

REFERENCE

ROSS, C. S. AND KERR, P. F., "The Kaolin Minerals," professional paper 165-E 1930.

THE AMERICAN MINERALOGIST, VOL. 45, JANUARY-FEBRUARY, 1960

LOW TEMPERATURE PHASE TRANSITION OF COLEMANITE

A. PERLOFF AND S. BLOCK, *National Bureau of Standards, Washington 25, D. C.*

In recent years several workers (1, 2, 3) by means of pyroelectric, ferroelectric, and nuclear magnetic resonance measurements have obtained evidence that colemanite, $CaB_3O_4(OH)_3 \cdot H_2O$, room temperature space group $P2_1/a$ (4, 5), undergoes a transition near 0° C. to a noncentrosymmetric phase. This phase change can also be observed with x-ray diffraction techniques.

Precession photographs of the $h0l$ and $0kl$ reciprocal lattice nets at room temperature and at −30° C. were taken using MoK_α radiation with a Zr filter. The single crystal fragment was from a colemanite specimen from Death Valley, California, kindly supplied by Dr. C. L. Christ of the U. S. Geological Survey.

Within the limits of error there was no change in the cell dimensions, which agree with the published values (5), and no changes were observed on the $0kl$ net. However, the low temperature $h0l$ net contained very weak reflections from the $70\bar{1}$, $50\bar{2}$, $90\bar{5}$, and $70\bar{6}$ planes which establishes that the glide plane does not exist in the low temperature form. The transition between the room temperature $P2_1/a$ phase and the low temperature $P2_1$ phase is readily reversible.

REFERENCES

1. DAVISSON, J. W. (1956), *Acta Cryst.* **9**, 9.
2. GOLDSMITH, G. J. (1956), *Bull. Am. Phys. Soc. Ser II* **1**, 322.
3. HOLUJ, F. AND PETCH, H. E. (1958), *Can. J. Phys.* **36**, 145.
4. CHRIST, C. L. (1953), *Am. Mineral.* **38**, 411.
5. CHRIST, C. L., CLARK, J. R. AND EVANS, H. T., JR. (1958), *Acta Cryst.* **11**, 761.